

Durham E-Theses

Dental anthropology investigations of behaviour and society in some historic Arctic/Sub-Arctic samples

CHARLOTTE SELENE MCELVANEY

How to cite:

MCELVANEY, CHARLOTTE SELENE (2023) Dental anthropology investigations of behaviour and society in some historic Arctic/Sub-Arctic samples. Doctoral thesis, Durham University.

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a <https://etheses.durham.ac.uk/id/eprint/15056/> is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full Durham E-Theses policy](#) for further details.

Dental anthropology investigations of behaviour and society in some historic Arctic/Sub-Arctic samples

By

Charlotte S. McElvaney

Grey College, Department of Archaeology, Durham University

A thesis submitted in partial fulfilment of the requirements for Doctor of Philosophy at Durham
University

Submitted

2023

Abstract

Charlotte S. McElvaney, Dental anthropology investigations of behaviour and society in some Arctic/Sub-Arctic samples.

The thesis is a dental anthropological study of Arctic/Sub-Arctic samples utilising oral environmental health indicators (caries, calculus, periodontal disease), dental wear, craniofacial trauma (CFT), paramasticatory dental activities (PMDA) and cultural identifiers to analyse labour and dietary divisions, and how teeth were used as tools and cultural identifiers. The study was organised ecogeographically, as the mostly historically collected remains meant temporal distinctions were largely impossible, bar being pre-European contact. Contextualisation utilised ethnohistoric accounts, published bioarchaeological, archaeological and clinical studies, and a PMDA recording method, developed here. A total of 1540 individuals were analysed from Siberia, the Aleutian Islands, Alaska, Canada, and Greenland. Arctic/Sub-Arctic populations have been the focus of ethnohistoric, bioarchaeological, and clinical studies, but misconceptions remain regarding homogeneity. Whilst many cultures extended across the ecogeographic range of Arctic/Sub-Arctic populations, the divergent ecogeographies should result in distinct diet, labour, PMDA, and cultural identification.

The oral environmental health indicators show overall, homogenously good oral health but were too infrequent for dietary divisions assessment. Whilst the wear results were similarly non-distinct for the adults for labour divisions, they illustrated the age PMDA began (5.5-10.5-years-old) when analysed in conjunction with the CFT and PMDA results. The younger age (5.5-years-old) coincides with development of adult levels of coordination and balance, and improved musculature control from changes in motor learning abilities. The same type of PMDA was found to continue into adulthood in one sample (West Greenland). Further distinct behaviours were found in another sample (Amaknak Island), as wear is absent in subadults, but extensive wear is present in the adults.

The analysis also showed two distinct cultural identification configurations – wearing labrets and ablation – with a demographic distribution and restricted to the Aleutian Islands. Ablation has been reported in these populations, but not accepted by most researchers. The analysis found evidence that females and males had different extraction methods and placements of ablation. In males, teeth were forcefully removed from the socket, with the roots remaining, followed by alveolar bone resorption. The females experienced a less traumatic extraction method, as roots remaining is absent. Evidence of wearing labrets inferior to the *labia inferior oris* was found. The analysis also found an unreported labret placement, being superior to the *labia superior oris*. The females and males have different patterns of wearing labrets, with females wearing labrets laterally, and the males wearing one medially, both superior to the *labia superior oris*. The study provides an immense amount of information on Arctic/Sub-Arctic samples, the homogenous oral health environment, and the distinct PMDA and cultural identifiers.

Table of Contents

I.	List of Tables.....	viii
II.	List of Figures.....	xi
III.	List of Equations.....	xiii
IV.	Declaration.....	xv
V.	Notes	xv
VI.	Statement of Copyright.....	xv
VII.	Acknowledgments	xvi
1	Chapter 1 Introduction.....	1
1.1	Aims and Research Questions.....	3
1.2	Signification of Research	4
1.3	Ethics Statement.....	4
1.3.1	Terminology.....	5
1.3.2	Chapter Organisation	6
2	Chapter 2 Dental Anthropological Research – Dental Conditions	8
2.1	Dental Anatomy and Development	9
2.1.1	Malposition	11
2.1.2	Agenesis.....	11
2.2	Dental Wear.....	12
2.3	Oral Health	14
2.3.1	Caries.....	14
2.3.2	Periodontal Disease	15
2.3.3	Continuous Eruption	17
2.3.4	Antemortem Tooth Loss	17
2.3.5	Post-Mortem Tooth Loss.....	18
2.3.6	Root Resorption.....	18
2.3.7	Traumatic Enamel Macrofracture (TEM).....	19
2.3.8	Dental Calculus	20
2.4	Physiological Disturbances	20
2.4.1	Linear Enamel Hypoplasia (LEH)	21
2.5	Paramasticatory Dental Activities	22
2.5.1	Types	23
2.5.2	Grooves	23
2.5.3	Striae.....	25

2.5.4	Facets	26
2.5.5	Wear	26
2.5.6	Previous Studies	27
2.5.7	Cultural Identifiers	29
2.5.8	Labrets	29
2.5.9	Ablation	29
3	Chapter 3 Arctic/Sub-Arctic Research	31
3.1	Background.....	31
3.2	Malposition	36
3.3	Agenesis	36
3.4	Wear.....	36
3.5	Caries	37
3.6	Periodontal Disease.....	38
3.7	Continuous Eruption.....	38
3.8	Antemortem Tooth Loss.....	39
3.9	Post-Mortem Tooth Loss.....	39
3.10	Root Resorption	40
3.11	Traumatic Enamel Macrofracture.....	40
3.12	Calculus	41
3.13	Linear Enamel Hypoplasia.....	41
3.14	Paramasticatory Dental Activities	42
3.15	Cultural Identifiers.....	43
3.16	Labrets	43
3.17	Ablation.....	45
3.18	Paramasticatory Dental Activities Summary	47
4	Chapter 4 Materials.....	48
4.1	Alaska	52
4.1.1	Amaknak Island and Area	52
4.1.2	South Alaska	55
4.1.3	St. Lawrence Island and Cape Chaplino.....	59
4.1.4	West Aleutians, Aleutians Unknown and Nome	62

4.1.5	North Alaska/Canada	67
4.2	Canada	70
4.2.1	Hudson Bay and Baffin Island, and Area.....	70
4.2.2	Nunavut.....	73
4.2.3	Canada Unknown.....	76
4.2.4	Vancouver Island and Area	77
4.2.5	Coats Island, Frozen Strait, Southampton Island, Walrus Island	79
4.3	Greenland	81
4.3.1	East Greenland.....	83
4.3.2	South Greenland	85
4.3.3	West Greenland.....	87
4.3.4	North Greenland.....	89
4.3.5	Greenland Unknown.....	92
4.4	Materials summary.....	93
5	Chapter 5 Methods	95
5.1	Notation Systems.....	95
5.2	Equipment	96
5.3	Sex Estimation	96
5.4	Age Estimation	97
5.4.1	Adult.....	98
5.4.2	Subadult	99
5.5	Analysis.....	100
5.6	Tooth Presence	101
5.7	Wear (Extent and Gradient)	103
5.8	Oral Health	105
5.8.1	Caries.....	105
5.8.2	Calculus.....	108
5.8.3	Alveolar Bone Resorption	109
5.8.4	Periodontal Disease	109
5.8.5	Antemortem Tooth Loss	110
5.8.6	Traumatic Enamel Macrofracture	111
5.9	Physiological Disturbances	111
5.9.1	Linear Enamel Hypoplasia	111

5.10	Paramasticatory Dental Activities	112
5.10.1	Types - Evidence	120
5.10.2	Types – Age Categories	120
5.10.3	Types – Physical	121
5.10.4	Types – Visibility	121
5.10.5	Types – Distance	122
5.10.6	Frequency	122
5.10.7	Affirmations, Connotations, and Purpose	122
5.10.8	Recording Method.....	122
5.10.9	Ablation.....	123
5.11	Divisions of Diet and Labour.....	124
6	Chapter 6 Results	125
6.1	Age and Sex Estimations.....	125
6.2	Tooth Status	127
6.2.1	Absence/Presence	127
6.2.2	Post-Mortem Tooth Loss	128
6.2.3	Agenesis.....	128
6.2.4	Antemortem Tooth Loss	129
6.2.5	Antemortem Tooth Loss and Odontological Conditions.....	130
6.2.6	Malposition	132
6.2.7	Tooth Presence Summary.....	132
6.3	Wear.....	132
6.3.1	Mesial and Distal Approximal Attrition.....	132
6.3.2	Wear (Extent)	133
6.3.3	Wear (Gradient).....	136
6.3.4	Wear Summary	137
6.4	Oral Health	138
6.4.1	Caries.....	138
6.4.2	Alveolar Bone Resorption	142
6.4.3	Periodontal Disease	146
6.4.4	Localised/Generalised Periodontal Disease	147
6.4.5	Periodontal Disease – using the methods by Kerr (1991) and Karn et al. (1984).....	155
6.4.6	Continuous Eruption	156
6.4.7	Calculus.....	156
6.4.8	Oral Health Summary.....	162

6.5	Root Resorption and Traumatic Enamel Macrofracture	163
6.5.1	Root Resorption.....	163
6.5.2	Traumatic Enamel Macrofracture - Notching.....	164
6.5.3	Traumatic Enamel Macrofracture - Chipping.....	167
6.5.4	Traumatic Enamel Macrofracture - Pattern.....	169
6.5.5	Traumatic Enamel Macrofracture - Prevalence	171
6.5.6	Traumatic Enamel Macrofracture and Odontological Conditions	172
6.5.7	Root Resorption and Traumatic Enamel Macrofracture Summary.....	172
6.6	Linear Enamel Hypoplasia.....	172
6.6.1	Linear Enamel Hypoplasia and Odontological Conditions	176
6.6.2	Linear Enamel Hypoplasia Summary	177
6.7	Dental Features	177
6.7.1	Distribution.....	177
6.7.2	Buccal.....	180
6.7.3	Lingual	182
6.7.4	Distal	183
6.7.5	Mesial	183
6.7.6	Occlusal	184
6.7.7	Dental Features and Odontological Conditions	185
6.7.8	Dental Features Summary	187
7	Chapter 7 Discussion	188
7.1	Oral Health	189
7.1.1	Oral Health Summary.....	191
7.2	Physiological Disturbances	191
7.2.1	Physiological Health Summary	192
7.3	Dietary Divisions	192
7.3.1	Caries.....	192
7.3.2	Calculus.....	194
7.3.3	Wear Gradient – Diet.....	194
7.3.4	Dietary Divisions Summary.....	195
7.4	Labour Divisions	195
7.4.1	Paramasticatory Dental Activities.....	195
7.4.2	Extent and Gradient of Wear	199
7.4.3	Root Resorption and Traumatic Enamel Macrofracture.....	201
7.4.4	Subadults	204

7.4.5	Percentages of Occurrence.....	205
7.4.6	Labour Divisions Summary.....	206
7.5	Evidence of Cultural Identifiers	207
7.5.1	Buccal Facets	207
7.5.2	Labrets	208
7.5.3	Ablation – Antemortem Tooth Loss	209
7.5.4	Ablation – Discussion	210
7.5.5	Cultural Identifiers Summary	214
8	Chapter 8 Conclusion	215
8.1	Achievement of Aims and Research Questions	215
8.1.1	Aims	215
8.1.2	Research Questions	216
8.2	Hypotheses	218
8.3	Outcomes.....	219
8.4	Limitations	221
8.5	Future Analyses.....	222
9	Chapter 8 References	225

I. List of Tables

Table 1-1	List of Abbreviations.....	xiv
Table 3-1	Arctic/Sub-Arctic samples and comparative samples	33
Table 4-1	Location names - current and historical.....	48
Table 4-2	Overview of samples used in the study	49
Table 4-3	Overview of skulls/post-cranial remains present	50
Table 4-4	Total individuals per location on Amaknak Island.....	53
Table 4-5	MNI - Amaknak Island.....	55
Table 4-6	MNI - South Alaska.....	59
Table 4-7	MNI - St. Lawrence	62
Table 4-8	MNI - West Aleutians	67
Table 4-9	MNI - North Alaska.....	70
Table 4-10	MNI - Hudson Bay.....	73
Table 4-11	MNI – Nunavut	75
Table 4-12	MNI - Canada Unknown.....	76
Table 4-13	MNI - Vancouver Island	79
Table 4-14	MNI - Coats Island.....	81

Table 4-15 MNI - East Greenland.....	85
Table 4-16 MNI - South Greenland	87
Table 4-17 MNI - West Greenland.....	89
Table 4-18 MNI - North Greenland.....	92
Table 4-19 MNI - Greenland Unknown.....	93
Table 4-20 Material summary.....	94
Table 5-1 General female and male skeletal differences.....	97
Table 5-2 Age groups	98
Table 5-3 Adult age estimation methods	99
Table 5-4 Scoring system - Hillson (2001, Appendix A, 274-278)	102
Table 5-5 Row 1 – Tooth presence, absence, caries – Scores and descriptions	103
Table 5-6 Rows 35-44 – Dental pathologies and locations.....	104
Table 5-7 Wear – scores and description.....	105
Table 5-8 Rows 7 and 11 - Mesial and distal approximal attrition score – Scores and descriptions.....	105
Table 5-9 Row 2 - Occlusal surface caries in premolars and molars - Scores and descriptions	106
Table 5-10 Row 3 - Pit sites in molars and upper incisors - Scores and descriptions	106
Table 5-11 Row 6 - Pit sites in molars and upper incisors - Scores and description.....	107
Table 5-12 Rows 8 and 12 - Mesial and distal contact area caries - Scores and descriptions.....	107
Table 5-13 Rows 9, 13, 16, 19 – Mesial, distal, buccal and lingual, root surface caries - Scores and descriptions	108
Table 5-14 Rows 40-44 – Calculus - buccal, lingual, distal, mesial, and occlusal - scores and descriptions	109
Table 5-15 Percentage categories for calculus.....	109
Table 5-16 Row 39 - Periodontal disease – scores and descriptions.....	110
Table 5-17 Traumatic enamel macrofracture - scores and descriptions	111
Table 5-18 Discriminate diagnostic criteria	112
Table 5-19 PMDA - nomenclature	114
Table 5-20 Paramasticatory dental activities - recording sheet - numbers and meanings.....	118
Table 5-21 Paramasticatory dental activities - recording sheet – feature numbers and meanings.....	118
Table 5-22 Types - Evidence	120
Table 5-23 Types - Age categories	121
Table 5-24 Types – Physical forms	121
Table 5-25 Type - Visibility forms	121
Table 5-26 PMDA – Rows 24-34, 45-49 – scores and description	123
Table 5-27 Aetiological reasons for AMTL excluding ablation	124
Table 5-28 Signs of ablation.....	124
Table 6-1 Subadult age classes present.....	126

Table 6-2 Sex ratio	126
Table 6-3 R1 - Mean number of teeth present per individual for each sample.	127
Table 6-4 R1:S10 – PMTL – accounted for	128
Table 6-5 Antemortem tooth loss summary - molars are most frequent	130
Table 6-6 Antemortem tooth loss summary - samples with age-progression.....	130
Table 6-7 AMTL and roots remaining – Amaknak Island.....	131
Table 6-8 AMTL/Roots Remaining – number of teeth, total and percentage.....	131
Table 6-9 AMTL/Roots Remaining – number of individuals, total and percentage.....	132
Table 6-10 Scores relating to tooth status – caries I	139
Table 6-11 Scores relating to tooth status - alveolar bone resorption.....	143
Table 6-12 Alveolar bone resorption – summary - adults.....	144
Table 6-13 Alveolar bone resorption – summary – subadult permanent teeth	145
Table 6-14 Alveolar bone resorption – summary – subadult deciduous teeth	146
Table 6-15 Scores relating to tooth status – periodontal disease	146
Table 6-16 Localised/generalised periodontal disease – Female YA and MA	147
Table 6-17 Localised/generalised periodontal disease – Female YA	148
Table 6-18 Localised/generalised periodontal disease – Female MA	149
Table 6-19 Localised/generalised periodontal disease – Males YA and MA	150
Table 6-20 Localised/generalised periodontal disease – Male YA	151
Table 6-21 Localised/generalised periodontal disease – Male MA	152
Table 6-22 Localised/generalised periodontal disease – Child and Adolescent Individuals	153
Table 6-23 Localised/generalised periodontal disease – Child Individuals.....	154
Table 6-24 Localised/generalised periodontal disease – Adolescent Individuals.....	155
Table 6-25 Periodontal disease – Row 51 - Scores found.....	156
Table 6-26 Scores relating to tooth status - calculus	157
Table 6-27 Percentages of tooth aspects affected by calculus – Rows 40-44, Scores 1-3.....	159
Table 6-28 Percentages of tooth aspects affected by calculus – Rows 40-44, Score 1	160
Table 6-29 Percentages of tooth aspects affected by calculus – Rows 40-44, Score 2	161
Table 6-30 Percentages of tooth aspects affected by calculus – Rows 40-44, Score 3.....	162
Table 6-31 Scores relating to tooth - root resorption and traumatic enamel macrofracture.....	163
Table 6-32 Notching - Samples showing age progression	167
Table 6-33 Notching – ratio of left to right.....	167
Table 6-34 Chipping – ratio of left to right.....	169
Table 6-35 Traumatic enamel macrofracture - pattern – adults	170
Table 6-36 Traumatic enamel macrofracture – pattern – subadults	171
Table 6-37 Traumatic enamel microfracture and caries	172
Table 6-38 Dental features - overview of age classes.....	178

Table 6-39 Dental features – percentages and prevalence	179
Table 6-40 Number of buccal dental features	181
Table 6-41 Row 26: Number of features on the lingual aspect	182
Table 6-42 Length and width of largest of the lingual distal features	182
Table 6-43 Length and width of largest of the distal dental features	183
Table 6-44 Dental features –lengths and widths of the largest of the mesial features	183
Table 6-45 Occurrence and dimensions of the largest of the occlusal dental features	184
Table 6-46 Dental features and caries.....	185
Table 6-47 Dental features (facets) and wear	185
Table 6-48 Dental features and periodontal disease - Kerr (1991)	186
Table 6-49 Dental features and periodontal disease - Karn et al. (1984).....	186
Table 6-50 Dental features and traumatic enamel macrofracture	186
Table 7-1 Ablation against Hrdlička (1940a) – 1	212
Table 7-2 Ablation against Hrdlička (1940a) – 2	212

II. List of Figures

Figure 2-1 Tooth anatomy.....	10
Figure 2-2 Dental wear – example	12
Figure 2-3 Carious lesions – example.....	15
Figure 2-4 Periodontal disease – example.....	16
Figure 2-5 Traumatic enamel macrofracture – example.....	19
Figure 2-6 Calculus – example.....	20
Figure 2-7 Linear enamel hypoplasia – example.....	22
Figure 2-8 Dental Features Example – Groove.....	24
Figure 2-9 Dental Features Example – Striae	25
Figure 2-10 Dental Features Example - Facets.....	26
Figure 2-11 Labret – Example	29
Figure 3-1 Major Cultures in the regions studied here	34
Figure 3-2 Map of sites frequently referenced	40
Figure 4-1 Map – Overview	51
Figure 4-2 Map Amaknak and Unalaska Islands	54
Figure 4-3 Amaknak Island - sites.....	54
Figure 4-4 Kodiak and Sitkinak Islands	58
Figure 4-5 Map: Cook Inlet and Tanaina.....	58
Figure 4-6 Map: St. Lawrence Island	60
Figure 4-7 Cape Chaplino/Indian Point (1897).....	61
Figure 4-8 Map: Nome census area, including Port Clarence and Wales	64

Figure 4-9 Map: Attu Island.....	65
Figure 4-10 Map: Kiska Island.....	65
Figure 4-11 Map: Shemya Island.....	66
Figure 4-12 Map: Sledge Island.....	66
Figure 4-13 Map: Collinson Point.....	69
Figure 4-14 Map: Devon Island and Somerset Island.....	69
Figure 4-15 Map: Hudson Bay, Baffin Island and area.....	72
Figure 4-16 Map: Nunavut.....	74
Figure 4-17 Vancouver Island.....	77
Figure 4-18 Coats Island, Southampton Island and Walrus Island.....	80
Figure 4-19 Map: Eleonoren Bay.....	84
Figure 4-20 Map: Tasilaq.....	84
Figure 4-21 Map: Sisimiut.....	86
Figure 4-22 Map: West Greenland.....	88
Figure 4-23 Map: Etah, Sulwuddy and Nerki.....	90
Figure 4-24 Map: North Star Bay and Appat.....	91
Figure 4-25 Map: Upernavik.....	91
Figure 5-1 FDI notation system.....	96
Figure 5-2 Acronyms.....	96
Figure 5-3 Dental Feature - Example – Cylindrical groove.....	119
Figure 5-4 Dental Features Example – Groove.....	119
Figure 5-5 Dental Features Example – Stria.....	119
Figure 5-6 Dental Features Example - Facet.....	120
Figure 6-1 Example - Wear 1.....	134
Figure 6-2 Example - Wear 2.....	134
Figure 6-3 Example - Wear 3.....	135
Figure 6-4 Example - Wear 4.....	135
Figure 6-5 Example - Wear 5.....	136
Figure 6-6 Caries - total and percentages of individuals with and without carious lesions.....	139
Figure 6-7 Caries - total and percentages of individuals with and without carious lesions based on sex class.....	140
Figure 6-8 Caries - total and percentages of individuals with and without carious lesions based on age and sex class.....	140
Figure 6-9 Caries - total and percentage of carious lesions per tooth class, for the age/sex class affected - anterior teeth.....	140
Figure 6-10 Caries - total and percentage of carious lesions per tooth class, for the age/sex class affected - M1.....	141

Figure 6-11 Caries - total and percentage of carious lesions per tooth class, for the age/sex class affected - M2.....	141
Figure 6-12 Caries - total and percentage of carious lesions per tooth class, for the age/sex class affected - M3.....	141
Figure 6-13 Notching - total number and percentage of individuals with notching.....	164
Figure 6-14 Notching - total number and percentage of individuals with notching – females.....	165
Figure 6-15 Notching - total number and percentage of individuals with notching – males.....	165
Figure 6-16 Notching - total number and percentage of individuals with notching – subadults	166
Figure 6-17 Chipping - total number and percentage of individuals with chipping	168
Figure 6-18 Chipping - total number and percentage of individuals with chipping – age/sex class.....	168
Figure 6-19 Chipping - total number and percentage of individuals with chipping - subadults	169
Figure 6-20 Linear enamel hypoplasia - total number of individuals per sample.....	173
Figure 6-21 Linear enamel hypoplasia - percentage of individuals by age/sex.....	174
Figure 6-22 Linear enamel hypoplasia – Total and percentages of teeth affected, by sample	174
Figure 6-23 Linear enamel hypoplasia – Total and percentages of teeth affected, by age/sex	175
Figure 6-24 Linear enamel hypoplasia - age of occurrence - all teeth and individuals	175
Figure 6-25 Linear enamel hypoplasia - number of occurrences per tooth per individual.....	176
Figure 6-26 PMDA – percentages of individuals with combined features per sample	180
Figure 7-1 Caries - comparison.....	193
Figure 7-2 PMDA - percentages of PMDA from comparative samples	206

III. List of Equations

Equation 1 Sex ratio	97
Equation 5-2 Point prevalence	100
Equation 5-3 True prevalence.....	101
Equation 5-4 Percentages – Post-mortem tooth loss, malpositions, agenesis	101
Equation 5-5 Calculus - percentage of affected tooth aspects	109
Equation 5-6 Percentage - localised/generalised periodontal disease	110
Equation 5-7 Percentages – Antemortem tooth loss	111

Table 1-1 List of Abbreviations

A	
AIDM	Activity-induced dental modifications
AMTL	Antemortem tooth loss
AN	Anterior teeth
C	
CEJ	Cemento-enamel junction
CFT	Craniofacial trauma
CMH	Canadian Museum of History
D	
DDC	Discriminate diagnostic criteria
DEJ	Dentinoenamel junction
H	
HG	Hunter-gatherer
HSR	Human skeletal remains
I	
IDM	Intentional dental modifications
L	
LEH	Linear enamel hypoplasia
M	
M1	First molar
M2	Second molar
M3	Third molar
MA	Adult Mature
MDL	Maximum diaphyseal length
P	
PMDA	Paramasticatory dental activities
PMTL	Post-mortem tooth loss
PR	Premolar(s)
T	
TEM	Traumatic enamel macrofracture(s)
U	
UDM	Unintentional dental modifications
UL	University of Liverpool
Y	
YA	Young Adult

IV. Declaration

The author declares there is no conflict of interest.

V. Notes

The Appendices were submitted with the electronic version of this thesis.

Portions of the research have been presented at the following conferences:

Alaska Anthropological Association (2021) Paper: *The tooth of the matter: Dental cultural identifiers in populations from across Alaska and Siberia (Preliminary results).*

Bioarchaeology Early Careers Conference (2021) Paper: *Wear are the caries? Aetiological association of wear and caries, and implications and recommendations for caries analyses (Preliminary results).*

Portions of the research were submitted and won the following awards:

Edwin S. Hall, Jr. Student Paper Competition, Alaska Anthropological Association (2021), Research paper: *The tooth of the matter: Dental cultural identifiers in populations from across Alaska and Siberia (Preliminary results).*

VI. Statement of Copyright

The copyright of this thesis rests with the author. No quotation from it should be published without the author's prior written consent and information derived from it should be acknowledged.

VII. Acknowledgments

In alphabetical order:

American Museum of Natural History for allowing me access to the collections. Thank you to Gisselle Garcia (Senior Museum Specialist II, Biological Anthropology) and Kristen Mable (Archivist and Registrar for Accessions and Loans) for all of their help and friendliness when I visited.

Alaskan Anthropological Association and Awards Committees. They graciously awarded me the James Van Stone Scholarship, which helped fund my research trip to the Canadian Museum of History in order to analyse individuals from Alaska. I would also like to thank the Edwin S. Hall, Jr. Student Paper Competition Committee, for awarding me the Edwin S. Hall, Jr. Student Paper, for the work conducted on the Aleutian Island individuals.

Dr Anwen Caffell (supervisor Oct 2018-Jan 2020).

Canadian Museum of History. I would like to thank Stacey Girling-Christie (Collections Information Specialist, Archaeology), for going above and beyond before, during and after my research visit. Janet Young (Curator, Physical Anthropology) for her help during my visit. Thank you to Patty, Meghan, and Phil. And all the staff I met at the museum for being friendly, helpful, and lovely people.

Dr Kristiaan D'Août (Medical and Comparative Anatomy Collection, University of Liverpool). Thank you for allowing me access to the human skeletal collection, and all your assistance when I was there.

The Duckworth Laboratory – University of Cambridge, Leverhulme Centre for Human Evolutionary Studies. Thank you to Dr Trish Biers (Collections Manager) and colleague for allowing me access to their collections, and all the assistance provided when I was there.

Inuit Heritage Trust (IHT) Board of Trustees. Thank you for allowing me to access the remains in CMH. I hope you find my research of interest.

Dr Tina Jakob (supervisor Oct 2018-Jan 2020).

Kaktovik Village, President. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Kenaitze Indian Tribe, Chairperson. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Dr Derek Kennet (Supervisor – Mar 2020-2023) Thank you for being my supervisor.

Dr Andrew Millard (Supervisor – Mar 2020-2023). Thank you for your help, the comments and feedback were invaluable.

Native Village of Afognak, Chairperson. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Native Village of Akhiok, President. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Native Village of Brevig Mission, President. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Native Village of Larsen Bay, President. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Native Village of Ouzinkie, President. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Native Village of Port Lions, President. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Native Village of Wales, President. Thank you for allowing me access to the Alaskan individuals. I hope you find my research of interest.

Dr Lawrence S. Owens. Thank you for the help over the years, from long before the start of this.

Professor Peter Rowley-Conwy (Supervisor Oct 2018-Aug 2020). Thank you for being my supervisor.

Amy Steffian, Chief Curator at the Alutiiq Museum & Archaeological Repository. Thank you for your assistance with contacting the Alaskan Indigenous communities.

Professor Mark White (Supervisor Aug 2020-2023). Thank you for being my supervisor.

ZSL Prince Philip Zoological Library & Archives (staff). Thank you for being constantly friendly, polite, and approachable. You were all a great comfort in the early years of the project, when I used the library space to write the initial parts of this thesis.

1 Chapter 1 Introduction

The following thesis is a dental anthropological analysis examining the diversity of past circumpolar (Arctic and Sub-Arctic) human hunter-gatherers, using populations samples (terms defined below). Dental anthropology analyses hominid dentitions, encompassing tooth development from germ to eruption, degradation, and destruction from disease or manipulation, and genetic components including morphology, dimensions, and number (Scott 2018, 1, 2015, 7; Irish and Scott 2016, 3; Scott and Turner 2008, 22; Hrdlička 1920). Dental anthropological studies reconstruct a variety of aspects of lifeways from past populations, including the focus of the present study; the analysis uses skeletal and odontological remains of Arctic and Sub-Arctic populations samples to reconstruct the use of teeth as tools and cultural identifiers, and labour and dietary divisions between age and sex classes.

Arctic/Sub-Arctic populations samples inhabit the northern circumpolar regions of Greenland, North America, northern and a portion of eastern Russia, and portions of northern Europe. Only individuals from Greenland, North America, and a portion of eastern Russia are studied here; the study encompasses a large area, covering the climatic and cultural areas of the Arctic and Sub-Arctic (Shephard and Rode 1996, 1). The climatic and cultural areas are different to the (unagreed upon) geographic boundaries of the Arctic and Sub-Arctic (Szathmáry 2015, 2). However, the regions can be defined as the Arctic being approximately north of latitude 66.7° (Jonasson et al. 2000, 275) and Sub-Arctic latitudes 50°-70° (Nuttall 2004, 53; Nuttall and Callaghan 2000, xxix). The Arctic is characterised by long, cold winters with minimal daylight, and short cool summers with minimal night. The Sub-Arctic experiences slightly increased temperatures, due to the Arctic oceanic currents and climate buffering southern warmer climates and currents (Park 2012, 113; Nuttall 2004, 53; Nuttall and Callaghan 2000, xxix; McGhee et al. 1994; Rainey 1941b, 459).

The Arctic/Sub-Arctic areas have been inhabited for an extended time-period, resulting in numerous cultures (Friesen and Mason 2016, 1; Finkelstein 2016, 653; Crockford 2008, 113; Arutyunov et al. 2006, 25; Dumond 2000; Shephard and Rode 1996, 11; Grygier 1994, 17; Lee and DeVore 1968, 5), distinct patterns in dental health (Tomenchuk and Mayhall 1979; Costa 1977, 55; Stewart and Strong 1939, 51; Waugh 1937b), linguistics, cultures, religions (Krutak 2018a; Oosten 1986), and apparel (Ryan and Young 2013; Vaudrin 1981, xxi; Damas 1968b, 111; Osgood 1933; Nelson 1900, 30). Ethnohistoric accounts, which are prevalent for Arctic/Sub-Arctic populations samples, can provide important information on many non-archaeologically preservable characteristics, such as linguistics, hunting techniques, technologies, art, gender fluidity, and mobility strategies (Morgan et al. 2017; Crass 1998, 145; Odell 1996; Whitley and Loendorf 1994). Ethnohistoric accounts relay that Arctic/Sub-Arctic populations samples used their teeth as tools, termed paramasticatory dental activities (PMDA), and cultural identifiers, including artificial cranial modifications, and pertinent to an odontological study, labrets (Dove et al. 2005; Scott 1997, Fig. 8; Clark 1970; Larsen and Rainey 1948, 114; Stewart and Strong 1939, 50; Grant 1922, although see Jenness 1957, 149; Nansen 1893, 125; Lisiansky 1814, 195). Paramasticatory dental activities and odontological, and

craniofacial cultural identifiers (e.g., labrets), can alter/damage the teeth by leaving cutmarks, chips, and wear patterns. The alterations/damage cause by PMDA can be used to reconstruct aspects of lifeways which may not be retained in other parts of the bioarchaeological record, such as labour divisions. Similarly, oral health conditions (e.g., caries, calculus, and periodontal disease) can reconstruct dietary divisions which may not be recorded in ethnohistoric accounts.

Arctic/Sub-Arctic populations samples are suitable for dental anthropological studies for several reasons; in addition to the ethnohistoric accounts noting PMDA, and the bioarchaeological evidence of PMDA, the ethnohistoric accounts also report that females largely conducted PMDA to produce clothing, whilst males did not (Dove et al. 2005; Scott 1997, Fig. 8; Stewart and Strong 1939, 50; Grant 1922, although see Jenness 1957, 149; Nansen 1893, 125). Therefore, the ethnohistoric accounts capture sex-based labour divisions, which may be unrecognisable in the archaeological record, but are odontologically identifiable. Also, the diet of pre-European contact Arctic/Sub-Arctic populations samples naturally contained minimal cariogenic foodstuffs (Pedersen 1947). As caries destroys the dentition, removing evidence of other dental pathologies (Temple 2016, 433; Kovach et al. 2013), many dental pathologies can be analysed in much greater detail on Arctic/Sub-Arctic populations samples than those who consume cariogenic foodstuffs. Finally, research on Arctic/Sub-Arctic populations samples has typically not included subadults (Justice 2017, 37; Park 1998). Although research into subadults can be hampered for reasons relating to what is purported to be a lack of skeletal remains (Scheuer and Black 2004, 18-19), wider bioarchaeological studies have successfully been conducted on subadults (Thompson et al. 2014; Halcrow and Tayles 2011). As such, within Arctic/Sub-Arctic studies, aspects of subadult lifeways are unknown. For example, when did subadults start adult roles (Justice and Temple 2019; Park 1998), such as those relating to PMDA, or having distinct diets?

A dental anthropological study on Arctic/Sub-Arctic populations samples is important because, occasionally, the populations samples have been viewed as a homogenous group, with the only variations being linked to a defined culture inclusive of characteristics (Whitridge 2016, 834). From the large ecogeographic area and temporal depth of the populations samples, characteristics and lifeways are expected to diverge. Further, although ethnohistoric accounts relay important information which may not be retained (bio-)archaeologically, there are problems. Ethnohistoric accounts are not inclusive of all cultures, and do not definitively illustrate social structures, as the observations are typically conducted on a small section of a population, from a small region. The accounts are then extrapolated to bioarchaeological populations samples, which may mask unique characteristics and lifeways of the bioarchaeological populations samples (French 2019; LeCompte and Goetz 1982; Binford 1967). Similar problems have been encountered in non-Arctic/Sub-Arctic studies. For example, pre-contact Native Americans from the Mississippi River Valley and Central Illinois River Valley, are generally viewed as consuming large amounts of maize (Boyd and Surette 2010; Phillips 2009; Scherer et al. 2007; Schollmeyer and Turner 2004;

Hutchinson et al. 1998; Katzenberg et al. 1995; Welch and Scarry 1995; Fritz 1990; Schwarcz et al. 1985). Whilst Lovis et al. (2011) present possible false negatives. Therefore, a dental anthropological study on Arctic/Sub-Arctic populations samples can illuminate if there were any divisions in labour or diet, or if/how teeth were used as tools and cultural identifiers. A study incorporating a large number of individuals from multiple areas can assess if any of the aforementioned characteristics (if present) were consistent across diverse areas or diverged.

1.1 Aims and Research Questions

The present study will use skeletal and odontological remains to conduct a dental anthropological analysis of populations samples from the Arctic/Sub-Arctic regions of Siberia, Aleutian Islands, North America, and Greenland. The following presents the aims and research questions of the study.

The main aims of the thesis are:

- Investigate sex- and age-based access to foodstuffs (diet) and oral health within ecogeographically dispersed Arctic/Sub-Arctic populations.
- Develop and test a recording and scoring method for PMDA.
- Investigate if evidence of task-based activities (PMDA) is retained on the dentition.
- Investigate if evidence of cultural identifiers is retained within the dentition.

The results gained from the aims will help analyse:

- Does any evidence of PMDA retained in the dentition illustrate age and sex-based divisions of labour?
- Can the age PMDA began be established?
- Were dental cultural identifiers present? And if so, are patterns present and decipherable?
- Do ecogeographically distinct populations display divergent dietary and oral health characteristics?

The data from the research questions will be used to test the following hypotheses:

- Human skeletal remains from different ecogeographies will exhibit marked differences in oral health, physiological stress, wear (extent and gradient) and PMDA.
- Evidence of PMDA and diet will illustrate when subadults began adult roles.
- Dental cultural identifiers will illustrate social structures.

The aimed outcomes will contribute understandings to:

- Dietary access between ages and sexes.
- Arctic/Sub-Arctic populations samples conducted PMDA from multiple ecogeographic regions.
- Cultural identifier prevalence across Arctic/Sub-Arctic populations.

1.2 Signification of Research

The research will significantly impact studies on Arctic/Sub-Arctic populations samples, and the wider dental anthropology discipline, in multiple ways. The first relates to dental anthropological studies, by developing and deploying a scoring system to record and analyse paramasticatory dental activities (PMDA). A comprehensive scoring system has hitherto not been developed but would permit assessing the presence/absence of PMDA, identifying the type of PMDA conducted, and provide consistency between researchers. The second significance relates to Arctic/Sub-Arctic studies and relies on a PMDA system being successfully developed. The system will be used to identify how Arctic/Sub-Arctic populations samples utilised their teeth and the orofacial region as tools and cultural identifiers, to reconstruct labour and dietary divisions. The results can significantly expand the knowledge of two aspects of lifeways; first, which members of a sample-population (females and/or males, subadults and/or adults) conducted PMDA, and if so the type of PMDA. And second, how/if access to foodstuffs were divided between members of a sample-population. As the study incorporates a large number of individuals, the results will also show if the labour divisions or access to foodstuffs were consistent across Arctic/Sub-Arctic populations samples or diverged. Therefore, the research has the potential to significantly expand the knowledge of PMDA in Arctic/Sub-Arctic populations samples (based on age and sex class), and other populations samples when the PMDA system is applied to them.

1.3 Ethics Statement

Non-destructive techniques were used to preserve the skeletal remains for future analysis, and for any repatriation request. Ethics forms were submitted to Durham University Department of Archaeology Ethics Committee at the start of the degree programme. A focus of bioarchaeology is to decolonise the subject and collections and have greater inclusion of Native and Indigenous peoples (Wobst 2004, 22), and this is an approach the researcher supports. As the researcher is not affiliated with either the curation institutions or Descendants, and therefore not involved with any current or pending discussions between the parties, no independent attempts were made to contact Descendants. Further, the published literature on some of the collections date to several decades ago (see the Materials chapter), and there may be more recent studies pending publication which clarify cultural affiliation. A portion of the remains were collected before archaeological techniques had been developed (for example, recording archaeological contexts), and before the inclusion or consultation with concerned parties (such as Descendants). Therefore, there is little information on many of the individuals included herein such as exact geographical location or cultural affiliation. The lack of archaeological context and cultural affiliations from historically collected remains may hinder attempts at identifying and notifying possible Descendants. Therefore, the researcher could have contacted the wrong party. To avoid misunderstandings, the regulations issued by the curation institutions were followed; requests were made directly to the institutions curating the remains, with the Canadian Museum of History (CMH) liaising with the Inuit Heritage Trust (IHT) Board of Trustees for

access to the Canadian collections, and notifications sent to Alaskan Descendants of intention to study the Alaskan collections. The American Museum of Natural History (AMNH), Duckworth Laboratory (DL) and University of Liverpool (UL) informed the researcher of their decision (approved or declined) to allow access to the collections. It is hoped the thesis being made freely and openly accessible via the University of Durham will allow for any interested parties to review the work conducted and assist in locating the collections and the curating institutions.

1.3.1 Terminology

Below are some of the terms and descriptions used herein.

- Arctic/Sub-Arctic sample(s)/population(s): In the present study, when discussing Arctic/Sub-Arctic regions or peoples, the area refers to that covering Siberia, Aleutian Islands, North America, and Greenland. Amongst modern Arctic/Sub-Arctic peoples there are several names for the peoples inhabiting each region, i.e., the Yupik (located in Russia and St. Lawrence Island, Alaska), Unangan/Unangas (Aleut) (located across the Aleutian Islands), Native Alaskans (located on mainland Alaska), First Nation Peoples (located in Canada) and Eskaleuts occasionally being used to simultaneously describe both Native Alaskans and Aleutian populations (Friesen and Mason 2016, 11-15; Tasa 1997, 16). Historically, Esquimaux and Eskimo have been used (Darwent and Foin 2010). Here, the broad term Arctic/Sub-Arctic will be used when describing or discussing the groups in the study. The term is used because many of the individuals are from historically collected curations, which have limited archaeological context. Sometimes the greatest extent of context being the name of the country they were collected from (e.g., Canada). With the lack of context comes the loss of cultural association, which is one reason why the populations here are labelled by the locations (as best known) they were collected from. Therefore, the distinction here is made upon ecogeographical, rather than biological, cultural, or bioarchaeological variations. As such, the term Arctic/Sub-Arctic is used, so as not to impose or incorrectly assign any cultures to the individuals (Crass 2001, 106).
- Populations sample(s): The term sample-population has a fluidity regarding its usage, attaining distinct connotations in different contexts, both biological and anthropological (Waldron 2007, 35; Chamberlain 2006, 1). Here, sample-population will be used when discussing each skeletal series analysed, recognising the collection is a sample of the entire group the individual belonged to. The use of sample-population, from here shortened to sample, is because the individuals analysed in the study are portions (or a sample) of the populations they belonged to. The samples are labelled, or names, by the location they were collected from. An example of a sample name is the collated remains from East Greenland, which will be the East Greenland sample.
- Population: When discussing the groups of individuals of known cultural affiliation from published literature, the term populations is be used. The term is used as the published literature included in the study more frequently have archaeological contexts.

- Pre-European and pre-Norse contact: The terms will be used to differentiate between the two periods of contact with the native populations. Prehistory/prehistoric is not used as it denotes societies which are not known to have had written language (Broodbank 2000, 11).
- Macroscopic: Refers to examination using a magnification of 10x and no greater.

1.3.2 Chapter Organisation

The thesis, formed of eight chapters, is a dental anthropological study conducted on Arctic/Sub-Arctic samples. The chapters are organised in the following manner:

The current chapter, Chapter 1 (Introduction) provides an overview of the thesis, outlining the research themes, the aims, hypotheses, the original contribution of knowledge to the disciplines the study covers, the ethics statement, and lists some of the terms the study uses.

Chapter 2 (Dental Anthropological Research – Dental Conditions) is a review section presenting a synthesis of up-to-date research (not restricted to Arctic/Sub-Arctic hunter-gatherer populations) on the topics and themes analysed here. These are dental anatomy and development, malposition, agenesis, dental wear, caries, periodontal disease, continuous eruption, antemortem tooth loss, post-mortem tooth loss, craniofacial trauma, traumatic enamel microfracture, dental calculus, linear enamel hypoplasia, and lifeways which include paramasticatory dental activities, and cultural identifiers, including labrets and ablation.

Chapter 3 (Arctic/Sub-Arctic Research) focuses on research on Arctic/Sub-Arctic populations. The chapter includes an overview of the history of Arctic/Sub-Arctic research, including how the collection biases at the time directly affects the types of curated material, predominately (but not exclusively) being undated cranial remains with little archaeological context. The section then presents the themes and conditions but focuses on studies conducted on Arctic/Sub-Arctic populations.

Chapter 4 (Materials) introduces the samples (15 in total) analysed here. It also provides an overview of the ecogeographical regions inhabited by each sample, including the climate and available fauna and flora, when European/Russian contact occurred and any known transculturation effects. It provides the known areas where individuals were collected from, via maps, and provides historical, modern, and transliterated names, where known, for the areas being studied.

Chapter 5 (Methods) presents the different methods the study uses to capture the data. The structure mirrors Chapter 2, as the conditions are presented a similar order. The mirrored structure is to make it easier to reference between the chapters, and to present each condition without confusion with another condition or theme. The chapter presents the PMDA scoring system developed by the researcher. Although used for the present study, the method has been developed to be used on any population. The system

includes standard nomenclature, descriptions covering all aspects of PMDA, and a scoring system which captures data from five out of six dental aspects (bar apex).

Chapter 6 (Results) presents the data the study generates. The structure largely mirroring Chapters 2 and 3, also to permit referencing between the chapters.

Chapter 7 (Analyses and Discussions) analyses and discusses the results from Chapter 5 (Results). The chapter is structured differently from Chapters 2, 5 and 6, with the conditions grouped together, to reconstruct the evidence for labour and dietary divisions, including PMDA and cultural identifiers. There is also an evaluation of the method developed here to record evidence for PMDA and cultural identifiers.

Chapter 8 (Conclusions) summarises the results and findings of the present study. Additionally, the chapter presents suggestions and ideas for future research, based on the findings presented here.

2 Chapter 2 Dental Anthropological Research – Dental Conditions

The study reconstructs the oral health, diet, and paramasticatory activities of Arctic/Sub-Arctic samples, by using multiple odontological and alveolar bone conditions/features. Therefore, the following is a review of the literature relating to the oral palaeopathological conditions used for the reconstructions. The information is from archaeological, bioarchaeological, ethnohistoric (referring to older ethnographic accounts), and clinical studies. The conditions are presented with some detail to facilitate the aims being met and research questions answered. Because not all the conditions have been investigated in relation to Arctic/Sub-Arctic samples, the chapter incorporates non-Arctic/Sub-Arctic hunter-gatherers (HG), to provide comparative information on how the conditions can affect HG samples. The research focusing on Arctic/Sub-Arctic samples is presented in the following chapter.

The dentition was chosen as the focus of the study because teeth record environmental, developmental, and foreign object interactions. Therefore, the dentition has been used to decipher lifeways including diet (wear, isotopic analyses, and caries), material culture, biological age/sex and biological affinities (referring to biological characteristics within samples), labour divisions, oral health conditions (pathological lesions), physiological disturbances (enamel hypoplasia), hominid/hominin evolution, trauma, paramasticatory dental activities, and handedness rates (Littleton 2017; Scott and Irish 2017; Peckmann et al. 2016; Delezene 2015; Ackermann et al. 2014; Emonet et al. 2014; Martín-Francés et al. 2014; Gómez-Robles and Polly 2012; Cardoso 2010; Żądzińska et al. 2008; Delgado-Burbano 2007; Irish 2006; Matsumura and Hudson 2005; Miles 2001; Whittaker and Molleson 1996; Littleton and Frohlich 1993). Cultural transmission theory attributes differences in lifeways between populations to different ways of learning skills or culture (Zvelebil and Weber 2013). How each condition can reconstruct lifeways and oral health will be discussed.

The early anthropological approach to the acquisition of human skeletal remains has affected contemporary bioarchaeological studies. Many historically collected remains lack temporal and geographical provenance (Littleton et al. 2013; Mathiassen 1930), as early 20th century procurement focused on crania (largely surface finds), disregarding mandibles and post-crania (Bartholdy et al. 2019; Dibble et al. 2018; Littleton et al. 2013; Reichart et al. 2008; Keenleyside 1994, 75; Collier 1993; Jenness 1990; Utermohle 1984, 55; Littleton and Frohlich 1983; Goldstein 1981, 56; Stewart and Strong 1939, 56; Hawkes 1916b, 226, Table 5; Stefansson 1914, 191; Brierley and Parsons 1906; Hrdlička 1908, 1924, 1927, 1931, 1943, 127; 1940b, 1942a, 1942b, 1944). The biased collection methods the “crania-mania” caused (Zhao et al. 2020; Zegura 1978, 14) also extended to Arctic/Sub-Arctic lithic artefacts (Jensen 2009, 32). The “crania-mania” resulted in crania dominated assemblages (Loring and Prokopec 1994, 28; Miles 1962), with the paucity of mandibles contrasting to the archaeological record, where mandibles frequently survive (Mays 2014; Jackes 2011, 132; Lague et al. 2008; Waldron 1987, 58 Table 61). As will be presented in the Materials chapter, many of the human skeletal remains here were acquired during the early anthropological period.

“Crania-mania” affects a sample’s skeletal representation, itself already affected by preservation, taphonomy, recovery, soil chemistry, and age (of the individual, and period) (Lapérine et al. 2016; McCraw 2014; Duhig 2003; Henderson 1987, 45). The biased collection methods reflect contemporary studies and approaches, which largely focused on cranial shape and the dentition (Hrdlička 1940a, 12). One aim of the 19th century physical anthropologist when analysing the cranial shape and dentition was to categorise peoples into a racial hierarchical ranking. The rankings were based on larger cranial size equating to greater intelligence, and that peoples of different biological affinities had different origins (Geller and Stojanowski 2017). The legacy of the early physical anthropologists is still discussed (Geller and Stojanowski 2017; Redman 2016; Fabian 2010; Brace 1962). Contemporary physical anthropologists and bioarchaeologists, including the researcher, acknowledge the racist underpinnings of early physical anthropology.

The following chapter first discusses dental anatomy and development, to introduce the reader on how and when the dentition forms and erupts. The chapter will then focus on the aetiologies and development (where known) of the conditions used in the study. Alongside the discussion on the conditions are the results of studies focusing on non-Arctic/Sub-Arctic HG samples, to assist in making the reconstructions on the Arctic/Sub-Arctic samples.

2.1 Dental Anatomy and Development

The following section provides an overview of dental anatomy, development, and eruption. Teeth have four components - crown, cervix, root, and pulp cavity, see Figure 2-1. The crown is the visible aspect, except when root exposure occurs. Crown-root union occurs at the cervix, with the dentinoenamel junction (DEJ) indicating the location between the exposed and enclosed (within the alveolar bone) portions of the tooth (Lease 2016, 95; Viciano et al. 2012; Imbeni et al. 2005). Roots project into the alveolar bone, and attach by periodontal ligaments (Lease 2016, 95). Crown morphology differs between tooth types (Lease 2015, 94); incisors/canines are singular edged/cusped, premolars and molars have at least two grooves and fissures defined cusps (Seiler et al. 2017; Lease 2016, 94; Nelson and Ash 2009, 5). Root number varies, the anterior teeth are single rooted, whilst the posterior have 2-3, depended on the individuals’ biological affinity (Scott 2018, 3). The pulp cavity is composed of two sections, the pulp chamber, within the crown, and the pulp canal, within the root, where nerves and blood vessels enter the canal via the apical foramen (Lease 2016, 95; Legge and Hardin 2016, 191).

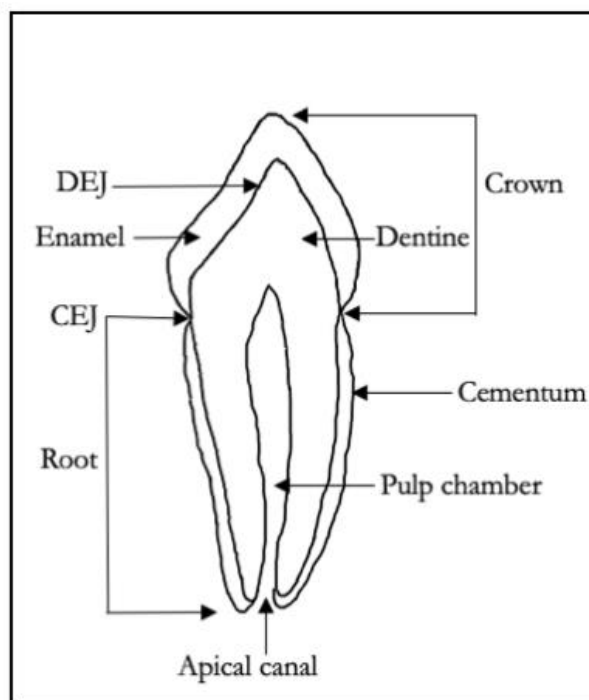


Figure 2-1 Tooth anatomy

Redrawn from Scheid and Weiss (2012, 11. Fig. 1-6)

Enamel is predominately composed of calcium hydroxyapatite (a hard, non-vital, static, acellular material), covering the crown, which preserves well within the archaeological record (Irish and Scott 2016, 3; Lease 2015, 94; Ogden 2008, 283; Scott and Turner 1997, 2). Enamel is formed by secreted ameloblasts, in continuous and regular linear prisms, secreted superiorly (Antoine and Hillson 2016, 223), between the DEJ-tooth surface. Enamel, unlike bone and dentin, does not remodel (Hale 2016). The deciduous dentition has thinner enamel than the permanent, but more regular thickness (Ijbara et al. 2018). Enamel's smooth surface makes it difficult for bacteria to adhere (Bartlett et al. 2011). Dentine (more resilient, but less mineralised than enamel) is formed by odontoblasts secreting a pre-dentine matrix, mineralising into mature dentine (Jussila et al. 2013, 118). Dentine is composed of collagen, resulting in elasticity, absorbing portions of forces, and assisting fracture resistance (Shahmoradi et al. 2014, 517). The three dentine types are primary, secondary, and tertiary (Tang et al. 2016, 205; Huang and Thesleff 2013, 165). Primary forms during dental development, secondary forms at a reduced rate once roots are fully formed, with less regular incremental layers, and tertiary as a response to injury (Tang et al. 2016, 205). Cementum is formed by cementoblasts and is composed of an organic type I collagen and hydroxyapatite (Consolaro et al. 2012), creating a thin cement layer, encapsulating the roots, allowing attachment of the ligaments (Yamamoto et al. 2016; Tang et al. 2016, 211-212). Cementum is secreted continuously, does not remodel, and retains aspects of life history (Tang et al. 2016, 213), and scanning electron microscopy can be used for age estimations (Bertrand et al. 2019).

Dental development encompasses crown and root formation, and eruption, which here, refers to when a tooth perforates the alveolar bone, rather than the gingivae (Larsen 2015, 25; Hillson 2005, 8-12, 1996, 6-67; 1979). The deciduous dentition crowns and permanent first molars begin forming during the neonatal stage; the deciduous dentition erupts over the following two years, and permanent first molars (Hillson 1996, 6-118) are completed with 2nd deciduous molar occlusion (2.5-3-years-of-age) (AlQahtani 2009; Nelson and Ash 2009, 28), followed by a period of no intraoral changes (2.5-4.5-years-of-age) (Tuteja et al. 2012; Nelson and Ash 2009, 28). The permanent dentition erupts until approximately 18-years-old (Jayatileke et al. 2019; Liversidge 2016, 163; 2008, 2005; Tompkins 1996; Fanning and Moorrees 1969). Once erupted from the gingivae, teeth are affected by mechanical, physical, physiological, and chemical disturbances (Burnett 2015, 415; Hale 2016).

2.1.1 Malposition

Malposition, here, refers to dental impaction, rotation, crowding and transposition (Scheid and Weiss 2012, 323; Sholts et al. 2010). All malpositions occur infrequently (Irish 2019), but there are variations in the infrequencies in the types and teeth affected. Clinically, rotation is most common amongst the maxillary lateral incisor, followed by mandibular 4th premolars, with unilateral expression dominated by the left quadrant (however, see Burnett and Weets, 2001), affecting females more frequently (Peck and Peck 1995; Peck et al. 1993). Malposition can lead to inadequate arch length, and severe malposition causes malocclusion (Bourdiol et al. 2017; Fiorin et al. 2014; Chattah and Smith 2006; Keenleyside 2003b; Varrela 2006, 1992; El-Attar and Ord 1986; Begg and Kesling 1977; Gottlieb 1952).

Dental anomaly aetiologies are genetic, developmental, or from metabolic disturbances (Scheid and Weiss 2012, 323; Irish 2019; Sholts et al. 2010; Burnett 1999; Peck et al. 1993; Nelson 1992). Crowding has a multifactorial aetiology and is associated with reduced masticatory load (Oppenheimer 1964). In the permanent dentition it is largely due to early deciduous dentition exfoliation, or from rotation of the teeth reducing the alveolar space (Thomaz et al. 2010; McMullan and Kvam 1990; Magnússon 1979; Kustaloglu 1966). Malposition is analysed visually on presence/absence (via the socket) (McMullan and Kvam 1990; Swanson et al. 1975).

2.1.2 Agenesis

Agenesis is when a tooth has not developed. Agenesis has a variable presence, and is most common in the M3s, and least common in the M1s (Trakinienė et al. 2019; Sujon et al. 2016; Fabra and González 2015; Mahoney 2015; Ramiro-Verdugo et al. 2015; John et al. 2012; del Rosario and Gonzalez 1990; de Castro 1989; Gleiser and Hunt 1955). The aetiologies are genetic and environmental, such as trauma to the deciduous dentition causing tooth germ necrosis of the permanent tooth (Bilgin and Kaya 2018; Bardellini et al. 2017; Cem Güngör et al. 2011). Radiographic analysis can rule out non-eruption or impaction (Scheid

and Weiss 2012, 324), but otherwise visual observations are used. Agenesis and malpositions are comorbid, particularly in the mandibular canines and incisors and maxillary canines (Peck et al. 2002).

2.2 Dental Wear

Wear is a destructive process, causing surface loss, and altering the crown's gradient, see Figure 2-2 (Scott and Halcrow 2017; Alzoba et al. 2012; Lucas 2004, 181; Hinton 1982). Because wear is destructive, it obliterates pathological and anthropological data causing problems when using the dentition as a proxy for health/activities (Anonymous 1983). Wear occurs on all exposed dental aspects and can reconstruct age-at-death, diets, and paramasticatory dental activities (Lovell and Palichuk 2019, 45; Ungar et al. 2019; Watson 2008; Chattah and Smith 2006; Littleton and Frohlich 1993; Maat et al. 1990; Lovejoy 198; Smith 1984; Costa 1982; Scott 1979; Molnar 1971; Leigh 1925a). Wear has three main factors; abrasion, attrition (tooth-on-tooth contact) causing shiny flat surfaces (facets) (Lucas 2004, 183) and corrosion/erosion (caused by acidity) (Burnett 2016, 415; Cristina-Angela et al. 2013; Kaidonis 2008; Brace et al. 1991, 46; Smith 1983, 253; Tomenchuk and Mayhall 1979; Molnar et al. 1972; Murphy 1959b).



Figure 2-2 Dental wear – example

Willmann et al. (2018, Fig. 1, Subject 308, d)

Abrasion is a mechanical process, resulting in the crown's destruction from repeated contact with foreign bodies (Pickles 2006, 87-88). Frequent aetiologies are mastication of foodstuffs containing hard particles, and paramasticatory dental activities. Enamel may be more resistant to mechanical than erosive processes (see below), due to its strength and hardness. Therefore, foreign bodies require a level of hardness to cause abrasion (Pickles 2006, 88). Attrition is a mechanical process that does not involve a foreign body. The crown's destruction from direct contact between the teeth or soft tissues (*buccae* and tongue) causes polishing (Khan and Young 2011a; 2011b; Addy et al, 2006). Attrition can occur on the buccal and lingual

aspects (Addy et al, 2006). Because attrition and abrasion have similar processes, the affects to the dentition are similar (Addy et al, 2006). Erosion is a chemical process with intrinsic (e.g., stomach acid) or extrinsic (e.g., dietary) sources, dissolving the teeth (Pickles 2006, 87). Erosion is generally not thought to have affected HG samples, as the diet had limited acidic components (fruits and berries). However, diet is dependent on the ecogeographic region inhabited (Szathmáry 2015, 10-11; Kaidonis 2008).

Wear can be studied on different aspects. Occlusal aspect wear is recorded by extent and gradient (Ermioni et al. 2017; Bird and Coddington 2015, 1; Estalrich and Rosas 2015; Berbesque et al. 2012; Clement and Hillson 2012; Grimoud et al. 2012; Grant 2010, 74; Eshed et al. 2006; Turner et al. 1991; Smith 1984; Reinhardt 1983; Turner and Cheuiche Machado 1983; Murphy 1959a). Lingual aspect wear is from the tongue holding foodstuffs/material against the teeth, termed lingual surface attrition of the maxillary anterior teeth, or from acidic erosion (stomach bile) (Alrousan 2016; Berbesque et al. 2012; Irish and Turner 1997, 1987; Robb et al. 1991; Turner et al. 1991; Turner and Cheuiche Machado 1983).

Age and wear extent can correlate as wear should increase as the individual's age increases (Littleton et al. 2013; Grimoud et al. 2012; Boldsen 2005; Kieser et al. 1985; Miles 1962). Within an individual's dental arcade, differential wear rates may occur, causing asymmetrical wear (Saso and Kondo 2019; Berbesque et al. 2012; Hillson 1996, 236-237; Murphy 1959a), and variable M3 wear has been noted (Mays et al. 1995). Differential wear rates may be from the anterior teeth replacing the posterior teeth's role during mastication, if the posterior teeth have been lost (Højgaard 1980), and different enamel thickness between permanent and deciduous teeth (Bartholdy et al. 2019; Berbesque et al. 2012; Prowse et al. 2008; Jurmain 1990). Additional processes affecting the deciduous dentitions are breastfeeding, teething objects, and lacking opposing dentition; all cease at varying ages depending on cultural norms and eruption timings (Bartholdy et al. 2019).

Wear patterns vary due to distinct masticatory processes and tooth sizes (larger teeth exhibit slower wear rates) (Littleton 2017; Watson 2008; Chattah and Smith 2006; Walker et al. 1991, 169; Macchiarelli 1989; Lovejoy 1985; Smith 1984; Molnar 1971). Hunter-gatherers are noted as having varied wear patterns (Schmidt et al. 2019), and have shown equal or greater wear rates on anterior dentition, compared to the posterior (Alrousan 2016; Watson et al. 2013; Berbesque et al. 2012; Deter 2009; Jarosová et al. 2006; Elvery et al. 1998; Sciulli 1997; Hillson 2008b, 307; 1996, 237; Lubell et al. 1994; Rose et al. 1991, 12; Macchiarelli 1989; McKee and Molnar 1988; Borgognini Tarli and Repetto 1985; Hinton 1981b; Turner 1979; Greene et al. 1967; Anderson 1965). Mastication is conducted unilaterally, preferentially by the premolars and molars, and amongst HG females frequently display greater wear on the anterior dentition than the males (Berbesque et al. 2012; Comuzzie and Steele 1988; Irish and Turner 1987; Turner and Machado 1983). Also, wear can cause secondary health problems, by allowing bacteria into exposed dental pulp (Kaidonis 2008).

Because of variations in (para-)masticatory behaviours, there is not a standard level of oral health or wear amongst HG samples (Crittenden and Schnorr 2017; Pezo-Lanfranco et al. 2017; Kortlandt 1976). Greater wear gradients are associated with big game and variable diets (Deter 2009), flat occlusal wear with tough, fibrous foodstuffs, oblique occlusal wear to soft diets (Smith 1984; Molnar 1971), and extreme lingual wear in combination with interproximal grooves, to vegetable consumption (Silva et al. 2016). Masticating coarse foodstuffs/hard objects requires longer mastication and greater muscle strength (Esclassan et al. 2009).

2.3 Oral Health

Oral health covers oral cavity (ill-)health, focusing on the masticatory apparatus and its connections with the environment and lifeways. Oral health reflects socioeconomic position, behaviours, adaptations, biological and dietary/nutritional characteristics, and is affected by immune responses (Grimoud et al. 2017; Friesen and Mason 2016, 11; Jati et al. 2016; Zhang et al. 2016a; Mant and Roberts 2015; Kamak et al. 2015; Oxilia et al. 2015; Consolaro et al. 2012; Zhou et al. 2012; Nimigea et al. 2009; Owens 2004, 133; Hillson 2008b, 302, Figure 10.1, 319; Rupprecht et al. 2001; Jorgić-Srdjak et al. 1998; Urbani et al. 1991; Elliott and Bowers 1983; Tal 1983; Muller and Perizonius 1980; Davies et al. 1974). The following section presents caries, periodontal disease, continuous eruption, ante- and post-mortem tooth loss, root resorption, traumatic enamel microfracture, and dental calculus. Overall, HG present fewer oral health problems than populations with other subsistence strategies (Watson et al. 2013; Hillson 2008b, 301; Macchiarelli 1989).

2.3.1 Caries

Caries is the result of organic acid demineralising enamel (Temple 2016, 433; Kovach et al. 2013), and can be found on any exposed dental aspects, see Figure 2-3. The process is complex, as interactions between bacteria and carbohydrates affect the oral environment (Miller et al. 2016; Mant and Roberts 2015; Temple 2015, 433; Humphrey et al. 2014; Karpinski and Szkaradkiewicz 2013; Ferrazzano et al. 2011; Moynihan 2005; Navia 1994; Sheiham 1983; Hillson 1979; Miller 1891). Caries' destructive nature prevents other pathological conditions being observed. Caries can be affected by other oral conditions, such as masticatory processes (frequency, muscle activity, and bite force) or wear, as both are demineralisation processes (Maharani et al. 2019; Alaraudanjoki et al. 2016; Little et al. 2013; Meng et al. 2011; Albashaireh and Al-Shorman 2010; Caglar et al. 2007; Ikebe et al. 2007; Lukacs and Largaespada 2006; Dodds et al. 1991, 2005; Maat and Van der Velde 1987; Powell 1985). Further contributors to caries are enamel hypoplasia, reducing enamel quality and integrity (Naveen Kumar et al. 2016; Hong et al. 2009; Matee et al. 1994), while fluoride prevents caries formation (Yu et al. 2018). Caries is more commonly (but not exclusively) found with low wear rates and on teeth with more cusps, such as mandibular molars (Tschammler et al. 2019; Deery 2017; Naaman et al. 2017; Alaraudanjoki et al. 2016; Lucas et al. 2010; Owens 2001, 152; Hillson 1996, 280-282; Hrdlička 1920).

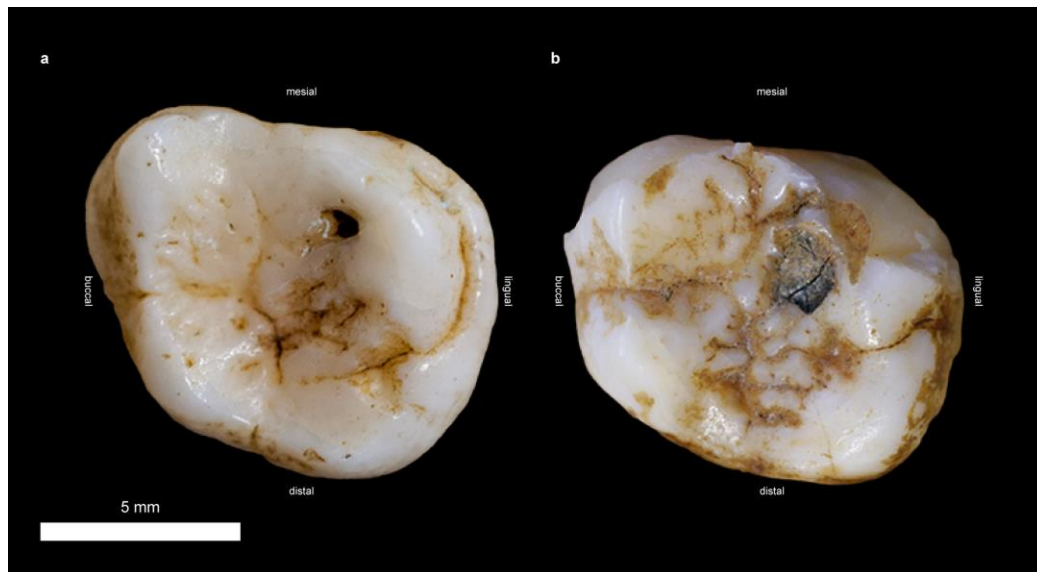


Figure 2-3 Carious lesions – example

a = tooth 18, b = tooth 17

From Fuss et al. (2018, Fig. 8)

Caries has been used to reconstruct diet, inferring carbohydrate and sugar incorporation, with a notable increase when consumption of these foodstuffs and dietary divisions began (Saso and Kondon 2019; Michael et al. 2017; Limbo 2013; Boesen et al. 1976; Stewart and Strong 1939, 15). Generally, HG females exhibit higher caries frequency than males (Trombley et al. 2019; Larsen 2015, 73; Da-Gloria and Larsen 2014), with two hypotheses; the cultural model, and the reproductive ecological model. The cultural model posits differential access and consumption of cariogenic foodstuffs, based on gender-based labour division (Lukacs 1996). Males have higher protein diets as the acquirers of meat (Brumbach and Jarvenpa 2006, 523), while females have higher fructose diets from gathering fruits, berries, and plants (Kolpan and Bartelink 2019; Veile 2018; Brumbach and Jarvenpa 2006, 523). The reproductive ecological model posits altered female profiles of saliochemical and saliometric during reproduction, which help to preserve oral biological homeostasis, cause an increase in caries (Trombley et al. 2019; Silk et al. 2008; Burakoff 2003; Laine 2002; Steinberg 2000). However, not all studies find sex differences (Temple 2011; Lukacs 1996).

2.3.2 Periodontal Disease

Clinically there is no definition of periodontal health, rendering analysis of periodontal disease problematic (Lang and Bartold 2018; Hildebolt and Molnar 1991, 225). Periodontal disease covers the degeneration of periodontal ligaments, gingiva, cementum, and alveolar bone (Saso and Kondo 2019; Williams et al. 2018; Tomczyk et al. 2017; Mant and Roberts 2015; Nelson 2016, 472; Novak 2015; Cardoso et al. 2014; Grigoras et al. 2013; Palmer et al. 2013, 9; Rissech et al. 2012; Brothwell and Ghiabi 2009; Robertson and Smith 2009; Ogden 2008, 288; Sanz and Quirynen 2005; Nair 2004; Senior 1999). Periodontal disease is characterised by trabecular bone porosity along the alveolar margin, and loss of alveolar bone height, see

Figure 2-4 (Trombley et al. 2019; Larsen 2015, 78; Nelson 2016, 472; Kerr 1988a). Localised defects occur sporadically along the circumference (Karn et al, 1984), whilst the interproximal spaces inaccessibility may result in greater periodontal disease induced by bacterial build-up. The maxilla is more susceptible, due to its thinner alveolar bone (Ogden 2008, 292).



Figure 2-4 Periodontal disease – example

Periodontal disease is present between the 3rd premolar and the 1st molar

Lozano et al. (2013, Figure 2)

Periodontal disease has a multi-factorial aetiology, involving at least 20 known bacterial species symbiotic to the subgingival biofilm (Pilloud and Fancher 2019; Saso and Kondo 2019; Nelson 2016, 472; Grigoras et al. 2013; Palmer et al. 2013, 9; Ogden 2008, 288; Sanz and Quirynen 2005; Senior 1999). All periodontal disease responses are hereditary and affected by the individual's immunity (Han et al. 2015; Nelson 2016, 472; Li et al. 2013; Palmer et al. 2013, 11, 26-27; Chen et al. 2012; Miley et al. 2011; Schenkein 2002; Laine et al. 2000; Schaefer 2000; Marazita et al. 1994; Boughman et al. 1992; Hart et al. 1992; Beaty et al. 1987; Long et al. 1987; Van Dyke et al. 1985; Saxen and Nevanlinna 1984). Studies on mice have shown periodontitis and alveolar bone resorption co-occur (Kesavalu et al. 2007), whilst diet and malnutrition can affect the presence and extent of periodontal disease (Woelber and Tennert 2020, 125-126; Baumgartner et al. 2009; Smith 1972). Malnutrition reduces the immune response; severe Vitamin C deficiency leads to scurvy-initiated periodontitis (Moynihan 2005), whilst Vitamin D reduces the risk of bone absorption and the initial (but not progressive) stages of periodontal disease, due to its anti-inflammatory and antimicrobial properties (Khammissa et al. 2018; Schæbel et al. 2015; Jimenez et al. 2014; Millen 2014; Zhan et al. 2014; Bastos et al. 2013; Millen et al. 2013; Andersen et al. 2012; Zhang et al. 2012; Boggess et al. 2011; Grant 2011; Miley et al. 2009; Dietrich et al. 2005, 2004; Krall et al. 2001. However, see Pavlesen et al. 2016).

It is not possible to determine periodontal disease pathogenesis within bioarchaeological studies, and it is unknown why lesions, sometimes chronic, become inflamed as the immunopathological process begins, and why gingivitis does not always progress to periodontitis (Luder 2015; Palmer et al. 2013, 11-12; Lavigne and Molto 1995; Clarke et al. 1986; Goldberg et al. 1976; Davies et al. 1969). The inflammation and periodontal tissue destruction can result in exfoliation (Palmer et al. 2013, 12; Ogden 2008, 288), although gingivitis does not affect the connective tissue attachments (Hasan and Palmer 2014). However, the alveolar bone can return to a healthy state following periodontal disease (Lang and Bartold 2018; Fashing 2008, 2). Bioarchaeological recording techniques use visual examination of alveolar bone alterations, and typically do not incorporate possible aetiologies. Analysis may be affected by the fragility of dried alveolar bone (Scott and Winn 2011).

2.3.3 Continuous Eruption

Continuous eruption is a tooth perpetually erupting after reaching anatomical position, in response to losing occlusion with the opposing tooth (Villmoare et al. 2013; Varrela et al. 1995; Dean et al. 1992; Danenberg et al. 1991; Whittaker et al. 1990; Smith et al. 1989). Studies have inconsistently found links with wear (d’Incau et al. 2011; Whittaker et al. 1990). The condition is not exclusive to *Homo sapiens sapiens*, and has been recorded in *Pan*, *Gorilla* and *Pongo* (Dean et al. 1992). Analyses is visual, measuring horizontal increased distance between the CEJ-alveolar bone or via radiography (Zhou et al. 2012; Smith et al. 1989). Although, there are contrasting views on the CEJ-alveolar bone junction, with some positing the CEJ-alveolar bone distance is maintained, whilst others disagree (Smith et al. 1989; Clarke et al. 1986; Newman and Levers 1979; Ainamo and Talari 1976b). A clinical study found minimal movement of teeth (<1mm), over a 10-year period (Huanca Ghislanzoni et al. 2017).

2.3.4 Antemortem Tooth Loss

Antemortem tooth loss (AMTL) refers to a tooth lost during an individual’s lifetime (excluding the natural exfoliation of the deciduous teeth), and still occurs in modern samples (Steele et al. 2004). It is predominantly found in the permanent dentition, and can cause supplementary conditions, such as decreased masticatory efficiency (Gilbert et al. 2004) and malocclusion (Fiorin et al. 2014). Antemortem tooth loss is recorded as absent/present and extent of alveolar bone remodelling (Trombley et al. 2019; Hillson 2001). Variations in bone absorption times, 10 weeks-3 months in a canid study, render it impossible to determine how long before death loss occurred (Hansson and Halldin 2012; Merbs 1968).

The aetiology can be caries (Gilbert et al. 2004; Cucina and Tiesler 2003), trauma (Cieřlik et al. 2017; Harvey et al. 2017, 126; Lukacs 2007; Nelson et al. 1999; Costa 1980a; Merbs 1968), ablation (Larsen 2015, 84; Pietrusewsky and Douglas 2012, 596), wear (Lee et al. 2019; Burnett 2016, 415; Flensburg 2011; Meng et al. 2011; Molnar 2011; Buzon and Bombak 2010; Liu et al. 2010; Lukacs 2007; Cucina and Tiesler 2003), periodontal disease (Herrera et al. 2014b; Merbs 1968; Stewart and Strong 1939, 50-51; Hrdlička 1941a, 2),

malnutritional (e.g., Vitamin C deficiency) (Crist and Sorg 2014), continuous eruption (Larsen 2015, 79; Fujita et al. 2013; Kaidonis 2008; Hillson 2008b, 307; 2001; Whittaker and Molleson 1996; Varrelle et al. 1995; Hrdlička 1940, 8), and bone weakening conditions (e.g., osteoporosis) (Chen et al. 2018; Savić Pavičin et al. 2017; Henriques and Neto 2011; Coulthard et al. 2008, 111; Gueldner 2008, 1; Nicopoulou-Karayianni et al. 2009; Parfitt 2003, 3). As AMTL is consequential on other conditions, aetiological assessment is difficult (Douglas 2006, 201).

2.3.5 Post-Mortem Tooth Loss

Post-mortem tooth loss (PMTL) is the taphonomic loss of teeth (Hillson 2001), recorded as present/absent. Post-mortem tooth loss is linked to dental and alveolar bone dehydration (Duric et al. 2004), with increased presence in the singular rooted anterior teeth (Eriksson and Lidén 2013; Viciano et al. 2012; Hillson 2001; Oetting 1930, 350). Few studies incorporate PMTL data, although there are some exceptions (Flensburg et al. 2019; Davey et al. 2014).

2.3.6 Root Resorption

Root resorption is rare in clinical studies, and is associated with traumatic injuries, although not all aetiologies are known. The trauma results in the root surface becoming unprotected then inflamed, loss of the protective layer (Schuurs and Matos 2013, 173-174; Trope 2002), antemortem acidic bioerosion, or a response to viral infection (resorption osteoclastic cells) (Henry and Weinmann 1951). When caused by a virus, multiple teeth are affected, but the virus does not pass the midline (Kjær 2017, 160).

Craniofacial trauma (CFT) can damage the alveolar bone, occurring when the force (pressure damage) causes the tooth and bony socket to impact (Trope 2002). Root necrosis is affected more greatly by force distribution, rather than intensity (Consolaro 2014). Forces against the buccal/lingual aspects diffuse to the root, affecting the alveolar and maxillofacial bones (Merbs 1968). Dental necrosis can occur to one root, independent of the tooth's other roots. Following root necrosis and resorption, the gingivae can retain the tooth as there is normally 1.5mm of gingivae above the alveolar bone (Palmer et al. 2013, 5; Nelson and Ash 2009, 85; Lavigne and Molto 1995; Clarke et al. 1986), and the empty socket can heal (Gutmann 2017; Consolaro 2014).

Another aetiology is arrested root development from traumatic intrusive luxation to the deciduous dentition as the permanent tooth germ is developing (Bardellini et al. 2017; Cem Güngör et al. 2011; Arx 1993). The direction of impact does not affect the germ's death, with low impact causing germ or tooth necrosis (Vilela et al. 2019). Both CFT types can reconstruct juvenile life-histories in adult remains (Kjær 2017, 158).

2.3.7 Traumatic Enamel Macrofracture (TEM)

Traumatic enamel macrofracture (TEM) is macroscopically visible enamel fracture (Lucas and van Casteren 2014); see Figure 2-5, and is normally scored as present/absent (Scott and Winn 2011; Dobney and Brothwell 1987). Traumatic enamel macrofracture has not been extensively bioarchaeologically studied (Belcastro et al. 2018; Viciano et al. 2015), unlike other types of dental and craniofacial-oral trauma (Webb 1984; Lovejoy and Heiple 1981).



Figure 2-5 Traumatic enamel macrofracture – example

Maxillary right central incisor. The yellow box indicates the TEM

From Willoughby et al. (2018, Fig. 10)

The aetiologies can be diet, interpersonal violence, and (para-)masticatory processes (Belcastro et al. 2018; Bader et al. 2001), whereas alveolar fractures are associated with violent dental injuries (Tay et al. 2015; Viciano et al. 2015; Cohenca et al. 2007). Frozen food can increase the risk of thermal fatigue (Brown et al. 1972), or from heat-induced dental tissue fractures (Campbell et al. 2011). Enamel has a low tensile strength, so as the temperature suddenly decreases and the enamel contracts, microfractures occur between the cooled and uncooled parts (Brown et al. 1972). Macrofractures are also caused by the force exceeding the tooth's strength and are more frequent in the molars (buccally in maxillae, lingually in mandibles) (Belcastro et al. 2018; Schuurs and Matos 2013, 211; Scott and Winn 2011; Bader et al. 2001; Alvrus 1997; Turner and Cadien 1969; Merbs 1968; Schour and Sarnat 1942). Aetiologies can be difficult to determine, e.g., discriminating between accidental and intentional trauma, ante- and post-mortem fractures/damage (Belcastro et al. 2018; Merbs 1968), such as when dehydrated enamel breaks away (Scott and Winn 2011; Alvrus 1997).

2.3.8 Dental Calculus

Calculus, composed of organic and inorganic components, is caused by a dense bacterial biofilm (dental plaque) mineralising with calcium phosphate (Hillson 2008b 312; Jin and Yip 2002; Roberts-Harry et al. 2000; Lieverse 1999; Corbett and Dawes 1998), forming a hardened crystalline matrix, see Figure 2-6. The aetiology is multi-factorial, including a genetic link and has been linked with high protein diets and genetics (Pateel et al. 2017; Arabacı et al. 2015; Lieverse 1999; Hillson 1979). Clinically, calculus has been associated with a reduction in caries prevalence (Duckworth and Hunting 2006, 22). Calculus can occur on all aspects (bar apex); supragingival calculus is normally greatest on mandibular anterior lingual aspects and maxillary molar buccal aspects, from proximity to the major salivary glands (Corbett and Dawes 1998; Ferreira-Arquez 2017; Fashing 2008, 33). Supragingival deposits form on crowns and exposed roots and can extend over the gingivae; no correlation exists between supragingival calculus and periodontal tissue irritation (Hillson 2008, 312; Corbett and Dawes 1998).



Figure 2-6 Calculus – example

From Sawafuji et al. (2020, Fig 1)

Calculus is used to recreate dietary patterns (Waldron 2008, 241-242; Hillson 1979; however, see Hillson 2008b, 312), but dried calculus is susceptible to post-mortem damage (Smith 1970, 39). Presence/extent are recorded (Greene et al. 2005), both macro- and microscopically (Power et al. 2018; Radini et al. 2017; Cristiani et al. 2016; Leonard et al. 2014; Scott et al. 2012; Tromp and Dudgeon 2012; Henry et al. 2011; Charlier et al. 2010; Dobney and Brothwell 1987).

2.4 Physiological Disturbances

Physiological disturbances can be studied skeletally and odontologically (Boucherie et al. 2017; Ulijaszek 2015, 2; Zhao et al. 2015; Antoniadis et al. 2003). Dental physiological disturbances occur in the prenatal, postnatal, and early life, which may have long-term adverse health implications, termed the Barker Hypothesis or Developmental Origins of Health and Disease Hypothesis (Walter and Dewitte 2017; Daniels 2016; Perng et al. 2016; Larsen 2015, 7-8; Miskiewicz 2015; Barker 2012; Armelagos et al. 2009; Duray 1996). Physiological disturbances largely have unknown aetiologies (Papageorgopoulou et al. 2011)

so presence is analysed across a sample. The following presents the dental physiological disturbance analysed here.

2.4.1 Linear Enamel Hypoplasia (LEH)

Enamel hypoplasia is associated with physiological episodic disturbances during the developmental enamel matrix secretion phase (Skinner et al. 2019; Hale 2016; Nelson and Ash 2009, 22; Hillson 2008b, 302; King et al. 2005), resulting from strained conditions (Larsen 2015, 7), see Figure 2-7. The physiological disturbance result in stunted enamel development (the visual defects) (Cares Henriquez and Oxenham 2019; Guatelli-Steinberg 2016, 451; Golkari et al. 2011; Berbesque and Doran 2008; Nanci 2008, 151; Hillson 2001; Boyde 1979). The size and prominence do not appear to correlate with physiological disturbance extent (Hillson 2008b, 305; Hillson and Bond 1997), and there is little formation timing variation between samples of different biological affinities (Reid and Dean 2006). There are four types of enamel hypoplasia: Linear enamel hypoplasia (LEH), pitting, plane, and localised (Ogden 2008, 284).

Enamel hypoplasia has been linked to diet, Vitamins A and D, protein-energy malnutrition, caries, increase in maternal weight during pregnancy, premature births, trauma during the tooth's development, and genetic predisposition (Lawrence et al. 2021; Folayan et al. 2018; Reed et al. 2017; Basha et al. 2016; Naveen et al. 2016; Seow 2014; Salanitri and Seow 2013; Caufield et al. 2012; Cem Güngör et al. 2011; Morton 2006, 98; Moynihan 2005; Sciulli 1977). Linear enamel hypoplasia during the neonatal period has been attributed to maternal illnesses during pregnancy (Hillson et al. 1998; Jacobi et al. 1992), childhood illnesses, dietary deficiencies, and weaning (Mays 2016; Miszkiewicz 2015; Blakey et al. 1994; Moggi-Cecchi 1994). The absence of LEH has been linked to an individual's resistance, environmental controls, and cultural structures (protective elements from environmental factors, such as sufficient clothing, and adequate nutrition) (Larsen 2015, 7).



Figure 2-7 Linear enamel hypoplasia – example

Buccal aspect of right, 1st and 2nd incisors, and canine

From Zhang et al. (2016b, Fig 2)

Only LEH is regularly studied because age of occurrence can be determined (Hillson 2008b, 302; Reid and Dean 2006, 2000; although see Duray 1996), and appears as a macroscopically visible linear furrow (Berbesque and Hoover 2018; Hale 2016; Ogden 2008, 284). Linear enamel hypoplasia records physiological disturbances from prenatal to late juvenility, depending on the crown (Liversidge 2016, 160; Ogden 2008, 284). Inter- and intra-observer error makes visual examination less reliable than geometric morphometrics analysis (González et al. 2007; Bruzek 2002; Konigsberg and Hens 1998). Such problems are ameliorated by the methods of Reid and Dean (2006) based on visual comparison against a diagram. Prior to Reid and Dean (2006) there was little recording consistency (Lofaro et al. 2019; Pitfield et al. 2019; Łukasik and Krenz-Niedbala 2014; Ritzman et al. 2008; Simpson and Kunos 1998; Keenleyside 1994, 223). Linear enamel hypoplasia has been used to reconstruct life histories, mortality profiles, seasonal nutritional disturbances, and gendered behaviours (Ralston 2016, 13; Hillson 2008b, 304).

2.5 Paramasticatory Dental Activities

A paramasticatory dental activity (PMDA) is using the oral cavity as a tool, and can include using the dentition for gripping objects, as a form of pliers, or mastication for non-dietary purposes. The term paramasticatory dental activities will be used here, rather than “stuff and cut” behaviour, task wear facets, non-masticatory, or cultural striae (Bartholdy et al. 2019; Belcastro et al. 2018; Towle et al. 2017; Molnar 2011; Estalrich and Rosas 2013; Oxenham et al. 2002). Paramasticatory dental activities will be used as the term does not imply meaning behind the actions and removes association with mastication. Paramasticatory dental activities studies have been inconsistent and have lacked a unifying methodology. As PMDA studies

have had little consistency, an extensive overview is provided of the existing literature; Appendix Table 232 provides author(s), location/site, culture, date, MNI, sex/age, percentage showing PMDA, number of teeth, PMDA type, activities PMDA were assigned to, most affected teeth/aspect, and pathological associations, from studies which do study PMDA.

Because there is no method, researchers disagree as to what constitutes PMDA and the aetiologies. Some researchers consider PMDA a type of traumatic enamel macrofracture (Plessas and Pepelassi 2012; Bagnall 2011), particularly when on the anterior dentition (occlusal edge and buccal aspect) (Fiorenza and Kullmer 2013; Fiorenza et al. 2011a; Blakely and Beck 1984; Brace 1962). Difficulties have been noted in differentiating between PMDA and intentional dental modifications (Willey and Ubelaker 1976). Other studies have found evidence of PMDA in multiple species of *Homo* (e.g., *H. erectus*, *H. sapiens sapiens*, *H. s. neanderthalensis*) (Ungar et al. 2001), and have shown when handedness appears (Estalrrich et al. 2017a; Sarig et al. 2016; Sun et al. 2014; Estalrrich and Rosas 2013; Lozano et al. 2008; Villa and Giacobini 1995; Frayer 1991; Brown and Molnar 1990; Formicola 1988; Lukacs and Pastor 1988; Turner and Cacciatore 1998). Other studies have also focused on animal remains (Gordon 1984).

2.5.1 Types

Paramasticatory dental activities are inferred from the types of evidence left on the dentition. However, because there is no standardised recording method (Stojanowski et al. 2016, 389; Molnar 2011), there are discrepancies in nomenclature and aetiologies in most anthropological and palaeoanthropological studies. The discrepancies are apparent with different terms used interchangeably, e.g., groove and striae (Arcini 2005; Formicola 1991). The frequently discussed types (grooves, striae, and facets) are presented below. Striae and grooves have had more research conducted on them, whilst facets have largely been ignored in anthropological and palaeoanthropological literature.

2.5.2 Grooves

Grooves, illustrated in Figure 2-8, are caused by an object harder than enamel/cementum continuously or consistently moving across the tooth, in a parallel direction, resulting vertical erosion (d’Incau et al. 2012). The vertical erosion leaves behind a depression between ridges (d’Incau et al. 2012). Occlusal and interproximal grooves have been more studied. Measurements for grooves are sometimes provided (e.g., Sperduti et al. 2018), but are tool and activity specific; depth results from the pressure applied, width by the object’s width, and length by the object’s duration of usage. Grooves are habitual features, requiring time and repetitive actions.

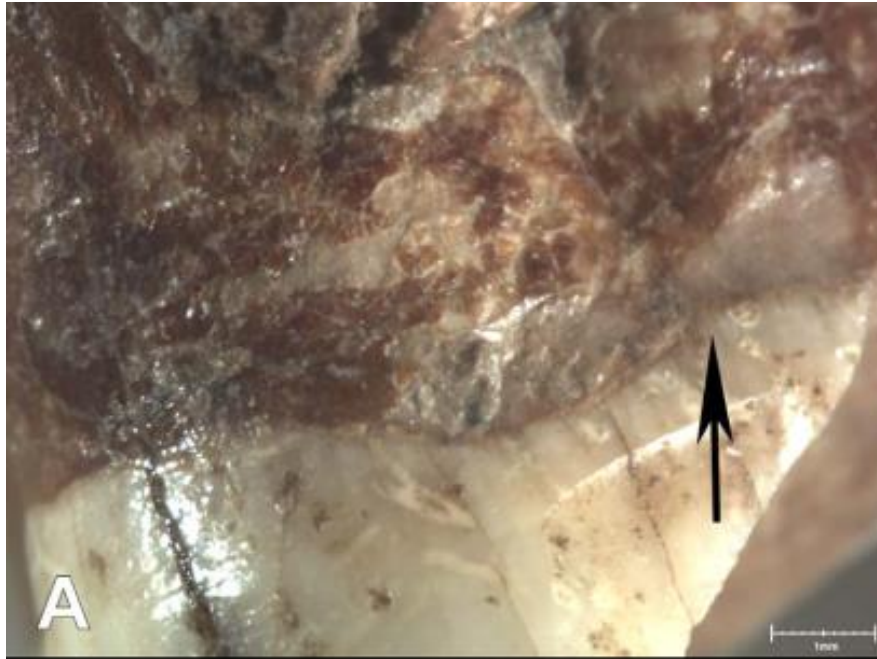


Figure 2-8 Dental Features Example – Groove

Located on the distal aspect of 3rd premolar, from a Homo sapiens neanderthalensis individual. The researchers (Lozano et al. 2013) labelled the feature an interproximal groove, due to its location, being on the mesial aspect of a premolar

From Lozano et al. (2013, Figure 3.A)

Interproximal grooves, typically considered separate to other grooves, although it is unknown why, have been described as transverse and parallel, with a trough/furrow appearance (Stojanowski et al. 2016, 380; Bonfiglioli et al. 2004; Brown and Molnar 1990; Formicola 1988; Lukacs and Pastor 1988; Frayer and Russell 1987; Ubelaker et al. 1969). They are more frequent on the posterior teeth, with sizes between 0.5-3.5mm (Stojanowski et al. 2016, 380; Ungar et al. 2001; Brown and Molnar 1990; Formicola 1988; Lukacs and Pastor 1988; Frayer and Russell 1987; Berryman et al. 1979; Ubelaker et al. 1969). Ungar et al. (2001) state interproximal grooves are more frequent in the CEJ region, with distal interproximal grooves often extending to the buccal aspect, mesial ones to the lingual aspect, and maxillary ones more frequent than mandibular.

Interproximal grooves have been found more often on males than females (Ungar et al. 2001; Brown and Molnar 1990). Occlusal grooves have been found on the anterior dentition of Early Holocene Libyan individuals (Minozzi et al. 2003), and males from the western Great Basin (Larsen 1985). Waters-Rist et al. (2010) also found sex-based differences in occlusal grooves, from Siberian samples. Largely, the aetiology of interproximal grooves has been given as using toothpicks to remove food debris or alleviate discomfort, termed dental probing independent of caries (Estalrich et al. 2017a; Estalrich and Rosas 2013; Lozano et al. 2013; White et al. 1997; Villa and Giacobini 1995; Formicola 1991; Formicola 1988; Frayer and Russell 1987). They have been associated with habitual and occupational actions (Erdal 2008; Milner and Larsen 1991, 373; Lukacs and Pastor 1988), and occasionally linked to AMTL (Lorkiewicz 2011). Lukacs and Pastor

(1988) divide interproximal grooves into three categories: therapeutic dental probing, using toothpicks (labelled habitual idiopathic), and paramasticatory processes/occupational grooving. Hlusko (2003) produced cylindrical interproximal grooves using grass on the dentition of *H. s. sapiens* and *Papio hamadryas* (baboon). However, the study used archaeological (dry) remains to recreate interproximal grooves, and the measures used to mimic living soft tissue are not referenced.

Alternative aetiologies are a by-product of interproximally sucking saliva mixed with particles, tough material (e.g., plant fibres/sinew) pulled through interproximal spaces, and occlusal channelling and buccal abrasion (Frayer 1991). The fibres have been attributed to grass, as this is the only flora/fauna occurring in all the ecogeographic regions where interproximal spaces are found (Hlusko 2003; Schulz 1977; Koenigswald 1972; Wallace 1974; Weyer 1929). Not all activities are conducted exclusively by *H. sapiens sapiens*; material being pulled through the interproximal space is seen in *Gorilla beringei beringei* (Tennie et al. 2008), and interproximal grooves have been noted on a fossilised buffalo incisor (Koenigswald in Molnar et al. 1972).

2.5.3 Striae

Striae, illustrated in Figure 2-9, are caused by an object harder than enamel/cementum contacting the tooth surface in a single motion. Striae are linear and thin, with variable width and length, and have been described as “V”-shaped, sometimes termed Hertzian cones (Estalrich and Rosas 2013; Pérez-Pérez et al. 1994; Lalueza Fox and Pérez-Pérez 1993; Bromage and Boyde 1984; Ryan 1979; Ubelaker et al. 1969; Frank and Lawn 1967).

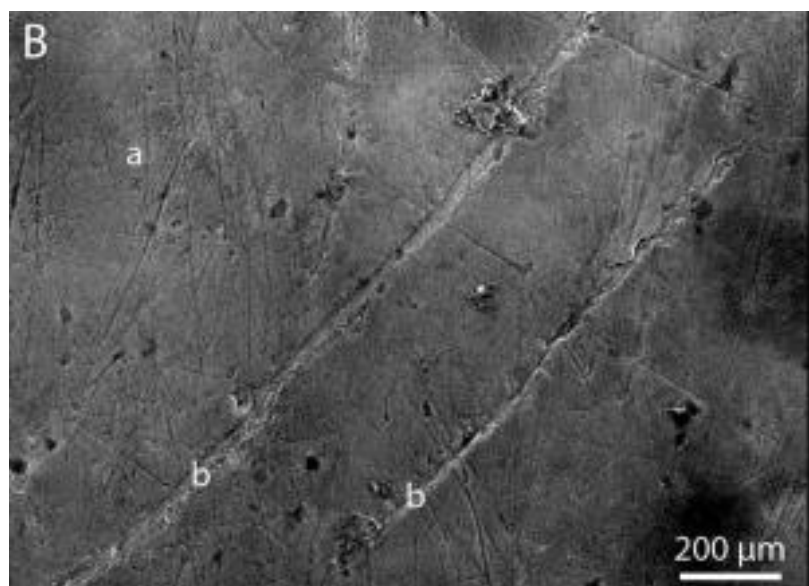


Figure 2-9 Dental Features Example – Striae

Striation labelled a = from non-PMDA, striae labelled b = from PMDA

From Willoughby et al. (2018, Figure 11.B)

Striae have been noted more frequently on the buccal aspects, occasionally on the anterior teeth (Arcini 2005; Puech 1979). Striae are associated with periodontal disease (92.3%, $n=24/26$), caries (36.56%, $n=34/93$) (Ubelaker et al. 1969), and hard particle inclusion during mastication (d’Incau et al. 2012; Fox et al. 1996; Ryan 1979). Striae occurring from hard particles in foodstuffs and from PMDA may be difficult to differentiate (Ryan 1979). Therefore, the location and length/width may become important between differentiate PMDA or diet.

2.5.4 Facets

Facets are caused by objects continuously rubbing against the tooth surface, leaving a polished, flat surface. Facets are more likely on the buccal aspect, see Figure 2-10 (Pokhojaev et al. 2018; Sarig et al. 2014; Hillson 2008b, 310; Scott 1997). Facets, sometimes termed dental abrasions, can be caused by retouching lithic tools, utilising the teeth when cutting meat, clamping the dentition to hold objects, or splitting reeds/stalks (Lukacs and Pastor 1988). Facets have not been associated with pulp exposure/periapical inflammation (Hillson 2008b, 310).



Figure 2-10 Dental Features Example - Facets

Buccal facets on right canine, 3rd and 4th premolars, and 1st and 2nd molars, on individual MHR 554

From Frayer et al. (2020, Figure 2)

2.5.5 Wear

Wear resulting from PMDA is difficult to interpret as mastication also causes wear, see 2.2, and a definitive aetiology is moot (Waters-Rist et al. 2010; Ubelaker et al. 1969). It has been proposed mastication lasts <8 minutes a day, but PMDA lasts for several hours (Scheid and Weiss 2012, 271), and possibly longer for

frozen foodstuffs. A greater occurrence of buccal wear on anterior mandibular teeth is associated with PMDA (Hinton 1981a; Molnar et al. 1972). However, because of the aetiological uncertainty, wear is a much less reliable indicator of PMDA than other types of evidence.

One study which can be used is by Molnar (1968, using the equipment developed by Brace and Molnar 1967), who used a masticatory machine to analyse wear patterns and PMDA. Molnar's (1968) study shows extreme wear with multiple directions across a single occlusal aspect could be caused by mastication alone, with the material type causing greater and more varied wear directions. Molnar (1968) recreated wear patterns similar to those on Australian Aborigines, as reported by Campbell (1925), and coastal Native Americans, but no further information on the samples is given. Molnar (1968) hypothesises asymmetrical (para-)mastication causes wear on the buccal cusps of the mandibular dentition, and lingual cusps on the maxillary isomers leading to oblique planes. A problem highlighted by Molnar (1968) was the moulded teeth had no movement, whereas living teeth have flexibility and movement. So, Molnar (1968) can be used to infer the material (para-)masticated, but not the activities.

One ethnographic study where PMDA and associated wear were observed on a living HG sample, the Hadza, is by Berbesque et al. (2012), who analysed maxillae moulds (anterior teeth to the M1). Resulting from eruption timings, the M1s express the greatest wear, however, between 15-19-years-old the central incisors exhibit the greatest wear (Berbesque et al. 2012). Berbesque et al. (2012) also found females express greater wear in the incisors (central and lateral), and 3rd premolars compared to males, with males presenting greater wear in the premolars and M1s. Males display greater asymmetrical wear than females, bar the canines where the females contain the greatest asymmetrical wear (Berbesque et al. 2012). The greater wear in the females' anterior dentition is proposed to be from more PMDA, as females less frequently carry knives, more frequently consume tubers, and sinew processing causing lingual aspects wear (Berbesque et al. 2012). Greater asymmetrical wear in males is associated with using their teeth to tightened bow strings and stripping bark to produce twine (Berbesque et al. 2012).

2.5.6 Previous Studies

The limited studies analysing PMDA (Fidalgo et al. 2019; Kolpan and Bartelink 2019; Hillson 2001; Alt and Pichler 1998, 387; Macchiarelli 1989; Walker and Erlandson 1986; Merbs 1968; Brace and Molnar 1967) frequently lack references to clinical literature (d'Incau et al. 2012). Some studies do not reference or explain how determinations on striae/grooves formation were made or why aetiologies were excluded (Baker et al. 2012, 156; Molleson 2007; Scott 1997). Where clinical literature is incorporated, it covers interproximal wear facet development (Pokhojaev et al. 2018; Sarig et al. 2014), striae caused by dietary particles (Perez-Perez et al. 1994; Fine and Craig 1981; Ryan 1979) and wearing labrets (Levin 2007).

The published literature mostly records the location via illustration, striae timing deduction via scanning electron microscope (Lozano et al. 2021) or is descriptive (Molleson 2007). The attempts to devise a PMDA recording system have been categorical or only record some evidence types. For example, Alt and Pichler (1998, 389, Table 1) present a classification system for PMDA and intentional dental modifications but lack regulated nomenclature and a recording system. Whilst Molleson (2007) proposes using differential diagnosis, there is no detailed information on the alterations PMDA cause. The more developed 10-point differential diagnostic criteria (DDC) developed on bioarchaeological Tennessee individuals (see Appendix Table 232) by Blakely and Beck (1984), covers PMDA and intentional dental modifications. However, it is not widely used (Sorrentino et al. 2018; Redfern et al. 2017; Usai et al. 2014; Shimada et al. 2004; Meijer 2003), possibly relating to analytical problems. The first criterion (appearance) is based on non-attrition (excluding mastication and bruxism) induced interproximal, buccal, and lingual wear. The authors acknowledge it may be difficult to differentiate between wear types as they do not occur exclusively. The second is the criterion relating to position, as the method excludes the lingual aspect which can display evidence.

The published studies use ethnographic/historic accounts to reconstruct the PMDA of bioarchaeological populations. However, the ethnohistoric accounts detail activities, but rarely mention subsequent dental results, except in relation to wear (Berbesque et al. 2012; Merbs 1968). For example, the oft cited Brown and Molnar (1990) study (Towle et al. 2018; Estalrich et al. 2017; Igarashi et al. 2017; Oxilia et al. 2017; Radini et al. 2017; Ricci et al. 2016) used cinematographic depictions of 20th century Australian Aboriginals, to analyse PMDA aetiology. The study neglected dental assessment before or after the PMDA were conducted, meaning it is unknown if the actions caused the dental changes (Frayer 1991; Brown and Molnar 1990). Similarly, contemporary females from the Great Basin (USA) were observed processing roots (Coville 1892) and ethnographic accounts of PMDA causing occlusal grooves were collected (Wheat 1967, in Larsen 1985, Figs. 4a-4d). Larsen presents Wheat's (1967, in Larsen 1985, Figs. 4a-4d) photographic evidence of females conducting PMDA, as activities the bioarchaeological samples may have conducted, resulting in occlusal grooves. Larsen (1985) states the bioarchaeological females did not display grooves, but males did, with the discrepancy explained as sampling bias. It is not stated if odontological examination of the ethnohistoric sample was conducted before or after analysis. Therefore, it is unknown if the females observed conducting PMDA had the same occlusal grooves as those observed in the bioarchaeological sample.

Some bioarchaeological studies expect all PMDA instances to be recorded on the dentition, but a lack of evidence does not imply absent activities (Ungar et al. 2001; Brown 1991). For example, interproximal grooves are not always present in samples where toothpick usage is known (Ungar et al. 2001; Brown 1991), and Javan *Homo erectus* does not present PMDA evidence (Puech 1983), but archaeological evidence indicates tool use (Joordens et al. 2014).

2.5.7 Cultural Identifiers

“Cultural identifiers”, a term devised by the researcher, refers to physical alterations and body adornments used to send visual meanings about an individual or the wider population to other individuals. Studies have linked dental modifications and other cultural identifiers, such as artificial cranial modification, in non-Arctic/Sub-Arctic samples (Khudaverdyan 2011; 2010). Only labrets and ablation are discussed here.

2.5.8 Labrets

Labrets, see Figure 2-11, are cited as causing facets, and are jewellery worn by insertion through the *buccae* (cheeks), or inferior to the *labia inferior oris* (Stojanowski et al. 2015, 381; Torres-Rouff 2003, although see Lukacs and Pastor 1988). The only reference found to labrets superior to the *labium superior oris*, relates to New Ireland (Dall 1885, 79). Labrets are made from available resources, such as bone, wood, and stone (Scott 1997; Bank 1953), and like ablation, can have positive or negative connotations (Vincent 2020, 93). Labrets/facets have been minimally studied, for example, Stojanowski et al.’s (2016, 381) review on activity-induced dental modifications only allocate a small section to facets. Torres-Rouff’s (2003) study on facets/labrets from a pre-Columbian Chile individual’s grave, is one of the few analysing facets associated with labrets. Clinically, labrets are associated with alveolar bone resorption, possible infection from creating the hole (first 6-8 weeks), TEM aetiology, altering salivary flow, and speech and mastication impairments, possibly leading to malnutrition (Plessas and Pepelassi 2012; Kapferer et al. 2012; Vilchez-Perez et al. 2009; Levin 2007; Halliday 2005; Leichter et al. 2003; Moss 1999; Boyd 1996).

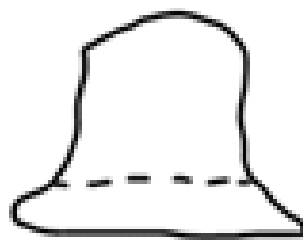


Figure 2-11 Labret – Example

The labret is a bat shaped labret, and was found in a site near Inuvik, Northwest Territories, Canada. The labret dates to the 19th century

Re-drawn from Arnold (1986, Fig. 4f)

2.5.9 Ablation

Ablation is tooth removal for non-medical purposes, often associated with marking attainment of social achievement, and group affiliation, and is found more frequently amongst agriculturalists (Palefsky 2019; Harvey et al. 2017, 127; Pietrusewsky et al. 2017, 118; Aseffa et al. 2016; Wasterlain et al. 2016; Temple et

al. 2011). The definition of ablation here (non-medical purposes), makes it distinct from extraction, which here is defined as tooth removal for medical purposes. An example of extraction is tooth removal to allow individuals with tetanus to keep feeding (Pinchi et al. 2015). When roots remain, removal is via forces exerted to the tooth with the aid of a sinew or knocking the tooth out; roots can be retained within the healed alveolar bone (Pietrusewsky et al. 2017, 121; Domett et al. 2013; Khudaverdyan 2011; Hrdlička 1940a, 2). Ablation is more common on the more visible anterior dentition (Harvey et al. 2017, 126-128), normally in the following order: Maxillary central incisors, maxillary lateral incisors, mandibular incisors (Durband et al. 2014; Romero 1970, 52, Fig. 1).

Only a few individuals may present ablation, where it is practiced, and multiple ablation patterns may be present (Hemdan et al. 2017, 241; Stojanowski et al. 2014). Individuals with ablation normally lack alterations to the antimeric teeth (Roksandic et al. 2016). Symmetry in ablation is expected when removal occurred at the same time, or the individual lived long enough for complete alveolar bone recovery. So, asymmetry may indicate one portion of social achievement (De Groot and Humphrey 2017, 26; Roksandic et al. 2016). Therefore, ablation may not occur identically across a sample, or be recognisable if too few individuals with ablation are studied.

3 Chapter 3 Arctic/Sub-Arctic Research

The following is an overview of the extensive Arctic/Sub-Arctic and Pacific Northwest research (for example, Bronshtein et al. 2016, 470; Jordan 2015, 218-276; Nuttall 2004; Mueller-Wille and Barr 2000, 3; VanStone 1976; Damas 1968a; Birket-Smith 1952; Olson 1940). The overview will focus on studies relevant to the current research, focusing on the conditions used to reconstruct oral health, diet, and paramasticatory dental activities. The chapter is a companion to the previous chapter. The chapter first presents an overview of the research on Arctic/Sub-Arctic samples. Second, are the conditions relating to Arctic/Sub-Arctic samples. Similar to the previous chapter, some conditions have limited information on them.

3.1 Background

The focus of the current study is hunter-gatherer samples from the Arctic/Sub-Arctic region. As a large amount of work has been conducted on hunter-gatherers which feed into the studies on Arctic/Sub-Arctic hunter-gatherers, a brief overview on hunter-gatherer studies is given. Hunter-gatherers (HG) inhabit all ecogeographies, and many studies have analysed HG from different regions and time periods (Karsten et al. 2019; Lane 2014, 104; Bellwood and Dizon 2013, 236; Fitzhugh 2012, 19; Scheinsohn 2003; Lee and Daly 1999, 1; Binford 1983; Lee and DeVore 1968, 3). Despite the numerous studies, a definition is not agreed upon, as the HG groups have few comparable characteristics (Barnard 2019, 4; Lee and DeVore 1968, 4). The definition here is: pre-industrial societies following seasonal game migrations with portable technologies (Barnard 2019, 34; Jordan and Cummings 2014, 34; Sassaman and Randall 2012, 19; Fitzhugh 2003, 1). Non-Arctic/Sub-Arctic HG have been studied by ethnographers, anthropologists (Currie 2016; Jordan and Weber 2016; Cummings et al. 2014; Pluciennik 2014, 55), archaeologists, and bioarchaeologists (Temple and Stojanowski 2019; Delgado et al. 2018; Hoover and Berbesque 2018; Von Cramon-Taubadel 2011; Mithen 2001; Arnold 1996; Burch and Ellanna 1996). Previous studies using non-Arctic/Sub-Arctic HG have focussed on diet and oral health (Dlamini et al. 2019; Crittenden et al. 2017; Schulting 2016, 1266l; Lieverse et al. 2007; Isler et al. 1985) habitation patterns, subsistence strategies (Morgan et al. 2017; Spielmann 2014, 882; Eren 2012; Fitzhugh and Habu 2002; Mason and Hather 2002; Boaz 1998; Gowdy 1998; Meehan and White 1990; Winterhalder and Smith 1981; Nurse and Jenkins; Jochim 1976), technologies, art (Odell 1996; Whitley and Loendorf 1994), and social structures and identities (Uchiyama 2016; Cobb 2005; Schnorr 2015; Kelly 2007; Lieverse 2011, 141; Walker 2011; Papagianni et al. 2008; Fitzhugh 1996; Price and Brown 1985a; Bailey 1983).

Two prevailing analytical themes are kinship and adaptation within human-environmental interactions (Jordan and Cummings 2014, 36). Early studies focused on gender-based labour divisions and food resource accessibility (Lee and DeVore 1968, 11). Hunter-gatherer studies have shown gender-based labour divisions during food acquisition (Barnard 2019, 46; Villotte et al. 2010; Hurtado et al. 1992; Molnar 1971, although see Stein and Rowe 2006, 249). Labour divisions refer to tasks largely/exclusively conducted by one portion of society (age/sex/social class) (Baustian 2018; Larsen 2018; Bird and Coddling 2015, 1; Torres-Rouff et

al. 2015; Larsson 2013; Niinimäki et al. 2013; Weber, and Goriunova 2013; Tung and Knudson 2011; Pechenkina and Delgado 2006; Boyd 1996). Contemporary HG diets contain 45-85% meat regardless of ecogeographical region, and it has been noted not all available vegetation and foliage is consumed (Crittenden and Schnorr 2017; Cordain et al. 2000). As modern HG no longer exclusively consume wild foodstuffs, diet is largely reconstructed ethnographically (Crittenden and Schnorr 2017). Typically, ethnographic/ethnohistoric accounts are extrapolated back to historical/(bio-)archaeological HG, assuming there are similar lifeways (Estalrich et al. 2017; Friesen and Mason 2016, 5; Jordan and Cummings 2014, 36-37; Lane 2014, 105; Fiorenza and Kullmer 2013; Hurcombe 2007, 60-61; David and Kramer 2001, 2; Zegura 1975; Steward 1955, 42; although see Araújo et al. 2011).

As hunter-gatherers, Arctic/Sub-Arctic peoples have particular subsistence strategies, habitation patterns, and social structures, but are sometimes viewed as homogenous (Justice and Temple 2019; Snow 1976, 205; Hrdlička 1940a, 12); however, the large geographic regions inhabited would result in divergences and variabilities. Studies have largely focused on marine subsistence Arctic samples (Lane 2014, 109) or Thule culture (dated 1750-450 BP) (Crockford 2008, 113; Howse 2008), with other periods (such as the Dorset, dated to 1450-450 BP) lacking research (Friesen 2007; Coltrain et al. 2004) and include linguistics (Dorais 2014), with limited ethnobotanical research between Arctic cultures (Duffy Davis and Banack 2012). However, Arctic/Sub-Arctic peoples have frequently been studied by ethnographers (Chappell 2014; M'Keevor and Fréminville 2014; Rink and Brown 2014; Henshaw 1995, 7; Jochelson 1933; Rasmussen 1931; Thornton et al. 1931, 105-106; Stefansson 1926; Wakeham 1898; Crantz 1820), and used in comparative studies against various other populations, see Table 3-1. Bioarchaeological analysis have analysed skeletal and mummified humans remains (Cray et al. 2011; Zimmerman et al. 2000, 1971; Zimmerman and Aufderheide 1984; Meigs 1856), assessed health changes from alterations in living conditions (Marks et al. 2019; Justice and Temple 2018, 254; Hilton et al. 2014; Shephard and Rode 1996, 13; Grygier 1994, 16; Jamison 1990, 1970; Dall 1880, 6), and activity-induced musculoskeletal stress markers (Hawkey and Merbs 1995).

Arctic/Sub-Arctic human remains were collected extensively by early anthropologists (Loring and Prokopec 1994, 27), but are not consistently included in anthropological work of the Americas (Boyd 1996). Problems with earlier research papers can be seen in Hrdlička (1941c, 1941d), who frequently does not provide data on the period, or record stratigraphy. Similarly, Leigh (1925b) conducted a large-scale study on $n=324$ contemporary skeletons of young adults from Greenland, Cumberland Sound, Point Barrow, St. Lawrence Island, St. Michael (Alaska) and Siberia (coast). However, Leigh (1925b) omits information such as date, ages, sexes, percentages, or totals. The omissions render comparisons problematic (Smith et al. 2009; Hurme 1948; however, see Ousley and Jones 2010). Geographic references can also be unclear, for example, Weyer (1929, 227) seemingly uses two names (Fortress Rock and Fortress Island) for the same

locale. Meanwhile, a reference in Turner's (1967, 199) Ph.D. thesis on circumpolar dental traits, gives a reference as personal communication with Skarland (1963), which prevent further investigations.

Table 3-1 Arctic/Sub-Arctic samples and comparative samples

Sample	Author(s)
North American Native Americans	Górka (2016); So (1980)
Australian Aboriginals	Górka (2016); Clarke and Hirsch (1991)
Bateke-Balali	Górka (2016)
<i>Homo sapiens neanderthalensis</i>	Clement et al. (2012); Fiorenza et al. (2011b); Guatelli-Steinberg et al. (2005, 2004)
Khoe	Górka (2016)
Khoisan	Freidline et al. (2015)
San	Barnard (2019, 47); Górka (2016)
Mesolithic Britain	Clark (1954, 10-11)
Pakistani individuals from the Neolithic and Chalcolithic periods	Lukacs and Pastor (1988)

There are numerous cultures associated with Arctic/Sub-Arctic peoples, many of which overlap in different areas. Some of these cultures migrated across geographic regions, appearing, and disappearing at different times to each other. Figure 3-1 illustrates the known major cultures from 400-5450 BP, in the regions being studied here. The archaeological work conducted in the British Columbia and Pacific Northwest has not resulted in a chronology of cultures of the area, which is unlike other areas of North America (Fladmark 1982). Similarly, the history of the South-East Alaska has information collected from oral histories (Crowell and Howell 2013). Therefore, there is little information illustrating the different cultures in the region.

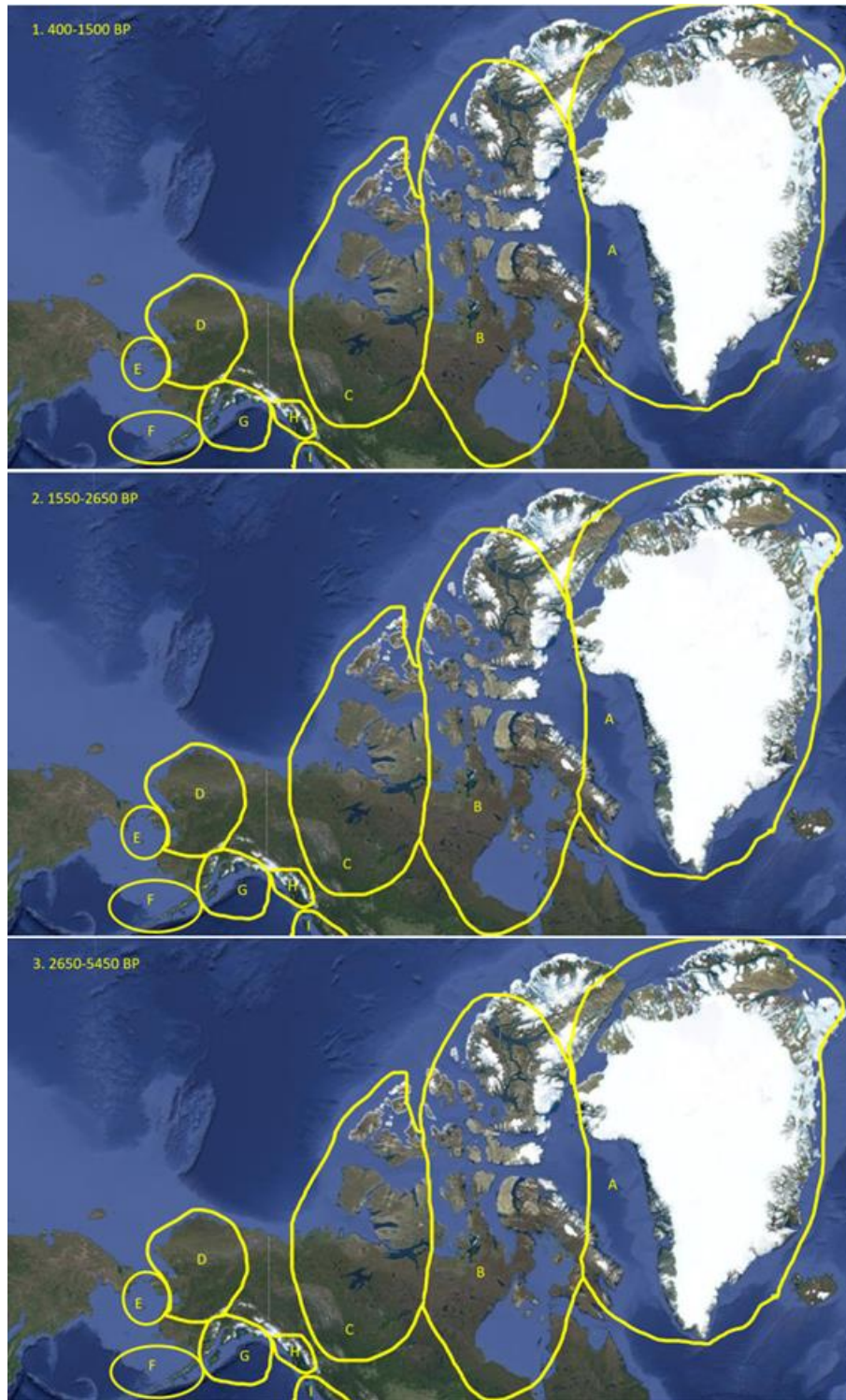


Figure 3-1 Major Cultures in the regions studied here

Taken from Friesen and Mason (2016, 12, Figure I.1); Gulløv (2016, 899-900); Crowell and Wayne (2013); Lynnerup and Norby (2004); Fladmark (1982)

Map 1: A = High Arctic and Greenland - Thule, Late Dorset and Norse; B = Nunavik, Labrador, Newfoundland- Inuit, Thule, Late Dorset; C = Central and Eastern Arctic - Thule, Late Dorset; D = Northwest Alaska - Thule, Birnirk, Ipintak; E = Bering Strait Region - Thule, Birnirk, Punuk, Old Bering Sea; F = Aleutians - Late Aleutian (Neo-Aleut); G = Western Gulf of Alaska - Koniag, Transitional Kachemak, Late Kachemak; H = Tsimshian, Gitskan, Nisga'a, Tlingit; I = no cultures known

Map 2: A = High Arctic and Greenland – Early Dorset/Greenlandic Dorset (there are no known cultures from until 1550 BP); B = Nunavik, Labrador, Newfoundland– Late Dorset, Middle Dorset, Early Dorset, Groswater; C = Central and Eastern Arctic; Late Dorset, Middle Dorset, Early Dorset; D = Northwest Alaska; Ipiutak, Norton, Choris; E = Bering Strait Region – Birnirk, Punuk, Old Berin Sea, Norton, Choris; F = Aleutians – Amaknak (Paleo-Aleut); G = Western Gulf of Alaska – Late Kachemak, Early Kachemak; H = Tsimshian, Gitskan, Nisga'a, Tlingit; I = no cultures known

Map 3: A=High Arctic and Greenland – Pre-Dorset, Saqqaq, Independence I; B=Nunavik, Labrador, Newfoundland– Groswater, Pre-Dorset, Archaic; C = Central and Eastern Arctic; Pre-Dorset, Initial Pre-Dorset; D = Northwest Alaska; Denbigh Flint Complex; E = Bering Strait Region – Denbigh Flint Complex; F = Aleutians – Amaknak (Paleo-Aleut) – Amaknak (Paleo-Aleut), Margaret Bay, Late Anangula; G = Western Gulf of Alaska – Early Kachemak, Ocean Bay II, Ocean Bay I; H = Tsimshian, Gitskan, Nisga'a, Tlingit; I = Ninkish First Nation Peoples, Nuu-chah-nulth First Nation Peoples, Shushats

Contact, and therefore transculturation, the process of cultural change due to the introduction of a new culture, rather an original culture developing naturally (Ortiz 1995, 98), occurred at different times (Sejersen 2004, 33; Pedersen 1947). The first area outside of Russia inhabited by the groups here were the Aleutian Islands and mainland Alaska, (960-920 BP) (Richards 2005, 112), reaching Greenland in 550-50 BP (Gulløv 2016, 897; Grønnow 1988). First contact with Norse occurred in Newfoundland (called Vinland), Baffin Island (called Helluland) and central Labrador (called Markland) (Richards 2005, 111). Historic (Icelandic sagas) accounts state initial Greenlandic contact occurred at approximately 965 BP (Haine 2008; Richards 2005, 108; Jones 1986; Fitzhugh 1985a, 19, 1985b; Seward 1922, 1, 3). Contact in Siberia occurred in the first half of the 17th century (Csonka 2005). Meanwhile, in Nunavut, Canada, European contact was minimal until the mid-19th century, followed by intensive contact began at the beginning of the 20th century (Csonka 2005; Barr 1994). Greater contact with Medieval Norse individuals in western Greenland occurred from the 15th century (Friesen and Mason 2016, 10; Gulløv 2016, 897; Csonka 2005; Damas 1999, 346; Pedersen 1971, 1949, 18, 22). In parts of east Greenland with the Tasiilaq, contact was from the 19th century (Pedersen 1971), due to inaccessibility from harsh environments (Salisbury 1895). From earlier European contact times there is more literature focused on the western region (Gulløv 2016, 897; Mathiasen 1930; Hobbs 1927; Nansen 1911, 300; Salisbury 1895).

Research on the climatic histories of some of the areas here has been conducted, to reconstruct animal migratory routes, subsistence strategies, and habitation areas (Li and Ghosh 2017; Hollesen et al. 2016; Krawczyk et al. 2010; Perrin et al. 2009, 630; Erlandson and Moss 1996, 280; Kindle 1909). Other studies have established the diet of these peoples was sufficient in Vitamin D and ω -3 fatty acids (Schæbel et al. 2017, 2015; Szathmáry 2015, 11; Kelly 2013, 41, Table 3-1; Schæbel et al. 2013; Stein and Rowe 2006, 430). The foodstuffs associated with Arctic/Sub-Arctic peoples are terrestrial and marine mammals, although diet varied based on the region inhabited. Mainland and inland populations consumed greater amounts of terrestrial mammals, whilst coastal-based populations relied heavily on marine mammals (Howse 2008; Spencer 1959, 126; McCartney 1975, 281; Murdoch 1892, 61). Acidic foodstuffs, such as fruit, were consumed seasonally where possible (Kaidonis 2008), such as the Tanaina or interior Western Greenlanders who consumed fruit and vegetables (Goebel and Potter 2016, 237; Szathmáry 2015, 4; Wickham-Jones

2014, 695; Park 2012, 114; Grønnow 2009; Howse 2008; Gotfredsen 1997; Yesner 1989; Vaudrin 1981, xxiv; Black 1977; Spencer 1959, 126; Leigh 1925b; Nansen 1911, 300). Coltrain (2010) highlights regional and temporal dietary distinctions across the Alaskan peninsula, and archaeological research has found different periods had different cooking and preservation techniques (Admiraal and Knecht 2019, 117). For example, in lieu of wood, animal fat could be used as fuel for fires (Alix 2016, 113), therefore, foodstuffs could have been cooked in landscapes lacking wood.

Although diets differed regionally (Harris et al. 2019; Britton et al. 2016, 2013; DiNicolantonio 2016; Jensen 2016, 751; Crockford 2008, 116-117; El-Zaatari 2008; Chu 1998, 39; Gotfredsen 1997; Cruwys 1988; Balikci 1968, 82; Rainey 1941a), there appear to have been minimal food accessibility divisions (Soulier 2021; Górka 2016, 31; Costa 1982), although; intrasample variation occurred based on socioeconomic status (Karsten et al. 2019; Landry 2016; Hart and Lovis 2013; Boyd 1996; Ubelaker et al. 1995). However, diet is proposed to have lowered infant mortality rate and increased longevity on Kodiak Island, due to greater marine fauna availability (Ziker 2015, 2; Kehoe 1992, 493; Yesner et al. 1980; Laughlin and Reeder 1962a; Laughlin and Reeder 1962b). The post-European contact diet changed dramatically; in early 20th century in the urban areas of West Greenland; consumption of imported foodstuffs increased from 17% in 1901 to 63-90% in 1930 (Pedersen 1947). The imports included flour and processed foodstuffs (Pedersen 1947; Karshan et al. 1939; Rosebury and Karshan 1939; Rosebury and Waugh 1939).

3.2 Malposition

Studies have found malocclusion is more likely in post-European contact individuals (Baarregaard 1949). The malocclusions are caused by the commencement of cariogenic diets, and changes in masticatory loading, causing early deciduous dentition exfoliation. The bioarchaeological results differ, as Leigh (1925b) found $n=10$ impacted teeth, given as 11.4%, and states the deciduous first molar roots are retained via impaction. Pedersen (1938), however, on archaeological $n=526$ skulls from East and West Greenland, found no impaction.

3.3 Agenesis

In Arctic/Sub-Arctic studies, non-eruption has been reported alongside high M3 agenesis prevalence (Hylander 1977, 130; Pedersen 1947). No further information on agenesis in these samples was found.

3.4 Wear

Excessive wear has been noted in Arctic/Sub-Arctic individuals (Smith 1970, 29) with Pedersen (1947) stating contemporary Greenlandic individuals exhibited wear which had worn the crowns to the gingivae. Variations of soil composition, foodstuffs consumed, and PMDA, will cause inter-sample differential wear rates. For example, individuals from Point Hope (Alaska, now divided into two distinct cultural samples -

Ipiutak and Tigara) were exposed to coarse sand, causing greater wear rates, compared to Aleutian Islanders' diet with less grit (El Zaatari 2014, 132, 2008; Collins et al. 1945, 6).

Different wear rates between the sexes have been found; Leigh (1925b) and Waugh (1937b) found females have greater wear, which Leigh (1925b) attributes to preparing animal hides. Górká (2016, 70) note greater wear extent in the Point Hope males below 20-years-of-age, but the over 20-years-of-age females have the greater wear. However, as Górká (2016) only analysed the left side of each dental arcade, asymmetrical wear was not assessed. Tomenchuk and Mayhall (1979) meanwhile, found males exhibit greater maxillary molar wear, on $n=85$ individuals from Igoolik, Foxe Basin and Qikiqtaaluk Region, Nunavut. Differential wear rates are not always present; Keenleyside (2003a) found no substantial variations in wear between temporally distinct individuals from the same area (Umnak Island, dated 2500 BP–1500 AD, and 18th century, Kagamil Island, dated 14th–18th century, and Shiprock Island, dated 1400–1780 AD).

Not all Arctic/Sub-Arctic samples display extensive wear. In the Sadlermiut sample, wear is minimal, largely occurring on the incisors and premolars (Wood 1992, 141). Curzon et al. (1970), on $n=40$ individuals from Greenland, Alaska, Baffin Island, and Labrador, found wear only destroyed dental characteristics, e.g., evaginated odontomes, by 35-years-of-age. Scott et al. (1984) studied $n=5$ individuals from Barrow, Alaska (Mound 44, Utqiagvik, date unstated), and state subadults exhibit reduced wear. Few studies incorporate wear gradient; Costa (1977, 50, 55) found Kodiak Islanders exhibit no gradient wear pattern and Point Hope females exhibit a greater wear slope (gradient not stated). Meanwhile, Hinton (1981b) found rounded wear on a sample labelled Eskimo, MNI $n=195$.

3.5 Caries

The diet of Arctic/Sub-Arctic population is documented to have largely lacked carbohydrates, minimising caries occurrence (Madimenos 2005, 32; Diubaldo 1999, 15; Keenleyside 1988, 179; Anonymous 1983; Costa 1980b, 1977, 38; Pedersen 1947; Hrdlička 1941a, 2; Goldstein 1932; Oetteking 1930, 350; Brierley and Parsons 1906). Many studies have found no more than 1% of teeth/individuals present caries in a sample. Leigh (1925b) found 1% ($n=4/394$; total also given as 395) in the Greenland sample. Pedersen (1947) found $n=2$ caries, but it is not clear if it refers to individuals (0.3%), permanent teeth (<0.1%), or carious lesions (1.3%). Merbs (2018, 312) found no caries amongst the Sadlermiut, and Pedersen (1938) found no caries on the deciduous dentition ($n=0/156$), but the presence of caries in the permanent dentition ($n=5/7606$, 0.06%). Keenleyside (1988, 180) notes higher percentages in the Niutang (no further information other than location) maxillary (2.8%) and mandibular (4.2%), although the Tasioya sample, labelled a Thule site (Thompson et al. 1981) have lower maxillary and mandibular (0.6%) percentages.

Despite the uncommonness of caries, analysis between age/sex classes has been conducted. Costa (1980b) found Ipiutak males have greater caries numbers, in the Tigara it is the females, whilst the Jones Point

sample show less sex-based variation. Madimenos (2005, 30-33, Tables 4.2-4.4) found Tigara and Ipiutak males have greater caries prevalence, which are also much greater than 1%. The results are 14% of Tigara males (15 caries, $n=12/84$ individuals) compared to 7% of females (13 caries, $n=10/137$ individuals). In the Ipiutak, Madimenos found 41% of males (13 caries, $n=12/29$ individuals) compared to 24% of females (13 caries, $n=7/29$ individuals).

Some studies have noted the young/middle aged adults have the greater caries occurrences. Costa (1980b) shows Ipiutak males have a decrease in caries as age increased, with the greatest occurrences in 16-20-year-olds, whilst 46+-year-olds have the fewest. Conversely, Costa (1980b) found females have no age-related differences in caries occurrences. Madimenos (2005, 33, Table 4.5) found Tigara males have the greatest percentage in 26-35-year-olds, whilst females have the greatest presence in the 16-25-year-olds. Keenleyside (1988, 180) found three carious lesions on a Kekerten subadult (individual #36), on teeth 64 (occlusal aspect), 61 (buccal aspect), and 71 (lingual). However, later it is stated only one caries was found in the individual, and clarity on the tooth affected becomes unclear (Keenleyside 278, Appendix G). Likewise, Cook (1981) found $n=3/128$ carious lesions (no clarity on individuals or teeth) on Kodiak Island subadults.

3.6 Periodontal Disease

Studies have found contrasting results for the presence/extent of periodontal disease. Leigh (1925b) found periodontal disease with greater frequency along the molars, with CEJ-alveolar bone distance in maxillary M1s of 1mm. Leigh (1925b) postulates healthy alveolar bone height may be reduced in Arctic/Sub-Arctic samples, based on the total of 61% ($n=324$ – no further information) showing what is termed “alveoloclasia” (alveolar bone destruction), causing AMTL predisposition. Meanwhile, Costa (1977, 85) attributes possible interproximal wall deterioration in Kodiak Islanders to mastication, rather than periodontal disease.

Richie (1924) did not find periodontal disease in Central or Western Canada individuals (MNI and date unknown). Clarke et al. (1986) found minimal periodontal disease in individuals from Tanunuk, Alaska ($n=40$) and Greenland ($n=22$), alongside 34 other samples (unknown locales). Pedersen (1947), studying living individuals, found males exhibit greater periodontal disease rates and greater gingivitis extent, attributed to tobacco consumption, and “mouth-breathing” (unexplained). If correct, pre-European contact individuals would have reduced periodontal disease, as tobacco was unavailable, but mouth-breathing may have occurred. Keenleyside (2003a) also found higher periodontal disease rates in post-European contact older individuals.

3.7 Continuous Eruption

Continuous eruption has been linked to antemortem tooth loss (AMTL) by Hrdlička (1940a, 8) on Alaskan skulls, finding continuous eruption where AMTL occurred on the tooth above.

3.8 Antemortem Tooth Loss

The primary cause of anterior antemortem tooth loss (AMTL) has been given as wrestling, a form of entertainment among Arctic/Sub-Arctic populations, and in post-European contact individuals, opening bottles with their teeth (Merbs 1968; Brierley and Parsons 1906). Variations in AMTL rates occur between studies. Keenleyside (1988, 173) found 12.5% AMTL in the maxillary dentition and 21.9% in the maxillary dentition. In contrast, Brierley and Parsons (1906) found all individuals have frequent (undefined) AMTL occurrences, similar to Leigh (1925b). Keenleyside (2003a) found significantly higher AMTL rates between temporally distinct samples, resulting from the individuals' older age and wear rates. Studies have analysed AMTL across age classes. Costa (1977, 86) found most Point Hope and Kodiak Island individuals aged 46+-years-old retain approximately two-thirds of their dentition. However, the significance is not given. Merbs (1968), on $n=71$ Sadlermiut individuals, states AMTL is absent from subadults, beginning between 19-24-years-old. Mature individuals all express AMTL at least once, but many express extensive (undefined) AMTL (Merbs 1968).

Studies have found females have the greater AMTL rate across several studies. Costa (1980a) found the Ipiutak exhibit opposing patterns – the AMTL in the males characterised as; incisal (5.3%, with percentages showing AMTL per age class/tooth classification), canine (1%), premolar (4.3%) and M3 (39.4%). The females, conversely, have higher AMTL rates for incisors (19.4%) and canines (8.8%), but minimal for premolars (1.9%). The average AMTL rate for male Tigara incisor is 8.8%, whilst the AMTL rate in the Tigara females do not exceed 16.4% (Costa 1980a). Overall, across different studies, Tigara and Ipiutak males exhibit low anterior AMTL rates, with the females having greater AMTL rates (Dabbs 2011; Madimenos 2005, 35-36; Costa 1980a). Similarly, the three Baffin Island samples analysed by Keenleyside (1988, 178), found males have low AMTL levels, and females the opposite, attributed to females undertaking more PMDA across a greater number of teeth. Stewart and Strong (1939, 51) also found females exhibit higher AMTL rate, with reduced wear.

3.9 Post-Mortem Tooth Loss

Only Keenleyside (1988, 31-32) discusses PMTL, and attributes greater anterior PMTL in the Kekerten sample to taphonomic processes, see Figure 3-2 for locations.



Figure 3-2 Map of sites frequently referenced

A = Point Hope, Alaska (Tigara and Ipiutak); B = Umnak Island, Aleutians; C = Kekerten, Cumberland Sound, and Baffin Island

3.10 Root Resorption

Scott (2020) states a condition noted to be shortened roots is not uncommon, with the condition associated with wear, but does not explain the association. For example, does wear initiate continuous eruption, resulting in root resorption or necrosis from leaving the alveolar socket. Pedersen (1947) notes frequent root absorption in Greenlanders, beginning in adolescence.

3.11 Traumatic Enamel Macrofracture

Studies have found different traumatic enamel macrofracture (TEM) rates in Arctic/Sub-Arctic samples, but only Merbs (1968) proposes TEM aetiology for these samples; the aetiology being biting/pulling objects grasped between the teeth. Pedersen (1947) states post-European contact Greenlanders exhibit numerous TEM, whilst Keenleyside (1988, 1990) found low TEM levels from the Kekerten samples, with $n=1/40$ (2.5%). Scott and Winn (2011) found no TEM side bias, but a molar dominant pattern from $n=67$ St. Lawrence Islanders, dated to AD 200-1700. Molar dominance is associated with HG samples, as molars are used in PMDA, and masticating hard/frozen foodstuffs (Hillson 2008b, 307; Leigh 1925a). Turner and Cadien (1969) found divergent TEM levels between non-Arctic/Sub-Arctic mainland North American samples, who have the greater amount, compared to a Greenlandic sample.

Turner and Cadien (1969) found no sex-based difference in TEM presence in individuals from Kodiak Island, mainland Alaska, Canada, and Greenland. However, Merbs (2018, 312) found females have slightly greater wear and enamel chipping, female=81.9%, males=77.8%, $p=0.307$. Turner and Cadien (1969) show

similar TEM rates between the Aleutian Islands age classes, whereas the Kodiak Island, Greenlandic, and mainland North American samples show an increase with age. Similarly, Merbs (2018, 312) found TEM on 72.2% of Sadlermiut individuals between 6-20-years-old, and 91.1% of individuals 21+-years-old.

3.12 Calculus

Studies on calculus have mostly been isotopic analyses, and few incorporate Arctic/Sub-Arctic samples (Baumann et al. 2017; Scott and Poulson 2012; Coltrain 2010; Coltrain et al. 2004; Harper et al. 1984). Where studies have incorporated Arctic/Sub-Arctic samples, similarly low levels of presence/extent of calculus deposits have been reported. Leigh (1925b) states mandibular dentition (lingual aspect) have little calculus on Arctic/Sub-Arctic individuals. Whilst Richie (1924) notes the absence of calculus on Central and Western Canadian individuals. Costa (1977, 52, 70) studying Kodiak Islanders and Point Hope individuals, found the number of teeth exhibiting calculus decreased with age. Costa notes the extent being consistent between 20-46+-years-old, over 1mm depth by 35-years-of-age in males and 30-years-of-age in females.

3.13 Linear Enamel Hypoplasia

Several studies analyse enamel hypoplasia (not always the linear form) in Arctic/Sub-Arctic samples. One proposed aetiology of linear enamel hypoplasia (LEH) in Arctic/Sub-Arctic samples has been seasonal nutritional disturbances (Szathmáry 2015, 12; Lobdell 1980, 246). Pedersen (1947) found, in an East Greenland sample, very few occurrences of what is termed gross enamel hypoplasia and notes there was no pit or groove form hypoplasia in the incisors. Pedersen (1938) found infrequent occurrences in West and East Greenland archaeological samples. In both of Pedersen's studies (1947, 1938) no further information on the frequency or hypoplasia type is given.

Scott and Gillispie (n.d., in Scott et al. 1984) studied $n=67$ St. Lawrence Islanders, dated to 200-1700 AD, and found 65.4% ($n=175/276$) of anterior teeth exhibit LEH (termed hypoplastic lines). Scott and Gillispie's (n.d., in Scott et al. 1984) data are referenced in Scott et al. (1984) as being in press, but it appears to not have been published. Scott and Gillispie (n.d., in Scott et al. 1984) found percentages higher than the enamel hypoplasia on Aleutian (2.04%, $n=3/147$) or Eskimo (as termed in the study, 17.22%, $n=67/389$) samples studied by Keenleyside (1994, 222). Leigh (1925b) analysed $n=324$ modern skulls, finding 17 instances of occlusal hypoplasia (percentages cannot be calculated). Meanwhile, Scott et al. (1984) found no enamel hypoplasia.

Dabbs (2009, 124) also studied hypoplasia (type not in the main text, but it may be in the unavailable Appendix). However, the type could be LEH, being included in Dabbs (2011). In the Ipiutak sample Dabbs (2011) found adult Ipiutak females exhibit no hypoplasia, but the adult males exhibit hypoplasia in the permanent dentition; incisors (13.33%), and canines (8.33%) (tooth total not given). The adult Tigara

females and males did display hypoplasia; females have greater hypoplasia prevalence on the permanent incisors (92.31%), whilst males have greater hypoplasia prevalence on the permanent canines (males=37.14%; females=19.23%) (Dabbs 2009, 134). The hypoplasia occurred between 3-6.5-years-of-age (Dabbs 2009, 134, using Steckel and Rose 2002).

3.14 Paramasticatory Dental Activities

The paramasticatory dental activities (PMDA) of Arctic/Sub-Arctic samples have been discussed frequently, and as with non-Arctic/Sub-Arctic PMDA studies, the proposed aetiologies differ. Using ethnographic accounts, it has been possible to assign aetiologies to some odontological observations. For example, Merbs (1968) notes Arctic/Sub-Arctic populations' use of teeth as tools reflect the tool kits lack pliers. Possible links between females observed PMDA and bioarchaeological evidence have also occurred. Females are documented using their dentition to make animal hides malleable (Dove et al. 2005; Scott 1997, Fig. 8; Stewart and Strong 1939, 50; Grant 1922, although see Jenness 1957, 149; Nansen 1893, 125). And evidence of animal hides preparation in the anterior dentition of the Tigara sample (it is unstated if it is analogously present across age/sex classes) (Schwartz et al. 1995).

Ethnohistoric studies have also associated activities with features; sinew processing has been attributed to occlusal and interproximal grooves (Pedersen and Jakobsen 1989, 125). In post-European contact Greenland females, it was noted sinew preparation caused occlusal transverse grooves (Pedersen 1947). Occlusal grooving has also been reported amongst North-western Greenlanders, in an unpublished conference lecture (Hansen 1984), so further information is unknown. Turner and Machado (1983) infer sinew processing from interproximal grooves on females and one male. Similarly, ethnohistoric accounts show Northwest Coast females paramasticating root fibres for basket construction (Larsen 1985). Pre-European contact females from Prince Rupert Harbour, British Columbia, have evidence of PMDA on their anterior teeth (particularly the canines) (Cybulski 1974). Other accounts show activities which affect conditions, but which might not leave identifiable aetiologies (e.g., wear); oral traditions of the Tikiġaq people reference paramasticating sediments from lamp-oil mixed with animal down (Lowenstein and Tukummiq 1992, 6).

Labour divisions between the age/sex classes have been reported; Wood (1992, 140-141) notes age/sex-based labour divisions in the Sadlermiut sample, however, activities could not be deduced, but were inferred using ethnohistoric accounts. Wood (1992, 45) found gender specific roles began 5-12-years-of-age, but does not state how this was determined, or what constituted gender roles. Merbs (1968) deduced males used small tools, and females used their dentition to hold larger objects, based on males having fewer teeth affected. However, Merbs (1968) is not clear on the PMDA type, and the affected teeth are unidentified. Although El Zaatari (2014, 133) report minimal differences in striae number between the Tigara and Ipiutak (Point Hope) samples. Similar to Madimenos (2005), who notes the Tigara males 20 have striae across nine

individuals and three features (termed cuts) on three individuals. Females exhibit 45 striae across 20 individuals and 10 grooves across eight individuals (Madimenos 2005, 30-31, Table 4.1-4.2). Amongst the Ipiutak, males exhibit six striae across three individuals, one groove on one individual, whilst the females exhibit five striae across three individuals one groove on one individual (Madimenos 2005, 31 Table 4.3-4.24). However, a non-odontological study notes the Tigara sample has evidence of labour divisions (Giardini and Eggers 2002).

3.15 Cultural Identifiers

Multiple types of cultural identifiers are known, including from Kodiak Island and Vancouver Island, and elsewhere along the Pacific Northwest Coast, where labrets and artificial cranial modification occurred (Rorabaugh and Shantry 2017). These modifications have been associated as cultural identifiers elsewhere (Watson and García 2017, 309). In the Pacific Northwest Coast, cranial modification replaced labrets as the cultural identifier (Rorabaugh and Shantry 2017; Cybulski 2010, 15; Emmick 2001, 4). Meanwhile, labrets and tattoos occur across the Arctic/Sub-Arctic region (Lynnerup 2015). Tattoos are also cultural identifiers in Canada and Greenland (Krutak 2018a; 2018b), where odontological cultural identifiers are unknown (Dumond 2009). Tattoos have been linked with curative properties (Krutak 2019) and labrets noted from material cultural items. For example, a walrus ivory sculpture from Ekven, Siberia (Arutyunov et al. 1964, Fig. 5), dating approximately 800–1200 AD (Mason 1998). The multiple cultural identifiers illustrate these populations were socially complex (Fitzhugh 1988, 47).

Climatic conditions may have influenced which portion of the body had cultural identifiers. Cultural identifiers need to be visible, but the body also needs to be protected from the elements. In cold regions, the neurocranium is likely covered for warmth, leaving the craniofacial region the more visible portion of the skull. In colder climates, therefore, the dentition is more likely be the focus of cultural identification (Khudaverdyan 2011; Fitzhugh 1988, 51). In milder climates, the neurocranium would be exposed for longer periods, increasing the importance of neurocranial cultural identification. For example, Kodiak Island, with both artificial cranial modification and labrets, experienced a milder climate compared to more northern areas.

3.16 Labrets

The appearance of labrets in the archaeological record differs by region, and are archaeologically known from Crag Point and Three Saints (both Kodiak Island) (Clark 1970), Point Hope, Jabbertown (Larsen and Rainey 1948, 114), and Amaknak Island (see section 4.1.1). The oldest labrets from the Aleutian Islands date to 3460 ± 132 BP (Aigner 1966), whilst in the Kodiak Archipelago the earliest date to 3450 BP (Clark 1977, 213). Across the Bering Sea, labrets have intermittent presence; being present between 2650 BP-AD 500 (Giddings and Anderson 1986; Giddings 1964), and then again from AD 1400 in northern Alaska, until the 19th century (Murdoch 1892 48). In southern Alaska, labrets are continuously present (Dumond 2009).

In Arctic/Sub-Arctic areas labrets were plugs, and all ethnographic and (bio-)archaeological studies have found labrets inferior to the *labium inferior oris* (Maschner 2016, 331; Mason 2014, 40; Hillson 2008b, 310; Steffian and Saltonstall 2001, 1-2; Kehoe 1992, 487; Keddle 1980 Clark 1970; Larsen and Rainey 1948, 114; Hrdlička 1941c; Jenness 1918). Ethnohistoric accounts state labrets in Point Barrow were worn with one medially placed, preceded by two laterally placed (De Laguna and Oetteking 1934, 204-205). Medial labrets have also been found at Barter Island and Point Atkinson, although how the placement was determined is unspecified (De Laguna and Oetteking 1934, 204). De Laguna and Oetteking (1934, 205) state lateral only labrets are from the Aleutian Islands based on Jochelson (1925, 97, Fig. 92). Ethnohistoric accounts state Bering Sea males had lateral labrets, with size increasing over time (Fitzhugh and Kaplan 1983, 17; Nelson 1900, 48). Material cultural items depict labrets as inferior to the *labium inferior oris*, ranging from masks from Uelen cemetery, Russia (from Dumond 2009; Arutiunov et al. 2006, 195, Fig. 99:1) and Alaska (Ray, 1967, Plate 23 – Alaskan, but provenance unknown, Plate 67 – Aleut), and laterally and/or medially placed holes, occasionally in association with tattoos, and on carvings of animals (not seemingly transfigured) with holes in projecting mandibular regions (Ray 1981, 146-147, Fig. 101-102).

As with the non-Arctic/Sub-Arctic labret research, studies have focused on the labrets themselves, and not the effects of wearing them. For example, Knecht's (1995) in-depth work on labrets does not mention facets. Where evidence has been noted, it has been on the mandibular dentition. Scott (1997, 801, Figure 11) found a buccal facet on tooth 33 assigned to labrets, of a "*prehistoric Alaskan Eskimo*" (no further information). Aigner and Veltre (1976) recorded a facet on a 50-year-old female's mandibular canine, from Umnak Island, dated pre-1500 AD, but no association to labrets was made. Only Cybulski (2010) analysed labret-induced facets from the Pacific Northwest; facets on the anterior mandibular dentition's buccal aspects were found on $n=9$ adult females ($n=20/62$, 32.2%, teeth with facets) from Greenville. The facets were assigned to labrets from AMTL patterns, localised periodontal disease, and labrets found within the burial ground (Cybulski 1993, 67).

Studies have found regional differences in which sex/age classes wore labrets. Labrets are associated both exclusively by males and both sexes in Alaska and viewed as indicating changes in social complexity (Dumond 2009; Knecht and Davis 2008). In the Pacific Northwest coast in the Tlingit, Haida, and Tsimshian, labrets are associated with females. The Pacific Northwest coast females wore labrets after their first menstruation, the size depended on number of children they had, and material indicating social status (Moss 1999). In the Pacific Northwest and Kodiak Island area, it has been stated wearing labrets begun around birth or puberty, with a gradual size increase (Reddish 2013; Steffian and Saltonstall 2001, 2; Keddle 1980). The former is supported by ethnohistoric accounts stating Kodiak Island subadults had their lower *labium inferior oris* pierced at 20-days-old (Lisiansky 1814, 195). However, no sex-based distinctions were present south of the Yukon region (Keddle 1980; Larsen and Rainey 1948, 114). Labret typology has been

analysed for the Pacific Northwest (La Salle 2008; Keddie 1981; De Laguna and Oetteking 1934, 204-205), Alaska, including the Kodiak archipelago (Knecht 1995, 625, 627), the Bering Strait and portions of Russia (Dumond 2009). Fitzhugh and Kaplan (1983, 17-18) describe labret typological differences between males and females, as male labrets were plug-shaped, whilst female labrets were sickle-shaped, which suspended strings of beads.

Archaeological evidence of when labrets started to be worn comes from a burial from Cook Inlet, which indicates subadults (approximately 5-years-old) wore labrets. The burial dates to stratigraphic layer Yukon Island sub-III, within the Late Kachemak period, and overall Kachemak dates of ?3000-?1500 BP (Workman 1998; De Laguna and Oetteking 1934, 43). There is disagreement whether labrets found in burial contexts indicate the individual wore them; Larsen and Rainey (1948, 114) state the Ipiutak individual labelled Burial 90 (15-year-old female) may not have worn the labret found in the burial context, proposing it was a funerary good. They summarise by saying both sexes wore labrets. Contrariwise, Keddie (1980) states the Burial 90 labret does not mean both sexes worn labrets, as funerary goods were not necessarily used by the individual in life, as has been found elsewhere (Le Bras-Goude et al. 2013; Parker Pearson 2003, 3; Crass 2001, 114).

Labrets from Arctic/Sub-Arctic regions have numerous associations. Knecht (1995, 622, 630-631) associates labrets to social status, figurative association with animals, and climatic oscillations, intentional altering of facial muscles to rectify problems from a naturally occurring short ear canal and illustrate how much pain could be withstand from having the labret inserted, also proposed by Osgood (1970, 286). De Laguna (1933) states in Southeast Alaskan samples, individuals with higher social status wore labrets inferior to the *labia inferior oris*. Labrets have been associated with figurative animal transformation across portions of the Arctic/Sub-Arctic, including Southern Alaska and the Kodiak Archipelago (Dumond 2009; Knecht 1995, 622). Aigner (1966) associates smaller labrets with facial adornments, whilst longer labrets with face masks, although, both sizes are undefined. In the Pacific Northwest, labrets were also used to alter the shape of the face to resemble an animal, sometimes altering the mandibular parabolic curve (Cybulski 2010, 3, Figure XI-3). Rorabaugh and Shantray (2017) propose labrets in portions of the Northwest Coast were 'heirlooms', being retained by the deceased's living relatives. Elsewhere in Alaska, labrets were fashioned to resemble tusks, possibly to imitate the physical appearance of tusked animals (Hill 2019; Knecht 1995, 622; Fitzhugh and Kaplan 1983, 6). Carved depictions of transfigured individuals show human forms with elongated walrus tusks from Unalga Island (Ray 1981, 109, Fig. 37), whilst oral traditions include figuratively combining animals (a raven) and humans (Lowenstein and Tukummiq 1992, 6).

3.17 Ablation

Dental modifications have been little studied in Arctic/Sub-Arctic samples, for example the Arctic/Sub-Arctic regions are missing from the Burnett and Irish (2017) publication on dental modification.

Ethnohistoric accounts on these populations do not record ablation (Cook 1981), but there is contested bioarchaeological evidence. Leigh (1925b) lists several instances of ablation, but it is not clear how the percentages were calculated. Hrdlička (1940a, 1) states a large quantity (n =unspecified) of Alaskan skulls, excavated between 1926-38, have incisor and canine ablation, based on AMTL patterns. Hrdlička (1940a, 5-8) states one feature of ablation is buccal alveolar bone damage from the extraction method (bring pulled), similar to Milner and Larsen (1991, 363).

Hrdlička (1940a, 30) found ablation in both sexes, but males have the greater frequency, and began at a young age (not specified). Hrdlička (1940a, 12) states problems with the study were inclusion of older individuals, possibly biasing the results from naturally occurring AMTL, and the crania/skulls mixture. Problems noted here are Hrdlička (1940a) infrequently gives the samples' date, and the terms skull and crania appear interchangeable. Cook (1981) using the same Kodiak Island sample as Hrdlička (1940a), found evidence of ablation on the deciduous dentition of $n=12$ subadults, including on individuals 2-years-of-age ($n=2/12$, 16.6%). In one instance Cook (1981) found a retained root in the alveolar bone which had not been removed during the extraction process. Hrdlička (1944c, 431) also reports possible ablation (or congenital absence) of a maxillary canine and incisor from a Kodiak Island subadult sample. Non-traditional ablation has been reported from the adult mandibles of a female and a male from Cottonwood Creek, Kachemak Bay, Cook Inlet. The removed dentition had been discarded elsewhere in the site and based on description ablation occurred post-mortem (Lobdell 1980, 19; Workman et al. 1980). Aleutian and Alaskan populations would be well equipped to conduct ablation with minimal complications, as they had an in-depth knowledge of human anatomy, including the dentition (Lucier et al. 1971; Marsh and Laughlin 1956). Marsh and Laughlin (1956) link the lack of recorded anatomical terminology, intentional mummification, and some cultural identifiers in Canadian and Greenlandic populations to a greater following of Shamanism, which excluded anatomical knowledge.

Despite Hrdlička (1940a) and Cook (1981), others state these populations did not practice ablation (Scott 2020). Hrdlička's (1940a) assertions are disregarded (Harvey et al. 2017, 127), and Cook's (1981) independent work has been overlooked, except to discredit Hrdlička (1940a) (Palefsky 2019). Merbs (1968) analysed ablation on the Sadlermiut sample and states anterior AMTL could be detrimental by negatively affecting PMDA. However, Merbs' (1968) proposal can be rejected as the remaining dentition can compensate for the teeth lost. Moreover, Merbs does not provide AMTL pattern, preventing re-analysis of their results. Merbs (1968) uses a lack of ethnohistoric accounts to strength the argument ablation was not practiced. But ethnographic populations may not represent bioarchaeological populations, and due to their isolation, the Sadlermiut are anomalous and an unwise sample to use (see Materials). As ablation is unconfirmed in these populations, and few instances are recorded in North America (Burnett 2017, 250-252), finding comparative literature is difficult.

3.18 Paramasticatory Dental Activities Summary

This review has shown that past work on PMDA in Arctic/Sub-Arctic samples and populations has been inconsistent, but nevertheless it is clear that these populations conducted different types of PMDA resulting in different types of odontological evidence. Sex-based labour divisions of PMDA have been reported, but do not appear to alter as the individual ages, whilst subadults are not referenced in ethnohistoric accounts conducting PMDA. Bioarchaeological and ethnohistoric literature posits cultural identification was practiced in Siberia, St. Lawrence Island, the Aleutian Islands, Alaska, Pacific Northwest coast, and western Canada, and absent from eastern Canada and Greenland. Meanwhile, ablation has been proposed (e.g., Kodiak Islanders) (Hrdlička 1940a), rebuffed (Merbs 1968), and then re-proposed (Cook 1981).

4 Chapter 4 Materials

The following chapter presents information on the locations the studied remains were collected/excavated from. The remains are curated in four institutions: American Museum of Natural History (AMNH), Canadian Museum of History (CMH), Duckworth Laboratory at the University of Cambridge (DL) and University of Liverpool (UL). The UL (all Greenlandic) and DL (Canadian and Greenlandic) are all undated, except for the assertions by Brierley and Parsons (1906) and Le Gros Clark (1920) that the UL remains were pre-European contact. A large portion of the AMNH remains were acquired from Felix Von Luschan's collection in 1924, and whilst the AMNH archives contain references to the purchase, there were no documents relating to where or how Von Luschan acquired them, other than general locations such as 'Greenland'. Unlike Brierley and Parsons (1906), there is no evidence to suggest Von Luschan tried to collect pre-European contact individuals, rather the opposite. For the other AMNH curated remains, the AMNH archival documents include information and description from the sender, and information and descriptions, including discrepancies found by the AMNH. For example, the remains from Unalaska are associated with infant remains from the 1928 Stoll-McCracken expedition, but they were not amongst the items delivered (Weyer 1928).

Table 4-1 Location names - current and historical

The names here relate to the sites composing the different samples, with known name variations. It is not the complete list of sites in the study; these can be found in Appendix Table 1

Current Name	Curation Associated Name	Other Historical Name(s)
Ilulissat	Jacobshaven	Jacobshawn, Jacobshaun, Jakobshavn
Oqaatsut	Rode Bay	
Qasigiannnguit	Christianshaab	
Qaqortoq	Julianhaab	
Qeqertarsuup Tunua	Disco Bay	Disko Bay
Tasiilaq	Angmagssalik	Ammassalik
Cape Chaplin/Chaplino	Indian Point	

There are problems with identifying the locations the remains came from, as although some sites have much information available (e.g., Amaknak Island), others do not (e.g., Vancouver Island). Similarly, whilst much ethnohistoric information pertains to areas such as Nunavut or Hudson Bay, there is little archaeological information. Also, there are discrepancies with place names (Higgins 2010; De Laguna and Oetteking 1934; Hawkes 1916b, 5-6, 23-24). Table 4-1 lists the current name, alongside the curation and other name(s) as known to the researcher. The current name, as known by the researcher, will be used.

Table 4-2 and Figure 4-1 provide an overview of the samples, and the locales where the individuals come from. Maps providing more precise information on the locales the individuals came from will be presented under each of the sections relating to each of the 15 samples, with the MNI of each site.

Table 4-2 Overview of samples used in the study

Area	Sample
Alaska	Amaknak Island and area
	South Alaska
	St. Lawrence Island and Cape Chaplino
	West Aleutians, Aleutians Unknown and Nome
	North Alaska/Canada
Canada	Nunavut
	Canada Unknown
	Vancouver Island and area
	Coats Island, Frozen Strait, Southampton Island, Walrus Island
Greenland	East Greenland
	South Greenland
	West Greenland
	North Greenland
	Greenland Unknown

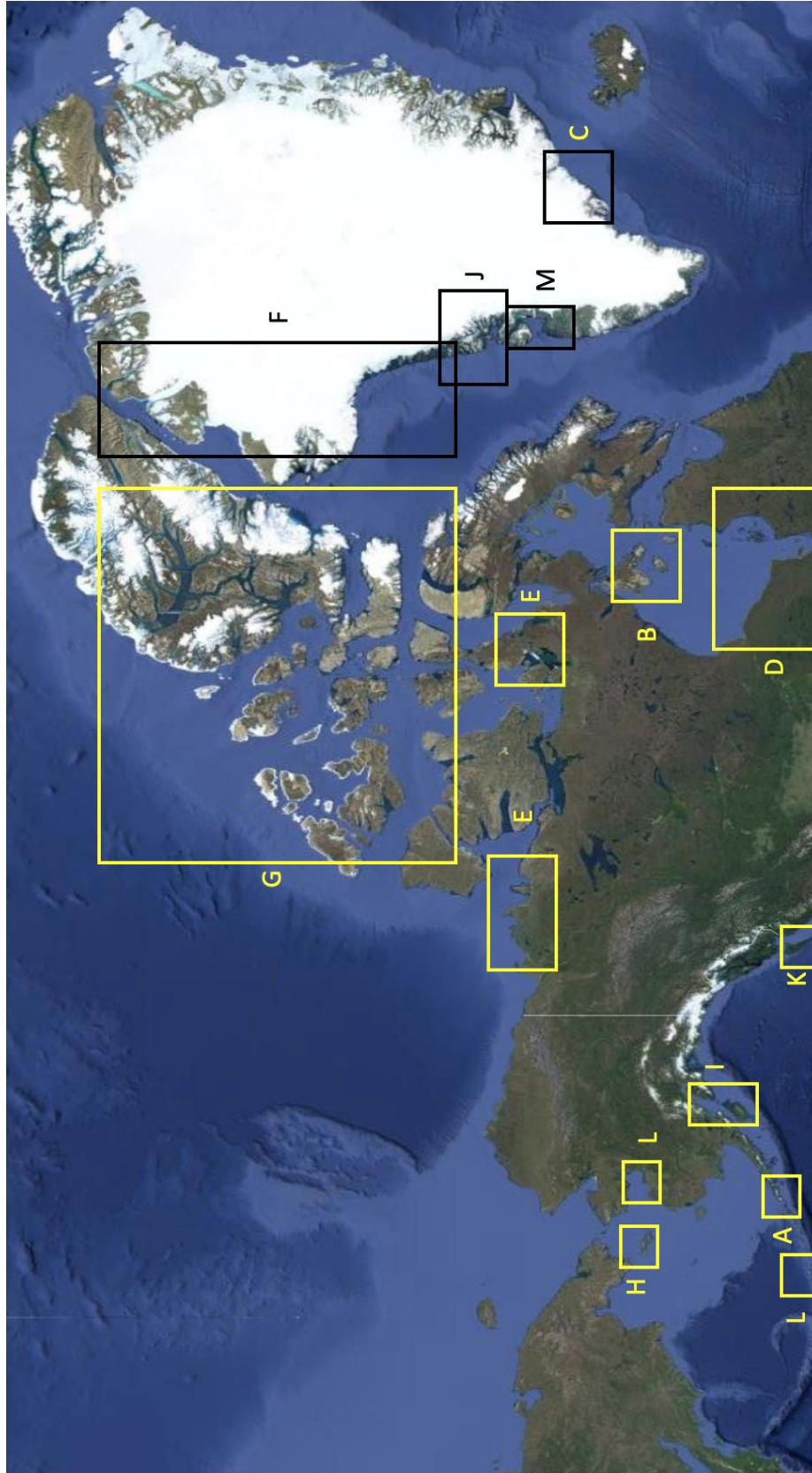
The remains came from 168 locales, placed into 15 samples, determined by their associated geographical location, see Appendix Table 1 and Appendix Table 2. Whilst some collections were combined to produce larger sample sizes, most were combined as they were from geographically close locations. There are two samples containing remains of unknown locations as only the country of origin is known (Canada or Greenland), therefore, no information is known. In the maps below, circles and squares indicate approximate area(s), as the precise location is unknown.

Many of the samples are undated, due to the collection methods. However, working with undated collections (human, material culture, or organic) is not unknown in studies relating to the Arctic/Sub-Arctic area (Ledger et al. 2016). Additionally, many Arctic/Sub-Arctic derived collections have not had many or in-depth studies conducted on them (Jensen 2009, 32). Further, reliable radiocarbon dates, and therefore chronologies, for the Thule period were still few (Friesen 2020; Norman et al. 2017; Ledger et al. 2016). Also, the unknown time periods and locations were hindrances; therefore, as recommended by Utermohle (1984, 55), the data were pooled to create a larger dataset, as has been done elsewhere (Pardoe and Durband 2017, 212; Larsen 1985). An analytical approach is to combine samples if they derive from the same ecogeography (Barnard 2019, 1; Littleton 2018; Merbs 2018, 302, 1968; Weyrich et al. 2017; Szathmáry

2015; Jordan and Cummings 2014, 36; Kelly 2013, 2; Fiorenza et al. 2011b; Oxenham and Matsumura 2008; Kantner 2004, 9; Cunningham 2003; Moss 1999; Scott and Turner 1997, 269; Webb 1995, 1; Morehouse 1981, 3; Lee and DeVore 1968, 5; Laughlin 1963; Sinclair 1953; However, see Turner 1967), and problems may arise from the short time spent recording the sample (Page and French 2020). The samples containing only skull/post-cranial remains are listed in Table 4-3.

Table 4-3 Overview of skulls/post-cranial remains present

Sample	Skull	Post-cranial
Amaknak Island	X	
Canada Unknown	X	X
Coats Island	X	X
East Greenland	X	X
Greenland Unknown	X	X
Hudson Bay	X	X
North Alaska	X	X
North Greenland	X	
Nunavut	X	X
St Lawrence	X	
South Alaska	X	
South Greenland	X	
Vancouver Island	X	
West Aleutians	X	X
West Greenland	X	X



A=Amaknak Island, B=Coats Island, C=East Greenland, D=Hudson Bay, E=North Alaska, F=North Greenland, G=Nunavut, H=St. Lawrence, I=South Alaska, J=South Greenland, K=Vancouver Island, L=West Aleutians, M= West Greenland

Figure 4-1 Map – Overview

Note, the different colour in the boxes is to ensure the boxes are visible

Source: Google Earth

4.1 Alaska

Despite considerable amounts of skeletal and archaeological material known and collected, little has been published on populations from the Aleutian Islands, which here includes the Amaknak Island and West Aleutians populations (Herrera et al. 2014; Wilmerding and Hatfield 2012, 211; Davis and Knecht 2010; Veltre and Smith 2010; Corbett et al. 2008, 45-46; West et al. 2003; Maschner and Reedy-Maschner 2002, xi; Hinton 1982). Artefacts made of ground slate and iron are found across the Aleutian Islands from 1000 BP, coinciding with two morphologically and genetically distinct populations, the Neo-Aleut and Paleo-Aleut, and divergences in funerary practices between the East and West Aleutian Islands, as well as inter-personal violence (Hatfield 2010; Brennercoltrain et al. 2006; Hrdlička 1945, 581).

4.1.1 Amaknak Island and Area

Amaknak and Unalaska Islands are within the Aleutian Island chain, see Figure 4-2. The Amaknak Island remains, Figure 4-3 (where known) and Table 4-4, for the total MNI per site, were deposited in the AMNH by A. R. Cahn between 1944-46, along with surface finds of human remains (n =unknown). The precise location is not given, except that the individuals were from Amaknak or Unalaska Islands, and/or surrounding islands (Faunce 1945, 2020k). None have not been dated using scientific methods, however, they are thought to be pre-European contact (Faunce 1945). Cahn (1945a, 1945b) states all individuals analysed here were located in kitchen middens, and rarely in articulation.

The earliest known archaeological phase for the eastern Aleutians Island is the Early Anangula phase (9000-7000 Cal. BP) (Davis and Knecht 2010). More recent work on Amaknak and Unalaska Islands and the surrounding areas has shown impact from external cultures, and adaptations to environmental changes, including changes to fauna and sea levels (Knecht and Davis 2008). Habitation sites on Amaknak Island used whalebones for the main structure, with evidence from the Amaknak Bridge site indicating abandoned habitation sites were reused as refuse points, and occasionally as funerary interment sites (Cahn 1944; Knecht and Davis 2008). Food was consumed cooked, from the presence of cooking stones between 2840 $\pm$ 90 radiocarbon years before present (Knecht and Davis 2008). Overall, the Amaknak and Unalaska Islands display non-continuous occupation, based on archaeological evidence and radiocarbon dates, with sites with overlaying occupational layers between distinct cultures rare in this part of the Aleutians Island (David and Knecht 2010).

The material culture found by Cahn (Cahn 1944) include harpoons and fishhooks (undated), and within the dated Amaknak Bridge site (2590 $\pm$ 90 radiocarbon years before present) possible sewing needles from albatross bones were found. The material culture from Unalaska, as collected by Weyer during the 1928 Stoll-McCracken expedition included beads, clothing lamps and spear shafts (Weyer 1928). Whilst lithic culture includes the Arctic Small Tool tradition, which is absent from 3000 radiocarbon years before present

(Knecht and Davis 2008; Davis and Knecht 2005). Labrets have been found on Amaknak Island, including with the individuals here, possible being worn symmetrically, with smaller labrets possible being worn by subadults (Knecht and Davis 2008), and are recorded across the Aleutian Archipelago (De Laguna and Oetteking 1934, 205).

Overall, the Aleutian Islands are devoid of trees (Nelson 1900, 23), with the only foliage from shrubs, grasses, and flowers (Collins 1945, 2). As there was little flora, the fauna is mainly marine based, and includes seals, sea lions, whales, sea otters, fish, and molluscs; terrestrial fauna mainly encompasses birds (McCartney 1975, 81; Collins et al. 1945, 2). Two factors have been proposed regarding the ability of the Aleutian Islands to accommodate large populations; the proficiency of the Aleuts in hunting marine mammals, and the extensive fauna present across the islands (Collins et al. 1945, 2).

Table 4-4 Total individuals per location on Amaknak Island

All locations designated Site D are the same, the additional letters or numbers relate to the level the individuals were found.

Amaknak Island	Total individuals
Site Unspecified	23
Site A	5
Site B	11
Site D	15
Site D2	3
Site DD	9
Site DD1	1
Site DD2	1
Site DD3	1
Total	69

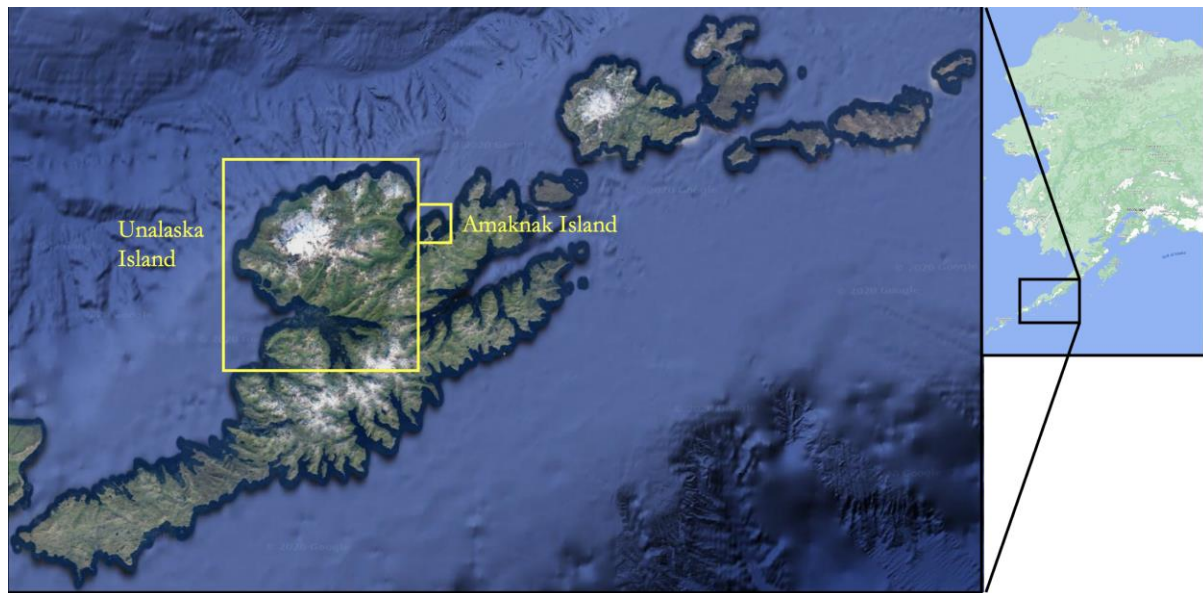


Figure 4-2 Map Amaknak and Unalaska Islands

Source: Google Earth and Google Maps

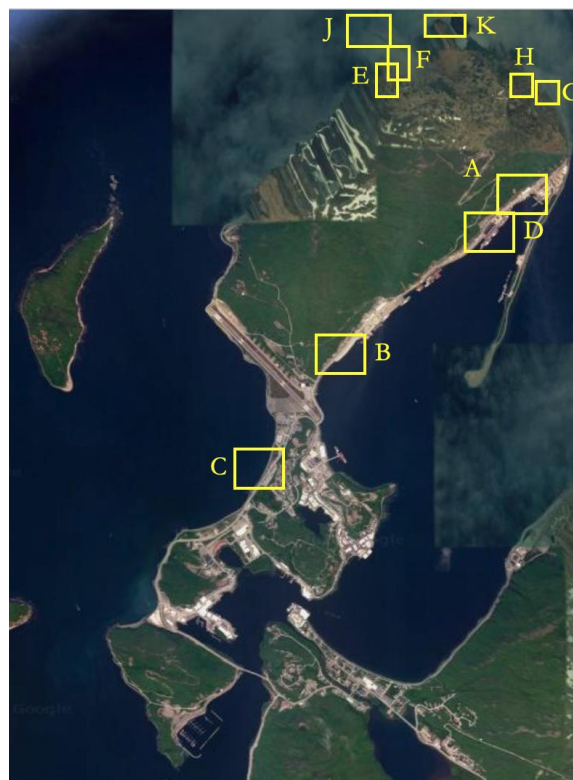


Figure 4-3 Amaknak Island - sites

Locations taken from AMNA (2020d)

All sites are shown, however not all contained human remains

Source: Google Earth

The minimum number of individuals (MNI) was 49, with the largest group the MA females and MA males, see Table 4-5. Subadults are represented, however only composed 8.1% of the sample. The indeterminate individuals number the same as the females $n=14$, but less than pooled females and probable females.

Table 4-5 MNI - Amaknak Island

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Sub-adults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						3	3
Later child						0	0
Subadult unknown						0	0
Adolescent	1	1	1	0	5	1	9
Young adult	3	0	0	1	2		6
Early middle adult	1	0	1	0	1		3
Later middle adult	3	0	3	0	2		8
Mature adult	6	2	3	3	2		16
Adult unknown	0	1	1	0	2		4
Subtotal	14	4	9	4	14	4	49

4.1.2 South Alaska

Cook Inlet and Kenai, Tanaina are situated only 12 miles apart (Vaudrin 1981, xvi – see Figure 4-5) whilst Kodiak and Sitkinak Islands are located offshore from Cook Inlet (see Figure 4-4) and form part of the Kodiak archipelago. The environment of the Cook Inlet area causes poor preservation of organic material, including bone (Townsend 1970), but the ecology of Cook Inlet supports beluga whale and salmonid fish (Howe et al. 2015; Loring et al. 2014).

The Tanaina area was first occupied during the Medieval Warm Period, approximately 1000 years ago (Razjigaeva et al. 2019; Sigman 2018, 54), and the Tanaina are known to have inhabited the Cook Inlet region prior to European contact (Townsend 1970). The historical Tanaina occupied the area surrounding Cook Inlet, including Iliamna Lake, and the Susitna River Valley, Kenai Peninsula, then relocated to Pedro

Bay (Vaudrin 1981, xv-xvi; Townsend and Townsend 1961). The first European contact occurred when Captain Cook explored the region (Townsend and Townsend 1961), whilst the Kodiak archipelago European contact occurred in the 18th century, by Russian fur traders (Findlay 1851, 436). However, there are very few archaeological records of Tanaina (Townsend 1963; Townsend and Townsend 1961), although contemporary ethnohistoric accounts exist (Osgood 1937; De Laguna and Oetteking 1934). Problems arise when studying Cook Inlet and surrounding areas, as several distinct populations inhabited the area, meaning it can be hard to assign individuals from unknown archaeological contexts into the correct culture or populations without material culture (Townsend 1970).

Although the ethnohistorical accounts are fleeting in nature, it is known that the Tanaina wore tailored clothing made from caribou or sheep skin (Vaudrin 1981, xxi; Osgood 1933), and wore lower labial labrets (Vaudrin 1981, xxii;), although De Laguna and Oetteking (1934, 109-112) found them associated with the cheek, from the Yukon Island sub-III, which is a stratigraphic layer, with unknown dates. Ethnohistoric accounts state Tanaina had multi-ranked social structures, with a developed trading system that was able to adapt to fur trade once Russian contact occurred (Townsend 1970). The complex social structure in the Kodiak archipelago has been attributed to ecological diversity and abundance, however the current view is climatic-linked fluctuations negatively affected the inhabitants (West 2009). Therefore, the Kodiak archipelago inhabitants, and surrounding areas which also saw ecological fluctuations, were apt at adapting subsistence strategies (West 2009).

Habitation sites were possibly hidden from view, as a form of protection from attacks from opposing groups, making identifying sites visually difficult, whilst other populations (identities not confirmed) built semi-subterranean habitation sites (Townsend 1970). As habitation sites (from all populations inhabiting the region) present evidence of fire (Townsend 1970), foodstuffs were likely cooked. Material culture associated with the Tanaina is similar to those populations from the surrounding area and includes harpoons and lamps (Townsend 1970).

The Iliamna Lake ecology has been described as a moderate-heavy coverage of forest, containing ash, birch, cottonwood, spruce, and willow (Vaudrin 1981, xvi), as well as supporting large terrestrial and marine mammals (Vaudrin 1981, xxiv; Osgood 1933). The local diet consisted of smoked fish and berries (Vaudrin 1981, xxiv, xxiv; De Laguna and Oetteking 1934, 13). Due to the variety of foodstuffs in close proximity to their dwellings, the Tanaina were considerably more sedentary than other populations in the area (Vaudrin 1981, xxiv-xxv).

Evidence of habitation for the Kodiak archipelago starts around 7500 Cal. BP, with socially complex HG societies and large habitation sites appearing between 3500 Cal. BP (the later portion of the Kachemak and Koniag phases), until the time of Russian contact (18th century AD) (West 2009). There is little published

information on Sitkinak Island, but due to its close proximity to Kodiak Island, the two are likely comparable. Artificial cranial deformations have been found on Kodiak Island, with slight-moderate lambdoidal flattening, with extent ranging from 15-93% (Emmick 2001, 15-16, 43, Scott 1991; Heathcote 1986, 97; Hrdlička 1944b, 35-42).

The Kodiak archipelago has limited terrestrial resources (Fitzhugh 2003, 68; Steffian et al. 2002). The inhabitants utilised marine resources, such as cod and salmon (Yesner 1989), although Crag Point in historical times was not located near salmon streams (Clark 1970). Due to the Kodiak archipelago's location, it is ice-free year-round, with reduced temperature fluctuations, resulting from the Alaskan Stream current (Fitzhugh 2003, 11-12). Archaeological evidence of fishing subsistence has been found throughout most of the occupation of the Kodiak archipelago, in the form of weirs, nets, and equipment for deep sea fishing (West 2009). Foodstuffs were preserved, and therefore consumed, via smoking (West 2009).

The Tanaina remains were collected in 1912, and the only reference to the Cook Inlet remains within the AMNH archive is in the initial purchasing document, stating one purchased individual from Cook Inlet (skeletal ID 221) (Cahn 1945a). One skull was acquired by Andrew Berg, who was known to store foodstuffs (sweets) in crania (Cassidy 2003, 209). It has been stated pre-European contact Tanaina cremated, then buried the deceased (Vaudrin 1981, xxix; Osgood 1933). As no burning was found on the Tanaina remains here, the practice may be post-European contact, or this individual is from a culture close-by to Tanaina, who could be mistaken archaeologically for Tanaina.

The MNI is 15, with the greatest numbers in the YA and later middle adult females, and YA and MA males, each composing 13.3% of the MNI, see Table 4-6. Subadults are represented, composing 6.6% of the MNI. The indeterminate group compose the smallest of the adult MNIs. The South Alaska sample represents one of the smaller samples.

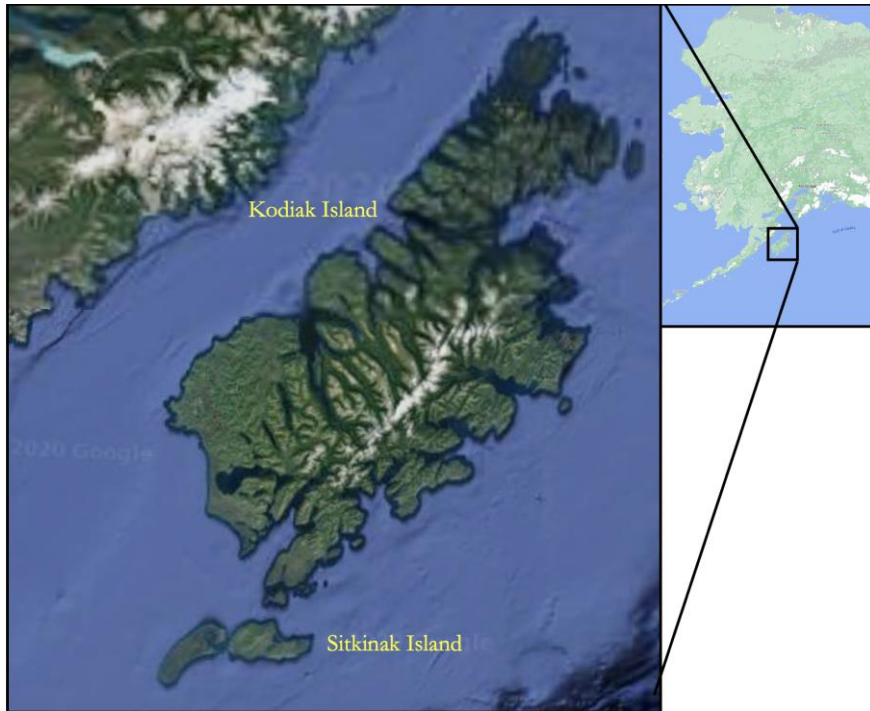


Figure 4-4 Kodiak and Sitkinak Islands

Source: Google Earth and Google Maps

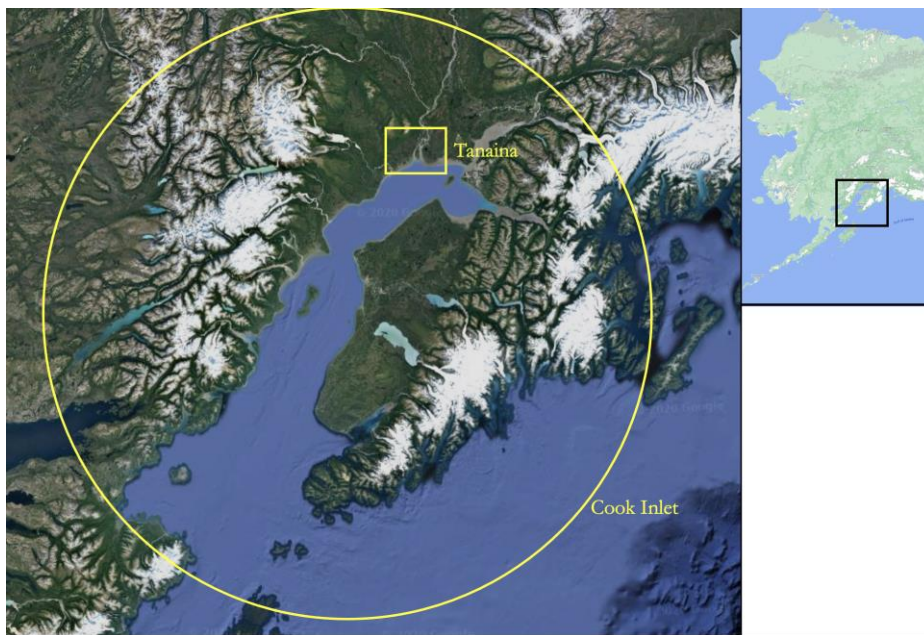


Figure 4-5 Map: Cook Inlet and Tanaina

Source: Google Earth and Google Maps

Table 4-6 MNI - South Alaska

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						0	0
Later child						0	0
Subadult unknown						0	0
Adolescent	0	0	0	0	0	1	1
Young adult	2	1	2	0	0		5
Early middle adult	0	0	1	0	1		2
Later middle adult	2	1	1	0	0		4
Mature adult	1	0	2	0	0		3
Adult unknown	0	0	0	0	0		0
Subtotal	5	2	6	0	1	1	15

4.1.3 St. Lawrence Island and Cape Chaplino

St. Lawrence Island is the largest of the Bering islands, and is situated 40 miles from Siberia, and 100 miles from mainland Alaska (see Figure 4-6). It is 100 miles long, by 20 miles wide (Collins 1937, 13). The interior is mountainous, areas of elevation have lichen, whilst lower elevation areas support grass, moss, and willows with the remainder having tundra and lakes (Collins 1937, 13). Fauna remaining year-round are Arctic fox, vole, ground squirrels, lemmings, and shrews (Collins 1937, 15). Polar bears frequent the island during winter, whilst summer sees an influx of migratory birds (Collins 1937, 15).

Most archaeological excavations on St. Lawrence Island are located along the coast, and show distinct habitations sites, with semi-subterranean winter sites, and above-ground summer sites (Hollowell 2006, 101; Geist 1936, 12). The permafrost affecting St. Lawrence Island results in good preservation of organic material, and largely material culture is made of ivory (Hollowell 2006, 101-103).

The earliest cultures and occupations of St. Lawrence Island date to 2000-2300 BP (Okvik and Old Bering Sea cultures), which bar a few occurrences on mainland Alaska, are cultural styles unique to St. Lawrence Island and the Russian coasts (Chukotkan) (Hollowell 2006, 101). Collins (1937, 246) states he did not locate any human remains dating to the Punuk or Old Bering Sea periods on St. Lawrence Island, as above ground burial led to taphonomic processes destroying the remains, but also states Gambell and eastern St. Lawrence contained numerous (n =unknown) crania from habitation sites and middens.

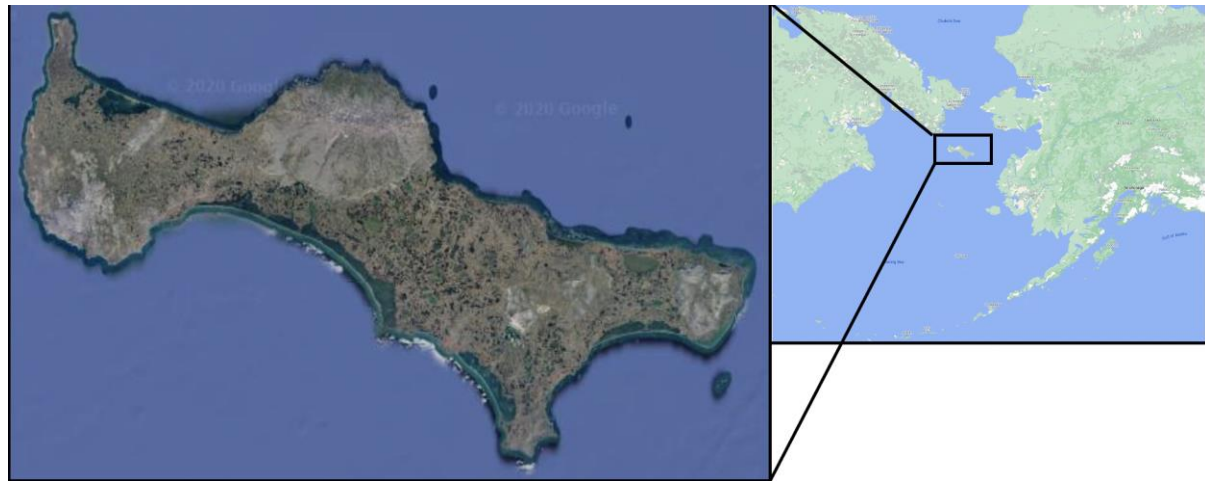


Figure 4-6 Map: St. Lawrence Island

Source: Google Earth and Google Maps

Indian Point is likely Cape Chaplin/Chaplino, in the extreme south-east of Russia, on the coast of the Bering Sea (64 ° 24' N., 172 ° 13' W.), see Figure 4-7. It is 39.7 miles from St. Lawrence Island (Callaway and Pilyasov 1993; Geist 1936, 1; Unnamed 1932, 71; Jackson 1900, 248). Cape Chaplino was deserted by 1954 when Novoye Chaplino was founded (Gruzdeva 2020; Callaway and Pilyasov 1993). There are ethnographic and linguistic studies for Novoye Chaplino (Gruzdeva 2020; Oparin 2012; Callaway and Pilyasov 1993), but few references to Cape Chaplino, except in relation to its closeness to St. Lawrence Island. The lack of references is likely from Cape Chaplino being used by illegal whalers, and as such few made written records of their time there, including interactions with any local inhabitants. Excavations have found a significant number of artefacts, including harpoon heads, arrowheads, sleds, and tools such as hammers and shovels (Rudenko 1961, 57-61).

Links still exist between the inhabitants of Novoye Chaplino and St. Lawrence Island, such as language (Gruzdeva 2020). Therefore, information on St. Lawrence Island is likely transferable to Cape Chaplino, and studies have shown cultural and genetic links between Siberian and Alaskan native populations (Raghavan et al. 2014; Csonka 2014, 10; Raghavan et al. 2014; Zimmerman 2012, 152; Tamm et al. 2007; Helgason et al. 2006). The St. Lawrence Island remains were deposited in the AMNH in 1901, by Waldemar

Bogoras during the Jesup North Pacific Expedition (Bogoras 1901), Both sites are undated. One individual was labelled Eskimo Siberia, with no specific location, and as such was placed here.

The MNI is 44, see Table 4-7 with the female and male adult unknown having the greatest proportion, at 13.6%. There are no subadults. The indeterminate group contain the smallest MNI of the adult groups, bar the probable female group, when the females/probable females and males/probable males are merged. When the sex classes are unmerged, it is probable males, as there are zero individuals in this group.

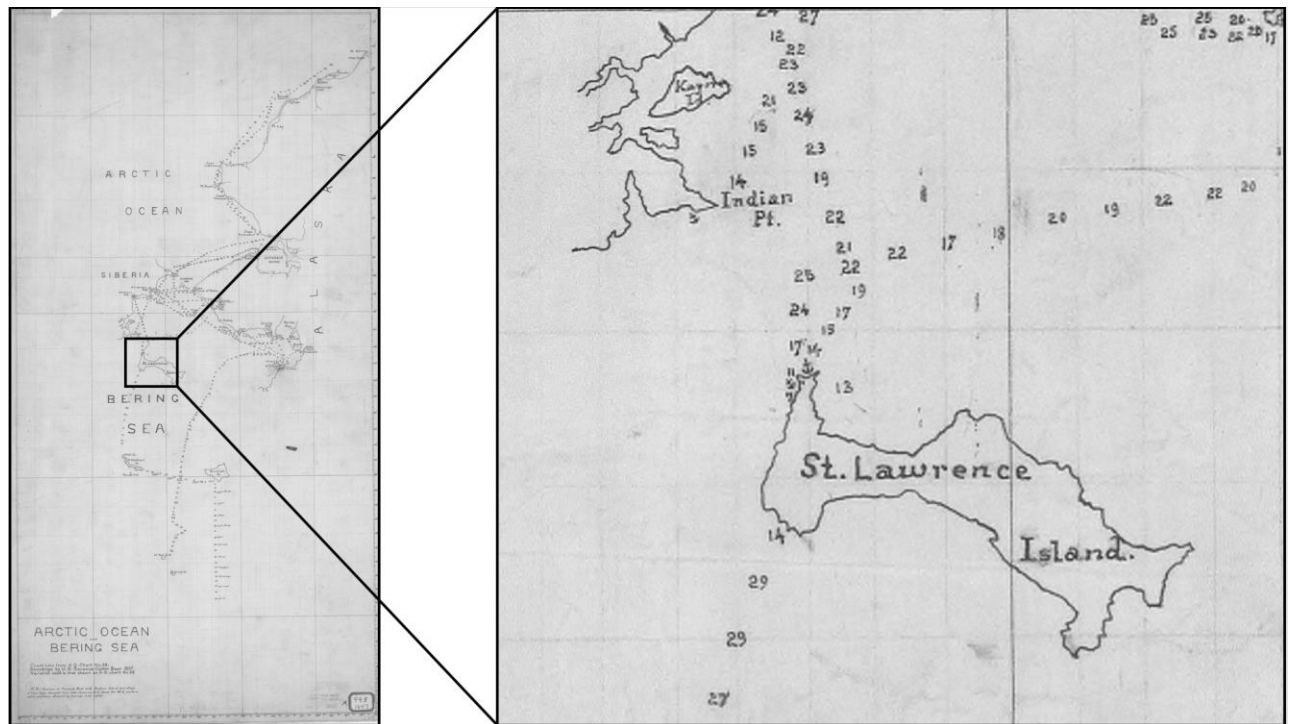


Figure 4-7 Cape Chaplino/Indian Point (1897)

Source: Map from NOAA's Office of Coast Survey Historical Map & Chart Collection

<https://historicalcharts.noaa.gov>

Alterations made by the current author (2020)

Table 4-7 MNI - St. Lawrence

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						0	0
Later child						0	0
Subadult unknown						0	0
Adolescent	1	0	0	0	0	0	0
Young adult	5	1	4	0	2		12
Early middle adult	2	0	1	0	0		3
Later middle adult	2	1	3	0	0		6
Mature adult	4	0	5	0	1		10
Adult unknown	6	0	6	0	0		12
Subtotal	20	2	19	0	3	0	44

4.1.4 West Aleutians, Aleutians Unknown and Nome

Port Clarence is located between 67.4-80 miles north of Nome, 15 miles in diameter (Collier et al. 1908, 43); Wales (Cape Prince of Wales) is situated 42.9 miles north of Port Clarence, both mainland protuberances (Kindle 1909), see Figure 4-8. Kiska Island is part of the Rat Islands group of Aleutian Islands, it is 25 miles long and 3 miles wide, see Figure 4-10 (Findlay 1851, 518). Shemya Island is 4.32 miles long and 2.73 miles wide, see Figure 4-11. Sledge Island is 0.92 miles wide and 1.74 miles long, see Figure 4-12, and is located 30 miles west of Cape Nome (Bockstoce 1979, 13). Attu Island is 35 mile long and 20 miles wide, see Figure 4-9. The individuals labelled only coming from the Aleutian Islands, and associated with Nome, have been merged here, to increase sample size.

More information has been published on the eastern Aleutians Islands and Kodiak Island (here relating to the Amaknak Island and South Alaska samples), possibly from a combination of being located closer to the mainland making travel easier, or from producing the earliest occupation ages for the Aleutian archipelago. Additionally, where excavations have taken place within the Western Aleutians, they focus on larger habitation sites, and therefore exclude other occupation evidence (Hatfield 2006, 18). Hatfield (2010) shows the Aleutian archipelago islands were not isolated, with trade and exchange, including cultures, travelling between the islands, causing inevitable variations in presence and adaptations.

Wales was ecologically richer, with superior marine resources and hunting than the surrounding areas, resulting in it being one of the most densely populated sites at the point of European contact, approximately 600 people (Richling 2012, 208-209). The historic and pre-European contact settlements of Wales were numerous, extending across the whole of Cape Prince of Wales (Harriett 2010). As Attu is close to Russia, it was one of the first Aleutian Islands where contact occurred, although there is little archaeological literature published on Attu Island. European contact occurred on Kiska Island (Map 9) in the mid-18th century (Findlay 1851, 518).

From the 1880s, Port Clarence became an important port, increasing interaction with locals and traders (VanStone 1976, 2), seen in the large material culture collection, The Bruce Collection of Eskimo Material Culture from Port Clarence, Alaska. The collection is extensive in number of items ($n=589$), however due to “inadequate storage” (VanStone 1976, 6), perhaps common at the time, they have deteriorated (VanStone 1976, 6).

Few excavations were conducted pre-1960s between the Cape of Prince Wales and Port Clarence area, although evidence suggests large habitation sites (Bockstoce 1979, 8). The Norton, Birnirk, and Thule cultures have been found at Cape of Prince Wales (Bockstoce 1979, 66). Few ethnohistorical or bioarchaeological reports exist for individuals from Port Clarence, however Harriman and Marriam (1931, 180) describe them as being tall and stout. The few ethnohistoric accounts for individuals from Wales report large, worn, teeth, discoloured from tobacco use, and rounded skulls (Thornton et al. 1931, 28), and labrets (lower labial) were restricted to males worn on each corner (Thornton et al. 1931, 32). Additionally, the ethnohistoric accounts show females engaged in PMDA for constructing boot soles from walrus hide, and when untying knots (Thornton et al. 1931, 28).

Sledge Island is unique as it is the closest area to Cape Nome with open water (Bockstoce 1979, 13), meaning Cape Nome inhabitants are likely to have interacted directly with Sledge Island inhabitants, if not have been the same population. Sledge Island marine mammalian fauna includes ringed bearded seals, with contemporary accounts stating the former were hunted in the winter, and the latter in the summer (Bockstoce 1979, 13). Additionally, during the 19th century Sledge Island was inhabited by large colonies of

walrus, with evidence of the fat being used in oil lamps, and the ivory to make harpoon heads (Bockstoce 1979, 13), and Shemya Island and surrounding sea support seals and walruses (Bockstoce 1979, 13). Port Clarence is one of the few areas where jasper and chert, used to produce tools, could be found (Bockstoce 1979, 98).

One of the earliest dates of occupation from Shemya Island is site ATU-061, dating to 3200 BP (Hatfield 2010; 2006, 135). Whilst Hatfield (2010, 2006) states the link between the East and West Aleutians appears fragmented between the Early Anangula phase, and 4780-4330±270 BP evidence from Shemya Island indicates some continued interactions with the East Aleutians. Uniquely Shemya Island contains the only known evidence of microblade technology within the Near Islands (Hatfield 2010).

The Shemya Island (Map 10) and Sledge Island remains were deposited with the AMNH in 1943 by H. B. Adriance but may have been collected in 1903 (Adriance 1943). No other information is known about them. The sample from Wales was excavated in 1926 in collaboration by C. M. Garber and D. Jenness (Richling 2012, 209). The location from which the remains were excavated was inhabited by the Iñupiat in two settlements (Richling 2012, 208).

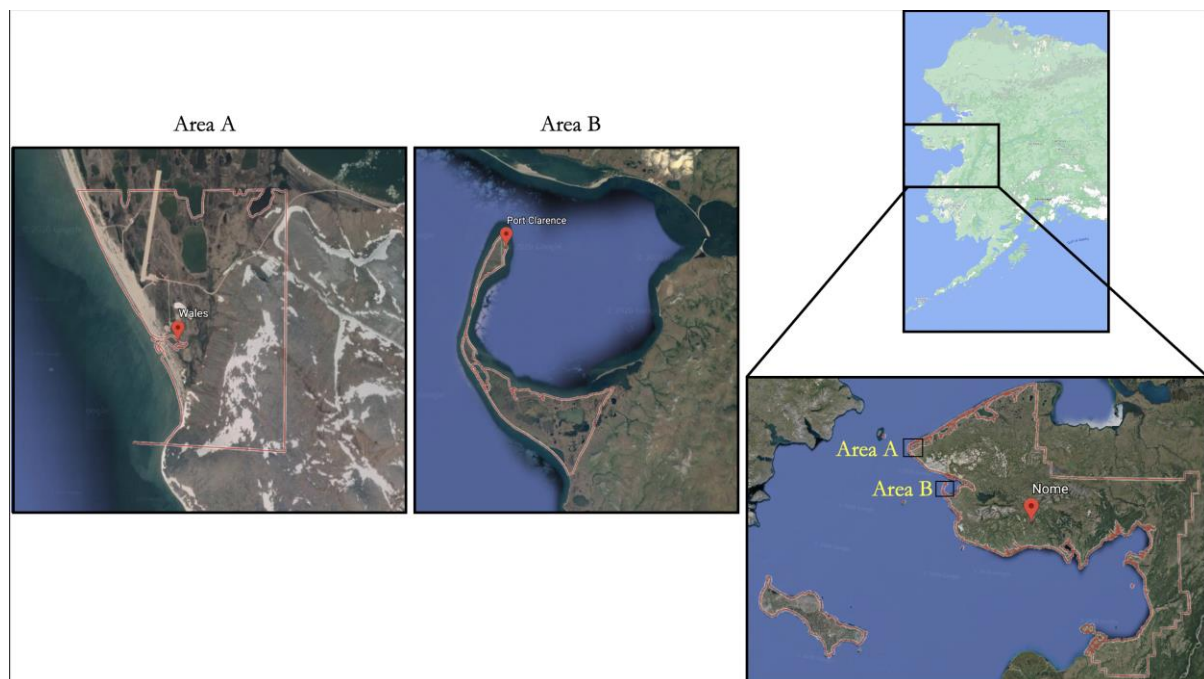


Figure 4-8 Map: Nome census area, including Port Clarence and Wales

Source: Google Earth and Google Maps



Figure 4-9 Map: Attu Island

Source: Google Earth and Google Maps

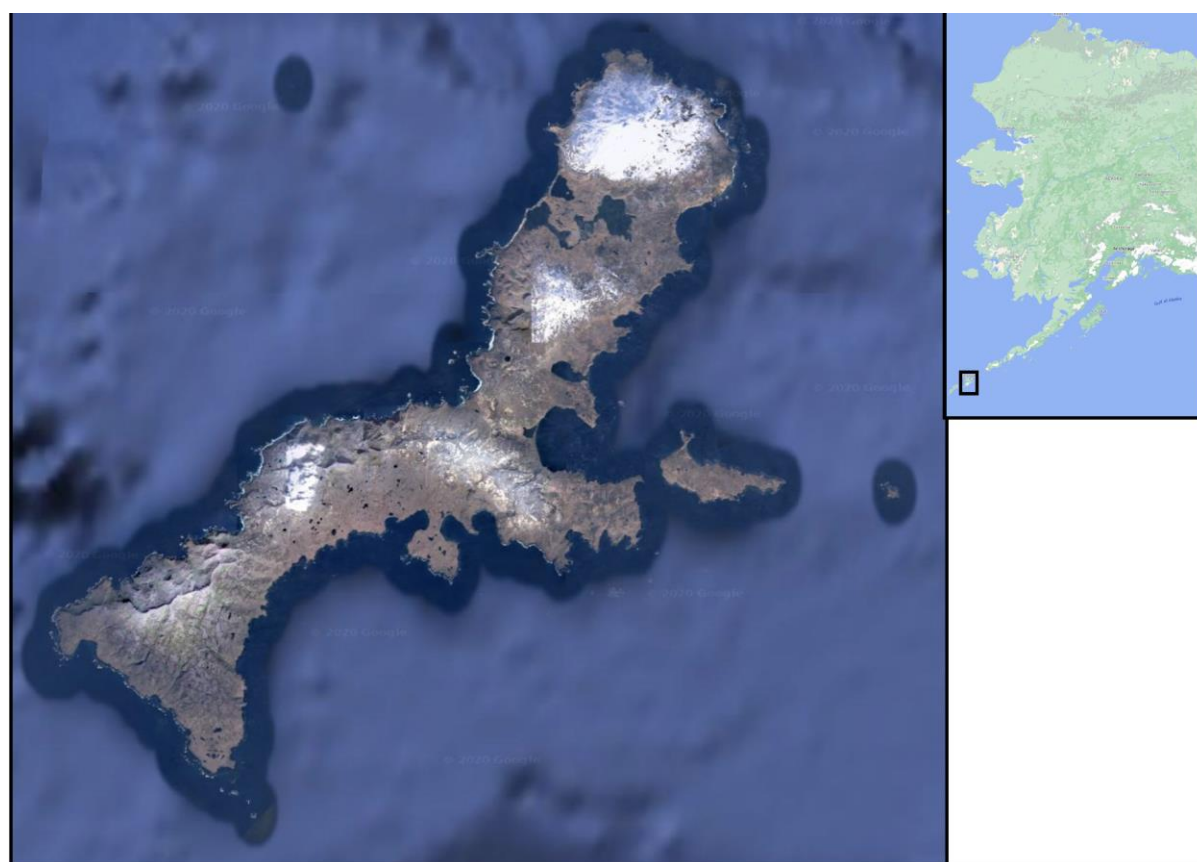


Figure 4-10 Map: Kiska Island

Source: Google Earth and Google Maps



Figure 4-11 Map: Shemya Island

Source: Google Earth and Google Maps

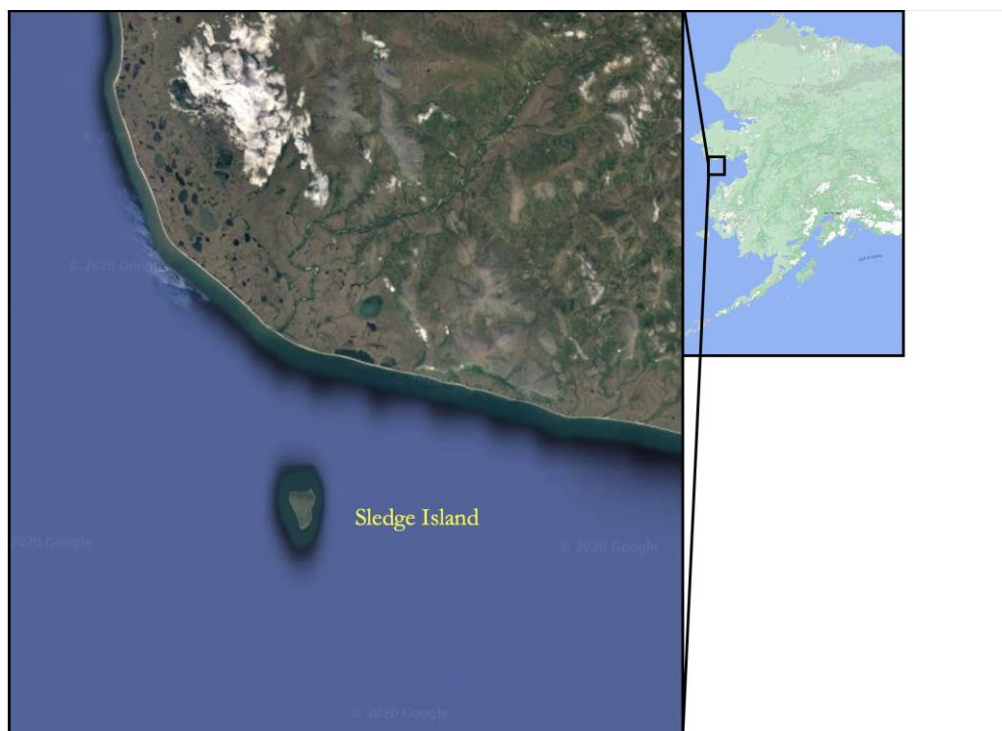


Figure 4-12 Map: Sledge Island

Source: Google Earth and Google Maps

The MNI is 47 see Table 4-8, with the largest groups later middle adult and MA males, at 12.7% each. Whilst subadults are represented, they comprise only 2.1%. Once the probable females and males had pooled within the females and males respectively, indeterminate have the smallest adult MNI.

Table 4-8 MNI - West Aleutians

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						0	0
Later child						0	0
Subadult unknown						0	0
Adolescent	0	3	1	0	3	1	8
Young adult	3	0	2	1	1		7
Early middle adult	0	0	2	0	1		3
Later middle adult	5	1	6	0	0		12
Mature adult	4	1	6	0	2		13
Adult unknown	2	0	1	1	0		4
Subtotal	14	5	18	2	7	1	47

4.1.5 North Alaska/Canada

Collinson Point is an island located off the coast of Northern Alaska, see Figure 4-13. The remains were collected by Frits Johansen in 1913 and deposited in the CMH in 1914. Ethnohistorical accounts state there were large numbers of individuals, based on the remains of dwellings (Jenness 1918). However, Jenness (1918) states there was no longer anyone residing there, as the inhabitants of Collinson Point were from other Alaskan locations (Jenness 1918).

There are very few reports (ethnohistoric/archaeological) on Collinson Point or Devon Island. Therefore, the description below centres on the Copper Inuit, themselves a part of the Central Inuit, related to

Collinson Point, and the Canadian High Arctic region and related peoples for Devon Island and South Somerset Island. Devon Island is located near Ellesmere Island (part of the Hudson Bay sample), and therefore accounts of these two populations are likely interchangeable to a degree. Croker Bay, Dundas Harbour, Fellfoot Point, and Porden Point Brook Village, Port Refuge, where Arctic fox, snow goose, long-tail duck, bearded seal, ringed seal, reindeer, auk and king eider were consumed (McGhee 1979, Table 1, 35), are located on Devon Island, and Qariaraqyuk, an abandoned site on South Somerset Island, see Figure 4-14, in the Canadian High Arctic region, with Dundas Harbour being abandoned (Le Mouel and Le Mouel 2002; Pringle 1997; Cook and Holland 1972; McGhee 1979; Polar Record 1952, 5). One individual has a location labelled Central Eskimo (now Central Inuit), referring to a large area in Northern Canada, rather than one group, therefore they have been placed here.

The material culture amongst the Copper Inuit is unique amongst most other Arctic/Sub-Arctic populations (Morrison 1987), with metal gained from the abandoned ship *HMS Investigator* in 1853, and the Coppermine River and Victoria Island, Northwest Territories (Wayman et al. 1985). Use of native copper for material culture extends back to possibly 3000 BP (Wayman et al. 1985).

Largely the Copper Inuit inhabited areas of tundra, extending to woodland, in an Arctic climate (VanStone 1994, 1). During the winter, ethnohistoric accounts show the Copper Inuit lived in snow-built habitation sites (VanStone 1994, 1), leaving no archaeological evidence, although, there is good preservation of material cultural objects in the region (Morrison 1987). Largely, the Copper Inuit subsisted on caribou and fish, with hunting implements such as bows and harpoons, and foodstuff was cooked (Alix 2016, 115; VanStone 1994, 1, 11). Contact with Europeans occurred in the 18th century, but the Copper Inuit remained largely unaffected, until intensive contact and transculturation occurred in the 19-20th centuries (Morrison 1987). The Canadian High Arctic region has a deep history of approximately 5000 years (O'Rourke 2017), however archaeological analyses only began approximately 60 years ago (Sutherland 2003).

Overall, Devon Island has had few human remains found, but evidence of Arctic Small Tool tradition have been found, and preservation conditions are described as excellent (Helmer and Kennedy 1986). Pre-Dorset (3800-3400 BP) material culture has been found in the Port Refuge area (Helmer and Kennedy 1986), whilst Independence, pre-Dorset (3800-3400 BP) and Late Dorset material culture has been found on Devon Island, illustrating the long occupation in this area.



Figure 4-13 Map: Collinson Point

Source: Google Earth and Google Maps

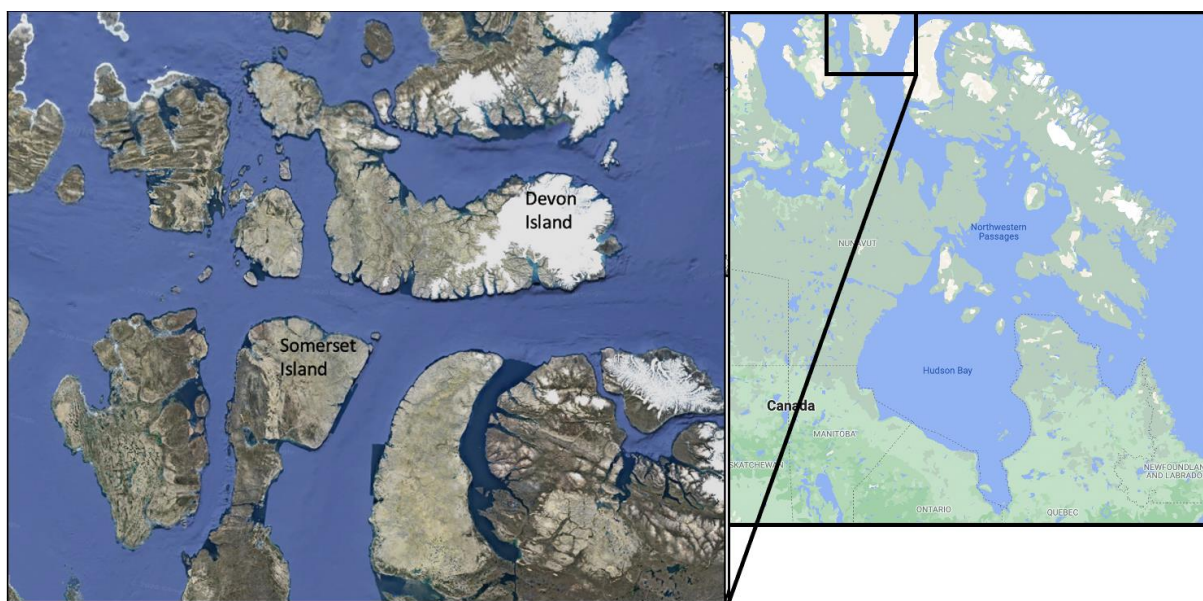


Figure 4-14 Map: Devon Island and Somerset Island

Source: Google Earth and Google Maps

The MNI is 19, see Table 4-9, with later middle adult males as the greatest 15.7%, and the subadults composing 10.5% ($n=2/19$). The indeterminate group do not contain any individuals. The North Alaska sample, similar to the East Greenland sample, represents one of the smaller samples, even though it is nearly twice as large.

Table 4-9 MNI - North Alaska

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						2	2
Later child						0	0
Subadult unknown						0	0
Adolescent	2	0	0	0	0	0	2
Young adult	2	0	1	1	0		4
Early middle adult	2	0	1	0	0		3
Later middle adult	1	0	3	0	0		4
Mature adult	0	0	2	1	0		3
Adult unknown	1	0	0	0	0		1
Subtotal	8	0	7	2	0	2	19

4.2 Canada

The samples from North Alaska, Hudson Bay, Nunavut, and West Greenland are all linked. Baffin Islands eastern Ellesmere, Labrador, Newfoundland, and West Greenland have similar ecological settings, supporting the same fauna, but dissimilar geographies, flora, and topographies (Fitzhugh 1985b, 24). The Labrador region contains forested areas (Roy et al. 2017). Therefore, although in many instances relating to these four samples there is little specific information, both archaeological and ethnohistorical, data on each may be transferable to the other.

4.2.1 Hudson Bay and Baffin Island, and Area

The Hudson Bay area is located the Sub-Arctic region, see Figure 4-15, and has had few archaeological analyses conducted (Hodgetts 2007). The AMNH Accession Record 1912-70, containing information on Pond Inlet (also called Mittimatalik/Mittima's Grave), is titled with Alaska, however, there does not appear

to be a Ponds Inlet in Alaska. Rather, Ponds Inlet is located north of Baffin Island. The discrepancy conforms to the information written on the boxes containing the remains which is 'Eskimo Ponds Inlet Baffin Bay', alongside an unsigned and undated note (AMNH Accession Record 1912-70), stating the skulls were collected in Ponds Inlet and Baffin Bay. Boas et al. (1907, 480) also collocate Ponds Inlet and Baffin Island. Igluikm Fury and Hecla Strait is not a landmass, but a sea channel located between Melville Peninsula (south) and Baffin Island (north), connecting Foxe Basin (east) and Gulf of Boothia (west), although it has seemingly been referenced as a physical location previously (Kroeber 1899, 277).

The region is difficult to analyse due to the size, and difficulty in identifying archaeological sites, however several sites are known in Baffin Island (ten Bruggencate et al. 2016). Variations in the Arctic Small Tool tradition are present throughout the Hudson Bay region, as populations adapted to each locale, one being the pre-Dorset culture, forming on southern Baffin Island (ten Bruggencate et al. 2016; Hodgetts 2007). The pre-Dorset period saw semi-sedentary lifestyles, a climatic shift to colder temperatures, with accompanying longer and more extreme winters saw the pre-Dorset develop into the Dorset period (2800–2500 BP), possibly with increased sedentarism, but this is not uniform (ten Bruggencate et al. 2016; Sutherland 2003). The Dorset period ended with the onset of the Medieval Warm Period (ten Bruggencate et al. 2016). The area was then populated by the immigrating Thule, which ended with the onset of the Little Ice Age, which saw the beginning of modern Inuit culture (ten Bruggencate et al. 2016). It is important to remember that the pre-Dorset and Inuit were genetically and culturally distinct populations (ten Bruggencate et al. 2016; Zságer 2010).

The area around Hudson Bay, and therefore the areas here, has been described as having abundant resources (Desjardins 2013), whilst Melville Peninsula is marshy. Both were traditionally inhabited by Thule and contemporary Inuit populations, with caribou the predominant terrestrial mammals subsisted upon (Desjardins 2013). Ethnohistoric accounts of Baffin Islanders found cultural links with West Greenlanders, as well as similarities in clothing between Baffin Island and Labrador populations (Hawkes 1916b, 2, 38). Ethnohistoric accounts from Belcher Island show changes in subadult responsibilities, occurring at 3-4 years-of-age (Parks 1998), whilst Guemple (1988, 134) states subadults are viewed as adults from near-birth. Similarly, there are variations in sex-based roles between subadult females and males, either female subadults were included in games designed to teach hunting techniques, or this was restricted to males (Parks 1998). The research highlights the divergent cultures present within each population.

The individuals and material culture were acquired by the AMNH expedition to Ponds Inlet and Baffin Bay in 1926 (Raven 1926), alongside remains from West Greenland (Ikirtok Fiord). The Pond Inlet remains appear to have been surface finds (Knowlton 1912). Those from Igloodik and Southampton Island were acquired by the AMNH from the Bartlett-Norcross expedition in 1933 (Pinder 1924) and consist of six skulls. The MNI is 326, Table 4-10, with YA females as the greatest 10.4%. Subadults compose 15.6%, with

the greatest being later child, 6.7%. Whilst the indeterminate group is greater than the probable females and males, once they were combined with the female and male groups respectively, the indeterminate group have the smallest MNI.

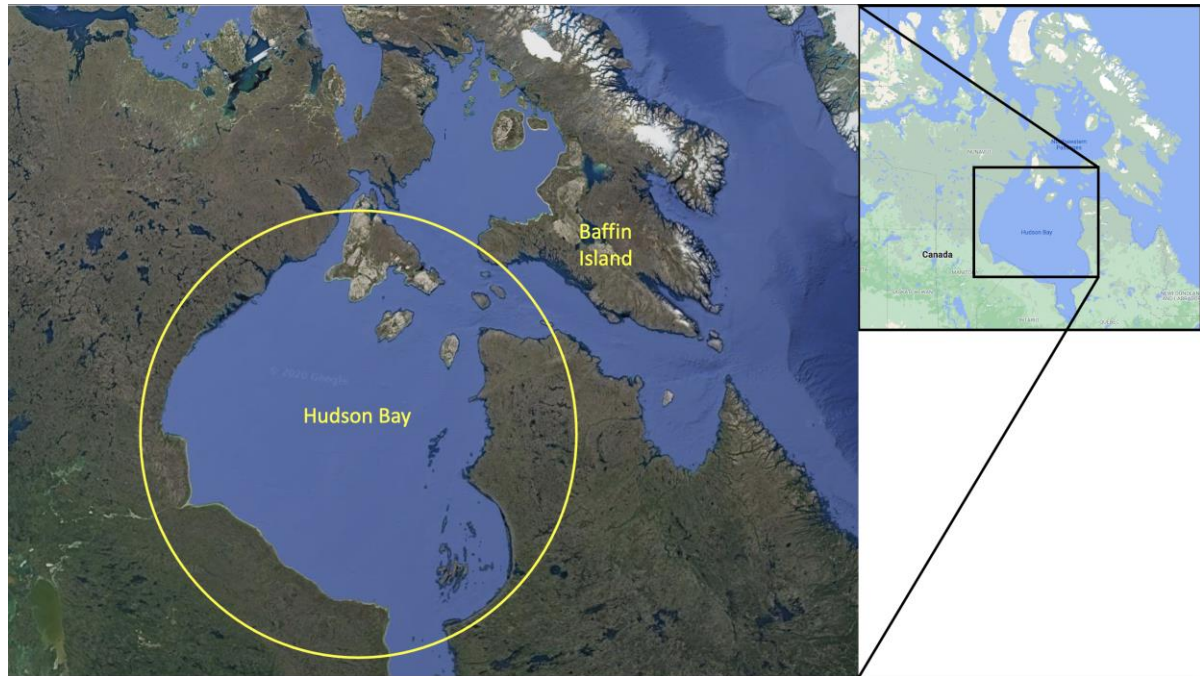


Figure 4-15 Map: Hudson Bay, Baffin Island and area

Source: Google Earth and Google Maps

Table 4-10 MNI - Hudson Bay

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						6	6
Late post-natal infant						6	6
Early child						10	10
Later child						22	22
Subadult unknown						1	1
Adolescent	13	8	5	1	6	6	39
Young adult	34	10	24	6	12		86
Early middle adult	17	2	15	2	4		40
Later middle adult	14	3	6	0	2		25
Mature adult	16	3	18	4	2		43
Adult unknown	14	5	12	6	11		48
Subtotal	108	31	80	19	37	51	326

4.2.2 Nunavut

Because of the depth of time this area has been inhabited, and its size, many areas have either not had any archaeological excavations conducted, or analyses have largely focused on the more recent periods (Friesen and Stewart 2004). Therefore, analyses are naturally more difficult. The Arctic Small Tool tradition has been found in the Nunavut region (Schledermann 1978), similar to the Hudson Bay and North Alaska samples. The Nunavut region, see Figure 4-16, is associated with the Kivallirmiut (Caribou Inuit), composed of several smaller groups, although the Kivallirmiut do not inhabit the entire Nunavut region (Friesen and Stewart 2004). The Kivallirmiut are near distinct in living inland year-round (Friesen and Stewart 2013). Individuals from Labrador are included in this sample, due to the proximity to Nunavut, as well as the small size of the Labrador sample. Labrador has been occupied since 7000 BP (Kaplan 1985, 45) with a multitude of culturally distinct populations.

Thule peoples migrated to Labrador between 1250-1300, after the area was already inhabited by Late Dorset peoples, with post-Norse contact occurring in 1587 (Fitzhugh 2016, 940-941). The contact, causing local near extinctions of marine mammals alongside the climatic effects of the Little Ice Age, resulted in

populations migrating to southern Labrador (Fitzhugh 2016, 941). Arendt (2010) and Kaplan (1985, 56) state that Labrador Inuit inhabited the Labrador between 1400-1900, although transculturation did not occur at the point of post-Norse contact with Moravian missionaries approximately 1770. Significant transculturation occurred between post-Norse contact and 1850, with the introduction of European tools and ceramics, and, affecting oral hygiene, tobacco, which in turn affected social structures as higher status now depended on access to European goods (Fitzhugh 2016, 941).

Within the Arctic portion Labrador, the paucity of inland resources meant populations largely lived in coastal zones, and similar to Hudson Bay population, terrestrial subsistence was predominately on caribou (Fitzhugh 2016, 940). Whilst areas such as Ungava are tundra (Fitzhugh 2016, 940). The Sub-Arctic region of Labrador had a much more reliable ecology, with the diet also containing more marine mammals (Fitzhugh 2016, 940). Berries (and thus fructose) were common in the Labrador area (1916b 34). Although references to Hopedale are few, a Moravian Mission was established there towards the end of the 18th century (Hawkes 1916b, 19). Populational decline in the Labrador area resulted from diseases (Hawkes 1916b, 20), but the area contains numerous habitation sites (Bird 1945, 128).

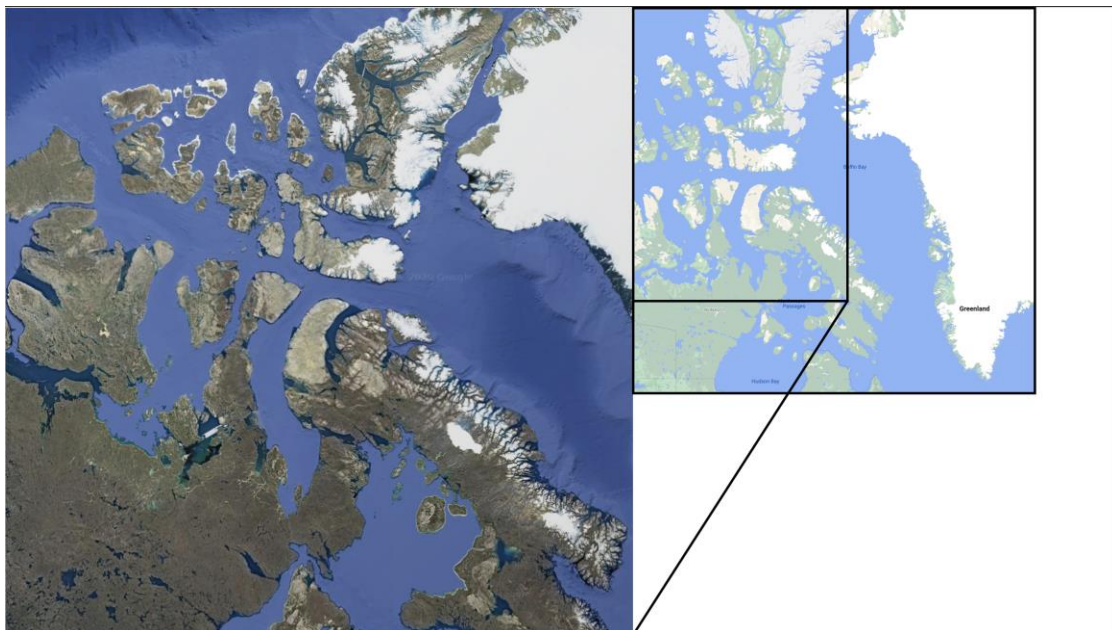


Figure 4-16 Map: Nunavut

Source: Google Earth and Google Maps

Climatically, Labrador, within the Arctic Circle, experiences short summers, and longer winters, but has a diverse ecology, including marine and terrestrial mammals and avifauna (Arendt 2010). As a result of the ecogeography of the Labrador region, settlements are found along the coastline, much like other Arctic habitation sites, with summer dwellings composed of animal skin tents (leaving no archaeological evidence) and stone subterranean dwellings during the winter (Arendt 2010). Clothing was predominantly made of caribou skin, which if PMDA were conducted, could have been the material affecting the dentition. Despite

human remains being found on the Melville Peninsula, the area has been described as uninhabitable (Kroeber 1899, 266). Ethnohistoric accounts state Labrador Inuit were exclusively coastal based (Hawkes 1916b, 14). The area of Hopedale maintained a large population of marine mammals with a mild climate, with contact occurring in 1500-1600s, based on archaeological excavations (Kaplan 1985, 50, 52-56).

Table 4-11 MNI – Nunavut

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						2	2
Early child						5	5
Later child						17	17
Subadult unknown						0	0
Adolescent	2	10	3	1	5	5	26
Young adult	21	4	17	9	14		65
Early middle adult	6	3	13	0	9		31
Later middle adult	5	2	10	3	1		21
Mature adult	6	1	11	3	5		26
Adult unknown	9	4	11	3	3		30
Subtotal	49	24	65	19	37	29	223

Kroeber (1899, 266, 272) states European contact with the Smith Sound populations, inhabiting the treeless Smith Sound area occurred in 1818, whilst no contact between the Smith Sound populations and those in Greenland occurred. Ethnohistoric accounts sound the Smith Sound populations were non-sedentary HG (Kroeber 1899, 266). They are distinct in that sex-based divisions of foodstuffs are recorded, with females consuming plant matter in the summer, and forbidden from consuming eggs, whilst for the males this is different (Kroeber 1899, 269). Marine mammals and avifauna were the most common foodstuffs consumed (Kroeber 1899, 269-270). The MNI is 223, see Table 4-11, YA females are the most common, comprising 9.4%. Subadults compose 13%, with later child the most frequent at 7.6%. Once the probable females and

males were pooled with the females and males, respectively, the indeterminate group contain the smallest MNI of the adult groups.

4.2.3 Canada Unknown

The Canada Unknown sample was collected/excavated from Canada, but no more precise location is known. The MNI is 33, see Table 4-12, YA of indeterminate sex is most frequent with 21.2%. Subadults are represented, with the most frequent group being later child with 12.1%. The largest group is the indeterminate, which is due to the fragmented nature of the individuals, occasionally represented by one tooth. Because indeterminate was the largest group, it resulted in few sex estimations being made, and the age based on wear and or root formation/development, if present. When wear was not present in the tooth, adult unknown was assigned.

Table 4-12 MNI - Canada Unknown

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						1	1
Early child						1	1
Later child						4	4
Subadult unknown						0	0
Adolescent	1	0	0	0	4	1	6
Young adult	1	0	1	0	7		9
Early middle adult	0	0	0	1	0		1
Later middle adult	1	1	1	0	3		6
Mature adult	0	1	0	0	1		2
Adult unknown	1	0	2	0	0		3
Subtotal	4	2	4	1	15	7	33

4.2.4 Vancouver Island and Area

The individuals composing the Vancouver Island and area are members of the Pacific Northwest Coast and are therefore not members of the Inuit peoples. The Vancouver Island sample have been retained because it makes a good comparative sample with the South Alaska sample. The comparative qualities are because, as with the South Alaska area, different populations from Vancouver Island and the surrounding areas had multiple types of cultural identifiers (Rorabaugh and Shantry 2016). Additionally, Vancouver Island and the surrounding areas have a diverse ecology, similar to the South Alaska area. The similarities in ecology relate to how diverse the ecologies were, and not similarities in the flora or fauna. Further, the two samples are from areas where the ethnographic HG populations, such as the Tanaina, were considered more sedentary (below) (Vaudrin 1981, xxiv-xxv).

Vancouver Island, see Figure 4-17, is 290 miles long and 62 miles wide (Findlay 1851, 390). European contact, although infrequent, occurred in the late 18th century (Findlay 1851, 389). The diet of the coastal based populations included shellfish, marine animals, seaweed, and terrestrial foodstuffs such as berries and venison (Findlay 1851 392). Read Island is located between Vancouver Island and the mainland, whilst Richardson Point has been difficult to locate, but could potentially be located in British Columbia, so has been placed here. Barkley Sound is located in West Vancouver Island (Rahn 2002, 16), with the Nuuchah-nulth First Nation People being composed of 18 distinct peoples across Vancouver Island and Olympic Peninsula, with excavations finding historic cave and rock shelter burials (Béland et al. 2018; Schulting and McMillan 1995).

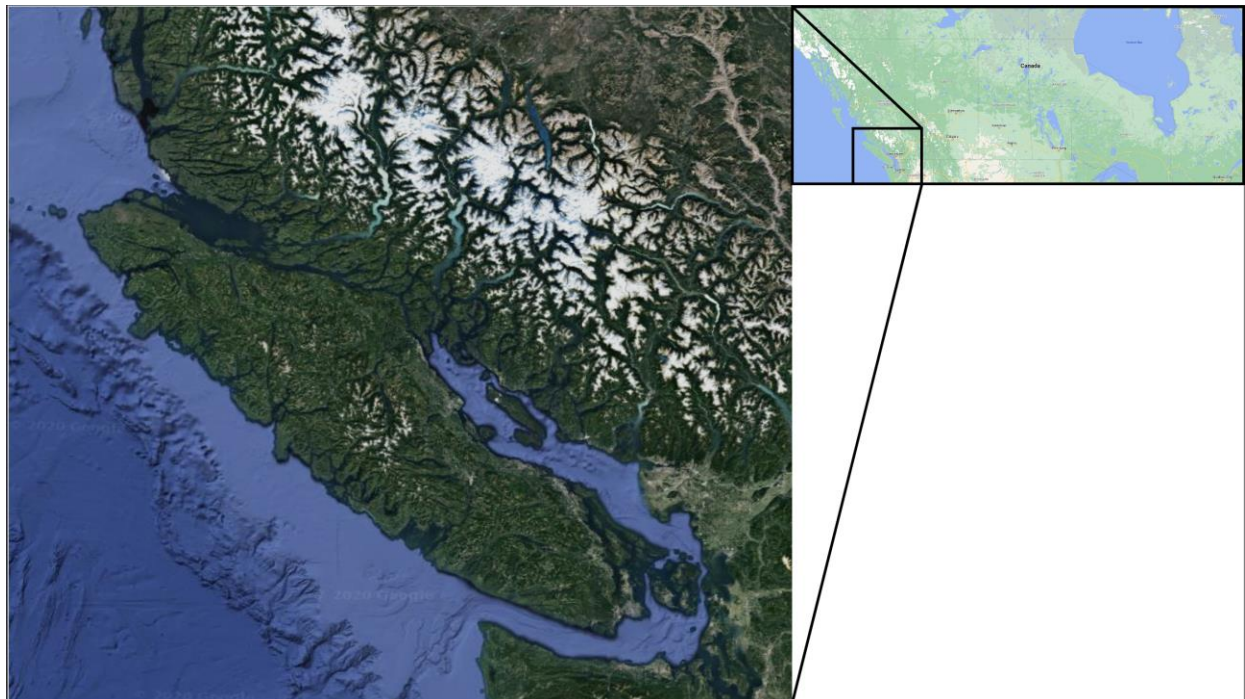


Figure 4-17 Vancouver Island

Source: Google Earth and Google Maps

Hinderances to the analysis are that archaeological studies did not begin in the area until the 1960s (Rahn 2002, 25), and as of 2011, the post-glacial period is under-studied (Mackie et al. 2011, 58). Archaeological surveys in the Barkley Sound area began in 1985 (Haggarty and Inglis 1986, 1985). Overall, however, little archaeological work has been conducted on Vancouver Island (Monks 2006). There is very little information on the Shushats from Barclay/Barkley Sound and no information on Stickeen. The Snuneymuxw are associated with the Nanaimo (one individual). The Ninkish First Nation People are located in Uchulta country, and in 1851 numbered 500 (Findlay 1851, 391). Artificial cranial deformations were observed here, but will not be discussed, as they are not pertinent to the study. Labrets and artificial cranial modifications have long been used in Vancouver Island (Rorabaugh and Shantry 2016). Evidence from Yuquot, Nootka Sound, shows habitation from 4200 BP, and shows cultural continuity, with minor adaptations to the toolkits (Rahn 2002, 25), but earlier sites may now be submerged (Mackie et al. 2011, 58).

Vancouver Island has a diverse ecogeography, including forested areas, which were utilised in making habitation sites, tools, and clothing (Rahn 2002, 19). The ecogeography supports varieties of berries (a source of fructose), such as salmonberry and salal, which do not occur in the areas of other samples, with marine mammals and fish (salmon and halibut) being the most frequently consumed. Overall, the inhabitants of Vancouver Island have been described as non-egalitarian, sedentary societies (McMillan et al. 2008), which differs from many, if not all, of the other populations here, and therefore would have experienced distinct cultures, life histories, and diets. These distinct features have been attributed to the abundance and range of foodstuffs, as well as advanced foodstuffs procurement and preservation techniques, although there is contention around the issues linking societal features, and adaptations and uses of ecogeographies (McMillan et al. 2008; Sassaman 2004; Rahn 2002, 24; Cannon 1998; Ames 1994). Dietary variation is present across Vancouver Island, such as with salmon, which had little availability in the west of the Island (McMillan et al. 2008). The MNI is 17, see Table 4-13, with the YA and early middle adult males, and later middle adult probable males each composing 11.7%. Subadults are represented with the early and late child, and adolescent, each at 5.8%. The YA females are the largest group, with 23.5%.

Table 4-13 MNI - Vancouver Island

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						1	1
Later child						1	1
Subadult unknown						0	0
Adolescent	0	0	1	0	0	1	2
Young Adult	4	0	2	0	0		6
Early middle adult	0	0	2	0	0		2
Later middle adult	1	0	1	2	1		5
Mature adult	0	0	0	0	0		0
Adult unknown	0	0	0	0	0		0
Subtotal	5	0	6	2	1	3	17

4.2.5 Coats Island, Frozen Strait, Southampton Island, Walrus Island

The individuals excavated from Southampton Island are frequently referred to as the Sadlermiut population, however as there are other smaller populations combined here, the label Coats Island will be used. The Sadlermiut, who have been studied elsewhere (Symchych 2016; Veniaminoff 1840) inhabited Coats, Southampton, and Walrus Islands (Ryan and Young 2013). Little ethnohistoric information is known, due to their solitary nature (Ryan and Young 2013), and they had been isolated for an extended (unknown) period of time (Lyon 1825, 56). European contact occurred in 1825 (Lyon 1825, 55-64), and was minimal, despite the surrounding area attracting whalers, as the area did not offer a protected harbour (Merbs 2018, 302). Figure 4-18 shows the three islands, as well as the locations where the remains were found. The Sadlermiut became extinct in the summer-autumn of 1902 when they contracted an unknown disease (Mathiassen 1927a, 268, 284), succumbing quickly as Mathiassen (1927a, 284) state the deceased were found where they had fallen. Unlike other catastrophic mortality events in the archaeological record, such as the Black Death (DeWitte 2014; DeWitte and Wood 2008), the Sadlermiut epidemic seems to have affected

the entire population indiscriminately, so includes a high proportion of subadults. Several excavations have taken place within the three islands. Mathiassen in 1922 who excavated at Kuk, Duke of York Bay (Mathiassen 1927), Collins in 1954-55 who excavated primarily at Native Point (Southampton Island) for the Dorset culture sites (Collins 1956, 1957), Taylor in 1956 to the Tunermiut site (Native Point) to analyse architecture (Taylor 1960), Clark in 1977 at Lake Site, Native Point (Clark 1980). Of the 36 graves excavated by Collins between 1954-1955, only 30 (containing 33 individuals) have information linked to them (Merbs 2018, 310). In 1959 135 burials (containing 143 individuals) were excavated in Tunermiut/Native Point (Merbs 2018, 310). Frozen Strait is an expanse of water, rather than a landmass, and is located south of Southampton Island, and north of Melville Peninsula, with the strait connecting Repulse Bay (west) and Foxe Basin (east).

The MNI is 249, see Table 4-14, with the YA females most frequent at 16%. Subadults are represented, with the unknown subadults being the commonest at 9.6%. The indeterminate group have the fewest individuals of the adults.

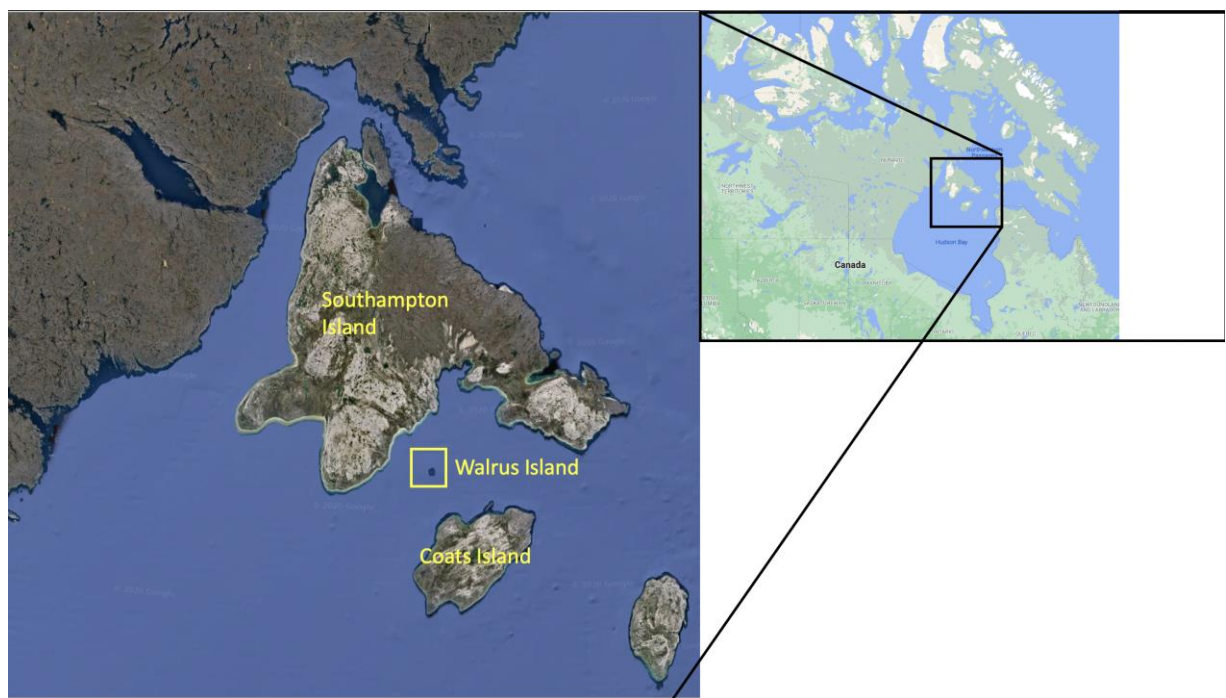


Figure 4-18 Coats Island, Southampton Island and Walrus Island

Source: Google Earth and Google Maps

Table 4-14 MNI - Coats Island

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						6	6
Late post-natal infant						21	21
Early child						15	15
Later child						13	13
Subadult unknown						24	24
Adolescent	7	6	4	0	4	6	27
Young adult	40	1	27	1	8		77
Early middle adult	8	2	12	2	5		29
Later middle adult	4	0	4	0	0		8
Mature adult	0	1	3	0	0		4
Adult unknown	10	8	4	1	2		25
Subtotal	69	18	54	4	19	85	249

4.3 Greenland

Similar to the Aleutian Islands, alongside a disproportionate number of excavations in certain parts of Greenland (e.g., West over East), many of the reports remain unpublished (Jensen 2009, 34; Darwent et al. 2007). Paleo-Eskimos arrived in Greenland approximately 4000 years ago, with the Dorset culture as the last Paleo-Eskimo culture in Greenland, which was superseded by the Thule culture 3000 years later; it is unknown how much interaction the cultures had (Gulløv and Appelt 2001, 154; Park 1998).

Concerning the UL collection, 17 individuals were collected by Brierley and Parsons (1906), but three crania are no longer within the UL collection. These are, using Brierley and Parsons (1906)'s crania numbers: 8, 11, 13. Brierley and Parsons (1906) state cranium 11 was sent to St. Thomas' Hospital, however, there is no record of cranium 11 at St. Thomas' Hospital. The remaining 4 individuals who were not collected by Brierley and Parsons (1906) are 6-Sam94, 54-Sam66, 13-Aa.113M and 45-Sam58, II. Individuals 13-Aa.113M and 45-Sam58, II have a known location of Greenland, although this is the only known

information. Brierley and Parsons (1906) estimated female sex for individual 37-Aa.113F, approximately 10.5-11.5 years-of-age (between late child and adolescent categories). As sexually dimorphic characteristics have not appeared at this age no sex estimation for individual 37-Aa.113F is used here. Individuals 6-Sam94 and 54-Sam66 are of an undocumented origin. Individual 6-Sam94 appears to be an anatomical specimen, due to the screws present on either side of the frontal. The maxilla has been removed, leaving a ragged surface. The researcher has included individuals 13-Aa.113M and 45-Sam58, II due to their documentation of Greenlandic origin. Individual 6-Sam94 does not contain any alveolar bone or dentition, so was removed from the analysis portion of the study.

Concerning the aforementioned assignment of cranial numbers by Brierley and Parsons (1906) based on the order the individuals were collected, two individuals have been allocated with cranial number 15 (11-Aa.113M and 56-Aa.113M). Based on the descriptions given in Brierley and Parsons (1906), it is individual 56-Aa.113M. Although Brierley and Parsons (1906) state there were three teeth present at the time of collection (13, 16 and 26), only two remain at the time of analysis (2019). The author has been able to re-designate one of UL's Greenlandic crania to the correct Brierley and Parsons (1906) cranial number. Based on descriptions in Brierley and Parsons (1906), of a completely destroyed splanchnocranium with a single right supra-orbital foramen and a left double supra-orbital foramen, in addition to the matching skeletal ID given to all Brierley and Parsons (1906) (e.g., Aa.113), individual 16-Aa.113F is Brierley and Parsons (1906) skull 6. Brierley and Parsons (1906) assigned this individual to be male, 20-30-years-old.

Comparably, the DL portion of this study lack's location certainty for two individuals. The information on the joint curation box for individuals, NA 112, and NA 113 states they are from Ungava Bay (which is located in Canada) as well as stating Greenland. NA 112 and NA 113 appear to have originated from the same collection, as NA 112 has been assigned to "Skeleton A", whilst NA 113 has been assigned "Skeleton B". Individuals NA 112 and NA 113 have been placed with the other individuals from Ungava Bay, as this is a more precise locale than the more general "Greenland". Therefore, whilst the DL portion of the sample has a resolved issue of locale, the UL portion of the sample has two categories; confirmed Greenlandic, and unconfirmed Greenlandic. The confirmed Greenlandic are those collected by Brierley and Parsons (1906), whilst the unconfirmed are those who lack such recorded provenance. Across the Greenlandic sites here, there is little evidence of burning, indicating raw/frozen/dried food consumption (Darwent and Foin 2010; Wood 1992, 43; Cruwys 1988; Booyens et al. 1986; Cheshire et al. 1980; Parry 1840, 264; Black 1977; Burks et al. 1976; Larsen and Rainey 1948, 23; Parry 1840, 264). However, Gulløv (2016, 905-906) state Greenlanders consumed greater amounts of cooked food, due to driftwood.

4.3.1 East Greenland

There are some published data on East Greenland geology and ecology, owing to Cambridge Expedition to East Greenland of 1926 (Wordie et al. 1927), but very few direct references to any human remains. Little information is known about this population. Eleonoren Bay is located on the north bank of Franz Josef Fjord (Wordie and Whittard 1930; Wordie et al. 1927; Greeley 1888, 698), see Figure 4-19. The information provided by DL states the remains from Eleonoren Bay were collected in 1929 by L.C.G. Clarke and J. M. Wordie; the only reference the researcher has found to Clarke and Wordie retrieving any human remains is the 1926 Cambridge Expedition to East Greenland (Wordie et al. 1927), stating from East Greenland both 5 and 6 individuals were collected (Wordie et al. 1927). Wordie et al. (1927) states four crania and two complete skeletons (p.263) and 4 crania and one complete skeleton (p.260). Potentially, the remains referred to in Wordie et al. (1927) can be identified within the DL, being NA 131 (East), NA 121 (Eleonoren Bay) and NA 130 (Greenland), although this is postulation by the present researcher. They were part of 12 graves, but it is not stated why only 5 individuals were taken (Wordie et al. 1927). The area where they were found also contained 66 habitat sites (Wordie et al. 1927).

Evidence of Paleo-Eskimos and Thule cultures have been found in East Greenland, with the length of occupation ranging from less than a few hundred years, to several thousand years (Grønnow et al. 2011). Thule subsistence strategies utilised both marine and terrestrial mammals (Grønnow et al. 2011). In east Greenland, ethnohistoric accounts show Pinnipeds and *Ursus maritimus* (Glahder 1995, 27; Robert-Lamblin 1986, 152, 107) were consumed. The only known contact between the Thule and Europeans was in 1823 (Grønnow et al. 2011). For Tasiilaq, Mathiassen (1930) states there is little archaeological information for this area (and West Greenland). Although it has been over 90 years since publication, the current researcher has found few publications regarding this area, although some ethnohistoric sources exist (Boesen et al. 1976). European contact occurred in 1884, with the establishment of a Danish trading station (Pedersen 1947). Pedersen (1947) states all contemporary eastern populations lived around Tasiilaq and Ittoqqortoormiit, see Figure 4-20. The ecogeographic and climatic restrictions which prevented European contact from occurring at the same time (or similar) to other parts of Greenland, also resulted in far fewer archaeological, ethnohistorical or anthropological analyses being conducted, compared to other regions, such as West Greenland. The MNI is 10, see Table 4-15, with YA females as the most frequent with 40%. Subadults are not represented. The East Greenland sample represents one of the smaller samples.

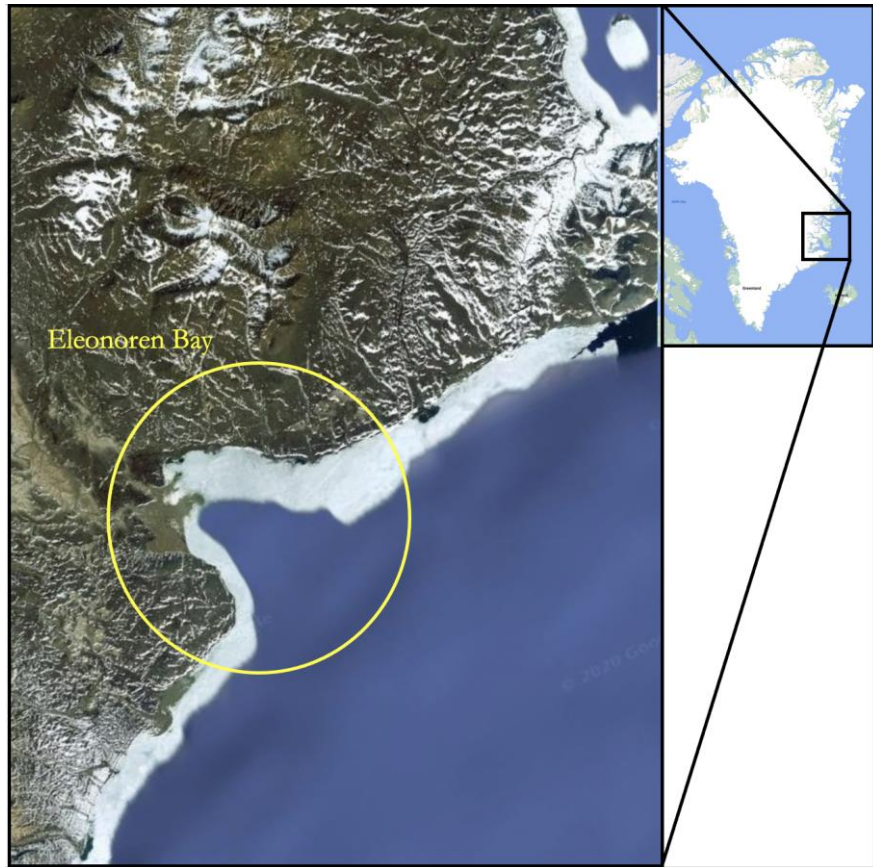


Figure 4-19 Map: Eleonoren Bay

Source: Google Earth and Google Maps

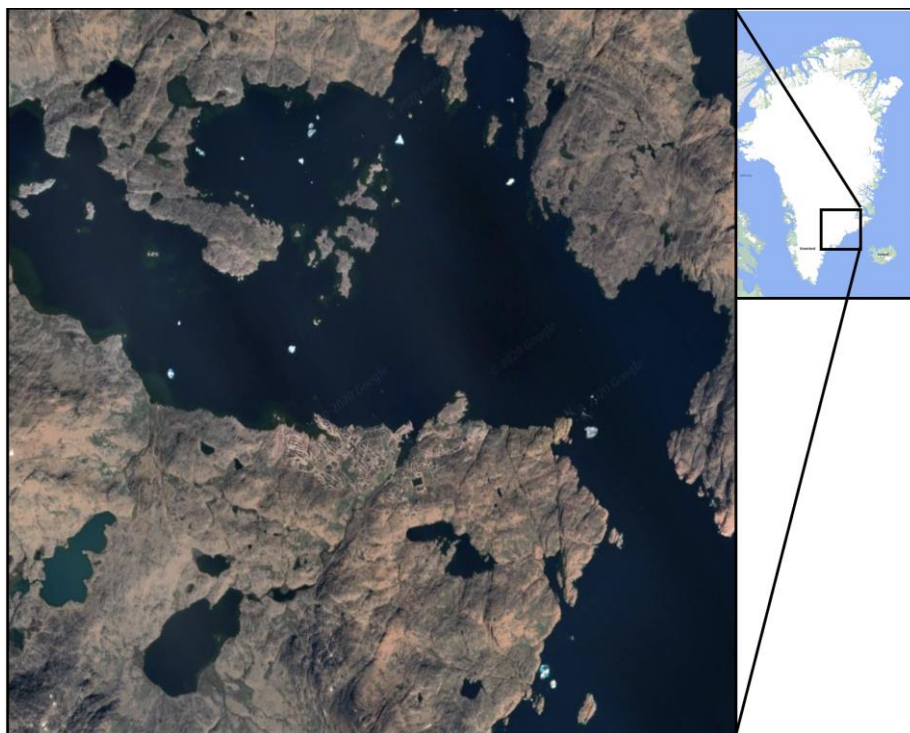


Figure 4-20 Map: Tasiilaq

Source: Google Earth and Google Maps

Source: Google Earth and Google Maps

Table 4-15 MNI - East Greenland

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						0	0
Later child						0	0
Subadult unknown						0	0
Adolescent	1	0	0	0	0	0	0
Young adult	4	0	0	0	0		4
Early middle adult	1	0	1	0	0		2
Later middle adult	1	0	0	1	0		2
Mature adult	0	0	0	0	0		0
Adult unknown	0	0	1	0	0		1
Subtotal	7	0	2	1	0	0	10

4.3.2 South Greenland

Most literature about the South Greenland area, including Sisimiut (formally Holstensborg Fiord and Holstensborg), concerns climate change, similarly, there are few references to Eqaluit, although the area is known to sustain trees (Elkington and Jones 1974). There is evidence of the Saqqaq culture from the Sisimiut area (Gotfredsen and Møbjerg 2004, 24), and Dorset and Thule cultures from across South Greenland (Gulløv 1995). The Sisimiut area was likely inhabited because it maintains a large coastal ice-free area (Møbjerg 1999). During the 20th century, Sisimiut was an important locale for Europeans (Hobbs

1926). Sisimiut, see Figure 4-21, had at the time of collection been uninhabited since 1857 (Thuesen 1999; Brierley and Parsons 1906), giving a tentative date to the remains.

The Sisimiut ecogeography supports seal, whales, and avifauna, and contained shrubs and some trees (Bennike et al. 2011; Gotfredsen and Møbjerg 2004, 18-19). Subsistence was from marine and terrestrial mammals (predominately seals and caribou), and avifauna (Møbjerg 1999). The MNI is 10, see Table 4-16, with the YA females being the greatest proportion at 30%. Subadults are not represented. Once the probable females and males were pooled with the females and males respectively, the indeterminate group have the smallest adult MNI. The South Greenland sample represents one of the smaller samples.



Figure 4-21 Map: Sisimiut

Source: Google Earth and Google Maps

Table 4-16 MNI - South Greenland

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						0	0
Later child						0	0
Subadult unknown						0	0
Adolescent	0	0	0	0	0	0	0
Young adult	3	1	2	1	0		7
Early middle adult	0	0	0	0	0		0
Later middle adult	0	0	0	0	0		0
Mature adult	1	0	1	0	0		2
Adult unknown	0	0	0	0	1		1
Subtotal	4	1	3	1	1	0	10

4.3.3 West Greenland

Ikerasak is 40 km south-eastward of Umanak (NB this is not Ummannaq, which pre-1973 could be spelt Umanak/Ũmánaq/ Umanaq) (Bangsted 1928; Brierley and Parsons 1906; Rink and Brown 1877, 352), see Figure 4-22. There was a settlement at Umanak during the 20th Century (Seward 1922, 89), although no individuals within the present analysis appear to have been recovered from here. There are very few references to Ikertok, other than relating to minerals (Giesecke 1832, 14). Archaeological excavations were conducted in the Ilulissat area in the 19th century, where evidence of the Paleo-Eskimo culture was found, in addition to Disko Bay (Jensen 2009, 32). Ethnohistoric accounts state Western Greenlanders were emigrant hunters (marine animals and caribou) (Grønnow 2009; Crantz 1820, 13).

For Oqaatsut and Ilulissat, due to calligraphy on the curation box, there is uncertainty with the locations, given as Rode Bay (now Oqaatsut), and North of Jacobshaven (now Ilulissat) (Barr 2012). On maps, Rode Bay is shown as Rodebay (Jensen 2009, 14, Fig. 2.1). There is little information on Oqaatsut or Ilulissat, but

it was founded in 1741 (Crantz 1820, 14). Qasigiannguut was founded by Jacob Severin in 1734 (Gulløv 1985, 80; Brierley and Parsons 1906; Crantz 1820, 13). Brierley and Parsons (1906) state the remains from Qasigiannguut were collected from a habitation site located close-by, which was abandoned when the population was relocated to Qasigiannguut in 1734. A tentative date is therefore pre-1734.

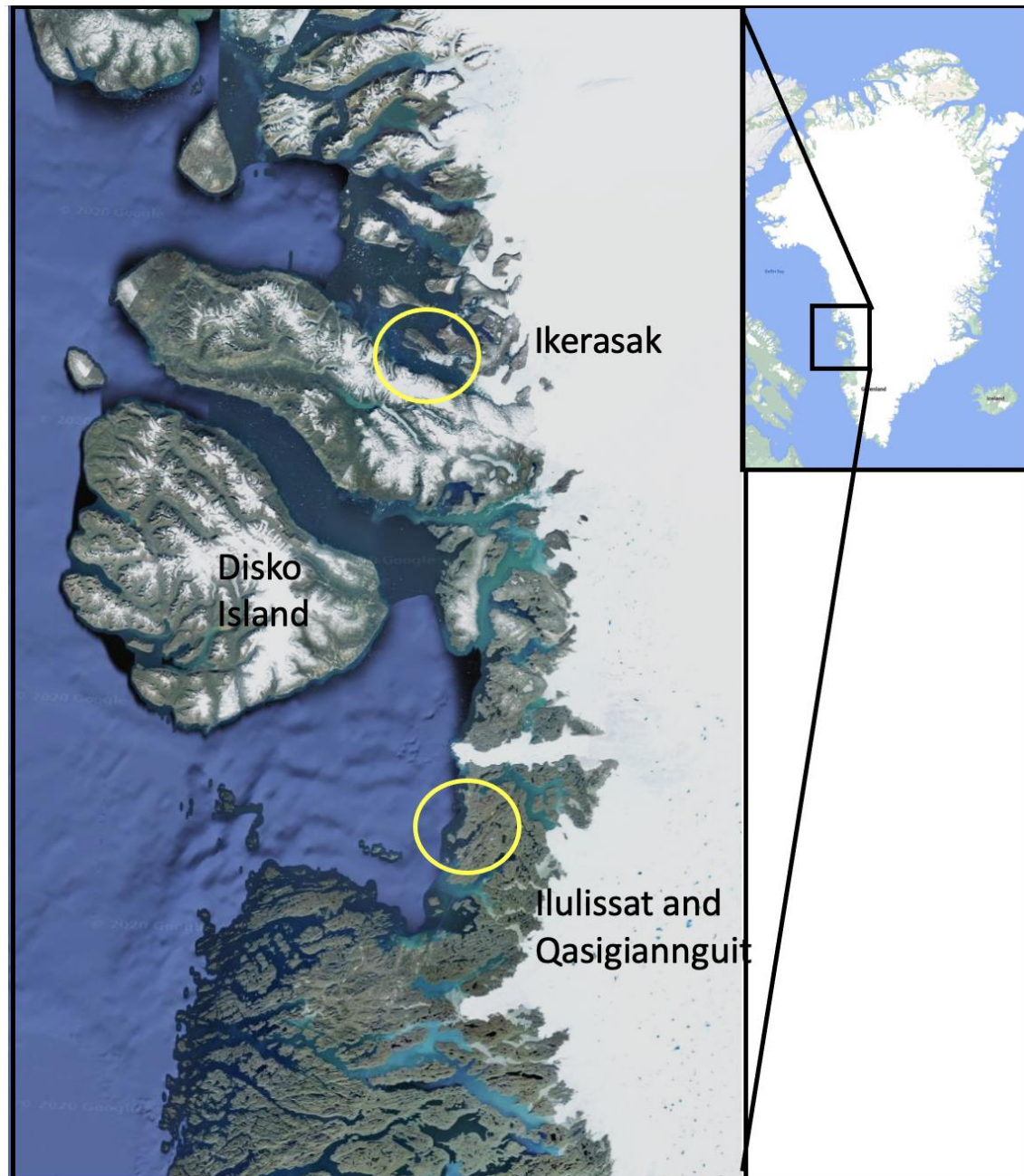


Figure 4-22 Map: West Greenland

Source: Google Earth and Google Maps

The MNI is 18, see Table 4-17, YA and early middle adult females, later middle adult males, and MA and adults unknown with indeterminate sex, are most common at 11.1%. Subadults are represented, with later child as the only age class present, at 5.5%. Once the probable females and males had pooled within the

females and males respectively, indeterminate have the smallest adult MNI. The West Greenland sample represents one of the smaller samples.

Table 4-17 MNI - West Greenland

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						0	0
Later child						1	1
Subadult unknown						0	0
Adolescent	0	0	0	1	0	0	1
Young adult	2	0	1	0	0		3
Early middle adult	2	0	1	0	0		3
Later middle adult	0	1	2	1	0		4
Mature adult	0	0	0	1	2		3
Adult unknown	0	0	1	0	2		3
Subtotal	4	1	5	3	4	1	18

4.3.4 North Greenland

There are few references to Etah, but it was deserted by 1934 (Nature 1935; Polar Record 1935), see Figure 4-23. The individuals may therefore date pre-1934. The only reference to Peterdawick the researcher has found relate to the AMNH (Hovey 1917, 9). There is little information available on Sulwuddy; it is located near Cape Alexander and close to Etah (north-west Greenland), and by 1918 was abandoned, (MacMillan 1918, 40). There are few references to Nerki (also spelled Nerky/Neqe); Peary and Peary (1894, 75) state it is located two days' journey from Redcliffe (north-west Greenland), whilst MacMillan (1918, 20) state it is 15 miles north of Murchison Sound. North Star Bay is an area rather than a site/settlement, with two settlements Narsaarsuk and Pituffik, both now abandoned (see Figure 4-24). There is little information on

Appat (also called Saunders Island), both island and town are called Upernavik (see Figure 4-25). It is located near North Star Bay, but the precise location with respect to North Star Bay is unknown, so therefore the date is unknown also. Many publications analyse geological sediments and strata of North Greenland, with no reference to human agency from any period.

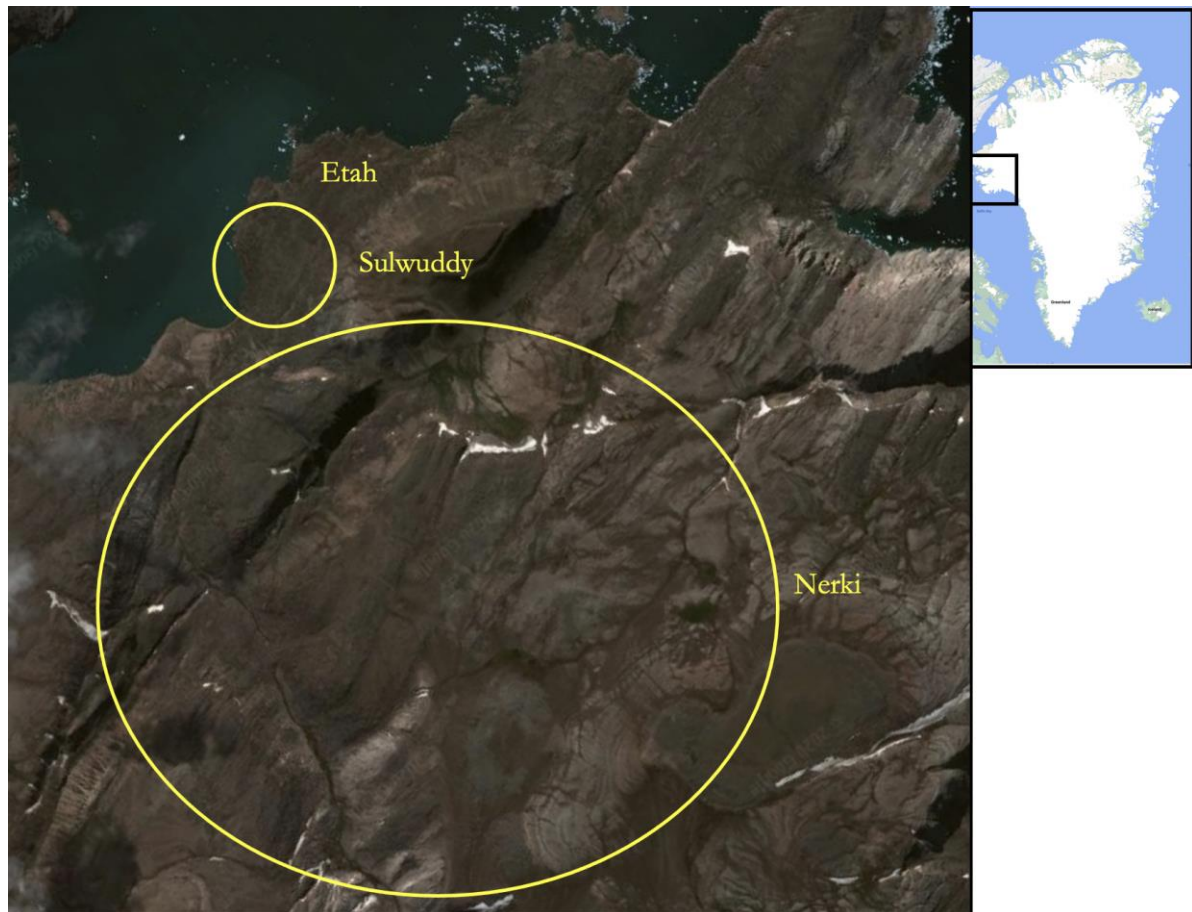


Figure 4-23 Map: Etah, Sulwuddy and Nerki

Source: Google Earth and Google Maps

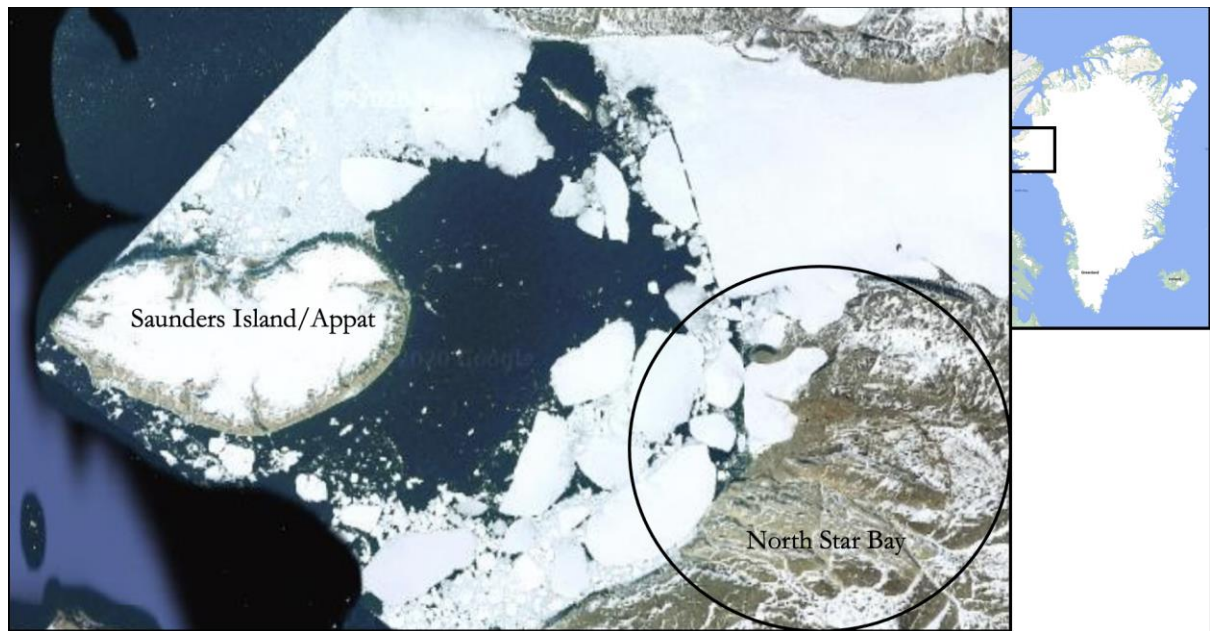


Figure 4-24 Map: North Star Bay and Appat

Source: Google Earth and Google Maps

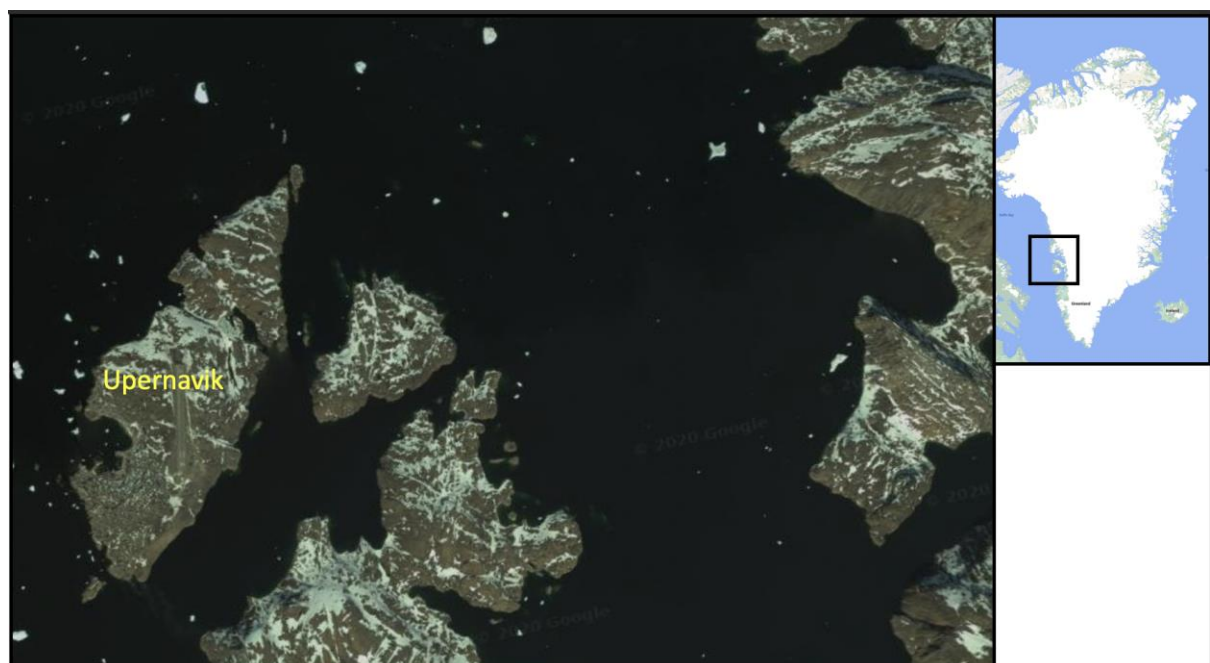


Figure 4-25 Map: Upernavik

Source: Google Earth and Google Maps

Habitation sites were found at Etah when the remains were acquired, but only one house was observed, with little material being found within the site, apart flint working and the processing of whales (AMNH 1917, 27). While North Star Bay material culture, clothes made from bird skin, arrow and spear points, knives, and lamps, was found to be closely related to Baffin Bay and Southampton Island, the material culture from Etah was found to be less closely associated with these two locations, although the origin of

the Etah inhabitants was placed in Baffin Island (AMNH 1917, 2-3, 27). The funerary process at North Stay Bay and Saunders Island correspond to those elsewhere where permafrost is frequent and include aboveground burial with stones surrounding the body (AMNH 1917, 11). Zooarchaeological data from northeast Greenland shows birds, fish, and marine mammals in the Late Dorset-Early Thule diet (Darwent and Foin 2010). The MNI is 27, see Table 4-18, with the most frequent being later middle adult males with 22.2%. Subadults are represented by later child, at 3.7%. The indeterminate group compose a minor portion of the MNI in this sample, at 3.7%.

Table 4-18 MNI - North Greenland

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						0	0
Later child						1	1
Subadult unknown						0	0
Adolescent	2	0	0	0	0	0	2
Young adult	3	0	3	0	0		6
Early middle adult	2	0	0	1	1		4
Later middle adult	2	1	6	0	0		9
Mature adult	0	1	1	0	0		2
Adult unknown	3	0	0	0	0		3
Subtotal	12	2	10	1	1	1	27

4.3.5 Greenland Unknown

Individuals from a locale other than Greenland have been placed here. The MNI is 20, see Table 4-19, with the early middle adult females having the greatest proportion, with 25%. Subadults are represented by later child with 5%. Unlike the Canada Unknown sample, the indeterminate group is rare with the females and males having greater MNI. The difference in females/males' representation is because there are few

individuals with limited skeletal elements compared, meaning a greater number could have age/sex assessments conducted.

Table 4-19 MNI - Greenland Unknown

Age / Sex class	Females	Females - Probable	Males	Males - Probable	Indeterminate	Subadults	Grand total
Infant unknown						0	0
Early post-natal infant						0	0
Late post-natal infant						0	0
Early child						0	0
Later child						1	1
Subadult unknown						0	0
Adolescent	1	0	0	0	0	0	0
Young adult	1	1	1	0	0		3
Early middle adult	5	0	1	0	1		7
Later middle adult	0	1	1	0	0		2
Mature adult	1	0	1	1	0		3
Adult unknown	0	0	2	1	0		3
Subtotal	8	2	6	2	1	1	20

4.4 Materials summary

As has been shown, many of the 15 samples are located within close proximity, and therefore likely experienced similar cultures and social structures, and the areas inhabited by multiple populations practicing divergent cultures, either adapting a pre-existing culture for the new ecogeography, or practicing a unique culture. The individuals cannot therefore be placed into a hypothetical culture, and will therefore remain within the ecogeographically defined populations, listed above, and summarised in Table 4-20.

Table 4-20 Material summary

Populations assigned to regions

Region	Sample
1	Amaknak Island
	West Aleutians
2	St. Lawrence
3	North Alaska
4	Hudson Bay
	Nunavut
	Coats Island
5	South Alaska
	Vancouver Island
6	East Greenland
7	South Greenland
	West Greenland
8	North Greenland
9	Canada Unknown
	Greenland Unknown

5 Chapter 5 Methods

Pathological conditions and life history events, e.g., weaning and antemortem tooth loss, can be analysed using non-destructive (e.g., macroscopic observations) methods and destructive (e.g., trace element studies, isotopic analysis, histological) analysis (Dąbrowski et al. 2019; Dlamini et al. 2019; Lorentz et al. 2019; Herrscher et al. 2018; Lösch et al. 2014; Oelze et al. 2012; Kusaka et al. 2010; Mundee 2010; Jay 2009; Lombardi-Boccia et al. 2003; Pate et al. 2001; Richards et al. 1998; Ambrose et al. 1997; Parr 1988). Macro-analytical processes can be conducted on fragile remains, with analyses successfully using periodontal probes and magnification of 10x, as used here (Kolpan and Bartelink 2019). Destructive techniques, e.g., isotope geochemistry (Ambrose and Krigbaum 2003) are not used; non-destructive methods preserve the human skeletal remains (HSR) for future analyses and repatriation requests (Lovis et al. 2011; Scherer et al. 2007; Ubelaker et al. 1995), can be conducted quickly, normally do not require specialised/costly equipment or relocation of the HSR (Copes 2012, 71), and can provide reliable results on oral health, wear, and paramasticatory dental activities (Trombley et al. 2019; Benazzi et al. 2013; Fiorenza and Kullmer 2013; Clement and Hillson 2012; Schmidt 2010). Multifactorial estimations, using multiple skeletal characteristics, are used to provide reliable results (age/sex/diagnostic pathology) (Spradley and Stull 2018, 13-14; Sharman 2013; White et al. 2012, 379-426, 2008; Adler and Donlon 2010; Anderson et al. 2010; Walker 2008, 2005; Lovejoy et al. 1985a; Mensforth and Lovejoy 1985; Meindl et al. 1983).

The chapter outlines the notation system and equipment used, the methods for assessing age/sex classes, tooth presence/absence, the oral health conditions, including the system to record paramasticatory dental activities, and how divisions of labour and diet are analysed. For all assessments, both sides are scored, to prevent bilateral asymmetry bias and account for activity induced alterations (Bassed et al. 2012; Overbury et al. 2009; DeLeon 2007; Gowland and Chamberlain 2002; Albert and Greene 1999; Lovell and Whyte 1999).

5.1 Notation Systems

For the dentition, the FDI system is used, see Figure 5-1 and Figure 5-2. The codes, noted in the text, were assigned by the researcher; each condition was assigned a number based on the order they appear in the scoring sheet; the level of the condition is also assigned a number. Examples of the recording sheets can be found in Appendix Images 1-12. The FDI and codes are numerical, facilitating quicker inputting into the scoring sheets (see Appendix Images 2-5 and Appendix Images 9-10), and computer programs. The premolars are denoted as 3rd and 4th premolars, not 1st and 2nd, as per Nikita (2017, 55). Mesial refers to the aspect heading towards the midline of the dental arcade, distal to the aspect heading away from the midline, buccal to the aspect facing the cheeks and lips (*buccae* and *labia oris*), lingual to the aspect facing the tongue, occlusal where the teeth contact the opposing tooth, and apex to the roots' tip.

Permanent																	
Right maxilla	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	Left maxilla
Right mandible	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38	Left mandible

Deciduous													
Right maxilla	55	54	53	52	51	61	62	63	64	65	Left maxilla		
Right mandible	85	84	83	82	81	71	72	73	74	75	Left mandible		

Figure 5-1 FDI notation system

Term	Acronym
Anterior	AN
Premolar	PM
Molar - 1st	M1
Molar - 2nd	M2
Molar - 3rd	M3

Figure 5-2 Acronyms

The acronyms may be found in the text, but were frequently used during the recording process

5.2 Equipment

An Optima GO LED pocket magnifier with magnification of 10x is used for magnification, which has been deployed elsewhere (Karsten et al. 2019; Tomczyk et al. 2017; Berryman et al. 1979). Alveolar bone recession is measured using a plastic dentistry periodontal probe with marked graduations (10mm depth), or digital calipers for over 10mm recession. A Nikon D3200 camera, with Nikon DX AF-SNIKKOR 18-55MM 1: 3.5-5.6 GII ED lens is used, with all scales in centimetres.

5.3 Sex Estimation

Sex estimation is based on cranial and post-cranial morphologies, depending on the skeletal elements present, see Table 5-1. The morphologies used provide reliable results (see Appendix Supplementary

Information) and supports analyses on a large number of individuals. Some individuals are composed only of cranial remains, see the Material chapter, resulting in differing levels of certainty for the estimations. Therefore, there are seven possible categories; female, male, probable female/male, indeterminate, unknown, and unknown due to age, referring to subadults (see Appendix Table 3). At times the sex classes are pooled, merging all individuals within a sex class (e.g., pooled males = all male adults regardless of sex class) to provide comparative data for the samples missing sex classes, and to increase sample size. Sex ratio is analysed via Equation 1.

Table 5-1 General female and male skeletal differences

From White et al. (2012, 412, 415-416) Walker (2005) and Brothwell (1981, 51-52)

Area	Feature	Males	Females
Cranial	Supraorbital rim	Greater prominence	Less prominence
	Glabella	Greater prominence	Less prominence
	Nuchal crest	Greater prominence	Less prominence
	Mastoid processes	Larger	Smaller
	Parietal bossing	Less prominence	Greater prominence
	Frontal bossing	Less prominence	Greater prominence
Mandibular	Mental Eminence	Square	Round
	Mental flaring	Greater prominence	Less prominence
Pelvic	Greater sciatic notch	Shallower	Wider
	Superior pubic rami	Shorter	Longer

Equation 1 Sex ratio

Where F = females + probable females, and M = males + male probable

$$\frac{F}{M}$$

5.4 Age Estimation

Age estimation (meaning skeletal age, not chronological or cultural age) is conducted using dental, cranial, and post-cranial elements, with maximum diaphyseal length (MDL) also used for subadults. Where possible methods incorporating populations with comparable biological affinities and/or lifestyles to the samples here are used (Mays et al. 1995). There are 13 age categories, see Table 5-2, covering <4 weeks to ≥46 years and includes adult and subadult unknown. Adult/subadult unknown means skeletal elements were present, but not enough survives to provide a more accurate age estimation. As with the sex estimations, the 13 categories support assigning age estimations on individuals with variable skeletal elements, resulting in differing levels of certainty for the estimations.

Table 5-2 Age groups

From Powers (2008, 12-14)

Codes added by the researcher. The codes were only required for the original age ranges, as when merged, the data was analysed from the original classifications

Description	Age range	Code	Age range when merged
<i>In utero</i>	28 weeks <i>in utero</i>	0	Unchanged
Inter-uterine / neonate	<4 weeks	1	Unchanged
Early post-natal infant	1–6 months	2	Infant
Later post-natal infant	7–11 months	3	
Early child	1–5 years	4	Child
Later child	6–11 years	5	
Adolescent	12–17 years	6	Unchanged
Young adult	18–25 years	7	Unchanged
Early middle adult	26–35 years	8	Middle adult
Later middle adult	36–45 years	9	
Mature adult	≥46 years	10	Unchanged
Adult unknown	Adult	11	Added by the researcher
Subadult unknown	Subadult	12	

5.4.1 Adult

The age estimation methods cover the neonatal period to mature adulthood (Cerezo-Román and Hernández Espinoza 2014; Schaefer et al. 2009, 9; Lovejoy 1985), see Table 5-3. The skeletal elements producing the sex/age estimations have variable reliabilities (described below), so multiple age/sex indicators are used to produce a more reliable age estimation. Methods developed on biologically similar samples for adult post-cranial remains, and Arctic/Sub-Arctic samples for dental wear, were not found. Therefore, Lovejoy (1985) is used for wear, being developed on a comparative (hunter-gatherer) sample from Libben, Ottawa County, Ohio, 800-1100 AD, MNI $n=332$ (adult dentitions) (Moreno-Mayar et al. 2018; Davis et al. 2011; Lovejoy and Heiple 1981; Lovejoy et al. 1977). Cranial suture closure is cranial joints fusing with age and assists with age estimations. Cranial suture fusion as a reliable age indicator is debated, so it is primarily used when no post-cranial remains are present (Ruengdit et al. 2018; Xanthopoulou et al. 2018; Wolff et al. 2013; Key et al. 1994; Brooks 1955). Cranial suture closure is used as the analyses incorporates some individuals without post-cranial remains, see the Material chapter; it is scored as open (indicating young age), fusing (indicating middle adult), fused/obliterated (indicating older age).

The sternal end of ribs four-nine provides age-at-death estimates, with no asymmetry causing differential estimates (Verzeletti et al. 2013; Yoder et al. 2001; İşcan and Loth 1986; İşcan et al. 1984, although see Muñoz et al. 2018). Variations in reliability occur due to genetic and environmental factors (substantial physical labour, e.g., activity), chronic respiratory disease from smoky environments (Qorbani et al. 2014) and endocrine disorders, diet, sex, and intercostal variations (and amongst modern samples, drug use), incorrect identification, low reproducibility from measurement complications, indistinct pit depth descriptions not containing sufficient accountability for pit shape, wall and rim configurations, with problematic correlation between skeletal and chronological age, and reduced reliability >50-years-of-age (Muñoz et al. 2018; Cerezo-Román and Hernández Espinoza 2014; Fanton et al. 2010; Hartnett 2010; İşcan et al. 1984). For the pubic symphysis, the method by Brooks and Suchey (1990), can under-estimate age for real age over 30 years and overestimates real ages over 35-years-of-age (Parambathettu Sasidharan and Thomas 2017; Savall et al. 2016). Therefore, as with cranial suture closure, the sternal ends of the ribs and pubic symphysis increase the number of skeletal elements for age estimations.

Table 5-3 Adult age estimation methods

Author	Feature	Age ranges the method assesses for
Adult		
AlQahtani et al. (2010)	3rd molar presence/absence	18-years-of-age
Lovejoy (1985)	Dental wear	12-55-years-of-age
Lovejoy et al. (1985a, 1985b)	Auricular surface of the ilium	>18-years-of-age
Brooks and Suchey (1990)	Pubic symphysis	
İşcan and Loth (1986); İşcan et al. (1984)	Sternal rib #3-5	>17-years-of-age
Subadult		
AlQahtani et al. (2010)	Dental eruption and development	28 weeks <i>in utero</i> to 23-years-of-age
Y'Edynak (1976)	Maximum diaphyseal length	Birth-19.9-years-of-age
Cunningham et al. (2016)	Osteometrics on bones not permitting	
Schaefer et al. (2009, 9)	maximum diaphyseal length to be taken	

5.4.2 Subadult

AlQahtani et al. (2010) is used for dental development and eruption, as it scores eruption from the alveolar bone, rather than the gingivae. For the permanent teeth, Garn and Moorrees (1951, Figure 2) note Arctic/Sub-Arctic individuals have earlier eruption timings than Caucasian individuals; 1.00 ± 0.12 years earlier for individuals <10-years-of-age, and 0.27 ± 0.12 years earlier for individuals >10-years-of-age.

AlQahtani et al. (2010) do not state if the method incorporates Arctic/Sub-Arctic individuals. Therefore, the ages of eruption for the permanent dentition were altered for individuals <10-years-of-age and >10-years-of-age, according to Garn and Moorrees (1951, Figure 2). The eruption timings for the deciduous dentition are unchanged and use AlQahtani et al. (2010).

For maximum diaphyseal length, the calculations by Y'Edynak (1976) are used, see Appendix Table 4. As Y'Edynak (1976) does not specify units, measurements are taken in millimetres. Y'Edynak (1976) has sex-specific age estimates; debate exists regarding the reliability of subadult sex estimations (Cunningham et al. 2016, 17; Irurita Olivares and Alemán Aguilera 2016; Wilson et al. 2008; Schutkowski 1993), as morphological characteristics have not developed (Irurita Olivares and Alemán Aguilera 2016. However, see Estévez et al. 2017; Wilson et al. 2008). Therefore, sex estimation is not conducted on subadults, and Y'Edynak's (1976) sex-specific age estimates are combined. For the skeletal elements not covered by the Y'Edynak (1976) method, the methods by Cunningham et al. (2016) or Schaefer et al. (2009, 9) are used.

5.5 Analysis

Intra-observer error (IOE) was analysed between the first and second analyses of the age and sex results, a paired t-test was run on all age and sex results, as has been used elsewhere (Pérez-Pérez et al. 1990). The current study utilises equations, true prevalence, and point prevalence, as the samples are divided based on location and age/sex classes. The greater the number of statistical tests used on data, the greater the number of false positives that are produced. Therefore, unlike other bioarchaeological analyses (Mehta et al. 2020; Ludbrook 2011), statistical analyses are not used. Equations are processed in Excel, Version 15.26 (160910). Point prevalence calculates prevalence of a condition, whilst acknowledging that point prevalence underestimates true prevalence, being conducted once (at the point of analysis) it lacks time depth (Waldron 2020, 327), see Equation 5-2. True prevalence shows how often a condition was present in the dentition, see Equation 5-3

Equation 5-2 Point prevalence

Where P = prevalence

From Waldron (2007, 59) and Kirkwood and Sterne (2003, 181-183)

$$P = \frac{\text{number of cases}}{\text{total sample}}$$

Equation 5-3 True prevalence

Where TP = true prevalence

$$TP = \frac{\text{number of cases}}{\text{number of teeth}}$$

5.6 Tooth Presence

Hillson's (2001) system scores the deciduous and permanent dentitions for tooth status, alveolar bone health, and caries location and development. The method has been used elsewhere (Willman and Lacy 2020; Goude et al. 2019; Rajić et al. 2019; Willmann et al. 2018; Larsen et al. 2015; Lozano et al. 2013; Griffin et al. 2011; Watson et al. 2010; Barton et al. 2008). Sixteen of the systems' 23-points are used (see Table 5-4 and Table 5-6); the removed points have been superseded by other methods, or are not suitable for bioarchaeological studies (discussed below). The method analyses 484 sites for the permanent dentition and 324 for the deciduous dentition, for five aspects excluding the apex. Each row has a parallel system, indicating a description for the condition, outlined below. Fragmented alveolar bones permit analysis on unerupted teeth for malposition and agenesis; malposition is scored when unerupted teeth appear not to be erupting in the correct occlusal position. Agenesis is scored when a tooth is absent if the individual is at an age the tooth should have developed. Agenesis is analysed by age/sex class, as tooth reduction has been proposed as increasing mortality (Merbs 1968).

Tooth status has 12 scores, see Table 5-5. The researcher added; score -1, to record when damage/absence prevents assessment; score 16 (tooth present, with root resorption, and if alveolar bone is present, displays healing), which is analysed via the visual appearance of the root and counted by the number of teeth with root resorption, not the number of roots resorbing; score 17 for root(s) remaining, with the crown lost antemortem. Score 15 scores all types of anomalous eruption by visually examining the tooth's location, not the orientation of the socket. Post-mortem tooth loss (PMTL) is scored as present, even if teeth/alveolar bones are documented at the point of excavation. Percentages for PMTL, malposition, and agenesis are calculated using Equation 5-4.

Equation 5-4 Percentages – Post-mortem tooth loss, malpositions, agenesis

$$\text{Condition presence} = \text{condition} / (\text{Tooth total} + \text{agenesis} + \text{post-mortem tooth loss})$$

Table 5-4 Scoring system - Hillson (2001, Appendix A, 274-278)

Rows grouped via pathologies studied here

The method was used score all the pathological conditions, but each of the conditions will be discussed in a separate section. All the conditions are included in the current together here, to provide an overview of method, and to show which pathological condition relates to the rows as indicated in the scoring sheet.

CEJ = cement–enamel junction

Tabulated by the researcher

Rows	Dental Locations	Pathology
1	Tooth presence, absence, carious	Presence/absence
2	Occlusal surface caries (fissure, groove, fossa sites)	Caries
3	Pit caries	
6	Attrition facet enamel rim chipping/caries	
8	Mesial contact area caries	
9	Mesial root surface caries	
12	Distal contact point caries	
13	Distal root surface caries	
16	Buccal root surface caries	
19	Lingual root surface caries	
4	Occlusal attrition score	Wear
7	Mesial attrition score	
11	Distal attrition score	
10	Mesial root exposure, CEJ-Alveolar crest (AC) (mm)	Alveolar Bone Absorption
14	Distal root exposure, CEJ-AC (mm)	
17	Buccal root exposure, CEJ-AC (mm)	
20	Lingual root exposure, CEJ-AC (mm)	

Table 5-5 Row 1 – Tooth presence, absence, caries – Scores and descriptions

From Hillson (2001, Appendix A, 274-275) Tabulated by the researcher

Score	Description	Category
-1	Missing post-mortem and jaw with socket missing too.	Damage
0	Tooth present, without gross caries	Present
7	Gross carious cavity, involving the loss of so much of the tooth that it is not possible to determine whether the lesion was initiated in the crown or root.	
8	Gross carious cavity, involving the loss of so much of the tooth that it is not possible to determine whether the lesion was initiated in the crown or root, and there is a clear opening into an exposed pulp chamber or root canal.	
14	Tooth partly erupted (crypt communicating with crest of alveolar process, or tooth not yet in wear).	
15	Anomalous eruption, so that the tooth has not reached its normal position in the tooth row.	
16	Tooth present, with root resorption. If alveolar bone is present, this also displays healing.	
10	Tooth missing, leaving an empty socket in the jaw without any sign of remodelling.	PMTL
11	Tooth missing, leaving an empty cavity in which there are signs of remodelling, but the bone is not fully remodelled to a level contour.	AMTL
12	Tooth missing, with full remodelling of the jaw to leave a level contour.	
17	Root(s) remaining, crown lost antemortem.	
13	No evidence that the tooth has ever erupted (as a result of young age, impaction or agenesis).	Absent

5.7 Wear (Extent and Gradient)

Capturing wear extent and gradient uses a different method to the one generating age estimations to support the different aims – age estimations and the effects of diet and PMDA on the teeth. Extent and gradient (Rows 35 and 36) use the methods by Brabant (1966) (see Table 5-7) and Hillson (2001) (Rows 7 and 11 mesial and distal approximal attrition scores, see Table 5-8). Other wear methods, such as Smith (1984) or Scott (1979), were not used as Brabant's (1966) method more quickly captures similar and additional data, when analysing a large number of individuals. Smith's (1984) method has more categories in comparison to Brabant's (1966) method, increasing the analysis time per individual, but captures similar data (e.g., the amount of enamel loss). Meanwhile, Scott's (1979) method divides the occlusal aspect into four sections, with each section given a score denoting the gradient, and then a sum of the scores defining the overall

gradient for that tooth. The result of scoring each quadrant of an occlusal aspect is, as Scott (1979) states, the method can take up to 3-5 minutes per dentition, which is impractical for the number of individuals here. Also, whilst Smith (1984) and Scott (1979) incorporate gradient changes of the occlusal aspect to determine stages of wear, the methods do not contain scores for gradient, only extent of wear. The method by Brabant (1966) has distinct scores for extent and gradient.

Brabant (1966) captures the extent (row 35) and gradient (row 36) of occlusal wear; when an occlusal aspect has multiple gradients, the gradient involving the greatest part of the occlusal aspect is scored. For mesial and distal attrition (Rows 7 and 11), score 4 means teeth worn to the roots prevent occlusal attrition between opposing teeth (Hillson 2001). Here, teeth worn to the roots are scored as -1, as an ethnohistoric account on Greenlandic individuals and bioarchaeological studies note root surfaces being used as replacement occlusal surfaces after wear had obliterated the crown (Griffin 2014; Reinhardt 1983; Pedersen 1947). Also, reconstructing occlusal attrition is not the focus of the research. Teeth scoring -1 still receive wear scores using Brabant (1966).

Table 5-6 Rows 35-44 – Dental pathologies and locations

Row	Dental locations	Pathology
35	Occlusal - Extent	Wear
36	Occlusal - Gradient	
37	Enamel - notching	TEM
38	Enamel - chipping	
39	Alveolar bone	Periodontal disease
45		
46		
40	Buccal	Calculus
41	Lingual	
42	Distal	
43	Mesial	
44	Occlusal	

Table 5-7 Wear – scores and description

From Brabant (1966)

Description – Row 35 Extent	Score	Description – Row 36 Gradient
No wear, no loss of surface features	0	No wear, no loss of surface features
Wear limited to enamel	1	Horizontal and plane
Presence of dentin clusters	2	Horizontal and concave
Most dentin still covered	3	Oblique and plane
Involvement of pulpal horns or pulpal exposure	4	Oblique and concave

Table 5-8 Rows 7 and 11 - Mesial and distal approximal attrition score – Scores and descriptions

From Hillson (2001, Appendix A, 276)

Tabulated by the researcher

Score	Description
-1	Contact point missing (for whatever reason).
0	No attrition facet around contact point.
1	Approximal attrition facet confined to the enamel.
2	Approximal attrition facet exposing dentine at its centre.
3	Approximal attrition facet exposes dentine all the way down to the cement–enamel junction.
4	Occlusal attrition has proceeded down into the roots of the teeth, so that there is no longer any contact between neighbouring teeth.

5.8 Oral Health

5.8.1 Caries

Two of the scores for recording tooth status relate to caries; scores 7 and 8 record gross caries, scoring caries extent is such that the caries initiation site cannot be determined (Hillson 2001). Scores 7 and 8 both incorporate the dental fissure systems. Scoring is possible if wear or caries have not destroyed a substantial portion of the occlusal aspect. Where the caries initiation site can be determined, the following are used; occlusal surface caries in premolars and molars, and pit sites in molars and upper incisors (Rows 2-3, see Table 5-9 and Table 5-10). Features relating to Row 3 (pit sites in molars and upper incisors) are not typically destroyed by wear. Occlusal attrition facet enamel edge chipping and caries (Row 6 – pit sites in molars and upper incisors, Table 5-11) covers caries with scores 7-8, while scores 1-2 cover enamel chipping, so are included alongside traumatic enamel macrofracture in the results and discussion. Mesial and distal contact area caries (Row 8 and Row 12, Table 5-12) are superior to the cemento-enamel junction (CEJ), where the gingiva would have been (Hillson 2001, Table 5-13). Rows 15 and 18 (buccal and lingual enamel smooth surface site) are rare in bioarchaeological samples, so are omitted here (Hillson 2001).

Table 5-9 Row 2 - Occlusal surface caries in premolars and molars - Scores and descriptions

From Hillson (2001, Appendix A, 275)

Tabulated by the researcher

Score	Description
-1	Sites missing for any reason, or fully obscured.
0	Sites present but enamel is translucent and with a smooth surface.
1	White or stained opaque area in enamel of fissure/groove/fossa, with smooth glossy or matte surface.
2	White or stained opaque area, with associated roughening or slight surface destruction.
3	Small cavity, where there is no clear evidence that it penetrates to the dentine.
5	Larger cavity, which clearly penetrates the dentine.
6	Large cavity which was clearly initiated in a fissure/groove/fossa site within the occlusal surface (it does not involve the contact areas), within the floor of which is the open pulp chamber, or open root canals.
7	Gross coronal caries, involving the occlusal crown surface and contact area or pit.
8	Gross coronal caries, defined as in score 7 above, within the floor of which is the open pulp chamber, or open root canals.

Table 5-10 Row 3 - Pit sites in molars and upper incisors - Scores and descriptions

From Hillson (2001, Appendix A, 275)

Tabulated by the researcher

Score	Description
-1	Pit site not present or not visible (for any reason).
0	Site or sites present, but enamel is translucent and with a smooth surface.
1	White or stained opaque area in enamel of pit, with smooth glossy or matte surface.
2	White or stained opaque area, with associated roughening or slight surface destruction.
3	Small cavity, where there is no clear evidence that it penetrates to the dentine.
5	Larger cavity, which clearly penetrates the dentine.
6	Large cavity, which was clearly initiated in a pit site, within the floor of which is the open pulp chamber, or open root canals.
7	Gross coronal caries, involving a pit and the occlusal crown surface (Row 2 above).

8	Gross coronal caries, defined as in score 7 above, within the floor of which is the open pulp chamber, or open root canals.

Table 5-11 Row 6 - Pit sites in molars and upper incisors - Scores and description

From Hillson (2001, Appendix A, 276)

Tabulated by the researcher

Score	Description
-1	Worn enamel rim not yet exposed at any point on the perimeter of the occlusal surface, missing or obscured (for whatever reason).
0	Enamel rim of occlusal attrition facet exposed at any point, but intact with no chipping.
1	Chipping which appears to be postmortem in origin.
2	Chipping which appears to be antemortem, but is not affected by caries.
3	Chipping associated with carious lesion.
7	Gross carious lesion (scores 7 or 8 in Rows 2, 3, 8, 12, 15, 18), involving the enamel rim of the occlusal facet, but not clearly associated with any chipping.
8	Gross carious lesion, as defined in score 7 above, involving the enamel rim, within the floor of which is the open pulp chamber, or open root canals.

Table 5-12 Rows 8 and 12 - Mesial and distal contact area caries - Scores and descriptions

From Hillson (2001, Appendix A, 276)

Tabulated by the researcher

Score	Description
-1	Contact area missing, or not visible, for any reason.
0	Contact area present, but enamel is translucent and with a smooth surface (and any exposed dentine is unstained and not cavitated).
1	White or stained opaque area in enamel with smooth glossy or matte surface (or stained patch in dentine).
2	White or stained opaque area of enamel, with associated roughening or slight surface destruction.
3	Small enamel cavity, where there is no clear evidence that it penetrates to the dentine.
4	Discolouration in exposed dentine of an approximal attrition facet.
5	Larger enamel cavity which clearly penetrates the dentine (or clear cavity in dentine of approximal attrition facet).

6	Large cavity, clearly initiated in the contact area or approximal attrition facet, within the floor of which is the open pulp chamber, or open root canals.
7	Gross cavity in the contact area or approximal attrition facet, which involves neighbouring occlusal sites (Rows 2 or 6) and/or root surface sites (Rows 9 or 13).
8	Gross cavity, defined as in score 7 above, within the floor of which is the open pulp chamber, or open root canals.

Table 5-13 Rows 9, 13, 16, 19 – Mesial, distal, buccal and lingual, root surface caries - Scores and descriptions

From Hillson (2001, Appendix A, 276-277)

Tabulated by the researcher

Score	Description
-1	No part of the buccal/labial/lingual root surface or cement–enamel junction preserved, or at least not visible if present.
0	Root surface/cement–enamel junction present and visible, with no evidence of staining or cavitation.
1	Area of darker staining along cement–enamel junction or on root surface.
5	Shallow cavity (stained or unstained), following the line of the cement–enamel junction, or confined to the surface of the root
6	Cavity involving the cement–enamel junction, or root surface alone, within the floor of which is the open pulp chamber, or open root canals.
7	Gross cavity, including the cement–enamel junction, or root surface, which involves the neighbouring crown side (Rows 15 or 18), occlusal or pit sites (Rows 2 or 3) or occlusal attrition facet sites (Row 6).
8	Gross cavity, defined as in score 7 above, within the floor of which is the open pulp chamber, or open root canals.

5.8.2 Calculus

Calculus (Rows 40-44 corresponding to the buccal, lingual, distal, mesial, and occlusal aspects) is recorded using four scores (see Table 5-14) on the deciduous and permanent dentitions (Greene et al. 2005). Where calculus has broken away leaving a clear mark on the tooth, the score references the height. Percentage of affected tooth aspects are calculated using Equation 5-5 (Fashing 2008, 36). The results are grouped into five percentage ranges of tooth aspects covered by calculus, see Table 5-15 (Fashing 2008, 36). The equation is used when all scores of calculus deposits were combined, and each individual score.

Table 5-14 Rows 40-44 – Calculus - buccal, lingual, distal, mesial, and occlusal - scores and descriptions

From Greene et al. (2005)

Score	Title	Definition
0	Absent	None.
1	Small	Thin, narrow band (<2mm), covering <1/3 of aspect.
2	Moderate	Thin band covering <1/3, but not >2/3 of aspect.
3	Large	Calculus covers >2/3 of aspect, or a continuous band (>2mm) around cervical region.

Equation 5-5 Calculus - percentage of affected tooth aspects

From Fashing (2008, 36)

$$\frac{n \text{ tooth surfaces with calculus}}{n \text{ tooth surfaces observed}} \times 100$$

Table 5-15 Percentage categories for calculus

From Fashing (2008, 36)

Percentage Categories
0.00-0.99%
1.00-24.99%
25.00-49.99%
50.00-74.99%
75.00-100.00%

5.8.3 Alveolar Bone Resorption

Hillson (2001) records alveolar bone reduction using mesial, distal, buccal, and lingual root exposure (Rows 10, 14, 17, 20), see Table 5-4. A periodontal probe measures the distance between the CEJ and alveolar bone crest, rounded to the nearest whole millimetre. The mean of the total measurements per aspect for the age/sex class are then calculated.

5.8.4 Periodontal Disease

Periodontal disease is analysed using three methods. First, Ogden's (2008, 293; Fig. 13.7) (see Table 5-16) five-grade system based on the appearance of the buccal aspect's alveolar bone. Ogden (2008, 293) does not specify if deciduous teeth were included in the study, but it is suggested by Kerr (1988b). Therefore, Ogden's (2008, 293) method is used on deciduous teeth. Using the results from Ogden (2008, 293), periodontal disease is divided into generalised (present across >50% of the alveolar bone) or localised

(present across <50% of the alveolar bone) (Palmer et al. 2013, 25-26), using Equation 5-6. Here, generalised periodontal disease represents advanced periodontal disease, referring to how much of the alveolar bone is affected by periodontal disease, rather than how developed the periodontal disease is.

Karn et al. (1984) (Row 51) and Kerr (1991) (Row 50), which have been used elsewhere (Buikstra 2019, 771; Willmann et al. 2018; Nikita 2017, 238; Tomczyk et al. 2017; Nelson 2016, 472; Kerr 1994), analyse approximal wall crest deteriorations; initially the crest becomes porotic, then irregularly disappears creating a gap, causing instability (permanent dentition only). In Kerr's (1991) 6-category scoring system, see Appendix Table 7, category (grade 0) indicates AMTL and post-mortem damage. Here the category is separated; category 0.1 - AMTL on either side of septum, and category 0.2 – post-mortem damage either side of septum. Category 0.3 was added for teeth yet to erupt. To use the system, the interproximal spaces are numbered, e.g., the mesial area between the maxillary central incisors (teeth 11 and 21) is 11-21. Karn et al. (1984), see Appendix Table 6, categorises types of alveolar bone alterations. Alterations relating to horizontal bone loss (plane) indicate continuous eruption. Whilst Glass (1991) associates continuous eruption with mandibular posterior teeth, here all teeth are analysed, as intended by Karn et al. (1984).

Table 5-16 Row 39 - Periodontal disease – scores and descriptions

From Ogden (2008, 293, Fig. 13.7)

Score	Description	Designation
0	Unable to score (alveolus damaged or missing).	Not Illustrated
1	Alveolar margin meets tooth at a knife-edged acute angle.	No disease
2	Alveolar margin is blunt and flat-topped with a slightly raised rim.	Mild periodontitis
3	Alveolar margin is rounded and porous, with a trough of 2–4 mm depth between tooth and alveolus.	Moderate periodontitis
4	Alveolar margin is ragged and porous, with an irregular trough or funnel >5 mm depth between tooth and alveolus.	Severe periodontitis

Equation 5-6 Percentage - localised/generalised periodontal disease

The equation is used on results derived from Ogden (2008)

$$\frac{\text{Total periodontal disease}}{\text{Total teeth}} \times 100$$

5.8.5 Antemortem Tooth Loss

Visual examination of alveolar bone remodelling uses no greater than x10 magnification. Antemortem tooth loss (AMTL) is present if remodelling is observed, with row 1 score 11 recorded when partial remodelling

of the alveolar bone has occurred, whilst full alveolar remodelling is recorded as row 1 score 12 (see Table 5). Equation 5-7 shows how AMTL percentage is calculated.

Equation 5-7 Percentages – Antemortem tooth loss

AMTL = antemortem tooth loss; PMTL = post-mortem tooth loss; TP = total tooth present

$$\text{AMTL presence} = \text{AMTL} / (\text{AMTL} + \text{PMTL} + \text{TP})$$

5.8.6 Traumatic Enamel Macrofracture

Bonfiglioli et al. (2004), which has been used elsewhere (Towle and Loch 2021), scores two types of traumatic enamel macrofracture (TEM), see Table 5-17: chipping, an irregularly shaped loss of enamel on any coronal section (Bonfiglioli et al. 2004). And notching, an incisal-occlusal edge indentation, oriented perpendicular/transverse to the mesial-distal axis. The depression is broader than deep, with smooth and polished enamel and/or dentine (Scott and Jolie 2008; Bonfiglioli et al. 2004). Mickleburgh (2007, 31) associates notches near exclusively with PMDA, but Bonfiglioli et al. (2004) and the researcher do not. Rather, the aspect and tooth's location in the dental arcade have greater consideration. Ante- and post-mortem TEM is differentiated between; sharp and bright edges indicate post-mortem damage, and blunt and dull edges indicate antemortem damage (Viciano et al. 2015; Hillson 2008b, 310).

Table 5-17 Traumatic enamel macrofracture - scores and descriptions

From Bonfiglioli et al. (2004)

Chipping (Row 38)		Notching (Row 37)	
Description	Score	Description	
Slight crack or fracture (0.5 mm), or larger but superficial enamel flake loss.	1	(Small) - Slight superficial indentation affecting only the enamel.	
Square irregular lesion (1 mm) with the enamel more deeply involved.	2	(Evident) - Wider and deeper indentation with polished dentine.	
Crack bigger than 1mm involving enamel and dentine or a large, very irregular fracture that could destroy the tooth.	3	(Strong) - Very deep and equally wide depression with heavily polished dentine.	

5.9 Physiological Disturbances

5.9.1 Linear Enamel Hypoplasia

Reid and Dean's (2006) system scores linear enamel hypoplasia. The decile age ranges, based on 1-11-grades (depending on the tooth) for enamel formation timings are retained. A numerical score for each decile was added by the researcher to easily equate the results, see Appendix Table 5.

5.10 Paramasticatory Dental Activities

A paramasticatory dental activities (PMDA) recording system, with nomenclature and theoretical component, was developed. The system records the absence/presence, type, location, number, and greatest dimension of the feature (described below) on five dental aspects (bar apex). Technical limitations prevent recording feature depth here. The theoretical component includes age categories when the modification occurred, physical and visibility types, types of cultural identifiers and activity-induced dental modifications (AIDM), and non-odontological cultural identifiers. The PMDA section can be used on odontological remains, and the theoretical component on osteological, odontological, and soft tissue remains.

The method recognises if teeth were directly utilised for modification (e.g., ablation), or inadvertently affected (e.g., labrets causing facets). Standard nomenclature is used throughout; some terms are already extant – e.g., striae, whilst the researcher developed others, e.g., cylindrical grooves, see Table 5-19, Figure 5-3-Figure 5-6. The recording method (see Appendix Image 3-Appendix Image 5, and Appendix Image 10 for the recording sheet) uses numbers allocated to each feature type and dental aspect, see Table 5-20 and Table 5-21. A differential diagnosis assesses the evidence of PMDA in Chapter 6 Analysis and Discussion, incorporating a highly revised version of Blakely and Beck's (1984) discriminate diagnostic criteria (DDC) (see Table 5-18). The DDC separates paramasticatory and intentional/unintentional modifications via identification of key characteristics.

Table 5-18 Discriminate diagnostic criteria

Adapted from Blakely and Beck (1984)

Altered and merged indicates changes made by the researcher

The description of the unaltered criteria has changed, and altered criteria have either the title and/or description altered by the researcher

Criteria	Status	Description
1. Appearance	Merged	Appearance has been divided into two sections, relating to feature type and wear (direction). Assessment can be conducted macroscopically for such features as facets, however, for striae this may require magnification.
2. Sex	Unaltered	It is culture dependent. Both males and females can be expected to display PMDA, however in every culture each sex may have different trends. In archaeologically derived skeletons, the sex of subadults is (normally) unknown, so possibly subadults cannot have this criteria of the DDC applied to them.
3. Age of feature	Altered	Formerly titled age, referring to the age of the feature, not the individual. As with all TEM, the edges become less pronounced and smoother as time from the trauma increases (Blakely and Beck 1984). In contrast, PMDA can become more pronounced as time increases, as the activity continues (Blakely and Beck 1984). Ascertaining which overlapping features occurred first may need magnification.

4. Location	Unaltered	Alterations can occur on the anterior and posterior dentition, although anterior teeth are more commonly affected (Molnar et al. 1972). Striae on the anterior teeth can be from either IDM or paramastication, differentiation largely depends on location. Most IDM are located on the maxillary and mandibular anterior teeth (Romero 1970, 52, Fig. 1).
5. Aspect	Altered	Formerly titled position. All coronal aspects and some portions of the root following gingival and alveolar bone resorption, bar the apex, can present UDM. But IDM is more commonly on the crown. The buccal aspect can have UDM (e.g., labret facet) and IDM (e.g., inlays), the obscured interproximal and lingual aspects are more likely to have UDM, whilst the occlusal aspect can have both, IDM is more likely. Further, features inferior to the CEJ (on the root) indicate gingivae and alveolar bone resorption, which may assist in assessing pathological conditions present (e.g., periodontal disease).
6. Symmetry	Altered	Unintentional dental modifications from PMDA are normally asymmetrical, UDM from cultural identifiers (e.g., labret facets) and IDM can be symmetrical and asymmetrical.
7. Texture of eroded surface	Merged	Now forms portions of appearance/type of feature (see no. 1).
8. Pathology	Altered	Formerly titled cariogenesis. The category now incorporates other pathological conditions. Association requires the feature (e.g., stria/groove) being near the pathological lesion. Therefore, features located close to the CEJ or approximate gingivae location, are more likely to be evidence of therapeutic care/oral hygiene, as opposed to features closer to the occlusal aspect. However, pathological lesions of bone may heal leaving no trace, so the feature may seem to be in isolation.
9. Sample frequency	Altered	Formerly titled frequency, the title now distinguishes between the frequency on one individual, and all individuals being analysed. An analysis on frequency is dependent on sample size, and quality of remains (e.g., damage from taphonomic processes), and the excavation parameters. The frequency depends on the culture, so background knowledge may be required. Intentional dental modifications are likely on the minority of individuals, and UDM on the majority of individuals, but the type of IDM and UDM may alter between distinct members of society (e.g., sex, age, socioeconomic status).
10. Grave furniture	Withdrawn	Blakely and Beck (1984) state PMDA is occasionally associated with utilitarian/occupational artefacts, whilst IDM is occasionally associated with non-utilitarian/status markers. Parker Pearson (2003, 3) states the dead do not bury themselves, whilst artefacts in a burial context may not have the meaning or use determined by the researcher (Wallis 2014).

11. Age of individual	New	A new criterion developed by the researcher. It is akin to Criterion 2 (Sex) by Blakely and Beck (1984) and can require knowledge of the culture the individual was from. The age of individual can show when activities began (UDM), or when social status achieved (IDM). Further, whilst age of feature is difficult to gauge, age of individual can help assess how old a feature is, especially on younger individuals, as the feature has had less time to develop (e.g., a facet) or be produced (e.g., a groove).

Table 5-19 PMDA - nomenclature

Name	Description
Paramastication	Mastication for all non-dietary purposes, e.g., chewing sinew to make the material malleable.
Paramasticatory dental activities (PMDA)	Activities involving the dentition as tools, but not associated with the mastication of foodstuffs, alters the dentitions. It includes all uses of teeth for tools, cultural identifiers, and sites of adornment.
Cultural identifiers	These are not restricted to the dentition and are alterations or additions to the body to present a culturally defined perception, such as socioeconomic status, tribal/group affiliation, and inherited or acquired status. Odontological cultural identifiers include intentional dental modifications, and unintentional dental modifications (see below) reconstructing cultural identifiers from, for example, inlays, filing, ablation, or facets from labrets. Odontological cultural identifiers are typically permanent, as teeth do not remodel. When conducted on the deciduous dentition they are temporary. Non-odontological cultural identifiers include artificial cranial modification, tattoos, and material cultural items such as jewellery or headdresses, which contextualise the (non-odontological) skeleton, soft tissues, and material culture items. Cultural identifiers show the relationships between individuals; the more visible or larger the cultural identifier is, then the further away the observer could be whilst maintaining the cultural identifier's visibility. Conversely, the less visible/more obscured or smaller the cultural identifier is, then the observer would need to be close to maintain the cultural identifier's visibility (see the visibility section). Cultural identifiers can range from permanent alterations to the human body, such as artificial cranial shaping, or removable items of material culture, such as jewellery. Difficulties may arise in differentiating between clinical and cultural odontological alterations. For example, a replacement tooth may resemble a natural tooth if tooth removal was due to a pathological condition. As clinical alterations are attempts to resolve clinical/health issue(s), to return the dentition to the healthy state alterations for non-health related purposes may have a non-natural appearance.

	Teeth which have been replaced with high-quality metals or rare materials resembling a natural tooth can be evidence of cultural identifiers, rather than clinical procedures, if on the visible anterior teeth. Although the form may be natural, utilising high-quality metals or rare materials suggests greater emphasis was on the material, rather than health. When just the crown was replaced, clinical alterations are more likely. In both instances the individuals' socioeconomic status can be ascertained via the material used, for example, high-quality metals or rare materials illustrate high socioeconomic status (Kolesnikov et al. 2001).
Activity-induced dental modifications (AIDM)	The term refers to any dental modification associated with activity, rather than cultural practices. Therefore, the term excludes facets when caused by labrets. Assigning AIDM may require analysing skeletal remains from the same culture, and possibly comparison against ethnographic/ethnohistoric data. However, AIDM can be allocated when non-activity induced dental modifications can be removed as aetiologies.
Intentional dental modifications (IDM)	Alterations/additions to the dentition, and includes filing, filling/inlaying, ablation, intentionally produced dental striae, grooves, or notches (Burnett and Irish 2017, 2). Problems may arise when distinguishing between striae, grooves, notches, and similar unintentional dental modifications (see UDM, and each features' description). They are more likely on the dentition's visible aspects – buccal and occlusal of the anterior teeth. Intentional dental modifications on the occlusal aspect may relate to the dental shaping (e.g., filing). Possibly the IDM on the occlusal aspect may extend to other aspects. Grouped striae or grooves on the occlusal aspect are likely not IDM, but rather UDM.
Unintentional dental modifications (UDM)	Unintentional dental modifications are the process of inadvertently altering the morphology of the tooth. They can be caused by a habitual activity, an idiosyncratic behaviour, or a by-product of activity. An example of a habitual activity is pipe smoking, whereby a pipe is held between the dentition, eroding a circular hole in the dentition (Meyer 2003; Ubelaker 1996). An example of an idiosyncratic behaviour is striae from using a toothpick, knives, or lithic tools. They can occur on any aspect (bar apex), including the root following material loss of the gingivae and alveolar bone. The lingual aspect is least likely to contain UDM, as the lingual aspect is not easily visible, and hard to access, but can be accidentally affected. Most features on the lingual aspect are likely to be UDM, rather than IDM.
Occupational indicators	The two types of occupational indicators are specialised and generalised tasks. Occupational indicators help recreate social status; specialised tasks are conducted by a minority of the population and may be misinterpreted as idiosyncratic behaviours. Habitual UDM when on the majority of individuals indicate commonplace activities so are termed generalised tasks. Task generalisation/specialisation are types of labour division.
Dental feature	A non-specific term to describe the alteration to the tooth (e.g., striae, groove, facet) before the type has been assigned, or when multiple different types of features are being discussed.

Location	Location refers to the anatomical aspect the feature occurs on, using standard odontological terms; occlusal, buccal, lingual, mesial, and distal (the interproximal aspects), crown, and root. The apex has been omitted, as features here occur following the tooth's removal, e.g., processes during interment, or alterations to make the tooth a material cultural item.
Instrument	Instrument is the implement or instrument causing the PMDA. 'Instrument' is non-descript, and can be used as a collective term, or when the correct instrument is unknown.
Striae	A type of dental feature; longer than wide or deep, and the surface is unpolished. The two indentations meet forming a "V" shape (magnification may be required to identify the characteristic). Striae have six parts – (1) initiation point, (2) gradient, (3) length, (4) width, (5) depth, and (6) termination (added by the researcher) (Puech 1979); parts 1, 2, 6, and occasionally 5, require greater than 10x magnification for observation. Here length is not required for striae to be assigned (but is recorded). Length depends on how long the instrument making the stria has contact with the tooth. Width is also dependent on the instrument being used, but width helps defines striae. Striae are a type of UDM, being a by-product of activity, e.g., toothpicks or knives causing linear cuts to the tooth. Each stria is a separate action, with striae located close to each other indicating repeated actions. High levels of magnification are required to analyse the timeframe of overlapping striae.
Developed striae	A type of dental feature and UDM, being a by-product of repeated activity. These form a "V" shape, but because of the larger dimensions are visible without magnification. The "V" may be wider than a standard stria. As the indentation develops, a groove may form.
Groove(s)	A type of dental feature and UDM, being a by-product of repeated activity. Grooves (all types) result from the dental aspect concerned eroding from friction with an instrument. Grooves are more commonly reported in the interproximal aspects but can occur on any aspect. Wider and deeper than long, or to the same extent as length. Grooves indent into the tooth, with defined ridges on either side of the indentation, leaving a flat transversion.
Facet(s)	A type of dental feature and UDM. Facets are polished, flat, shiny surfaces, with no indentation, and can affect the enamel or erode the dentine (Alexandersen and Lynnerup 2017, 86). Facets are caused by the tooth (any aspect bar apex) rubbing against another surface. Facet size depends on the object's size causing the facet. Facets are not determined by the size or dimensions of the object. Facet formation causes material loss to the tooth. A flat tooth's surface indicates the instrument instigating the facet was suspended by the soft tissue. A facet with a curved surface suggests the instrument had continuous force being applied, resulting in differential wear to the tooth. At this point the facet is becoming a faceted groove, see below. Facets can be a by-product of activity, or from wearing a cultural identifier, such as a labret. The actions causing facets are likely to be paramasticatory in nature, as the instrument is

	used for an extended period, when the different occasions are combined, whereas foodstuffs are typically broken down during the mastication process. The location of the facet can help reconstruct the aetiology. Lingual facets may be infrequent, as the lingual aspect is not frequently used in (para-)masticatory processes. Therefore, a polished/shiny lingual aspect is more likely to be a pathological condition, such as frequent expulsion of gastric juices, or habitual UDM. Occlusal facets are more common than the lingual, as the occlusal aspect is used in many types of PMDA.
Faceted groove(s)	A type of dental feature; these are grooves as defined above, except the flat transversion has a polished surface (a facet). It can be located on the sides or the bottom of the groove. Not all grooves progress to faceted grooves.
Cylindrical groove	A type of dental feature; a groove as defined above, except the depression, when regarded in cross-section, is cylindrical/tubular in shape.
Cylindrical groove – faceted surface	A type of dental feature; a cylindrical groove as described above, but the edge of the depression is shiny and smooth (a facet).
Impact	Traumatic enamel microfractures (TEM) is an injury to the tooth causing enamel damage, being caused by masticatory processes, interpersonal trauma, and accidental trauma. Differential diagnosis will help assign the TEM aetiology to PMDA. The TEM is a type of UDM when related to PMDA, being a by-product of activity. Traumatic enamel microfractures can occur on any aspect of the dentition covered in enamel but are more likely on the occlusal aspect, and may extend to the buccal, lingual, or interproximal aspects. The process of inserting inlays – removing a portion of the tooth to insert a foreign object – is both TEM and cultural identification. If a small depth of the tooth was removed for the inlay, and any adhesive is absent, TEM may be recorded without the inlay being considered.

Table 5-20 Paramasticatory dental activities - recording sheet - numbers and meanings

The numbers relate to those on the recording sheet, indicating which row of the sheet should be filled in. The break in numbers was due to the system being developed whilst other portions of the recording sheets were being developed for the project

Numeral	Title	Meaning
24	Present (type)/absent	If a feature is present, which type
25	Buccal aspect	Number of features per aspect
26	Lingual aspect	
27	Distal aspect	
28	Mesial aspect	
29	Occlusal aspect	
30	Buccal aspect	Length of greatest feature
31	Lingual aspect	
32	Distal aspect	
33	Mesial aspect	
34	Occlusal aspect	
45	Buccal aspect	Width of greatest feature
46	Lingual aspect	
47	Distal aspect	
48	Mesial aspect	
49	Occlusal aspect	

Table 5-21 Paramasticatory dental activities - recording sheet – feature numbers and meanings

The numbers relate to those on the recording sheet, indicating feature is present

Number	Feature
1	Striae
2	Developed striae
3	Groove(s)
4	Facet(s)
5	Faceted groove(s)
6	Cylindrical groove
7	Cylindrical groove – faceted surface

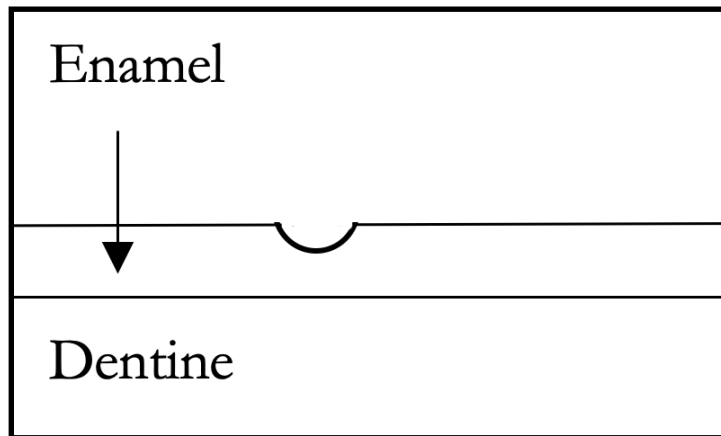


Figure 5-3 Dental Feature - Example – Cylindrical groove

The illustration is a cross-section of a tooth and shows how a cylindrical groove can affect the enamel. The illustration shows the dentine unaffected, but this can occur

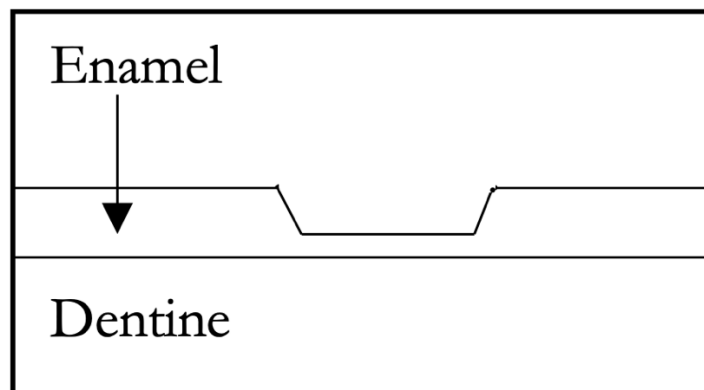


Figure 5-4 Dental Features Example – Groove

The illustration is a cross-section of a tooth and shows how a groove can affect the enamel. The illustration shows the dentine unaffected, but this can occur

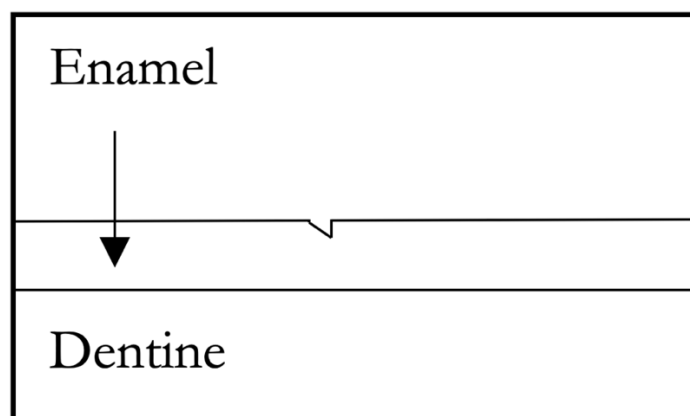


Figure 5-5 Dental Features Example – Stria

The illustration is a cross-section of a tooth and shows how a striae can affect the enamel. The illustration shows the dentine unaffected, but this can occur

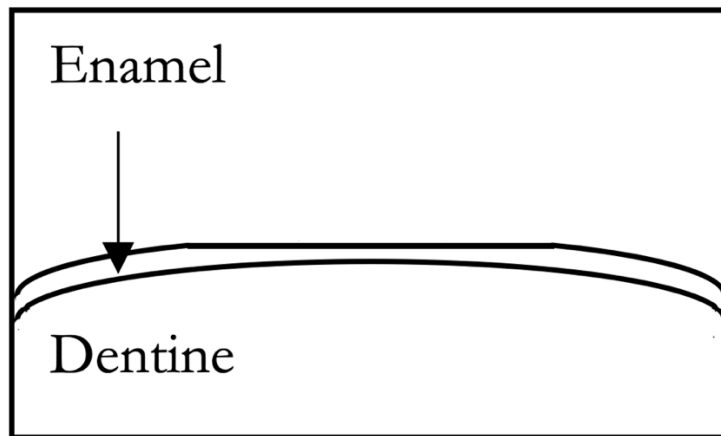


Figure 5-6 Dental Features Example - Facet

The illustration is a cross-section of a tooth and shows how a facet can affect the enamel. The illustration shows the dentine unaffected, but this can occur

The enamel is the slightly flat where the facet has eroded the enamel, but has not penetrated the dentine

5.10.1 Types - Evidence

The types of evidence are direct, bi-direct, and indirect, see Table 5-22. The evidence type governs how the data is analysed, as PMDA and cultural identification rely on different types of evidence.

Table 5-22 Types - Evidence

Type	Description
Direct	The body element (e.g., cranium, dentition, skeletal element, soft tissue) is intentionally, or directly, used – e.g., ablation.
Bi-direct	The body element is intentionally used, but the resulting evidence is unintentional, e.g., cutmarks from tools when material is held between the teeth.
Indirect	The body element is unintentionally used, but the resulting evidence is visible, e.g., wearing labrets causing facets.

5.10.2 Types – Age Categories

Bioarchaeological analyses place individuals into age categories based on the chronological age of the skeleton. The system notes the individuals' developmental stage (developing and developed) when PMDA and cultural identification occurred, focusing on age the individual's age when PMDA/cultural identifiers appear. The developed category starts at 18 years of age, as this is when most bones have fused. The stages remove cultural and physiological ages and help reconstruct inherited or earned status.

Table 5-23 Types - Age categories

Type	Range	Description
Developing	Subadult	Skeleton and/or the permanent teeth are still developing or erupting.
Developed	Adult	Skeletal and odontological development is mostly complete.

5.10.3 Types – Physical

The three types of physical cultural identifiers place levels of significance onto each cultural identifier type (form). The significance is not based on the population's cultural characteristics, which vary across cultures, requiring an in-depth knowledge of the culture. Rather, the significance is based on if the cultural identifier could be removed without leaving damage, see Table 5-24.

Table 5-24 Types – Physical forms

Physical	Description
Permanent	The cultural identifier could not be altered/removed, e.g., ablation.
Semi-permanent	The cultural identifier could be removed but soft tissue, osteological, or odontological unintentional alterations remain. For example, when removed, labrets and tattoos leave soft tissue damage.
Non-permanent	The cultural identifier could be removed leaving no evidence on the individual, e.g., jewellery, headdresses, or temporary/semi-permanent body dye (henna).

5.10.4 Types – Visibility

Visibility refers to where on the body the cultural identifier was, and how recognisable the cultural identifier is when looking at the individual. There are four forms, see Table 5-25.

Table 5-25 Type - Visibility forms

Visibility	Description
Primary	The permanent cultural identifier is on a clearly visible portion of the individual. The skull is the most recognisable part of the body, and the craniofacial region is the most visible of the skull (Sheehan and Nachman 2014). Examples are ablation and artificial cranial modification.
Secondary	The cultural identifier is reconstructed using indirect evidence from osteological, odontological (e.g., facets), or soft tissue (e.g., insertions), unintentional alterations. The material cultural item does not need to be present, as its presence is inferred.
Tertiary	The cultural identifier leaves osteological/odontological evidence and is reconstructed using an unintentional and indirect modification. For example, alterations to mandibular

	parabolic curve from labret wearing (Cybulski 2010, 3, Figure XI-3). Secondary and tertiary forms may be discussed in conjunction with each other.
Quaternary	Material cultural items are directly associated with the HSR, e.g., a ring on a finger. The cultural identifier is not permanent, can be removed from the individual, and does not leave osteological, odontological, or soft tissue evidence.

5.10.5 Types – Distance

Distance refers to how far away the cultural identifier can be viewed. The importance relates to features becoming visually distorted the greater distance there is between two individuals; small cultural identifiers (e.g., dental inlays), are only visible in physically close situations. Cultural identifiers, such as artificial cranial modifications, depending on the extent, are an intermediate/distant cultural identifier, retain visibility with some distance present. Larger cultural identifiers, e.g., neck elongation, retain visibility with greater distance between the individuals, so are distant cultural identifiers.

5.10.6 Frequency

The frequency of the PMDA or cultural identifier, all types, can help determine the meaning of the PMDA/ cultural identifier, excluding positive/negative connotations (discussed below). When the minority of individuals present a cultural identifier or IDM, such as inlays or filing/shaping, it may be evidence of an exclusive/socially reserved practice or individualism, rather than illustrating group affiliation. Individualism over illustrating group affiliation could explain the large categories in dental alterations (inlays and filings) in South American groups (Williams and White 2006). Frequency can also help reconstruct task specialisation and generalisation. Infrequency can mean the activity did not regularly cause UDM, meaning task frequency is unknown.

5.10.7 Affirmations, Connotations, and Purpose

Cultural identifiers can convey positive or negative affirmations and connotations, which vary via culture. Reconstructing purposes and connotations can be difficult; cultural identifiers can negatively impact an individuals' life, without having negative connotations, e.g., ablation potentially causing masticatory problems. The physical impediment the cultural identifier caused could enhance social status, indicating the individual was given assistance.

5.10.8 Recording Method

The method records the occlusal, interproximal, buccal, and lingual aspects. Feature type is first determined, then the features' dimensions (length, width, and equipment permitting, depth) are recorded, see Table 5-26. Measurements can help recreate the object causing the features, technological advancement (striae from tools), and societal changes (increasing labret sizes). Then the theoretical component is reviewed.

Table 5-26 PMDA – Rows 24-34, 45-49 – scores and description

Devised by the researcher

Row	Description	Score
24	Presence/absence and type	0 = absent 1 = striae 2 = facet 3 = groove 4 = faceted groove 5 = cylindrical groove 6 = cylindrical groove – faceted edges
25	Buccal	Number of features observed
26	Lingual	
27	Distal	
28	Mesial	
29	Occlusal	
30	Buccal	Length of largest feature in mm
31	Lingual	
32	Distal	
33	Mesial	
34	Occlusal	
45	Buccal	Width of largest feature in mm
46	Lingual	
47	Distal	
48	Mesial	
49	Occlusal	

5.10.9 Ablation

Ablation is analysed by assessing patterns and frequencies of AMTL and roots remaining (with/without alveolar bone resorption). The anterior teeth are assessed individually to evaluate for AMTL patterns in the incisors and canines. Greater anterior AMTL frequency over posterior AMTL and Hrdlička's (1940a, 5-8) differential diagnosis, presented in the Analyses and Discussion chapter, help signify ablation. The first section of Hrdlička's (1940a, 5-8) differential diagnosis, see Table 5-27, lists five AMTL aetiologies to test the evidence against; if the aetiologies can be excluded, ablation can be proposed. The second section, see Table 5-28, reinforces the proposed ablation, by associating the AMTL with indications of ablation.

Table 5-27 Aetiological reasons for AMTL excluding ablation

From Hrdlička (1940a, 6)

Category	Aetiology	Condition
1	Agenesis	Agenesis (row 1 score 13)
2	Accidental loss	Root and alveolar bone resorption (row 1 score 16) and TEM (rows 37 and 38)
3	Extraction for health e.g., caries	Caries (row 1 scores 7-8, and row 2 score 3)
4	Periodontal disease and abscesses/scurvy	Periodontal disease (rows 46-47)
5	Older age - e.g., reduction of alveolar bone	Alveolar bone loss (rows 10, 14, 17, 20)

Table 5-28 Signs of ablation

From Hrdlička (1940a, 5)

Category	Signs
1	Symmetry/near symmetry
2	Intra-group occurrence
3	Fractures to buccal alveolar bone
4	Tooth removal at young age
5	Inter-group occurrence (proximal)
6	Ethnographic accounts

5.11 Divisions of Diet and Labour

The results of the conditions will reconstruct dietary and labour divisions, based on the absence, presence, and extent across the age and sex classes. Dietary divisions are evaluated via the results for caries (5.8.1), wear (5.7), and calculus (5.8.2); diet cannot be directly or conclusively assigned as linear enamel hypoplasia aetiology (5.9.1), however, physiological disturbances may reinforce patterns in dietary divisions. Labour divisions are evaluated via the results for wear, root resorption, (5.6), TEM (5.8.6), and PMDA (5.10).

6 Chapter 6 Results

This chapter presents the results of the research. Only individuals containing dental remains and/or alveolar bone are included in the analyses, with the full list of individuals in Appendix Table 1. The difficulties obstructing the study were absence or damage preventing scoring, occurring most often for occlusal surface caries and lingual root exposure. Occasionally previous researchers had glued teeth back into alveolar bones hampering scoring due to debris or plant matter adhering to teeth. The method largely affects the cemento-enamel junction-alveolar bone measurements and scoring linear enamel hypoplasia (Scott et al. 2016, 259). Some samples' small MNI, and infrequency of some conditions prevents statistical analysis. Therefore, the prevalence and percentage of conditions was given based on age/sex class. Although it is acknowledged analyses on low numbers can cause limited conclusions, prevalence and percentage accurately represent the data. For reference, when a table lists n.d., it means all data inputted into an equation was 0.

Due to curation location (i.e., differing countries) and travelling costs, intra-observer error (IOE) was not conducted on all collections. Intra-observer error was conducted on all UL and nearly all DL individuals, with AMNH and CMH sampled. Intra-observer error for the CMH curated HSR was interrupted due to COVID-19 restrictions, resulting in the remaining nine days cancelled. Were these nine days to have proceeded, all individuals retaining dental remains or alveolar bones would have been reanalysed and formed a part of the IOE. The IOE results can be found in the Appendix Table 8 and Appendix Table 9. The IOE test, conducted on $n=437$ individuals, found same variations in results. The variations relate to the different options for age and sex, for example, there are two options for each sex - 1. female/male, and 2. possible female/male. Therefore, the slight differences in the results between the first and second time the individuals were analysed, resulted in either female/male or possible female/male being assigned. Overall, the IOE test shows similar results between the two scorings and means the age and sex estimations were reliable.

6.1 Age and Sex Estimations

Subadults are present in $n=11/15$ samples, despite the problems associated with subadult preservation and identification (Scheuer and Black 2004, 18-19; although see Hoppa and Gruspier 1996). However, there is no consistency in presence, as in five of the samples with subadults, there is only one subadult. Table 6-1 shows the distribution of subadult age classes per sample. Overall, all age/sex classes are represented, bar *in utero* and inter-uterine/neonate, with more young adults than mature adults. Table 6-2 presents the sex ratios and shows $n=5/15$ samples had more males (Greenland Unknown, North Alaska, Nunavut, Vancouver Island and West Greenland). The remaining 10 samples have more females.

Table 6-1 Subadult age classes present

Sample	Infant	Child	Adolescent
Amaknak Island		X	X
Canada Unknown	X	X	X
Coats Island	X	X	X
Greenland Unknown		X	X
Hudson Bay	X	X	X
North Alaska		X	
North Greenland		X	
Nunavut	X	X	X
South Alaska		X	
Vancouver Island		X	X
West Aleutians		X	X
West Greenland		X	

Table 6-2 Sex ratio

Based on Females/Males

Sample	Ratio
Amaknak Island	1.3
Canada Unknown	1.2
Coats Island	1.5
East Greenland	2.3
Greenland Unknown	0.6
Hudson Bay	1.4
North Alaska	0.8
North Greenland	1.2
Nunavut	0.8
South Alaska	1.1
South Greenland	1.25
St. Lawrence	1.1
Vancouver Island	0.6
West Aleutians	1.1
West Greenland	0.75

6.2 Tooth Status

The following presents the results for most tooth presence scores. The results for root resorption (row 1, score 16) are presented in 6.5.2, and roots remaining (row 1, score 17) in 6.2.5.

6.2.1 Absence/Presence

The total mean tooth count per sample is in Table 6-3, with the complete results in the Appendix Tables 10-51. There are variations in the mean tooth presence across the samples and between the sexes. The South Alaska sample has the greatest mean (25.7), despite having a small MNI. Whilst the three largest samples have smaller and similar means – Coats Island (10), Hudson Bay (11.3) and Nunavut (12.4). The smallest mean is Canada Unknown with 5.1. Retained deciduous teeth occur in two adult individuals from Coats Island (YA females, teeth 65 and 85) and Nunavut (pooled males, tooth 61). Anterior teeth are regularly the most frequent tooth class, whilst the third molar is rarely the most frequent tooth class. Overall, pooled males have the greatest tooth presence.

Table 6-3 R1 - Mean number of teeth present per individual for each sample.

The relevant scores in recording sheets are Row 1 scores 0,7,8,14-17.

Sample	Mean
Amaknak Island	16
Canada Unknown	5.1
Coats Island	10
East Greenland	16.6
Greenland Unknown	8.5
Hudson Bay	11.3
North Alaska	10.4
North Greenland	9.6
Nunavut	12.4
South Alaska	25.7
South Greenland	8.7
St. Lawrence	19.7
Vancouver Island	9.5
West Aleutians	12.8
West Greenland	9.2

Regularly across the subadults the M1 is the most frequent in $n=12/21$ (57.1%). The next most frequent is the anterior teeth in $n=7/21$ (33.3%) of the subadults. Finally, the M2, across pooled age classes, is the

most frequent in $n=4/21$ (19%) in the subadults. An outlier in the subadults, is the Nunavut adolescents, as the M3 is the most frequent tooth class; these results will be discussed in the next chapter.

6.2.2 Post-Mortem Tooth Loss

The results for post-mortem tooth loss (PMTL), including true prevalence rates, are in Appendix Tables 10-51). Records of PMTL from acquisition/collection is available for two individuals, see Table 6-4. The results mirror those for tooth presence, as the samples with high means for tooth presence have low PMTL, and vice-versa, see 6. The results show females have the greatest PMTL in $n=9/15$ samples (Amaknak Island, Greenland Unknown, Hudson Bay, North Alaska, North Greenland, Nunavut, South Alaska, South Greenland, and Vancouver Island). Males only have the greater PMTL in $n=2/15$ samples (East Greenland and North Alaska), and mixed frequency in $n=4/15$ (Coats Island, St. Lawrence, West Aleutians, and West Greenland). The (normally) singled-rooted anterior teeth have a greater PMTL rate compared to the molars. Several samples have high percentages; the greatest is the West Greenland pooled females with $n=29/30$ (96.67%).

Table 6-4 R1:S10 – PMTL – accounted for

In the recording sheets the relevant score is Row 1, Score 10.

Skeletal ID	Tooth	Observed by	Reason
56-Aa.113M	16	Brierley and Parsons (1906)	Not accounted for
NA 134	28	DL curation note, signed by F. RLM.C	Removed for destructive analysis
	38		

6.2.3 Agenesis

Most samples present agenesis, but all percentages are low, with the results, including true prevalence rates, in Appendix Tables 10-51. In the Scoring Sheets agenesis is Row 1 Score 13. Although agenesis does not progress, as with some conditions (e.g., caries), age classes are maintained for consistency. There is only one instance of M1 agenesis, in the Nunavut sample. Where agenesis occurs, the highest rate is in the M3s, apart from the West Aleutians MA males. The greatest percentage is in the Coats Island child individuals, with $n=57/58$ (98.28%) and Hudson Bay child individuals, with $n=36/39$ (85.71%). These percentages can be ignored, as they do not correctly represent M3 agenesis rates amongst these age classes, as will be explained in the next chapter. The remaining high percentages are in the following samples: Canada Unknown pooled females, Greenland Unknown pooled and MA males and St. Lawrence MA males.

Several age/sex classes do not present agenesis; East Greenland (all individuals), and South Greenland (all males), North Greenland (subadults – pooled and child), Vancouver Island (males – pooled and YA), and West Greenland (all males). All other age/sex classes have agenesis at least once. There are two symmetrical occurrences of agenesis in an adult (individual NA 151, the Greenland Unknown sample), in teeth 41 and 31; the sockets for the lateral incisors (teeth 42 and 32) show teeth 41 and 31 have not erupted, and the mandibular M3s and the lateral permanent incisors are absent. Although there is slight rotation in the central incisors, the rotation is not linked to the missing lateral incisors. Rather, the rotation is a characteristic, termed winging, associated with the samples' biological affinity (Scott and Irish 2017, 13).

6.2.4 Antemortem Tooth Loss

The results, including true prevalence rates, are in the Appendix Tables 10-51. If referencing the scoring sheets, row 1 scores 11, 12, and 17 are relevant. Antemortem tooth loss (AMTL) is greater in females in $n=6/15$ samples (Amaknak Island, North Greenland, Nunavut, South Greenland, St. Lawrence, and West Greenland), and males in $n=9/15$ sample (Canada Unknown, Coats Island, East Greenland, Greenland Unknown, Hudson Bay, North Alaska, South Alaska, Vancouver Island and West Aleutians). Where YA females exhibit AMTL, the corresponding MA females always contain a greater percentage. Subadult AMTL occurs in the permanent dentition in two Hudson Bay adolescents (13.5 and 15.5 years-of-age), with partial remodelling (tooth 32 $n=1$) and full remodelling (tooth 42 $n=1$, tooth 41 $n=2$, tooth 31 $n=2$).

Most age/sex classes have the highest percentage AMTL in molars ($>0.2\%$), see Table 6-5. The remaining have anterior or mixed tooth classes as the most frequent. Age-related progression (where MA have greater AMTL than YA), occurs in several samples, but not correspondingly between females and males, see Table 6-6. Unexpectedly, there are several instances where the YA have the greatest AMTL: Coats Island (females), Greenland Unknown (males), North Alaska (males, there were only YA females), South Alaska (males, the YA and MA females do not present any AMTL), and West Greenland (there are no MA females). The East Greenland sample do not have YA males or mature adults of either sex, whilst the Vancouver Island sample do not have any MA individuals.

Amongst the samples with AMTL, there are frequently tooth classes with AMTL at $>50\%$. Although the females present the greatest AMTL rate (including $>50\%$), some males present $>50\%$ of AMTL. The results show the majority of these are in the molars, including M3. Two samples have AMTL in subadults; in the Nunavut child the AMTL occurs in deciduous anterior teeth in quadrant five ($n=2/38$, 1.47% of the total deciduous tooth presence). The Hudson Bay adolescents have AMTL in the permanent anterior dentition in quadrants three and four ($n=6/24$, 11.11% , of the total permanent and overall – deciduous and permanent combined, tooth presence).

Table 6-5 Antemortem tooth loss summary - molars are most frequent

Sample	Age/sex class
Coats Island	Mature adult males
East Greenland	Pooled females
Greenland Unknown	Pooled, young adult and mature adult females, and pooled and YA males
Hudson Bay	Pooled and mature adult males
North Alaska	Pooled, young adult and mature adult males
North Greenland	Mature adult females, and pooled and mature adult males
Nunavut	pooled and mature adult males
South Alaska	Pooled females
South Greenland	Pooled and young adult females, and pooled and mature adult males
St. Lawrence	Pooled, young adult and mature adult females, and pooled and mature adult males
Vancouver Island	Pooled and young adult females and males
West Greenland	Pooled and young adult females and males

Table 6-6 Antemortem tooth loss summary - samples with age-progression

Sample	Sex class
Amaknak Island	Females and males
Canada Unknown	Females (there were no mature adult males)
Coats Island	Males
Greenland Unknown	Females
Hudson Bay	Females and males
North Greenland	Females and males
Nunavut	Females and males
South Greenland	Males (there were no mature adult females)
St. Lawrence	Females and males
West Aleutians	Females and males

6.2.5 Antemortem Tooth Loss and Odontological Conditions

Only the Amaknak Island sample has roots remaining, with/without alveolar bone resorption; if referencing the scoring sheets, row 1 scores 11, 12, and 17 are relevant. The occurrences of roots remaining against AMTL are given in Table 6-7. Two MA males and an adult unknown male have roots remaining predominately in the mandibular anterior dentition (no greater pattern can be established). In all instances, roots either reach the alveolar bone, or are -1mm below it. Only one individual (the adult unknown) has

roots remaining with alveolar bone resorption, whilst the MA individuals do not show alveolar bone resorption.

The percentages of teeth with roots remaining, when viewed via tooth and age/sex class, range from 20-100% (Table 6-8). When the percentages of roots remaining are viewed by age class (Table 6-9), the male pooled and two age classes (adult unknown and mature adult), the percentages range from 23.7-100%. The male adult unknown individual is the only one of the age/sex classes with roots remaining, whilst the two MA males compose 33% ($n=2/6$). However, the percentage of individuals displaying roots remaining across the entire sample is small – 8.57% ($n=3/35$).

Table 6-7 AMTL and roots remaining – Amaknak Island

RR = roots remaining

Skeletal ID	Sex	Age	12	41	31	33
AMNH 99.1/700	Male	Adult unknown	RR with signs of alveolar bone remodelling			
AMNH 99.1/803	Male Possible	MA			RR with no signs of alveolar bone remodelling	
AMNH 99.1/802	Male Possible	MA		RR with no signs of alveolar bone remodelling		RR with no signs of alveolar bone remodelling

Table 6-8 AMTL/Roots Remaining – number of teeth, total and percentage

Tooth	12	41	31	33
Male Pooled	1/2 (50%)	1/5 (20%)	1/5 (20%)	1/5 (20%)
Adult Unknown	1/1 (100%)			
MA		1/3 (33.3%)	1/3 (33.3%)	1/2 (50%)

Table 6-9 AMTL/Roots Remaining – number of individuals, total and percentage

Sample (Combined)	Male Pooled	Adult Unknown	MA
3/35 (8.57%)	3/13 (23.07%)	1/1 (100%)	2/6 (33.3%)

6.2.6 Malposition

Malpositions are not age-dependent, so the data are based on pooled females, pooled males and pooled subadults. The results, including true prevalence rates are in Appendix Table 52. If referencing the scoring sheets, row 1 score 15 is relevant. Malpositions are not consistently present, and are absent in $n=5/15$ samples; Greenland Unknown, South Alaska, St. Lawrence, Vancouver Island, and West Greenland. Most frequently malpositions occur in the M3s, followed by the anterior teeth.

Malposition infrequency mean percentages are exceptionally low, with little difference between the samples with malpositions. After the expectedly variable M3s, the anterior teeth show the highest percentages, particularly in the North Greenland and South Greenland females, with $n=1/3$ (33.3%) and $n=1/4$ (25%) respectively. Within the males, the greatest malpositions in the anterior teeth is $n=17/73$ (23.29%), in Coats Island. Only the Nunavut sample present malpositions in M2s, whilst no M1 malpositions occur in any of the samples. The Coats Island and Hudson Bay adolescents are the only subadults with malpositions, in the permanent anterior teeth. For the Coats Island adolescents, the malposition teeth have an occurrence of 0.05% ($n=4/204$), and in the Hudson Bay sample, the percentage is 0.04% ($n=3/147$).

6.2.7 Tooth Presence Summary

Overall, there was a high tooth mean per sample, although with some exceptions. Tooth presence, AMTL, and PMTL diverge between the sexes, rather than ecogeographic regions. There were greater frequencies of PMTL in female, and greater tooth presence in males. Whereas agenesis and malpositions show divergences across ecogeographical regions, particularly in some Greenlandic samples. Unexpected patterns of malpositions occur in the Coats Island sample, in contrast to what is expected from the effects of genetic restriction. However, overall, the samples, do not show excessive levels of malposition.

6.3 Wear

This section analyses the results for wear.

6.3.1 Mesial and Distal Approximal Attrition

The very few odontological changes associated with mesial and distal wear are largely from absent or destroyed features. There are minimal differences between the results for interproximal attrition, in that the contact points were either missing, attrition was lacking, or confined to the enamel. Therefore, the results are presented in total and percentages of occurrences for both. If referencing the scoring sheets, rows 7 and 11 should be consulted, with the results in Appendix Tables 58, 59, 66, 67, 68. For distal wear, attrition

was present in the Canada Unknown and Greenland Unknown samples in the anterior teeth across pooled females and males, and Greenland Unknown sample also within the anterior teeth, but minimally.

6.3.2 Wear (Extent)

The results for wear (extent) are in Appendix Tables 78-80. If referencing the scoring sheets, row 35 scores 0-4 should be consulted. Differing from the bioarchaeological norm, only $n=1/15$ samples present the anterior teeth as the class with the greatest wear extent (the Coats Island sample). Molars display the greatest wear in $n=7/15$ samples; Amaknak Island, Hudson Bay, North Alaska, Nunavut, South Alaska, St. Lawrence, and Vancouver Island. Mixed tooth classes with the greatest frequencies occurs in $n=7/15$ samples; Canada Unknown, East Greenland, Greenland Unknown, North Greenland, South Greenland, West Aleutians, and West Greenland.

Whilst age progression occurs in some samples, such as the Amaknak Island females, others, such as the Coats Island females, show similar wear extent between the YA and MA. Most samples are similar to the Coats Island females, with the YA showing reduced wear (scores 0-2) and the MA showing the greater wear (scores 3-4). Age-related wear progression occurs in males in $n=10/12$ samples (Coats Island, Greenland Unknown, Hudson Bay, North Alaska, North Greenland, Nunavut, South Alaska, St. Lawrence, West Aleutians, and West Greenland) and for females in $n=7/11$ samples (Amaknak Island, Canada Unknown, Greenland Unknown, Hudson Bay, Nunavut, South Alaska, and West Aleutians). The remainder are mixed.

Overall, the subadults express the opposite to the adult samples, with the child age class presenting greater wear extent than adolescents, apart from the Amaknak Island sample which will be discussed below. The majority of subadults present no or limited wear (Scores 0-1), however three groups present dentine clusters. The wear on the Hudson Bay adolescents (permanent dentition) and West Aleutians child individuals (deciduous dentition), have score 2. The West Greenland child (deciduous dentition) has score 3. Whilst the South Alaska pooled and adolescent subadults (permanent dentition) have scores 1-2. The Hudson Bay infants show anterior deciduous tooth wear (scores 2-3). Wear was not found on any other infant individual.

One sample with atypical patterns for both adults and subadults is the Amaknak Island sample. The most extensive wear is in the adult Amaknak Island sample, resulting in wear exceeding the limits of the scoring system, with tooth height frequently only 0.5-1mm above the alveolar bone. The extreme wear occurs in both sexes, and whilst it predominantly occurs across the M1-M3s, the anterior teeth are also affected, see Figure 6-1-Figure 6-4. Figure 6-1 (square B) shows the variation in wear extent within individuals, as the anterior teeth have much less wear than the molars. Although gingival location is difficult to ascertain in bioarchaeological samples, it is approximately where teeth are reduced to. Despite the excessive wear, none of the teeth are necrotic.



Figure 6-1 Example - Wear 1

Amaknak Island - AMNH 99.1/798. A YA female individual, presenting extensive wear, which in life would occur at the gingivae level. Of additional note is the wear direction on teeth 46-48.

A = illustrates both the height loss present and multiple and excessive gradients present.

Photograph: Author's Own, Courtesy of the Division of Anthropology, American Museum of Natural History



Figure 6-2 Example - Wear 2

Amaknak Island - AMNH 99.1/798. A YA female individual, presenting extensive wear, which in life would occur at the gingivae level.

Photograph: Author's Own, Courtesy of the Division of Anthropology, American Museum of Natural History

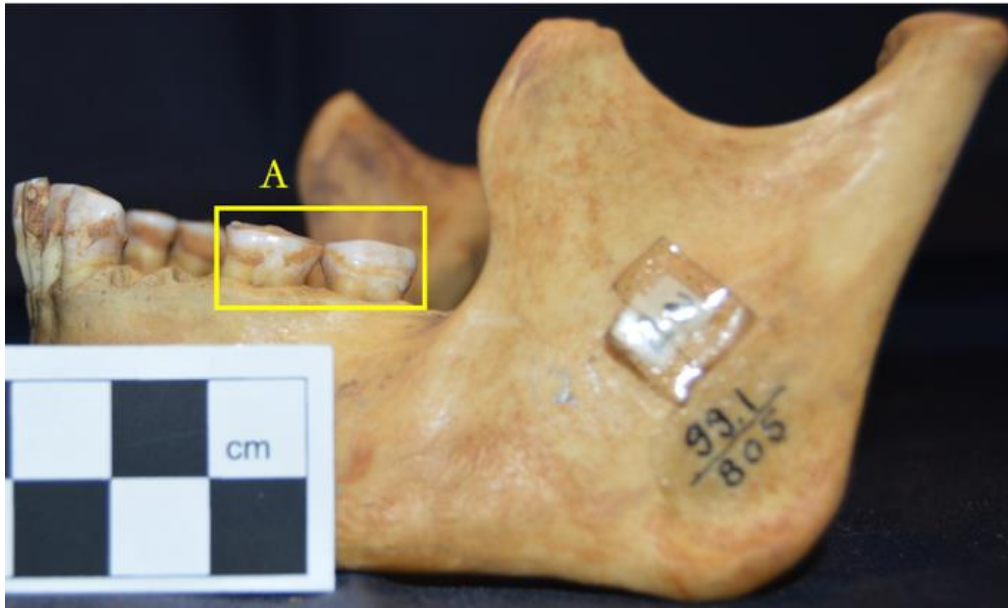


Figure 6-3 Example - Wear 3

Amaknak Island - AMNH 99.1/805. A YA female individual

A = illustrating reduced loss of the height of the tooth, and reduced variations in divergent gradients.

Photograph: Author's Own, Courtesy of the Division of Anthropology, American Museum of Natural History

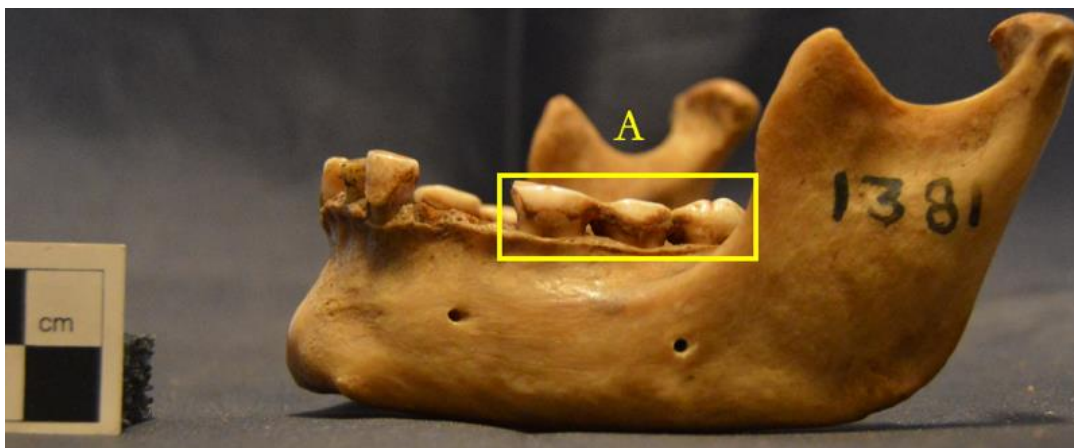


Figure 6-4 Example - Wear 4

Amaknak Island - AMNH VL/1381. A YA male individual

A = illustrating wear which would be located close to the gingivae level in life.

Photograph: Author's Own, Courtesy of the Division of Anthropology, American Museum of Natural History



Figure 6-5 Example - Wear 5

Amaknak Island - AMNH VL/1381. A YA male individual

Photograph: Author's Own, Courtesy of the Division of Anthropology, American Museum of Natural History

Figure 6-4 illustrates the variation in wear in the Amaknak Island sample. Both individuals were YA, however they display distinct extent and patterns of wear across the arcade. Individual AMNH 99.1/798 (Figure 6-1) shows, as stated, extensive molar wear, with greatly reduced (for this sample) anterior tooth wear, with the gradient between the molars and anterior teeth varying too. Whereas individual AMNH VL/1381 (Figure 6-4) displays more consistent wear (extent) across the dental arcade. Whilst the wear on individual AMNH VL/1381 is still greater than many post-HG samples, it is greatly reduced compared to individual AMNH 99.1/798. Whilst individual AMNH 99.1/798 shows wear to the proposed gingivae, individuals AMNH 99.1/805 and AMNH VL/1381 do not. However, the wear extent in the latter two individuals is a significant reduction in crown height. The Amaknak Island subadults have similarly unique results compared to Amaknak Island adults and many of child individuals from the other samples; wear is absent from the subadults, on the deciduous or permanent dentitions.

6.3.3 Wear (Gradient)

The results are in Appendix Table 81-83; if referencing the scoring sheets, row 36 scores 0-4 should be consulted. Gradient changes associated with age increase from YA to MA occur in $n=10/15$ samples, but only $n=6/10$ show age increase in both sexes; Amaknak Island, Hudson Bay, North Greenland, South Alaska, St. Lawrence, and West Aleutians. Whilst three samples show only males with age related wear gradient changes (Coats Island, North Alaska, West Greenland), and only one female has age-related wear gradient changes (Canada Unknown). The remaining five samples do not present gradient change

associated with age increase. Limited gradient changes were found in the subadults, as they present limited wear, see 6.3.2.

Overall, the most frequent gradients are horizontal and plane, concave, or absent wear (scores 0-2) across the age/sex classes. But there are differences between the sexes. Most males have horizontal and plane or concave wear (scores 1-2) most frequently. The females pooled and YA meanwhile express no wear most frequently. Apart from the Amaknak Island sample, only MA of both sexes present oblique and concave wear (score 4). The Amaknak Island adult sample presents unique results; frequently each occlusal aspect presents multiple gradients. No other sample has as many gradients on an occlusal surface, or degree of angle present. Figure 6-1 square A shows the variable and dramatically contrasting wear patterns in the Amaknak Island sample, particularly on the molars. Square B on the other hand illustrates reduced loss of dental height, and flat gradient. In Figure 6-4, just as wear extent is reduced compared to other Amaknak Island individuals, the variation in gradient present per occlusal aspects was also much less varied, in individual AMNH VL/1381 compared to individual AMNH 99.1/798. Figure 6-3 meanwhile displays slight gradient variation per occlusal aspect in individual AMNH 99.1/805, and the individual, similar to those in Figure 6-1 and Figure 6-4 is a YA, and therefore shows the beginning of the unique wear patterns (extent and gradient) present in the Amaknak Island sample.

As was reported in section 6.3.2, the Amaknak Island subadults do not present wear, meaning there is also no wear gradient. The Coats Island, Hudson Bay, and West Greenland child age class displayed horizontal and concave wear (score 2) but only on the deciduous dentition. The two most frequently occurring patterns (across all the subadults) are no wear, or horizontal and plane (scores 0-1). For most subadults, absent wear (score 0) was the most frequent in the Amaknak Island, Canada Unknown, Coats Island, Greenland Unknown, North Alaska, North Greenland, Vancouver Island, West Aleutians, and West Greenland samples. Three samples consistently display horizontal and plane wear (score 1) as the most frequent score through all the subadult age classes present – Hudson Bay, Nunavut, and South Alaska.

6.3.4 Wear Summary

The results show contrasting results between approximal and occlusal wear. The interproximal sites show minimal/no wear, all without caries association. The occlusal aspect has greater wear, so the minor alterations recorded via the interproximal sites are lost. Wear extent and gradient show greatly varied results, which are not always linked to age (for extent) or sex (for gradient). The wear patterns are as expected, with YA of both sexes generally presenting no wear to presence of dentine clusters (scores 0-2), and all MA of both sexes exhibiting greater exposure of dentine or pulpal horns (score 3-4). There are discrepancies, as the Amaknak Island YA females and Hudson Bay pooled, YA and MA males all have greater dentine exposure (score 4) more frequently. Although the Hudson Bay pooled, YA and MA males present the

greatest wear level in the males, Amaknak Island has the greater extent (no greater than 1mm above the alveolar bone).

6.4 Oral Health

Presented below are the results for caries, alveolar bone resorption, periodontal disease, and calculus. Overall, the results show most individuals displayed homogeneously healthy oral environments. However, some distinctions were found, relating to sex/age classes, mainly with caries and calculus.

6.4.1 Caries

The section presents the results for caries, all of which are at a recognisable stage; here middle adults were included as they form a portion of the pooled data. Because caries is infrequent, present in only $n=3/15$ samples, all lesions have been tabulated together, including the true prevalence rates, see Appendix Table 84. If referencing the scoring sheets, Table 6-10 should be consulted. Caries' infrequency ($n=9$ lesions across $n=6$ individuals) renders percentages low, which do not show strong differences between the age/sex classes. The number of individuals with caries per sample are in Figure 6-1; the total and percentage per sex classes are in Figure 6-7, and by age and sex class are in Figure 6-8. There are three gross carious lesions (row 1, scores 7-8) in two Amaknak Island individuals, each have either gross lesions or gross lesions with exposed pulp, and one West Greenland individual with the latter. The Amaknak Island individuals are female, and the West Greenland individual male, and all are middle adults or older. Of those with caries, $n=1/6$ is a YA from the Nunavut sample (also female), with two lesions. Caries is absent from all subadults.

Only $n=2/6$ individuals are male, each with gross lesions. The females present varied caries extent. The maxillae have more lesions, with $n=6/9$, with the left maxillae quadrant containing the most, $n=4/9$. When tooth class frequency is viewed, the single-cusped anterior teeth have the fewest occurrences ($n=1/9$), whilst the multi-cusped molars contain more, with the M3s containing the greatest ($n=4/9$), the M1s and M2s each contain $n=2$; the four lesions are across three individuals. The percentages show the Amaknak Island females have similar results to the Nunavut females for the M3s, whilst the Amaknak Island male has the greater results. The Amaknak Island female M2 percentage is dissimilar to the Amaknak Island M3 percentage, being nearly double the total of the Amaknak Island M3 tooth class and Nunavut females in the M3 tooth class. The Amaknak Island male has greater M3 results compared to the Nunavut sample. When the caries results are viewed by age and sex class, and tooth class, the greatest percentage is in the Amaknak Island male MA, in the M2 tooth class ($n=1/99$, 11.11%), see Figure 6-11. When caries is viewed by sex class in each sample, see Figure 6-6, the Amaknak Island males have the greatest percent. When caries is viewed by age class between the samples, the greatest percentage is in the Amaknak Island MA sample ($n=5/14$, 0.35%). However, none of the results reach $>1\%$, for the age/sex classes.

Table 6-10 Scores relating to tooth status – caries I

Row	Score	Location/description
1	7-8	Unknown (gross carious lesions)
2	1-8	Occlusal aspect of molars
3	1-8	Pit sites in molars and upper incisors
6	1-8	Occlusal attrition facet enamel edge chipping and caries
8	1-8	Mesial contact areas caries
9	1-8	Mesial root surface caries
12	1-8	Distal contact area caries
13	1-8	Distal root surface caries
16	1-8	Buccal root surface caries
19	1-8	Lingual root surface caries

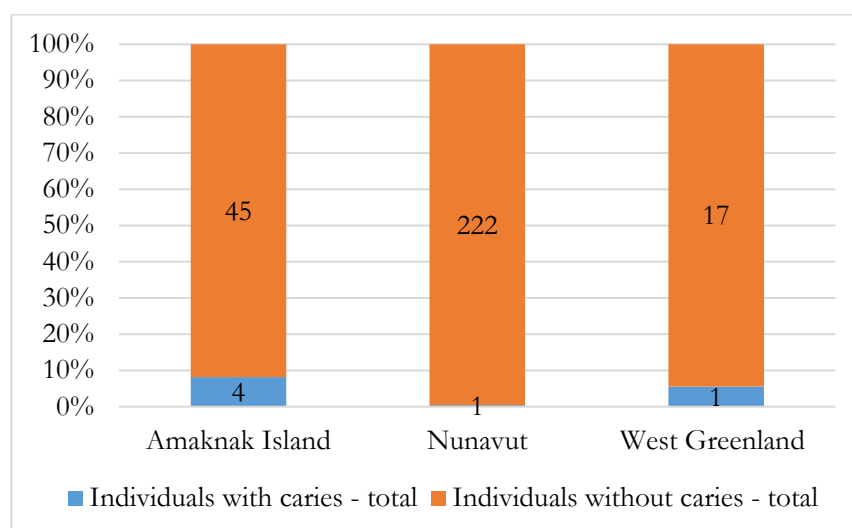


Figure 6-6 Caries - total and percentages of individuals with and without carious lesions

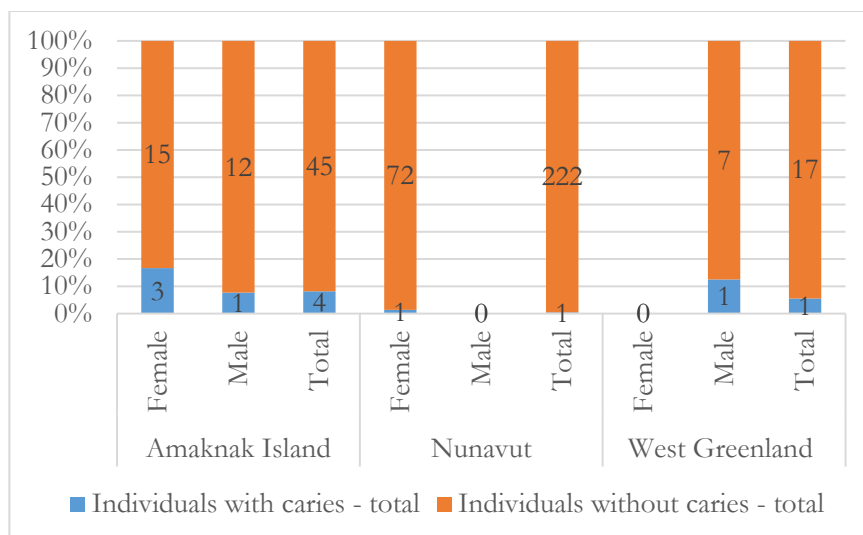


Figure 6-7 Caries - total and percentages of individuals with and without carious lesions based on sex class

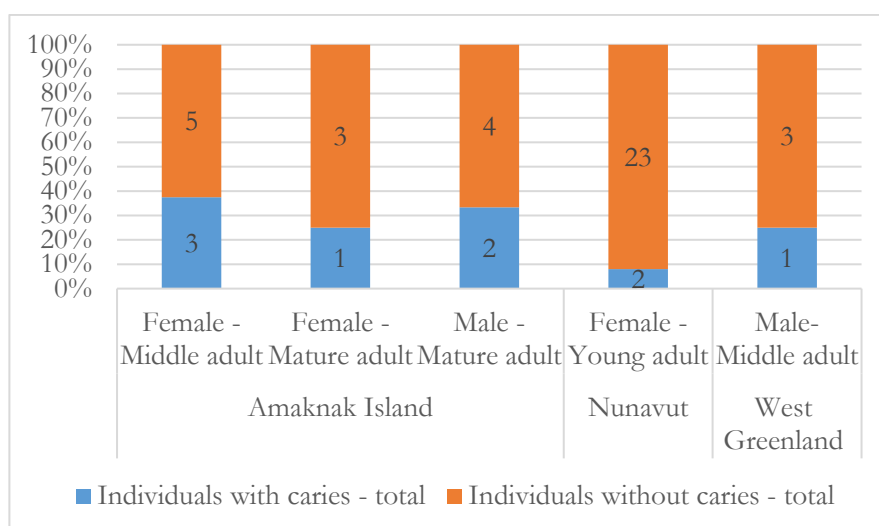


Figure 6-8 Caries - total and percentages of individuals with and without carious lesions based on age and sex class

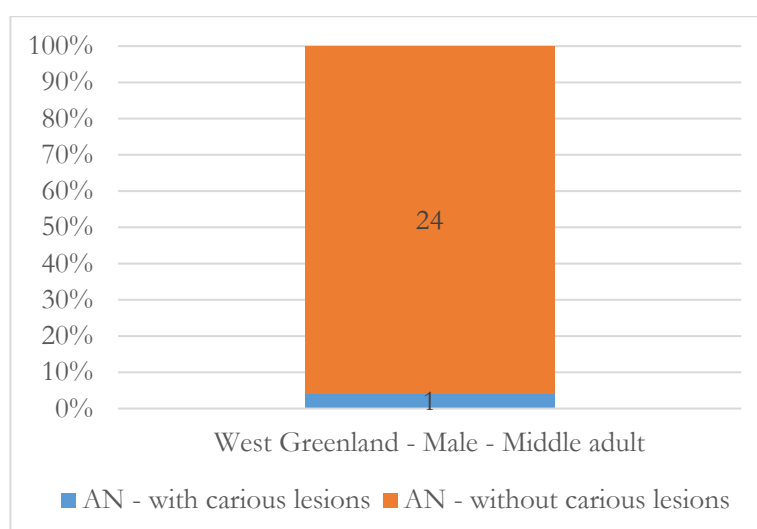


Figure 6-9 Caries - total and percentage of carious lesions per tooth class, for the age/sex class affected - anterior teeth

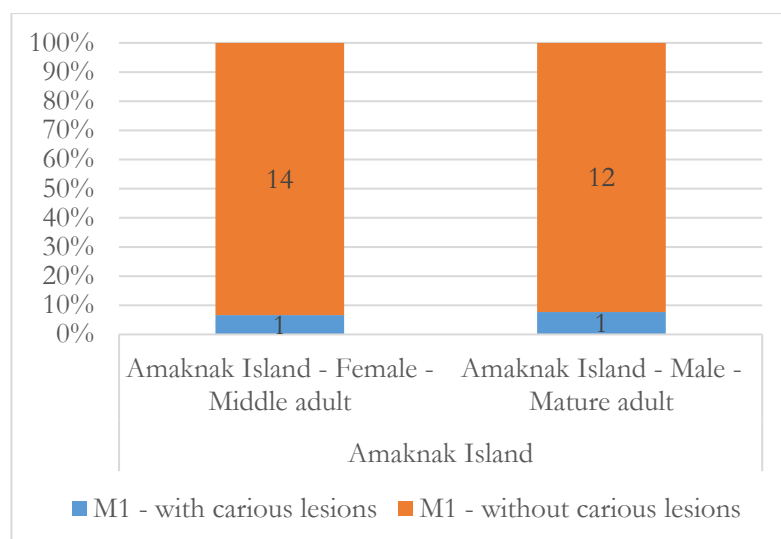


Figure 6-10 Caries - total and percentage of carious lesions per tooth class, for the age/sex class affected - M1

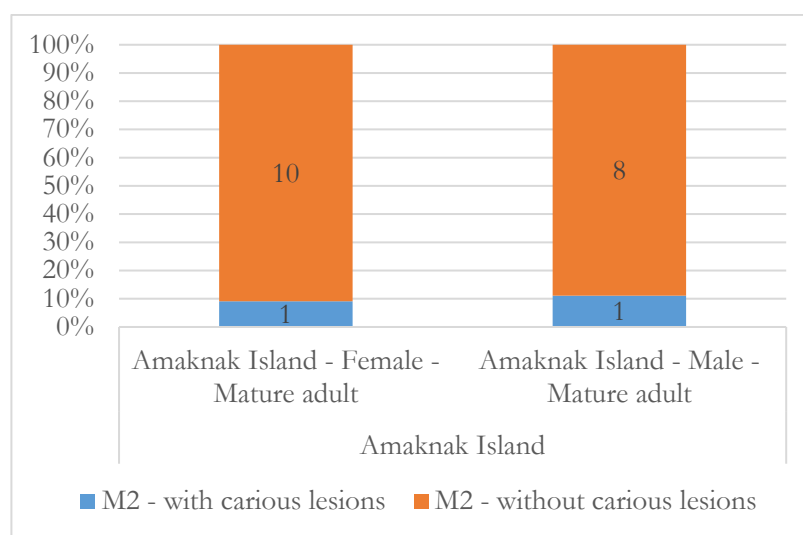


Figure 6-11 Caries - total and percentage of carious lesions per tooth class, for the age/sex class affected - M2

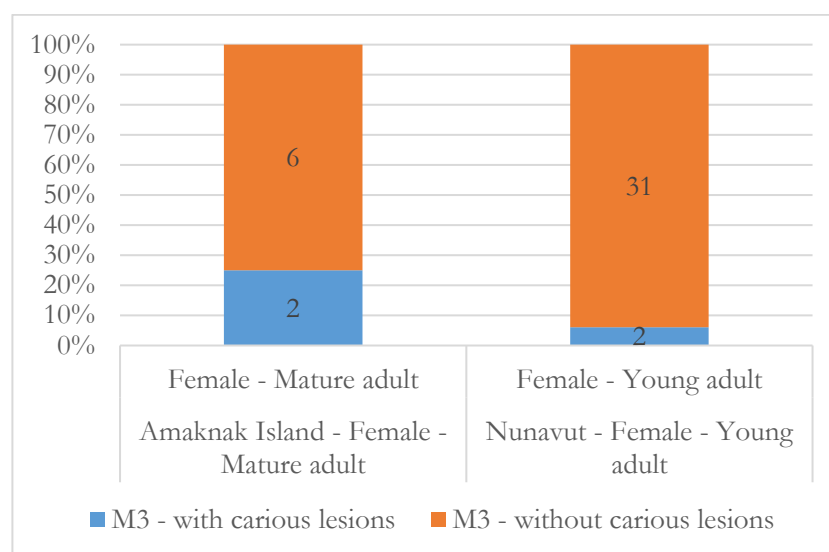


Figure 6-12 Caries - total and percentage of carious lesions per tooth class, for the age/sex class affected - M3

For caries on the occlusal aspect of molars (row 2), greater scores occur when the results are pooled, showing; no odontological changes (score 0), odontological changes indicating caries (scores 1-2) and two scores for caries (score 3 – small cavity and score 5 – large cavity). In the Amaknak Island sample, score 3 is the most frequent ($n=3/4$), and score 5 only occurred $n=1/4$. Within the Nunavut sample, only score 3 occurs, with symmetry between teeth 18 and 28. The only occlusal caries present is in the MA Amaknak Island and YA Nunavut sample. Within the Amaknak Island sample, the male individual has the greatest caries percent, in sex/age class. Even amongst the larger Nunavut sample, the rate of caries is lower than the Amaknak Island sample that has a smaller MNI. The Amaknak Island MA females and male samples presented scores 2, 3 and 5.

The scores relating to the caries in pit sites, contact, and root aspects show very minor odontological changes, with minor alterations to the teeth's appearance. The results are presented in the Appendix Tables 53-57 and 60-65. The odontological changes in the pit sites in molars and upper incisors have scores 1 and 2, relating to changes in enamel colour and have some slight surface destruction (Hillson 2001, Appendix A). In the adults these are in the female, male and subadult pooled samples, and the deciduous teeth of the child age class. There are many more instances of alterations for occlusal attrition facet enamel edge chipping and caries, with scores 1 and 2. For mesial root surface caries, the pooled males again are the sex class showing odontological alterations, but again not associated with caries. However, the alterations are only in the East Greenland sample, with score 1 (changes to the enamel colour near the cement–enamel junction, or root surface) (Hillson 2001, Appendix A). For distal root surface caries, only the Greenland Unknown pooled and MA males have results greater than score 0, being score 1 (enamel colour alterations).

For mesial contact areas caries, the South Greenland and Vancouver Island pooled males, and South Greenland MA males, show scores over 0, being scores 1 (white/stained opaque area in enamel, with smooth glossy/matte surface, or stained patch in dentine) and 2 (white/stained opaque area of enamel, with associated roughening/slight surface destruction) (Hillson 2001, Appendix A). For distal contact area caries, only the Canada Unknown pooled females show alterations (score 1, relating to the enamels' colour). For buccal root surface caries, only the East Greenland pooled males have a score greater than 0, being score 1 (relating to the enamels' colour). Lingual root surface caries has more occurrences of score 1 (relating to the enamels' colour), occurring more frequently in females; Canada Unknown, East Greenland, South Greenland (pooled females), South Greenland (female YA), and West Greenland (pooled males).

6.4.2 Alveolar Bone Resorption

The results, as means are rounded to nearest 0.1mm, are in Appendix tables 85-88, which show the four aspects have a mixture of alveolar bone resorption extents. If referencing the scoring sheets, Table 6-11 should be consulted. The summaries in Table 6-12 and Table 6-14 show where the mature adults have the greater alveolar bone resorption, where the young adults have the greater resorption, and in the permanent

and deciduous, between the infant (deciduous only), child, and adolescent individuals. However, there is no clear pattern of alveolar bone resorption. The results across the buccal, lingual, and interproximal aspects show alveolar bone resorption extent is not always linked to the age of the individual, as YA individuals occasionally have the greater extent of alveolar bone resorption. As the Vancouver Island sample does not have MA counterparts, age progression cannot be analysed, but the YA females have the greater alveolar bone resorption compared to the YA males.

The subadults have alveolar bone resorption on both the deciduous and permanent dentitions. Mostly, where permanent and deciduous teeth are present, the deciduous display the greater extent of alveolar bone resorption and is greatest in the child age class. Lingually, the infants present alveolar bone resorption of no greater than 1.60mm. The adolescents have less resorption, in the Coats Island, Hudson Bay, and Nunavut with <0.80mm. The remaining subadults have alveolar bone resorption no greater than 0.07mm. As with the other conditions, the results will be discussed in the following chapter.

The distal aspect displays quite high levels of alveolar bone resorption in the adults' permanent dentition and subadults' deciduous dentition. The greatest is in the Hudson Bay pooled females, with 7.41mm, and Nunavut pooled subadults 1.90mm (deciduous). As with the lingual aspect, in the buccal aspect alveolar bone resorption occurs in the Nunavut infants, with 0.03mm (deciduous). The Hudson Bay child sample have a high mean of 1.99mm (deciduous), and Coats Island child individuals have 1.88mm (deciduous). The remaining subadults, from all samples have reduced alveolar bone absorption, if present.

Table 6-11 Scores relating to tooth status - alveolar bone resorption

Row	Aspect
10	Medial
14	Distal
17	Buccal
20	Lingual

Table 6-12 Alveolar bone resorption – summary - adults

The table shows which age class has the greater resorption per aspect

Sex	Females				Males			
Sample/Aspect	Mesial	Distal	Lingual	Buccal	Mesial	Distal	Lingual	Buccal
Amaknak Island	MA	YA	YA	MA	MA	MA	MA	MA
Canada Unknown	YA and MA have equal resorption	YA	YA	MA	YA	YA	YA	YA
Coats Island	YA	YA	YA	YA	YA	YA	YA	MA
East Greenland	YA	YA	YA	YA	No YA or MA individuals			
Greenland Unknown	YA	YA	YA	MA	YA	YA	YA	YA
Hudson Bay	MA	YA	YA	YA	MA	MA	YA	YA
North Alaska	YA	YA	YA	YA	MA	MA	MA	YA
North Greenland	YA	YA	YA	YA	YA	YA	YA	YA
Nunavut	YA	YA	YA	MA	YA	YA	YA	YA
South Alaska	YA	YA	YA	MA	YA	YA	YA	YA
South Greenland	YA	YA	YA	MA	YA	YA	YA	YA
St. Lawrence	YA	YA	YA	MA	YA	YA	YA	YA
Vancouver Island	YA	YA	YA	YA	YA	YA	YA	YA
West Aleutians	YA	MA	YA	MA	MA	MA	YA	YA
West Greenland	MA	YA	YA	MA	MA	MA	YA	MA

Table 6-13 Alveolar bone resorption – summary – subadult permanent teeth

The table shows which age class has the greater resorption per aspect

Teeth	Permanent teeth			
Sample/Aspect	Mesial	Distal	Lingual	Buccal
Amaknak Island	All data is 0.00	All data is 0.00	All data is 0.00	All data is 0.00
Canada Unknown	Child	Child	Child	Child
Coats Island	Child	Adolescent	Adolescent	Adolescent
East Greenland	N/A	N/A	N/A	N/A
Greenland Unknown	Infant and child have equal resorption	Child	Adolescent and child have equal resorption	Adolescent and child have equal resorption
Hudson Bay	Adolescent	Child	Ad	Child
North Alaska	All data is 0.00	All data is 0.00	All data is 0.00	All data is 0.00
North Greenland	All data is 0.00	All data is 0.00	All data is 0.00	All data is 0.00
Nunavut	Child	Child	Child	Child
South Alaska	Child	Child	Adolescent	All data is 0.00
South Greenland	N/A	N/A	N/A	N/A
St. Lawrence	N/A	N/A	N/A	N/A
Vancouver Island	Adolescent and child have equal resorption	Child	Child	Child
West Aleutians	Adolescent	Adolescent	Child	Child
West Greenland	Child	Child	All data is 0.00	Child

Table 6-14 Alveolar bone resorption – summary – subadult deciduous teeth

The table shows which age class has the greater resorption per aspect

Teeth	Deciduous teeth			
Sample/Aspect	Mesial	Distal	Lingual	Buccal
Amaknak Island	Child	Child	Child	Child
Canada Unknown	All data is 0.00	All data is 0.00	Child	All data is 0.00
Coats Island	Child	Child	Child	Child
East Greenland	N/A	N/A	N/A	N/A
Greenland Unknown	Infant	Child	Child	Child
Hudson Bay	Child	Child	Child	Child
North Alaska	Child	Child	Child	Child
North Greenland	Child	Child	Child	Child
Nunavut	Child	Child	Child	Child
South Alaska	All data is 0.00	All data is 0.00	All data is 0.00	All data is 0.00
South Greenland	N/A	N/A	N/A	N/A
St. Lawrence	N/A	N/A	N/A	N/A
Vancouver Island	Child	Adolescent	Child	Child
West Aleutians	Child	Child	Child	Child
West Greenland	Child	Child	Child	Child

6.4.3 Periodontal Disease

The following section presents the results for the three periodontal disease methods. Ogden (2008, 293; Fig. 13.7) was configured to analyse localised or generalised periodontal disease, and for Kerr (1991) and Karn et al. (1984) infants were removed as they lack permanent dentition. If referencing the scoring sheets, Table 6-15 should be consulted. Overall, the results show minimal extensive periodontal disease, several instances of healed periodontal disease, and fewer instances of periodontal disease in the subadults. Where subadults exhibit periodontal disease, there are fewer variations, with several only containing initial signs of periodontal changes.

Table 6-15 Scores relating to tooth status – periodontal disease

Row	Method
39	Ogden (2008, 293; Fig. 13.7)
50	Kerr (1991)
51	Karn et al. (1984)

6.4.4 Localised/Generalised Periodontal Disease

The results in Table 6-16-Table 6-24 are from the data gathered when using Ogden's (2008, 293; Fig. 13.7) method, and show females and males have similar results. Age progression of periodontal disease occurs in both sexes. The YA age class typically have individuals without periodontal disease. In contrast, nearly all MA individuals have some level of periodontal disease, most commonly this is generalised periodontal disease. Only the East Greenland sample does not contain periodontal disease, and only twice does localised periodontal disease occur without generalised periodontal disease; Greenland Unknown YA males, and Coats Island child individuals. In the subadults, the child age class has more positive data than the adolescents. Both the child and adolescent age classes have generalised periodontal disease most commonly, when samples with absent periodontal disease were not considered. Interestingly, a Nunavut infant ($n=1/2$, 50%) displays periodontal disease in teeth 82 and 71. Periodontal disease is absent from infants from all other samples. Therefore, infants are not assessed for localised/generalised periodontal disease.

Table 6-16 Localised/generalised periodontal disease – Female YA and MA

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total
Amaknak Island	1 (5.88%)	13 (76.47%)	3 (17.65%)	17
Canada Unknown	0 (0.00%)	0 (0.00%)	1 (100.00%)	1
Coats Island	3 (3.95%)	57 (75.00%)	16 (21.05%)	76
East Greenland	0 (0.00%)	0 (0.00%)	7 (100.00%)	7
Greenland Unknown	1 (11.11%)	4 (44.44%)	4 (44.44%)	9
Hudson Bay	1 (0.81%)	81 (65.85%)	41 (33.33%)	123
North Alaska	0 (0.00%)	3 (42.86%)	4 (57.14%)	7
North Greenland	1 (7.69%)	5 (38.46%)	7 (53.85%)	13
Nunavut	1 (1.56%)	48 (75.00%)	15 (23.44%)	64
South Alaska	0 (0.00%)	7 (100.00%)	0 (0.00%)	7
South Greenland	0 (0.00%)	3 (75.00%)	1 (25.00%)	4
St. Lawrence	0 (0.00%)	14 (77.78%)	4 (22.22%)	18
Vancouver Island	0 (0.00%)	2 (40.00%)	3 (60.00%)	5
West Aleutians	1 (5.88%)	10 (58.82%)	6 (35.29%)	17
West Greenland	0 (0.00%)	4 (80.00%)	1 (20.00%)	5

Table 6-17 Localised/generalised periodontal disease – Female YA

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

n.d. = no data

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total Individuals
Amaknak Island	0 (0.00%)	2 (66.67%)	1 (33.33%)	3
Canada Unknown	0 (0.00%)	0 (0.00%)	1 (100.00%)	1
Coats Island	1 (2.44%)	32 (78.05%)	8 (19.51%)	41
East Greenland	0 (0.00%)	0 (0.00%)	4 (100.00%)	4
Greenland Unknown	0 (0.00%)	2 (100.00%)	0 (0.00%)	2
Hudson Bay	0 (0.00%)	25 (56.82%)	19 (43.18%)	44
North Alaska	n.d.	n.d.	n.d.	0
North Greenland	0 (0.00%)	2 (66.67%)	1 (33.33%)	3
Nunavut	0 (0.00%)	22 (91.67%)	2 (8.33%)	24
South Alaska	0 (0.00%)	3 (100.00%)	0 (0.00%)	3
South Greenland	0 (0.00%)	2 (66.67%)	1 (33.33%)	3
St. Lawrence	0 (0.00%)	4 (66.67%)	2 (33.33%)	6
Vancouver Island	0 (0.00%)	0 (0.00%)	2 (100.00%)	2
West Aleutians	0 (0.00%)	1 (33.33%)	2 (66.67%)	3
West Greenland	0 (0.00%)	2 (100.00%)	0 (0.00%)	2

Table 6-18 Localised/generalised periodontal disease – Female MA

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

n.d. = no data

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total Individuals
Amaknak Island	1 (14.29%)	6 (85.71%)	0 (0.00%)	7
Canada Unknown	n.d.	n.d.	n.d.	0
Coats Island	0 (0.00%)	1 (100.00%)	0 (0.00%)	1
East Greenland	n.d.	n.d.	n.d.	0
Greenland Unknown	n.d.	n.d.	n.d.	0
Hudson Bay	0 (0.00%)	15 (100.00%)	0 (0.00%)	15
North Alaska	n.d.	n.d.	n.d.	0
North Greenland	0 (0.00%)	1 (100.00%)	0 (0.00%)	1
Nunavut	0 (0.00%)	7 (100.00%)	0 (0.00%)	7
South Alaska	0 (0.00%)	1 (100.00%)	0 (0.00%)	1
South Greenland	n.d.	n.d.	n.d.	0
St. Lawrence	0 (0.00%)	4 (100.00%)	0 (0.00%)	4
Vancouver Island	n.d.	n.d.	n.d.	0
West Aleutians	1 (20.00%)	4 (80.00%)	0 (0.00%)	5
West Greenland	n.d.	n.d.	n.d.	0

Table 6-19 Localised/generalised periodontal disease – Males YA and MA

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

n.d. = no data

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total
Amaknak Island	2 (16.67%)	10 (83.33%)	0 (0.00%)	12
Canada Unknown	1 (33.33%)	1 (33.33%)	1 (33.33%)	3
Coats Island	1 (1.82%)	46 (83.64%)	8 (14.55%)	55
East Greenland	0 (0.00%)	0 (0.00%)	3 (100.00%)	3
Greenland Unknown	2 (40.00%)	1 (20.00%)	2 (40.00%)	5
Hudson Bay	4 (4.71%)	63 (74.12%)	18 (21.18%)	85
North Alaska	0 (0.00%)	8 (88.89%)	1 (11.11%)	9
North Greenland	0 (0.00%)	9 (81.82%)	2 (18.18%)	11
Nunavut	0 (0.00%)	65 (89.04%)	8 (10.96%)	73
South Alaska	0 (0.00%)	5 (83.33%)	1 (16.67%)	6
South Greenland	1 (20.00%)	4 (80.00%)	0 (0.00%)	5
St. Lawrence	0 (0.00%)	8 (61.54%)	5 (38.46%)	13
Vancouver Island	1 (12.50%)	0 (0.00%)	7 (87.50%)	8
West Aleutians	0 (0.00%)	16 (88.89%)	2 (11.11%)	18
West Greenland	0 (0.00%)	6 (75.00%)	2 (25.00%)	8

Table 6-20 Localised/generalised periodontal disease – Male YA

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

n.d. = no data

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total Individuals
Amaknak Island	0 (0.00%)	1 (100.00%)	0 (0.00%)	1
Canada Unknown	0 (0.00%)	1 (100.00%)	0 (0.00%)	1
Coats Island	1 (3.70%)	24 (88.89%)	2 (7.41%)	27
East Greenland	n.d.	n.d.	n.d.	0
Greenland Unknown	1 (100.00%)	0 (0.00%)	0 (0.00%)	1
Hudson Bay	0 (0.00%)	21 (95.45%)	1 (4.55%)	22
North Alaska	0 (0.00%)	2 (100.00%)	0 (0.00%)	2
North Greenland	0 (0.00%)	2 (66.67%)	1 (33.33%)	3
Nunavut	0 (0.00%)	24 (92.31%)	2 (7.69%)	26
South Alaska	0 (0.00%)	1 (50.00%)	1 (50.00%)	2
South Greenland	1 (33.33%)	2 (66.67%)	0 (0.00%)	3
St. Lawrence	0 (0.00%)	1 (25.00%)	3 (75.00%)	4
Vancouver Island	0 (0.00%)	0 (0.00%)	2 (100.00%)	2
West Aleutians	0 (0.00%)	1 (50.00%)	1 (50.00%)	2
West Greenland	0 (0.00%)	1 (100.00%)	0 (0.00%)	1

Table 6-21 Localised/generalised periodontal disease – Male MA

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

n.d. = no data

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total Individuals
Amaknak Island	1 (16.67%)	5 (83.33%)	0 (0.00%)	6
Canada Unknown	n.d.	n.d.	n.d.	0
Coats Island	0 (0.00%)	3 (100.00%)	0 (0.00%)	3
East Greenland	n.d.	n.d.	n.d.	0
Greenland Unknown	n.d.	n.d.	n.d.	0
Hudson Bay	0 (0.00%)	21 (100.00%)	0 (0.00%)	21
North Alaska	0 (0.00%)	3 (100.00%)	0 (0.00%)	3
North Greenland	0 (0.00%)	1 (100.00%)	0 (0.00%)	1
Nunavut	0 (0.00%)	13 (100.00%)	0 (0.00%)	13
South Alaska	0 (0.00%)	2 (100.00%)	0 (0.00%)	2
South Greenland	0 (0.00%)	2 (100.00%)	0 (0.00%)	2
St. Lawrence	0 (0.00%)	3 (100.00%)	0 (0.00%)	3
Vancouver Island	n.d.	n.d.	n.d.	0
West Aleutians	0 (0.00%)	5 (100.00%)	0 (0.00%)	5
West Greenland	n.d.	n.d.	n.d.	0

Table 6-22 Localised/generalised periodontal disease – Child and Adolescent Individuals

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

n.d. = no data

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total
Amaknak Island	0 (0.00%)	0 (0.00%)	4 (100.00%)	4
Canada Unknown	0 (0.00%)	0 (0.00%)	7 (100.00%)	7
Coats Island	2 (3.17%)	3 (4.76%)	60 (95.23%)	65
East Greenland	n.d.	n.d.	n.d.	0
Greenland Unknown	0 (0.00%)	1 (50.00%)	1 (50.00%)	2
Hudson Bay	3 (11.11%)	5 (18.51%)	19 (70.37%)	17
North Alaska	0 (0.00%)	0 (0.00%)	2 (100.00%)	2
North Greenland	0 (0.00%)	0 (0.00%)	1 (100.00%)	1
Nunavut	1 (3.33%)	9 (30.00%)	15 (50.00%)	30
South Alaska	n.d.	n.d.	n.d.	1
South Greenland	n.d.	n.d.	n.d.	0
St. Lawrence	n.d.	n.d.	n.d.	0
Vancouver Island	0 (0.00%)	0 (0.00%)	3 (100.00%)	3
West Aleutians	1 (16.67%)	1 (16.67%)	4 (66.67%)	6
West Greenland	0 (0.00%)	1 (100.00%)	0 (0.00%)	1

Table 6-23 Localised/generalised periodontal disease – Child Individuals

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

n.d. = no data

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total Individuals
Amaknak Island	0 (0.00%)	0 (0.00%)	3 (100.00%)	3
Canada Unknown	0 (0.00%)	0 (0.00%)	5 (100.00%)	5
Coats Island	1 (3.70%)	0 (0.00%)	26 (96.30%)	27
East Greenland	n.d.	n.d.	n.d.	0
Greenland Unknown	0 (0.00%)	1 (100.00%)	0 (0.00%)	1
Hudson Bay	3 (15.00%)	1 (5.00%)	16 (80.00%)	20
North Alaska	0 (0.00%)	0 (0.00%)	2 (100.00%)	2
North Greenland	0 (0.00%)	0 (0.00%)	1 (100.00%)	1
Nunavut	0 (0.00%)	7 (33.33%)	14 (66.67%)	21
South Alaska	n.d.	n.d.	n.d.	0
South Greenland	n.d.	n.d.	n.d.	0
St. Lawrence	n.d.	n.d.	n.d.	0
Vancouver Island	0 (0.00%)	0 (0.00%)	2 (100.00%)	2
West Aleutians	1 (25.00%)	1 (25.00%)	2 (50.00%)	4
West Greenland	0 (0.00%)	1 (100.00%)	0 (0.00%)	1

Table 6-24 Localised/generalised periodontal disease – Adolescent Individuals

The table shows the number of individuals and the percentages of individuals displaying localised, generalised periodontal disease, and no periodontal disease per sample

n.d. = no data

No colour = no occurrences, blue = smallest percentage, yellow = middle percentage, red = greatest percentage

Samples	Localised	Generalised	No Periodontal Disease	Total Individuals
Amaknak Island	n.d.	n.d.	n.d.	0
Canada Unknown	n.d.	n.d.	n.d.	0
Coats Island	n.d.	n.d.	n.d.	0
East Greenland	n.d.	n.d.	n.d.	0
Greenland Unknown	n.d.	n.d.	n.d.	0
Hudson Bay	0 (0.00%)	4 (66.67%)	2 (33.33%)	6
North Alaska	n.d.	n.d.	n.d.	0
North Greenland	n.d.	n.d.	n.d.	0
Nunavut	1 (25.00%)	2 (50.00%)	1 (25.00%)	4
South Alaska	0 (0.00%)	1 (100.00%)	0 (0.00%)	1
South Greenland	n.d.	n.d.	n.d.	0
St. Lawrence	n.d.	n.d.	n.d.	0
Vancouver Island	n.d.	n.d.	n.d.	0
West Aleutians	n.d.	n.d.	n.d.	0
West Greenland	n.d.	n.d.	n.d.	0

6.4.5 Periodontal Disease – using the methods by Kerr (1991) and Karn et al. (1984)

The data from using Kerr's (1991) method result in numerous different scores, ranging from good periodontal health (score 1) to the second level of periodontal disease (score 4) (the least common), see Appendix Tables 183-189. Overall, the results show good oral health. The subadults only have scores 1 and 2 (gingivitis), meaning good oral health. The child age class more commonly has positive data compared to the adolescents. The adolescents with gingivitis are: Coats Island, Hudson Bay, Nunavut, South Alaska, and West Aleutians. The exception is the Greenland Unknown sample, where all adolescents have good periodontal health.

The results from using Karn's et al. (1984) method produce numerous (twenty-five) scores, see Table 6-25 and Appendix Tables 189-226. Despite the array of results, the buccal aspect is most commonly involved, either independent of, or alongside, other aspect(s). Sex-based differences in alveolar bone alteration in the

anterior teeth occur between the pooled females (trench-buccal – score 11) and males (buccal-lingual – score 21). The buccal trend does not occur across all samples, being absent in the Amaknak Island, Coats Island, and Hudson Bay pooled females. As Karn et al.'s (1984) method uses only permanent teeth, the subadults have fewer and less varied results, showing reduced alterations from periodontal disease, with scores 21, 22, 41, 61.

Table 6-25 Periodontal disease – Row 51 - Scores found

Scores
11-14
21-23
31
41-47
51
61-63
66-67

6.4.6 Continuous Eruption

Continuous eruption was absent.

6.4.7 Calculus

Calculus occurs infrequently, and not equally across the dental aspects, with the calculus rarely proceeding to the greatest level. If referencing the scoring sheets, Table 6-26 should be consulted. As will be shown, the lingual, interproximal, and occlusal aspects all have similar results, however, calculus deposits differ in the subadults. The buccal aspect has the greatest variation in deposits, but the greater calculus levels are most common. As with periodontal disease, calculus is absent from the East Greenland sample. Some tooth classes have one or two teeth, meaning percentages are high (e.g., 50-100%). The true prevalence rates, in Appendix Tables 133-182, analyses the number of teeth with absent/present calculus, with all scores combined. The true prevalence rates show absent calculus is the most common. Because of the true prevalence rates and instances of small MNI and tooth classes, the following results are analysed via age/sex class. The results for the five aspects are below; following on are the results for the percentages of affected tooth aspects.

Table 6-26 Scores relating to tooth status - calculus

Row	Aspect
40	Buccal
41	Lingual
42	Distal
43	Mesial
44	Occlusal

Amongst the females, calculus is mostly absent. Where larger calculus deposits are more frequent, it is in the young adults, rather than the mature adults. Therefore, age progression is not present. Only the Aleutian Island and West Aleutians samples have age progression in the females. Some YA females do not have calculus: Canada Unknown, East Greenland, North Alaska, and West Greenland. In the MA females only the Amaknak Island sample (score 0-3), Nunavut (score 0-1) and West Aleutians (score 0-1 and 3) have calculus. The remaining MA females do not display calculus. The males have more varied results between the young and mature adults, although absence of calculus was still the most common. The Vancouver Island YA males are distinct as all individuals present calculus, ranging from scores 1 and 3 (small and large deposits). Age progression cannot be assessed in the Vancouver Island sample, as there are no MA males. Age progression occurs, relating to deposit size, with MA individuals having greater calculus deposits in the Amaknak Island, Hudson Bay, St. Lawrence, West Aleutians, and West Greenland samples. In the subadults, the child individuals display greater calculus than the adolescents, although, absent calculus is still most common. The child samples showing larger calculus are: Coats Island (small and large deposits), Hudson Bay (moderate deposit), and Nunavut (large deposit). The adolescent sample with calculus is the Nunavut sample (small deposit). Infants have calculus (score 1) in the Canada Unknown, Coats Island, Hudson Bay, and Nunavut samples.

The results for calculus on the buccal aspect show the most frequent score is 0 (absent), see Appendix Table 133-139. Where samples display scores 1-3 (small to large deposits), absence still has the greatest percentages. The lingual and interproximal aspects show similar results to the buccal aspects, as the female YA samples have the greater calculus than the MA individuals, see Appendix Table 140-160 for the totals and percentages. However, in the lingual and interproximal aspects the YA males also have the greatest calculus compared to the MA individuals. As with the buccal aspect, the Vancouver Island YA males have calculus (small-large), but no individual lacks calculus. Another similarity to the buccal aspect is where samples score 1-3. In the subadults, calculus occurs on the permanent dentition, except for the interproximal aspects, where calculus occurs on the deciduous dentition. Only the Vancouver Island child sample has lingual calculus (score 1, small), but the greatest percentage is absence of calculus; lingual calculus is absent from all other subadults. Interproximally, infants have small calculus (score 1).

Where occlusal calculus occurs, it is small (score 1) amounts, see Appendix Table 162-167, with absence of calculus still having the greatest percentage; small calculus deposits occur in the young adults. For the females, the samples are the Coats Island, South Greenland, and West Aleutians, and for the males, the samples are the Coats Island, Greenland Unknown, and Nunavut. In the subadults, only the Canada Unknown child sample has small occlusal calculus deposits.

The percentage of tooth aspects affected by calculus are in Table 6-27-Table 6-30. As calculus is infrequent, the greatest amount (75-100% affected tooth aspects by calculus) does not occur; the infrequency means largely, the percentages are similar. Overall, the YA females show the greatest percentage of affected tooth aspects, with exceptions in the Vancouver Island and Nunavut MA females and males and West Aleutians YA females and males. The infants do not present any percentage of aspects affected, as where calculus occurs it is <0.05%. When the calculus results are combined, only two samples present coverage of 25-49.99%; Greenland Unknown (females YA), and South Alaska (pooled females). The only occurrences of 50-74.99% (the greatest coverage of aspects affected here), are in the Vancouver Island pooled and YA males. The subadults samples largely contain <0.99% of dental aspects affected by calculus. Greater percentages are in the Nunavut (adolescents) and Vancouver Island (subadult pooled and child individuals) with results between ≈ 2 -<10%, so are within the 1.00-24.99% category.

When small (score 1) calculus deposits were analysed, it was still the Vancouver Island pooled and YA male samples that present the greatest percentage of aspects covered (25-49.99%). For small calculus deposits, only the Nunavut (adolescents) and Vancouver Island (subadult pooled and child individuals) display percentages over 1%, however, they are ≈ 2 -<10% (the 1.00-24.99% category). For moderate (score 2) calculus deposits only two samples have affected aspects between 25.00-49.99%, the Greenland Unknown (YA females), and Vancouver Island (YA males). The majority present 1.00-24.99% of tooth aspects affected by calculus. For large (score 3) calculus deposits, the only results with positive data are <0.99% and 1.00-24.99% affected aspects, with most results being <0.99%. For the subadults only two samples (Coats Island and Vancouver Island) present positive results; the Vancouver Island sample have >1.00%, and the Coats Island sample <0.1%.

Table 6-27 Percentages of tooth aspects affected by calculus – Rows 40-44, Scores 1-3

White = no data, red = 0.00%-0.99%, green = 1.00%-24.99%, orange 25.00%-44.99%, blue = 50.00%-74.99%

Sex Class	Females			Males			Subadults			
Age Class	Pooled	YA	MA	Pooled	YA	MA	Pooled	Infant	Child	Adolescent
Amaknak Island	14	21.72	9.4	7.2	3.63	2.15	0	0	0	0
Canada Unknown	0.95	6.66	0	0.55	0	N/A	0.83	0	0.9	0
Coats Island	6.13	6.99	0	4.01	3.98	0	0.04	0	0.08	0
East Greenland	0.31	0	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A
Greenland Unknown	9.72	44	0	5	1.53	3.63	0	N/A	0	N/A
Hudson Bay	3.04	7.36	0	2.94	5.3	0.47	0.04	0	0.05	0
North Alaska	0	0	N/A	0	0	0	0	N/A	0	N/A
North Greenland	1.11	3.07	0	1.44	0	0	0	N/A	0	N/A
Nunavut	4.45	7.89	1.7	5.72	15.22	0.15	0.27	0	0	2.85
South Alaska	26.9	22.85	0	0	0	0	0	N/A	N/A	0
South Greenland	20	24.6	N/A	12.8	15	4	N/A	N/A	N/A	N/A
St. Lawrence	3.6	6.54	0	0.2	0	0.86	N/A	N/A	N/A	N/A
Vancouver Island	4.11	4.51	N/A	52	72.5	N/A	8.69	N/A	9.62	0
West Aleutians	8.53	10.71	21.3	5.57	11	1.17	0	N/A	0	0
West Greenland	0	0	N/A	1.57	0	4	0	N/A	0	N/A

Table 6-28 Percentages of tooth aspects affected by calculus – Rows 40-44, Score 1

White = no data, red = 0.00%-0.99%, green = 1.00%-24.99%, orange 25.00%-44.99%, blue = 50.00%-74.99%

Sex Class	Females			Males			Subadults			
Age Class	Pooled	YA	MA	Pooled	YA	MA	Pooled	Infant	Child	Adolescent
Amaknak Island	11.2	21.72	2.9	4.91	0.03	0.01	0	0	0	0
Canada Unknown	0.95	6.66	0	0.66	0	N/A	0.83	0	0.9	0
Coats Island	6.02	6.8	0	3.92	3.84	0	0.02	0	0.04	0
East Greenland	0.31	0	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A
Greenland Unknown	1.38	5.3	0	5	1.53	3.63	0	N/A	0	N/A
Hudson Bay	3.04	7.36	0	2.58	5	0.19	0	0	0	0
North Alaska	0	0	N/A	0	0	0	0	N/A	0	N/A
North Greenland	0	0	0	0.82	0	0	0	N/A	0	N/A
Nunavut	1.91	2.37	1.7	4.95	14.19	0	0.27	0	0	2.85
South Alaska	21.3	20.81	0	0	0	0	0	N/A	N/A	0
South Greenland	18.8	23.1	N/A	12.8	15	4	N/A	N/A	N/A	N/A
St. Lawrence	2.6	4.72	0	0.2	0	0.86	N/A	N/A	N/A	N/A
Vancouver Island	0	0	N/A	42.41	46.25	N/A	6.95	N/A	7.61	0
West Aleutians	7.38	10.71	17.82	4.27	8.5	0.58	0	N/A	0	0
West Greenland	0	0	N/A	0.78	0	4	0	N/A	0	N/A

Table 6-29 Percentages of tooth aspects affected by calculus – Rows 40-44, Score 2

White = no data, red = 0.00%-0.99%, green = 1.00%-24.99%, orange 25.00%-44.99%, blue = 50.00%-74.99%

Sex Class	Females			Males			Subadults			
Age Class	Pooled	YA	MA	Pooled	YA	MA	Pooled	Infant	Child	Adolescent
Amaknak Island	2.23	0	5.09	0.01	0	0	0	0	0	0
Canada Unknown	0	0	0	0	0	N/A	0	0	0	0
Coats Island	0	0.19	0	0.07	0.14	0	0	0	0	0
East Greenland	0	0	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A
Greenland Unknown	8.05	38.6	0	0	0	0	0	N/A	0	N/A
Hudson Bay	0	0	0	0.2	0.3	0.19	0.04	0	0.05	0
North Alaska	0	0	N/A	0	0	0	0	N/A	0	N/A
North Greenland	0	0	0	0.61	0	0	0	N/A	0	N/A
Nunavut	0.73	1.53	0	0.48	1.02	0.15	0	0	0	0
South Alaska	1.68	2.04	0	0	0	0	0	N/A	N/A	0
South Greenland	0	0	N/A	0	0	0	N/A	N/A	N/A	N/A
St. Lawrence	0.4	0.72	0	0	0	0	N/A	N/A	N/A	N/A
Vancouver Island	1.17	1.29	N/A	1.72	46.25	N/A	0	N/A	0	0
West Aleutians	0.12	0	0	0.89	2.5	0.58	0	N/A	0	0
West Greenland	0	0	N/A	0.78	0	0	0	N/A	0	N/A

Table 6-30 Percentages of tooth aspects affected by calculus – Rows 40-44, Score 3

White = no data, red = 0.00%-0.99%, green = 1.00%-24.99%, orange 25.00%-44.99%, blue = 50.00%-74.99%

Sex Class	Females			Males			Subadults			
Age Class	Pooled	YA	MA	Pooled	YA	MA	Pooled	Infant	Child	Adolescent
Amaknak Island	0.53	0	1.45	0	0	0	0	0	0	0
Canada Unknown	0	0	0	0	0	N/A	0	0	0	0
Coats Island	0	0	0	0.01	0	0	0.02	0	0.04	0
East Greenland	0	0	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A
Greenland Unknown	0.27	0	0	0	0	0	0	N/A	0	N/A
Hudson Bay	0	0	0	0.15	0	0.9	0	0	0	0
North Alaska	0	0	N/A	0	0	0	0	N/A	0	N/A
North Greenland	1.11	3.07	0	0	0	0	0	N/A	0	N/A
Nunavut	1.81	3.98	0	0.29	0	0	0	0	0	0
South Alaska	3.92	0	0	0	0	0	0	N/A	N/A	0
South Greenland	1.25	1.54	N/A	0	0	0	N/A	N/A	N/A	N/A
St. Lawrence	0.6	1.09	0	0	0	0	N/A	N/A	N/A	N/A
Vancouver Island	2.94	3.22	N/A	7.93	20	N/A	1.73	N/A	1.9	0
West Aleutians	1.01	0	3.47	0.39	0	0	0	N/A	0	0
West Greenland	0	0	N/A	0	0	0	0	N/A	0	N/A

6.4.8 Oral Health Summary

The results show, overall, the samples have healthy oral environments, based on the results for caries, alveolar bone resorption, periodontal disease, and calculus. Caries is insignificant, affecting only a few individuals, caries formation patterns cannot be analysed. But the results show caries are present in (likely) pre-contact Arctic/Sub-Arctic samples, with a high rate of caries in the Amaknak Island sample. The results

for adult and subadult alveolar bone resorption show excessive bone loss, particularly on the buccal and interproximal aspects, with the lingual aspect much less affected. The results suggest alveolar bone resorption does not have a regulated, or age-related process, with varying and frequently great resorption levels. Rather, that alveolar bone resorption progresses once the initiating factor(s) begin. However, determining the aetiology of alveolar bone resorption is not within this study's parameters. The results for periodontal disease show inter-ecogeographical homogeny, irrespective of ecology. Where calculus has age/sex divergences, it is predominately in the Vancouver Island sample; for percentages of tooth aspects affected by calculus, the distinctions between sexes are in the Vancouver Island sample, for all calculations. The Vancouver Island adolescents differ to the other age/sex classes in the sample, as calculus is absent.

6.5 Root Resorption and Traumatic Enamel Macrofracture

The following presents the results for traumatic enamel macrofracture (notching and chipping), and root resorptions, referring to tooth present with root resorption, and if the alveolar bone resorption (if present). If referencing the scoring sheets, Table 6-31 should be consulted. None of the individuals display visible alveolar bone trauma.

Table 6-31 Scores relating to tooth - root resorption and traumatic enamel macrofracture

Row	Score/description
1	16
37	Notching
38	Chipping

6.5.1 Root Resorption

Root resorption occurs in $n=6/15$ samples, with narrowing of the apical region, towards the foramen. The true prevalence rates, see Appendix Tables 227 and 228, show molars are most frequently affected. However, when the percentages for the tooth classes are viewed, many are $<1\%$ or $<10\%$. Five of the samples have $<5\%$ of individuals with root resorption. Of the two samples where the occurrence is $>5\%$, the South Alaska has a small MNI, however, the percentage is $<10\%$. The three samples with multiple individuals with root resorption are Coats Island, Hudson Bay, and Nunavut, so distribution can be analysed. The Coats Island sample has more females, the Hudson Bay sample more males, and the Nunavut sample one female and one male. The Hudson Bay and Nunavut samples have more, if not exclusively (Nunavut) MA individuals, and the Coats Island sample has more YA individuals. Overall, males have root resorption slightly more commonly than females. Due to the infrequency, any patterns are tentative. Deciduous root resorption occurs in two Nunavut child individuals on teeth 51 and 52. The root resorption does not match resorption during the deciduous dentition's normal exfoliation processes that the researcher has encountered. Rather, the appearance matches the resorption in the permanent dentition. Therefore, the occurrences are considered root resorption.

6.5.2 Traumatic Enamel Macrofracture - Notching

The totals and percentages per samples, age and sex class are in Figure 6-13-Figure 6-16, and prevalence, totals and percentages per score are in Appendix Tables 89-96 and 122-124. All large notches (score 3) are +1mm, and involve the enamel and dentine, but not to the extent that traumatic enamel macrofractures (TEM) caused tooth destruction. When the data are analysed via age/sex classes, it shows not all age/sex classes present notching. For example, in the North Alaska sample, only the pooled males contain notching. The true prevalence rates, in Appendix Tables 122-124, show where TEM occurs it is more frequent in the molars. The true prevalence rates show the West Greenland MA males are distinct, as all tooth classes present 100% notching. Also, the West Greenland YA female has the M1 (the only tooth class with notching) at 24% ($n=1/4$). Where notching occurs in the other samples, the percentages do not reach 4% in the females and 20% in the males. In the Amaknak Island sample, there is more notching in MA females compared to YA, whilst YA males have more occurrences than female YA, but MA males have the greatest occurrence of any age/sex class. Most notable is that a Coats Island child individual (XIV-C:084, 5.5-years-old) has three notches (score 1, small) in deciduous M2s (quadrants 5, 7 and 8). The Coats Island YA females also have fewer notching (score 3, large), whilst notching is absent in the MA males and females. The two retained deciduous teeth in the Coats Island YA females each present notching.

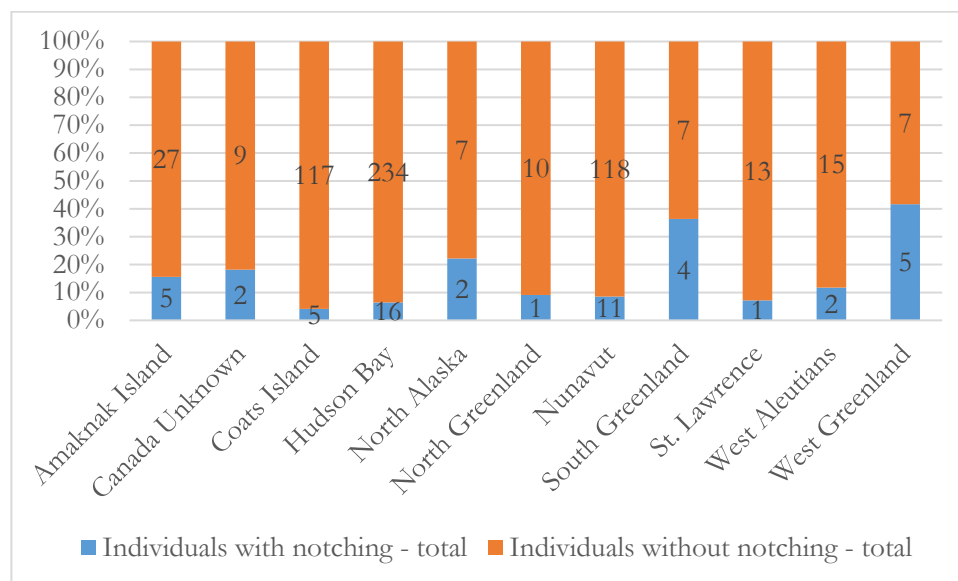


Figure 6-13 Notching - total number and percentage of individuals with notching

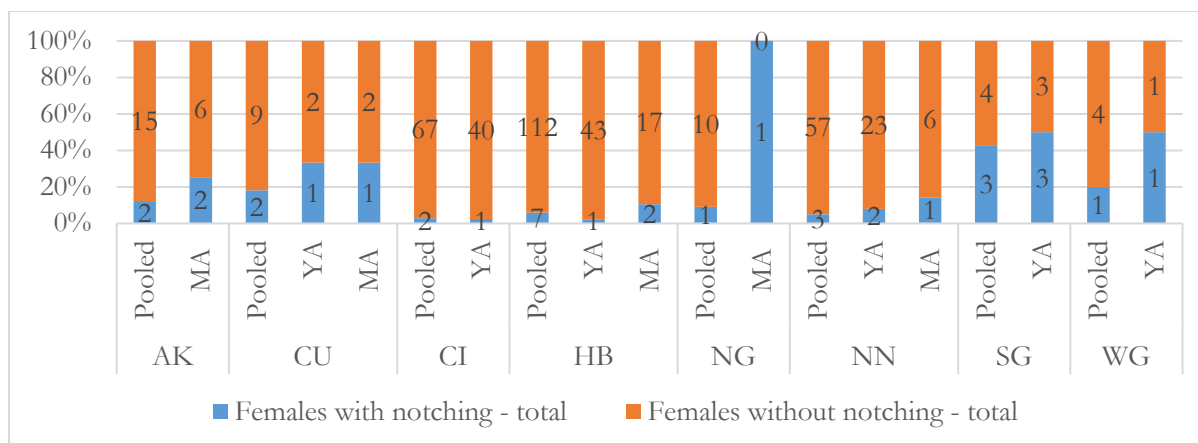


Figure 6-14 Notching - total number and percentage of individuals with notching – females

AK = Amaknak Island, CU = Canada Unknown, CI = Coats Island, HB = Hudson Bay, NG = North Greenland, NN = Nunavut, SG = South Greenland, WG = West Greenland

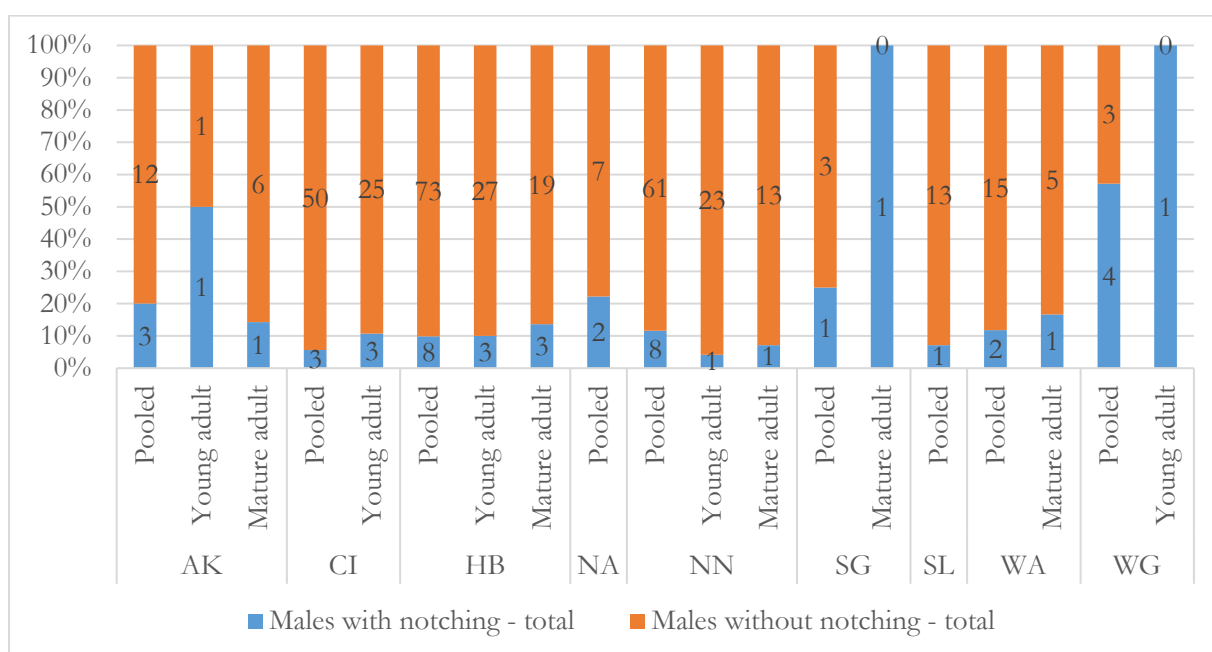


Figure 6-15 Notching - total number and percentage of individuals with notching – males

AK = Amaknak Island, CI = Coats Island, HB = Hudson Bay, NA = North Alaska, NN = Nunavut, SG = South Greenland, SL = St. Lawrence, WA = West Aleutians, WG = West Greenland

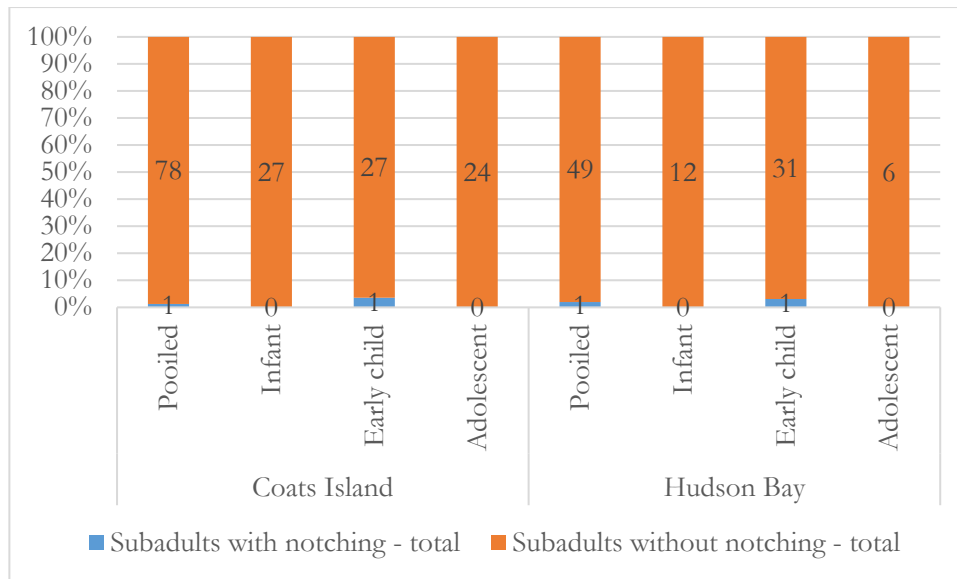


Figure 6-16 Notching - total number and percentage of individuals with notching – subadults

The samples with age progression are in Table 6-32; Amaknak Island does not show age progression, but rather the YA males have the greater percentages. From TEM infrequency, the percentages of teeth with the different scores per age/sex class are overall low. Across the age/sex classes most percentages are <7%, and where greater percentage occur, it is mostly in the older age classes. In the pooled females, the Canada Unknown sample contains the greatest percentage ($n=1/15$, 6.67%) of teeth with notching. Of the samples from known areas, the West Greenland samples has the greatest percentage, with $n=1/17$ (5.88%) displaying score 2 (with no occurrences in scores 1 – small, and 3 – large). For the YA females, the West Greenland sample again show the greatest percent, with $n=1/17$ (14.29%), again from score 2 (evident). As there are no MA female teeth to analyse in the West Greenland sample, the greatest percentage is again the Canada Unknown sample, as the only tooth present has notching ($n=1/1$, 100%, score 2, moderate). Of samples from known locales, the North Greenland sample has the greatest, with $n=1/2$ (50%, score 3, large). The pooled males show again the West Greenland sample have the greatest percentage, with $n=8/53$ (15.09%, score 2, moderate). In the YA males, it is the Amaknak Island sample, with $n=1/7$ (14.29%, score 3, large), whilst the MA males again is the West Greenland sample, with $n=7/7$ (100%, score 2, moderate). Only the Coats Island sample have subadults with notching, with $n=3/28$ (10.7%, score 1, small) in the child age class. Table 6-33 lists the ratio of notching per sample, shows little difference, except in the Hudson Bay sample.

Table 6-32 Notching - Samples showing age progression

Sample	Age/sex	No notching	Score 1	Score 2	Score 3	Total
Nunavut	Female YA	185 (98.40%)			3 (1.60%)	188
	Female MA	21 (95.45%)			1 (4.55%)	22
Amaknak Island	Male YA	6 (85.71%)			1 (14.29%)	7
	Male MA	41 (89.13%)	5 (10.87%)			46
West Greenland	Male YA	4 (80.00%)	1 (20.00%)			5
	Male MA			7 (100.00%)		7

Table 6-33 Notching – ratio of left to right

Based on left/ right

Sample	Left Total	Right Total	Ratio
Amaknak Island	6	18	0.33
Canada Unknown	0	2	0.00
Coats Island	5	17	0.29
East Greenland	0	0	No data
Greenland Unknown	0	0	No data
Hudson Bay	23	8	2.88
North Alaska	1	3	0.33
North Greenland	0	2	0.00
Nunavut	9	10	0.90
South Alaska	0	0	No data
South Greenland	2	0	Undefined
St. Lawrence	2	0	Undefined
Vancouver Island	0	0	No data
West Aleutians	2	3	0.67
West Greenland	11	9	1.22

6.5.3 Traumatic Enamel Macrofracture - Chipping

Chipping is less frequent than notching, shown in the percentages and prevalence, see Appendix Tables 97-102 and Appendix Tables 125-127. The infrequency prevents many determinations being made. Chipping only occurs in the molars of YA and child individuals, and is absent from the MA individuals, infants, and adolescents, so there is no age progression. The West Greenland child has 100% ($n=1/1$) chipping for the M1, and 50% ($n=1/2$) for the M2. Chipping in the other samples does not exceed 33.33%. For the pooled and YA females, only the South Greenland sample has chipping for both with $n=1/8$ (12.5%, score 1, slight crack or fracture - 0.5 mm, or larger but superficial enamel flake loss). Only Nunavut males have chipping; the pooled males have $n=1/545$ (0.18%), and YA males have $n=1/187$ (0.53%), both score 1. The Hudson Bay and West Greenland samples display chipping; the West Greenland pooled

subadults and child individuals have the greatest percent ($n=1/6$, 16.67%, score 2, square irregular lesion - 1 mm with the enamel more deeply involved). As with notching, the ratios between left and right show little difference between the samples (where there was data), apart from the Hudson Bay sample.

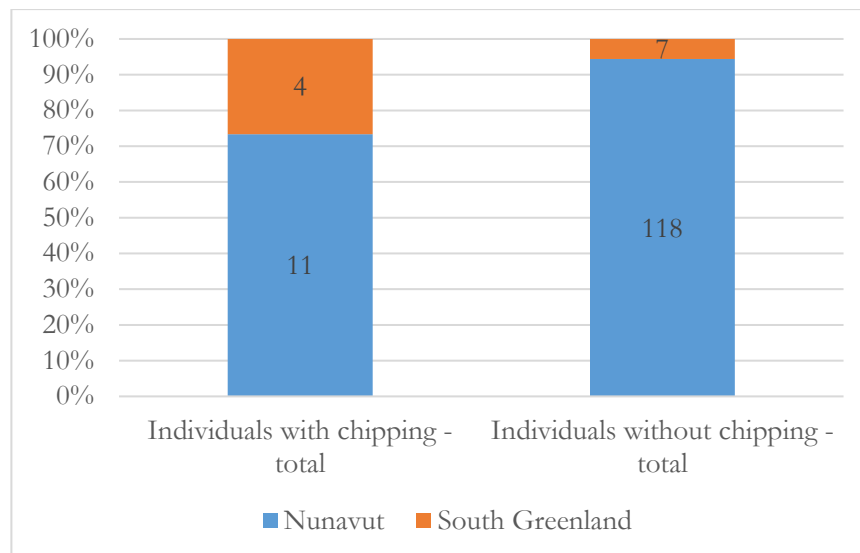


Figure 6-17 Chipping - total number and percentage of individuals with chipping

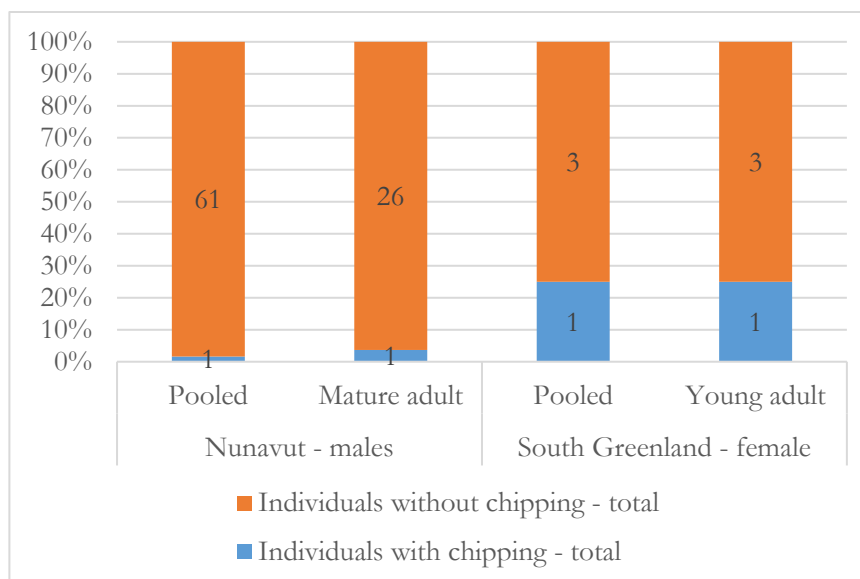


Figure 6-18 Chipping - total number and percentage of individuals with chipping - age/sex class

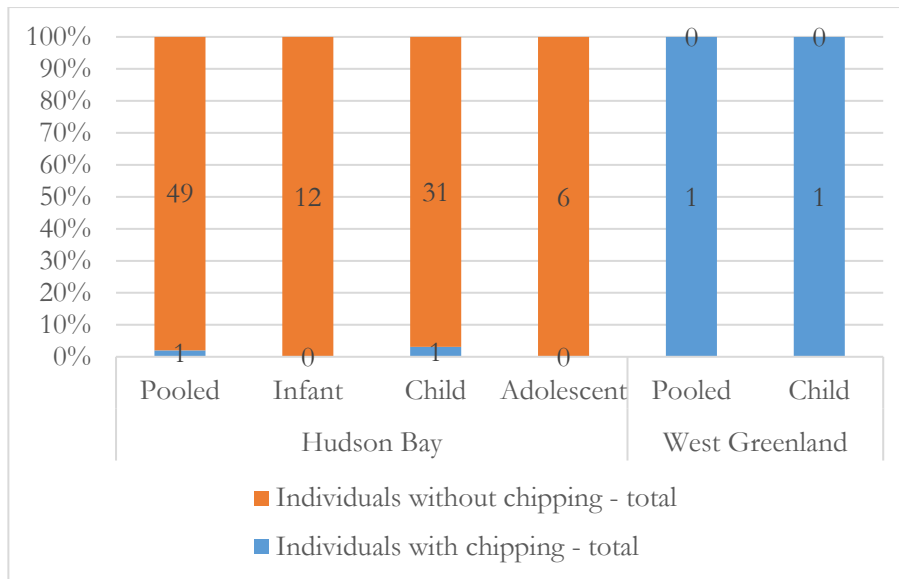


Figure 6-19 Chipping - total number and percentage of individuals with chipping - subadults

Table 6-34 Chipping – ratio of left to right

Based on left/right

Sample	Left Total	Right Total	Ratio
Amaknak Island	0	0	No data
Canada Unknown	0	0	No data
Coats Island	0	0	No data
East Greenland	0	1	0.00
Greenland Unknown	1	0	No data
Hudson Bay	9	8	1.13
North Alaska	0	0	No data
North Greenland	0	0	No data
Nunavut	2	0	Undefined
South Alaska	0	0	No data
South Greenland	2	0	Undefined
St. Lawrence	0	0	No data
Vancouver Island	0	0	No data
West Aleutians	0	0	No data
West Greenland	0	2	0.00

6.5.4 Traumatic Enamel Macrofracture - Pattern

The occurrences between the maxilla and mandible, see Table 6-35 and Table 6-36. The mandible has the most notching and notching in the Amaknak Island males YA and MA, Coats Island pooled and child individuals, Hudson Bay in the males pooled, YA, and MA, Nunavut females pooled, YA, and MA, males MA, and West Greenland males pooled and MA. In all samples, the molars most frequently present TEM.

Table 6-35 Traumatic enamel macrofracture - pattern – adults

The table shows the number of teeth in either the maxilla or mandible with TEM

Max = maxillae, Man = mandibular

Sex	Females						Males					
Age	Pooled		YA		MA		Pooled		YA		MA	
Sample	Max	Man	Max	Man	Max	Man	Max	Man	Max	Man	Max	Man
Amaknak Island	4	0	0	0	4	0	0	10	0	1	0	5
Canada Unknown	1	0	0	0	1	0	0	0	0	0	0	0
Coats Island	4	0	2	0	0	0	4	1	4	1	0	0
East Greenland	0	0	0	0	0	0	1	0	0	0	0	0
Greenland Unknown	1	0	0	0	0	0	0	0	0	0	0	0
Hudson Bay	6	2	2	0	1	0	5	20	1	5	0	4
North Alaska	0	0	0	0	0	0	4	0	0	0	0	0
North Greenland	1	0	0	0	1	0	0	0	0	0	0	0
Nunavut	0	4	0	3	0	1	6	3	3	0	0	1
South Alaska	0	0	0	0	0	0	0	0	0	0	0	0
South Greenland	1	0	1	0	0	0	1	0	0	0	1	0
St. Lawrence	0	0	0	0	0	0	2	0	0	0	0	0
Vancouver Island	0	0	0	0	0	0	0	0	0	0	0	0
West Aleutians	0	0	0	0	0	0	2	1	0	0	2	0
West Greenland	1	0	1	0	0	0	2	8	1	0	0	7

Table 6-36 Traumatic enamel macrofracture – pattern – subadults

The table shows the number of teeth in either the maxilla or mandible with TEM

Max = maxillae, Man = mandibular

Sex	Subadults							
Age	Pooled		Infant		Child		AD	
Sample	Max.	Man.	Max.	Man.	Max.	Man.	Max.	Man.
Amaknak Island	0	0	0	0	0	0	0	0
Canada Unknown	0	0	0	0	0	0	0	0
Coats Island	1	2	0	0	1	2	0	0
East Greenland	0	0	0	0	0	0	0	0
Greenland Unknown	0	0	0	0	0	0	0	0
Hudson Bay	1	0	0	0	1	0	0	0
North Alaska	0	0	0	0	0	0	0	0
North Greenland	0	0	0	0	0	0	0	0
Nunavut	0	0	0	0	0	0	0	0
South Alaska	0	0	0	0	0	0	0	0
South Greenland	0	0	0	0	0	0	0	0
St. Lawrence	0	0	0	0	0	0	0	0
Vancouver Island	0	0	0	0	0	0	0	0
West Aleutians	0	0	0	0	0	0	0	0
West Greenland	1	0	0	0	1	0	0	0

6.5.5 Traumatic Enamel Macrofracture - Prevalence

When the notching and chipping data are combined, there are still very few traumatic enamel microfracture (TEM) occurrences. The prevalence (by age/sex class) with common odds ratios are in Appendix Table 122-127, with middle adult individuals present as they form a part of the pooled samples. When the sexes are compared with combined age classes, the Coats Island, Hudson Bay, and South Greenland samples have similar prevalence between the sexes. For the samples with dissimilar prevalence between the sexes, males have slightly greater prevalence. Conversely, only the North Greenland sample have females with the greater prevalence. The summary also shows the samples with one or both sexes classes with TEM; $n=8$ have both sexes, $n=5$ just males and $n=1$ just females. The results by age/sex classes shows age progression is not always present. Greater percentages in the young adults than mature adults occur in; Amaknak Island (males), Canada Unknown (males and females), Coats Island (males), and Nunavut (males), South Greenland (females).

The prevalence shows several samples with smaller MNI have greater TEM prevalence than samples with larger MNI. For example, the Amaknak Island sample have a total prevalence (females and males

combined) of 15.6% ($n=5/32$), but the Coats Island sample have 4.1% ($n=5/122$). The TEM prevalence in the West Greenland combined adults and subadult is the greatest across all the samples – $n=15$ for all individuals, and $n=3$ for the samples with TEM in subadults. The West Greenland sample have the greatest prevalence, with 57.1% ($n=4/7$), occurring in the males (all age classes combined). Both the West and South Greenland females have prevalence of 20% ($n=1/5$) and the Canada Unknown females have the greatest, with 25% ($n=3/12$). Child individuals in three larger samples (Coats Island, Hudson Bay, and Nunavut) and one smaller sample (West Greenland) have TEM, although the prevalence is smaller than the adults. Within the subadults, the child individuals compose; Coats Island – 1.60% ($n=1/61$), Hudson Bay – $n=1/43$ (2.30%), Nunavut – 6.90% ($n=2/27$), and West Greenland 100% ($n=1/1$).

6.5.6 Traumatic Enamel Macrofracture and Odontological Conditions

No link occurs between the two conditions by analysing individuals with caries and TEM. No individual has both conditions on the same tooth, see Table 6-37. Two individuals have TEM (notching) and caries on different teeth.

Table 6-37 Traumatic enamel microfracture and caries

The table illustrates the distribution of traumatic enamel microfracture and caries in the two individuals which displayed both conditions

Sample	Age/sex	Skeletal ID	18	16	28	41	47
Amaknak Island	Female MA	AMNH 99.1/691	Small cavity (row 2, score 3)	Small cavity (row 3, score 3)	Small cavity (row 2, score 3)		
West Greenland	Male middle adult	21-Aa.113M				Gross carious cavity (row 1, score 7)	Chipping (score 2)

6.5.7 Root Resorption and Traumatic Enamel Macrofracture Summary

Overall, root resorption and traumatic enamel macrofracture occur infrequently, inhibiting clearly identifying patterns, but occur in adults and subadults. Despite the infrequency, males have slightly greater occurrences of both conditions than females and subadults.

6.6 Linear Enamel Hypoplasia

Linear enamel hypoplasia (LEH) is present in eight individuals from $n=4/15$ samples, all on the anterior teeth. The analyses keep the age/sex classes, to provide consistency throughout the study. When the age/sex classes are analysed, the smaller samples have the larger percentages; North Greenland has 25% ($n=1/4$), and South Alaska male YA sample has the greatest (a smaller sample), with $n=1/3$ (33.33%),

although it is the lowest possible number/percentage. Meanwhile, the larger samples have smaller percentages: Hudson Bay male YA has 6.25% ($n=2/32$), and Nunavut female YA 3.84% ($n=1/26$), female MA 12.5% ($n=1/8$), male YA 7.14% ($n=2/28$), see Figure 6-20. The North Greenland and South Alaska also have the greater percentage when the number of individuals with LEH are compared against each sample's MNI, see Figure 6-21.

Appendix Tables 128-130 present the point prevalence of LEH for the age/sex classes of the samples with LEH. When the percentage of teeth with LEH is analysed, the larger samples have the smaller percentages; Hudson Bay 0.16% ($n=1/1812$), North Greenland has 5.12% ($n=8/156$), Nunavut has 0.68% ($n=9/1322$), South Alaska has 1.27% ($n=2/157$). When the LEH is analysed via age/sex class for teeth totals, the South Alaska male YA sample has the greatest (a smaller sample), with $n=2/29$ (6.89%), although it is the lowest possible number/percentage. Meanwhile, Hudson Bay male YA (a larger sample), has the smallest percentage ($n=3/245$, 1.22%). The percentages for the remaining two samples are: North Greenland (a smaller sample) has 24.24% ($n=8/33$), and Nunavut (a larger sample) female YA has 1.47% ($n=3/203$), female MA has 7.14% ($n=2/28$), male YA has 4.12% ($n=4/97$), see Figure 6-23. The earliest age of an individual LEH occurs is ~1.7-5 years old, varying by sample, see Figure 6-24. The number of LEH per tooth varied from one to seven, see Figure 6-25.

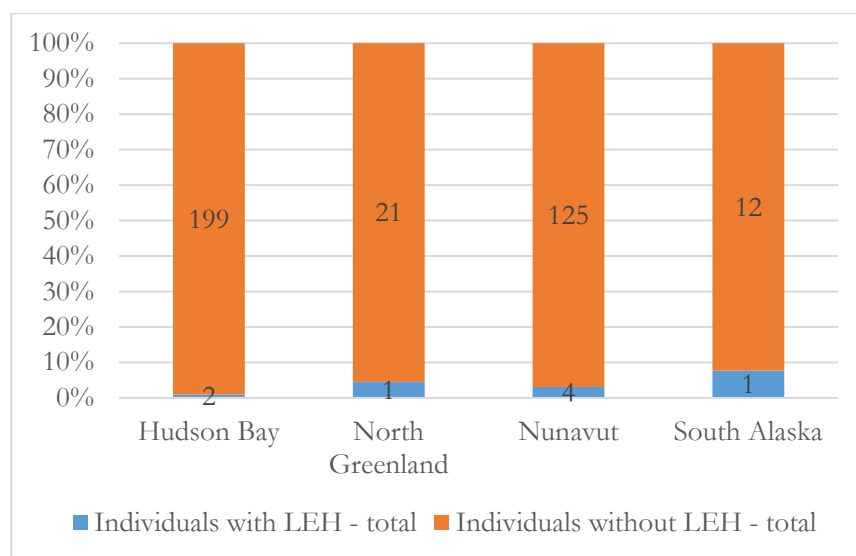


Figure 6-20 Linear enamel hypoplasia - total number of individuals per sample

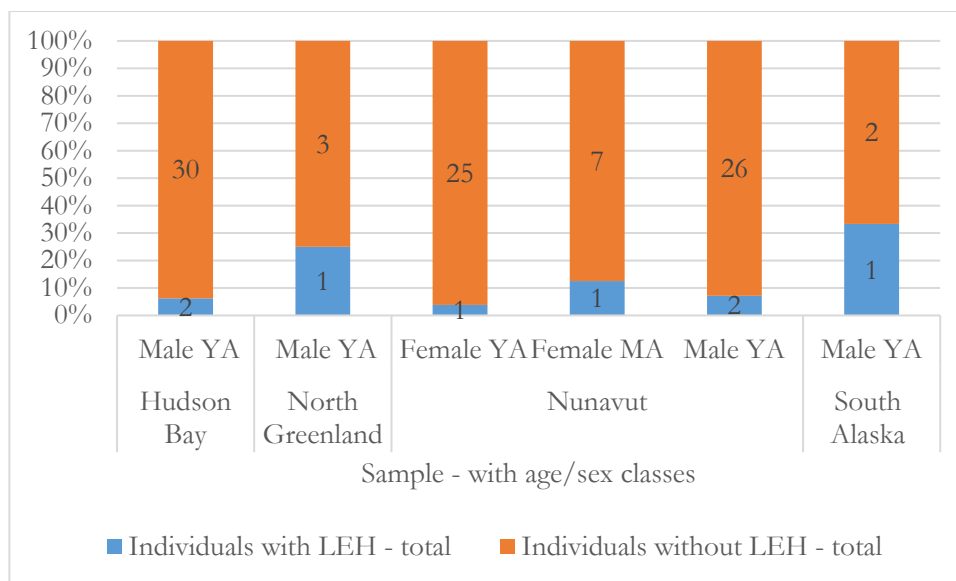


Figure 6-21 Linear enamel hypoplasia - percentage of individuals by age/sex

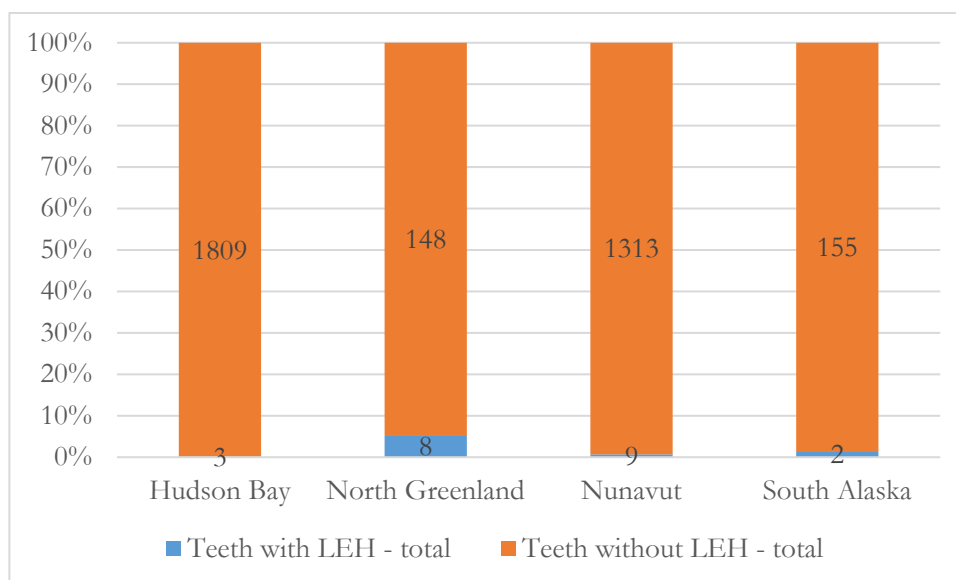


Figure 6-22 Linear enamel hypoplasia – Total and percentages of teeth affected, by sample

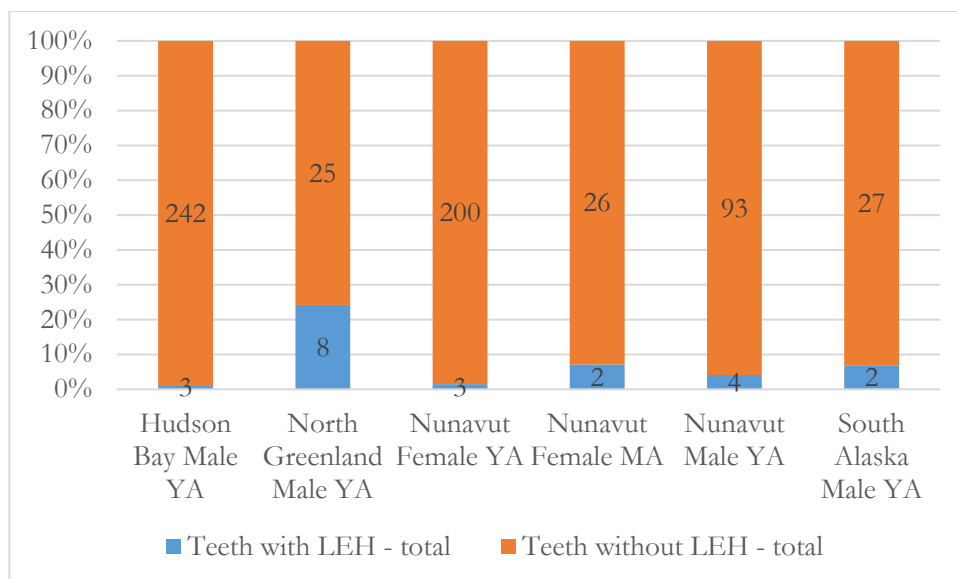


Figure 6-23 Linear enamel hypoplasia – Total and percentages of teeth affected, by age/sex

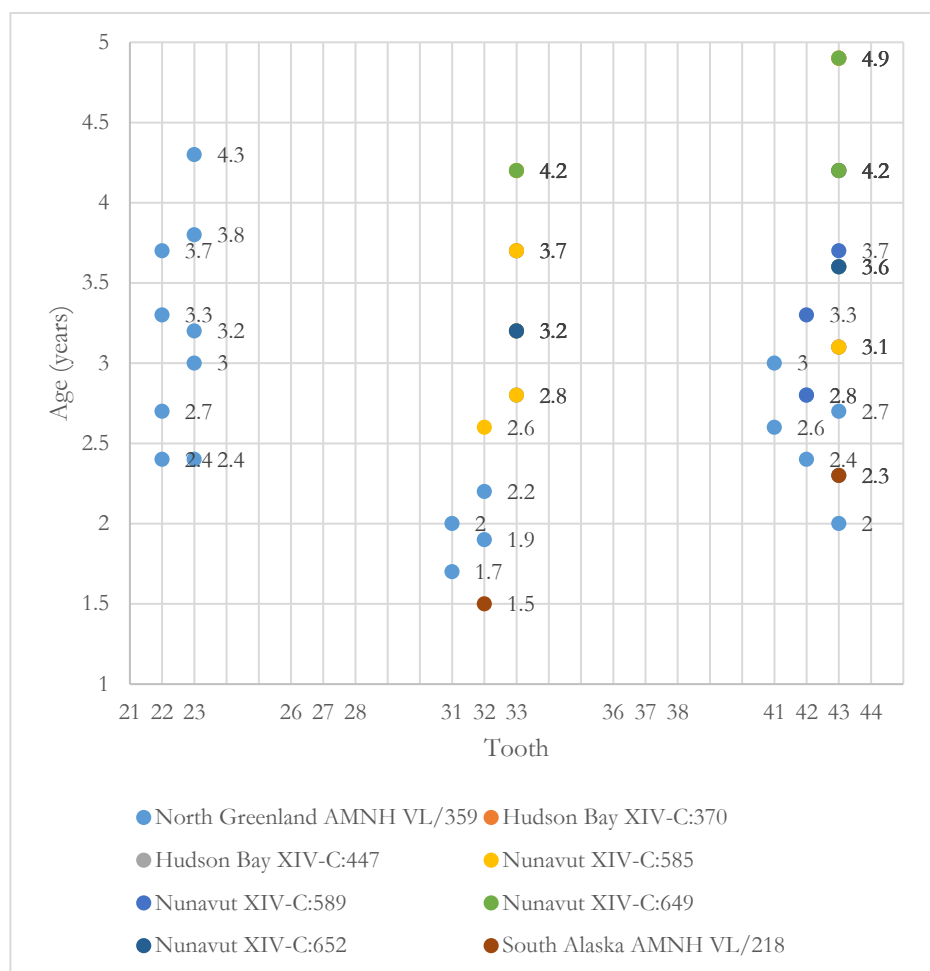


Figure 6-24 Linear enamel hypoplasia - age of occurrence - all teeth and individuals

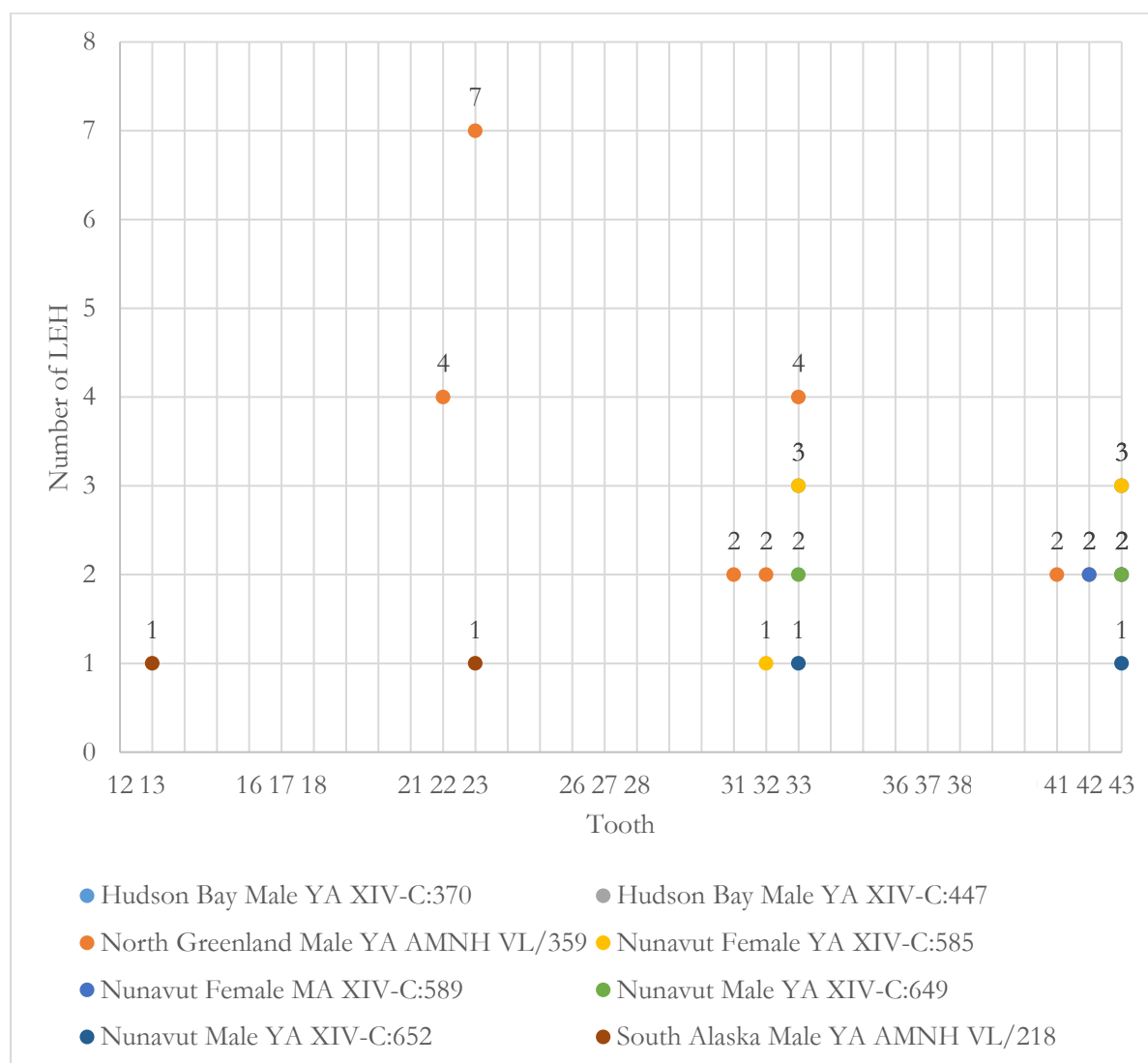


Figure 6-25 Linear enamel hypoplasia - number of occurrences per tooth per individual

6.6.1 Linear Enamel Hypoplasia and Odontological Conditions

Links between caries, antemortem tooth loss (AMTL) and traumatic enamel macrofracture (TEM) and linear enamel hypoplasia (LEH) were assessed. However, no link was found between LEH and caries, as no individual has both conditions. Antemortem tooth loss (AMTL) occurs inconsistently on teeth next to those with LEH, as $n=5/8$ (62.5%) individuals with LEH do not have AMTL in the alveolar bones available to analyse. The three individuals where LEH and AMTL co-occur have both conditions present in the same jaw, see Appendix Table 132. However, as LEH is infrequent and AMTL was frequent, no link was present. An analysis on LEH and traumatic enamel macrofracture (TEM), to assess if LEH reducing enamels' thickness results in TEM predisposition, does not show a link. Only one Nunavut MA female has LEH and TEM (notching, score 3); both in the same side of the mandible.

6.6.2 Linear Enamel Hypoplasia Summary

The evidence shows LEH near exclusively in MA males, and that the physiological stresses inducing LEH were infrequent. No condition could be linked to LEH.

6.7 Dental Features

The following section presents the results for dental features (striae and facets), and includes the age/sex distributions, feature frequency and prevalence per sample. Then features per dental aspect, feature type and dimensions, and the age/sex distributions are presented. Finally, associations with other conditions are presented.

6.7.1 Distribution

Dental features occur infrequently – $n=19/1107$ (1.71%) individuals, from $n=9/15$ samples; the location, tooth, type, and true prevalence rates are in Appendix Tables 229-243. Across the 19 individuals, features occur on all five coronal aspects, with the anterior teeth most common in the Amaknak Island, Coats Island, Hudson Bay, North Alaska, and West Aleutians samples. Most individuals are in three age classes: YA, middle adult, and MA. There are some subadults (child and adolescent), and one adult of unknown age, see Table 6-38. The point prevalence of combined feature types by age/sex classes differs considerably between samples, see Table 6-39. The results show the West Greenland sample has the greatest prevalence in all age/sex combined, pooled ($n=7/14$, 50%), and YA females ($n=2/5$, 40%), and the child age class ($n=1/1$, 100%). For pooled males, the South Alaska sample has the greatest ($n=2/6$, 33.3%).

The point prevalence for the tooth affected by age/sex class, Appendix Table 231, are smaller in the age/sex classes for the larger samples (Coats Island, Hudson Bay, and Nunavut), compared to the smaller samples (Amaknak Island, North Greenland, South Alaska, South Greenland, West Aleutians, and West Greenland). The West Greenland sample has the greatest prevalence by age class, for both striae (females, 28.57%, $n=2/7$), and developed striae (males, 20%, $n=1/4$). Feature type, which is likely related to activities, shows age progression in the Amaknak Island, South Greenland, and West Greenland samples. The remaining samples do not show age progression, as only one individual has a feature, or because multiple individuals have different feature types. The percentages of individuals with features per sample is in Figure 6-26, and shows two Greenland samples have the greatest; West Greenland has 27.7% ($n=5/18$), and South Greenland has 20% ($n=2/10$). The remaining samples (Amaknak Island, Coats Island, Hudson Bay, North Alaska, North Greenland, Nunavut, South Alaska, and West Aleutians) have <14%.

Table 6-38 Dental features - overview of age classes

The table presents the age classes of individuals displaying dental features

Sample	Child	Adolescent	Young adult	Middle adult	Mature adult	Adult Unknown
Amaknak Island				Facets and striae	Facets and striae	
Coats Island			Developed striae			
Hudson Bay			Striae			
North Alaska				Striae		
North Greenland						Striae
Nunavut		Striae				
South Alaska			Striae		Striae	
South Greenland			Striae		Striae	
West Aleutians				Striae		
West Greenland	Developed striae		Striae	Striae and developed striae		

Table 6-39 Dental features – percentages and prevalence

The table shows the percentages of all dental features found in each age and sex class per sample

	Sex class	Female			Male			Subadult
Sample	Combined	Pooled	Young adult	Middle adult	Pooled	Young adult	Middle adult	Child
Amaknak Island	4/35 (11.4%)	2/18 (11.1%)			2/13 (15.3%)		2/6 (33.3%)	
Coats Island	1/230 (0.4%)	1/87 (1.1%)	1/41 (2.4%)					
Hudson Bay	1/289 (0.3%)	1/139 (0.7%)	1/44 (2.2%)					
North Alaska	1/19 (5.2%)			1/3 (33.3%)				
North Greenland	1/26 (3.8%)	1/14 (7.1%)						
Nunavut	1/186 (0.5%)	1/73 (1.3%)						
South Alaska	2/14 (14.2%)				2/6 (33.3%)	1/2 (50%)	1/2 (50%)	
South Greenland	2/9 (22.2%)	1/5 (20%)	1/4 (25%)		1/4 (25%)		1/1 (100%)	
West Aleutians	1/42 (2.3%)				1/18 (5.5%)			
West Greenland	5/14 (35.7%)	2/5 (40%)	2/2 (100%)		2/8 (25%)			1/1 (100%)

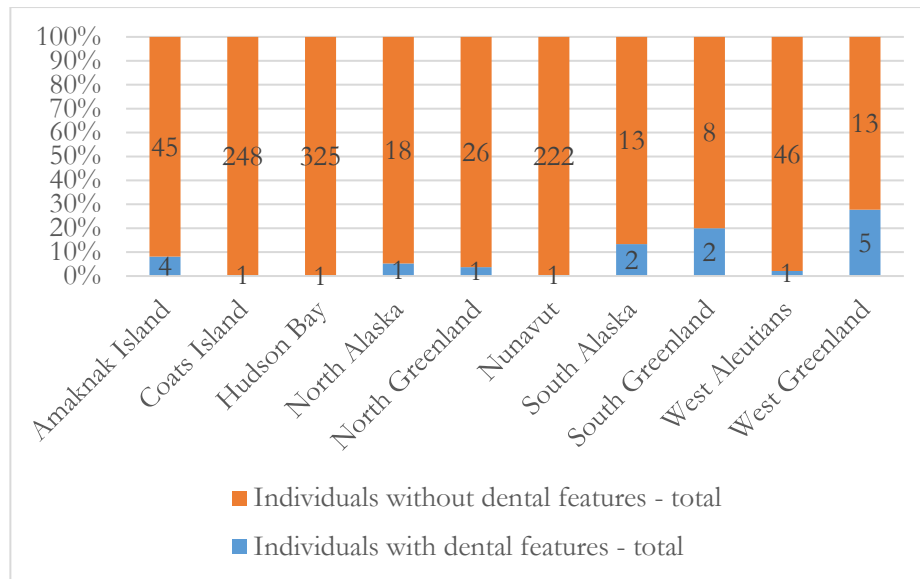


Figure 6-26 PMDA – percentages of individuals with combined features per sample

6.7.2 Buccal

The following section presents buccal features, which occur on all tooth classes, but not on all four dental quadrants – being absent on the left mandible. The buccal aspect is either the most frequent or the only aspect with features, in the Amaknak Island, Hudson Bay, North Alaska, North Greenland, and West Aleutians samples. Therefore, the buccal aspect has more data than other aspects. Using the criteria defined here there are two feature types. The first are thin, horizontal, linear features, indenting into the tooth which do not display shiny surfaces or a groove (when viewed with 10x magnification); therefore, they are striae. The second are flat, with shiny, and smooth surfaces; therefore, they are facets.

The buccal aspect has the greatest number of features per tooth, although most frequently there is one feature per tooth. Most teeth ($n=5/6$) with multiple features are molars, ranging from $n=1-16$ features per tooth. The greatest, 16 features, is on tooth 47, whilst only once are there multiple features on an anterior tooth – tooth 21, with seven features. There are differences in how many features per tooth the individuals have, see Table 6-40. For example, the Amaknak Island sample has $n=1/4$ individual with $n=7-16$ features across two teeth, and the remaining $n=3/4$ individuals have one feature per tooth. The two West Greenland individuals have $n=2$ and $n=3$ features per tooth. The South Alaska and South Greenland samples have $n=6$ and $n=5$ features, respectively. The remaining individuals/teeth have one feature (Hudson Bay, North Alaska, North Greenland, and West Aleutians).

The facets in the Amaknak Island female and male have different locations. The female's facets are across a lateral incisor and both canines, whilst the male's facets are restricted to the central incisors. Buccal facets occur on two other individuals – a West Aleutians mature adult male, mandibular canine (tooth 43), and a West Greenland male middle adult, maxillary molar (tooth 16). However, as these facets occur in one individual per sample, location cannot be analysed in relation to sex/age; both are male, but their age classes

differ. Striae locations on the Amaknak Island individuals also differ between the age/sex classes. The striae on the middle adult female are on the molars (teeth 47 and 48), whilst the mature male has striae on the anterior dentition (teeth 22 and 23). In the other sample with multiple individuals, West Greenland, both are YA females; for one individual the striae are on teeth 26 and 27, the other the stria is on tooth 27. Therefore, the Amaknak Island individuals show age/sex distinctions in striae location, but the West Greenland sample does not. The remaining individuals are the only individuals from their respective samples with buccal striae, so distribution by age, sex or tooth classes cannot be conducted. These are: Hudson Bay (YA female), North Alaska (middle adult female), North Greenland (female - adult unknown), South Alaska (YA male), and South Greenland (MA male).

Table 6-40 Number of buccal dental features

Sample	Skeletal ID	Sex	Age	Tooth													
				18	16	13	12	11	21	22	23	26	27	48	47	46	43
Amaknak Island	AMNH 99.1/707	Female	Middle adult			1	1				1						
	AMNH 99.1/793	Female	Middle adult											7	16		
	AMNH 99.1/808	Male	Mature adult					1	1								
	AMNH 99.1/713	Male	Mature adult							1	1						
Hudson Bay	XIV-C:344	Female	Young adult					1									
North Alaska	XIV-H:015	Female	Middle adult			1											
North Greenland	AMNH 99/7706	Female	Adult unknown													1	
South Alaska	AMNH VL/215	Male	Young adult						7								
South Greenland	1-Aa.113M	Male	Mature adult	5													
West Aleutians	XIV-F:001-1	Male	Middle adult														1
West Greenland	AMNH 99/8917	Male	Middle adult		1												
	11-Aa.113M	Female	Young adult									3	1				
	53-Aa.113F	Female	Young adult										2				

Striae have some homogeneity in widths and lengths, but facet dimensions diverge, see Appendix Table 244. All buccal striae have widths <3mm, and lengths are mostly <8mm. The North Greenland individual is the outlier, as the length is 10.23mm. The Amaknak Island buccal facets are between 2-4mm, with length and width gradually increasing. The Amaknak Island individuals with symmetrical facets have increases in dimensions; for individual AMNH 99.1/707, the tooth 13 facet is much smaller than the tooth 23 facet. For individual AMNH 99.1/808, the tooth 21 facet has greater width for the facet dimension, and only slightly greater length than tooth 11 facet. As the facets in the West Aleutians and West Greenland samples occur on one individual each, size differences cannot be assessed.

6.7.3 Lingual

The following section presents the lingual aspect features on three teeth across two female individuals from two samples, see Table 6-41. The features are vertical, thin, and linear, which indent into the tooth, and do not display shiny surfaces or grooves (when viewed with 10x magnification); therefore, they are striae. As each sample has one individual, they were compared against each other. The similarities are both individuals are female, and all occur on mandibular molars. The divergences are the age classes, the number of teeth with features, and the number of features per tooth. The Amaknak Island individual is a middle adult, with two teeth each with eight striae, and the Nunavut individual is an adolescent, with one tooth with one stria. Only the Amaknak Island individual has multiple features per tooth, who also has buccal striae. There is 0.1mm difference between the features' length and width on the Amaknak Island individual, see Table 6-42. The Nunavut individual's dimensions are smaller than the Amaknak Island individual.

Table 6-41 Row 26: Number of features on the lingual aspect

				Number / Tooth		
Sample	Skeletal ID	Sex	Age	48	47	36
Amaknak Island	AMNH 99.1/793	Female	Middle adult	8	8	
Nunavut	XIV-C:327	Female	Adolescent			1

Table 6-42 Length and width of largest of the lingual distal features

All measurements in mm.

Sample	Skeletal ID	Sex	Age	Tooth	48	47	36
Amaknak Island	AMNH 99.1/793	Female	Middle adult	Length	7.3	7.2	
				Width	1.1	1.2	
Nunavut	XIV-C:327	Female	Adolescent	Length			5.47
				Width			0.92

6.7.4 Distal

The following section presents the distal aspect features on two individuals from two samples (each with one feature per tooth). The features are vertical, thin, and linear, which indent into the tooth, and do not display shiny surfaces, or a groove (when viewed with 10x magnification); therefore, all are striae. As there is only one individual per sample (one male MA, and one female YA), frequency cannot be assessed, but they are compared against each other. As with the lingual aspect, the striae in the Amaknak Island individual (AMNH 99.1/713) extend distobuccally; no other individuals have features on multiple aspects. The dimensions are in Table 6-43, showing striae width in the Amaknak Island individual does not differ drastically; but stria length on tooth 22 is greater than on tooth 23. The stria dimensions on the South Greenland individual are similar to striae on other South Greenland individuals.

Table 6-43 Length and width of largest of the distal dental features

All measurements in mm

Sample	Skeletal ID	Sex	Age	Tooth	16	22	23
Amaknak Island	AMNH 99.1/713	Male	Mature adult	Length		0.71	2.25
				Width		0.42	0.56
South Greenland	24-Aa.113F	Female	Young adult	Length	3.16		
				Width	0.98		

6.7.5 Mesial

The following section presents the mesial aspect features, occurring on two Greenlandic YA females with one stria per tooth on maxillary molars. The features are vertical, thin, and linear, which indent into the tooth, and do not display shiny surfaces, or a groove (when viewed with 10x magnification); therefore, all are striae. Table 6-44 shows differences in dimensions, as widths have 0.4mm difference, and the lengths 1.25mm difference.

Table 6-44 Dental features –lengths and widths of the largest of the mesial features

All measurements in mm

Sample	Skeletal ID	Sex	Age	Tooth	17	16
South Greenland	24-Aa.113F	Female	Young adult	Length	6.1	
				Width	1.2	
West Greenland	53-Aa.113F	Female	Young adult	Length		7.4
				Width		0.8

6.7.6 Occlusal

The following section presents the occlusal aspect features on four individuals from three samples, with one feature per tooth, see Table 6-45. The features on the Coats Island individual, and two West Greenland individuals, are linear and indent into the tooth, but do not display defined ridges, an aspect of grooves, so are developed striae. The South Alaska individual's M2 is abraded without enough force to greatly erode into the occlusal aspect, so is a faceted groove. Most features occur on molars, with the Coats Island individual having features on the anterior dentition (two maxillary canines). Symmetry occurs in the Coats Island and West Greenland (21-Aa. 113M) individuals, as teeth 16 and 26 present features. The subadult's (West Greenland) feature is on a deciduous tooth. The occlusal aspect has the most diverse age/sex distribution, occurring in two males, one female, and one subadult (where sex could not be assessed due to age). The age distribution is child, YA, middle adult, and MA, with one individual per age class.

The dimensions are in Table 6-45; the striae lengths on individuals 21-Aa.113M and 37-Aa.113F are the longest. The facet length on individual AMNH VL/220 covers nearly the whole occlusal aspect. The Coats Island individual have the widest feature, covering a large portion of the aspect. The facet on the South Alaska individual is longer than the buccal facets on other individuals, although the width somewhat conforms. The developed striae dimensions on the West Greenland individuals show some uniformity; the lengths on the adult's four occlusal features are 7-8.69mm, and the widths are 0.9-1.3mm. The West Greenland subadult's developed stria is nearly 8mm in length, and 1.2mm in width. The West Greenland adult has isomeric symmetry (teeth 26 and 36 displays developed striae), and antimeric symmetry (tooth 16 also displays developed stria).

Table 6-45 Occurrence and dimensions of the largest of the occlusal dental features

All measurements in mm.

Sample	Skeletal ID	Sex	Age		Tooth							
					16	23	26	47	33	36	37	65
Coats Island	XIV-C:739	Female	Young adult	Length		3.95			3.95			
				Width		7.14			5.95			
South Alaska	AMNH VL/220	Male	Mature adult	Length				11.86				
				Width				3.34				
West Greenland	21-Aa.113M	Male	Middle adult	Length	8.5		8.69			8	7.1	
				Width	1.2		0.9			1.1	1.3	
	37-Aa.113F	Subadult	Child	Length								7.73
				Width								1.2

6.7.7 Dental Features and Odontological Conditions

The following section assesses whether the dental features were affected by other odontological conditions.

No link could be inferred for dental features with:

- Root resorption (does not occur).
- With caries (only three individuals: Table 6-46).
- Occlusal wear (extent and gradient) and buccal facets (Table 6-47), as individuals with facets on multiple teeth have consistent wear across the teeth.
- Periodontal disease, using any of the three methods (Appendix Table 245, Table 6-48, Table 6-49), as individuals with features have distinctive periodontal disease results.

Only the West Greenland sample has an association between traumatic enamel macrofractures (TEM) and features (Table 6-50). A West Greenland male displays TEM and a developed stria on the same tooth, whilst the West Greenland subadult has developed stria and TEM on neighbouring teeth.

Table 6-46 Dental features and caries

The number refers to the tooth displaying the feature

Sample	Skeletal ID	Sex	Age	Caries	Striae	Facets
Amaknak Island	AMNH 99.1/793	Female	Middle adult	37	47	
	AMNH 99.1/808	Male	Mature adult	17, 18		11, 21
West Greenland	21-Aa.113M	Male	Middle adult	41	13, 27	

Table 6-47 Dental features (facets) and wear

The table shows the occurrences when dental features and wear was found on the same individual

First number = wear extent, second number = wear gradient

				Type / Tooth						
Sample	Skeletal ID	Sex	Age	16	13	12	11	21	23	43
Amaknak Island	AMNH 99.1/707	Female	Middle adult		3/1	3/1			3/1	
	AMNH 99.1/808	Male	Mature adult				4/4	4/4		
West Aleutians	XIV-F:001-1	Male	Middle adult							4/1
West Greenland	AMNH 99/8917	Male	Middle adult	3/2						

Table 6-48 Dental features and periodontal disease - Kerr (1991)

Numbers denote periodontal scores on the alveolar bone for a tooth presenting dental features.

Premolar (tooth 15) is presented here as it forms a portion of the data relating to tooth 16

				Type / Tooth					
Sample	Skeletal ID	Sex	Age	17-16	16-15	22-23	23-24	47-48	46-47
Amaknak Island	AMNH 99.1/793	Female	Middle adult					1	1
Coats Island	XIV-C:739	Female	YA				0.1		
South Greenland	24-Aa.113F	Female	YA	2	2				
West Greenland	53-Aa.113F	Female	YA		2				

Table 6-49 Dental features and periodontal disease - Karn et al. (1984)

Numbers denote periodontal scores on the alveolar bone for a tooth presenting dental features

				Type / Tooth					
Sample	Skeletal ID	Sex	Age	17	16	22	23	48	47
Amaknak Island	AMNH 99.1/793	Female	Middle adult					41	41
Coats Island	XIV-C:739	Female	YA			41			
South Greenland	24-Aa.113F	Female	YA	21	21				
West Greenland	53-Aa.113F	Female	YA		21				

Table 6-50 Dental features and traumatic enamel macrofracture

TEM = traumatic enamel macrofracture

				Tooth		
Sample	Skeletal ID	Sex	Age	47	55	54
West Greenland	21-Aa.113M	Male	Middle adult	TEM and developed stria		
	37-Aa.113F	Subadult	Child		Developed stria	TEM

6.7.8 Dental Features Summary

Overall, few individuals have dental features. The results show, collectively, child-MA individuals exhibit features, with age progression in the Amaknak Island, South Greenland, and West Greenland samples. Features' dimensions show facet size increase in the Amaknak Island, but mostly homogenous striae dimensions. Frequently, the West Greenland sample have the greatest feature prevalence for age/sex classes. The West Greenland adult and subadult also have similar characteristics; the developed striae had similar dimensions, and an association with TEM.

7 **Chapter 7 Discussion**

This chapter discusses the evidence for sex- and age-based divisions of diet, labour, physiological disturbances, and paramasticatory dental activities. For each condition a differential diagnosis is conducted, facilitating more reliable interpretations, to assign possible/likely aetiology(-ies) (Waldron 2021, 70; Klaus 2017; Lawler 2017; Mitchell 2017). The differential diagnoses use ethnohistoric accounts, and clinical and (bio-)archaeological studies on Arctic/Sub-Arctic samples, or, if absent, non-Arctic/Sub-Arctic samples. As disparities between ethnohistoric accounts and the bioarchaeological record have been noted (Littleton 2018; Mitchell 2017), greater reliance is placed on bioarchaeological data. Data reliability is assessed using the demographic composition, tooth absence/presence and mean, and the conditions affecting tooth presence (agenesis, post-mortem tooth loss, and malpositions). The largest age/sex class in most samples is YA females, diverging from published mortality profiles (Chamberlain 2006, 89-90; Laughlin 1963; Veniaminoff 1840). The female majority is not related to earlier female maturation in these samples (Levine 1953), as early maturation would affect the female adolescent class. Although the palaeodemography does not align with mortality profiles (Viciano et al. 2018, 2015), the results resemble Madimenos (2005, 22, Table 3.1-3.2), where most age-at-deaths in the Tigara are 36-45 years-old, and in the Ipiutak are 26-35 years-old. Therefore, the palaeodemography conforms to previous Arctic/Sub-Arctic studies. The IOE results show there are some variations between the first and second age/sex assessments by the researcher, however, overall, the results show conformity between the assessments; therefore, the data is reliable.

Post-mortem tooth loss (PMTL) has variable presence, whilst agenesis and malpositions are infrequent, see Appendix Tables 10-51. Caries can be an aetiology of malposition, as the early exfoliation of deciduous teeth can cause the permanent tooth to erupt in the incorrect location. However, as caries are infrequent and absent from the deciduous dentition, this cannot be the aetiology. Possibly malpositions and agenesis are infrequent because the samples are genetically linked, and the conditions have hereditary involvement (Raghavan et al. 2014). Agenesis and malpositions were scored inconsistently, as subadults' unerupted teeth were scored through fragmented alveolar bones, creating some analytical bias, for example, the larger percentages in the Coats Island and Hudson Bay samples. The results on erupted teeth show frequent M3 agenesis, contrasting to Pedersen (1947) on Greenlandic samples, and Peck and Peck's (1995) summary on transposition. The results cannot be directly compared, as although Pedersen (1938) notes malpositions in $n=7762$ teeth from $n=250$ archaeological Greenlandic skulls, tooth total and percentages are not given. The infrequent deciduous dentition and permanent M1 (one occurrence) agenesis conforms to published literature (Mahoney 2015; Gleiser and Hunt 1955).

Males have greater tooth presence, and females greater PMTL, particularly the Greenlandic samples. The anterior teeth most frequently have PMTL, possibly from the single roots; as roots were not recorded, further investigation is not conducted. Some conditions are unsupported as PMTL aetiologies, e.g., a bone weakening disorder, female associated health condition causing skeletal fragility (e.g., osteoporosis)

(Agarwal 2016; Nicopoulou-Karayianni et al. 2009; Coulthard et al. 2008, 112) or Vitamin D deficiency (Schæbel et al. 2015; Andersen et al. 2012). The aetiologies are unsupported as a reduction in post-mortem tooth retention is not sufficiently diagnostic. Records for teeth removed for destructive analyses exist, but additional teeth may have been lost before initial analyses, particularly for historically sourced remains (Littleton et al. 2013; Mathiassen 1930). Therefore, the true PMTL total may be lower. Other studies on samples from/near Greenland also report high PMTL; Pedersen (1938) notes PMTL in 53.8-55.8% ($n=4175-4331/7762$) of archaeological Greenlandic crania/skulls, and Keenleyside (1988, 178) states a Kekerten sample, which is geographically close to the Greenlandic samples, has high PMTL.

The palaeodemography, agenesis, malpositions, and PMTL results conform to published literature (Mahoney 2015; Gleiser and Hunt 1955; Pedersen 1947), so do not negatively affect the remaining results.

This chapter discusses:

1. Oral health, analysing periodontal disease and alveolar bone resorption.
2. Dietary divisions, analysing caries, calculus, and wear (gradient).
3. Physiological disturbances, analysing linear enamel hypoplasia.
4. Labour division, using dental features, wear (extent and gradient), root resorption, and traumatic enamel macrofracture.
5. Cultural identifiers, using antemortem tooth loss, roots remaining, and buccal facets.

7.1 Oral Health

This section first discusses the results for periodontal disease (section 6.4.3 and Appendix Tables 183-226), and then alveolar bone resorption (section 6.4.2 and Appendix Tables 85-88). A differential diagnosis shows some conditions are unsupported as aetiologies for periodontal disease: calculus is an unsupported aetiology due to its infrequency, see 7.3.2 (Soames and Southam 2005, 106; Corbett and Dawes 1998). The relative infrequency of advanced periodontal disease may be due to the samples' genetic relatedness; low hereditary susceptibility is linked to similar, strong immunological responses to the bacteria causing periodontal disease and can prevent the development of more severe forms of gingivitis (Originating Group 2017; Palmer et al. 2013, 11; Moynihan 2005). However, immunological responses cannot be analysed using skeletal material, so this remains unsubstantiated. The infrequent and healed periodontal disease may relate to low-carbohydrate diets maintaining a homeostatic oral environment. Karn et al.'s (1984) method detected more buccal periodontal disease which may be from forces affecting the dentition buccally, forcing the roots lingually. The forces may have occurred from pulling an object held between the teeth. Alternatively, the buccal aspect is exposed to more external factors, and the interproximal and lingual aspects have greater protection. A rationale for more buccal-associated results cannot be established.

Most subadults do not present periodontal disease, including all the Amaknak Island subadults, where the adults have (largely) generalised periodontal disease. The alveolar bone of the permanent dentition of

Greenland Unknown, West Aleutians, and West Greenland child and Hudson Bay and South Alaska adolescent individuals have periodontal disease, using Kerr's (1991) method. Bioarchaeological Kodiak Island subadults ($n=128$) also have absent severe periodontal disease (Cook 1981). Individuals <12-years-of-age are less likely to have destructive forms of periodontal disease whilst having gingivitis. From ~12-years-of-age, destructive forms of periodontal disease become common, possibly from hormone changes (Originating Group 2017). Some forms of periodontal disease (localised aggressive periodontitis) only affect permanent teeth, particularly the M1 (Originating Group 2017). Therefore, all subadults likely had gingivitis without destructive periodontal disease.

The possible aetiologies for the periodontal disease in a Nunavut infant, when using Ogden's (2008, 293; Fig. 13.7) method, are: reacting to foodstuffs (changing from liquid to solid foodstuffs), scurvy (Moore and Koon 2017), or teething toys causing irritation. Alternatively, the results are a false positive from using Ogden's (2008, 293; Fig. 13.7) method on the alveolar bone around the deciduous teeth, as the methodology does not state their inclusion. The aetiologies resemble those for the wear on the Hudson Bay infants. Overall, generalised periodontal disease is more frequent than localised, which differs to Pedersen's (1947) study on 20th century Greenlandic individuals, who lacked localised periodontal disease. The East Greenland and Vancouver Island samples conform to Pedersen (1947), with absent periodontal disease. The results were likely unaffected by sample sizes, as the other samples with small MNIs have positive results. The contrast to Pedersen's (1947) study may be that the contemporary and bioarchaeological individuals had different lifestyles, e.g., diet and oral hygiene products, altering periodontal disease susceptibility. Alternatively, periodontal disease did not affect the alveolar bone.

The percentages for the YA and MA females and males for localised/generalised periodontal disease have similar results, although the females have more variation compared to males in the proportions of absent, localised, or generalised periodontal disease. The variation in the females' results is likely not an indication of sex-specific oral health, such as those relating to the reproductive model for caries (Trombley et al. 2019; Silk et al. 2008; Burakoff 2003; Laine 2002; Steinberg 2000). Sex-specific physiological changes affecting periodontal disease would likely have been noted in other studies. The results for localised/generalised periodontal disease show distinctions between the adult age classes. The age-related distinctions may be from diet (Smith 1972) or increased interproximal spaces from (para-)masticating hard material/foodstuffs (Ubelaker et al. 1969). Intrasample health variations occur in other bioarchaeological fields (Garcin et al. 2010), so divergences can be expected, especially as periodontal diseases have multifactorial aetiologies (Palmer et al. 2013, 10).

The differential diagnosis for alveolar bone resorption shows several conditions are not supported as aetiologies. Labrets can cause alveolar bone resorption (Plessas and Pepelassi 2012; Kapferer et al. 2012; Vilchez-Perez et al. 2009; Levin 2007; Halliday 2005; Leichter et al. 2003; Moss 1999; Boyd 1996). However,

as evidence of labrets is limited (see 7.5), but alveolar bone resorption is frequent, labrets are an unlikely aetiology. Further unsubstantiated aetiologies are an immunoinflammatory response to the bacteria causing periodontitis (Kesavalu et al. 2007), or preventative effects of dietary Vitamin D, from marine mammals, reducing alveolar bone resorption (Schäbel et al. 2015; Andersen et al. 2012). However, the parameters of the current research do not facilitate analyses on the immunological or effects of dietary Vitamin D. Therefore, the aetiology cannot be deduced. But the results can still be discussed. In the adults, alveolar bone resorption occurs on all dental aspects, similar to other Greenland individuals (Leigh 1925b). Subadults have lingual and buccal alveolar bone resorption, with greater alveolar bone resorption on the lingual aspect (no greater than 1.60mm). The maximum resorption is mid-point to alveolar bone resorption in contemporary Flemish subadults (0.07-2.88mm) (Wylleman et al. 2020). As the subadult alveolar bone resorption is within an established range, the results do not indicate oral ill-health or an immunological response. Rather, the subadult alveolar bone resorption appears to be a normal process.

7.1.1 Oral Health Summary

Overall, the samples have homogeneous, relatively healthy oral environments, with oral biological homeostasis often returning following periodontal disease. The subadults' periodontal disease and alveolar bone resorption corresponds to clinical literature (Wylleman et al. 2020; Originating Group 2017).

7.2 Physiological Disturbances

This section discusses physiological disturbances, using linear enamel hypoplasia (LEH) as the marker. Not all teeth developing simultaneously display LEH and it is absent from the molars, possibly from enamel formation patterns resulting in less visible anomalies than the anterior teeth. Establishing why teeth developing simultaneously do not all display LEH requires further analyses. As presented in Chapter 2, aetiologies for physiological disturbance are largely unknown (Papageorgopoulou et al. 2011), and those affecting the dentition cannot be macroscopically analysed. Therefore, no differential diagnosis is conducted, but rather the prevalence and possible effects of LEH are discussed.

The physiological factor(s) causing LEH occurred between 1.5-5-years-of-age. Although the aetiology/-ies of LEH are difficult to determine, possibly, the LEH likely ceased at 5-years-of-age as the immune system has fully developed by then (Newman 1995). Eight individuals have LEH, mostly males. The smaller samples (e.g., North Greenland and South Alaska) have larger percentages of individuals and teeth with LEH. Therefore, the two larger (e.g., Hudson Bay and Nunavut) samples have lower percentages of individuals and teeth with LEH. The point prevalence shows the North Greenland has the larger percentages when the age/sexes and the sample's tooth total are analysed. The remaining samples have <10% of teeth with LEH by age/sex and the sample's tooth total. The South Alaska sample has the greatest percentage of individuals with LEH possibly as the physiological factors causing LEH were more widespread.

The LEH percentages resemble most published studies on Arctic/Sub-Arctic samples; Keenleyside (1994, 222) notes the anterior teeth have LEH frequency rates of $n=3/146$ (2.05% - given as 2.04%) in an Aleut sample, and $n=67/389$ (17.22%) in a group labelled Eskimo. Dabbs (2009) notes LEH on the teeth of Point Hope individuals - the number of teeth for the sexes is not provided in the available text, but tooth totals per sample are Ipiutak - $n=78$, and Tigara - $n=309$ (Dabbs 2009, 115, Table 8.5). Therefore, only the percentages of teeth with LEH follow; in the incisors, the Tigara females have 45.45%, and the Tigara males have 32.14%, whilst the Ipiutak females exhibit no LEH (Dabbs 2009, 124). Scott et al. (1984) also notes the absence of enamel hypoplasia, on Utqiagvik individuals. However, Scott and Gillispie's (in Scott et al. 1984) study on bioarchaeological St. Lawrence Islanders (in Scott et al. 1984) found $n=175/276$ (63.4% - given as 65.4% in Scott et al. 1984) individuals have LEH. The results here for individuals with LEH differ drastically, as the percentages of individuals LEH are not this high. Also, LEH is absent from the St. Lawrence Island sample here. The results show infrequent physiological ill-health is normal for these samples, meaning Scott and Gillispie's (in Scott et al. 1984) sample are the exception.

7.2.1 Physiological Health Summary

The results for linear enamel hypoplasia (LEH) show, in conjunction with published literature (Dabbs 2009, 124; Keenleyside 1994, 222; Scott et al. 1984), physiological disturbances leaving odontological traces are infrequent in Arctic/Sub-Arctic samples. The cessation of physiological oscillations between health and ill-health synchronises with immunological maturity.

7.3 Dietary Divisions

This section evaluates dietary divisions, using the caries, calculus, and wear gradient results. As presented below, the calculus deposits contain the greatest, but still limited, evidence of dietary divisions. The problems encountered when analysing the wear gradient results are also discussed.

7.3.1 Caries

This section discusses caries and relates to section 6.4.1. As $n=3/15$ samples (Amaknak Island, Nunavut, and West Greenland) and <10 individuals have caries, conducting a differential diagnosis is problematic. Diet likely affected caries presence, but a possible accelerating aetiology for caries is (para-)masticatory processes, altering the oral environments' pH. For example, wear has been associated with caries formation (Maharani et al. 2019; Meiklejohn et al. 1992). Amaknak Island, which is the only sample with caries and dental features in the same tooth class, has the most extensive wear. The M3s' obscured location in the dental arcade may have caused the slightly higher percentages in the Amaknak Island and Nunavut female M3s, by preventing hygiene maintenance. Pre-European contact diets were inconsistent, procuring seasonally changing foodstuffs, and preservation methods altering foodstuff composition, compared to post-European contact diets when cariogenic components increased dramatically (Karshan et al. 1939; Pedersen 1947; Rosebury and Karshan 1939; Rosebury and Waugh 1939; Stewart and Strong 1939, 15).

Low caries prevalence is indicative of limited cariogenic dietary components (Temple 2016, 433; Karpinski and Szkaradkiewicz 2013; Moynihan 2005; Navia 1994; Sheiham 1983; Hillson 1979; Miller 1891), which corresponds to published literature on other Arctic/Sub-Arctic HG samples (Merbs 2018, 312; Madimenos 2005, 30-31, Tables 4.2-4.4; Keenleyside 2003a; Scott et al. 1984; Pedersen 1947, 1938; Leigh 1925b – Greenland sample only).

Ethnohistoric accounts and early 20th century dentistry studies on Arctic/Sub-Arctic populations relate alterations in lifeways affected diets; older individuals did not consume foreign cariogenic foodstuffs, were more likely to maintain pre-European contact PMDA, and had infrequent carious lesions. In contrast, younger individuals were more likely to consume foreign cariogenic foodstuffs, and had fluctuating carious lesions prevalence (Mayhall 1977, 226; Pedersen 1947; Rosebury and Waugh 1939). Therefore, lifeways and dietary alterations differed across society. These studies describe the only references to dietary divisions, being based on personal choice, not societal decisions, contrasting to some published literature which state females in HG societies have the greater caries presence (Trombley et al. 2019; Larsen 2015, 73; Da-Gloria and Larsen 2014). The Amaknak Island and Nunavut females have the greater percentages, and males in the West Greenland sample, see Figure 7-1. The results tentatively show dietary divisions between age/sex classes, although caries is too infrequent for accurate reconstructions. The results more resemble Temple (2011) and Lukacs (1996), who note no differences between the sexes. When the results are compared against Pedersen's (1938) findings, only the Nunavut (female and combined female/males YA and MA) are similar, as both are <1%, see Figure 7-1. Also, similar to the published literature, when assessable, occlusal aspect caries are more common (Almosa et al. 2003).

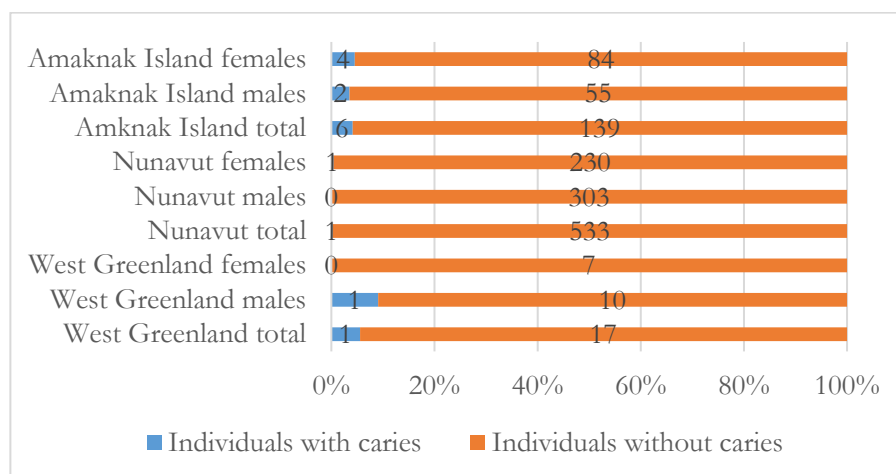


Figure 7-1 Caries - comparison

The data was formatted to correspond Pedersen (1938). Based on female tooth total, male tooth total, and female/males YA and MA tooth total (permanent only and excluding any deciduous), due to Pedersen's (1938) data presentation

7.3.2 Calculus

This section discusses the results for calculus, relating to Appendix Tables 133-183 and section 6.4.7. The infrequent presence and extent of calculus corresponds to the published literature (Viciano et al. 2015). The infrequency means analysing for patterns is difficult. However, using Fashing's (2008, 36) method permits analysing age/sex-based dietary divisions. A differential diagnosis shows an inverse relationship cannot be established between calculus and caries, whereby one inhibits the others' presence from opposing mineralisation/demineralisation processes, as both conditions are infrequent (Duckworth and Hunting 2006, 22). The infrequency of calculus and striae, especially interproximally, does not support calculus removal using tools as an aetiology. Intentional calculus removal may not have been required if it did not build up to a great extent, whilst the tongue may have contributed to infrequent lingual aspect calculus.

As these aetiologies have been discounted, other suggestions can be made. Calculus has various aetiologies, including a link to diet (Arabacı et al. 2015; Greene et al. 2005; Lieverse 1999; Hillson 1979); equality in access to foodstuffs may be expected in the Arctic region, but greater biodiversity in Sub-Arctic regions gives more opportunity for differential access. However, there is limited evidence of dietary divisions between age/sex classes, differing from studies on non-Arctic/Sub-Arctic HG samples (Trombley et al. 2019; Larsen 2015, 73; Da-Gloria and Larsen 2014; Katzenberg et al. 2009). The buccal aspect has tentative evidence of dietary divisions between the young and mature adult females and males. Five samples have the greatest deposits in the young adults (Amaknak Island, Coats Island, Hudson Bay, Nunavut, and St. Lawrence). Costa (1977, 52) also notes young adults from Point Hope and Kodiak Island have the greatest calculus.

The results using Fashing's (2008, 36) method shows the percentage of tooth aspects affected by calculus do not reach the greatest 75-100%. Rather, most (but not all) samples have the smallest percentages <0.99% and 1.00-24.99%. Evidence of dietary divisions predominantly occur in the Vancouver Island and South Alaska adults. In the Vancouver Island sample the calculus largely occurs in the YA males, with 50-74.99% of tooth aspects affected by calculus, and the South Alaska pooled females have elevated percentages of tooth aspects affected by calculus (25-49.99% range). The results suggest different diets were consumed between the Vancouver Island YA males and adult females, MA males, and subadults, and the South Alaska females and adult males and subadults. The elevated calculus deposits in the Vancouver Island and South Alaska samples may relate to the proximal ecogeographic area producing similar foodstuff consumption. However, the deposits are not sufficient to make conclusive reconstructions on dietary divisions.

7.3.3 Wear Gradient – Diet

Wear gradient can be used to reconstruct dietary divisions, but no distinct patterns occur across most samples. The multi-gradient wear present impedes differentiating between masticatory and paramasticatory processes as similar materials are processed. Similarly, other researchers note multi-gradient wear in HG

individuals (Schmidt et al. 2019; Griffin 2014). Therefore, differential diagnosis for aetiological determination is difficult. However, the results match bioarchaeological Native Americans (Molnar 1971) and non-Arctic/Sub-Arctic HG (Smith 1984). The multi-gradient wear indicates the (para-)masticatory activities were possibly individualised, but abrasive material incorporated with foodstuffs may have been a contributing aetiology (Krueger et al. 2021; Ackermans et al. 2020). Only the Coats Island sample can have an aetiology proposed: most adults have horizontal and plane wear, indicating the diet was tough and fibrous, lacking abrasive particle inclusions, without dietary differences.

Age-related changes occur in $n=10/15$ samples. In three samples the age-related changes occur in the males; Coats Island, North Alaska, and West Greenland, and in six samples in both sexes; Amaknak Island, Hudson Bay, North Greenland, South Alaska, St. Lawrence, and West Aleutians. Only the Canada Unknown sample has age associated gradient changes in females alone, but the unknown archaeological context hampers further analysis. Rarely is wear absent in males, indicating they had greater loadings or a coarser diet. The anterior teeth frequently have the greater wear, conforming to ethnographic accounts and bioarchaeological studies, which note PMDA more frequently affects, or is conducted using, the anterior dentition (Clement and Hillson 2012; Dove et al. 2005; Scott 1997, Fig. 8; Merbs 1968; Stewart and Strong 1939, 50; Grant 1922, although see Jenness 1957, 149; Nansen 1893, 125). The results also correspond to Jurmain (1990) on pre-contact coastal samples between San Francisco Bay and San Jose, California, where the permanent M1 is the most frequently affected, and permanent M3 the least.

7.3.4 Dietary Divisions Summary

Overall, caries and calculus are infrequent, with higher caries percentages in the Amaknak Island sample, and calculus across portions of the South Alaska and Vancouver Island samples. Wear gradient can only reconstruct diet in the Coats Island sample, indicating females and males consumed the same diet. No other sample presents clear gradient patterns. If ethnographic accounts are used as proxies (Soulier 2021; Górka 2016, 31; Costa 1982) and in conjunction with the limited evidence of dietary divisions, it may be divisions were absent, or cariogenic and calculus-forming foodstuffs were irregularly consumed.

7.4 Labour Divisions

This section discusses the results for dental features, wear (extent and gradient - labour), root resorption, and TEM to reconstruct labour divisions.

7.4.1 Paramasticatory Dental Activities

The paramasticatory dental activities (PMDA) method satisfactorily recognised and recorded three types of dental features – striae, developed striae, and facets, on $n=19$ individuals from $n=10$ samples. This section analyses striae and non-buccal facets; buccal facets from the Amaknak Island and West Aleutians samples are discussed in section 7.5. The differential diagnosis first evaluates the formation timings, then features'

location in the dental arcade, then common possible aetiologies for feature types. For striae, formation is instantaneous, from one contact with an object (e.g., tool, probe, or organic matter) (Krueger et al. 2021; Lalueza-Fox and Pérez-Pérez 1994; Pérez-Pérez et al. 1994). For facets, the precise time enamel polishing takes is unknown, but time is none-the-less required, with continuous/repeated movement, indicating habitual activity. The further along in the dental arcade the more inaccessible a tooth becomes, e.g., the anterior teeth are more accessible than the distal aspects of molars. The molars are used as a vice during (para-)mastication to grip material, and with minor obstruction from the *buccae* are unlikely to be the site of intentional modifications (Durband et al. 2014; Romero 1970, 52, Fig. 1). (Para-)masticatory processes do not involve the buccal aspect, and foodstuffs likely do not cause facets/faceted grooves, as otherwise they would be more frequent, whilst the lingual aspect is partially protected by the tongue (Nelson and Ash 2009, 297).

Several tools/activities can be discounted as aetiologies for striae on the molars (irrespective of aspect), due to the *buccae*. Striae on molars are unlikely to be caused by holding sharp objects (needles/probes/knives) between the teeth, as these would put the *buccae* at risk of injury, and holding objects between the teeth does not typically involve intentional contact with the lingual aspect. Therefore, lingual striae are likely unintentional. The interproximal aspects may exhibit more striae when a neighbouring tooth is missing or the interproximal space is wider (e.g., AMTL, non-eruption, transposition, diastema), as the obstruction has been removed. Conversely, interproximal spaces cannot accommodate thick material if the neighbouring tooth is in occlusion. Grass, as described by Hlusko (2003), can make grooves on teeth as they are semi-inflexible and rigid. However, grass is an unsupported material for causing the striae in the Arctic individuals, as the Arctic may not sustain grass (Turner and Machado 1983; Fine and Craig 1981). Hlusko (2003) illudes that only Arctic individuals do not exhibit interproximal grooves as they lack frequent access to grass. Foodstuffs containing particles result in striae requiring >10x magnification to be visible (Perez-Perez et al. 1994; Fine and Craig 1981; Ryan 1979). Striae here are visible with 10x magnification, so this cannot be their aetiology. Individuals with striae do not have elevated levels of periodontal disease, caries, or calculus compared to their respective samples, therefore probing as a dentistry intervention responding to oral ill-health is not supported as the aetiology.

Only one individual has an occlusal faceted groove (so age/sex-based divisions cannot be assessed), on the mandibular dentition (tooth 47) of a South Alaska individual. The differential diagnosis has removed intentional modifications as an aetiology for molars, and (para-)masticatory processes use multiple occlusal surfaces, whilst one occlusal surface has a feature. The aetiology is possibly repeatedly pulling long linear material back and forth, such as sinew (Lalueza-Fox and Pérez-Pérez 1994; Ryan and Johanson 1989), accounting for the indentation into the tooth. Because facet formation requires time, the feature must arise from the individuals' habitual idiosyncratic behaviour causing an unintentional dental modification. The South Alaska sample is close to the Vancouver Island sample and Pacific Northwest Coast. Females from

Pacific Northwest Coast populations are associated with paramasticating root fibres for basket construction (Larsen 1985). Potentially, a similar activity caused the faceted groove in the South Alaska individual. Despite ethnographic accounts of PMDA from the Pacific Northwest Coast (Larsen 1985), and the evidence of PMDA in the South Alaska sample, features are absent in the comparative Vancouver Island sample. As with the other samples without features (Canada and Greenland Unknown, East Greenland, and St. Lawrence), it cannot be conclusively stated why features are absent. However, PMDA may not have caused odontological changes or the activities were non-odontological.

Having eliminated these aetiologies, one possibility remains. Striae on the lingual, interproximal, buccal, and occlusal aspects are consistent with being made by thin linear instruments. Many striae are longer and wider than the published literature (Estalrrich and Rosas 2013; Ubelaker et al. 1969), and striae on each individual have similar dimensions. Striae locations differ to Lalueza Fox and Pérez-Pérez's (1994) study of $n=20$ Greenlandic individuals, where striae extend the disto-occlusal to mesio-cervical, and mesio-occlusal to disto-cervical aspects. Here, the striae extend disto-buccally. Dimensions/locations are a natural by-product of tool use, relying on the instrument's width, how long interaction was, and the angle and movement with which the instrument was held against the tooth.

Only two samples have multiple individuals with buccal striae – Amaknak Island (two female middle adults and two MA males) and West Greenland (one male middle adult and two YA females). As the buccal striae have similar dimensions but different locations in the dental arch, possibly a similar tool was used but activities differed. The individuals may illustrate age/sex-based labour divisions, as the males are an age class older than the females. Using ethnohistoric accounts and archaeological literature, the tools may have been knives for males, and needles for females (Zawadski 2018; Merbs 1968). Avian bone needles are known from Northwest Territories, Canada (Zawadski 2018), but overall information on needles is limited, with more descriptions of sewing needle cases; probes are not referenced. Amongst Arctic/Sub-Arctic samples sewing needles and cases are associated with females (Zawadski 2018, Figure 1; Hoffman 2000, 162; Issenman 1997, 64). But both sexes can use needles when away from the group, even if one sex typically conducts sewing activities (Lyman 2015). Another possible aetiology is probes to remove foodstuffs (non-dentistry) made of ad-hoc material, such as wooden splinters, or fish bones (Irving 1992; Wallace 1974).

Lingual striae occur in the molars of females from the Amaknak Island (middle adult) and Nunavut (adolescent) samples. The aetiology may be a probe to remove foodstuff, which is activity induced dental modifications (AIDM). Similar determinations have been made for striae on interproximal aspects (Estalrrich et al. 2017a; Estalrrich and Rosas 2013; Lozano et al. 2013; White et al. 1997; Villa and Giacobini 1995; Formicola 1991, 1988; Frayer and Russell 1987). Only females have lingual striae, suggesting sex-based divisions of tool usage, but not age-based divisions, as the age classes differ between the females. Because interproximal striae have been recorded here, Hlusko's (2003) statement interproximal grooves do

not occur on Arctic individuals, has been disproven. However, a possible reason for this discrepancy between the results here and Hlusko's (2003) statement, is the studies are using the same term for different features. The problems with using the same term is expanded on in section 2.5.6. All distal striae on the anterior teeth occur on a mature adult male (Amaknak Island), and all distal molar striae on a young adult female (South Greenland). The distal striae in the Amaknak Island sample are an extension of the buccal striae, so share the same aetiology – a knife. The stria on the South Greenland female is restricted to the distal aspect, indicating the individual had different activities using similar tool(s). As with the distal stria, the mesial striae occur on molars (teeth 16 and 17) of young adult females from the South and West Greenland samples, with one stria per tooth. The soft tissue near molars is at risk of damage, so knives cannot be the aetiology for the mesial and distal striae. Based on the width and location (molar), possibly tools are a probe (non-dentistry related) or needle (Zawadski 2018, Figure 1), so are activity induced dental modifications (AIDM) from removing foodstuffs, or during needlework.

The aetiology for the linear-shaped occlusal developed striae can have (para-)mastication discounted, because foodstuffs/material are moved in a circular motion, so linear wear does not occur. As the occlusal aspect can be cleaned easily, dentistry is not the aetiology (Wallace 1974; Ubelaker et al. 1969). Based on the demographic distribution across all individuals with occlusal striae, more males conducted PMDA using long, thin material. The adult outlier is the Coats Island YA female, likely because the samples' isolated nature resulted in distinct activities and labour/dietary divisions. The developed striae from the Coats Island sample have isomeric symmetry, on teeth 23 and 33. There is no shiny, smooth surface present, so facet formation was not occurring. Therefore, the material was unable, or did not have time, to produce a facet, and the features are more likely to be habitual UDM. The adult individual has corresponding mandibular features, however, the subadult lacks a mandible, so assessment cannot be conducted. The features on both individuals do not exhibit a shiny, smooth surface, so facets were not forming, indicating the material did not generate facets, but they have similar dimensions, suggesting similar activities/tool. Therefore, the features on both individuals have been assigned to habitual UDM.

The developed striae on the West Greenland individuals correspond to features on contemporary West Greenlandic individuals observed by Pedersen (1947) and bioarchaeological individuals from Qilakitsoq, also in West Greenland (Ammitzøll et al. 1991, 83-96). Of the eight Qilakitsoq individuals (six adults females, two subadults), dating to 475 BP (Andreasen et al. 1991, 48), two adults have features termed transverse furrows on the anterior teeth; the description by Andreasen et al. (1991, 48) matches the definition of developed striae here. Mummification prevented odontological analyses on the Qilakitsoq subadults. Analysing contemporary individuals, Ammitzøll et al. (1991, 83) and Pedersen and Jakobsen (1989, 125) assigned the developed striae to sinew paramastication, largely conducted by females. The developed striae here also match Pedersen's (1947) description of occlusal (incisal) features of incisors, termed transverse groove, which are more pronounced than other occlusal wear, associated with processing

hides, also by females. The sinew processing was observed on contemporary females, then extrapolated on to the bioarchaeological samples. Although ethnohistoric accounts cannot be used as direct proxies for bioarchaeological samples and there are some differences, the proposal could be the aetiology for the developed striae in the West Greenlanders here. Here the features are on an adult male and a subadult, and in the published literature it is females. The West Greenland subadult is older than 2-years-of-age, when societal changes occurred in the Kodiak Island sample (Cook 1981). However, developed striae require time to form, so the social changes involving PMDA started at a younger age than the subadults' age-at-death. The subadult had not reached sexual maturity, inhibiting sex estimation; thus, sex-based labour divisions cannot be assessed. However, as an adult and subadult have the same feature, consistent activity(-ies) were present across age classes. The evidence from the present study and published literature, suggests developed striae are a frequent characteristics of West Greenland samples.

A maxillary buccal facet on a West Greenland (tooth 16) middle adult male matches the appearance of other facets. The facet has not been assigned to labrets (see 7.5), due to the obscured location in the dental arcade, the facet's small dimensions, and the lack of ethnohistoric, archaeological, or bioarchaeological evidence of labrets in Greenland. Although there are no ethnohistoric accounts to reconstruct activities, an aetiology can be proposed; material held between the buccal aspect and soft tissue, which is an idiosyncratic UDM. Because of the linearity, symmetry, and ethnohistoric accounts, all occlusal striae in the West Greenland and Coats Island samples have been attributed to paramasticating long, thin, material (sinew). The buccal facet may indicate another PMDA type conducted in West Greenland. The remaining buccal, lingual, and interproximal striae have been assigned to females using probes or needles, and males using a knife. Therefore, there are sex-based divisions, conforming to Arctic/Sub-Arctic (Wood 1992, 140-141; Merbs 1968) and Northwest Coast (Larsen 1985) studies.

7.4.2 Extent and Gradient of Wear

This section discusses the results for extent and gradient of wear in relation to labour divisions, based on section 6.3.2 and 6.3.3. Extent, where more determinations can be made, will be discussed first, then gradient, and a differential diagnosis will be performed for both. The asymmetrical wear (e.g., quadrant variations) differ to Nelson and Ash (2009, 298); asymmetrical wear has contradicting presence in non-Arctic/Sub-Arctic HG literature; Saso and Kondo (2019) and Berbesque et al. (2012) note asymmetrical wear, but Murphy (1959a) does not, and Hillson's (1996, 236-237) summary of wear it is absent. Therefore, asymmetrical wear may not indicate cultural characteristics or activities, but individualised preference.

Most individuals have occlusal wear, corresponding to Smith (1970, 29), and interproximal wear is mostly absent, and lingual wear is completely absent. The results show differences between the sex classes, and subadults and adults, but not between adult age classes. Ethnohistoric accounts do not mention age-based labour divisions or access to foodstuffs, only sex-based labour divisions (Dove et al. 2005; Scott 1997, Fig.

8; Stewart and Strong 1939, 50; Grant 1922, Nansen 1893, 125). Therefore, the results suggest that the adults' (para-)masticatory activity continued once it commenced without altering as age increased.

The Amaknak Island sample contains the clearest evidence of age-related differences, between the subadults (child and adolescent) and adults (young adult onwards). The subadults lack wear whilst young and mature adults have the greatest wear level. The differences in wear extent indicate a drastic change between adolescence and young adulthood; the subadults possibly consumed a softer diet or did not undertake PMDA. The results semi-diverge from Waugh (1937b) who notes advanced wear by 14-years-of-age, increasing to wear to the gingivae by 35-years-of-age, on individuals from Labrador, Ungava Bay, and Alaska. The consistent wear in the young and mature adults may be from continuing (para-)masticatory activities, or (para-)masticating similar material (Wallace et al. 1975). The variations in wear between individuals AMNH VL/1381 and AMNH 99.1/798, see Figure 6.1 and Figure 6.3, may be because adult age classes cover 10 years, meaning there could be up to 10 years of difference between the individuals.

The West Aleutians sample, which is geographically close to the Amaknak Island sample, also frequently has the greatest wear (involvement of pulpal horns or pulpal exposure). Although, tooth height/size cannot be reconstructed (although see McFarlane et al. 2021), it is possible to state the Amaknak Island sample has the greater tooth material loss; the teeth are worn to a few millimetres above the alveolar bone crest. No other sample has wear to this extent. Similar extreme wear has been reported by Waugh (1937b) and in pre-European contact Californian samples (Griffin 2014; Reinhardt 1983). Contrastingly, some samples have no/little wear, such as the Coats Island and Vancouver Island samples, corresponding to Point Hope and Kodiak Island individuals (Costa 1977, 50). Possibly, (para-)mastication causing enamel destruction was not conducted or activities were non-odontological.

The subadults from the other samples (other than Amaknak Island) have wear ranges from no wear to the second and third scores; presence of dentine clusters and most dentine still covered, matching bioarchaeological individuals from Utqiagvik (Scott et al. 1984). Limited wear occurs in the children; where child individuals do have wear, the deciduous dentition has greater wear than the permanent dentition. The wear on the child individuals' deciduous teeth also has greater wear to the adolescents' permanent dentition. Pathological conditions are infrequent on the deciduous dentition, due to the shorter occlusion time (Sciulli 1990). Therefore, the greater wear on the child individuals' deciduous dentition is because they had been in occlusion for longer than their permanent dentition. Similar results occur on individuals from Labrador (Stewart and Strong 1939, 50), and non-Arctic/Sub-Arctic subadults; imperial Roman (Prowse et al. 2008), bioarchaeological Californian (Jurmain 1990), and Omani individuals (Macchiarelli 1989; Højgaard 1980). Wear on anterior deciduous teeth requires foreign object interference, as they do not occlude (Schuurs 2012, 195). However, the wear on the <11-months-old Hudson Bay infant's anterior teeth cannot be from PMDA, due to their age. The aetiology may be dietary alterations (changing to solid foodstuffs), teething

toys, or feeding vessel, with the deciduous dentition's different enamel composition (De Menezes et al. 2010) an additional factor. No other infants have wear.

Wear gradients can help reconstruct activities and labour divisions (Littleton 2017), but this was not possible here. Age-based (but not consistently sex-based) gradient distinctions occur. Horizontal and concave wear occurs regularly in the young and mature females and males, for example, in the Amaknak Island and St. Lawrence Island samples. Whereas in other samples, such as Hudson Bay, the young adult females and mature adult males have mostly horizontal and concave wear, and the mature adult females and young adult males have mostly horizontal and plane wear. The consistent gradient between the age/sex classes shows (para-)mastication continued as age increases. Wear gradient changes between the young and mature females and males show that either the (para-)masticatory processes causing the gradient take time to have an effect, or the age classes had different (para-)masticatory activities. When subadults have wear, it is largely horizontal and plane, apart from the Coats Island, Hudson Bay, and West Greenland children's deciduous dentition, with horizontal and concave wear (when present). The results suggest subadults infrequently conducted (para-)masticatory activities. Possibly they engaged in non-odontological labour activities or had softer diets. The different wear patterns between the sexes may relate to the length of time material was (para-)masticated or clamped between the teeth, dependent on how long the material took to cut (Wallace et al. 1975). For example, Leigh (1925b) assigns greater wear in females with processing animal hides. An oral tradition from the Tikiġaq people references paramasticating sediments from lamp-oil mixed with animal down, although sex-based divisions are not specified (Lowenstein and Tukummiq 1992, 6).

7.4.3 Root Resorption and Traumatic Enamel Macrofracture

This section discusses the differential diagnoses for the infrequent root resorption and traumatic enamel macrofracture (TEM), based on section 6.5.2-6.5.6. For both conditions, the osteological marker is indirect evidence of the actions, as the aetiologies are deduced, and actions inferred. Both conditions lack long-term clinical data, as they now receive medical treatment soon after initiating, so may not progress to the stages found bioarchaeologically. For example, root resorption has limited clinical understanding other than the initial inflammation or arrested root development (Kjær 2017, 149; Schuurs and Matos 2013, 173-174; Trope 2002). For root resorption, a viral attack is not a possible aetiology because viral attacks do not cross the midline (Kjær 2017, 160). Here, root resorption occurs on both sides of the dental arcade in the same individual. Periodontal disease is an unlikely aetiology, as root resorption and advanced levels of periodontal disease are rare, contrasting to Pedersen (1971) who relates periodontal disease instigated root resorption from gingival inflammation travelling to the bone, teeth, and surrounding soft tissue, eventually causing antemortem tooth loss (AMTL). The root resorption on the deciduous dentition does not relate to the natural exfoliation process; rather, the roots' appearance conforms to Gill and Naini's (2011, 118) description of roots resorbing. Therefore, arrested root development, from damage to the permanent tooth's dental germ, is an unsupported aetiology, as deciduous and permanent teeth have root resorption.

For TEM, interpersonal violence and accidental trauma (e.g., a fall) are not supported as aetiologies due to the absence of alveolar bone trauma. Thermal fatigue is an unsupported aetiology (Brown et al. 1972), as samples from different climatic regions and differing diets have similar TEM presence. Wear can exacerbate TEM by causing enamel destabilisation (Milner and Larsen 1991, 370). However, wear is not consistently associated with TEM, for example, the Coats Island sample have TEM but wear is limited or absent. An unsupported aetiology for the subadult TEM is post-mortem damage aging to resemble antemortem damage, as TEM occurs on three subadults from three samples, with two curation procedures. The importance of removing post-mortem damage as TEM aetiology in subadults is because TEM is unexpected at the subadults' ages. Some oral ill-health conditions can be aetiologies; caries can increase TEM from demineralisation causing enamel degradation (Soares et al. 2017), and LEH from irregularly laid enamel increasing TEM susceptibility (Berbesque and Hoover 2018; Hale 2016; Guatelli-Steinberg 2016, 451; Ogden 2008, 284). However, the conditions are infrequent, so are unlikely to be aetiologies.

Some possible aetiologies remain. Root resorption was possibly caused by low-impact trauma to the developing permanent tooth (Vilela et al. 2019) through (para-)mastication of hard foodstuffs/material. Pedersen's (1947) radiographic study on contemporary and bioarchaeological Greenlandic individuals supports paramastication as the aetiology. Pedersen (1947) states root resorption, on teeth displaying hypercementosis, occur over an individual's lifetime from a force instigating an unspecified periodontal ligament response. Progressive trauma means root resorption and not arrested root development occurred. Thus, the proposed root resorption aetiology is PMDA-induced impact damage to the apical region through the alveolar bone, using Gill and Naini's (2011, 118) description, Pedersen's (1947) observation, and Vilela et al.'s (2019) low-impact trauma findings. The periodontal ligament may have sustained an inflammation-inducing insult resulting from repetitive, low-impact blows to the apical region during PMDA (Katona and Eckert 2017). Root resorption is absent on individuals with dental features, meaning some PMDA caused root resorption, and some affected the crown. The activities possibly causing TEM were using the molars as a grip or during (para-)mastication, or the anterior teeth as pliers (Merbs 1968). Molars have the greater TEM frequency, possibly from larger crown size relative to the anterior teeth, as the opposing molar cusps act as wedges, damaging the enamel (Schuurs and Matos 2013, 211). Scott and Winn (2011) on Arctic/Sub-Arctic samples, and a clinical study (Bader et al. 2001) also note greater TEM frequency in molars.

As aetiologies have been proposed, the frequencies and distributions will be discussed, first TEM, then root resorption, then the conditions together. The variations in which a jaw expresses greater TEM rate partially align with clinical studies (Roh and Lee 2006; Ravin 1981). Here, $n=6/10$ (60%) samples have only maxillary TEM, $n=1/10$ (10%) only mandibular TEM, and $n=3/10$ (30%) mixed. Studies note side/quadrant preference of TEM in bioarchaeological St. Lawrence Islanders (Scott and Winn 2011), and Turner and Cadien (1969) identify quadrants with greater TEM. However, here no side or quadrant is significantly more

affected. Sample MNI has not affected TEM frequency, as the larger samples (Hudson Bay and Nunavut) have TEM across more age classes, but not the highest percentages. The (smaller) Amaknak Island sample ($n=20/485$, 4.1% occurrences), has a larger percentage of notching than the Hudson Bay sample ($n=27/2364$, 1.1% occurrences). The West Greenland sample has the greatest percentage ($n=15/80$, 11.2% occurrences), and distinct true prevalence of chipping and notching, at 100% in the tooth classes with TEM. The high true prevalence rates occur in a male MA, female YA, and the child individual, indicating most age/sex classes conducted the TEM-inducing activities. Towle and Loch's (2021) study on TEM frequency in non-Arctic/Sub-Arctic samples, state samples with <15% individuals with chipping indicate infrequent (para-)mastication of hard material/foodstuffs. Therefore, the results suggest infrequent PMDA. Keenleyside's (1988, 190) study on similar samples also found infrequent TEM. However, Turner and Cadien (1969) and Woods (1992, 10) note greater TEM rates in the Sadlermiut individuals, incorporated into the Coats Island sample. The discrepancy may relate to a combination of different recording methods, and taphonomic processes in the 20-50-years between studies causing TEM to resemble post-mortem damage.

The female middle and older adults have the greatest prevalence in the Amaknak Island and Canada Unknown samples. Only in the Hudson Bay females and males is there a similar prevalence between the sex classes. The male middle adults and older adults predominantly have greater TEM prevalence in the North Alaska, Nunavut, South Alaska, South Greenland, St. Lawrence, West Aleutian, and West Greenland samples. The results differ to Schuurs and Matos (2013, 211), who state TEM prevalence is the same between the sexes aged 30-years-old+ (which the middle adult age class straddles). Only the Amaknak Island sample has the greater percentage in the young adults (notching), possibly relating to the excessive wear levels. The wear could have destroyed TEM in the mature adults, as although the young and mature adults have extensive wear, the mature adults sustained wear for longer. The results suggest, where TEM occurs, both sexes (para-)masticated tough material(s), but males more frequently. However, Merbs' (2018, 312-313) bioarchaeological study shows females more frequently have TEM. Ethnographic accounts state females paramasticated sinew to make the material malleable (Dove et al. 2005; Scott 1997, Fig. 8; Stewart and Strong 1939, 50; Grant 1922). Possibly, paramasticating sinew does not cause TEM, and the males here paramasticated a different material to the published literature. In samples where TEM is present in female and male young and mature adults, mostly, the mature adults have the greater percentage, corresponding to Turner and Cadien's (1969) findings on Arctic/Sub-Arctic samples. It cannot be determined when TEM occurred in an individuals' life, but as TEM frequency is greater in mature adults, either TEM accumulated over time, or the activity begun in mature adulthood.

Root resorption occurs in $n=6/15$ samples, illustrating that although few individuals are affected, the condition is not an anomaly. The infrequency corresponds to clinical literature where root resorption, from any aetiology, is rare (Trobe 2002). In samples where both sexes display root resorption, prevalence does

not significantly differ. Molars more frequently have root resorption than anterior teeth, in the Amaknak Island, Coats Island, Hudson Bay, and South Alaska samples. The anterior teeth have greater occurrences in the Nunavut (permanent and deciduous dentitions combined) and St. Lawrence samples. The molars may have more occurrences as the multiple roots provide more opportunities for root resorption. The single rooted anterior teeth are more likely to be lost antemortem, as once root resorption commences, they become loose in the socket. Alternatively, the object/material the anterior teeth used during PMDA had limited movement, reducing the likelihood of root damage.

The low resorption presence in the deciduous dentition compared to the permanent dentition may relate to the naturally occurring odontological and alveolar bone alterations during the exfoliation process, masking AMTL occurring at the same age. Further, deciduous teeth are in occlusion for no longer than 9-years, whilst permanent teeth are in occlusion for decades, so have more time for root resorption to progress. The root resorption in the Nunavut teeth 51 and 52 matches the published literature, as the most common odontological trauma in the deciduous dentition occurs in the maxillary incisors (Vilela et al. 2019). Only the two Nunavut individuals, both 6.5-years-of-age, have root resorption in the deciduous dentition. The ages are similar to the Coats Island subadults with notching (5.5-years-of-age).

7.4.4 Subadults

This section discusses the age at which subadults began PMDA, based on the totality of results for root resorption, TEM, occlusal features, wear, and clinical and (bio-)archaeological studies. The Nunavut adolescent female with lingual striae is not included here, as the aetiology was inferred to be a probe used to remove foodstuff debris, not PMDA. The reason PMDA evidence in the subadults is limited may be the individuals died before evidence could be retained, subadults infrequently conducted PMDA, or because evidence on the deciduous teeth is lost when exfoliated. Using the differential diagnoses, the conditions have been associated with PMDA. The Coats Island (5.5-years-of-age) and Nunavut individuals (both 6.5-years-of-age) show the earliest ages, while the West Greenland subadult is 6.5-11.5-years-of-age, but the dental feature requires time to form, meaning the activity began at a younger age. Changes occur in motor learning abilities at 4-5-years-old, where individuals gain better musculature control and develop the same degree of coordination and balance as adults, making object manipulation easier (Goodway et al. 2021, 349; Sprenger 2008, 50), and this is possibly linked to the onset of PMDA.

The ages of the subadults (5.5-11.5-years-old) with evidence of PMDA here conforms to (undefined) gender specific roles in the Sadlermiut sample (5-12-years-old) (Wood 1992, 45). As discussed in 7.4.2, Amaknak Island subadults may have been exempt from odontological-based labour, with the results indicative of age defined societal changes occurring very rapidly at the beginning of physiological adulthood (18-years-of-age). In contrast, the West Greenland results indicate subadults (6.5-11.5-years-of-age) conducted the same activities as adult males. Although the samples are from different areas, the similarity

in ages reconstruct when subadult societal changes in different Arctic/Sub-Arctic samples occurred. Bioarchaeological, material cultural, and Arctic/Sub-Arctic studies, do not always include subadults (Justice 2017, 37), so the results greatly increase the knowledge of subadult roles in Arctic/Sub-Arctic samples.

7.4.5 Percentages of Occurrence

As outlined in Chapter 2, there has hitherto not been a comprehensive method for analysing paramasticatory dental activities (PMDA). The result is a lack of cohesion between studies, problems assigning features to activities (Blake 2011, 16; Minozzi et al. 2003), and limited data on striae causation (Lalueza Fox 1992). Therefore, only broad comparisons can be made, using the published literature to establish the range of previously observed frequencies of PMDA, and comparing to the results of this project. An overview of the studies reviewed is in Appendix Table 232, and the ranges are in Figure 7-2. The infrequency of features here contrasts with most non-Arctic/Sub-Arctic HG samples. Frequently, half of individuals/teeth from the published literature have facets, striae, or grooves. Figure 7-2 shows two percentage ranges for individuals with PMDA: $\approx 0\text{-}15\%$ and $\approx 50\%$. The $\approx 0\text{-}15\%$ may illustrate sporadic PMDA, whilst the $\approx 50\%$ may indicate regular PMDA, resembling Towle and Loch's (2021) proposal.

Only one study on Arctic/Sub-Arctic samples with suitable data is known, on Point Hope individuals represented by two cultural groups – Tigara and Ipiutak, with $12.7\text{-}13.7\%$ (Madimenos 2005, 30-31 Table 4.1-4.24). Figure 6.26 shows the percentage of individuals with dental features in the samples here; only the South Alaska sample has similar percentages to the Point Hope samples (13.3% , $n=2/15$). Seven of the 10 samples with dental features are closer to non-Arctic/Sub-Arctic samples, with percentages in the lower range ($0.3\text{-}8.1\%$). These samples were Amaknak Island, Coats Island, Hudson Bay, North Alaska, North Greenland, Nunavut, and West Aleutians. The remaining two samples with dental features (South Greenland and West Greenland) have results intermediate to the two ranges ($20\text{-}27.7\%$). Therefore, most samples here conform to Point Hope individuals, showing much lower percentages of PMDA compared to non-Arctic/Sub-Arctic samples.

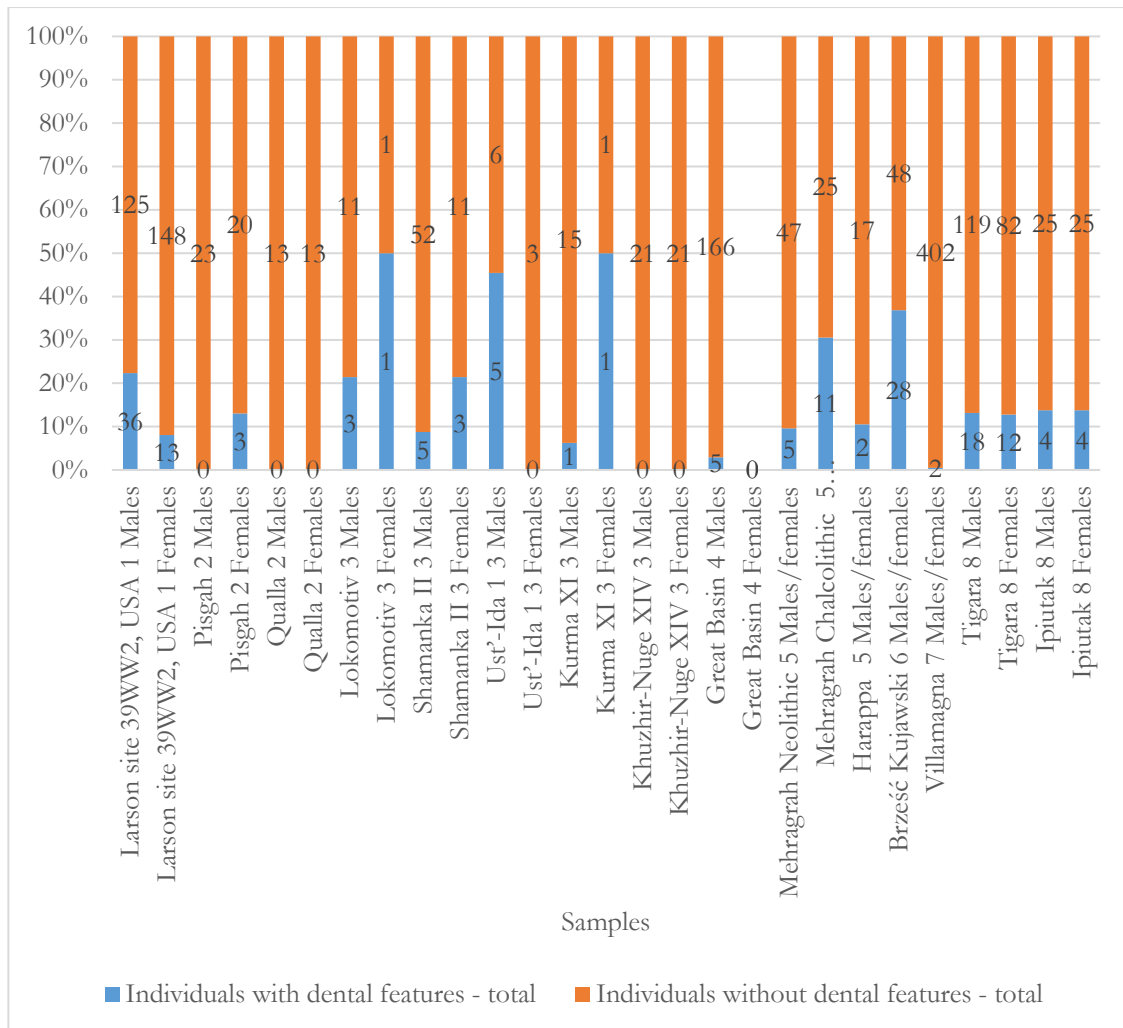


Figure 7-2 PMDA - percentages of PMDA from comparative samples

1 = Berryman et al. (1979), 2= Blakey and Beck (1984), 3 = Waters-Rist et al. (2010), 4 = Larsen (1985), 5 = Lukacs and Pastor (1988), 6 = Lorkiewicz (2011), 7 = Trombley et al. (2018), 8 = Madimenos (2005, 30-31 Table 4.1-4.24)

7.4.6 Labour Divisions Summary

The results show, interestingly, the disparity in samples associated with PMDA and cultural identifiers in ethnohistorical accounts and archaeological studies (Cybulski 2010, 3, Figure XI-3; Ray 1981, 109, Fig. 37), and the evidence retained bioarchaeologically. Similar disparities are noted elsewhere (Littleton 2017; Rorabaugh and Shantry 2016). The study shows subadults began PMDA from ~5-years-of-age, conducting process-based (root resorption and TEM) and habitual (occlusal striae) PMDA. The study found labour divisions between the sex/age classes; the results for wear (extent), overall, indicate females and males had divergent (para-)masticatory processes/loadings, whilst the molar-dominate TEM in males indicates they (para-)masticated tough material more than females.

For all samples, the evidence from root resorption and TEM shows age-based labour divisions between those younger than the child age class, and those older. Most individuals with root resorption do so independent of TEM, meaning one subset of individuals sustained impact trauma to the crown, whilst

another sustained impact trauma to the roots. For root resorption, any labour division had similar levels of force affecting the roots. For TEM, the results suggest males engaged in PMDA with force greater than the enamel could withstand or conducted PMDA more regularly. As females were ethnohistorically recorded paramasticating sinew, features in females may be caused by wear. However, problems exist using ethnohistoric accounts as proxies in bioarchaeological studies, see Chapter 2; if applicable here, two activity types are illustrated, one causing features on males, and one causing wear in females.

The Amaknak Island sample's wear results indicate labour divisions between the child and adolescent individuals and adults, suggesting cultural adulthood coincided with physiological adulthood. The lack of discernible wear patterns prevents specific activities being recognised. However, because female and male young and mature adults, and subadults, have dental features assigned to PMDA, the evidence shows most of society undertook PMDA. The West Greenland sample has the greatest evidence for PMDA, when features (developed striae) and TEM are considered. Distinct TEM results occur in multiple age/sex classes of the West Greenland sample, as mostly 100% of a tooth class has TEM. The results suggest they engaged more regularly in PMDA with greater loadings.

7.5 Evidence of Cultural Identifiers

This section discusses the evidence for cultural identifiers using buccal-aspect facets and antemortem tooth loss (AMTL), see sections 6.7.2 and 6.2.4. Buccal facets (discussed first) give evidence for labrets, whilst AMTL (discussed second) gives evidence for ablation. For the following discussion, Canada Unknown and Greenland Unknown are excluded due to the unknown locales.

7.5.1 Buccal Facets

In total there are $n=7$ buccal facets on $n=4$ individuals, from the Amaknak Island, West Aleutians, and West Greenland samples. The facets are distributed thus: three on a female and two on a male (Amaknak Island), one on a male (West Aleutians), and one on a male (West Greenland). The West Greenland facet is discussed in 7.4.1, as it relates to labour. Most buccal facets are maxillary, unlike the published literature (Fitzhugh and Kaplan 1982, 17; Ray 1981, 147, Fig. 101; De Laguna and Oetteking 1934, 204-205; De Laguna 1933; Nelson 1900, 48), except for the West Aleutians individual, which is mandibular. There is no evidence of the formative factor of cultural identifier, as the remains are from unknown contexts.

The facets all occur on the anterior teeth, and are shiny, smooth, flat to the same extent, and cover 75-100% of the buccal aspect. The facets' flat surfaces suggest the object/material was relatively static, other than the slight movement causing facet formation. A piece of long material moving side-to-side against the buccal aspect cannot be the aetiology, as the soft tissue would have interfered, and there are no known (para-)masticatory activities causing buccal facets. As aetiologies from PMDA were eliminated in Section 7.4.1, a remaining possibility, based on the location (buccal aspect of the anterior teeth), is that the facets

are from wearing labrets, a form of cultural identification. Corresponding to published literature (Dumond 2009) no evidence of labrets occur in the Canadian or Greenlandic samples.

7.5.2 Labrets

The evidence of labrets in females and males of two Aleutian samples corresponds to Dumond (2009) and Knecht and Davis (2008), who state Alaskan females and males wore labrets. The locations of the facets in the Amaknak Island sample suggests two labret placement patterns, one by females with two labrets worn laterally and symmetrically (one on either side of the face), and the other by males, with one central labret. The proposed female labret placement partially corresponds to De Laguna and Oetteking's (1934, 204-205) statement that Aleutian Islanders wore labrets laterally. There are divergences, first, De Laguna and Oetteking (1934, 204-205) do not state the lateral placement is restricted to one sex. Second, the lateral labrets here were worn superior to the *labia superior oris*, whereas all ethnohistoric accounts, including De Laguna and Oetteking (1934, 204-205), state labrets were worn inferior to the *labia inferior oris*. The West Aleutians individual's facet is mandibular (tooth 43), corresponding to the ethnohistoric accounts of labrets worn inferior to the *labia inferior oris*. As only one West Aleutians individual has evidence of labrets, it is unknown if labret placement was restricted to males and/or middle adults. However, the West Aleutian individual is the same age class as the Amaknak Island female.

Some cultural proposals can be discounted as occurring in the Amaknak Island sample; the sample is relatively well recorded, and labrets were frequently recovered close to the skeletal remains (see Materials). Therefore, labrets as 'heirloom' items (Rorabaugh and Shantry 2017) or removed at death to indicate social status revocation (Cahue et al. 1998) had not occurred, with any meaning from wearing labrets retained post-mortem. The surfaces of a labret can have different dimensions (Ford and Stewart 1959, 221, Fig. 108), and facet dimension may reflect the labrets' internal surface. Although labrets are known from the Aleutian Islands (De Laguna and Oetteking 1934, 204-205), no published literature presents dimensions, so labret typology is unknown. The only information on labret dimensions for Arctic/Sub-Arctic samples is from Kodiak Island (Knecht 1995, 627). The facets on the Amaknak Island individuals do not match the width of the Kodiak Island labrets (internal side) (Knecht 1995, 627). The facet dimensions on the West Aleutians individual are very similar to the Amaknak Island individual AMNH 99.1/707's tooth 23 facet dimensions. Here, most widths are 1.3-3.3mm wider than Knecht (1995, 627) states. The dimension variations in the Amaknak Island female's facets suggest different sized labrets were worn on opposite sides of the face. Possibly, female labret placement was symmetrical, but (internal) labret typology was asymmetrical. Different labret sizes can indicate different rites of passage, achievements, or illustrate withstanding pain from size increases (Knecht 1995, 622, 630-631). Further analysis is impossible, as facet size in relation in labret size has not been studied.

As there are no published proposals on labret purposes from the Aleutian Islands, evidence from similar samples is used. Transfiguration using labrets has been proposed (Knecht 1995, 623) and is known from material cultural items (masks) (Rogers and Anichtchenko 2011) and funerary furniture (mouth/lip ornamentation) (Hill 2019; Rainey 1941a). For example, a Point Hope Ipiutak individual was buried with an ivory mouth plug covering the dentition, but it is unknown whether it was worn in life (Rogers and Anichtchenko 2011; Rainey 1941a). In some Arctic/Sub-Arctic samples, it is known that individuals began wearing cultural identifiers when a particular life stage was reached, in contrast, Kodiak Islanders wore labrets from birth (Maschner 2016, 331; Mason 2014, 40; Hillson 2008b, 310; Steffian and Saltonstall 2001, 1-2; Kehoe 1992, 487; Fitzhugh and Kaplan 1982, 17-18; Cook 1981; Keddie 1980 Clark 1970; Larsen and Rainey 1948, 114; Hrdlička 1941c; Jenness 1918; Nelson 1900, 4). All individuals here with facets are adults, so it is unknown when wearing labrets began, if they relate to life stages or birth assignment. Ethnohistoric accounts relay labrets were worn regularly, including from areas here (e.g., Kodiak Island), and labrets regularly occur in the archaeological record (see Chapter 2).

Labrets are the primary visible type of cultural identifier, being located craniofacially, so would be clearly visible when the individual is viewed face-on. Labrets are semi-permanent, being removeable, and the second physical form of identifier, requiring soft tissue damage to be worn, and possibly causing facets. Depending on labret size, intermediate proximity would be required for the labrets to be visible. Teeth are not the intentional site of cultural identification, as the evidence on the dentition is the indirect consequence of wearing labrets. Therefore, individuals with and without cultural identifiers could be in close-intermediate contact, indicating physical separations were not in place. As shown here, few individuals retain bioarchaeological evidence of labrets, so it cannot be determined if a minority of Amaknak Island and West Aleutians adults wore odontological-modifying cultural identifiers. Similar divergences for oral health are noted on bioarchaeological Aboriginal Australians, by Littleton (2018), with Mitchell (2017) making similar statements. Therefore, the results do not erroneously represent cultural identification practices in these samples, rather, labrets may rarely cause facets.

7.5.3 Ablation – Antemortem Tooth Loss

This section discusses the results for antemortem tooth loss (AMTL), relating to section 6.2.4. First, is the differential diagnostic, and second, is AMTL distribution. As presented in section 2.3.4, AMTL has several aetiologies, many not leaving diagnostic evidence, hindering aetiological reconstructions (Lee et al. 2019; Cieřlik et al. 2017; Harvey et al. 2017, 126; Burnett 2016, 415; Larsen 2015, 84; Crist and Sorg 2014; Herrera et al. 2014b; Fujita et al. 2013; Pietrusewsky and Douglas 2012, 596; Flensburg 2011; Meng et al. 2011; Molnar 2011; Buzon and Bombak 2010; Liu et al. 2010; Kaidonis 2008; Lukacs 2007; Gilbert et al. 2004; Cucina and Tiesler 2003; Hillson 2001; Whittaker and Molleson 1996; Varrelle et al. 1995; Costa 1980a; Merbs 1968; Stewart and Strong 1939, 50-51; Hrdlička 1941a, 2, 1940, 8). However, root resorption is a proposed aetiology (see section 7.4.3). Clinical literature (Huanca Ghislanzoni et al. 2017) states continuous

eruption occurs infrequently with minimal eruption, so is an unlikely AMTL aetiology, differing from anthropological literature (Hillson 2008a, 129; Danenberg et al. 1991). Consequently, a lack of continuous eruption is normal. Caries and linear enamel hypoplasia are unlikely aetiologies, as they are infrequent, but AMTL regularly occurs. Alveolar bone resorption occurs on individuals (including subadults) with and without AMTL, so it is unlikely to be a consistent or significant aetiology.

As these aetiologies have been discounted, other proposals can be made. All 15 samples, but not all individuals, have AMTL; overall, adult females more frequently have AMTL, corresponding to Point Hope and Kodiak Island samples (Dabbs 2011; Madimenos 2005, 35-36; Keenleyside 1988, 178; Costa 1980a). Some samples show AMTL increasing with age, with greater percentages in the mature adults than younger adults. Keenleyside (1988, 173), on bioarchaeological populations from Baffin Island, notes low AMTL, but an increase with age. The three samples without an age increase (Coats Island, Hudson Bay, and Nunavut), have the young adults with the greater AMTL percentages. The three samples, from a similar area, suggest a geographically specific area (eastern North America) of young adults who experienced greater AMTL and then dying before reaching mature adulthood. The Amaknak Island sample have another divergent AMTL pattern, with AMTL absent in the young adults of both sexes but present in the mature adult of both sexes. The results are not strictly linked to the Osteological Paradox, whereby older individuals may show greater evidence of pathological conditions, having survived long enough for diagnostic characteristics to develop (DeWitte and Stojanowski 2015; Klimenko and Smirnova 2014; Lopez et al. 2012). Merbs (1968) states AMTL (by any aetiology), particularly in the anterior dentition, increases mortality rates, by causing incorrect/inefficient (para-)mastication. Although, individuals could have been supported by others or sustained themselves via non-masticatory processes, where the samples have younger adults with the greater AMTL, the AMTL may have interfered with mortality rates, as proposed by Merbs (1968).

7.5.4 Ablation – Discussion

This section discusses the evidence for ablation, based on antemortem tooth loss (AMTL) results. Evidence of ablation is in $n=2/15$ samples, but not with equal certainty. There is no evidence of post-mortem ablation, unlike Lobdell (1980, 19) and Workman et al. (1980), who analysed individuals from the area corresponding to the South Alaska sample. Many individuals do not have archaeological contexts, and isolated teeth may not have been recovered or recognised as belonging to an individual. However, PMTL frequency is quite high across all samples, not just South Alaska, and post-mortem ablation is referenced rarely in published literature, so it is an unlikely aetiology. The Amaknak Island sample have strong evidence of ablation, but the evidence in the West Aleutians sample is less robust.

First, the other $n=13/15$ samples will be discussed, to justify why ablation is rejected. All samples have similar reasons, either the AMTL percentages are the same across the anterior teeth (when the three anterior

teeth were separated), or molars have the greater AMTL percentages even though ablation is more likely in the anterior teeth (Harvey et al. 2017, 126-128; Durband et al. 2014; Romero 1970, 52, Fig. 1). The Coats Island, Hudson Bay, and Nunavut samples largely have similar AMTL occurrences in the anterior and molar teeth. The similar occurrences show the AMTL rate is natural, rather than indicating human agency. The AMTL in the Nunavut child (right maxillary – deciduous) are unlikely to be ablation. Ablation is avoided on deciduous teeth due to their temporary nature, and early exfoliation of a deciduous tooth can compromise the permanent replacement's eruption location. The AMTL in the Hudson Bay adolescents (13.5- and 15.5-years-of-age), in quadrants three and four (M1-M2), may relate to root resorption (see Section 7.4.3) as by 13.5-years-of-age M1-M2 roots are fully developed. But, without the teeth present to analyse, root resorption cannot be assessed.

The North Alaska females have similar AMTL percentages in the anterior and molar teeth, whilst the males have greater AMTL percentages in the molars. The St. Lawrence Island, South Alaska, and South and West Greenland samples have greater molar AMTL, and AMTL rarely occurs in the anterior teeth. Only one South Alaskan individual has root resorption and AMTL (tooth 26), where ablation is unlikely. The Vancouver Island sample has varied AMTL rates, but greater AMTL concentration in the molars than the anterior teeth. Cultural identifiers (artificial cranial modifications and labrets) are known from Kodiak Island, Vancouver Island, and the Pacific Northwest area (Rorabaugh and Shantry 2017; Cybulski 2010, 15; Emmick 2001, 4; Cook 1981). However, there is no evidence of ablation. The North Greenland sample has elevated AMTL rates, but no visible pattern; young and mature adults have AMTL, which is unexpected with ablation, as normally a minority of individuals display dental modifications. The East Greenland females do not have AMTL, whilst the males have similar AMTL percentages across the tooth classes. Conforming to Dumond (2009), odontological cultural identifiers are absent from Greenland. Now, the evidence of ablation in the Amaknak Island and West Aleutians samples is considered. First, the samples are compared to Hrdlička's (1940a, 5) criteria for differential diagnosis of ablation, see Table 7-1 and Table 7-2 showing the samples can be associated with ablation.

Table 7-1 *Ablation against Hrdlička (1940a) – 1*

Sample	Amaknak Island	West Aleutians
Criteria		
1 - agenesis	Unsupported - agenesis in the anterior teeth does not occur	Unsupported – agenesis was not dissimilar to the occurrences in the molars
2 – accidental loss	Unsupported - absent alveolar bone trauma, and infrequent TEM and root resorption (Amaknak Island sample only)	
3 - extraction for health reasons	Unsupported - infrequent caries	Unsupported – no caries
4 - periodontal disease	Unsupported - not dissimilar to the other samples where ablation is not found	
5 - association with older age	Unsupported - could potentially be an aetiology for AMTL; however, AMTL would likely not preferentially affect the anterior teeth to the rate of AMTL found here and does not account for roots remaining, and the young adults without AMTL	

Table 7-2 *Ablation against Hrdlička (1940a) – 2*

Sample	Amaknak Island	West Aleutians
Criteria		
1 - symmetry	Supported – found within the anterior teeth.	
2 - intra-group occurrence	Supported - several individuals presented the same AMTL pattern	
3 - fracture to the alveolar bone	Unsupported - has already been answered and is absent	
4 - tooth removed at a young age	Unsupported - because AMTL does not occur in the young adults	
5 - inter-group occurrence	Supported – the Amaknak Island and West Aleutians samples are located close to each other.	
6 – ethnographic accounts	Not verified - these samples lack contextual information, and ethnohistoric/graphic accounts cannot always be used a reliable proxy	

The West Aleutians sample has much higher AMTL percentages in the anterior teeth in the mature adult females and males, whilst AMTL is absent in the young adults. However, the evidence of ablation is tentative; first, the AMTL in the mature adults may relate to AMTL's progressive nature. Second, the lack of archaeological context. Third, the sample incorporates individuals from different Aleutian Islands. Therefore, the evidence is not strong enough to substantiate ablation. The Amaknak Island sample has greater evidence of ablation, based on the extent and pattern of AMTL between the anterior teeth and

molars, and roots remaining (with/without alveolar bone resorption). Nearly 50% of the Amaknak Island sample has AMTL and/or with roots remaining, males more frequently than females, aligning with Hrdlička (1940a, 30). Of the Amaknak Island sample, no side has greater evidence of ablation, but mandibular AMTL is more frequent. The Amaknak Island female and male young adults do not have AMTL. The female mature adults have much greater AMTL percentages in the anterior teeth than the molars, and the mature males have similar AMTL percentages in the anterior teeth and 3rd molars.

Hrdlička (1940a, 2) asserts that abstraction by force exerted on the dentition causes root(s) to remain and reduces alveolar bone fracture probability. The absence of alveolar bone healing here therefore accords with ablation. The absence of alveolar bone trauma also confirms to Stojanowski et al. (2014) and Domett et al. (2013), supporting non-violent abstraction rather than inter-personal violence. Cook (1981) also notes root(s) remaining in adult and subadult Kodiak Islanders. Therefore, the removal is traumatic, but the activity is cultural. The proposal is the same as that for root resorption, where root resorption has been assigned to craniofacial trauma, possibly from a type of PMDA, which is the activity (although, the teeth do not display dental features). The Amaknak Island sample has greater AMTL in the anterior teeth, associated with mature adults, and root(s) remaining with/without alveolar bone healing in the mandibular anterior dentition. Therefore, it can be proposed the Amaknak Island sample conducted ablation, focusing on the mandibular anterior dentition. The ablation pattern differs from Durband et al. (2014), where maxillary anterior teeth most frequently have AMTL. The AMTL and root(s) remaining results suggest there were two abstraction methods, differing between the sexes. Only males have roots remaining and both sexes have AMTL. Possibly males experienced a more traumatic ablation process, compared to the females where the crown and root(s) were removed. Alternatively, females did experience the traumatic ablation method, but the individuals here lived long enough for complete alveolar bone absorption. Radiographic analysis is required to examine this proposal.

The ablation in the Amaknak Island sample is age specific, occurring in mature adults. As odontological cultural identifiers are absent in the subadults and young adults, they may have practiced non-odontological cultural identification. For example, the quaternary form where the cultural identifier is directly associated with the remains but does not leave skeletal/odontological evidence (section 5.10). The Amaknak Island sample has distinct odontological age-based societal alterations, with the previously presented wear results between the adolescence/young adult threshold, and cultural identifiers from mature adulthood. As only mature adults display ablation, possibly, ablation was not a punishment, as all societal members may be at risk of the procedure. The Amaknak Island individuals with ablation are within the developed age range, as ablation is absent from the deciduous dentition. Therefore, the ablation was not acted on from infancy or childhood, differing from Cook (1981). The ablation likely does not represent group affiliation, as these cultural identifiers would then be expected in more individuals. Rather, a form of a non-rectifiable social status is more likely. Based on the individuals' age, the social status may have been based on achievement recognition, or when a chronological age (cultural or physiological) was reached.

Using the cultural identification scheme devised here, ablation is the permanent, first, physical form, as tooth removal cannot be rectified, and there are no known examples of false teeth from Arctic/Sub-Arctic samples. Ablation is also the first visibility type, being clearly visible on the individuals' craniofacial area. Regarding distance, close contact is required to see the ablation, as teeth, whilst noticeable, compose a small portion of the craniofacial region. As with labrets, the individuals with ablation would have had close-intermediate physical contact to individuals without ablation. Ablation is semi-permanent visibility, as the oral cavity is not visible when the mouth is closed, but a permanent type of cultural identifier. Ablation is the direct type of evidence, as the teeth were intentionally removed.

7.5.5 Cultural Identifiers Summary

The Amaknak Island sample have permanent and semi-permanent cultural identifiers, and the West Aleutians sample has a semi-permanent cultural identifier. No other sample presents cultural identification. The Amaknak Island sample has two labret placements and possibly two extraction methods for ablation, both with sex-based distinctions. The labrets in the West Aleutians sample also have sex-based distinctions. The cultural identifiers require intermediate/close distance to be visible, suggesting different social strata in the two samples. The Amaknak Island could have three social strata (minimum), and the West Aleutians sample two (minimum); being the Amaknak Island sample with individuals with (1) ablation, (2) labrets and (3) those without odontological cultural identifiers. And the West Aleutians sample with individuals with (1) labrets and (2) those who did not. The three strata conform to those recorded in the Aleutian Islands; elites, slaves, and those in between (Zimmerman 1998, 147; Zimmerman et al. 1971; Marsh and Laughlin 1956). However, the results cannot associate the different identifiers here with the recorded social strata.

8 Chapter 8 Conclusion

The thesis has presented a large dataset and addressed multiple avenues of research regarding Arctic/Sub-Arctic samples from Greenland, Canada, and Alaska. The following section concludes the research conducted, the results, and the analyses and discussions.

8.1 Achievement of Aims and Research Questions

8.1.1 Aims

The research achieved some but not all of its aims:

Investigate sex- and age-based access to foodstuffs (diet) and oral health within ecogeographically dispersed Arctic/Sub-Arctic samples.

Dental and osteological data were collected from $n=1107$ individuals, from $n=15$ samples. The samples were divided into those from the Arctic/Sub-Arctic regions, covering Greenland to Siberia, the Aleutian Island to northern Canada, with a comparative sample from the Pacific Northwest. The data were evaluated to estimate the individuals' sex and age, the dental evidence of diet using the evidence from wear, caries, and calculus, and oral health using three distinct methods to gather evidence of periodontal disease. The results show a relatively homogeneous and healthy oral environment across the age and sex classes.

Develop and test a statistical recording and scoring method for PMDA.

The aim was achieved; the research achieved its aim of developing a functional, statistically appropriate method of recording, scoring, and identifying different types of dental features, with a complex theoretical component. Because the method records seven types of features, it can reconstruct different types of PMDA. The theoretical component means the features can be divided into when teeth were used as tools or as cultural identifiers, and reconstructs the type of activity (specialised, non-specialised) or cultural identifier (permanent, semi-permanent, non-permanent). The method can further analyse how the wider society interacted with individual(s) displaying cultural identification, by the cultural identifiers' visibility based on the distance between individuals. The method can be used on any skeletal sample, and for non-odontological remains (e.g., the neurocranium for artificial cranial modifications) not just dental remains of Arctic/Sub-Arctic hunter-gatherers. The notation portion of the method was developed to be used on any odontological remains, regardless of the samples' temporality, subsistence strategy, culture, or area they inhabited. The standardised nomenclature gives consistency between studies. The method was also developed to be completely non-destructive in nature, preserving the human remains.

The odontological and alveolar bone remains of $n=1107$ individuals from $n=15$ samples were analysed for evidence of PMDA and cultural identifiers. The PMDA recording system successfully recorded features on the aspects it was designed for (occlusal, mesial, distal, lingual, and buccal aspects, but not the apex), to recreate both PMDA and cultural identifiers. The theoretical component was able to reconstruct various meanings behind the different types of features. Therefore, without the PMDA method being developed, conducting the study would not be possible, and the aims, analyse and outcomes could not have been

achieved. The PMDA method will be further tested on samples from varying ecogeographic regions, cultures, and temporalities to tests for the methods' accuracy, and for inter- and intra-observer error.

Investigate if evidence of task-based activities (PMDA) is retained on the dentition.

The aim was achieved; the PMDA method evaluated the nature and extent of the features, and their interpretations. The study successfully investigated if task-based activities (PMDA) are retained on the dentition, by finding odontological evidence of PMDA, such as habitual and idiosyncratic behaviours. It was also possible to say Arctic/Sub-Arctic subadults undertook PMDA.

Investigate if evidence of cultural identifiers is retained within the dentition.

The aim was achieved; the PMDA method and analysis of AMTL found labrets and ablation were practiced in adults, and Arctic/Sub-Arctic subadults did not have odontological cultural identifiers. Therefore, the investigation successfully found that evidence of cultural identifiers are retained on the dentition.

8.1.2 Research Questions

The results from the aims were able to meet the research questions and analyse:

Does any evidence of PMDA retained in the dentition illustrate age and sex-based divisions of labour?

The answers to this question and the following one were convolved. Age and sex-based distinctions were found. No odontological cultural identifiers occur in the subadults, but evidence of PMDA was. The evidence of PMDA in the subadults aligns to when the age motor learning stages fully develop, showing PMDA roles appear to be based on musculoskeletal age (Goodway et al. 2021, 349; Sprenger 2008, 50); a link to a culturally derived age could not be determined. The results show when subadults began PMDA (see next question), and approximately which age ranges cultural identifiers occur. Proposals for activities and tools being conducted and used (e.g., using a knife or sewing needle) were made, using ethnohistoric accounts as proxies.

Can the age at which PMDA commenced be established?

The age PMDA began to be conducted in these samples was successfully established using evidence from traumatic enamel macrofracture, PMDA, wear, and root resorption. Although differentiating between wear patterns from masticatory and paramasticatory processes is difficult as the same material can be used for different purposes, some determinations were made. Wear and PMDA results indicate the ages adult roles began to be undertaken. For example, wear in the Amaknak Island sample show all subadults (under 18-years-of-age) did not undertake PMDA. Meanwhile, PMDA in the Coats Island, Nunavut, and West Greenland sample had begun by 5.5-10.5-years-of-age, and in the West Greenland sample continued into mature (male) adulthood. The features in the West Greenland sample are also noted in published literature relating to contemporary West Greenland individuals (Andreasen et al. 1991, 48). Using the totality of

results from subadults, a reason why PMDA started in this age range can be proposed; the subadult ages coincide with motor learning abilities and immunological maturity (Goodway et al. 2021, 349; Sprenger 2008, 50; Newman 1995), and a similar age (5-year-old) to when an individual found with a cultural identifier (labret) (De Laguna and Oetteking 1934, 43).

Were dental cultural identifiers present? And if so, are patterns present and decipherable?

Cultural identifiers occur in a restricted ecogeographic region (the Aleutians Islands). The West Aleutians wore labrets inferior to the *labia inferior oris*, and two previously unrecorded cultural practices (ablation and labrets superior to the *labia superior oris*) were observed in the Amaknak Island sample. The pattern in the Amaknak Island sample has females with labrets placed laterally, and the males with one labret medially placed, identifiable via the presence of facets. The pattern is unrecorded in all populations known to wear labrets, not just Arctic/Sub-Arctic samples. Ablation in the males was conducted by forceful removal of the tooth from the socket, resulting in roots being retained, followed by alveolar bone resorption. The removal for females was less traumatic, as no instances of roots remaining occurs.

Do ecogeographically distinct samples display divergent dietary and oral health characteristics?

The research has shown successful dietary analyses in Arctic/Sub-Arctic samples are difficult to conduct, but oral health analyses can be successfully conducted. Overall, there is limited odontological evidence for the division of diet and distinctions in oral health between the sexes across the 15 samples. The determinations result for different reasons – a lack of, or too varied, evidence for the dietary study, and homogenous results for oral health. It was not possible to establish if any sample had dietary divisions because the conditions used in the reconstruction (caries and calculus) are too infrequent. The only variations in calculus deposits are from the South Alaska and (the comparative) Vancouver Island samples. The results found females have greater calculus rates, however, the evidence is not strong enough for firm determinations. Likely, the samples did not have dietary divisions, as the published literature supports (Górka 2016, 31; Costa 1982).

The differences in subadult oral health (infrequent periodontal disease) to the adults, may be based on hormone levels naturally preventing periodontal disease affecting the alveolar bone (Originating Group 2017). In adults the causes are less clear and may relate to diets supporting oral health and homeostatic oral environments, or reduced hereditary susceptibility (Palmer et al. 2013, 11; Moynihan 2005). The comparative Vancouver Island sample has different oral health to the South Alaska sample, with periodontal disease absent in the former and present in the latter. The South Alaska and Vancouver Island samples have variations in alveolar bone resorption and lack caries. Most of the remaining samples have similar results for these oral health conditions. The homogeneity between the samples illustrates that even when inhabiting distinct ecogeographic regions, the oral health of HG samples was similar.

The analysis of wear was unable to provide evidence of dietary differences, although unlike the evidence of caries and calculus, the problems relate to the variability in extent and gradient of wear. The wear patterns (e.g., varied gradients), also do not conform to Lagan and Ehrlich (2021) who state HG exhibit flat wear but conform to Schmidt et al. (2019) by having varied wear patterns. The outcome is difficulty in assigning (para-)masticatory processes as the aetiology of wear. This study shows Arctic/Sub-Arctic samples contain greater wear variations than have been reported for HG samples (Lagan and Ehrlich 2021). Therefore, odontological studies on Arctic/Sub-Arctic samples require different methodological and analytical approaches.

8.2 Hypotheses

The data gained from the research questions were used to test the following hypotheses, and found:

Human skeletal remains from different ecogeographies will exhibit marked differences in oral health, physiological stress, wear (extent and gradient) and PMDA.

The first hypothesis is not supported, as samples from different ecogeographies do not present marked differences in oral health or physiological stress. In some instances, it relates to the infrequency of the conditions' occurrence, i.e., calculus deposits. Rather, homogeneity of oral health across the samples occurs. An additional factor is the aforementioned problem with differentiating between wear aetiologies. However, because caries and calculus are absent, but periodontal disease (including healed) is present, it is possible to state these HG samples were able to maintain healthy oral environments without modern oral hygiene products. Therefore, HG lifeways in periods pre-dating oral hygiene products did not always result in overly negative oral health.

Physiological stresses occur, but there are insufficient occurrences to recreate sex-/age-based distinctions. Rather, these Arctic/Sub-Arctic samples did not regularly suffer from physiological stresses leading to macroscopically visible evidence. The finding supports published studies by Keenleyside (1994, 222), Dabbs (2009, 124), and Scott et al. (1984), who note similarly low frequencies of physiological stresses. The review of published literature highlights the anomalously high levels of physiological stresses found by Scott and Gillispie (n.d.) in a sample from St. Lawrence Island. Therefore, the research establishes a baseline of physiological disturbances for Arctic/Sub-Arctic samples.

Wear (extent and gradient) have mixed results, as wear in the Amaknak Island sample is found to have age-based distinctions, being absent in the subadults but extensive in the adults. Variations occur in the presence of PMDA, and in the presence and social distribution of cultural identifiers. For example, cultural identifiers occur in two samples from the Aleutian Islands (Amaknak Island and West Aleutians), but are absent in the remaining samples from Siberia, Canada, and Greenland. Further, evidence of specific PMDA occur in the West Greenland sample, in the form of developed striae, which also occurs in other West Greenlandic individuals (Andreasen et al. 1991, 48; Pedersen and Jakobsen 1989, 125; Pedersen 1947).

Evidence of PMDA and diet will illustrate when subadults began adult roles.

The hypothesis is partially supported. As stated above, the conditions used to analyse diet are too infrequent to reconstruct diet. Therefore, it is unknown if subadults consumed a different diet to adults, if diet signified alterations in roles, or when subadults began adult roles. The evidence from PMDA however, is clearer, showing that individuals began to take on adult roles from the age of ~5 years-old, based on; the Coats Island (5.5 years-of-age) and Hudson Bay child individuals (4.5 years-of-age) with TEM, two Nunavut child individuals (both 6.5 years-of-age) with root resorption, and a West Greenland child (9.5-10.5 years-of-age) individual with TEM and PMDA (developed striae).

It was possible to assign the observations to adult roles because similar evidence of root resorption, TEM and PMDA occur in the adults. The West Greenland child has particularly strong evidence indicating adult roles, as an adult in the sample has the same feature in the same part of the dental arcade and correspond to the published literature relating to West Greenland (Ammitzøll et al. 1991, 83; Pedersen and Jakobsen 1989, 125).

Dental cultural identifiers will illustrate social structures.

The evidence for dental cultural identifiers illustrates possible differences in social structures, with evidence of wearing labrets and ablation in the Amaknak Island sample and wearing labrets in the West Aleutians sample. The cultural identifiers illustrate multiple social groups, but a precise status, such as elites/slaves (Zimmerman 1998, 147; Zimmerman et al. 1971; Marsh and Laughlin 1956), cannot be assigned due to the unknown archaeological contexts.

8.3 Outcomes

Only two of the three outcomes have been achieved. The outcomes aim to contribute understanding to the following:

Dietary access between ages and sexes.

Access to foodstuffs and dietary divisions based on age and sex, cannot be fully assessed, due to the aforementioned absence of caries and calculus deposits, and the difficulties in differentiating between (para-)masticatory processes, so the evidence could not be assessed. The ubiquity of Arctic/Sub-Arctic samples with minimal dietary evidence has been shown by using $n=1107$ individuals across $n=15$ samples across a vast geographical area with varied ecogeographies. The wide-ranging overview demonstrates for the first time that past Arctic/Sub-Arctic samples are not suitable for dietary studies using the standard analytical tools (caries, calculus deposits, and wear), requiring more analytical research. Consequently, future analyses of Arctic/Sub-Arctic samples may need to incorporate destructive techniques, such as isotopic analyses on enamel or calculus, to analyse for dietary differences.

Arctic/Sub-Arctic PMDA from multiple ecogeographic regions.

The outcome has been achieved, as it is possible to provide improved understandings on PMDA in Arctic/Sub-Arctic samples from multiple ecogeographic regions. Paramasticatory dental activities vary across samples from different ecogeographic regions, but not to an extent different patterns can be established. Patterns cannot be established because PMDA is too infrequent, in terms of the number of samples ($n=10/15$) and individuals ($n=19/1107$, 1.71%) with features. Differences occur in the PMDA type present, with facets (assigned to cultural identification) in the Amaknak Island and West Aleutians samples, and developed striae in the West Greenland sample, that occurs in other West Greenland individuals (Ammitzøll et al. 1991, 83; Pedersen and Jakobsen 1989, 125). Striae show varied presence across the samples, but like the other features, are absent in most individuals and samples.

Paramasticatory dental activities in published data typically occurs in one of two frequency ranges: ~0-15% and ~50% of individuals. The samples here fall below the lower range but confirm to the percentages found on Point Hope individuals (Madimenos 2005, 30-31 Table 4.1-4.24). Therefore, although the samples inhabited different ecogeographic regions, they conducted PMDA leaving similar odontological evidence. Although ethnohistoric accounts relate that Arctic/Sub-Arctic individuals frequently conducted PMDA (Dove et al. 2005; Scott 1997, Fig. 8; Stewart and Strong 1939, 50; Grant 1922, although see Jenness 1957, 149; Nansen 1893, 125) the percentage ranges show the frequency is not reflected in the odontological evidence. Samples in eastern Canada and west Greenland (Coats Island, Hudson Bay, Nunavut, and West Greenland) have evidence of subadults taking on adult roles (PMDA) from ~5 years-of-age (described above). Evidence of PMDA is from the Amaknak Island sample, with subadults lacking wear, but extensive levels in the adults. Whilst a link between wear and PMDA could not be substantiated, there are clearly age-related changes in (para-)masticatory processes.

Cultural identifier prevalence across Arctic/Sub-Arctic samples.

Using the PMDA recording system developed here, cultural identifiers were recognised and analysed, including distinct and hitherto unrecorded labret placements, and evidence of ablation, previously unconfirmed for these samples. The results show only a minority of individuals have cultural identifiers. The research significantly expands and contributes to the understanding of cultural identification in Arctic/Sub-Arctic samples, by showing the varied nature of cultural identifications. The samples without odontological cultural identifiers (St Lawrence Island, mainland Alaska, Canada, and Greenland), conform to published literature, stating odontological cultural identifiers are absent in these areas (Dumond 2009). The South Alaska and Vancouver Island samples, where cultural identifiers are recorded elsewhere (Rorabaugh and Shantry 2017; Cook 1981), do not occur here. The research significantly expands the understanding of cultural identifiers across the Aleutians Islands (the only area cultural identifiers occur). The research identifies different social groups in the samples with cultural identifiers; the Amaknak Island

sample had three possible groups, individuals with labrets, with ablation, and individuals without. The West Aleutians sample had two groups, individuals with and without labrets.

8.4 Limitations

The study has some limitations which hindered portions of the analyses. One limitation relates to the lack of population-specific sex estimation methods. Another limitation is the low MNI in some samples (e.g., East Greenland), or the unequal numbers in age/sex classes. The samples are composed of individuals from mixed locales and times, however, the samples were not merged further, meaning age-based conditions or sex-based differences of some conditions are difficult to reconstruct. Samples with small MNI were retained, as merging samples further to increase MNI can potentially result in the loss of information (e.g., the distinct wear in the Amaknak Island sample).

Another limitation relates to the lack of known archaeological contexts, dates, and cultural affinities for some samples, preventing the analyse of temporal distinctions. The limitation cannot easily be overcome, as bioarchaeological analyses are dependent on what is retained in museums. Additionally, given present museum collections, study of remains from known archaeological contexts necessitates new archaeological excavation. Within the confines of a PhD such excavation in the Arctic region is impractical and prohibitively expensive.

The methods by Karn et al. (1984) and Kerr (1991) to analyse periodontal disease caused limitations; they are comprehensive methods, providing a multifaceted level of analysis, but generate large amounts of varied data, they are difficult to scrutinise, causing difficulties in making intra- and inter-sample/individual comparisons. A similar problem occurs for alveolar bone resorption. The result are the data these methods generate are difficult to analyse. The study found the method by Ogden (2008, 293; Fig. 13.7) produces the most usable results, producing analysable data, which can then be used to analyse localised/generalised periodontal disease.

There are limitations with the discriminate diagnostic criteria (DDC) developed by Blakely and Beck (1984); despite alterations only two criteria (sex and location) were not altered or removed. The DDC only infer from striae and caries, whereas the oral environment is subjected to many (ill-)health conditions. Therefore, samples where caries are typically absent, such as here, are not suitable for the DDC. Further, the present study shows there are more feature types than Blakely and Beck (1984) present. The DDC do not independently analyse features, because the DDC relies on comparing the number of features found against the total number of individuals present, or when multiple aspects are affected. Because the DDC do not independently assess features, features' frequencies cannot be assessed. Overall, the DDC were found to be ineffective and restrictive in their approach to analysing PMDA.

A limitation to the PMDA method developed here is it does not discriminate between crown and root features. Roots are liable to display features, for example, when a probe-like instrument has penetrated the gingivae and made contact with the root, or when gingivae and alveolar bone loss causes root exposure, leading to facet formation on the roots from (para-)masticatory processes. Overall, however, the research here is not excessively hindered by the limitations. Most aims were achieved, and the outcomes expand the knowledge and understanding of past Arctic/Sub-Arctic peoples, and of PMDA.

8.5 Future Analyses

In addition to achieving most of its aims, the research is also the foundation for several potential future studies. These are elaborated on below, but focus on PMDA:

- methodological improvements,
- more in-depth research,
- deployment on more samples,
- expanding the research to include more Arctic/Sub-Arctic samples (with greater exchange with Descendants),
- incorporating complimentary samples for analysis.

One highlighted area requiring more research is methodological, being a sample-specific sex estimation method. The method can utilise published literature (Osipov et al. 2016; Stock 2006; Mayhall et al. 1978; Boesen et al. 1976; Y'Edynak 1976; Levine 1953; Garn and Moorrees 1951) in conjunction with direct observations on Arctic/Sub-Arctic samples with large MNI, and pre-existing aDNA analyses producing genetic sex results (to reduce destructive techniques). An example of the sample to use is the Point Hope (Alaska) samples.

Future PMDA studies need to incorporate and continue odontological research on animals (Gordon 1984), to understand how often similar features appear in non-human dentitions, as inter-species comparisons are important to the field (Estebarez et al. 2009; Merceron et al. 2005). Their inclusion would help to assess and determine the aetiology of features (e.g., dietary from masticating grasses), or habitual or idiosyncratic activities (e.g., using toothpicks). Incorporation of non-human animal odontological remains can also show if there are any features unique or more common in humans or non-human animal dentitions.

To broaden the knowledge of PMDA, future studies focusing on human dentitions should include samples with greater MNI, and from more cultures/subsistence strategies, and time periods. The additions will strengthen the assertions made on the features, aetiologies, and meanings relating to culture identifications. Further, the additions can assess if any features are more common/exclusive to one subsistence strategy or be linked to specific material cultural items. Currently, the PMDA method only records the length and width of the largest feature, and one feature type per aspect. The research was unaffected as no individual has different feature types on the same aspect/root. Future versions of the method will record features on

the root and crown, multiple types, and occurrences of features per aspect, and measurements for each feature. The addition of individuals from known archaeological contexts will also reduce the need for destructive dating techniques, e.g., radiocarbon dating. Here, radiocarbon dating is only recommended for certain samples, e.g., Amaknak Island as it has some association to material cultural items (Cahn 1945a, 1945b, 1944), so radiocarbon dating may help strengthen links to the material culture. Whereas the smaller samples (e.g., East Greenland) require an increase in MNI from known archaeological context to make destructive techniques beneficial.

Further, future PMDA studies can incorporate alternative methodological approaches and techniques, including incorporating greater magnification, such as a minimum of 45x magnification (Berryman et al. 1979). The inclusion provides more information on features, i.e., striae start and end points, recording depth of features, and identifying features requiring greater than 10x magnification to be visible. The theoretical component for cultural identifiers can be enhanced by incorporating a greater variety of odontological and non-odontological cultural identifiers, e.g., dental alterations, shaping and inlays, tattoos, and artificial cranial modifications. The additions can help analyse links between different cultural identifiers on odontological, skeletal, and soft tissue remains, and expand the applicability of the interpretive system.

Future studies should keep improving the knowledge of PMDA in Arctic/Sub-Arctic samples by incorporating more samples. For example, the Siberian Yupik, whom have been shown are genetically related to the Aleut (Dryomov et al. 2015) with clearly defined cultural links (Csonka 2014, 11) and osteological morphological similarities (Laughlin et al. 1976). Further, there are specific archaeological sites of interest, such as Ekven and Uelen (both Russia) and Point Hope (Alaska). The interest is because the Ekven cemetery shares material cultural resemblance to the two Point Hope samples (Alaska), and the Uelen cemetery is located close to the Alaskan mainland (Mason 2014, 53).

Future studies will include greater co-production and engagement with the Descendants and Indigenous communities of the bioarchaeological individuals being studied. This engagement should include contacting concerned parties directly before research has begun, to assess if the proposed research can address any areas of research the parties may have, and to deposit the research directly with the parties.

Future Arctic/Sub-Arctic-specific analyses can be enhanced, by conducting comparative studies on similar samples. Complementary samples are those from Tierra Del Fuego, southern Argentina (De La Fuente et al. 2015). Tierra Del Fuego is, similar to the Aleutian Islands, an archipelago, albeit Sub-Antarctic, rather than Sub-Arctic. Comparisons between the two samples have already been drawn (Wickham-Jones 2014, 703-704; Yesner 2004; McCartney 1975, 281), including morphological similarities, such as supraorbital tori robusticity, exaggerated temporalis muscle attachment sites, and anteriorly positioned zygomas, occipital tori and sagittal keeling (Larsen 2015, 266; Lahr 1995). A comparison can show how samples living in

similar ecosystems adapt to the environment, including how/if PMDA varied, both as tool use and cultural identifiers, and the environment's effect on oral health.

9 Chapter 8 References

- Ackermans, N. L., Winkler, D. E., Martin, L. F., Kaiser, T. M., Clauss, M. and Hatt, J.-M. (2020) Dust and grit matter: Abrasives of different size lead to opposing dental microwear textures in experimentally fed sheep (*Ovis aries*). *Journal of Experimental Biology* Vol. 223(3), 1-9.
- Addy, M., Shellis, R. P. and Lussi, A. (2006) Interaction between attrition, abrasion and erosion in tooth wear. *Dental Erosion* Vol.20, 17-31.
- Adler, C. J. and Donlon, D. (2010) Sexual dimorphism in deciduous crown traits of a European derived Australian sample. *Forensic Science International* Vol. 199(1), 29-37.
- Admiraal, M. and Knecht, R. (2018) Understanding the function of container technologies in prehistoric Southwest Alaska. In (eds) Jordan, P. and Gibbs, K. *Ceramics in circumpolar prehistory: Technology, lifeways and cuisine*. Cambridge University Press. Chapter 6, 104-127.
- Adriance, H. B. (1943) Accession record, accession number 39700. *Central Archives 1943-49 gift, Mr H. B. Adriance, 60.1/8959-8965; 99.1/690*. American Museum of Natural History.
- Agarwal, S. C. (2016) Bone morphologies and histories: Life course approaches in bioarchaeology. *American Journal of Physical Anthropology* Vol. 159, 130-149.
- Aigner, J. S. (1966) Bone tools and decorative motifs from Chaluka, Umnak Island. *Arctic Anthropology* Vol. 3(2), 57-83.
- Aigner, J. S. and Veltre, D. (1976) The Distribution and pattern of Umqan burial on southwest Umnak Island. *Arctic Anthropology* Vol. 13(2), 113-127.
- Ainamo, J. and Talari, A. (1976) The increase with age of the width of attached gingiva. *Journal of Periodontal Research* Vol. 11(4), 182-188.
- Alaraudanjoki, V., Laitala, M.-L., Tjäderhane, L., Pesonen, P., Lussi, A. and Anttonen, V. (2016) Association of erosive tooth wear and dental caries in Northern Finland Birth Cohort 1966 - an epidemiological cross-sectional study. *BMC Oral Health* Vol.17 (1), 6-6.
- Albert, A. M. and Greene, D. L. (1999) Bilateral asymmetry in skeletal growth and maturation as an indicator of environmental stress. *American Journal of Physical Anthropology* Vol. 110(3), 341-349.
- Alexandersen, V. and Lynnerup, N. (2017) Dental modifications of anterior teeth in the Danish Viking Age. In (eds) Burnett, S. E. and Irish, J. D. *A world view of bioculturally modified teeth*. Gainesville: University Press of Florida. Chapter 6, 79-91.

- Alfonso-Durruty, M. P. and Thompson, J. L. (2011) Basiocciput age at death estimation assessment in subadults from Punta Teatinos, Chile. *Anthropologie* Vol. 49(2), 125-132.
- Alix, C. (2016) A critical resource: Wood use and technology in the North American Arctic. In (eds) Friesen, T. M. and Mason, O. K. *The Oxford handbook of the prehistoric Arctic*. New York, NY: Oxford University Press. Chapter 4, 109-130.
- Almosa, N. A., Lundgren, T., Bresin, A., Birkhed, D. and Kjellberg, H. (2013) Diagnosing the severity of buccal caries lesions in orthodontic patients at de-bonding using digital photographs. *Acta Odontologica Scandinavica* Vol. 72(6), 474-480.
- Alaraudanjoki, V., Laitala, M.-L., Tjäderhane, L., Pesonen, P., Lussi, A. and Anttonen, V. (2016) Association of erosive tooth wear and dental caries in Northern Finland Birth Cohort 1966 – an epidemiological cross-sectional study. *BMC Oral Health* Vol. 17(1), 6-6.
- Albashaireh, Z. S. M. and Al-Shorman, A. A. (2010) The frequency and distribution of dental caries and tooth wear in a Byzantine population of Sa'ad, Jordan: Caries and tooth wear in a Byzantine population. *International Journal of Osteoarchaeology* Vol. 20(2), 205-213.
- AlQahtani, S. J., Hector, M. P. and Liversidge, H. M. (2010) Brief communication: The London atlas of human tooth development and eruption. *American Journal of Physical Anthropology* Vol. 142(3), 481-490.
- AlQahtani, S. J. (2008) *Atlas of tooth development and eruption*. Barts and the London School of Medicine and Dentistry. London, Queen Mary University of London.
- Alrousan, M. (2016) Human dental buccal microwear and paleodiet reconstruction. *Anthropologie* Vol. 54(3), 305-315.
- Alt, K. W., and Pichler, S.L. (1998). Artificial modifications of human teeth. In Alt, K. W., Rösing, F. W. and Teschler-Nicola, M. (eds.), *Dental anthropology: Fundamentals, limits and prospects*. Vienna: Springer, Chapter 5.4, 387–415.
- Alvarez, J. O. (1995) Nutrition, tooth development, and dental caries. *American Journal of Clinical Nutrition* Vol. 61, 410S–416S.
- Alvarez, J. O. and Navia, J. M. (1989) Nutritional status, tooth eruption, and dental caries: A review. *The American Journal of Clinical Nutrition* Vol. 49(3), 417-426.
- Alvrus, A. (1997) Trauma to the teeth and jaws: Three Nubian examples. *Journal of Paleopathology* Vol. 9(1), 5-14.

Alzoba, V., Gavrilenko, V., Kuzin, A., Mityukhlyayev, V., Rakov, A., Todua, P. and Filippov, M. (2012) Scan nonlinearity of a scanning electron microscope. *Measurement Techniques* Vol. 55(9), 1001-1004.

Ambrose, S. H., Butler, B. M., Hanson, D. B., Hunter-Anderson, R. L. and Krueger, H. W. (1997) Stable isotopic analysis of human diet in the Marianas Archipelago, Western Pacific. *American Journal of Physical Anthropology* Vol. 104(3), 343-361.

Ambrose, S. H. and Krigbaum, J. (2003) Bone chemistry and bioarchaeology. *Journal of Anthropological Archaeology* Vol.22 (3), 193-199.

Ames, K. M. (1994) The Northwest Coast: Complex hunter-gatherers, ecology, and social evolution. *Annual Review of Anthropology* Vol. 23(1), 209-229.

Ammitzøll, T., Andersen, S. R., Andersson, H. P., Bodenhoff, J., Eiken, M., Eriksen, B., Foged, N., Ghisler, M., Gotfredsen, A., Hansen, H. E., Hart Hanse, J. P., Jakobsen, J., Balslev Jørgensen, J., Kobayasi, T., Kromann, N., Lyberth, K. J., Lyneborg, L., Mikkelsen, F., Möhl, R., Myhre, J., Pedersen, P. O., Prause, J. U., Sebbesen, O., Svejgaard, E., Thompson, D. D., Frølund Thomsen, V. and Vanggaard, L. (1991) The people. In (eds) Meldgaard, J., Nordqvist, and Peder Hart Hansen, J. *The Greenland mummies*. London: British Museum Publications. Chapter 4, 64-101.

AMNH (1917) The specimens collected while at North Star Bay. *Central Archives 1917-68 Crocker Land Exped.* 99/7812-7822; 99/7685 7692; 99/7693-7711; 60.1/4386-5052; 60.2/5394-5395; 60.1/5056-5312; 5319-5345; 4525 (1 to 36); 60.1/438 a-d). American Museum of Natural History.

Arnold, C. D. (1986) A nineteenth-century Mackenzie Inuit site near Inuvik, Northwest Territories. *Arctic* Vol.39 (1), 8-14.

Knowlton, J. G. (1912) Note by Knowlton dated 10th October 1912. Central Archives 1912-70. Dr J. G. Knowlton GIFT, 60/6870-6971, 99/6686-6693. American Museum of Natural History.

Anderson, J. E. (1965) Human skeletons of Tehuac'an. *Science* Vol. 148(3669), 496-497.

Anderson, M. F., Anderson, D. T. and Wescott, D. J. (2010) Estimation of adult skeletal age-at-death using the Sugeno fuzzy integral. *American Journal of Physical Anthropology* Vol. 142(1), 30-41.

Andersen, S., Laurberg, P., Kleinschmidt, K., Hvingel, B., Heickendorf, L. and Mosekilde, L. (2012) Vitamin D changes in an Arctic Inuit society in transition. *Bone* Vol. 50, S104-S105.

Andreasen, C., Gulløv, Hart Hansen, J. P., Lyberth, J. and Tauber, H. (1991) The find. In (eds) Meldgaard, J., Nordqvist, and Peder Hart Hansen, J. *The Greenland mummies*. London: British Museum Publications. Chapter 2, 37-52.

- Angle, E. H. (1907) *Treatment of malocclusion of the teeth. Angle's system*. S.S. White, Philadelphia. 7th Edition.
- Antoine, D. and Hillson, S. (2016) Enamel structure and properties. In (eds) Irish and Scott, *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 16, 223-243.
- Antoniades, L., MacGregor, A. J., Andrew, T., Spector, T. D. (2003) Association of birth weight with osteoporosis and osteoarthritis in adult twins. *Rheumatology* Vol. 42, 791–796.
- Arabacı, T., Çiçek, Y., Beydemir, Ş., Çanakçı, C. F. and Çanakçı, V. (2015) Are increased salivary carbonic anhydrase VI levels related to the amount of supragingival dental calculus formation and clinical periodontal scores? *Journal of Dental Sciences* Vol. 10(2), 123-127.
- Araújo, A., Reinhard, K., Leles, D., Sianto, L., Iñiguez, A., Fugassa, M., Arriaza, B., Orellana, N. and Ferreira, L. F. (2011) Paleoepidemiología de parásitos intestinales y piojos en Sudamérica Precolombina / Paleoepidemiology of intestinal parasites and lice in Pre-Columbian South America. *Revista de antropología chilena* Vol. 43(2), 303-313.
- Arcini, C. (2005) The Vikings bare their filed teeth. *American Journal of Physical Anthropology* Vol. 128(4), 727-733.
- Arendt, B. (2010) Caribou to cod: Moravian missionary influence on Inuit subsistence strategies. *Historical Archaeology* Vol. 44(3), 81-101.
- Armélagos, G. J., Goodman, A. H., Harper, K. N. and Blakey, M. L. (2009) Enamel hypoplasia and early mortality: Bioarcheological support for the Barker hypothesis. *Evolutionary Anthropology: Issues, News, and Reviews* Vol. 18(6), 261-271.
- Arnold, J. E. (1996) The archaeology of complex hunter-gatherers. *Journal of Archaeological Method and Theory* Vol. 3(1), 77-126.
- Arutyunov, S. A., Levin, M. G. and Sergeyev, D. A. (1964) Ancient burials on the Chukchi peninsula. In (eds) Michael, H. N. *The Archaeology and geomorphology of Northern Asia. Selected works No. 5*. University of Toronto Press. 333-347.
- Arutyunov, S. A., Sergeyev, D. A. And Bland, R. L. (2006) *Ancient cultures of the Asiatic Eskimo*. Moscow: Nauka.
- Arx, T. (1993) Developmental disturbances of permanent teeth following trauma to the primary dentition. *Australian Dental Journal* Vol. 38(1), 1-10.

- Aseffa, A., Wayessa, B. S. And Burka, T. (2016) "I have to resemble my ancestors through modification of midline diastema": An ethnoarchaeological study of dental modification among Karrayyu Oromo, Central Ethiopia. *Ethnoarchaeology* Vol. 8(1), 57-68.
- Aung, N. N., Saruwatari, L., Bo, B., Sakai, E., Manabe, Y. and Ohno, N. (2005) Dental traits among five tribes in Myanmar (Burma). *Journal of Oral Biosciences* Vol. 47(3), 272-279.
- Baarregaard, A. (1949) Dental conditions and nutrition among natives in Greenland. *Oral Surgery, Oral Medicine, Oral Pathology* Vol. 2(8), 995-1007.
- Bader, J. D., Martin, J. A. and Shugars, D. A. (2001) Incidence rates for complete cusp fracture. *Community Dentistry and Oral Epidemiology* Vol. 29(5), 346-353.
- Bagnall, S. (2011) Oral piercing & dental complications. *Vital* Vol. 9(1), 20-22.
- Bailey, G. N. (1983) *Hunter-gatherer economy in prehistory: A European perspective*. Cambridge: Cambridge University Press.
- Baker, B. J., Terhune, C. E. and Papalexandrou, A. (2012) Sew long? The osteobiography of a woman from Medieval Polis, Cyprus. In (eds) Stodder, A. L. W. and Palkovich, A. M. *The bioarchaeology of individuals*. University Press of Florida. Chapter 10, 151-161.
- Balikci, A. (1968) The Netsilik Eskimos: Adaptive processes. In (eds) Lee, R. B. and DeVore, I. *Man the hunter*. Chicago: New York: Aldine. Chapter 8, 78-82.
- Bangsted, H. (1928) A winter sledging expedition on the inland ice of Greenland. *The Scientific Monthly* Vol. 26(3), 253-256.
- Bastir, M., Godoy, P. and Rosas, A. (2011) Common features of sexual dimorphism in the cranial airways of different human populations. *American Journal of Physical Anthropology* Vol. 146(3), 414-422.
- Bank, T. P. (1953) *Cultural succession in the Aleutians*. American Antiquity Vol. 19(1), 40-49.
- Bastos, J. A., Andrade, L. C., Ferreira, A. P., Barroso, E. A., Daibert, P. C., Barreto, P. L., Vilela, E. M., Marcaccini, A. M., Colugnati, F. A. and Bastos, M. G. (2013) Serum levels of vitamin D and chronic periodontitis in patients with chronic kidney disease. *Jornal Brasileiro de Nefrologia* Vol. 35(1), 20–26.
- Bardellini, E., Amadori, F., Pasini, S. and Majorana, A. (2017) Dental anomalies in permanent teeth after trauma in primary dentition. *The Journal of Clinical Pediatric Dentistry* Vol. 41(1), 5-9.
- Barker, D. J. P. (2012) Developmental origins of chronic disease. *Public Health* Vol. 126(3), 185-189.

- Barnard, A. (2019) *Bushman. Kalahari Hunter-gatherers and their descendants*. Cambridge: Cambridge University Press.
- Barr, W. (2012) Gyrfalcons to Germany: Herdemerten's expedition to west Greenland, 1938. *Polar Record* 2012, Vol. 48(2), 113-122.
- Barr, W. (1994) The eighteenth century trade between the ships of the Hudson's Bay Company and the Hudson Strait Inuit. *Arctic* Vol. 47(3), 236-246.
- Bartholdy, B. P., Hoogland, M. L. P. and Waters-Rist, A. (2019) How old are you now? A new ageing method for nonadults based on dental wear. *International Journal of Osteoarchaeology* Vol. 29(4), 622-633
- Bartlett, J. D., Skobe, Z., Nanci, A. and Smith, C. E. (2011) Matrix metalloproteinase 20 promotes a smooth enamel surface, a strong dentino–enamel junction, and a decussating enamel rod pattern. *European Journal of Oral Sciences* Vol. 119, 199-205.
- Barton, N., Bouzouggar, A., Humphrey, L., Berridge, P., Collcutt, S., Gale, R., Parfitt, S., Parker, A., Rhodes, E. and Schwenninger, J.-L. (2008) Human burial evidence from Hattab II Cave and the question of continuity in Late Pleistocene-Holocene mortuary practices in Northwest Africa. *Cambridge Archaeological Journal* Vol. 18(2), 195-214.
- Basha, S., Mohamed, R. and Swamy, H. (2016) Association between enamel hypoplasia and dental caries in primary second molars and permanent first molars: A 3-year follow-up study. *Annals of Tropical Medicine and Public Health* Vol. 9(1), 4-11.
- Bassed, R., Briggs, C. and Drummer, O. (2012) The incidence of asymmetrical left/right skeletal and dental development in an Australian population and the effect of this on forensic age estimations. *International Journal of Legal Medicine* Vol. 126(2), 251-257.
- Baumgartner, S., Imfeld, T., Schicht, O., Rath, C., Persson, R. E. and Persson, G. R. (2009) The impact of the Stone Age diet on gingival conditions in the absence of oral hygiene. *Journal of Periodontology* Vol. 80(5), 759-768.
- Baumann, M., Lynnerup, N. and Scott, G. R. (2017) Stable isotopes and oral tori in Greenlandic Norse and Inuit. *International Journal of Osteoarchaeology* Vol. 27(2), 312-319.
- Baustian, K. M. (2018) Violence and social structure in the Mimbres region of Southwest New Mexico: Interpretations from bioarchaeological data. *KIVA* Vol. 84(4), 440-460.

- Beaty, T. H., Boughman, J. A., Yang, P., Astemborski, J. A. and Suzuki, J. B. (1987) Genetic analysis of juvenile periodontitis in families ascertained through an affected proband. *American Journal of Human Genetics* Vol. 40(5), 443–452.
- Becker-Christensen, F. G. (2003) Growth in Greenland: Development of body proportions and menarcheal age in Greenlandic children. *International Journal of Circumpolar Health* Vol. 62(3), 284-295.
- Begg, P. R. and Kesling, P. C. (1977) The differential force method of orthodontic treatment. *American Journal of Orthodontics* Vol. 71(1), 1-39.
- Belcastro, M. G., Mariotti, V., Riga, A., Bonfiglioli, B. and Frayer, D. W. (2018) Tooth fractures in the Krapina Neandertals. *Journal of Human Evolution* Vol. 123, 96-108.
- Béland, S. L., McLeod, B. A., Martin, J., Martin, G. M., Darling, J. D. and Frasier, T. R. (2018) Species composition of First Nation whaling hunts in the Clayoquot Sound region of Vancouver Island as estimated through genetic analyses. *Journal of Archaeological Science* Vol. 17, 235-241.
- Bellwood, P. and Dizon, E. (2013) The Batanes Islands and the prehistory of Island Southeast Asia. In (Eds) *4000 years of migration and cultural exchange: The archaeology of the Batanes Islands, Northern Philippines*. Canberra: ANU Press. Chapter 13, 235-239.
- Benazzi, S., Kullmer, O., Schulz, D., Gruppioni, G. and Weber, G. W. (2013) Individual tooth macrowear pattern guides the reconstruction of Sts 52 (*Australopithecus africanus*) dental arches. *American Journal of Physical Anthropology* Vol. 150(2), 324-329.
- Bennike, O., Wagner, B. and Richter, A. (2011) Relative sea level changes during the Holocene in the Sisimiut area, south-western Greenland. *Journal of Quaternary Science* Vol. 26(4), 353-336.
- Berbesque, J. and Hoover, K. (2018) Frequency and developmental timing of linear enamel hypoplasia defects in Early Archaic Texan hunter-gatherers. *PeerJ*, Vol. 6, e4367.
- Berbesque, J. C. and Doran, G. H. (2008) Brief Communication: Physiological stress in the Florida Archaic- Enamel hypoplasia and patterns of developmental insult in early North American hunter-gatherers. *American Journal of Physical Anthropology* Vol. 136(3), 351-356.
- Berbesque, J., Marlowe, F., Pawn, I., Thompson, P., Johnson, G. and Mabulla, A. (2012) Sex differences in Hadza dental wear patterns. *Human Nature* Vol. 23(3), 270-282.
- Bertsatos, A., Chovalopoulou, M.-E., Boskovits, N.-M., Garoufi, N. and Nikita, E. (2021) The impact of activity on pelvic age-at-death estimation. *International Journal of Osteoarchaeology* Vol. 31(2), 218-231.

- Berryman, H., Owsley, D. W. and Henderson, A. M. (1979) Non-carious interproximal grooves in Arikara Indian dentitions. *American Journal of Physical Anthropology* Vol. 50(2), 209-212.
- Bertrand, B., Cunha, E., Bécart, A., Gosset, D. and Hédouin, V. (2019) Age at death estimation by cementochronology: Too precise to be true or too precise to be accurate? *American Journal of Physical Anthropology* Vol. 169(3), 464-481.
- Bilgin, N. and Kaya, B. (2018) Etiology and treatment alternatives in tooth agenesis: A comprehensive review. *Stomatological Disease and Science*, Vol. 2(9), 1-11.
- Bird, J. B. (1945) *Archaeology of the Hopedale area, Labrador*. Anthropological papers of the AMNH: Vol. 39, pt. 2.
- Bird, D. W., Bliege Bird, R., Coddling, B. F. and Zeanah, D. W. (2019) Variability in the organization and size of hunter-gatherer groups: Foragers do not live in small-scale societies. *Journal of Human Evolution* Vol. 131, 96-108.
- Bird, R. and Coddling, B. F. (2015) The Sexual division of labor. In (eds) Scott, R. and Kosslyn, S., *Emerging trends in the social and behavioral sciences*. John Wiley & Sons, Inc. 1-16.
- Birket-Smith, K. (1952) Present status of the Eskimo problem. In (eds), Tax, S. *Indian tribes of Aboriginal America*. Selected Papers of the 29th International Congress of Americanists, 8-21.
- Binford, L. R. (1983) *In pursuit of the past. Decoding the archaeological record*. London: Thames and Hudson.
- Binford, L. R. (1978) *Nunamiut ethnoarchaeology*. New York: Academic Press.
- Binford, L. R. (1967) Smudge pits and hide smoking: The use of analogy in archaeological reasoning. *American Antiquity* Vol. 32(1), 1-12.
- Bishop, K. (2011) Thule paleopathology: The health concerns of an Arctic Lifestyle. *Totem: The University of Western Ontario Journal of Anthropology*, Vol. 19(1), 50-58.
- Black, L. T. (1977) The Konyag (the inhabitants of the Island of Kodiak) by Iosaf [Bolotov] (1794-1799) and by Gideon (1804-1807). *Arctic Anthropology* Vol. 14(2), 79-108.
- Blake, J. (2011) *Nonalimentary tooth use in Ancient California*. Unpublished Masters' thesis. San Francisco State University.
- Blakey, M. L., Leslie, T. E. and Reidy, J. P. (1994) Frequency and chronological distribution of dental enamel hypoplasia in enslaved African Americans: A test of the weaning hypothesis. *American Journal of Physical Anthropology* Vol. 95(4), 371-383.

- Blakely, R. L. and Beck, L. (1984) Tooth-tool use versus dental mutilation: a case study from the prehistoric southeast. *Midcontinental Journal of Archaeology* Vol. 9(2), 269-284.
- Boas, F., Comer, G., Mutch, J. S. and Peck, E. J. (1907) *Second report on the Eskimo of Baffin Land and Hudson Bay: From notes collected by George Comer, James S. Mutch, and E.J. Peck. Bulletin of the AMNH; Vol. 15, article 2.* American Museum of Natural History.
- Boaz, J. (1998) *Hunter-gatherer site variability: Changing patterns of site utilization in the interior of eastern Norway, between 8000 and 2500 BP* Oslo: Universitetets Oldsaksamling.
- Bockstoce, J. (1979) *The archaeology of Cape Nome, Alaska.* The University Museum. University of Pennsylvania.
- Boesen, P., Eriksen, J. H. and Helm, S. (1976) Timing of permanent tooth emergence in two Greenland Eskimo populations. *Community Dentistry and Oral Epidemiology* Vol. 4(6), 244-247.
- Bogges, K. A., Espinola, J. A., Moss, K., Beck, J., Offenbacher, S., and Camargo, C. A. (2011) Vitamin D status and periodontal disease among pregnant women. *Journal of Periodontology* Vol. 82(2), 195–200.
- Bogoras, Waldemar. 1901. Letter from Waldemar Bogoras to F. Boas dated 6/18/1901. *Central Archives Document Waldemar Bogoras (Jesup Exped.) 1901-54.* American Museum of Natural History.
- Boldsen, J. L. (2005) Analysis of dental attrition and mortality in the Medieval village of Tirup, Denmark. *American Journal of Physical Anthropology* Vol. 126(2), 169-176.
- Bonfiglioli, B., Mariotti, V., Facchini, F., Belcastro, M. G. and Condemi, S. (2004) Masticatory and non-masticatory dental modifications in the epipalaeolithic necropolis of Taforalt (Morocco). *International Journal of Osteoarchaeology* Vol. 14(6), 448-456.
- Booyens, J., Louwrens, C. C. and Katzeff, I. E. (1986) The Eskimo diet. Prophylactic effects ascribed to the balanced presence of natural *cis* unsaturated fatty acids and to the absence of unnatural trans and *cis* isomers of unsaturated fatty acids. *Medical Hypotheses* Vol. 21(4), 387-408.
- Borden, C. E. (1975) The Borden system of site identification. *Oracle. National Museums of Canada.* Vol. 1975(8).
- Borgognini Tarli, S.M., and Repetto, E. (1985) Dietary patterns in the Mesolithic samples from Uzzo and Molara caves (Sicily): The evidence of teeth. *Journal of Human Evolution* Vol. 14(3), 241-254.
- Boucherie, A., Castex, D., Polet, C. and Kacki, S. (2017) Normal growth, altered growth? Study of the relationship between harris lines and bone form within a post-medieval plague cemetery (Dendermonde,

Belgium, 16th Century): A re-examination of the etiology of Harris lines. *American Journal of Human Biology* Vol.29 (1), e22885.

Boughman, J. A., Astemborski, J. A. and Suzuki, J. B. (1992) Phenotypic assessment of early onset periodontitis in sibships. *Journal of Clinical Periodontology* Vol. 19(4), 233–239.

Bourdiol, P., Soulier-Peigue, D., Lachaze, P., Nicolas, E., Woda, A. and Hennequin, M. (2017) Only severe malocclusion correlates with mastication deficiency. *Archives of Oral Biology* Vol. 75, 14-20.

Boyd, D. (1996) Skeletal correlates of human behavior in the Americas. *Journal of Archaeological Method and Theory* Vol. 3(3), 189-251.

Boyd, M. and Surette, C. (2010) Northernmost precontact maize in North America. *American Antiquity* Vol. 75(1), 117-133.

Boyde, A. (1979) Carbonate concentration, crystal centers, core dissolution, caries, cross striations, circadian rhythms, and compositional contrast in the SEM. *Journal of Dental Research*, Vol. 58, 981-983.

Brabant, H. (1966) Contribution to the knowledge of the pathology of the teeth and jaws among the early population of Belgium and the Nord region of France. The ossuary of Marville (Meuse, France). *Bulletin du Groupement international pour la recherche scientifique en stomatologie* Vol. 9, 224–41. Cited in Esclassan, R., Grimoud, A. M., Ruas, M. P., Donat, R., Sevin, A., Astie, F., Lucas, S. and Crubezy, E. (2009) Dental caries, tooth wear and diet in an adult medieval (12th–14th century) population from Mediterranean France. *Archives of Oral Biology* Vol. 54(3), 287-297.

Brace, C. L. (1962) Refocussing on Neanderthal problem. *American Anthropologist* Vol. 64, 729-741.

Brace, C. L., Smith, S. L and Hunt, K. D. (1991) What big teeth you had grandma! Human tooth size, past and present. In (eds) Kelley, M. A. and Larsen, C. S. *Advances in dental anthropology*. Wiley-Liss Inc., New York. Chapter 4, 33-48.

Brace, C. L., Brown, T., Townsend, G. C., Harris, E. F., Howells, W. W., Huizinga, J., Constandse-Westermann, T. S., Hunt, E. E., Koritzer, R. T., Lombardi, A. V., Meiklejohn, C., Pietrusewsky, M., Preston, C. B., Roydhouse, R. H., St. Hoyme, L. E. and Turner, C. G. (1980) Australian tooth-size clines and the death of a stereotype [and comments and reply]. *Current Anthropology* Vol. 21(2), 141-164.

Brace, C. L. and Molnar, S. (1967) Experimental studies in human tooth wear: I. *American Journal of Physical Anthropology* Vol. 27(2), 213-221.

Brennercoltrain, J., Hayes, M. G. and Orourke, D. (2006) Hrdlička's Aleutian population-replacement hypothesis. A radiometric evaluation. *Current Anthropology* Vol. 47(3), 537-548.

- Brierley, J. and Parsons, F. G. (1906) Notes on a collection of ancient Eskimo skulls. *The Journal of the Anthropological Institute of Great Britain and Ireland* Vol. 36, 104-120.
- Britton, K., McManus-Fry, E., Nehlich, O., Richards, M., Ledger, P. M. and Knecht, R. (2016) Stable carbon, nitrogen and sulphur isotope analysis of permafrost preserved human hair from rescue excavations (2009, 2010) at the precontact site of Nunalleq, Alaska. *Journal of Archaeological Science: Reports* Vol. 17, 950-963.
- Britton, K., Knecht, R., Nehlich, O., Hillerdal, C., Davis, R. S. and Richards, M. P. (2013) Maritime adaptations and dietary variation in prehistoric Western Alaska: Stable isotope analysis of permafrost-preserved human hair. *American Journal of Physical Anthropology*, Vol. 152(3), 433-433.
- Briz Godino, I., Álvarez, M., Balbo, A., Zurro, D., Madella, M., Villagrán, X. and French, C. (2011) Towards high-resolution shell midden archaeology: Experimental and ethnoarchaeology in Tierra del Fuego (Argentina). *Quaternary International* Vol. 239(1-2), 125-134.
- Bromage, T. G. and Boyde, A. (1984) Microscopic criteria for the determination of directionality of cutmarks on bone. *American Journal of Physical Anthropology* Vol. 65(4), 359-366.
- Bronshtein, M. M., Dneprovsky, K. A. and Savinetsky, A. B. (2016) Ancient Eskimo cultures of Chukotka. In (eds) Friesen, M. and Mason, O. *The Oxford handbook of the prehistoric Arctic*. Oxford University Press. Chapter 19, 469-488.
- Broodbank, C. (2000) *An island archaeology of the early Cyclades*. Cambridge: Cambridge University Press.
- Brooks, S. T. (1955) Skeletal age at death: The reliability of cranial and pubic age indicators. *American Journal of Physical Anthropology* Vol. 13(4), 567-597.
- Brooks, S. and Suchey, J. M. (1990) Skeletal age determination based on the os pubis: A comparison of the Acsádi-Nemeskéri and Suchey-Brooks methods. *Human Evolution* Vol. 5, 227-238.
- Brothwell, D. and Ghiabi, E. (2009) Periodontal health status of the Sandy Bay First Nation in Manitoba, Canada. *International Journal of Circumpolar Health* Vol. 68(1), 23-33.
- Brothwell, D. R. (1981) *Digging up bones: the excavation, treatment and study of human skeletal remains*. London: British Museum (Natural History). Third Edition.
- Brown, T. (1991) Interproximal grooving: Different appearances, different etiologies, reply to Dr. Formicola. *American Journal of Physical Anthropology* Vol. 86 (1), 86-87.
- Brown, W. S., Jacobs, H. R. and Thompson, R. E. (1972) Thermal fatigue in teeth. *Journal of Dental Research* Vol. 51(2), 461-467.

- Brown, T. and Molnar, S. (1990) Interproximal grooving and task activity in Australia. *American Journal of Physical Anthropology* Vol. 81(4), 545-553.
- Brumbach, H. J. and Jarvenpa, R. (2006) Gender dynamics in hunter-gatherer society: Archaeological methods and perspectives. In (eds) Nelson, S. M. *Handbook of gender in archaeology*. Lanham, MD: AltaMira Press. Chapter 15, 503-536.
- Bruzek, J. (2002) A method for visual determination of sex, using the human hip bone. *American Journal of Physical Anthropology* Vol. 117(2), 157-168.
- Buckberry, J. L. and Chamberlain, A. T. (2002) Age estimation from the auricular surface of the ilium: A revised method. *American Journal of Physical Anthropology* Vol. 119(3), 231-239.
- Buikstra, J. E. (2019) *Ortner's identification of pathological conditions in human skeletal remains*. London: Academic Press. Third edition.
- Buikstra, J. E. and Ubelaker, D. H. (1994) *Standards for data collection from human skeletal remains: proceedings of a seminar at the Field Museum of Natural History*. Fayetteville, Arkansas: Arkansas Archeological Survey.
- Burakoff, R. P. (2003) Preventive dentistry: Current concepts in women's oral health. *Primary Care Update for OB/GYNs*. Vol. 10(3), 141-146.
- Burch, E. S. and Ellanna, L. J. (1996) *Key issues in hunter-gatherer research*. New York: Berg Publishers.
- Burks, J. M., Siimes, M. A., Mentzer, W. C. and Dallman, P. R. (1976) Iron deficiency in an Eskimo village: The value of serum ferritin in assessing iron nutrition before and after a three-month period of iron supplementation. *The Journal of Pediatrics* Vol. 88(2), 224-228.
- Burnett, S. E. (2016) Crown wear: Identification and categorization. In (eds) Irish, J. D. and Scott, G. R. *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 25:415-432.
- Burnett, S. E. (1999) Prevalence of maxillary canine-first premolar transposition in a composite African sample. *The Angle Orthodontist* Vol. 69(2), 187-9.
- Burnett, S. E. (2017) Intentional or not? Characterization and reassessment of proposed intentional dental modification cases in the present-day Southwestern United States. In (eds) Burnett, S. E., and Irish, J. D. *A world view of bioculturally modified teeth*. University of Florida Press. Chapter 16, 250-269.
- Burnett, S. E., Hawkey, D. E. and Turner, C. G. (2010) Brief communication: Population variation in human maxillary premolar accessory ridges (MxPAR). *American Journal of Physical Anthropology* Vol. 141(2), 319-324.

- Burnett, S. E. and Irish, J. D. (2017) *A world view of bioculturally modified teeth*. Gainesville: University Press of Florida.
- Burnett, S. E., and Weets, J. D. (2001). Maxillary canine-first premolar transposition in two Native American skeletal samples from New Mexico. *American Journal of Physical Anthropology* Vol. 116(1), 45–50.
- Buzon, M. R. and Bombak, A. (2010) Dental disease in the Nile Valley during the New Kingdom. *International Journal of Osteoarchaeology* Vol. 20(4), 371-387.
- Caglar, E., Kuscü, O. O., Sandalli, N. and Ari, I. (2007) Prevalence of dental caries and tooth wear in a Byzantine population (13th c. A.D.) from northwest Turkey. *Archives of Oral Biology* Vol. 52(12), 1136-1145.
- Cahn, A. R. (1944) Letter to Dr Shapiro, 8th September 1944. Central Archives 1944-52, Cahn, A. R. (40122) 991-691-913, 60.1-8997-9048 (St Lawrence Is), 60.1-9049-9652 (see also 1945-4). American Museum of Natural History.
- Cahn, A. R. (1945a) Letter from Cahn to Dr Shapiro, dated 8th September 1945. *Central Archives Cahn, Alvin R. C346 Notes, maps, and sketches, Aleutian Islands, 1943-1948*. American Museum of Natural History.
- Cahn, A. R. (1945b) Letter from Cahn to Dr Shapiro, dated 9th August 1945. *Central Archives Cahn, Alvin R. C346 Notes, maps, and sketches, Aleutian Islands, 1943-1948*. American Museum of Natural History.
- Cahue, L., Sauer, N. J. and Pollard, H. P. (1998) Lip plug (bezote) abrasion facets in a tarascan burial from Urichu Michoacán (abstract). *American Journal of Physical Anthropology*, Supplement 26, 111-119.
- Callaway, D. G. and Pilyasov, A. (1993) A comparative analysis of the settlements of Novoye Chaplino and Gambell. *Polar Record* Vol. 29(168), 25-36.
- Campbell, T. C. (1925) Dentition and palate of the Australian Aboriginal. Ph.D. Thesis. University of Adelaide, The Hassell Press, Adelaide. Cited in Molnar, S. (1968) Experimental studies in human tooth wear: II. *American Journal of Physical Anthropology* Vol. 28(3), 361-368.
- Campbell, M. N. and Fairgrieve, S. I. (2011) Differentiation of traumatic and heat-induced dental tissue fractures via SEM analysis. *Journal of Forensic Sciences* Vol. 56(3), 715-719.
- Cannon, A. (1998) Contingency and agency in the growth of Northwest Coast maritime economies. *Arctic Anthropology* Vol. 35(1), 57-67.
- Cares Henriquez, A. C. (2019) LEH chronology calculator. <https://www.lehtools.com/> Last accessed 20/01/19.

- Cares Henriquez, A. and Oxenham, M. F. (2019) New distance-based exponential regression method and equations for estimating the chronology of linear enamel hypoplasia (LEH) defects on the anterior dentition. *American Journal of Physical Anthropology* Vol. 168(3), 510-520.
- Cardoso, H. F. V., Abrantes, J. and Humphrey, L. (2014) Age estimation of immature human skeletal remains from the diaphyseal length of the long bones in the postnatal period. *International Journal of Legal Medicine* Vol. 128(5), 809-824.
- Cardoso, H. F. V. (2010) Testing discriminant functions for sex determination from deciduous teeth. *Journal of Forensic Sciences* Vol. 55(6), 1557-1560.
- Cardoso, H. F. V. (2007) Environmental effects on skeletal versus dental development: Using a documented subadult skeletal sample to test a basic assumption in human osteological research. *American Journal of Physical Anthropology* Vol. 132(2), 223-233.
- Carroll, M. (2018) Archaeological and epigraphic evidence for infancy in the Roman world. In (eds) Crawford, S., Hadley, D. M., and Sheperd, G. *The Oxford handbook of the archaeology of childhood*, Chapter 8, 148-164.
- Casado, A. M. (2017) Quantifying sexual dimorphism in the human cranium: A preliminary analysis of a novel method. *Journal of Forensic Sciences* Vol. 62(5), 1259-1265.
- Cassidy, C. (2003) *Alaska's no. 1 guide: The history and journals of Andrew Berg, 1869-1939*. Spruce Tree Publishing.
- Caufield, P. W., Li, Y. and Bromage, T. G. (2012) Hypoplasia-associated severe early childhood Caries: A proposed definition. *Journal of Dental Research* Vol. 91(6), 544-550.
- Cem Güngör, H., Püşman, E. and Uysal, S. (2011) Eruption delay and sequelae in permanent incisors following intrusive luxation in primary dentition: a case report. *Dental Traumatology* Vol. 27(2), 156-158.
- Cerezo-Román, J. I. and Hernández Espinoza, P. O. (2014) Estimating age at death using the sternal end of the fourth ribs from Mexican males. *Forensic Science International* Vol. 236, 196.e1-196.e6.
- Chamberlain, A. (2006) *Demography in archaeology*. Cambridge: Cambridge University Press.
- Chappell, E. (2014) *Narrative of a voyage to Hudson's Bay in His Majesty's ship Rosamond. Containing some account of the North-Eastern Coast of America and of the tribes inhabiting that remote region*. Cambridge: Cambridge University Press.

- Charlier, P., Huynh-Charlier, I., Munoz, O., Billard, M., Brun, L. and Grandmaison, G. L. de La (2010) The microscopic (optical and SEM) examination of dental calculus deposits (DCD). Potential interest in forensic anthropology of a bio-archaeological method. *Legal Medicine* Vol. 12(4), 163-171.
- Chattah, N. L-T. and Smith, P. (2006) Variation in occlusal dental wear of two Chalcolithic populations in the southern Levant. *American Journal of Physical Anthropology* Vol. 130(4), 471-479.
- Chen, G., Zhou, D., Zhang, Z., Kan, M., Zhang, D., Hu, X., Feng, G., Liu, Y. and He, L. (2012) Genetic variants in IFIH1 play opposite roles in the pathogenesis of psoriasis and chronic periodontitis. *International Journal of Immunogenetics* Vol. 39(2), 137-143.
- Chen, Q., Bao, N., Yao, Q. and Li, Z.-Y. (2018) Fractal dimension: A complementary diagnostic indicator of osteoporosis to bone mineral density. *Medical Hypotheses* Vol. 116, 136-138.
- Cheshire, N., Waldron, T., Quinn, A. and Quinn, D. (1980) Frobisher's Eskimos in England. *Archivaria* No. 10, 23-50.
- Chu, P. P. (1998) *Dietary variation among the prehistoric Asiatic Eskimo*. Simon Fraser University. Unpublished Ph.D. Thesis.
- Cieślík, A. I., Dąbrowski, P., Przysiężna-Pizarska, M. A. (2017) The face of conflict: Significant sharp force trauma to the mid-facial skeleton in an individual of probable 16th–17th century date excavated from Byczyna, Poland. *International Journal of Paleopathology* Vol. 17, 75-78.
- Clark, B. (1980) The Lake Site (KkHh-2), Southampton Island, N.W.T. and its position in Sadlermiut prehistory. *Canadian Journal of Archaeology/Journal Canadien d'Archéologie* No. 4, 53-81.
- Clark, D. W. (1975) Technological continuity and change within a persistent maritime adaptation: Kodiak Island, Alaska. In (eds) Fitzhugh, W. *Prehistoric Maritime Adaptations of the Circumpolar Zone*. The Hague: Mouton. 203-227.
- Clark, D. W. (1970) The Late Kachemak tradition at Three Saints and Crag Point, Kodiak Island, Alaska. *Arctic Anthropology* Vol. 6(2), 73-111.
- Clark, J. G. D. (1954) *Excavations at Star Carr*. Cambridge: Cambridge University Press.
- Clarke, N. G., Carey, S. E., Srikandi, W., Hirsch, R. S. and Leppard, P. I. (1986) Periodontal disease in ancient populations. *American Journal of Physical Anthropology* Vol. 71(2), 173-183.
- Clarke, N. G. and Hirsch, R. S. (1991) Tooth dislocation: The relationship with tooth wear and dental abscesses. *American Journal of Physical Anthropology* Vol. 85(3), 293-298.

- Clement, A. F. and Hillson, S. W. (2012) Intrapopulation variation in macro tooth wear patterns – A case study from Igloolik, Canada. *American Journal of Physical Anthropology* Vol. 149, 517-524.
- Clement, A. F., Hillson, S. W. and Aiello, L. C. (2012) Tooth wear, Neanderthal facial morphology and the anterior dental loading hypothesis. *Journal of Human Evolution* Vol. 62(3), 367-376.
- Cobb, H. L. (2005) *Investigating prehistoric hunter-gatherer identities: case studies from Palaeolithic and Mesolithic Europe. Theoretical Archaeology Conference (2004)*. Oxford: Archaeopress.
- Cohenca, N., Simon, J. H., Roges, R., Morag, Y. and Malfaz, J. M. (2007) Clinical indications for digital imaging in dento-alveolar trauma. Part 1: traumatic injuries. *Dental Traumatology* Vol. 23(2), 95-104.
- Collier, S. (1993) Sexual dimorphism in relation to big-game hunting and economy in modern human populations. *American Journal of Physical Anthropology* Vol. 91(4), 485-504.
- Collier, A. J., Hess, F. L., Smith, P. S. and Brooks, A. H. (1908) *The gold placers of parts of Seward Peninsula, Alaska: Including the Nome, Council, Kougarok, Port Clarence, and Goodhope Precincts*. Washington: U.S. Government Printing Office.
- Collins, H. B. (1956) Vanished mystery men of Hudson Bay. *National Geographic Society Magazine* Vol. 110(5), 669-687.
- Collins, H. B. (1957) Archaeological investigations on Southampton and Walrus Islands, N.W.T. *National Museum of Canada, Bulletin* Vol. 147, 22-61.
- Collins, H. B. (1937) *Archeology of St. Lawrence Island, Alaska*. Washington DC: Smithsonian Institute.
- Collins, H. B., Clark, A. H. and Walker, E. H. (1945) *The Aleutian Islands: Their people and natural history (with keys for identification of the birds and plants)*. Washington DC: Smithsonian Institute.
- Coltrain, J. B. (2010) Alaska peninsula stable isotope and radioisotope chemistry: A study in temporal and adaptive diversity. *Human Biology* Vol. 82(5), 613-627.
- Coltrain, J. B., Hayes, M. G. and O'Rourke, D. H. (2004) Sealing, whaling and caribou: the skeletal isotope chemistry of Eastern Arctic foragers. *Journal of Archaeological Science* Vol. 31(1):39-57.
- Comuzzie, A. G. and Steele, D. G. (1988) Maxillary lingual anterior tooth wear in prehistoric hunter-gathers from the Texas Coast. *American Journal of Physical Anthropology* Vol. 75, 197-198.
- Consolaro, A. (2014) Force distribution is more important than its intensity! *Dental Press Journal of Orthodontics* Vol. 19(1), 5-7.

- Consolaro, A., Consolaro, R. B. and Francischone, L. A. (2012) Cementum, apical morphology and hypercementosis: a probable adaptive response of the periodontal support tissues and potential orthodontic implications. *Dental Press Journal of Orthodontics* Vol. 17(1), 21-30.
- Cook, A. and Holland, C. (1972) Chronological list of expeditions and historical events in northern Canada. VII. 1846–54. *Polar Record* Vol. 16(101), 235-260.
- Cook, D. C. (1981) Koniag Eskimo tooth ablation: Was Hrdlička right after all? *Current Anthropology* Vol. 22(2), 159-163.
- Copes, L. (2012) *Comparative and experimental investigations of cranial robusticity in Mid-Pleistocene Hominins*. Unpublished Ph.D. Thesis. Arizona State University.
- Corbett, T. L. and Dawes, C. (1998) A Comparison of the site-specificity of supragingival and subgingival calculus deposition. *Journal of Periodontology* Vol. 69(1), 1-8.
- Corbett, D. G., Causey, D., Clementz, M., Koch, P. L., Doroff, A., Lefèvre, C. and West, D. (2008) Aleut Hunters, Sea Otters, and Sea Cows: Three thousand years of interactions in the Western Aleutian Islands, Alaska. In (eds) Rick, T. C. and Erlandson, J. M. *Human impacts on ancient marine ecosystems: A global perspective*. Berkeley: University of California Press. Chapter 3, 43-75.
- Cordain, L., Brand Miller, J., Eaton, S. B., Mann, N., Holt, S. H. A. and Speth, J. D. (2000) Plant-animal subsistence ratios and macronutrient energy estimations in worldwide hunter-gatherer diets. *The American Journal of Clinical Nutrition* Vol. 71(3), 682–692.
- Costa, R. L. (1982) Periodontal disease in the prehistoric Ipiutak and Tigara skeletal remains from Point Hope, Alaska. *American Journal of Physical Anthropology* Vol. 59, 97-110.
- Costa, R. L. (1980a) Age, sex, and antemortem loss of teeth in prehistoric Eskimo samples from Point Hope and Kodiak Island, Alaska. *American Journal of Physical Anthropology* Vol. 53(4), 579-587.
- Costa, R. L. (1980b) Incidence of caries and abscesses in archeological Eskimo skeletal samples from Point Hope and Kodiak Island, Alaska. *American Journal of Physical Anthropology* Vol. 52(4), 501-514.
- Costa, R. L. (1977) *Dental pathology and related factors in archaeological Eskimo skeletal samples from Point Hope and Kodiak Island, Alaska*. University of Pennsylvania. Unpublished Ph.D. Thesis.
- Coulthard, P., Horner, K., Sloan, P. and Theaker, E. (2008) *Master dentistry. Vol. 1, Oral and maxillofacial surgery, radiology, pathology and oral medicine*. Edinburgh: Churchill Livingstone. Second Edition.
- Coville, F. V. (1892) The Panamint Indians of California. *American Anthropologist* Vol. 5(4), 351-362.

Crantz, D. (1820) *The history of Greenland including an account of the mission carried on by the United Brethren in that country. Volume 1*. Cambridge: Cambridge University Press.

Crass, B. A (2001) Gender and mortuary analysis: What can grave goods really tell us? In, (eds) Arnold, B. and Wicker, N. *Gender and the archaeology of death*. Walnut Creek, California: AltaMira Press: Chapter 6, 105–118.

Crass, B. A. (2000) Gender in Inuit Burial Practices. In (eds) Rautman, A. E. *Reading the body: Representations and remains in the archaeological record*. Gender and Archaeology Conference (4th: 1996: Michigan State University). Philadelphia, Pa.: University of Pennsylvania Press. Chapter 6, 68-76.

Crass, B. A. (1998) *Pre-Christian Inuit mortuary practices: A compendium of archaeological and ethnographic sources*. The University of Wisconsin-Milwaukee. Unpublished Ph.D. thesis.

Crawford, S., Hadley, D. M., and Sheperd, G. (2018) The archaeology of childhood: The birth and development of a discipline. In (eds) Crawford, S., Hadley, D. M., and Sheperd, G. *The Oxford handbook of the archaeology of childhood*, Chapter 1, 3-37.

Cray, J., Mooney, M. P. and Siegel, M. I (2011) Cranial suture biology of the Aleutian Island Inhabitants. *The Anatomical Record* Vol. 294, 676-682.

Crist, T. A. and Sorg, M. H. (2014) Adult scurvy in New France: Samuel de Champlain's "Mal de la terre" at Saint Croix Island, 1604-1605 *International Journal of Paleopathology* Vol. 5, 95-105.

Cristiani, E., Radini, A., Edinborough, M. and Boric, D. (2016) Dental calculus reveals Mesolithic foragers in the Balkans consumed domesticated plant foods. *Proceedings of the National Academy of Sciences of the United States* Vol. 113(37), 10298-10303.

Cristina-Angela, G., Claudiu, T., Galina P., Simona, S. and Gianina, I. (2013) SEM study regarding dental erosion on extracted teeth immersed in hydrochloric acid. *Romanian Journal of Oral Rehabilitation* Vol. 5(3), 100-104.

Crittenden, A. N. and Schnorr, S. L. (2017) Current views on hunter-gatherer nutrition and the evolution of the human diet. *American Journal of Physical Anthropology* Vol. 162, 84-109.

Crittenden, A. N., Sorrentino, J., Moonie, S. A., Peterson, M., Mabulla, A. and Ungar, P. S. (2017) Oral health in transition: The Hadza foragers of Tanzania. *PLoS ONE* Vol. 12(3), e0172197.

Crockford, S. J. (2008) Be careful what you ask for: Archaeozoological evidence of mid-Holocene climate change in the Bering Sea and implications for the origins of Arctic Thule. In (eds) Clark, G., Leach, F. and

- O'Connor, S. *Islands of inquiry: colonisation, seafaring and the archaeology of maritime landscapes*. Canberra: ANU E Press. Chapter 8, 113-131.
- Crowell, A. L. and Howell, W. K. (2013) Time, oral tradition, and archaeology at Xakwnoowú, a Little Ice Age fort in Southeastern Alaska. *American Antiquity* Vol.78 (1), 3-23.
- Cruwys, E. (1988) Morphological variation and wear in teeth of Canadian and Greenland Inuit. *Polar Record* Vol. 24(151), 293-298.
- Csonka, Y. (2014) State of knowledge, research questions and goals. In (eds) Csonka, Y. *The Ekeven Settlement. Eskimo beginnings on the Asian shore of Bering Strait*. BAR International Series, 2426. Chapter 2, 7-14.
- Csonka, Y. (2005) Changing Inuit historicities in West Greenland and Nunavut. *History and Anthropology* Vol. 16(3), 321-334.
- Cucina, A. and Tiesler, V. (2003) Dental caries and antemortem tooth loss in the Northern Peten area, Mexico: A biocultural perspective on social status differences among the Classic Maya. *American Journal of Physical Anthropology* Vol. 122(1), 1-10.
- Cummings, V., Jordan, P. and Zvelebil, M. (2014) *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Oxford: Oxford University Press.
- Cunningham, C., Scheuer, L. and Black, S. (2016) *Developmental juvenile osteology*. Amsterdam; Boston: Elsevier Science: Second edition.
- Cunningham, J. J. (2003) Transcending the 'obnoxious spectator': A case for processual pluralism in ethnoarchaeology. *Journal of Anthropological Archaeology* Vol. 22(4), 389-410.
- Currie, A. (2016) Ethnographic analogy, the comparative method, and archaeological special pleading. *Studies in History and Philosophy of Science* Vol. 55, 84-94.
- Curzon, M. E., Curzon, J. A. and Poyton, H. G. (1970) Evaginated odontomes in the Keewatin Eskimo. *British Dental Journal* Vol. 129(7), 324-8.
- Cybulski, J. S. (2010) Labrets and teeth on the Northwest coast. In (eds) Matson, R. G. *The Crescent Beach site and the place of the Locarno Beach phase*. Vancouver: The University of British Columbia. Chapter 11, 1-20.
- Cybulski, J. S. (1993) *A Greenville burial ground: Human remains and mortuary elements in British Columbia prehistory*. Chicago: University of Chicago Press.

- Cybulski, J. S. (1974) Tooth wear and material culture: Precontact patterns in the Tsimshian area, British Columbia. *Syesis* Vol.7, 31-35. Cited in, Larsen, C. S. (1985) Dental modifications and tool use in the western Great Basin. *American Journal of Physical Anthropology* Vol. 67(4), 93-402.
- Dąbrowski, P., Grzelak, J., Kulus, M. and Staniewski, T. (2019) Diagnodent and VistaCam may be unsuitable for the evaluation of dental caries in archeological teeth. *American Journal of Physical Anthropology* Vol. 168(4), 797–808.
- Dabbs, G. R. (2011) Health status among prehistoric Eskimos from Point Hope, Alaska. *American Journal of Physical Anthropology* Vol. 146(1), 94-103.
- Dabbs, G. R. (2009) *Health and nutrition at prehistoric Point Hope, Alaska: Application and critique of the Western Hemisphere Health Index*. Unpublished Ph.D. Thesis. University of Arkansas.
- Dahlberg, A. A. and Menegaz-Bock, R. M. (1958) Emergence of the permanent teeth in Pima Indian children. *Journal of Dental Research* Vol. 37(6), 1123-1140.
- Da-Gloria, P. and Larsen, C. S. (2014) Oral health of the Paleoamericans of Lagoa Santa, central Brazil. *American Journal of Physical Anthropology* Vol. 154(1), 11-26.
- Dall, W. H. (1885) On masks, labrets, and certain aboriginal customs, with an inquiry into the bearing of their geographical distribution. *Third annual report of the Bureau of Ethnology, 1881-1882*, 67–202. Bureau of American Ethnology.
- Dall, W. H. (1880) *On the remains of later pre-historic man obtained from caves in the Catherina Archipelago, Alaska Territory, and especially from the caves of the Aleutian Islands*. Washington, D.C.: Smithsonian.
- Damas, D. (1999) The Arctic from Norse contact to modern times. First contacts: Norse and Thule peoples in the eastern Arctic. In (eds) Salomon, F. and Schwartz, S. B. *The Cambridge history of the Native Peoples. Volume 1 - North America Part 2*. Cambridge: Cambridge University Press. Chapter 14, 329-399.
- Damas, D. (1968a) Discussions, Part II. In Balikci, A. (1968) *The Netsilik Eskimos: Adaptive processes*. In (eds) Lee, R. B. and DeVore, I. *Man the hunter*. Chicago: New York: Aldine. Chapter 9, 83-95.
- Danenberg, P. J., Hirsch, R. S., Clarke, N. G., Leppard, P. I. and Richards, L. C. (1991) Continuous tooth eruption in Australian Aboriginal skulls. *American Journal of Physical Anthropology* Vol. 85(3), 305–312.
- Daniels, S. R. (2016) The Barker hypothesis revisited. *The Journal of Pediatrics* Vol. 173, 1-3.
- Darwent, J., Darwent, C. M., Lemoine, G. M., Lange, H. (2007) Archaeological survey of Eastern Inglefield Land, Northwest Greenland. *Arctic Anthropology*, Vol. 44(2), 51-86.

- Darwent, C. M. and Foin, J. C. (2010) Zooarchaeological analysis of a Late Dorset and an early Thule dwelling at Cape Grinnell, Northwest Greenland. *Geografiske Tidsskrift-Danish Journal of Geography* Vol. 110(2), 315-336.
- Davey, J., Craig, P. and Drummer, O. (2014) Dislodged teeth in four intact child mummies from Graeco/Roman Egypt (332 BCE - c. 395 CE) - child abuse, accident or careless embalmers? *Papers on Anthropology* Vol. 23(1), 18-28.
- David, N. and Kramer, C. (2001) *Ethnoarchaeology in action*. Cambridge: Cambridge University Press.
- Davis, C., Ge, J., Chidambaram, A., King, J., Turnbough, M., Collins, M., Dym, O., Chakraborty, R., Eisenberg, A. J. and Budowle, B. (2011) Y-STR loci diversity in native Alaskan populations. *International Journal of Legal Medicine* Vol. 125(4), 559-563.
- Davies, D. M., Picton, D. C. A. and Alexander, A. G. (1969) An objective method of assessing the periodontal condition in human skulls. *Journal of Periodontal Research* Vol. 4(1), 74-77.
- Davies, R. M., Downer, M.C., Hull, P. and Lennon, M. A. (1974) Alveolar defects in human skulls. *Journal of Clinical Periodontology* Vol. 1(2), 107-111.
- Davis, R. S. and Knecht, R. A. (2010) Continuity and change in the Eastern Aleutian archaeological sequence. *Human Biology* Vol.82 (5/6), 507-524.
- Davis, R. S. and Knecht, R. A. (2005) Evidence for the Arctic small tool tradition in the Eastern Aleutians. *Alaska Journal of Anthropology*, Vol. 3, 51-65.
- Dawson, H. and Brown, K. R. (2013) Exploring the relationship between dental wear and status in late medieval subadults from England. *American Journal of Physical Anthropology* Vol.150 (3), 433-441.
- de Castro, J. M. B. (1989) 3rd molar agenesis in human prehistoric populations of the Canary-Islands. *American Journal of Physical Anthropology* Vol. 79(2), 207-215.
- De Groot, I and Humprey, L. T. (2017) The chronology and significance of ablation in the Later Stone Age Maghreb. In (eds) Irish, J. D. *A world view of bioculturally modified teeth*. Gainesville: University of Florida Press. Chapter 2, 19-32.
- De La Fuente, C., Galimany, J., Kemp, B. M., Judd, K., Reyes, O. and Moraga, M. (2015) Ancient marine hunter gatherers from Patagonia and Tierra Del Fuego: Diversity and differentiation using uniparentally inherited genetic markers. *American Journal of Physical Anthropology* Vol. 158(4), 719-729.
- De Laguna, F. (1933) Mummified heads from Alaska. *American Anthropologist* Vol. 35(4), 742-744.

- De Laguna, F. and Oettinger, B. (1934) *The archaeology of Cook Inlet, Alaska*. Philadelphia: University of Pennsylvania Press.
- De Menezes Oliveira, M. A. H., Torres, C. P., Gomes-Silva, J. M., Chinelatti, M. A., De Menezes, F. C. H., Palma-Dibb, R. G. and Borsatto, M. C. (2010) Microstructure and mineral composition of dental enamel of permanent and deciduous teeth. *Microscopy Research and Technique* Vol. 73(5), 572-577.
- Dean, M. C., Jones, M. E. and Pilley, J. R. (1992) The natural history of tooth wear, continuous eruption and periodontal disease in wild shot great apes. *Journal of Human Evolution* Vol. 22(1), 23-39.
- Deery, C. (2017) Clinical practice guidelines proposed the use of pit and fissure sealants to prevent and arrest noncavitated carious lesions. *The Journal of Evidence-Based Dental Practice* Vol. 17(1), 48-50.
- Delaunay, A. N., Belardi, J. B., Marina, F. C., Saletta, M. S. and De Angelis, H. (2017) Glass and stoneware knapped tools among hunter-gatherers in southern Patagonia and Tierra del Fuego. *Antiquity* Vol. 91(359), 1330–1343.
- DeLeon, V. B. (2007) Fluctuating asymmetry and stress in a medieval Nubian population. *American Journal of Physical Anthropology* Vol. 132(4), 520-534.
- Deleuzene, L. K. (2015) Modularity of the anthropoid dentition: Implications for the evolution of the hominin canine honing complex. *Journal of Human Evolution* Vol. 86, 1-12.
- Delgado, H., Habicht, J. P., Yarbrough, C., Lechtig, A., Martorell, R., Malina, R. M. and Klein, R. E. (1975) Nutritional status and the timing of deciduous tooth eruption. *American Journal of Clinical Nutrition* Vol. 28(3), 216-224.
- Delgado, M., Ramírez, L. M., Adhikari, K., Fuentes-Guajardo, M., Zanolli, C., Gonzalez-José, R., Canizales, S., Bortolini, M.-C., Poletti, G., Gallo, C., Rothhammer, F., Bedoya, G. and Ruiz-Linares, A. (2018) Variation in dental morphology and inference of continental ancestry in admixed Latin Americans. *American Journal of Physical Anthropology* Vol. 168, 438–447.
- Delgado-Burbano, M. E. (2007) Population affinities of African Colombians to Sub-Saharan Africans based on dental morphology. *HOMO - Journal of Comparative Human Biology* Vol. 58(4), 329-356.
- del Rosario, L. and Gonzalez, N. (1990) Stages of formation and calcification of the third molar (Radiographic study of 500 Mexican children and adolescents). *Revista ADM* Vol. 47(3), 112-118.
- Demirjian, A. and Levesque, G. Y. (1980) Sexual differences in dental development and prediction of emergence. *Journal of Dental Research* Vol. 59(7), 1110-22.

- Demisch, A. and Wartmann, P. (1956) Calcification of the mandibular third molar and its relation to skeletal and chronological age in children. *Child Development* Vol. 27(4), 459-473.
- Desjardins, S. P. A. (2013) Evidence for intensive walrus hunting by Thule Inuit, northwest Foxe Basin, Nunavut, Canada. *Anthropozoologica* Vol. 48(1), 37-51.
- Deter, C. A. (2009) Gradients of occlusal wear in hunter-gatherers and agriculturalists. *American Journal of Physical Anthropology* Vol. 138(3), 247-254.
- DeWitte, S. (2014) Mortality risk and survival in the aftermath of the Medieval Black Death. *PLoS One* Vol. 9(5), e96513.
- DeWitte, S. and Stojanowski, C. (2015) The osteological paradox 20 years later: Past perspectives, future directions. *Journal of Archaeological Research* Vol. 23(4), 397-450.
- Dewitte, S. N. and Wood, J. W. (2008) Selectivity of Black Death mortality with respect to preexisting health. *Proceedings of the National Academy of Sciences* Vol. 105(5), 1436-1441.
- Dibble, H. L., Lin, S., Sandgathe, D. and Turq, A. (2018) Assessing the integrity of older archeological collections: An example from La Ferrassie. *Journal of Paleolithic Archaeology* Vol. 1(3), 179-201.
- Dibble, H. L., Raczek, T. P. and McPherron, S. P. (2005) Excavator bias at the site of Pech de l'Azé IV, France. *Journal of Field Archaeology* Vol. 30(3), 317-328.
- Dietrich, T. and Garcia, R. I. (2005) Associations between periodontal disease and systemic disease: Evaluating the strength of the evidence. *Journal of Periodontology* Vol. 76(11S), 2175–2184.
- Dietrich, T., Joshipura, K. J., Dawson-Hughes, B. and Bischoff-Ferrari, H. A. (2004) Association between serum concentrations of 25-hydroxyvitamin D3 and periodontal disease in the US population. *American Journal of Clinical Nutrition* Vol. 80(1), 108–113.
- Dimaisip-Nabuab, J., Duijster, D., Benzian, H., Heinrich-Weltzien, R., Homsavath, A., Monse, B., Stauf, N., Susilawati, S., Kromeyer-Hauschild, K. (2018) Nutritional status, dental caries and tooth eruption in children: a longitudinal study in Cambodia, Indonesia and Lao PDR. *BMC Pediatrics* Vol. 18(300), 1-11.
- d’Incau, E., Couture, C. and Maureille, B. (2012) Human tooth wear in the past and the present: Tribological mechanisms, scoring systems, dental and skeletal compensations. *Archives of Oral Biology* Vol. 57(3), 214-229.
- DiNicolantonio, J. J. (2016) Increase in the intake of refined carbohydrates and sugar may have led to the health decline of the Greenland Eskimos. *Open Heart*, Vol. 3(2), 1-4.
- Diubaldo, R. (1999) *Stefansson and the Canadian Arctic*. Montreal: McGill-Queen's University Press.

- Dlamini, N., Sealy, J. and Mayor, A. (2019) Diet variability among pre-Dogon and early Dogon populations (Mali) from stable isotopes and dental diseases. *American Journal of Physical Anthropology* Vol. 169, 287–301.
- Dobney, K. and Brothwell, D. R. (1987) A method for evaluating the amount of dental calculus on teeth from archaeological sites. *Journal of Archaeological Science* Vol. 14(4), 343-351.
- Dodds, M. W. J., Hsieh, S. C., and Johnson, D. A. (1991) The effect of increased mastication by daily gum-chewing on salivary gland output and dental plaque acidogenicity. *Journal of Dental Research* Vol. 70(12), 1474–1478.
- Dodds, M. W. J., Johnson, D. A., and Yeh, C. K. (2005) Health benefits of saliva: A review. *Journal of Dentistry* Vol. 33(3), 223–233.
- Domett, K. M., Newton, J., O'Reilly, D. J. W., Tayles, N., Shewan, L. and Beavan, N. (2013) Cultural modification of the dentition in Prehistoric Cambodia. *International Journal of Osteoarchaeology* Vol. 23(3), 274-286.
- Dorais, L.-J. (2014) *The language of the Inuit: Syntax, semantics, and society in the Arctic*. Montreal: McGill-Queen's University Press.
- Douglas, M. T. (2006) Subsistence change and dental health in the people of Non Nok Tha, northeast Thailand. In (eds) Oxenham, M. and Tayles, N. G. *Bioarchaeology of Southeast Asia*. Cambridge: Cambridge University Press.
- Dove, C., Hare, P., Heacker, M. (2005) Identification of ancient feather fragments found in melting Alpine Ice patches in Southern Yukon. *Arctic* Vol. 58(1), 38-43.
- Dressino, V. and Pucciarelli, H. (1997) Cranial growth in *Saimiri sciureus* (Cebidae) and its alteration by nutritional factors: A longitudinal study. *American Journal of Physical Anthropology* Vol. 102(4), 545-554.
- Dryomov, S. V., Nazhmidenova, A. M., Shalaurova, S. A., Morozov, I. V., Tabarev, A. V., Starikovskaya, E. B. and Sukernik, R. I. (2015) Mitochondrial genome diversity at the Bering Strait area highlights prehistoric human migrations from Siberia to northern North America. *European Journal of Human Genetics* Vol. 23, 1399-1404.
- Duckworth R.M. and Huntington, E. (2006) On the relationship between calculus and caries. In (eds) Duckworth R.M. *The teeth and their environment. Physical, chemical and biochemical influences*. Basel; London: Karger. Chapter 1, 1-28.
- Duffy Davis, J. and Banack, S. A. (2012) Ethnobotany of the Kiluhikturmiut Inuinait of Kugluktuk, Nunavut, Canada. *Ethnobiology Letters* Vol. 3, 78-90.

Duhig, C. (2003) Non-forensic remains: the use of forensic archaeology, anthropology and burial taphonomy. *Science & Justice* Vol. 43(4), 211-214.

Dumond, D. E. (2009) A note on labret use around the Bering and Chukchi Seas. *Arctic Anthropology*. Vol. 7(2), 121-134.

Dumond, D. E. (2000) The Norton tradition. *Arctic Anthropology* Vol. 37(2), 1-22.

Dumond, D. (1982) Trends and traditions in Alaskan prehistory: The place of Norton culture. *Arctic Anthropology*, Vol. 19(2), 39-51.

Durband, A. C., Littleton, J. and Walsh, K. (2014) Patterns in ritual tooth avulsion at Roonka. *American Journal of Physical Anthropology* Vol. 154(4), 479-485.

Duric, M., Rakocevic, Z. and Tuller, H. (2004) Factors affecting postmortem tooth loss. *Journal of Forensic Sciences* Vol. 49(6), 1313-1318.

Duray, S. M. (1996) Dental indicators of stress and reduced age at death in prehistoric Native Americans. *American Journal of Physical Anthropology* Vol. 99(2), 275-286.

Age-associated Variation and Sexual Dimorphism in Adult Cranial Morphology: Implications in Anthropological Studies

El-Attar, A. and Ord R. A. (1986) Long-standing mandibular dislocations: Report of a case, review of the literature. *British Dental Journal* Vol. 160(3) 91-94.

Elkington, T. T. and Jones, B. M. G. (1974) Biomass and primary productivity of Birch (*Betula Pubescens* S. Lat.) in South-West Greenland. *Journal of Ecology* Vol. 62(3), 821-830.

Elliott, J. R. and Bowers, G. M. (1983) Alveolar dehiscence and fenestration. *Periodontics* Vol. 1, 245-248.

Elvery, M., Savage, N. and Wood, W. (1998) Radiographic study of the Broadbeach Aboriginal dentition. *American Journal of Physical Anthropology* Vol. 107(2), 211-220.

El Zaatari, S. (2014) The diets of the Ipiutak and Tigara (Point Hope, Alaska): Evidence from occlusal molar microwear texture analysis, in (eds) Hilton, C. E., Auerbach, B. M. and Cowgill, L. W. *The foragers of Point Hope: The biology and archaeology of humans on the edge of the Alaskan Arctic*. Cambridge: Cambridge University Press. Chapter 6, 120-137.

El Zaatari, S. (2008) Occlusal molar microwear and the diets of the Ipiutak and Tigara populations (Point Hope) with comparisons to the Aleut and Arikara. *Journal of Archaeological Science* Vol. 35(9), 2517-2522.

- Emmick, J. (2001) *Effects of Koniag artificial cranial deformation on Eskimo population*. The University of Montana. Unpublished. Master's Thesis.
- Emonet, E-G., Andossa, L., Taisso Mackaye, H. and Brunet, M. (2014) Subocclusal dental morphology of *Sabelanthropus tchadensis* and the evolution of teeth in hominins. *American Journal of Physical Anthropology* Vol. 153(1), 116-123.
- Erdal, Y. S. (2008) Occlusal grooves in anterior dentition among Kovuklukaya inhabitants (Sinop, northern Anatolia, 10th century AD). *International Journal of Osteoarchaeology* Vol. 18(2), 152-166.
- Eren, M. I. (2012) *Hunter-gatherer behavior: Human response during the Younger Dryas*. Walnut Creek, CA: Left Coast Press.
- Eriksson, G. and Lidén, K. (2013) Dietary life histories in Stone Age Northern Europe. *Journal of Anthropological Archaeology* Vol. 32(3), 288-302.
- Ermioni, M. D., Efstathios, I. and Manolis S. K. (2017) Using dental and activity indicators in order to explore possible sex differences in an adult rural medieval population from Thebes (Greece). *Anthropological Review* Vol. 80(4), 427-447.
- Erlandson, J. M. and Moss, M. L. (1996). The Pleistocene–Holocene transition along the Pacific coast of North America. In (eds) Straus, L. G., Eriksen, B. V., Erlandson, J. M. and Yesner, D. R. *Humans at the end of the Ice Age: The archaeology of the Pleistocene–Holocene transition*. New York, NY: Plenum Press, Chapter 14, 277–301.
- Esclassan, R., Grimoud, A. M., Ruas, M. P., Donat, R., Sevin, A., Astie, F., Lucas, S. and Crubezy, E. (2009) Dental caries, tooth wear and diet in an adult medieval (12th–14th century) population from Mediterranean France. *Archives of Oral Biology* Vol. 54(3), 287-297.
- Esdale, J. A. (2008) A current synthesis of the Northern Archaic. *Arctic Anthropology* Vol. 45(2), 3-38.
- Eshed, V., Gopher, A. and Hershkovitz, I. (2006) Tooth wear and dental pathology at the advent of agriculture: New evidence from the Levant. *American Journal of Physical Anthropology* Vol. 130(2), 145-159.
- Estalrich, A., Alarcón, J. A. and Rosas, A. (2017a) Evidence of toothpick groove formation in Neandertal anterior and posterior teeth. *American Journal of Physical Anthropology* Vol. 162(4), 747-756.
- Estalrich, A., El Zaatari, S. and Rosas, A. (2017b) Dietary reconstruction of the El Sidrón Neandertal familial group (Spain) in the context of other Neandertal and modern hunter-gatherer groups. A molar microwear texture analysis. *Journal of Human Evolution* Vol. 104, 13-22.

- Estalrriich, A. and Rosas, A. (2013) Handedness in Neandertals from the El Sidrón (Asturias, Spain): Evidence from instrumental striations with ontogenetic inferences. *PLoS One*, Vol. 8(5) e62797.
- Estalrriich, A. and Rosas, A. (2015) Division of labor by sex and age in Neandertals: An approach through the study of activity-related dental wear. *Journal of Human Evolution* Vol. 80, 51-63.
- Estebaranz, F., Martínez, L. M., Galbany, J., Turbón, D. and Pérez-Pérez, A. (2009) Testing hypotheses of dietary reconstruction from buccal dental microwear in *Australopithecus afarensis*. *Journal of Human Evolution* Vol. 57(6), 739-750.
- Estévez, E., López-Lázaro, S., López-Morago, C., Alemán, I. and Botella, M. (2017) Sex estimation of infants through geometric morphometric analysis of the ilium. *International Journal of Legal Medicine* Vol. 131(6), 1747-1756.
- Evans, S., Briz Godino, I., Alvarez, M., Rowsell, K., Collier, P., Prosser De Goodall, R. N., Mulville, J., Lacrouts, A., Collins, M. J. and Speller, C. F. (2016) Using combined biomolecular methods to explore whale exploitation and social aggregation in hunter–gatherer–fisher society in Tierra del Fuego. *Journal of Archaeological Science Reports*, Vol. 6, 757-767.
- Eveleth, P. B., and Tanner, J. M. (1976) *Worldwide variation in human growth*. Cambridge: Cambridge University Press. First edition.
- Fabian, A. (2010) *The skull collectors: Race, science, and America's unburied dead*. Chicago, Ill.; London: University of Chicago Press.
- Fabra, M. and González, C. V. (2015) Diet and oral health of populations that inhabited Central Argentina (Córdoba Province) during Late Holocene. *International Journal of Osteoarchaeology* Vol. 25(2), 160-175.
- Falconer, D. S. (1960) *Introduction to quantitative genetics*. New York: The Ronald Press Company.
- Fanning, E. A. and Moorrees, C. F. (1969) A comparison of permanent mandibular molar formation in Australian Aborigines and Caucasoids. *Archives of Oral Biology* Vol. 14(9), 999-1006.
- Fanton, L., Gustin, M-P., Paultre, U., Schrag, B. and Malicier, D. (2010) Critical study of observation of the sternal end of the right 4th rib. *Journal of Forensic Science* Vol. 55(2), 467-472.
- Fashing, M. T. (2008) *Paleoepidemiology of peridontal disease and dental calculus in the Windover population (8BR246)*. Florida State University. Unpublished Master's Thesis.

Faunce, W. M. (1945) Accession record, accession number 40779. *Central Archives 1945-4 gift. Lieut. Commander A. R. Cabn. 99.1/691-713; 786-809; 68.1-8999-9048; 60.2/5229-5282; 60.1/9049-9652; 60.2/4837-4922.* American Museum of Natural History.

Feijóo, G., Barbería, E., De Nova, J. and Prieto, J. L. (2012) Permanent teeth development in a Spanish sample. Application to dental age estimation. *Forensic Science International*. Vol. 214(1-3) 213.e1-213.e6.

Ferrazzano, G. F., Amato, I., Cantile, T., Sangianantoni, G. and Ingenito, A. (2011) In vivo remineralising effect of GC Tooth Mousse on early dental enamel lesions: SEM analysis. *International Dental Journal* Vol. 61(4), 210-216.

Ferreira-Arquez, H. (2017) Unilateral duplication of parotid duct. A rare anatomical variation. *International Archives of Medicine* Vol. 10(267), 1-8.

Fidalgo, D., Silva, A. M. and Porfírio, E. (2019) Non-masticatory dental wear patterns in individuals exhumed from the Middle Bronze Age rock-cut tombs of Torre Velha 3 (Serpa, Portugal). *International Journal of Osteoarchaeology* Vol.30 (1), 13-23.

Findlay, A. G. (1851) *A directory for the navigation of the Pacific Ocean with descriptions of its coasts, islands, etc. Volume 1.* Cambridge University Press.

Fine, D. and Craig, G.T. (1981) Buccal surface wear of human premolar and molar teeth: A potential indicator of dietary and social differentiation. *Journal of Human Evolution* Vol. 10(4), 335-336.

Finkelstein, S. (2016) Reconstructing Middle and Late Holocene paleoclimates of the Eastern Arctic and Greenland. In (eds) Friesen, M. and Owen, M. *The Oxford Handbook of the Prehistoric Arctic*. Oxford University Press. Chapter 27, 653-672.

Fiorenza, L., Benazzi, S. and Kullmer, O. (2011a) Para-masticatory wear facets and their functional significance in hunter–gatherer maxillary molars. *Journal of Archaeological Science* Vol. 38(9), 2182-2189.

Fiorenza, L., Benazzi, S., Tausch, J., Kullmer, O., Bromage, T. G., Schrenk, F. and Rosenberg, K. (2011b) Molar macrowear reveals Neanderthal eco-geographic dietary variation. *PLoS ONE* Vol. 6(3), e14769.

Fiorenza, L. and Kullmer, O. (2013) Dental wear and cultural behavior in Middle Paleolithic humans from the Near East. *American Journal of Physical Anthropology* Vol. 152(1), 107-117.

Fiorin, E., Ibáñez-Gimeno, P., Cadafalch, J. and Malgosa, A. (2017) The study of dental occlusion in ancient skeletal remains from Mallorca (Spain): A new approach based on dental clinical practice. *HOMO* Vol. 68(3), 157-166.

Fiorin, E., Cadafalch, J., Ceperuelo, D., Adserias, M. J., Chimenos-Küstner, E. and Malgosa, A. (2014) Study of dental occlusion in ancient human remains: A methodological approach. *Collegium Antropologicum* 38(3), 993–1000.

Fitzhugh, B. (2016) The origins and development of Arctic maritime adaptations in the subarctic and arctic Pacific. In (eds) Friesen, T. M. and Mason, O. K. *The Oxford handbook of the prehistoric Arctic*. New York, NY: Oxford University Press. Chapter 10, 253-178.

Fitzhugh, B. (2012) Hazards, impacts, and resilience among hunter-gatherers of the Kuril Islands. In (Eds) Cooper, J. and Sheets, P. *Surviving sudden environmental change: Answers from archaeology*. Boulder, CO: University Press of Colorado. Chapter 1, 19-42.

Fitzhugh, B. (2003) *The evolution of complex hunter-gatherers: archaeological evidence from the North Pacific*. New York; Dordrecht: Kluwer Academic/Plenum.

Fitzhugh, B. and Habu, J. (2002) *Beyond foraging and collecting: Evolutionary change in hunter-gatherer settlement systems*. New York; London: Kluwer Academic/Plenum.

Fitzhugh, J. B. (1996) *The evolution of complex hunter-gatherers in the North Pacific: An archaeological case study from Kodiak Island, Alaska*. Unpublished Ph.D. thesis. The University of Michigan.

Fitzhugh, W. W. (1988) Eskimos: Hunters of the frozen coasts. In (eds) Fitzhugh, W. W. and Crowell, A. *Crossroads of continents: Cultures of Siberia and Alaska*. Washington, D.C: Smithsonian Institution Press, 42-51.

Fitzhugh, W. W. (1985a) Commentary on part 1. In (eds) Fitzhugh, W. W. *Cultures in contact: The impact of European contacts on Native American cultural institutions, A.D. 1000-1800*. Washington, D.C: Smithsonian Institution Press. Chapter 1, 19-22.

Fitzhugh, W. W. (1985b) Early contacts north of Newfoundland before A.D. 1600: A review. In (eds) Fitzhugh, W. W. *Cultures in contact: The impact of European contacts on Native American cultural institutions, A.D. 1000-1800*. Washington, D.C: Smithsonian Institution Press. Chapter 2, 23-44.

Fitzhugh, W. W. and Kaplan, S. A. (1983) *Inua: Spirit world of the Bering Sea Eskimo*. Washington D.C.: The Smithsonian Institute.

Fladmark, K. R. (1982) An introduction to the prehistory of British Columbia. *Canadian Journal of Archaeology* Vol.6 (6), 95-156.

Flensburg, G. (2011) Dento-alveolar lesions and palaeodietary inferences from the Paso Alsina 1 site (eastern Pampean–Patagonian transition, Argentina). *HOMO - Journal of Comparative Human Biology* Vol. 62(5), 335-350.

- Flensburg, G., Serna, A. and Prates, L. (2019) Oral stress and paleodiet changes among hunter-gatherers from Negro River (northern Patagonia, Argentina) during the late Holocene. *International Journal of Osteoarchaeology* Vol. 29(6), 1060-1071.
- Frank, F. C. and Lawn, B. R. (1967) On the theory of Hertzian fracture. *Proceedings of the Royal Society of London. Series A, Mathematical and physical sciences* Vol. 299(1458), 291-306.
- Freyer, D. W. (1991) On the etiology of interproximal grooves. *American Journal of Physical Anthropology* Vol. 85, 299-304.
- Freyer, D. W., Nava, A., Tartaglia, G., Vidale, M., Coppa, A. and Bondioli, L. (2020) Evidence of labret use in prehistory. *Bulletin of the International Association for Paleodontology* Vol. 14(1), 1-23.
- Freyer, D. W. and Russell, M. D. (1987) Artificial grooves on the Krapina Neanderthal teeth. *American Journal of Physical Anthropology* Vol. 74(3), 393-405.
- Freidline, S. E., Gunz, P. and Hublin, J.-J. (2015) Ontogenetic and static allometry in the human face: Contrasting Khoisan and Inuit. *American Journal of Physical Anthropology* Vol. 158(1), 116-131.
- French, J. C. (2019) The use of ethnographic data in Neanderthal archaeological research: Recent trends and their interpretative implications. *Hunter Gatherer Research* Vol.4 (1) 25-49.
- Friesen, T. M. (2020) Radiocarbon evidence for fourteenth-century Dorset occupation in the Eastern North American Arctic. *American Antiquity* Vol.85 (2), 222-240.
- Friesen, T. M. (2007) Hearth rows, hierarchies and Arctic hunter-gatherers: The construction of equality in the Late Dorset period. *World Archaeology* Vol. 39(2), 194-214.
- Friesen, M. and Mason, O. (2016) Introduction: Archaeology of the North American Arctic. In (eds) Friesen, M. and Owen, M. *The Oxford handbook of the prehistoric Arctic*. Oxford: Oxford University Press. Chapter 1, 1-24.
- Friesen, T. M. and Stewart, A. (2013) To freeze or to dry: Seasonal variability in caribou processing and storage in the barrenlands of Northern Canada. *Anthropozoologica* Vol. 48(1), 89-109.
- Friesen, T. M. and Stewart, A. M. (2004) Variation in subsistence among inland Inuit: Zooarchaeology of two sites on the Kazan River, Nunavut. *Canadian Journal of Archaeology* Vol. 28(1), 32-50.
- Fritz, G. (1990) Multiple pathways to farming in precontact eastern North America. *Journal of World Prehistory* Vol. 4(4), 387-435.

Folayan, M. O., Chukwumah, N. M., Popoola, B. O., Temilola, D. O., Onyejaka, N. K., Oyedele, T. A. and Lawal, F. B. (2018) Developmental defects of the enamel and its impact on the oral health quality of life of children resident in Southwest Nigeria. *BMC Oral Health* Vol. 18(1), 160.

Ford, J. A. and Stewart, T. D. (1959) Eskimo prehistory in the vicinity of Point Barrow, Alaska. With an appendix, skeletal remains from the vicinity of Point Barrow, Alaska by T. D. Stewart. *Anthropological papers of The American Museum of Natural History, New York* Vol. 47(1), 1-289.

Formicola, V. (1991) Interproximal grooving: Different appearances, different etiologies. *American Journal of Physical Anthropology* Vol. 86(1), 84-85.

Formicola, V. (1988) Interproximal grooving of teeth: Additional evidence and interpretation. *Current Anthropology*, Vol. 29(4), 663-667.

Foster, Z., Byron, E., Reyes-García, V., Huanca, T., Vadez, V., Apaza, L., Pérez, E., Tanner, S., Gutierrez, Y., Sandstrom, B., Yakhedts, A., Osborn, C., Godoy, R. A. and Leonard, W. R. (2005) Physical growth and nutritional status of 'Tsimane' Amerindian children of lowland Bolivia. *American Journal of Physical Anthropology* Vol. 126(3), 343-351.

Fox, C. L., Juan, J. and Albert, R. M. (1996) Phytolith analysis on dental calculus, enamel surface, and burial soil: Information about diet and paleoenvironment. *American Journal of Physical Anthropology* Vol. 101(1), 101-113.

Fujita, H., Suzuki, T., Shoda, S., Kawakubo, Y., Ohno, K., Giannakopoulou, P. and Harihara, S. (2013) Contribution of antemortem tooth loss (AMTL) and dental attrition to oral palaeopathology in the human skeletal series from the Yean-ri site, South Korea. *International Journal of Archaeology* Vol. 1(1), 1-5.

Fuss, J., Uhlig, G., Böhme, M., and Johnson, C. (2018) Earliest evidence of caries lesion in hominids reveal sugar-rich diet for a Middle Miocene dryopithecine from Europe. *PloS one* Vol.13 (8), e0203307-e0203307.

Garcin, V., Velemínský, P., Trefný, P., Bagousse, A. A-L., Lefebvre, A. and Bruzek, J. (2010) Dental health and lifestyle in four early mediaeval juvenile populations: Comparisons between urban and rural individuals, and between coastal and inland settlements. *HOMO - Journal of Comparative Human Biology* Vol. 61(6), 421-439.

Garn, S. M. and Moorrees, C. F. A. (1951) Stature, body-build, and tooth emergence in Aleutian Aleut children. *Child Development*, Vol. 22(4), 261-270.

Garvin, H. M., Sholts, S. B. and Mosca, L. A. (2014) Sexual dimorphism in human cranial trait scores: Effects of population, age, and body size. *American Journal of Physical Anthropology* Vol. 154(2), 259-269.

Garve, R., Garve, M., Türp, J. C. and Meyer, C. G. (2017) Labrets in Africa and Amazonia: Medical implications and cultural determinants. *Tropical Medicine & International Health* Vol. 22(2), 232-240.

Gaur, R., Boparai, G., Saini, K. (2011) Effect of under-nutrition on permanent tooth emergence among Rajputs of Himachal Pradesh, India. *Annals of Human Biology* Vol. 38(1), 84-92.

Geller, P. L. and Stojanowski, C. M. (2017) The vanishing Black Indian: Revisiting craniometry and historic collections. *American Journal of Physical Anthropology* Vol. 162 (2), 267-284.

Geist, O. W. (1936) *Archaeological excavations at Kukulik, St. Lawrence Island, Alaska; Preliminary report*. Washington, D.C.: U.S. Department of the Interior.

Giardini, L. B. and Eggers, S. (2002) Health, gender, and violence in the prehistory of Point Hope. - Alaska Anthropological Association, 29th Annual Meeting. In Ibáñez-Gimeno, P., Galtés, I., Jordana, X., Manyosa, J. and Malgosa, A. (2015) Activity-related sexual dimorphism in Alaskan foragers from Point Hope: Evidences from the upper limb. *Anthropologischer Anzeiger* Vol. 72(4), 473-489.

Giddings, J. L. (1964) *The archeology of Cape Denbigh*. Providence: Brown University Press. Cited in Knecht, R. A. (1995) *The late prehistory of the Alutiiq People: Culture change on the Kodiak Archipelago from 1200-1750 A.D.* Bryn Mawr College. Unpublished PhD Thesis.

Giddings, J. L. and Anderson, D. D. (1986) *Beach Ridge archaeology of Cape Krusenstern*. Vol. 20. Washington, D.C. National Park Service, U.S. Department of the Interior. Cited in Knecht, R. A. (1995) *The late prehistory of the Alutiiq People: Culture change on the Kodiak Archipelago from 1200-1750 A.D.* Bryn Mawr College. Unpublished PhD Thesis.

Giesecke, C. L. (1832) *A descriptive catalogue of a new collection of minerals in the museum of the Royal Dublin Society. To which is added an Irish mineralogy*. Dublin: R. Graisberry

Gilbert, G. H., Meng, X., Duncan, R. P. and Shelton, B. J. (2004) Incidence of tooth loss and prosthodontic dental care: Effect on chewing difficulty onset, a component of oral health-related quality of life. *Journal of the American Geriatrics Society* Vol. 52(6), 880-885.

Gill, D. S. and Naini, F. B. (2011) *Orthodontics principles and practice*. Hoboken: Wiley.

Gilmore, C. C. and Weaver, T. D. (2016) Comparative perspective on antemortem tooth loss in Neandertals. *Journal of Human Evolution* Vol. 92, 80-90.

Gilmore, C. C. (2013) A comparison of antemortem tooth loss in human hunter-gatherers and non-human catarrhines: Implications for the identification of behavioral evolution in the human fossil record. *American Journal of Physical Anthropology* Vol. 151(2), 252-264.

- Gilster, J. E., Smith, F. H. and Wallace, G. K. (1964) Calcification of the mandibular second primary molars in relation to age. *Journal of Dentistry for Children* Vol. 31, 284-288.
- Glahder, C. M. (1995) *Hunting in Kangerlussuaq, East Greenland, 1951-1991. An assesment of local knowledge.* Meddeleser om Grønland, Man and Society 19.
- Glass, G. B. (1991) Continuous eruption and periodontal status in pre-industrial dentitions. *International Journal of Osteoarchaeology* Vol. 1(3-4), 265-271.
- Gleiser, I. and Hunt, E. E. (1955) The permanent mandibular first molar: Its calcification, eruption and decay. *American Journal of Physical Anthropology* Vol. 13(2), 253-283.
- Grant, D. (2010) *Native Americans in the San Francisco Bay Area: Patterns in ancient teeth, palimpsests of behavior.* San Jose State University. Unpublished MSc Dissertation.
- Grant, W. B. (2011) A review of the role of solar ultraviolet-B irradiance and vitamin D in reducing risk of dental caries. *Dermato-Endocrinology* Vol. 3(3), 193-198.
- Grant, J. C. B. (1922) Some notes on an Eskimo skeleton. *American Journal of Physical Anthropology* Vol. 5(3), 267-271.
- Greely, A. W. (1888) *Report on the proceedings of the United States Expedition to Lady Franklin Bay, Grinnell Land. Vol. II.* Washington: Government Printing Office.
- Greene, D. L., Ewing, G. H. and Armelagos, G. J. (1967) Dentition of a Mesolithic population from Wadi Halfa, Sudan. *American Journal of Physical Anthropology* Vol. 27(1), 41-55.
- Greene, T. R., Kuba, C. L. and Irish, J. D. (2005) Quantifying calculus: A suggested new approach for recording an important indicator of diet and dental health. *HOMO - Journal of Comparative Human Biology* Vol. 56(2), 119-132.
- Griffin, M. C. (2014) Biocultural implications of oral pathology in an ancient Central California population. *American Journal of Physical Anthropology* Vol. 154(2), 171-188.
- Griffin, R., Pitts, M., Smith, R. and Brook, A. (2011) Inequality at Late Roman Baldock, UK: The impact of social factors on health and diet. *Journal of Anthropological Research* Vol. 67(4), 533-556.
- Grigoras, M. S., Rudnic, I., Danila. C., Potârniche, O. and Martu, S. (2013) Research regarding the interaction between herpesviruses and bacterial agents in aggressive periodontitis etiopathogeny. *Romanian Journal of Oral Rehabilitation* Vol. 5(1), 83-86.

- Grimoud, A.-M., Gibbon, V. E. and Ribot, I. (2017) Predictive factors for alveolar fenestration and dehiscence. *HOMO* Vol. 68(3), 167-175.
- Grimoud, A. M., Roberts, C. A., Boimond, L., Sevin, A., Lucas, S. and Passarrius, O. (2012) Topographical presentation of dental wear as arches in a French mediaeval population. *Archives of Oral Biology* Vol. 57(6), 841-852.
- Grønnow, B. (2009) Blessings and horrors of the interior: Ethno-historical studies of Inuit perceptions concerning the inland region of West Greenland. *Arctic Anthropology* Vol. 46(1/2), 191-201.
- Grønnow, B. (1988) Prehistory in permafrost: Investigations at the Saqqaq site, Qeqertasussuk, Disco Bay, West Greenland. *Journal of Danish Archaeology*. Vol. 7(1), 24–39.
- Grønnow, B., Gullov, H. C., Jakobsen, B. H., Gotfredsen, A. B., Kauffmann, L. H., Kroon, A., Pedersen, J. B. T. and Sorensen, M. (2011) At the edge: High Arctic Walrus hunters during the Little Ice Age. *Antiquity* Vol. 85(329), 960-977.
- Gruzdeva, E. (2020) Half a century after: A unique collection of Siberian Eskimo texts. *International Journal of Eurasian Linguistics* Vol. 2(1), 159-165.
- Grygier, P. S. (1994) *Long way from home: The tuberculosis epidemic among the Inuit*. Montreal: MQUP.
- Godde, K. (2015) Secular trends in cranial morphological traits: A socioeconomic perspective of change and sexual dimorphism in North Americans 1849-1960. *Annals of Human Biology* Vol. 42(3), 255-261.
- Goebel, T. and Potter, B. A. (2016) First traces. Late Pleistocene human settlement of the Arctic. In (eds) Friesen, T. M. and Mason, O. K. *The Oxford handbook of the prehistoric Arctic*. New York, NY: Oxford University Press. Chapter 9, 223-252.
- Goldberg, H. J. V., Weintraub, J. A., Roghmann, K. J. and Cornwell, W. S. (1976) Measuring periodontal disease in ancient populations: Root and wear indices in study of American Indian skulls. *Journal of Periodontology* Vol. 47(6), 348-351.
- Goldstein, L. G. (1981) One-dimensional archaeology and multi-dimensional people: Spatial organization and mortuary analysis. In (eds) Chapman, R., Kinnes, I. and Randsborg, K. *The archaeology of death*. Cambridge University Press: Cambridge. Chapter 4, 53–70.
- Goldstein, M. S. (1932) Caries and attrition in the molar teeth of the Eskimo mandible. *American Journal of Physical Anthropology* Vol. 16(4), 421-430.

- Golkari, A., Sabokseir, A., Pakshir, H-R. Dean, M. C., Sheiham, A. and Watt, R. G. (2011) A comparison of photographic, replication and direct clinical examination methods for detecting developmental defects of enamel. *BMC Oral Health* Vol. 11, 1-7.
- Gómez-Robles, A. and Polly, P. D. (2012) Morphological integration in the hominin dentition: Evolutionary, developmental, and function factors. *Evolution* Vol. 66(4), 1024-1043.
- González, P. N., Bernal, V., Ivan P. S. and Barrientos, G. (2007) Analysis of dimorphic structures of the human pelvis: Its implications for sex estimation in samples without reference collections. *Journal of Archaeological Science* Vol. 34(10), 1720-1730.
- González, P. N., Perez, S. I. and Bernal, V. (2010) Ontogeny of robusticity of craniofacial traits in modern humans: A study of South American populations. *American Journal of Physical Anthropology* Vol. 142(3), 367-379.
- Goodway, J., Ozmun, J. C. and Gallahue, D. L. (2021) *Understanding motor development: Infants, children, adolescents, adults*. Burlington, MA: Jones & Bartlett Learning 8th edition.
- Google Earth (2019) <https://earth.google.com/> Last Accessed 11/08/2021.
- Google Maps (2022) <https://www.google.co.uk/maps> Last Accessed 09/02/2022
- Gordon, K. R. (1984) Microfracture patterns of abrasive wear striations on teeth indicate directionality. *American Journal of Physical Anthropology* Vol. 63(3), 315-322.
- Górka, K. (2016) *Dental morphology and dental wear as dietary and ecology indicators: sexual and inter-group differences in traditional human populations*. Universitat de Barcelona. Unpublished Ph.D. thesis.
- Górka, K., Romero, A. and Pérez-Pérez, A. (2016) Dental-macrowear and diet of Tigara foragers from Point Hope, northern Alaska. *Anthropologischer Anzeiger. Journal of Biological and Clinical Anthropology*. Vol. 73(3), 257-64.
- Gotfredsen, A. B. (1997) Sea bird exploitation on coastal Inuit sites, west and southeast Greenland. *International Journal of Osteoarchaeology* Vol. 7(4), 271-286.
- Gotfredsen, A. B. and Møbjerg, T. (2004) *Nipisat - a Saqqaq culture site in Sisimiut, central West Greenland*. Copenhagen, Denmark: Danish Polar Center.
- Gottlieb, O. (1952) Long-standing dislocation of the jaw. *Journal of Oral Surgery* Vol. 10(1), 25–32.

- Goude, G., Salazar-García, D., Power, R., Terrom, J., Rivollat, M., Guy, A., Coutelas, A. and Hauzeur, A. (2019) A multidisciplinary approach to Neolithic life reconstruction. *Journal of Archaeological Method and Theory* Vol. 26(2), 537-560.
- Gowdy, J. M. (1998) *Limited wants, unlimited means: A reader on hunter-gatherer economics and the environment*. Washington, D.C.: Island Press.
- Gowland, R. L. and Chamberlain, A. T. (2002) A Bayesian approach to ageing perinatal skeletal material from archaeological sites: Implications for the evidence for infanticide in Roman-Britain. *Journal of Archaeological Science* Vol. 29(6), 677-685.
- Gowland, R. L., Caffell, A. C., Newman, S., Levene, A. and Holst, M. (2018) Broken childhoods: Rural and urban non-adult health during the Industrial Revolution in Northern England (Eighteenth-nineteenth centuries). *Bioarchaeology international* Vol. 2(1), 44-62.
- Guatelli-Steinberg, D. (2016) Dental stress indicators from micro- to macroscopic. In (eds) Irish, J. D. and Scott, G. R. *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons, Chapter 27, 450-464.
- Guatelli-Steinberg, D., Irish, J. D., Lukacs, J. R. (2001) Canary Islands-north African population affinities: Measures of divergence based on dental morphology. *HOMO - Journal of Comparative Human Biology* Vol. 52(2), 173-188.
- Guatelli-Steinberg, D., Reid, D. J., Bishop, T. A. and Larsen, C. S. (2005) Anterior tooth growth periods in Neandertals were comparable to those of modern humans. *Proceedings of the National Academy of Sciences of the United States of America* Vol. 102(40), 14197-14202.
- Guatelli-Steinberg, D., Larsen, C. S. and Hutchinson, D. L. (2004) Prevalence and the duration of linear enamel hypoplasia: A comparative study of Neandertals and Inuit foragers. *Journal of Human Evolution* Vol. 47(1), 65-84.
- Gueldner, S. H. (2008) *Osteoporosis: Clinical guidelines for prevention, diagnosis, and management*. New York: Springer.
- Gulløv, H. C. (2016) Inuit-European interactions in Greenland. In (eds) Friesen, M. and Owen, M. *The Oxford handbook of the prehistoric Arctic*. Oxford University Press. Chapter 38, 897-914.
- Gulløv, H. C. (1995) "Olden times" in Southeast Greenland: New archaeological investigations and the oral tradition. *Études/Inuit/Studies* Vol. 19(1), 3-36.

Gulløv, H. C. (1985) Whales, whalers, and Eskimos: The impact of European whaling on the demography and economy of Eskimo society in west Greenland. In (eds) Fitzhugh, W. W. *Cultures in contact: The Impact of European contacts on Native American cultural institutions, A.D. 1000-1800*. Washington D.C.: Smithsonian Institution Press. Chapter 4, 71-96.

Gulløv, H. C. and Appelt, M. (2001) Social bonding and shamanism among Late Dorset groups in High Arctic Greenland. In (eds) Price, N. S. *The archaeology of shamanism*. London: Routledge, Chapter 10, 146–62.

Gutmann, J. L. (2017) Some historical musings on tooth/root resorption. *Journal of Istanbul University Faculty of Dentistry*, Vol. 51(3), 1-9.

Haine, T. (2008) What did the Viking discoverers of America know of the North Atlantic Environment? *Weather* Vol. 63(3), 60-65.

Haggarty, J. C. and Inglis, R. (1985) *Historical resources site survey and assessment, Pacific Rim National Park*. Submitted to Parks Canada, Calgary.

Haggarty, J. C. and Inglis, R. (1986) *Pacific Rim National Park ethnographic history*. Submitted to Parks Canada, Ottawa.

Halcrow, S. E. and Tayles, N. (2011) The bioarchaeological investigation of children and childhood. In (eds) Glencross, B. A. and Agarwal, S. C. *Social Bioarchaeology*. Oxford, UK: Wiley-Blackwell. Chapter 12, 333-360.

Halliday, K. A. (2005) Body piercing: Issues and challenges for nurses. *Journal of Forensic Nursing* Vol. 1(2), 47-56.

Harriman, E. H. and Marriam, C. H. (1931) *Alaska: Narrative, glaciers, natives*. Washington, D.C.: Harvard University.

Hartnett, K. M. (2010) Analysis of age-at-death estimation using data from a new, modern autopsy sample—Part II: Sternal end of the fourth rib. *Journal of Forensic Sciences* Vol. 55(5), 1152-1156.

Hale, A (2016) Nutritional implications in 19th century Portugal: A LEH study. *Anthropologie*, Vol. 54(2), 161-174.

Hansen, J. P. H. (1984) The Eskimo of Greenland, A.D. 1460. Paper presented at the American Association of Physical Anthropologists, Philadelphia. Cited in, Larsen, C. S. (1985) Dental modifications and tool use in the western Great Basin. *American Journal of Physical Anthropology* Vol. 67(4), 93-402.

Hansson, S. and Halldin, A. (2012) Alveolar ridge resorption after tooth extraction: A consequence of a fundamental principle of bone physiology. *Journal of Dental Biomechanics* Vol. 3, 1758736012456543

- Harper, A., Laughlin, W. and Mazess, R. (1984) Bone mineral content in St. Lawrence Island Eskimos. *Human Biology* Vol. 56(1), 63-78.
- Harris, A., Marciniak, S., Marshall, I., Fuller, B., Southon, J., Poinar, H. and Grimes, V. (2019) Dorset Pre-Inuit and Beothuk foodways in Newfoundland, ca. AD 500-1829. *PLoS One* Vol. 14(1), e0210187.
- Harris, E. and McKee, J. (1990) Tooth mineralization standards for blacks and whites in the Middle Southern United States. *Journal of Forensic Sciences* Vol. 35(4), 859-872.
- Harriett, R. K. (2010) Variations of late prehistoric houses in Coastal Northwest Alaska: A view from Wales. *Arctic Anthropology* Vol. 47(1), 57-70.
- Hart, J. and Lovis, W. (2013) Reevaluating what we know about the histories of maize in Northeastern North America: A review of current evidence. *Journal of Archaeological Research* Vol. 21(2), 175-216.
- Hart, T. C., Marazita, M. L., Schenkein, H. A. and Diehl, S. R. (1992) Re-interpretation of the evidence for X-linked dominant inheritance of juvenile periodontitis. *Journal of Periodontology* Vol. 63(3), 169-173.
- Harvey, A. R., Scott, R. G., Pellegrini, E. and Turner, C. G. (2017) Biocultural perspectives on Jomon dental ablation. Social complexity, identity, and visage. In (eds) Burnett, S. E. and Irish, J. D. *A world view of bioculturally modified teeth*. Gainesville: University Press of Florida.
- Han, M.-X., Ding, C. and Kyung, H.-M. (2015) Genetic polymorphisms in pattern recognition receptors and risk of periodontitis: Evidence based on 12,793 subjects. *Human Immunology* Vol. 76(7), 496-504.
- Hasan, A. and Palmer, R. M. (2014) A clinical guide to periodontology: Pathology of periodontal disease. *British Dental Journal* Vol. 216(8), 457-461.
- Hatfield, V. L. (2010) Material culture across the Aleutian Archipelago. *Human Biology*, Vol. 82(5/6), 525-556.
- Hatfield, V. L. (2006) *Historical continuity from Shemya to Dutch Harbor: An evolutionary analysis of chipped stone technology in the Aleutian Islands*. Unpublished Ph.D. Thesis. University of Kansas.
- Hawkes, E. W. (1916a) *Skeletal measurements and observations of the Point Barrow Eskimo with comparisons with other Eskimo groups*. *American Anthropologist*, Vol. 18(2), 203-244.
- Hawkes, D. E. (1916b) *The Labrador Eskimo*. Ottawa Government Printing Bureau.
- Hawkey, D. E. and Merbs, C. F. (1995) Activity-induced musculoskeletal stress markers (MSM) and subsistence strategy changes among ancient Hudson Bay Eskimos. *International Journal of Osteoarchaeology* Vol. 5(4), 324-338.

Heathcote, G. M. (1986) *Exploring human craniometry of recent Eskaleutian regional groups from the Western Arctic and Subarctic or North America. A new approach to population historical reconstruction*. Oxford: British Archaeological Reports International.

Helgason, A., Pálsson, G., Pedersen, H. S., Angulalik, E., Gunnarsdóttir, E. D., Yngvadóttir, B. and Stefánsson, K. (2006) mtDNA variation in Inuit populations of Greenland and Canada: Migration history and population structure. *American Journal of Physical Anthropology* Vol. 130(1), 123-134.

Heller, C. A., Scott, E. M. and Hammes, L. M. (1967) Height, weight, and growth of Alaskan Eskimos. *American Journal of Diseases in Children* Vol. 118, 338-345.

Helmer, J. W. and Kennedy, B. V. (1986) Early Palaeo-Eskimo skeletal remains from North Devon Island, High Arctic Canada. *Canadian Journal of Archaeology* Vol.10, 127-143.

Heman, K. M., Bukowski, J. A., Cobb, D. E. and Thompson, A. R. (2017) Modified teeth, cultural Diversity, and community building at Cahokia (AD 900–1400). In (eds) Burnett, S. E. and Irish, J. D. *A world view of bioculturally modified teeth*. University Press of Florida. Chapter 15, 229-249.

Henderson, J. (1987) Factors determining the state of preservation of human remains. In (eds) Boddington, A., Garland, A. N. and Janaway, R. C. *Death, decay and reconstruction: Approaches to archaeology and forensic science*. Manchester: Manchester University. Chapter 5, 43-54.

Hennessy, R. J. and Stringer, C. B. (2002) Geometric morphometric study of the regional variation of modern human craniofacial form. *American Journal of Physical Anthropology* Vol. 117(1), 37-48.

Henriques, P. S. G. and Neto, A. M. P. (2011) Association between tooth loss and bone mineral density in Brazilian postmenopausal women. *Journal of Clinical Medicine Research* Vol. 3(3), 118-123.

Henry, A. G., Brooks, A. S. and Piperno, D. R. (2011) Microfossils in calculus demonstrate consumption of plants and cooked foods in Neanderthal diets (Shanidar III, Iraq; Spy I and II, Belgium). *Proceedings of the National Academy of Sciences of the United States* Vol. 108(2), 486-492.

Henry, I. L. and Weinmann, J. P. (1951) The pattern of resorption and repair of human cementum. *Journal of the American Dental Association* Vol. 42(3), 270-90.

Henshaw, A. S. (1995) *Central Inuit household economies: Zooarchaeological, environmental, and historical evidence from outer Frobisher Bay, Baffin Island, Canada*. Unpublished Ph.D. Thesis. Harvard University.

Herrera, B., Hanihara, T. and Godde, K. (2014) Comparability of multiple data types from the Bering Strait region: Cranial and dental metrics and nonmetrics, mtDNA, and Y-chromosome DNA. *American Journal of Physical Anthropology* Vol. 154(3), 334-348.

Herrera, D., Alonso, B., Arriba, L., Santa Cruz, I., Serrano, C. and Sanz, M. (2014b) Acute periodontal lesions. *Periodontology 2000* Vol. 65(1), 149-177.

Herrscher, E., Fenner, J. N., Valentin, F., Clark, G., Reepmeyer, C., Bouffandeau, L. and André, G. (2018) Multi-isotopic analysis of first Polynesian diet (Talasie, Tongatapu, Kingdom of Tonga). *Journal of Archaeological Science: Reports* Vol. 18, 308-317.

Hewlett, B. S. and Lamb, M. E. (2005) Emerging issues in the study of hunter-gatherer children. In (eds) Hewlett, B. S. and Lamb, M. E. *Hunter-gatherer childhoods: Evolutionary, developmental & cultural perspectives*. New Brunswick; London: Aldine Transaction. Chapter 1, 3-18.

Hildebolt, C. F. and Molnar, S. (1991) Measurement and description of periodontal disease in anthropological studies. In, (eds) Kelley, M. A. and Larsen, C. S. *Advances in dental anthropology*. New York: Wiley-Liss. Chapter 13, 225-240.

Higgins, A. K. (2010) Exploration history and place names of northern East Greenland: Colophon, abstract, introduction, official place names in Greenland. *Geological Survey of Denmark and Greenland Bulletin* Vol. 21, 1-16.

Hill, E. (2019) Humans, birds and burial practices at Ipiutak, Alaska: Perspectivism in the Western Arctic. *The Journal of Human Palaeoecology* Vol. 24(4), 434-448.

Hillson, S. W. (2008a) The current state of dental decay. In (eds) Irish, J. D. and Nelson, G. C. *Technique and application in dental anthropology*. Cambridge: Cambridge University Press. Chapter 6, 111-135.

Hillson, S. W. (2008b) Dental pathology. In (eds) Katzenberg, M. A. and Saunders, S. R. *Biological anthropology of the human skeleton*. Hoboken, N.J.: Wiley-Liss 2nd ed. Chapter 10, 301-340.

Hillson, S. W. (2005) *Teeth*. Cambridge: Cambridge University Press. Second Edition.

Hillson, S. W. (2001) Recording dental caries in archaeological human remains. *International Journal of Osteoarchaeology* Vol. 11(4), 249-289.

Hillson, S. W. (1996) *Dental Anthropology*. Cambridge: Cambridge University Press.

Hillson, S. W. (1979) Diet and dental disease. *World Archaeology* Vol. 11(2), 147-162.

Hillson, S. W. and Bond, S. (1997) Relationship of enamel hypoplasia to the pattern of tooth crown growth: A discussion. *American Journal of Physical Anthropology* Vol. 104(1), 89-104.

Hillson, S. W., Grigson, C. and Bond, S. (1998) Dental defects of congenital syphilis. *American Journal of Physical Anthropology* Vol. 107(1), 25-40.

- Hilton, C. E., Auerbach, B. M. and Cowgill, L. W. (2014) *The foragers of Point Hope: The biology and archaeology of humans on the edge of the Alaskan Arctic*. Cambridge: Cambridge University Press.
- Hilton, C. E., Ogilvie, M. D., Czarniecki, M. L. and Gossett, S. (2014) Postcranial pathological lesions in precontact Ipiutak and Tigara skeletal remains of Point Hope, Alaska. In (eds) Hilton, C. E., Auerbach, B. M. and Cowgill, L. W. *The foragers of Point Hope: The biology and archaeology of humans on the edge of the Alaskan Arctic*. Cambridge: Cambridge University Press. Chapter 7, 138-180.
- Hinton, R. J. (1982) Differences in interproximal and occlusal tooth wear among prehistoric Tennessee Indians: Implications for masticatory function. *American Journal of Physical Anthropology* Vol. 57(1), 103-115.
- Hinton, R. J. (1981a) Changes in articular eminence morphology with dental function. *American Journal of Physical Anthropology* Vol. 54(4), 439-455.
- Hinton, R. J. (1981b) Form and patterning of anterior tooth wear among aboriginal human groups. *American Journal of Physical Anthropology* Vol. 54(4), 555-564.
- Hinton, R. J. and Carlson, D. S. (1979) Temporal changes in human temporomandibular joint size and shape. *American Journal of Physical Anthropology* Vol. 50(3), 325-333.
- Hlusko, L. J. (2003) The Oldest hominid habit? Experimental evidence for toothpicking with grass stalks. *Current Anthropology* Vol. 44(5), 738-741.
- Hobbs, W. H. (1927) The Second Greenland Expedition of the University of Michigan. *Nature* Vol. 120(3034), 920-922.
- Hobbs, W. H. (1926) The first Greenland expedition of the University of Michigan. *Science* Vol. 64(1658), 348-349.
- Hodgetts, L. M. (2007) The changing Pre-Dorset landscape of SW Hudson Bay, Canada. *Journal of Field Archaeology* Vol. 32(4), 353-367.
- Hoffman, B. W. (2000) Broken eyes and simple grooves: Understanding eastern Aleut needle technology through experimental manufacture and use of bone needles. In (eds) Frink, L., Shepard, R. S. and Reinhardt, G. A. *Many faces of gender roles and relationships through time in Indigenous Northern communities*. Calgary: University of Calgary Press. Chapter 10, 151-164.
- Hollesen, J., Matthiesen, H., Møller, A. B., Westergaard-Nielsen, A. and Elberling, B. (2016) Climate change and the loss of organic archaeological deposits in the Arctic. *Scientific Reports* Vol. 6(1), 28690.

- Holliday, T. W. and Hilton, C. E. (2010) Body proportions of circumpolar peoples as evidenced from skeletal data: Ipiutak and Tigara (Point Hope) versus Kodiak Island Inuit. *American Journal of Physical Anthropology* Vol. 142(2), 287-302.
- Hollowell, J. (2006) St. Lawrence Island's legal market in archaeological goods. In (eds) Brodie, N., Kersel, M. M., Luke, C. and Walker Tubb, K. *Archaeology, cultural heritage, and the antiquities trade*. Gainesville: University Press of Florida. Chapter 5, 98-132.
- Holman, D. J. and Yamaguchi, K. (2005) Longitudinal analysis of deciduous tooth emergence: IV. Covariate effects in Japanese children. *American Journal of Physical Anthropology* Vol. 126(3), 352-358.
- Hong, L., Levy, S. M., Warren, J. J. and Broffitt, B. (2009) Association between enamel hypoplasia and dental caries in primary second molars: A cohort study. *Caries Research* Vol. 43(5), 345-353.
- Hoover, K. and Berbesque, J. (2018) Early Holocene morphological variation in hunter-gatherer hands and feet. *PeerJ* Vol.6, e5564.
- Hoover, K. C. and Williams, F. L'E. (2016) Variation in regional diet and mandibular morphology in prehistoric Japanese hunter-gatherer-fishers. *Quaternary International* Vol. 405, 101-109.
- Hoppa, R. D. and Gruspier, K. L. (1996) Estimating diaphyseal length from fragmentary subadult skeletal remains: Implications for palaeodemographic reconstructions of a southern Ontario ossuary. *American Journal of Physical Anthropology* Vol. 100(3), 341-354.
- Hovey, E. O. (1917) *Field note book Crocker Land Expedition 1913-1915 No. 52 Greenland VI Etah to Godhaven*. American Museum of Natural History: Crocker Land Expedition (1913-1917).
- Howe, M., Castellote, M., Garner, C., McKee, P., Small, R. J. and Hobbs, R. (2015) Beluga, *Delphinapterus leucas*, ethogram: A tool for cook inlet beluga conservation? *Marine Fisheries Review* Vol. 77(1), 32-41.
- Howse, L. (2008) Late Dorset caribou hunters: Zooarchaeology of the Bell Site, Victoria Island. *Arctic Anthropology*, 2008, Vol. 45(1), 22-40.
- Højgaard, K. (1980) Dentition on Umm an-Nar (Trucial Oman), 2500 B.C. *Scandinavian Journal of Dental Research*. Vol. 88(5), 355-64.
- Hrdlička, A. (1908) New examples of American Indian skulls with low forehead. *Smithsonian Institute* Vol. 35(1641), 171-177.
- Hrdlička, A. (1910) *Contribution to the anthropology of central and Smith Sound Eskimo*. New York: American Museum of Natural History.

- Hrdlička, A. (1920) Shovel-shaped incisors. *American Journal of Anthropology*, Vol. 3(2), 429-465.
- Hrdlička, A. (1924) Catalogue of human crania in the United States National Museum collections: The Eskimo, Alaska and related Indians, Northeastern Asiatics. *Smithsonian Institute* Vol. 63(12), 1-51.
- Hrdlička, A. (1927) Catalogue of human crania in the United States National Museum collections: The Algonkin and related Iroquois; Sinuan, Caddoan, Salish and Sahaptin, Shoshonean, and Californian Indians. *Smithsonian Institute* Vol. 69(5), 1-127.
- Hrdlička, A. (1930) Anthropological survey in Alaska. Annual report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, Smithsonian Institution Bureau of American Ethnology, Vol. 46, 19-374. Cited in Turner, C. G. (1967) *The dentition of Arctic peoples*. University of Wisconsin. Unpublished Ph.D. Thesis.
- Hrdlička, A. (1931) Catalogue of human crania in the United States National Museum collections: Pueblos, southern Utah Basket-makers, Navaho. *Smithsonian Institute* Vol. 78(2), 1-95.
- Hrdlička, A. (1936) Puberty in Eskimo girls. *Proceedings of the National Academy of Sciences of the United States of America* Vol. 22(6), 355-7.
- Hrdlička, A. (1940a) *Ritual ablation of front teeth in Siberia and America (with five plates)*. City of Washington: The Smithsonian Institution.
- Hrdlička, A. (1940b) Catalog of human crania in the United States National Museum collections: Indians of the Gulf States. *Smithsonian Institution* Vol. 87(3076), 315-464.
- Hrdlička, A. (1941a) *Diseases of and artifacts on skulls and bones from Kodiak Island*. Smithsonian Institute.
- Hrdlička, A. (1941b) Height and weight in Eskimo children. *American Journal of Physical Anthropology* Vol. 28(3), 331-341.
- Hrdlička, A. (1941c) Exploration of Mummy Caves in the Aleutian Islands: Part I. Previous knowledge of Such Caves. Original explorations. *Scientific Monthly* Vol. 52(1), 5-23.
- Hrdlička, A. (1941d) Exploration of Mummy Caves in the Aleutian Islands: Part II. Further exploration. *Scientific* Vol. 52(2), 113-130.
- Hrdlička, A. (1943) *Alaska diary 1926-31*. Lancaster, Pennsylvania: The Jaques Cattell Press.
- Hrdlička, A. (1942a) Catalog of human crania in the United States National Museum collections: Eskimo in general. *Smithsonian Institute* Vol. 91(3131), 169-429.

- Hrdlička, A. (1942b) Crania of Siberia. *American Journal of Physical Anthropology* Vol. 29(4), 435-481.
- Hrdlička, A. (1944b) *Catalog of human crania in the United States National Museum collections- Non-Eskimo people of the Northwest Coast, Alaska and Siberia*. Smithsonian Institute.
- Hrdlička, A. (1944c) *The anthropology of Kodiak Island*. Philadelphia: Wistar Institute.
- Hrdlička, A. (1945) *The Aleutian and Commander islands and their inhabitants*. Wistar Institute of Anatomy and Biology.
- Huanca Ghislanzoni, L., Jonasson, G. and Kiliaridis, S. (2017) Continuous eruption of maxillary teeth and changes in clinical crown length: A 10-year longitudinal study in adult women. *Clinical Implant Dentistry and Related Research* Vol.19 (6), 1082-1089.
- Huang, G. T.-J. and Thesleff, I. (2013) *Stem cells in craniofacial development and regeneration*. Hoboken, New Jersey: Wiley-Blackwell.
- Hughes, C. E., Dudzik, B., Algee-Hewitt, B. F. B., Jones, A. and Anderson, B. E. (2019) Understanding (mis)classification trends of Latin Americans in Fordisc 3.1: Incorporating cranial morphology, microgeographic origin, and admixture proportions for interpretation. *Journal of Forensic Sciences* Vol. 64(2), 353-366.
- Humphrey, L. T., De Groote, I., Morales, J., Barton, N., Colcutt, S., Bronk Ramsey, C. and Bouzouggar, A. (2014) Earliest evidence for caries and exploitation of starchy plant foods in Pleistocene hunter-gatherers from Morocco. *Proceedings of the National Academy of Sciences* Vol. 111(3), 954–959.
- Hurcombe, L. M. (2007) *Archaeological artefacts as material culture*. London: Routledge.
- Hurme, V. O. (1948) Standards of variation in the eruption of the first six permanent teeth. *Child Development* Vol. 19(4), 213-231.
- Hurtado, A., Hill, K., Hurtado, I. and Kaplan, H. (1992) Trade-offs between female food acquisition and child care among Hiwi and Ache foragers. *Human Nature* Vol. 3(3), 185-216.
- Hutchinson, D. L., Larsen, C. S., Schoeninger, M. J. and Norr, L. (1998) Regional variation in the pattern of maize adoption and use in Florida and Georgia. *American Antiquity* Vol. 63(3), 397-417.
- Hylander, W. L. (1977) The adaptive significance of Eskimo craniofacial morphology. In (eds) Dahlberg, A. A. and Graber, T. M. *Orofacial growth and development*. The Hague/Paris: Mouton Publishers. 129-171.
- Hylander, W. L. (1972) *The adaptive significance of the Eskimo craniofacial morphology*. The University of Chicago. Unpublished Ph.D. thesis.

- Ibáñez-Gimeno, P., Galtés, I., Jordana, X., Manyosa, J. and Malgosa, A. (2015) Activity-related sexual dimorphism in Alaskan foragers from Point Hope: Evidences from the upper limb. *Anthropologischer Anzeiger* Vol. 72(4), 473-489.
- Igarashi, Y., Yoshida, S. and Kanazawa, E. (2017) The prevalence and morphological types of non-carious cervical lesions (NCCL) in a contemporary sample of people. *Odontology* Vol. 105(4), 443-452.
- Ijbara, M., Wada, K., Tabata, M. J., Wada, J., Inoue, G. and Miyashin, M. (2018) Enamel microcracks induced by simulated occlusal wear in mature, immature, and deciduous teeth. *BioMed Research International*, Vol. 2018, 1-9.
- Ikebe, K., Matsuda, K., Morii, K., Hazeyama, T., Kagawa, R., Ogawa, T., and Nokubi, T. (2007) Relationship between bite force and salivary flow in older adults. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology* Vol. 104(4), 510–515.
- Imbeni, V., Kruzic, J. J., Marshall, G. W., Marshall, S. J. and Ritchie, R. O. (2005) The dentin–enamel junction and the fracture of human teeth. *Nature Materials* Vol. 4(3), 229-232.
- Irish, J. D. (2020) Tooth transposition prevalence and type among sub-Saharan Africans. *American Journal of Human Biology* Vol.32 e23329.
- Irish, J. D. (2006) Who were the Ancient Egyptians? Dental affinities among Neolithic through postdynastic peoples. *American Journal of Physical Anthropology* Vol. 129(4), 529-543.
- Irish, J. D. (2016) Assessing dental nonmetric variation among populations. In (eds) Irish, J. D. and Scott, G. R. *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 18, 265-286.
- Irish, J. D., Black, W., Sealy, J., Ackermann, R. R. (2014) Questions of Khoesan continuity: Dental affinities among the indigenous Holocene peoples of South Africa. *American Journal of Physical Anthropology* Vol. 155(1), 33-44.
- Irish, J. D. and Scott, G. R. (2016) Introduction to dental anthropology. In (eds) *A companion to dental anthropology*. Irish, J. D. and Scott, G. R. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 1, 3-6.
- Irish, J. D. and Turner, C. G. (1997) Brief communication: First evidence of LSAMAT in non-native Americans: Historic Senegalese from West Africa. *American Journal of Physical Anthropology* Vol. 102(1), 141-146.
- Irish, J. D. and Turner, C. G. (1987) More lingual surface attrition of the maxillary anterior teeth in American Indians: Prehistoric Panamanians. *American Journal of Physical Anthropology* Vol. 73(2), 209-213.

- Irurita Olivares, J. and Alemán Aguilera, I. (2016) Validation of the sex estimation method elaborated by Schutkowski in the Granada Osteological Collection of identified infant and young children: Analysis of the controversy between the different ways of analyzing and interpreting the results. *International Journal of Legal Medicine* Vol. 130(6), 1623-1632.
- Isler, R., Schoen, J. and İscan, M. Y. (1985) Dental pathology of a prehistoric human population in Florida. *Florida Scientist* Vol. 48(3), 139-146.
- Issenman, B. K. (1997) *Sinews of survival: The living legacy of Inuit clothing*. Vancouver: UBC Press.
- İscan, M. Y. and Loth, S. (1986) Determination of age from the sternal rib in white females: A test of the phase method. *Journal of Forensic Sciences* Vol. 31(3), 990-999.
- İscan, M. Y., Loth, S. R. and Wright, R. K. (1984) Metamorphosis at the sternal rib end: A new method to estimate age at death in white males. *American Journal of Physical Anthropology* Vol. 65, 147-156.
- Irving, B. G. (1992) The pectoral fin spines of European catfish *Siluris glanis*; cultural artifacts or food remains? *International Journal of Osteoarchaeology* Vol. 2(3), 189-197.
- Jackes M. (2011) Representativeness and bias in archaeological skeletal samples. In (eds) Agarwal S.C. and Glencross B. A. *Social bioarchaeology*. Chichester: Wiley-Blackwell. Chapter 5, 107–146.
- Jackson, S. (1900) *Annual report on introduction of domestic reindeer into Alaska, with maps and illustrations*. Washington: Government Issue Office.
- Jacobi, K. P., Cook, D. C., Corruccini, R. S. and Handler, J. S. (1992) Congenital syphilis in the past: Slaves at Newton Plantation, Barbados, West Indies. *American Journal of Physical Anthropology* Vol. 89(2), 145-158.
- Jain, S., Kaur, H. and Aggarwal, R. (2017) Classification systems of gingival recession: An update. *Indian Journal of Dental Sciences* Vol.9 (1), 52-59.
- Jamison, P. L. (1970) Growth of Wainwright Eskimos: Stature and weight. *Arctic Anthropology* Vol. 7(1), 86-94.
- Jamison, P. L. (1990) Secular trends and the pattern of growth in Arctic populations. *Social Science & Medicine* Vol. 30(6), 751-759.
- Jamison, P. L. and Zegura, S. L. (1970) An anthropometric study of the Eskimos of Wainwright, Alaska. *Arctic Anthropology* Vol. 7(1), 125-143.

Jarosová, I., Pérez-Pérez, A., Dockalová, M., Drozdová, E. and Turbon, D. (2006) Buccal dental microwear as a dietary indicator in the Iron Age human population from Son Real, Spain. *Anthropologie* Vol. 44(2), 139-150.

Jati, A. S., Furquim, L. Z. and Consolaro, A. (2016) Gingival recession: Its causes and types, and the importance of orthodontic treatment. *Dental Press Journal of Orthodontics* Vol. 21(3), 18-29.

Jay, M. (2009) Breastfeeding and weaning behaviour in archaeological populations: Evidence from the isotopic analysis of skeletal materials. *Childhood in the Past* Vol. 2(1), 163-178.

Jayatilleke, A., Nawarathna, L. S., Ravishanker, N., Wijekoon, P., Nawarathna, R. N., Vithanaarachchi, V. S. N. and Wijeyaweera, R. L. (2019) New standards for eruption time and sequence of permanent dentition in Sri Lankan children. *Communications in Statistics: Case Studies, Data Analysis and Applications*, Vol. 5, 92-100.

Jelliffe, E. F. and Jelliffe, D. B. (1973) Deciduous dental eruption, nutrition and age assessment. *The Journal of Tropical Pediatrics and Environmental Child Health* Vol. 19(2), 193-248.

Jenness, D. (1957) Dawn in Arctic Alaska. Minnesota UP; Oxford UP. Cited in Crass, B. A. (2000) Gender in Inuit burial practices. In (eds) Rautman, A. E. *Reading the body: Representations and remains in the archaeological record*. Gender and Archaeology Conference (4th: 1996: Michigan State University). Philadelphia, PA.: University of Pennsylvania Press. Chapter 6, 68-76.

Jenness, D. (1922) *The life of the Copper Eskimos*. Ottawa, ON: F. A. Acland.

Jenness, D. (1918) The Eskimos of Northern Alaska: A study in the effect of civilization. *Geographical Review* Vol. 5(2), 89-101.

Jenness, S. E. (1990) Diamond Jenness's archaeological investigations on Barter Island, Alaska. *Polar Record* Vol. 26(157), 91-102.

Jensen, A. M. (2016) Archaeology of the Late Western Thule/Iñupiat in North Alaska (a.d. 1300–1750). In (eds) Friesen, T. M. and Mason, O. K. *The Oxford handbook of the prehistoric Arctic*. New York, NY: Oxford University Press. Chapter 21, 513-536.

Jensen, A. M. (2014) The archaeology of north Alaska: Point Hope in context. In (Eds) Hilton, C. E., Auerbach, B. M. and Cowgill, L. W. *The foragers of Point Hope: The biology and archaeology of humans on the edge of the Alaskan Arctic*. Cambridge: Cambridge University Press. Chapter 2, 11-34.

Jensen, A. M. (2009) *Nuvuk Point Barrow, Alaska - The Thule cemetery and Ipiutak occupation*. Bryn Mawr College. Unpublished Ph.D. Thesis.

- Jensen, J. F. (2016) Greenlandic Dorset. In (eds) Friesen, M. and Owen, M. *The Oxford handbook of the prehistoric Arctic*. Oxford University Press. Chapter 31, 737-760.
- Jensen, J. F. (2006) *The Stone Age of Qeqertarsuup Tunua (Disko Bugt) A regional analysis of the Saqqaq and Dorset cultures of Central West Greenland*. Copenhagen: The Commission for Scientific Research in Greenland.
- Jimenez, M., Giovannucci, E., Krall Kaye, E., Joshipura, K. J. and Dietrich, T. (2014) Predicted vitamin D status and incidence of tooth loss and periodontitis. *Public Health Nutrition* Vol. 17(4), 844-852.
- Jin, Y. and Yip, H. K. (2002) Supragingival calculus: formation and control. *Critical reviews in oral biology and medicine* Vol. 13(5), 426-41.
- Jochim, M. A. (1976) *Hunter-gatherer subsistence and settlement: A predictive model*. New York: Academic Press.
- John, J., Nambiar, P., Mani, S. A., Mohamed, N. H., Ahmad, N. F. and Murad, N. A. (2012) Third molar agenesis among children and youths from three major races of Malaysians. *Journal of Dental Sciences* Vol. 7(3), 211-217.
- Johnston, F. E., Ensroth, A. E., Laughlin, W. S. and Harper, A. B. (1982) Physical growth of St. Lawrence Island Eskimos: Body size, proportion, and composition. *American Journal of Physical Anthropology* Vol. 58(4), 397-401.
- Jones, G. (1986) *The Norse Atlantic saga: Being the Norse voyages of discovery and settlement to Iceland, Greenland, and North America*. Oxford: Oxford University Press. Second edition.
- Jordan, P. (2015) *Technology as human social tradition: Cultural transmission among hunter-gatherers*. Oakland, California: University of California Press.
- Jordan, P. and Cummings, V. (2014) Analytical frames of reference in hunter-gatherer research. In (eds) Cummings, V., Jordan, P., Zvelebil, M. *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Chapter 2, 33-42.
- Jurmain, R. (1990) Paleoepidemiology of a central California prehistoric population from CA-Ala-329: Dental disease. *American Journal of Physical Anthropology* Vol. 81(3), 333-342.
- Justice, L. C. and Temple, D. H. (2018) Bioarchaeological evidence for cultural resilience at Point Hope, Alaska: Persistence and memory in the ontology of personhood in Northern Hunter-Gatherers, hunter-gatherer adaptation and resilience. In (eds) Temple, D. H. and Stojanowski, C. M. *Hunter-Gatherer adaptation and resilience: A bioarchaeological perspective*. Cambridge: Cambridge University Press. Chapter 11, 253-273.

- Justice, L. C. (2017) *Biological and cultural evidence for social maturation at Point Hope, Alaska: Integrating data from archaeological mortuary practices and human skeletal biology*. George Mason University. Unpublished Thesis.
- Jochelson, W. (1933) *History, ethnology, and anthropology of the Aleut*. Washington, D.C.: Carnegie Institution of Washington.
- Jochelson, W. (1925) *Archaeological investigations in the Aleutian Islands*. Washington, D.C.: Carnegie Institution.
- Jonasson, S., Callaghan, T. V., Shaver, G. R. and Nielsen, L. A. (2000) Arctic terrestrial ecosystems and ecosystem function. In (eds) Nuttall, M. and Callaghan, T. V. *The Arctic. Environment, people, policy*. Harwood: Amsterdam: The Netherlands: Routledge. Chapter 10, 275-314. 7.
- Joordens, J. C. A., D'Errico, F., Wesselingh, F. P., Munro, S., De Vos, J., Wallinga, J., Ankjærgaard, C., Reimann, T., Wijbrans, J. R., Kuiper, K. F., Mûcher, H. J., Coqueugniot, H., Prié, V., Joosten, I., Van Os, B., Schulp, A. S., Panuel, M., Van Der Haas, V., Lustenhouwer, W., Reijmer, J. J. G. and Roebroeks, W. (2014) *Homo erectus* at Trinil on Java used shells for tool production and engraving. *Nature* Vol. 518(7538), 228-231.
- Jordan, P. and Cummings, V. (2014) Analytical frames of reference in hunter-gatherer research. In (eds) Cummings, V., Jordan, P. and Zvelebil, M. *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Oxford: Oxford University Press First edition. Chapter 1, 33-42.
- Jordan, P. and Cummings, V. (2014) Introduction. In (eds) Cummings, V., Jordan, P. and Zvelebil, M. *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Oxford: Oxford University Press First edition. 1-32.
- Jordan, P. and Weber, A. (2016) Persistent foragers: New insights into Holocene hunter-gatherer archaeology in northern Eurasia. *Quaternary International* Vol. 419, 1-4.
- Jorgić-Srdjak, K., Plančak, D., Bošnjak, D. and Azinović, Z. (1998) Incidence and distribution of dehiscences and fenestrations on human skulls. *Collegium Antropologicum*, Vol. 22(Suppl), 111-116.
- Kaidonis, J. (2008) Tooth wear: The view of the anthropologist. *Clinical Oral Investigations* Vol. 12(1), S21–S26.
- Kamak, G., Kamak, H., Keklik, H. and Gurel, H. G. (2015) The Effect of changes in lower incisor inclination on gingival recession. *The Scientific World Journal* Vol. 2015, 1-5.
- Kamae, Y., Kawana, T., Oshiro, M. and Ueda, H. (2017) Seasonal modulation of the Asian summer monsoon between the Medieval Warm Period and Little Ice Age: A multi model study. *Progress in Earth and Planetary Science* Vol. 4(1), 1-13.

- Kantner, J. (2004) *Ancient Puebloan Southwest*. Cambridge: Cambridge University Press.
- Kapferer, I. and Beier, U. S. (2012) Lateral lower lip piercing--prevalence of associated oral complications: a split-mouth cross-sectional study. *Quintessence International* Vol.43 (9), 747-752.
- Kaplan, S. A. (1985) European goods and socio-economic change in early Labrador Inuit society. In (eds) Fitzhugh, W. W. *Cultures in contact: The impact of European contacts on Native American cultural institutions, A.D. 1000-1800*. Smithsonian Institution Press. Chapter 3, 45-70.
- Karn, K. W., Shockett, H. P., Moffitt, W. C. and Gray, J. L. (1984) Topographic classification of deformities of the alveolar process. *Journal of Periodontology* Vol. 55, 336-340.
- Karpinski, T. M. and Szkaradkiewicz, A. K. (2013) Microbiology of dental caries. *Journal of Biology and Earth Sciences*, Vol. 3(1), M21-M24.
- Karshan, M., Rosebury, T. and Waugh, L. M. (1939) Dental caries among Eskimos of the Kuskokwim area of Alaska: II. Biochemical characteristics of stimulated saliva correlated with dental caries and occurrence of salivary calculus. *American Journal of Diseases of Children* Vol.57 (5), 1026-1034.
- Karsten, J. K., Jeske, R. J., Edwards, R. J., Strange, D., Kuehl, K. and Behm, J. A. (2019) Assessing subsistence and its relationship to cultural complexity in the late prehistoric upper Midwest: A new perspective provided by dental health. *American Journal of Physical Anthropology*, Vol. 168, 750-763.
- Katona, T. R. and Eckert, G. J. (2017) The mechanics of dental occlusion and disclusion. *Clinical Biomechanics* Vol. 50, 84-91.
- Katz, D. C., Grote, M. N. and Weaver, T. D. (2017) Changes in human skull morphology across the agricultural transition are consistent with softer diets in preindustrial farming groups. *Proceedings of the National Academy of Sciences of the United States of America* Vol. 114(34), 9050-9055.
- Katzenberg, M. A., Goriunova, O. and Weber, A. (2009) Paleodiet reconstruction of Bronze Age Siberians from the mortuary site of Khuzhir-Nuge XIV, Lake Baikal. *Journal of Archaeological Science* Vol. 36(3), 663-674.
- Katzenberg, M. A., Schwarcz, H. P., Knyf, M., Melbye, F. J. (1995) Stable isotope evidence for maize horticulture and paleodiet in southern Ontario, Canada. *American Antiquity* Vol. 60(2), 335-351.
- Keddie, G. (1981) The use and distribution of labrets on the North Pacific Rim. *Syesis*. Vol. 14, 59-80.
- Kehoe, A. B. (1992) *North American Indians: A comprehensive account*. Englewood Cliffs, N.J: Prentice Hall: 2nd ed.

- Keenleyside, A. (2003a) Changing patterns of health and disease among the Aleuts. *Arctic Anthropology* Vol. 40(1), 48-69.
- Keenleyside, A. (2003b) An unreduced dislocated mandible in an Alaskan Eskimo: A case of altruism or adaptation? *International Journal of Osteoarchaeology* Vol. 13(6), 384-389.
- Keenleyside, A. (1998) Skeletal evidence of health and disease in pre-contact Alaskan Eskimos and Aleuts. *American Journal of Physical Anthropology*, Vol. 107(1), 51-70.
- Keenleyside, A. (1994) *Skeletal evidence of health and disease in pre- and post-contact Alaskan Eskimos and Aleuts*. McMaster University. Unpublished Ph.D. Thesis.
- Keenleyside, A. (1988) *A palaeopathological analysis of an historic Inuit population from southern Baffin Island, N.W.T.* The University of Alberta. Unpublished Master Thesis.
- Kelly, R. L. (2013) *The lifeways of hunter-gatherers: The foraging spectrum*. Cambridge: Cambridge University Press.
- Kelly, R. L. (2007) *The foraging spectrum: Diversity in hunter-gatherer lifeways*. New York: Percheron Press.
- Kerr, N. W. (1994) Prevalence and natural history of periodontal disease in a London, Spitalfields, population (1645–1852 AD). *Archives of Oral Biology* Vol. 39(7) 581-588.
- Kerr, N. W. (1991) Prevalence and natural history of periodontal disease in Scotland – The mediaeval period (900–1600 A. D.) *Journal of Periodontal Research* Vol. 26(4), 346-354.
- Kerr, N. W. (1988a) A method of assessing periodontal status in archaeologically derived skeletal material. *Journal of Paleopathology* Vol. 2(2), 67–78.
- Kerr, N. W. (1998b) The prevalence and natural history of periodontal disease in Britain from prehistoric to modern times. *British Dental Journal* Vol. 185(10), 527–535.
- Kesavalu, L., Sathishkumar, S., Bakthavatchalu, V., Matthews, C., Dawson, D., Steffen, M., Ebersole, J. L. (2007) Rat model of polymicrobial infection, immunity, and alveolar bone resorption in periodontal disease. *Infection and Immunity* Vol. 75(4), 1704-1712.
- Key, C. A., Aiello, L. C. and Molleson, T. (1994) Cranial suture closure and its implications for age estimation. *International Journal of Osteoarchaeology* Vol. 4(3), 193-207.
- Kirkwood, B. R. and Sterne, J. A. (2003) *Essential medical statistics*. Oxford: Blackwell.
- Kieser, J. A., Groeneveld, H. T. and Preston, C. B. (1985) Patterns of dental wear in the Lengua Indians of Paraguay. *American Journal of Physical Anthropology* Vol. 66(1), 21-29.

- Kindle, E. M. (1909) Notes on the Point Hope Spit, Alaska. *The Journal of Geology* Vol. 17(2), 178-189.
- King, T., Humphrey, L. T. and Hillson, S. (2005) Linear enamel hypoplasias as indicators of systemic physiological stress: Evidence from two known age-at-death and sex populations from postmedieval London. *American Journal of Physical Anthropology* Vol.128 (3), 547-559.
- Khammissa, R. A. G., Ballyram, R., Jadwat, Y., Fourie, J., Lemmer, J. and Feller, L. (2018) Vitamin D deficiency as it relates to oral immunity and chronic periodontitis. *International Journal of Dentistry* Vol. 2018, 1-9.
- Khan, F. and Young, W. G. (2011a) The multifactorial nature of toothwear. In (eds) Khan, F. and Young, W. G. *Toothwear: The ABC of the worn dentition*. Hoboken: Wiley. Chapter 1, 1-15.
- Khan, F. and Young, W. G. (2011b) The oral presentation of toothwear in adults. In (eds) Khan, F. and Young, W. G. *Toothwear: The ABC of the worn dentition*. Hoboken: Wiley. Chapter 4, 50-74.
- Khudaverdyan, A. (2010b) Palaeopathology of human remains from Vardbakh and the Black Fortress I, Armenia. *Bioarchaeology of the Near East* Vol. 4, 1-23.
- Khudaverdyan, A. (2011) Trepanation and artificial cranial deformations in ancient Armenia. *Anthropological Review (Poznań, Poland)* Vol.74 (1), 39-55.
- Kjær, I. (2017) *Etiology-based dental and craniofacial diagnostics*. Chichester, West Sussex, United Kingdom: Wiley-Blackwell.
- Klaus, H. D. (2017) Paleopathological rigor and differential diagnosis: Case studies involving terminology, description, and diagnostic frameworks for scurvy in skeletal remains. *International Journal of Paleopathology* Vol. 19, 96-110.
- Klimenko, V. I. and Smirnova, I. V. (2014) Risk factors of dental disease in working age population of a large industrial city. *Zaporozhskij Medicinskij Zhurnal* No. 4, 60-62.
- Knecht, R. A. (1995) *The late prehistory of the Alutiiq People: Culture change on the Kodiak Archipelago from 1200-1750 A.D.* Bryn Mawr College. Unpublished PhD Thesis.
- Knecht, R. A. and Davis, R. S. (2008) The Amaknak Bridge site: Cultural change and the Neoglacial in the Eastern Aleutians. *Arctic Anthropology* Vol. 45(1), 61-78.
- Knowles, F. H. S. (1915) *The glenoid fossa in the skull of the Eskimo*. Ottawa Government Printing Bureau.

Kodali, V. (1998) The interface of nutrition and dentition. *The Indian Journal of Pediatrics* Vol. 65(4), 529-539.

Kohli, M. V., Patil, G. B., Kulkarni, N. B., Bagalkot, K., Purohit, Z., Dave, N., Sagari, S. G. and Malaghan, M. (2014) A changing trend in eruption age and pattern of first deciduous tooth: Correlation to feeding pattern. *Journal of Clinical and Diagnostic Research* Vol. 8(3), 199-201.

Koenigswald, G. H. R (1972) Reply to Molar, S. (1972) Tooth wear and culture: A survey of tooth functions among some prehistoric populations. Cited in Molnar, S., Barrett, M. J., Brian, L., Brace, C. L., Brose, D. S., Dewey, J. R., Frisch, J. E., Ganguly, P., Gejvall, N.-G., Greene, D. L., Poirier, F. E., Pourchet, M. J., Rhine, S., Turner, C. G., Van Valen, L., Von Koenigswald, G. H. R., Wilkinson, R. G., Wolpoff, M. H. and Wright, G. A. (1972) Tooth wear and culture: A survey of tooth functions among some prehistoric populations [and comments and reply]. *Current Anthropology* Vol. 13(5), 511-526.

Kolesnikov, L. L., Pashinyan, G. A. and Abramov, S. S. (2001) Anatomical appraisal of the skulls and teeth associated with the family of Tsar Nicolay Romanov. *The Anatomical Record* Vol. 265(1), 15-32.

Kolpan, K. and Bartelink, E. (2019) Dental disease in prehistoric Central California: Sex differences in early period Windmiller populations. *Archaeological and Anthropological Sciences* Vol. 11(6), 3001-3012.

Konigsberg, L. W. and Hens, S. M. (1998) Use of ordinal categorical variables in skeletal assessment of sex from the cranium. *American Journal of Physical Anthropology* Vol. 107(1), 97-112.

Kortlandt, A. (1976) The ecosystem in which the incipient hominines could have evolved. Paper prepared for the symposium "Les plus anciens hominides," IXe Congres International des Sciences Pre-historiques et Protohistoriques, Nice, France. Cited in Puech, P.-F. (1983) Tooth wear, diet, and the artifacts of Java Man. *Current Anthropology* Vol. 24(3), 381-382.

Kovach, I. V., Dychko, Y. N., Bindyuhin, O. Y. and Bunyatyan, H. A. (2013) Potential risk factors in systemic hypoplasia and dental caries at odontogenesis stage. *Medični Perspektivi* Vol. 18(1), 33-37.

Krall, E. A., Wehler, C., Garcia, R. I., Harris, S. S. and Dawson-Hughes, B. (2001) Calcium and vitamin D supplements reduce tooth loss in the elderly. *The American Journal of Medicine* Vol. 111(6), 452-456.

Krawczyk, D., Witkowski, A., Moros, M., Lloyd, J., Kuijpers, A. and Kierzek, A. (2010) Late-Holocene diatom-inferred reconstruction of temperature variations of the West Greenland current from Disko Bugt, central West Greenland. *The Holocene* Vol. 20(5), 659-666.

Kroeber, A. L. (1899) The Eskimo of Smith Sound. *Bulletin of the American Museum of Natural History* Vol. 12, 21.

- Krueger, K. L., Chwa, E., Peterson, A. S., Willman, J. C., Fok, A., Heel, B., Heo, Y., Weston, M. and DeLong, R. (2021) Technical note: Artificial Resynthesis Technology for the experimental formation of dental microwear textures. *American Journal of Physical Anthropology* Vol. 176(4), 703-712.
- Krueger, K. L. (2015) Reconstructing diet and behavior in bioarchaeological groups using incisor microwear texture analysis. *Journal of Archaeological Science: Reports* Vol. 1, 29-37.
- Krueger, K. L. (2014) Contrasting the Ipiutak and Tigara: Evidence from incisor microwear texture analysis. in (eds) Hilton, C. E., Auerbach, B. M. and Cowgill, L. W. *The foragers of Point Hope: The biology and archaeology of humans on the edge of the Alaskan Arctic*. Cambridge: Cambridge University Press. Chapter 5, 99-119.
- Krüger, G., L'Abbé, E., Stull, K. and Kenyhercz, M. (2015) Sexual dimorphism in cranial morphology among modern South Africans. *International Journal of Legal Medicine* Vol. 129(4), 869-875.
- Krutak, L. (2018a) Therapeutic tattooing in the Arctic: Ethnographic, archaeological, and ontological frameworks of analysis. *International Journal of Paleopathology* Vol. 25, 99-109.
- Krutak, L. (2018b) Sacrificing the sacred: Tattooed prehistoric ivory figures of St. Lawrence Island, Alaska. In (eds) Krutak, L. and Deter-Wolf, A. *Ancient ink: The archaeology of tattooing*. Seattle: University of Washington Press. Chapter 18, 262-285.
- Kusaka, S., Hyodo, F., Yumoto, T. and Nakatsukasa, M. (2010) Carbon and nitrogen stable isotope analysis on the diet of Jomon populations from two coastal regions of Japan. *Journal of Archaeological Science* Vol. 37(8), 1968-1977.
- Kustaloglu, O. A., Schultz, A. H., Chaplin, J. H. and Oppenheimer, A. M. (1966) On tool-use and crowded teeth. *Current Anthropology* Vol. 7(3), 355-359.
- Lagan, E. M. and Ehrlich, D. E. (2021) An improved method for measuring molar wear. *American Journal of Physical Anthropology* Vol. 174(4), 832-838.
- Lague, M. R., Collard, N. J., Richmond, B. G. and Wood B. A. (2008) Hominid mandibular corpus shape variation and its utility for recognizing species diversity within fossil Homo. *Journal of Anatomy* Vol. 213(6), 670-685.
- Lahr, M. M. (1995) Patterns of modern human diversification: Implications for Amerindian origins. *American Journal of Physical Anthropology* Vol. 38(S21), 163-198.
- Laine, M. A. (2002) Effect of pregnancy on periodontal and dental health. *Acta Odontologica Scandinavica* Vol. 60(5), 257-264.

- Laine, M. L., Crielaard, W. and Loos, B. G. (2000) Genetic susceptibility to periodontitis. *Periodontology* Vol. 58(1), 37-68.
- Lalueza-Fox, C. (1992) Information obtained from the microscopic examination of cultural striations in human dentition. *International Journal of Osteoarchaeology* Vol. 2(2), 155-169.
- Lalueza-Fox, C. and Pérez-Pérez A. (1994) Cutmarks and post-mortem striations in fossil human teeth. *Human Evolution*, Vol. 9(165-172), 165-172.
- Lalueza Fox, C. and Pérez-Pérez, A. (1993) The diet of the Neanderthal Child Gibraltar 2 (Devil's Tower) through the study of the vestibular striation pattern. *Journal of Human Evolution* Vol. 24(1), 29-41.
- Lalueza, C., Perezperez, A. and Turbon, D. (1996) Dietary inferences through buccal microwear analysis of Middle and Upper Pleistocene human fossils. *American Journal of Physical Anthropology* Vol. 100(3), 367-387.
- Landry, S. D. (2016) *More than making ends meet: Ridge Ruin faunal exploitation and social organization*. Unpublished Ph.D. Thesis. Northern Arizona University.
- Lane, P. J. (2014) Hunter-gatherer-fishers, ethnoarchaeology, and analogical reasoning. In (eds) Cummings, V., Jordan, P., Zvelebil, M. *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Chapter 7, 104-150.
- Lang, N. P. and Bartold, P. M. (2018) Periodontal health. *Journal of Clinical Periodontology* Vol. 45, S9-S16.
- Lapépine, O., Cloitre, A., Caillon, J., Huck, O., Bugueno, I. M., Pilet, P., Sourice, S., Le Tilly, E., Palmer, G., Davideau, J-L., Geoffroy, V., Guicheux, J., Beck-Cormier, S. and Lesclois, P. (2016) Interleukin-33 and RANK-L interplay in the alveolar bone loss associated to periodontitis. *PLoS ONE*, Vol. 11(12), e0168080.
- Larsen, C. S. (2018) Bioarchaeology in perspective: From classifications of the dead to conditions of the living. *American Journal of Physical Anthropology* Vol. 165(4), 865-878.
- Larsen, C. S. (2015) *Bioarchaeology: Interpreting behavior from the human skeleton*. Cambridge: Cambridge University Press. Second Edition.
- Larsen, C. S. (1985) Dental modifications and tool use in the western Great Basin. *American Journal of Physical Anthropology* Vol. 67(4), 393-402.
- Larsen, C. S., Hillson, S., Boz, B., Pilloud, M., Sadvari, J., Agarwal, S., Glencross, B., Beauchesne, P., Pearson, J., Ruff, C., Garofalo, E., Hager, L., Haddow, S. and Knüsel, C. (2015) Bioarchaeology of Neolithic Çatalhöyük: Lives and lifestyles of an early farming society in transition. *Journal of World Prehistory* Vol. 28(1), 27-68.

- Larsen, H. and Rainey, F. G. (1948) *Ipiutak and the Arctic whale hunting culture*. New York.
- Larsson, L. (2013) Tooth-beads, antlers, nuts and fishes. Examples of social bioarchaeology. *Archaeological Dialogues* Vol. 20(2), 148-152.
- La Salle, M. J. (2008) *Beyond lip service: An analysis of labrets and their social context on the Pacific Northwest Coast of British Columbia*. The University of British Columbia. Unpublished Masters' Thesis.
- Laughlin, W. S. (1979) Problems in the physical anthropology of North American Indians, Eskimos and Aleuts. *Arctic Anthropology* Vol. 16(1), 165-177.
- Laughlin, W. S. and Reeder, W. G. (1962a) Rationale for the collaborative investigation of Aleut-Konyag prehistory and ecology. *Arctic Anthropology* Vol. 1(1), 104-108.
- Laughlin, W. S. and Reeder, W. G. (1962b) Revision of Aleutian prehistory. *Science* Vol. 137(3533), 856-857.
- Laughlin, W. S. (1963) Eskimos and Aleuts: Their origins and evolution. *Science* Vol. 142(3593), 633-645.
- Laughlin, W. S., Okladnikov, A. P., Derevyanko, A. P., Harper, A. B. and Atseev, I. V. (1976) Early Siberians from Lake Baikal and Alaskan population affinities. *American Journal of Physical Anthropology* Vol. 45(3), 651-659.
- Lavigne, S. E. and Molto, J. E. (1995) System of measurement of the severity of periodontal disease in past populations. *International Journal of Osteoarchaeology* Vol. 5(3), 265-273.
- Lawler, D. F. (2017) Differential diagnosis in archaeology. *International Journal of Paleopathology* Vol. 19, 119-123.
- Lawrence, J., Stojanowski, C. M., Paul, K. S., Seidel, A. C. and Guatelli-Steinberg, D. (2021) Heterogeneous frailty and the expression of linear enamel hypoplasia in a genealogical population. *American Journal of Physical Anthropology* Vol. 176(4), 638-651.
- Lease, L. R. (2016) Anatomy of individual teeth and tooth classes. In (eds) Irish, J. D. and Scott, G. R. *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 8, 94-107.
- LeCompte, M. D. and Goetz, J. P. (1982) Problems of reliability and validity in ethnographic research. *Review of Educational Research* Vol. 52 (1), 31-60.
- Ledger, P. M., Forbes, V., Masson-MacLean, E. and Knecht, R. A. (2016) Dating and digging stratified archaeology in circumpolar North America: A view from Nunalleq, Southwestern Alaska. *Arctic* Vol. 69(4), 378-390.

- Lee, H., Hong, J. H., Hong, Y., Shin, D. H. and Slepchenko, S. (2019) Caries, antemortem tooth loss and tooth wear observed in indigenous peoples and Russian settlers of 16th to 19th century West Siberia. *Archives of Oral Biology* Vol. 98, 176-181.
- Lee, R. B. and Daly, R. (1999) Introduction: Foragers and others. In (Eds) Lee, R. B. and Daly, R. *The Cambridge encyclopedia of hunters and gatherers*. Cambridge: Cambridge University Press.
- Lee, R. B. and DeVore, I. (1968) *Man the hunter*. Chicago: New York: Aldine
- Le Bras-Goude, G., Herrscher, E. and Vaquer, J. (2013) Funeral practices and foodstuff behaviour: What does eat meat mean? Stable isotope analysis of Middle Neolithic populations in the Languedoc region (France). *Journal of Anthropological Archaeology* Vol. 32(3), 280-287.
- Le Gros Clark, W. E. (1920) On a series of Ancient Eskimo skulls from Greenland. *The Journal of the Royal Anthropological Institute of Great Britain and Ireland* Vol. 50, 281-298.
- Leichter, J. W., Lovegrove, J. and Murray, C. (2003) Elective lip piercing and gingival recession: Case report. *Oral Health* Vol. 93(10), 51-56.
- Leigh, R. W. (1925a) Dental pathology of Indian Tribes of varied environmental and food conditions. *American Journal of Physical Anthropology*, Vol. 8, 179–199.
- Leigh, R. W. (1925b) Dental pathology of the Eskimos. *The Dental Cosmos*. Vol. 67(9), 884-898.
- Legge, S. S. and Hardin, A. M. (2016) The pulp cavity and its contents. In (eds) Irish, J. D. and Scott. G. R., *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 14, 191-203.
- Le Mouel, J.-F. and Le Mouel, M. (2002) Aspects of early Thule culture as seen in the architecture of a site on Victoria Island, Amundsen Gulf area. *Arctic* Vol. 55(2), 167-190.
- Leonard, C., Vashro, L., O'Connell, J. and Henry, A. (2014) Plant microremains in dental calculus and diet breadth. *American Journal of Physical Anthropology* Vol. 153(Suppl 58), 168-168.
- Levin, L. (2007) Alveolar bone loss and gingival recession due to lip and tongue piercing. *New York State Dental Journal* Vol. 73(4), 48-50.
- Levine, V. E. (1953) Studies in physiological anthropology, III. The age of onset of menstruation of the Alaskan Eskimo. *American Journal of Physical Anthropology* Vol. 11(2), 252.

- Lewis, C. J. and Garvin, H. M. (2016) Reliability of the Walker cranial nonmetric method and implications for sex estimation. *Journal of Forensic Sciences* Vol. 61(3), 743-751.
- Li, B. and Ghosh, A. (2017) Near-continuous tremor and low-frequency earthquake activities in the Alaska-Aleutian subduction zone revealed by a mini seismic array. *Geophysical Research Letters* Vol. 44(11), 5427-5435.
- Li, D., Cai, Q., Ma, L., Wang, M., Ma, J., Zhang, W., Pan, Y., Wang, L. and Mittal, B. (2013) Association between MMP-1 g.-1607dupG polymorphism and periodontitis susceptibility: A meta-analysis. *PLoS ONE* Vol. 8(3), e59513.
- Lieverse, A. R. (2011) Health and behavior in Mid-Holocene Cis-Baikal: Biological indicators of adaptation and cultural change. In (eds) Katzenberg, M. A., Schurr, T. G. and Weber, A. W. *Prehistoric hunter-gatherers of the Baikal Region, Siberia: Bioarchaeological studies of past life ways*. Philadelphia: University of Pennsylvania Press.
- Lieverse, A. R. (1999) Diet and the aetiology of dental calculus. *International Journal of Osteoarchaeology* Vol. 9(4), 219-232.
- Lieverse, A. R., Link, D. W., Bazaliiskiy, V. I., Goriunova, O. I. and Weber, A. W. (2007) Dental health indicators of hunter-gatherer adaptation and cultural change in Siberia's Cis-Baikal. *American Journal of Physical Anthropology* Vol. 134(3), 323-339.
- Limbo, J. (2013) The frequency and pattern of dental caries in archaeological populations from Estonia. *Papers on Anthropology* Vol. 22, 121-132.
- Lisiansky, Urey (1814) *A voyage round the world in the years 1803, 4, 5, & 6; performed, by order of His Imperial Majesty Alexander the First, Emperor of Russia, in the ship Neva, by Urey Lisiansky*. London: John Booth.
- Littleton, J. (2018) Hunter-gatherer dental pathology: Do historic accounts of Aboriginal Australians correspond to the archeological record of dental disease? *American Journal of Human Biology* Vol. 30(2), 1-19.
- Littleton, J. (2017) Dental wear and age grading at Roonka, South Australia. *American Journal of Physical Anthropology* Vol. 163(3), 519-530.
- Littleton, J. and Frohlich, B. (1993) Fish-eaters and farmers: Dental pathology in the Arabian Gulf. *American Journal of Physical Anthropology* Vol. 92(4), 427-447.
- Littleton, J., Scott, R., McFarlane, G. and Walshe, K. (2013) Hunter-gatherer variability: Dental wear in South Australia. *American Journal of Physical Anthropology* Vol. 152(2), 273-286.

- Liu, W., Zhang, Q. C., Wu, X. J. and Zhu, H. (2010) Tooth wear and dental pathology of the Bronze-Iron Age people in Xinjiang, Northwest China: Implications for their diet and lifestyle. *HOMO: Journal of Comparative Human Biology* Vol. 61(2), 102-117.
- Liversidge, H. M. (2016) Tooth eruption and timing. In (eds) Irish, J. D. and Scott, G. R., *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 12, 159-171.
- Liversidge, H. M. (2008) Timing of human mandibular third molar formation. *Annals of Human Biology* Vol. 35(3), 294-321.
- Liversidge, H. M. (2005) Dental age revisited. *American Journal of Physical Anthropology* Suppl. 40, 139-139.
- Lobdell, J. E. (1980) *Prehistoric human populations and resource utilization in Kachemak Bay, Gulf of Alaska*. University of Tennessee, Knoxville. Unpublished Ph.D. Thesis.
- Lofaro, E., Kurin, D., Gómez Choque, D. and Krigbaum, J. (2019) Reconstructing diet and mobility using multi-isotopic analysis in Apurimac, Peru (~ AD 880–1260). *Archaeological and Anthropological Sciences* Vol. 11(3), 1089-1105.
- Logan, M. H., Sparks, C. S. and Jantz, R. L. (2003) Cranial modification among 19th Century Osages: Admixture and loss of an ethnic marker. *Plains Anthropologist* Vol. 48(187), 209-224.
- Lombardi-Boccia, G., Aguzzi, A., Cappelloni, M., Di Lullo, G. and Lucarini, M. (2003) Total-diet study: Dietary intakes of macro elements and trace elements in Italy. *British Journal of Nutrition* Vol. 90(6), 1117-1121.
- Long, J. C., Nance, W. E., Waring, P., Burmeister, J. A. and Raney, R. R. (1987) Early onset periodontitis: A comparison and evaluation of two modes of inheritance. *Genetic Epidemiology* Vol. 4(1), 13–24.
- Lopez, B., Pardiñas, A. F., Garcia-Vazquez, E. and Dopico, E. (2012) Socio-cultural factors in dental diseases in the Medieval and early Modern Age of northern Spain. *HOMO - Journal of Comparative Human Biology* Vol. 63(1), 21-42.
- Loring, P. A., Harrison, H. L. and Gerlach, S. C. (2014) Local perceptions of the sustainability of Alaska's highly contested Cook Inlet salmon fisheries. *Society & Natural Resources* Vol. 27(2), 185-199.
- Loring, S. and Prokopec, M. (1994) A most peculiar man. The life and times of Aleš Hrdlička. In (eds) Bray, T. L. and Killion, T. W. *Reckoning with the dead: Larsen Bay repatriation and the Smithsonian Institute*. Washington D.C.: Smithsonian Institute. Chapter 4, 26-42.

- Lorentz, K. O., Lemmers, S. A. M., Chrysostomou, C., Dirks, W., Zaruri, M. R., Foruzanfar, F. and Sajjadi, S. M. S. (2019) Use of dental microstructure to investigate the role of prenatal and early life physiological stress in age at death. *Journal of Archaeological Science* Vol. 104, 85-96.
- Lorkiewicz, W. (2011) Nonalimentary tooth use in the neolithic population of the Lengyel culture in central Poland (4600-4000 BC). *American Journal of Physical Anthropology* Vol. 144(4), 538-551.
- Lösch, S., Moghaddam, N., Grossschmidt, K., Risser, D. U. and Kanz, F. (2014) Stable isotope and trace element studies on gladiators and contemporary Romans from Ephesus (Turkey, 2nd and 3rd Ct. AD) Implications for differences in diet. *PLoS ONE* Vol. 9(10), e110489.
- Lovejoy, C. O. (1985) Dental wear in the Libben population: Its functional pattern and role in the determination of adult skeletal age at death. *American Journal of Physical Anthropology* Vol. 68(1), 47-56.
- Lovejoy, C. O. and Heiple, K. G. (1981) The analysis of fractures in skeletal populations with an example from the Libben site, Ottawa County, Ohio. *American Journal of Physical Anthropology* Vol. 55(4), 529-541.
- Lovejoy, C. O., Meindl, R. S., Pryzbeck, T. R. and Mensforth, R. P. (1985a) Chronological metamorphosis of the auricular surface of the ilium: A new method for the determination of adult skeletal age at death. *American Journal of Physical Anthropology* Vol. 68(1), 15-28.
- Lovejoy, C. O., Meindl, R. S., Mensforth, R. P. and Barton, T. J. (1985b) Multifactorial determination of skeletal age at death: A method and blind tests of its accuracy. *American Journal of Physical Anthropology* Vol. 68(1), 1-14.
- Lovejoy, C. O., Meindl, R. S., Pryzbeck, T. R., Barton, T. S., Heiple, K. G. and Kotting, D. (1977) Paleodemography of the Libben site, Ottawa county, Ohio. *Science* Vol. 198(4314), 291-293.
- Lovell, N. C. and Palichuk, K. E. (2019) Task activity and tooth wear in a woman of ancient Egypt. In (eds) Mant, M. and Holland, A. *Bioarchaeology of marginalized people*. London, United Kingdom: Academic Press. First Edition. Chapter 3, 33-51.
- Lovell, N. C. and Whyte, I. (1999) Patterns of dental enamel defects at ancient Mendes, Egypt. *American Journal of Physical Anthropology* Vol. 110(1), 69-80.
- Lovis, W. A., Urquhart, G. R., Raviele, M. E. and Hart, J. P. (2011) Hardwood ash nixtamalization may lead to false negatives for the presence of maize by depleting bulk $\delta^{13}\text{C}$ in carbonized residues. *Journal of Archaeological Science* Vol. 38(10), 2726-2730.
- Lowenstein, T., translated by Tukummiq (1992) *The things that were said of them: Shaman stories and oral histories of the Tikigaq People as told by Asatchaq*. Berkeley: University of California Press.

- Lozano, M., Jiménez-Brobeil, S. A., Willman, J. C., Sánchez-Barba, L. P., Molina, F. and Rubio, Á. (2021) Argaric craftswomen: Sex-based division of labor in the Bronze Age Southeastern Iberia. *Journal of Archaeological Science*. Vol. 127, 105239.
- Lozano, M., Subirà, M. E., Aparicio, J., Lorenzo, C. and Gómez-Merino, G. (2013) Toothpicking and periodontal disease in a Neanderthal specimen from Cova Foradà site (Valencia, Spain). *PLoS ONE* Vol. 8(10), e76852.
- Lozano, M., Bermúdez de Castro, J. M., Carbonell, E. and Arsuaga, J. L. (2008) Non-masticatory uses of anterior teeth of Sima de los Huesos individuals (Sierra de Atapuerca, Spain). *Journal of Human Evolution* Vol. 55(4), 713-728.
- Lucas, P. W. (2004) *Dental functional morphology: How teeth work*. Cambridge: Cambridge University Press.
- Lucas, P. W. and van Casteren, A. (2014) The wear and tear of teeth. *Medical Principles and Practice*, Vol. 24(1), 3-13.
- Lucas, S., Sevin, A., Passarius, O., Esclassan, R., Crubezy, E. and Grimoud, A. M. (2010) Study of dental caries and periapical lesions in a mediaeval population of the southwest France: Differences in visual and radiographic inspections. *HOMO - Journal of Comparative Human Biology* Vol. 61(5), 359-372.
- Lukacs, J. R. and Pastor, R. F. (1988) Activity-induced patterns of dental abrasion in prehistoric Pakistan: Evidence from Mehrgarh and Harappa. *American Journal of Physical Anthropology* Vol. 76(3), 377-398.
- Lucier, C. V., VanStone, J. W. and Keats, D. (1971) Medical practices and human anatomical knowledge among the Noatak Eskimos. *Ethnology* Vol. 10(3), 251-264.
- Lubell, D., Jackes, M., Schwarcz, H., Knyf, M. and Meiklejohn, C. (1994) The Mesolithic-Neolithic transition in Portugal: Isotopic and dental evidence of diet. *Journal of Archaeological Science* Vol. 21(2), 201-216.
- Ludbrook, J. (2011) Is there still a place for Pearson's chi-squared test and Fisher's exact test in surgical research. *ANZ Journal of Surgery* Vol. 81(12), 923-926.
- Luder, H. U. (2015) Malformations of the tooth root in humans. *Frontiers in Physiology* Vol.6, 307.
- Lukacs, J. R. and Pastor, R. F. (1988) Activity-induced patterns of dental abrasion in prehistoric Pakistan: Evidence from Mehrgarh and Harappa. *American Journal of Physical Anthropology* Vol. 76(3), 377-398.
- Lukacs, J. R. (1996) Sex differences in dental caries rates with the origin of agriculture in South Asia. *Current Anthropology*. Vol. 37(1), 147-153.

- Lukacs, J. R. (2007) Dental trauma and antemortem tooth loss in prehistoric Canary Islanders: Prevalence and contributing factors. *International Journal of Osteoarchaeology* Vol. 17(2), 157-173.
- Lukacs, J. R. and Largaespada, L. L. (2006) Explaining sex differences in dental caries prevalence: Saliva, hormones, and "life-history" etiologies. *American Journal of Human Biology* Vol.18 (4), 540-555.
- Łukasik, S. and Krenz-Niedbala, M. (2014) Age of linear enamel hypoplasia formation based on Massler and colleagues' and Reid and Dean's standards in a Polish sample dated to 13th–18th century CE. *HOMO - Journal of Comparative Human Biology*, Vol. 65, 296-310.
- Lyman, R. L. (2015) North American paleoindian eyed bone needles: Morphometrics, sewing, and site structure. *American Antiquity* Vol. 80(1), 146-160.
- Lynnerup, N. (2015) The Thule Inuit mummies from Greenland. *Anatomical Record*, Vol. 298(6), 1001-1006.
- Lynnerup, N. and Nørby, S. (2004) The Greenland Norse: Bones, graves, computers, and DNA. *Polar Record* Vol. 40(2), 107-111.
- Lyon, G. (1825) *A brief narrative of an unsuccessful attempt to reach Repulse Bay through Sir Thomas Roe's "Welcome."* London: J. Murray.
- M'Keever, T. and Fréminville, C-P de La Poix. (2014) *A voyage to Hudson's Bay during the Summer of 1812: containing a particular account of the icebergs and other phenomena which present themselves in those regions; Also, a description of the Esquimeaux and North American Indians.* Cambridge: Cambridge University Press.
- Maat, G., Lonnee, H. A. and Noordhuizen, H. J. W. (1990) Analysis of human skeletons from the Hellenistic period, buried at a ruined Bronze age building on Failaka, Kuwait. *MOM Éditions* Vol. 18(1), 85-102.
- Maat, G. J. R. and Van der Velde, E. A. (1987) The caries-attribution competition. *International journal of Anthropology* Vol. 2(4), 281-292.
- Macchiarelli, R. (1989) Prehistoric "fish-eaters" along the eastern Arabian coasts: Dental variation, morphology, and oral health in the Ra's al-Hamra community (Qurum, sultanate of Oman, 5th-4th millennia BC). *American Journal of Physical Anthropology* Vol. 78(4), 575-594.
- Macchiarelli, R., Bondioli, L., Caropreso, S., Mazurier, A., Merceron, G. and Piana, E. L. (2006) The oldest human remains from the Beagle Channel region, Tierra del Fuego. *International Journal of Osteoarchaeology* Vol. 16(4), 328-337.

- Mackie, Q., Fedje, D., McLaren, D., Smith, N. and McKechnie, I. (2011) Early environments and archaeology of Coastal British Columbia. In (eds) Bicho, N. F., Davis, L. G. and Haws, J. *Trekking the shore: Changing coastlines and the antiquity of coastal settlement*. New York, NY: Springer New York. Chapter 3, 51-103.
- MacMillan, D. B. (1918) *Four years in the White North. Narrative of the Crocker Land expedition, 1913-17, in the Queen Elizabeth Islands*. Berkeley: University of California: Harper & Brothers.
- Madimenos, F. (2005) *Dental evidence for division of labor among the prehistoric Ipiutak and Tigara of Point Hope, Alaska*. Unpublished MA dissertation. Louisiana State University.
- Magnússon, T. E. (1979) The effect of premature loss of deciduous teeth on the spacing of the permanent dentition. *European Journal of Orthodontics* Vol. 1(4), 243-249.
- Maharani, D. A., Zhang, S., Gao, S. S., Chu, C.-H. and Rahardjo, A. (2019) Dental caries and the erosive tooth wear status of 12-year-old children in Jakarta, Indonesia. *International Journal of Environmental Research and Public Health* Vol. 16(16), 2994.
- Mehta, S. B., Loomans, B. A. C., Banerji, S., Bronkhorst, E. M. and Bartlett, D. (2020) An investigation into the impact of tooth wear on the oral health related quality of life amongst adult dental patients in the United Kingdom, Malta and Australia. *Journal of Dentistry* Vol. 99, 103409.
- Mahoney, P. (2015) Dental fast track: Prenatal enamel growth, incisor eruption, and weaning in human infants. *American Journal of Physical Anthropology* Vol. 156(3), 407-421.
- Mahoney, P., Schmidt, C. W., Deter, C., Remy, A., Slavin, P., Johns, S. E., Miskiewicz, J. J. and Nystrom, P. (2016) Deciduous enamel 3D microwear texture analysis as an indicator of childhood diet in Medieval Canterbury, England. *Journal of Archaeological Science* Vol. 66, 128-136.
- Malainey, M., Álvarez, M., Briz i Godino, I., Zurro, D., Verdún i Castelló, E., Figol, T. (2015) The use of shells as tools by hunters-gatherers in the Beagle Channel (Tierra del Fuego, South America): An ethnoarchaeological experiment. *Archaeological and Anthropological Sciences* Vol. 7(2), 187-200.
- Manifold, B. M. (2013) Differential preservation of children's bones and teeth recovered from early medieval cemeteries: Possible influences for the forensic recovery of non-adult skeletal remains. *Anthropological Review* Vol. 76(1), 23-49.
- Mant, M. and Roberts, C. (2015) Diet and dental caries in post-Medieval London. *International Journal of Historical Archaeology* Vol. 19(1), 188-207.

- Marazita, M. L., Burmeister, J. A., Gunsolley, J. C., Koertge, T. E., Lake, K. and Schenkein, H. A. (1994) Evidence for autosomal dominant inheritance and race-specific heterogeneity in early-onset periodontitis. *Journal of Periodontology* Vol. 65(6), 623–630.
- Margvelashvili, A., Zollikofer, C. P. E., Lordkipanidze, D., Tafforeau, P. and Ponce De León, M. S. (2016) Comparative analysis of dentognathic pathologies in the Dmanisi mandibles. *American Journal of Physical Anthropology* Vol. 160(2), 229-253.
- Marks, T. N., Maddux, S. D., Butaric, L. N. and Franciscus, R. G. (2019) Climatic adaptation in human inferior nasal turbinate morphology: Evidence from Arctic and equatorial populations. *American Journal of Physical Anthropology* Vol. 169(3), 498-512.
- Marsh, G. H. and Laughlin, W. S. (1956) Human anatomical knowledge among the Aleutian Islanders. *Southwestern Journal of Anthropology* Vol. 12(1), 38-78.
- Martín-Francés, L., Martínón-Torres, M., Lacasa-Marquina, E., Fernández-Colón, P., Gracia-Téllez, A. and Bermúdez de Castro, J. M. (2014) Palaeopathology of the Pleistocene specimen D2600 from Dmanisi (Republic of Georgia). *Comptes rendus – Palevol* Vol. 13(3), 189-203.
- Maschner, H. D. G. (2016) Archaeology of the Eastern Aleut region. In (eds) Friesen, T. M. and Mason, O. K. *The Oxford handbook of the prehistoric Arctic*. New York, NY: Oxford University Press. Chapter 13, 323-348.
- Maschner, H. D. G. and Reedy-Maschner, K. L. (2002) Forward. In (eds) Jochelson, W. *Archaeological investigations in the Aleutian Islands*. Washington: Carnegie Institution of Washington. Chapter Forward, xi-xvii.
- Mason, S. L. R. and Hather, J. G. (2002) *Hunter-gatherer archaeobotany: Perspectives from the northern temperate zone*. London: Institute of Archaeology, University College London.
- Mason, O. K. (2014) The Ipiutak cult of shamans and its warrior protectors: An archaeological context. In (eds) Hilton, C. E., Auerbach, B. M. and Cowgill, L. W. *The foragers of Point Hope: The biology and archaeology of humans on the edge of the Alaskan Arctic*. Cambridge: Cambridge University Press. Chapter 3, 35-70.
- Mason, O. K. (1998) The Contest between the Ipiutak, Old Bering Sea, and Birnirk polities and the origin of whaling during the First Millennium A.D. along Bering Strait. *Journal of Anthropological Archaeology* Vol. 17(3), 240-325.
- Matee, M., Hof, M., Maselle, S., Mikx, F., van Palenstein Helderman, W. (1994) Nursing caries, linear hypoplasia, and nursing and weaning habits in Tanzanian infants. *Community Dentistry and Oral Epidemiology* Vol. 22, 289-293.

- Mathiassen, T. (1930) An old Eskimo culture in West Greenland: Report of an archeological expedition to Upernivik. *Geographical Review* Vol. 20(4), 605-614.
- Mathiassen, T. (1927a) Archaeology of the Central Eskimos I: Descriptive part. Report of the Fifth Thule Expedition, 1921-24. *Gyldendalske Boghan del, Nordisk Forlag, Copenhagen* Vol. 4(1).
- Matsumura, H. and Hudson, M. J. (2005) Dental perspectives on the population history of Southeast Asia. *American Journal of Physical Anthropology* Vol. 127(2), 182-209.
- Mayhall, J. T., Belier, P. L. and Mayhall, M. F. (1978) Canadian Eskimo permanent tooth emergence timing. *American Journal of Physical Anthropology* Vol. 49(2), 211-216.
- Mayhall, J. T. and Kanazawa, E. (1989) Three-dimensional analysis of the maxillary first molar crowns of Canadian Inuit. *American Journal of Physical Anthropology* Vol. 78(1), 73-78.
- Mayhall, J. T. (1977) Cultural and environmental influences on the Eskimo dentition. In (eds) Dahlberg, A. A. and Graber, T. M. *Orofacial growth and development*. Berlin; Boston: De Gruyter Mouton. Chapter 16, 215-228.
- Mays, S. (2016) A study of the potential of deciduous incisor wear as an indicator of weaning using a human skeletal population. *International Journal of Osteoarchaeology* Vol. 26(4), 725-731.
- Mays, S. (2014) Resorption of mandibular alveolar bone following loss of molar teeth and its relationship to age at death in a human skeletal population. *American Journal of Physical Anthropology* Vol. 153(4), 643-652.
- Mays, S., la Rua, C. and Molleson, T. (1995) Molar crown height as a means of evaluating existing dental wear scales for estimating age at death in human skeletal remains. *Journal of Archaeological Science* Vol. 22(5), 659-670.
- McCartney, A. P. (1975) Maritime Adaptations in Cold Archipelagos. An analysis of environment and culture in the Aleutian and other island chains. In (eds) Fitzhugh, W. W. *Prehistoric maritime adaptations of the circumpolar zone*. The Hague: Mouton. Chapter 18, 281-338.
- McCraw, K. (2014) *Bone preservation in an archaeological burial assemblage: The effects of time, soil pH, age, and sex*. Boston University. Unpublished Master's Thesis.
- McEuen, C. S. (1938) An examination of the mouths of Eskimos, in the Canadian Eastern Arctic. *Canadian Medical Association Journal* Vol. 38(4), 374-377.
- McFarlane, G., Floyd, B., Smith, C. and Mahoney, P. (2021) Technical note: Estimating original crown height in worn mandibular canines using aspects of dentin morphology. *American Journal of Physical Anthropology* Vol. 176 (4), 692-702.

- McGhee, R. (1979) *Palaeoeskimo occupations at Port Refuge, High Arctic Canada*. University of Ottawa Press.
- McGhee, R., Burch., E. S., Csonka, Y., Dumond, D. E., Gullov, H. C., Rowley, S., Schledermann, P., Smith, E. A., Stenton, D. R., Wenzel, G. W. and Workman, W. B. (1994) Disease and the development of Inuit culture [and comments and reply]. *Current Anthropology* Vol. 35(5), 565-594.
- McHugh, W. (1962) Archaeological investigations on Kodiak Island. *Arctic Anthropology* Vol. 1(1), 113-115.
- McIlvaine, B. K., Schepartz, L. A., Larsen, C. S. and Sciulli, P. W. (2014) Evidence for long-term migration on the Balkan Peninsula using dental and cranial nonmetric data: Early interaction between Corinth (Greece) and its colony at Apollonia (Albania). *American Journal of Physical Anthropology* Vol. 153(2), 236-248.
- McKee, J. K. and Molnar, S. (1988) Measurements of tooth wear among Australian aborigines: II. Intrapopulation variation in patterns of dental attrition. *American Journal of Physical Anthropology* Vol. 76(1), 125-136.
- McMillan, A. D., McKechnie, I., St. Claire, D. E and Gay Frederick, S. (2008) Exploring variability in maritime resource use on the Northwest Coast: A case study from Barkley Sound, Western Vancouver Island. *Canadian Journal of Archaeology* Vol. 32(2), 214-238.
- McMullan, R. E. and Kvam, E. (1990) Investigation of premolar rotation in a group of 15-year-old Norwegian children. *European Journal of Orthodontics* Vol. 12(3), 311-315.
- Meigs, J. A. (1856) Catalogue of human vrania, in the vollection of the Academy of Natural Sciences of Philadelphia. *Proceedings of the Academy of Natural Sciences of Philadelphia* Vol. 8, 1-112.
- Meijer, D. J. W. (2003) Some thoughts on burial interpretation. *Altorientalische Forschungen* Vol. 30(1), 51-62.
- Meiklejohn, C., Wyman, J. M. and Schentag, C. T. (1992) Caries and attrition: Dependent or independent variable? *International Journal of Anthropology* Vol. 7(1), 17-22.
- Meindl, R. S. and Lovejoy, C. O. (1985) Ectocranial suture closure: A revised method for the determination of skeletal age at death based on the lateral-anterior sutures. *American Journal of Physical Anthropology* Vol. 68(1), 57-66.
- Meindl, R. S., Lovejoy, C. O. and Mensforth, R. P. (1983) Skeletal age at death: Accuracy of determination and implications for human demography. *Human Biology* Vol. 55(1), 73-87.
- Meehan, B. and White, N. (1990) *Hunter-gatherer demography: Past and present. International conference on hunting and gathering societies (5th: 1988: Darwin, N.T.)*. Sydney: University of Sydney.

- Meng, Y., Zhang, H-Q., Pan, F., He, Z-D., Shao, J-L. and Ding, Y. (2011) Prevalence of dental caries and tooth wear in a Neolithic population (6700–5600 years BP) from northern China. *Archives of Oral Biology* Vol. 56(11), 1424-1435.
- Mennella, J., Reiter, A., Pohlig, R., Stallings, V. and Trabulsi, J. (2019) Timing and patterning of primary teeth eruption as a biomarker for early rapid weight gain (P11-080-19). *Current Developments in Nutrition* Vol. 3(Supplement 1), 1052.
- Mensforth, R. P. and Lovejoy, C. O. (1985) Anatomical, physiological, and epidemiological correlates of the aging process: A confirmation of multifactorial age determination in the Libben skeletal population. *American Journal of Physical Anthropology* Vol. 68(1), 87-106.
- Merbs, C. F. (2018) The discovery and rapid demise of the Sadlermiut. In (eds) Temple, D. H. and Stojanowski, C. M. *Hunter-Gatherer adaptation and resilience: A bioarchaeological perspective*. Cambridge: Cambridge University Press. Chapter 13, 302-327.
- Merbs, C. F. (1968) Anterior tooth loss in Arctic populations. *Southwestern Journal of Anthropology* Vol. 24(1), 20-32.
- Merceron, G., Blondel, C., De Bonis, L., Koufos, G. D. and Viriot, L. (2005) A new method of dental microwear analysis: Application to extant primates and *Ouranopithecus macedoniensis* (Late Miocene of Greece). *PALAIOS* Vol. 20(6), 551-561.
- Merrill, R. G. (1964) Occlusal anomalous tubercles on premolars of Alaskan Eskimos and Indians. *Oral Surgery, Oral Medicine, and Oral Pathology* Vol. 17, 484-96.
- Mehta, S. B., Loomans, B. A. C., Banerji, S., Bronkhorst, E. M. and Bartlett, D. (2020) An investigation into the impact of tooth wear on the oral health related quality of life amongst adult dental patients in the United Kingdom, Malta and Australia. *Journal of Dentistry* Vol. 99, 103409.
- Meyer, C. (2003) Osteological evidence for the Battles of Zürich, 1799: A glimpse into soldiery of the past. *International Journal of Osteoarchaeology* Vol. 13(4), 252-257.
- Michael, D. E., Iliadis, E. and Manolis, S. K. (2017) Using dental and activity indicators in order to explore possible sex differences in an adult rural medieval population from Thebes (Greece). *Anthropological Review* Vol. 80(4), 427-447.
- Mickleburgh, H. L. (2007) *Teeth tell tales: Dental wear as evidence for cultural practices at Anse à la Gourde and Tutu*. Leiden, The Netherlands: Sidestone Press.

- Miles, A. E. W. (2001) The Miles method of assessing age from tooth wear revisited. *Journal of Archaeological Science* Vol. 28(9), 973-982.
- Miles, A. E. W. (1962) Assessment of the ages of a population of Anglo-Saxons from their dentitions. *Proceedings of the Royal Society of Medicine* Vol. 55(10), 881-886.
- Miley, D. D., Baumgartner, M. H., Cheverud, J. M., Roseman, C. C., Rogers, J., McLeod, D. E., Reyes, E. and Hildebolt, C. F. (2011) Heritability of alveolar bone loss from periodontal disease in a baboon population: A pilot study. *Journal of Periodontology* Vol. 82(4), 575-580.
- Miley, D. D., Garcia, M. N., Hildebolt, C. F. Shannon, W. D., Couture, R. A., Anderson Spearie, C. L., Dixon, D. A., Langenwarter, E. M., Mueller, C. and Civitelli, R. (2009) Crosssectional study of vitamin D and calcium supplementation effects on chronic periodontitis. *Journal of Periodontology* Vol. 80(9), 1433–1439.
- Millen, A. E. (2014) Adequate vitamin D status may prevent subsequent tooth loss. *The Journal of Evidence-Based Dental Practice* Vol. 14(4), 197-199.
- Millen, A. E., Hovey, K. M., Lamonte, M. J., Swanson, M., Andrews, C. A., Kluczynski, M. A., Genco, R. J. and Wactawski-Wende, J. (2013) Plasma 25-Hydroxyvitamin D concentrations and periodontal disease in postmenopausal women. *Journal of Periodontology* Vol. 84(9), 1243-1256.
- Miller, J. P. and German, R. Z. (1999) Protein malnutrition affects the growth trajectories of the craniofacial skeleton in rats. *The Journal of Nutrition* Vol. 129(11), 2061-2070.
- Miller, M. J., Bernstein, S., Colaiacovo, S. L., Nicolay, O. and Cisneros, G. J. (2016) Demineralized white spot lesions: An unmet challenge for orthodontists. *Seminars in Orthodontics* Vol. 22(3), 193-204.
- Miller, W. D. (1891) The human mouth as a focus of infection. *Dental Cosmos* Vol. 33(9), 689-706.
- Milner, G. R. and Larsen, C. S. (1991) Teeth as artifacts of human behavior: Intentional mutilation and accidental modification. In (eds) Kelley, M. A. and Larsen, C. S. *Advances in dental anthropology*. New York; Chichester: Wiley-Liss. Chapter 20, p.357-378.
- Minozzi, S., Manzi, G., Ricci, F., Di Lernia, S. and Borgognini Tarli, S. M. (2003) Nonalimentary tooth use in prehistory: An example from early Holocene in Central Sahara (Uan Muhuggiag, Tadrart Acacus, Libya. *American Journal of Physical Anthropology* Vol. 120(3), 225-232.
- Miszkievicz, J. J. (2015) Linear enamel hypoplasia and age-at-death at Medieval (11th–16th Centuries) St. Gregory's Priory and cemetery, Canterbury, UK. *International Journal of Osteoarchaeology* Vol. 25(1), 79-87.
- Mitchell, P. D. (2017) Improving the use of historical written sources in paleopathology. *International Journal of Paleopathology* Vol. 19, 88-95.

- Mithen, S. J. (2001) *Hunter-gatherer landscape archaeology: The Southern Hebrides Mesolithic project, 1988-1998*. Cambridge: McDonald Institute for Archaeological Research.
- Moggi-Cecchi, J., Pacciani, E. and Pinto-Cisternas, J. (1994) Enamel hypoplasia and age at weaning in 19th-century Florence, Italy. *American Journal of Physical Anthropology* Vol. 93(3), 299-306.
- Molleson, T. (2007) A method for the study of activity related skeletal morphologies. *Bioarchaeology of the Near East* Vol. 1, 3-55.
- Molnar, P. (2011) Extramasticatory dental wear reflecting habitual behavior and health in past populations. *Clinical Oral Investigations* Vol. 15(5), 681-689.
- Molnar, S., Barrett, M. J., Brian, L., Brace, C. L., Brose, D. S., Dewey, J. R., Frisch, J. E., Ganguly, P., Gejvall, N.-G., Greene, D. L., Poirier, F. E., Pourchet, M. J., Rhine, S., Turner, C. G., Van Valen, L., Von Koenigswald, G. H. R., Wilkinson, R. G., Wolpoff, M. H. and Wright, G. A. (1972) Tooth wear and culture: A survey of tooth functions among some prehistoric populations [and comments and reply]. *Current Anthropology* Vol. 13(5), 511-526.
- Molnar, S. (1971) Human tooth wear, tooth function and cultural variability. *American Journal of Physical Anthropology* Vol. 34(2), 175-189.
- Molnar, S. (1968) Experimental studies in human tooth wear: II. *American Journal of Physical Anthropology* Vol. 28(3), 361-368.
- Monks, G. G. (2006) The fauna from Ma'acoah (DfSi-5), Vancouver Island, British Columbia: An interpretive summary. *Canadian Journal of Archaeology* Vol. 30(2), 272-301.
- Moore, J. and Koon, H. E. C. (2017) Basilar portion porosity: A pathological lesion possibly associated with infantile scurvy. *International Journal of Paleopathology* Vol.18, 92-97.
- Moorrees, C. F. A. (1957) *The Aleut dentition. A correlative study of dental characteristics in an Eskimoid People*. Cambridge MA: Harvard University Press.
- Morehouse, K. B. (1981) *Alaska Native diet and nutrition: An ethnohistorical view*. Unpublished Master's thesis. University of Alaska.
- Moreno-Mayar, J. A., Potter, B. A., Vinner, L., Steinrücken, M., Rasmussen, S., Terhorst, J., Kamm, J. A., Albrechtsen, A., Malaspinas, A.-S., Sikora, M., Reuther, J. D., Irish, J. D., Malhi, R. S., Orlando, L., Song, Y. S., Nielsen, R., Meltzer, D. J. and Willerslev, E. (2018) Terminal Pleistocene Alaskan genome reveals first founding population of Native Americans. *Nature* Vol. 553(7687), 203-207.

- Morgan, C., Neme, G., Sugrañes, N., Salgan, L., Gil, A. F., Otaola, C., Giardina, M. and Llano, C. (2017) Late Prehistoric high-altitude hunter-gatherer residential occupations in the Argentine Southern Andes. *Journal of Field Archaeology* Vol. 42(3), 214-227.
- Morrison, D. A. (1987) Thule and historic Copper use in the Copper Inuit area. *American Antiquity* Vol. 52(1), 3-12.
- Morton, S. M. B. (2006) Maternal nutrition and fetal growth and development. In (eds) Gluckman, P. D. and Hanson, M. A. *Developmental origins of health and disease*. Cambridge: Cambridge University Press. Chapter 8, 98-129.
- Moss, M. L. (1999) George Catlin among the Nayas: Understanding the practice of labret wearing on the Northwest Coast. *Ethnohistory* Vol. 46(1), 31-65.
- Moye, Z. D., Zeng, L. and Burne, R. A. (2014) Fueling the caries process: Carbohydrate metabolism and gene regulation by *Streptococcus mutans*. *Journal of Oral Microbiology* Vol. 6(1), 1-15.
- Moynihan, P. (2005) The role of diet and nutrition in the etiology and prevention of oral diseases. *World Health Organization. Bulletin of the World Health Organization* Vol. 83(9), 694-699.
- Möbjer, T. (1999) New adaptive strategies in the Saqqaq culture of Greenland, c. 1600-1400 BC. *World Archaeology* Vol. 30(3), 452-465.
- Mueller-Wille, L. and Barr, W. (2000) *Franz Boas among the Inuit of Baffin Island, 1883-1884: Journals and letters*. Toronto: University of Toronto Press.
- Mulhern, D. M. and Jones, E. B. (2005) Test of revised method of age estimation from the auricular surface of the ilium. *American Journal of Physical Anthropology* Vol. 126(1), 61-65.
- Muller, D. and Perizonius, W. R. K. (1980) The scoring of defects of the alveolar process in human crania. *Journal of Human Evolution* Vol. 9(2), 113-116.
- Mundee, M. M. (2010) *Exploring diet and society in medieval Spain: new approaches using stable isotope analysis*. Unpublished Ph.D. Thesis. Durham University.
- Muñoz, A., Maestro, N., Benito, M., Sánchez, J. A., Márquez-Grant, N., Trejo, D. and Ríos, L. (2018) Sex and age at death estimation from the sternal end of the fourth rib. Does Íscan's method really work? *Legal Medicine* Vol. 31, 24-29.
- Murdoch, J. (1892) *Ethnological results of the Point Barrow expedition. Ninth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution, 1887-1888*. Government Printing Office, Washington: Project Gutenberg.

- Murdock, G. P. (1967) Ethnographic atlas: A summary. *Ethnology* Vol. 6(2), 109-236.
- Murphy, T. (1959a) The changing pattern of dentine exposure in human tooth attrition. *American Journal of Physical Anthropology* Vol. 17(3), 167-178.
- Murphy, T. (1959b) Gradients of dentine exposure in human molar tooth attrition. *American Journal of Physical Anthropology* Vol. 17(3), 179-186.
- Murray, K. A. and Murray T. (1991) A test of the auricular surface aging technique. *Journal of Forensic Science* Vol. 36(4), 1162-1169.
- Naaman, R., El-Housseiny, A. A. and Alamoudi, N. (2017) The use of pit and fissure sealants - A literature review. *Dentistry Journal* Vol. 5(4), 34-53.
- Nanci, A. (2008) *Ten Cate's oral histology: Development, structure, and function*. St. Louis, Mo.: Mosby 7th ed.
- Nansen, F. (1911) *In northern mists: Arctic exploration in early times*. London: W. Heinemann
- Nansen, F. (1893) *Eskimo Life*. London: Longmans, Green, and Co. Second Edition. Translated by Archer, W.
- Nature (1935) Explorations in Ellesmere Island. *Nature* Vol. 136(3447), 828-828.
- Naveen Kumar, P., Bhate, P., Rai, R. and Mohammadi, S. (2016) Enamel hypoplasia and dental caries. *Annals of Tropical Medicine and Public Health* Vol. 9(2), 90-91.
- Nair, P. N. R. (2004) Pathogenesis of apical periodontitis and the causes of endodontic failures. *Critical Reviews in Oral Biology and Medicine* Vol. 15(6), 348–381.
- Naveen Kumar, P., Bhate, P., Rai, R. and Mohammadi, S. (2016) Enamel hypoplasia and dental caries. *Annals of Tropical Medicine and Public Health* Vol.9 (2), 90-91.
- Navia, J. M. (1994) Carbohydrates and dental health. *American Journal of Clinical Nutrition* Vol. 59(3), 719S-727S.
- Nelson, E. W. (1900) *An Eskimo about Bering Strait*. Washington. Smithsonian Institute.
- Nelson, G. C. (2016) A Host of Other Dental Diseases and Disorders. In (eds) Irish, J. D. and Scott, G. R. *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons, Chapter 28, 465-483.
- Nelson, G. C. (1992) Maxillary canine/third premolar transposition in a prehistoric population from Santa Cruz Island, California. *American Journal of Physical Anthropology* Vol. 88(2), 135-144.

- Nelson, G. C., Lukacs, J. R. and Yule, P. (1999) Dates, caries, and early tooth loss during the Iron Age of Oman. *American Journal of Physical Anthropology* Vol. 108(3), 333-343.
- Nelson, S. J. and Ash, M. (2009) Wheeler's dental anatomy, physiology and occlusion. Saunders. Ninth edition.
- Newman, H. N. and Levers, B. G. H. (1979) Tooth eruption and function in an early Anglo-Saxon population. *Journal of the Royal Society of Medicine* Vol. 72(5), 341-350.
- Newman, J. (1995) How breast milk protects newborns. *Scientific American* Vol. 273(6), 76-79.
- Nicopoulou-Karayianni, K., Tzoutzoukos, P., Mitsea, A., Karayiannis, A., Tsiklakis, K., Jacobs, R., Lindh, C., Van Der Stelt, P., Allen, P., Graham, J., Horner, K., Devlin, H., Pavitt, S. and Yuan, J. (2009) Tooth loss and osteoporosis: The osteodent study. *Journal of Clinical Periodontology* Vol. 36(3), 190-197.
- Niinimäki, S., Niskanen, M., Niinimäki, J., Nieminen, M., Tuukkanen, J. and Junno, J.-A. (2013) Modeling skeletal traits and functions of the upper body: Comparing archaeological and anthropological material. *Journal of Anthropological Archaeology* Vol. 32(3), 347-351.
- Nikita, E. (2017) *Osteoarchaeology: A guide to the macroscopic study of human skeletal remains*. London, United Kingdom: Academic Press.
- Nikita, E. (2014) Age-associated Variation and Sexual Dimorphism in Adult Cranial Morphology: Implications in Anthropological Studies. *International Journal of Osteoarchaeology* Vol.24 (5), p.557-569.
- Nimigean, V. R., Nimigean, V., Bencze, M. A., Dimcevic-Poesina, N., Cergan, R. and Moraru, S. (2009) Alveolar bone dehiscences and fenestrations: an anatomical study and review. *Romanian Journal of Morphology and Embryology* Vol. 50, 391-397.
- NOAA (2019) Office of Coast Survey Historical Map & Chart Collection <https://historicalcharts.noaa.gov> Last Accessed 09/09/2019.
- Norman, L. E. Y., Friesen, T. M., Alix, C., O'Rourke, M. J. E. and Mason, O. K. (2017) An early Inupiaq occupation: Observations on a Thule house from Cape Espenberg, Alaska. *Open Archaeology* Vol.3 (1), 17-48.
- Novak, M. (2015) Dental health and diet in early medieval Ireland. *Archives of Oral Biology* Vol. 60(9), 1299-1310.
- Nuger, R. L. (2003) Obstetrics and pelvic dimensions in prehistoric Inuits. *American Journal of Physical Anthropology*, Suppl. 36, 160.

- Nurse, G. T. and Jenkins, T. (1977) *Health and the hunter-gatherer: Biomedical studies on the hunting and gathering populations of Southern Africa*. Basel; New York: S. Karger.
- Nuttall, M. (2004) *Encyclopedia of the Arctic*. New York: London: Routledge.
- Nuttall, M. and Callaghan, T. V. (2000) Introduction. In (eds) Nuttall, M. and Callaghan, T. V. *The Arctic. Environment, people, policy*. Introduction, xxv-xxxvii. Harwood: Amsterdam: The Netherlands: Routledge.
- Odell, G. H. (1996) *Stone tools and mobility in the Illinois Valley: From hunter-gatherer camps to agricultural villages*. Ann Arbor, Mich.: International Monographs in Prehistory.
- Oelze, V. M., Koch, J. K., Kupke, K., Nehlich, O., Zäuner, S., Wahl, J., Weise, S. M., Rieckhoff, S., Richards, M. P. (2012) Multi-isotopic analysis reveals individual mobility and diet at the early Iron Age monumental tumulus of Magdalenenberg, Germany. *American Journal of Physical Anthropology* Vol. 148(3), 406-421.
- Oetteking, B. (1945a) Skeletal remains from Prince William Sound, Alaska. *American Journal of Physical Anthropology* Vol. 3(1), 57-96.
- Oetteking, B. (1945b) Skeletal remains from Prince William Sound, Alaska. *American Journal of Physical Anthropology* Vol. 3(2), 177-205.
- Oetteking, B. (1945c) Skeletal remains from Prince William Sound, Alaska. *American Journal of Physical Anthropology* Vol. 3(3), 277-311.
- Oetteking, B. (1930) *Craniology of the North Pacific coast*. New York: The American Museum of Natural History.
- Ogden, A. (2008) Advances in the palaeopathology of teeth and jaws. In (eds) Pinhasi, R. and Mays, S. *Advances in human palaeopathology*. Chichester, England; Hoboken, NJ: John Wiley & Sons. Chapter 13, 283-307.
- Olson, R. L. (1940) The social organization of the Haisla of British Columbia. *University of California Anthropological Records* Vol. 2(5): 169-200.
- Oosten, J. G. (1986) Male and female in Inuit Shamanism. *Études/Inuit/Studies* Vol. 10(1/2), 115-131.
- Oparin, D. (2012) The commemoration of the dead in contemporary Asiatic Yupik ritual space. *Études/Inuit/Studies* Vol. 36(2), 187-207.
- Oppenheimer (1964) Tool use and crowded teeth in Australopithecinae. *Current Anthropology*, Vol. 5(5), 419-421.

- O'Rourke, M. J. E. (2017) Archaeological site vulnerability modelling: The influence of high impact storm events on models of shoreline erosion in the Western Canadian Arctic. *Open Archaeology* Vol. 3(1), 1-16.
- Originating Group (2017) Periodontal diseases of children and adolescents. *Pediatric Dentistry* Vol. 39(6), 431-439.
- Orquera, L. A. and Piana, E. L. (2009) Sea Nomads of the Beagle Channel in Southernmost South America: Over six thousand years of coastal adaptation and stability. *The Journal of Island and Coastal Archaeology* Vol. 4(1), 61-81.
- Orquera, L. A., Legoupil, D. and Piana, E. L. (2011) Littoral adaptation at the southern end of South America. *Quaternary International* Vol. 239(1-2), 61-69.
- Ortiz, F. (1995) *Cuban counterpoint. Tobacco and sugar*. Durham: Duke University Press. Translated by De Onís, Harriet.
- Osgood, C. (1970) Ingalik Material Culture. Vol. 22. *New Haven: Human Relations Area Files Press*. Cited in Knecht, R. A. (1995) *The late prehistory of the Alutiiq People: Culture change on the Kodiak Archipelago from 1200-1750 A.D.* Bryn Mawr College. Unpublished PhD Thesis.
- Osgood, C. (1937) *The ethnography of the Tanaina*. New Haven: Yale University.
- Osgood, C. (1933) Tanaina Culture. *American Anthropologist* Vol. 35(4), 695-717.
- Osipov, B., Temple, D., Cowgill, L., Harrington, L., Bazaliiskii, V. I. and Weber, A. W. (2016) Evidence for genetic and behavioral adaptations in the ontogeny of prehistoric hunter-gatherer limb robusticity. *Quaternary International* Vol. 405(B), 134-146.
- Oswalt, W. (1953) The saucer-shaped Eskimo lamp. *Anthropology Papers of University of Alaska* Vol. 1(2), 15-23. Cited in Turner, C. G. (1967) *The dentition of Arctic peoples*. University of Wisconsin. Unpublished Ph.D. Thesis.
- Ousley, S. D. (1995) Relationships between Eskimos, Amerindians, and Aleuts: Old data, new perspectives. *Human Biology* Vol. 67(3), 427-548.
- Ousley, S. D. and Jones, E. B. (2010) Craniometric variation in the Aleutians: Integrating morphological, molecular, spatial, and temporal. *Human Biology* Vol. 82(5/6), 629-651.
- Overbury, R. S., Cabo, L. L., Dirkmaat, D. C. and Symes, S. A. (2009) Asymmetry of the os pubis: Implications for the Suchey-Brooks method. *American Journal of Physical Anthropology* Vol. 139(2), 261-268.

Owens, L. S. (2004) *The application of dental anthropology to populations dynamics, economy and health in the Prehispanic Canary Islands*. Unpublished Ph.D. Thesis. UCL.

Oxenham, M. F. and Matsumura, H. (2008) Oral and physiological paleohealth in cold adapted peoples: Northeast Asia, Hokkaido. *American Journal of Physical Anthropology* Vol. 135(1), 64-74.

Oxenham, M. F., Nguyen, L. C. and Thuy, N. K. (2002) Oral health in Northern Viet Nam: Neolithic through metal periods. *Indo-Pacific Prehistory Association Bulletin* Vol. 22(6), 121-134.

Oxilia, G., Fiorillo, F., Boschini, F., Boaretto, E., Apicella, S. A., Matteucci, C., Panetta, D., Pistocchi, R., Guerrini, F., Margherita, C., Andretta, M., Sorrentino, R., Boschian, G., Arrighi, S., Dori, I., Mancuso, G., Crezzini, J., Riga, A., Serrangeli, M. C., Vazzana, A., Salvadori, P. A., Vandini, M., Tozzi, C., Moroni, A., Feeney, R. N. M., Willman, J. C., Moggi-Cecchi, J. and Benazzi, S. (2017) The dawn of dentistry in the late upper Paleolithic: An early case of pathological intervention at Riparo Fredian. *American Journal of Physical Anthropology* Vol. 163(3), 446-461.

Oxilia, G., Peresani, M., Romandini, M., Matteucci, C., Debono Spiteri, C., Henry, A. G., Schulz, D., Archer, W., Crezzini, J., Boschini, F., Boscato, P., Jaouen, K., Dogandzic, T., Broglio, A., Moggi-Cecchi, J., Fiorenza, L., Hublin, J.-J., Kullmer, O. and Benazzi, S. (2015) Earliest evidence of dental caries manipulation in the Late Upper Palaeolithic. *Nature Scientific Reports* Vol. 5, 1-10.

Oyhenart, E. E., Orden, B., Fucini, M. C., Muñe, M. C. and Pucciarelli, H. M. (2003) Sexual dimorphism and postnatal growth of intrauterine growth retarded rats. *Growth, Development and Aging* Vol. 67(2), 73-83.

Page, A. E. and French, J. C. (2020) Reconstructing prehistoric demography: What role for extant hunter-gatherers? *Evolutionary Anthropology* Vol. 29(6), 332-345.

Pahel, B. T., Vann, W. F., Divaris, K. and Rozier, R. G. (2017) A contemporary examination of first and second permanent molar emergence. *Journal of Dental Research* Vol. 96(10), 1115-1121.

Palmer, R. M., Ide, M. and Floyd, P. D. (2013) *A clinical guide to periodontology*. London: British Dental Association. Third edition.

Papagianni, D., Layton, R. and Maschner, H. (2008) *Time and change: Archaeological and anthropological perspectives on the long term in hunter-gatherer societies*. Oxford: Oxbow.

Palefsky, G. (2019) Tooth ablation in Iron Age central Thailand: Evidence from the archaeological sites of Ban Mai Chaimongkol and Tha Kae. *International Journal of Osteoarchaeology* Vol. 29(5), 696-705.

Papageorgopoulou, C., Suter, S. K., Rühli, F. J. and Siegmund, F. (2011) Harris lines revisited: Prevalence, comorbidities, and possible etiologies. *American Journal of Human Biology* Vol.23 (3), 381-391.

- Parambathettu Sasidharan, J. and Thomas, Z. (2017) Age determination from pubic symphyseal changes: An autopsy study. *Journal of Evidence Based Medicine and Healthcare* Vol. 4(13), 723-729.
- Pardoe, C. and Durband, A. C. (2017) Tooth ablation along the Murray River in Southeastern Australia. In (eds) Burnett, S. E. and Irish, J. D. *A world view of bioculturally modified teeth*. University Press of Florida. Chapter 14, 211-226.
- Parfitt, A. M. (2003) New concepts of bone remodelling: A unified spatial and temporal model with physiologic and pathophysiologic implications. In (eds) Agarwal, S. C. and Stout, S. D. *Bone loss and osteoporosis: An anthropological perspective*. New York: Kluwer Academic/Plenum Publishers. Chapter 1, 3-18.
- Park, R. W. (2018) Learning the tools of survival in the Thule and Dorset cultures of Arctic Canada. In (eds) Crawford, S., Hadley, D. M., and Sheperd, G. *The Oxford handbook of the archaeology of childhood*, Chapter 12, 213-227.
- Park, R. W. (2012) Adapting to a frozen coastal environment. In (eds) Pauketat, T. R. *The Oxford handbook of North American archaeology*. New York; Oxford: Oxford University Press. Chapter 10. 113-123.
- Park, R. W. (1998) Size counts: The miniature archaeology of childhood in Inuit societies. *Antiquity* Vol. 72(276), 269–81.
- Parker Pearson, M. (1982) Mortuary practices, society and ideology: An ethnoarchaeological study. In (eds) Hodder, I. *Symbolic and structural archaeology*. Cambridge: Cambridge University Press. Chapter 10, 99-113.
- Parker Pearson, M. (2003) *The archaeology of death and burial*. Stroud: Gloucestershire: The History Press. Second Edition.
- Parr, N. M., Passalacqua, N. V. and Skorpinski, K. (2017) Investigations into age-related changes in the human mandible. *Journal of Forensic Sciences* Vol. 62(6), 1586-1591.
- Parr, R. (1988) On the role of neutron activation analysis in the certification of a new reference material for trace-element studies, mixed human diet, H-9. *Journal of Radioanalytical and Nuclear Chemistry*, Vol. 123(1), 259-271.
- Parry, W. E. (1840) *Three voyages for the discovery of a Northwest Passage from the Atlantic to the Pacific, and narrative of an attempt to reach the North Pole, Volume 1*. New York: Harper & brothers. Project Gutenberg.
- Pate, F. D., Craib, J. L. and Heathcot, G. M. (2001) Stable isotopic analysis of prehistoric human diet in the Mariana Islands, western Pacific. *Australian Archaeology* Vol. 52(1), 1-4.

- Pateel, D. G. S., Gunjal, S., Math, S. Y., Murugesappa, D. G. and Nair, S. M. (2017) Correlation of salivary statherin and calcium levels with dental calculus formation: A preliminary study. *International Journal of Dentistry* Vol. 2017, 1-4.
- Pavlesen, S., Mai, X., Wactawski-Wende, J., Lamonte, M. J., Hovey, K. M., Genco, R. J. and Millen, A. E. (2016) Vitamin D status and tooth loss in postmenopausal females: The Buffalo osteoporosis and periodontal disease (OsteoPerio) study. *Journal of Periodontology* Vol. 87(8), 852-863.
- Peary, J. D. and Peary, R. E. (1894) *My Arctic journal: A year among ice-fields and Eskimos. With an account of The Great White Journey across Greenland*. London: Longmans, Green.
- Pechenkina, E. A. and Delgado, M. (2006) Dimensions of health and social structure in the early intermediate period cemetery at Villa El Salvador, Peru. *American Journal of Physical Anthropology* Vol. 131(2), 218-235.
- Peck, L., Peck, S., and Attia, Y. (1993) Maxillary canine-first premolar transposition, associated dental anomalies and genetic basis. *The Angle Orthodontist* Vol. 63(2), 99–109.
- Peck, S., Peck, L. and Kataja, M. (2002) Concomitant occurrence of canine malposition and tooth agenesis: Evidence of orofacial genetic fields. *American Journal of Orthodontics and Dentofacial Orthopedics* Vol. 122(6), 657-660.
- Peck, S. and Peck, L. (1995) Classification of maxillary tooth transpositions. *American Journal of Orthodontics and Dentofacial Orthopedics* Vol. 107(5), 505-17.
- Peckmann, T. R., Logar, C., Garrido-Varas, C. E., Meek, S. and Pinto, X. T. (2016) Sex determination using the mesio-distal dimension of permanent maxillary incisors and canines in a modern Chilean population. *Science & Justice* Vol. 56(2), 84-89.
- Pedersen, P. O. (1971) Dental disease in Europe and Greenland. *Royal Society of Health Journal* Vol. 91(3), 88-91.
- Pedersen, P. O. (1949) *The East Greenland Eskimo dentition, numerical variations and anatomy: A contribution to comparative ethnic odontography*. Copenhagen, Denmark: C. A. Reitzel.
- Pedersen, P. O. (1947) Dental Investigations of Greenland Eskimos. Summary. *Proceedings of the Royal Society of Medicine* Vol. 40(12), 726-732.
- Pedersen, P. O. (1938) Investigations into dental conditions of about 3,000 ancient and modern Greenlanders. *American Journal of Orthodontics and Oral Surgery* Vol. 24(7), 702-704.

- Pedersen, P. O. and Jakobsen, J. (1989) Teeth and jaws of the Qilakitsoq mummies. In (eds) Hart Hansen, J. P. and Gullov, H. C. *The mummies from Qilakitsoq: Eskimos in the 15th century*. Meddelelser om Grønland: Man and Society 12. 112-130.
- Pérez-Pérez, A., Alesan, A. and Roca, L. (1990) Measurement error: Inter-and Intraobserver Variability. An Empiric Study. *International Journal of Anthropology* Vol.5 (2), 129-135.
- Pérez-Pérez, A., Lalueza, C. and Turbón, D. (1994) Intraindividual and intragroup variability of buccal tooth striation pattern. *American Journal of Physical Anthropology* Vol.94 (2), 175-187.
- Perng, W., Hajj, H., Belfort, M. B., Rifas-Shiman, S. L., Kramer, M. S., Gillman, M. W. and Oken, E. (2016) Birth size, early life weight gain, and midchildhood cardiometabolic health. *The Journal of Pediatrics* Vol. 173, 122-130.e1.
- Perrin, W. F., Würsig, B. G. and Thewissen, J.G.M. (2009) *Encyclopedia of marine mammals*. Burlington, MA; London: Academic. Second Edition.
- Petaros, A., Sholts, S. B., Slaus, M., Bosnar, A. and Warmlander, S. K.T.S. (2015) Evaluating sexual dimorphism in the human mastoid process: A viewpoint on the methodology. *Clinical Anatomy* Vol. 28(5), 593-601.
- Pezo-Lanfranco, L., Peralta, A., Guillén, S. and Eggers, S. (2017) Oral pathology patterns in late farmers of the Central Andes: A comparative perspective between coastal and highland populations. *HOMO - Journal of Comparative Human Biology* Vol. 68(5), 343-361.
- Phillips, D. A. (2009) Adoption and intensification of agriculture in the North American Southwest: notes toward a quantitative approach. *American Antiquity* Vol. 74(4), 691-708.
- Pickles, M. J. (2006) Tooth wear. In (eds) Duckworth, R. M. *The teeth and their environment*. Monographs Oral Science. Basel, Karger. Chapter 4, 86-104.
- Pietrusewsky, M., Lauer, A., Tsang, C-H., Li, K-T. and Toomay Douglas, M. (2017) Tooth ablation in early Neolithic skeletons from Taiwan. In (eds) Burnett, S. E., Irish, J. D. and Larsen, C. S. *A world view of bioculturally modified teeth*. Gainesville: University Press of Florida. Chapter 8, 102-124.
- Pietrusewsky, M. and Douglas, M. T. (2012) The history of paleopathology in the Pacific. In (eds) Buikstra, J. E. and Roberts, C. A. *The global history of paleopathology: Pioneers and prospects*. New York; Oxford: Oxford University Press. Chapter 63, 594-618.
- Pilloud, M. A. and Fancher, J. P. (2019) Outlining a definition of oral health within the study of human skeletal remains. *Dental Anthropology*, Vol. 32(02), 3-11.

- Pinchi, V., Barbieri, P., Pradella, F., Focardi, M., Bartolini, V. and Norelli, G.-A. (2015) Dental ritual mutilations and forensic odontologist practice: A review of the literature. *Acta Stomatologica Croatica* Vol.49 (1), 3-13.
- Pindar, Geo, N. 1924. Itemized list of Van Luschian Collection dated 5/16/1924. *Central Archives Prof Felix Von Luschian, Museum für Völkerkunde in Berlin, 1924-37*. New York: American Museum of Natural History.
- Pitfield, R., Miszkiewicz, J. J. and Mahoney, P. (2019) Microscopic markers of an infradian biorhythm in human juvenile ribs. *Bone* Vol. 120, 403-410.
- Plessas, A. and Pepelassi, E. (2012) Dental and periodontal complications of lip and tongue piercing: Prevalence and influencing factors. *Australian Dental Journal* Vol. 57(1), 71-78.
- Pluciennik, M. (2014) Historical frames of reference for 'Hunter-Gatherers'. In (eds) Cummings, V., Jordan, P. and Zvelebil, M. *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Oxford: Oxford University Press. First edition. Chapter 4, 55-68.
- Pokhojaev, A., Habashi, W., May, H., Schulz-Kornas, E., Shvalb, N. and Sarig, R. (2018) Examination of the interproximal wear mechanism: Facet morphology and surface texture analysis. *Journal of Dental Research* Vol.97 (13), 1445-1451.
- Polar Record (1952) Stratigraphical studies at Dundas Harbour Devon Island, 1949. *Polar Record* Vol. 6(43) 370.
- Polar Record (1935) MacMillan Expedition to Labrador and Baffin Island, 1934. *Polar Record* Vol. 2(9), 45-46.
- Powell, M. L. (1985) The analysis of dental wear and caries for dietary reconstruction. In (ed) Gilbert R. I. *The analysis of prehistoric diets*. Academic Press: Orlando, FL. Chapter 10, 307–338.
- Power, R. C., Salazar-García, D. C., Rubini, M., Darlas, A., Harvati, K., Walker, M., Hublin, J.-J. and Henry, A. G. (2018) Dental calculus indicates widespread plant use within the stable Neanderthal dietary niche. *Journal of Human Evolution* Vol. 119, 27-41.
- Powers, N. (2008) *Human osteology method statement*. London: Museum of London.
- Price, T. D. and Brown, J. (1985) *Prehistoric hunter-gatherers: The emergence of cultural complexity*. New York: Academic Press.
- Pringle, H. (1997) New respect for metal's role in ancient Arctic cultures. *Science* Vol. 277(5327), 766-768.

- Prowse, T. L., Saunders, S. R., Schwarcz, H. P., Garnsey, P., Macchiarelli, R. and Bondioli, L. (2008) Isotopic and dental evidence for infant and young child feeding practices in an imperial Roman skeletal sample. *American Journal of Physical Anthropology* Vol. 137(3), 294-308.
- Psoter, W., Gebrian, B., Prophete, S., Reid, B. and Katz, R. (2008) Effect of early childhood malnutrition on tooth eruption in Haitian adolescents. *Community Dentistry and Oral Epidemiology* Vol. 36(2), 179-189.
- Puech, P. F. (1983) Tooth wear, diet, and the artifacts of Java Man. *Current Anthropology* Vol. 24(3), 381-382.
- Puech, P.-F. (1979) The diet of early man: Evidence from abrasion of teeth and tools. *Current Anthropology* Vol. 20(3), 590-592.
- Qorbani, M., Yunesian, M. and Baradaran, H. (2014) Indoor smoke exposure and risk of anthracosis. *Iranian Journal of Medical Sciences* Vol. 39(6), 571-576.
- Radini, A., Nikita, E., Buckley, S., Copeland, L. and Hardy, K. (2017) Beyond food: The multiple pathways for inclusion of materials into ancient dental calculus. *American Journal of Physical Anthropology* Vol. 162, 71-83.
- Raghavan, M., Degiorgio, M., Albrechtsen, A., Moltke, I., Skoglund, P., Korneliussen, T. S., Grønnøw, B., Appelt, M., Gullov, H. C., Friesen, T. M., Fitzhugh, W., Malmström, H., Rasmussen, S., Olsen, J., Melchior, L., Fuller, B. T., Fahrni, S. M., Stafford, T., Grimes, V., Renouf, M. A. P., Cybulski, J., Lynnerup, N., Lahr, M. M., Britton, K., Knecht, R., Arneborg, J., Metspalu, M., Cornejo, O. E., Malaspinas, A-S., Wang, Y., Rasmussen, M., Raghavan, V., Hansen, T. V. O., Khusnutdinova, E., Pierre, T., Dneprovsky, K., Andreasen, C., Lange, H., Hayes, M. G., Coltrain, J., Spitsyn, V. A., Götherström, A., Orlando, L., Kivisild, T., Villems, R., Crawford, M. H., Nielsen, F. C., Dissing, J., Heinemeier, J., Meldgaard, M., Bustamante, C., O'Rourke, D. H., Jakobsson, M., Gilbert, M. T. P., Nielsen, R. and Willerslev, E. (2014) The genetic prehistory of the New World Arctic. *Science* Vol. 345(6200), 1255832.
- Rahn, R. B. (2002) *Spatial analysis of archaeological sites in Barkley Sound, Vancouver Island*. The University of Manitoba. Unpublished Master's Thesis.
- Rainey, F. G. (1942) Discovering Alaska's oldest Arctic Town. *National Geographic*, Vol. 82(3), 318–336.
- Rainey, F. (1941a) The Ipiutak culture at Point Hope, Alaska. *American Anthropologist* Vol. 43(3), 364-375.
- Rainey, F. (1941b) *Eskimo prehistory: The Okvik site on the Punuk Islands*. New York: American Museum of Natural History.
- Rajić Š., P., Premužić, Z. and Meštrović, S. (2019) Hide and seek: Impacted maxillary and mandibular canines from the Roman period Croatia. *International Journal of Paleopathology* Vol. 24, 89-93.

Ralston, C. E. (2016) *Dental cementum increment analysis and estimating season at death in humans*. Boston University. Unpublished MSc Thesis.

Ramiro-Verdugo, J., De Vicente-Corominas, E., Montiel-Company, J. M., Gandia-Franco, J. L. and Bellot-Arcis, C. (2015) Association between third molar agenesis and craniofacial structure development. *American Journal of Orthodontics and Dentofacial Orthopedics* Vol. 148(5), 799-804.

Rasmussen, K. (1931) The Netsilik Eskimos: Social life and spiritual culture. Report of the fifth Thule expedition, 1921-1924. Cited in Balikci, A. (1968) The Netsilik Eskimos: Adaptive processes. In (eds) Lee, R. B. and DeVore, I. *Man the hunter*. Chicago: New York: Aldine. Chapter 8, 78-82.

Raven, H. C. (1926) Accession record, register number 27003. Central Archives 1926-61, Museum Exped. To Greenland (H. C. Raven Col.), 60.1/5597-9. American Museum of Natural History.

Ravin, J. J. (1981) Follow-up study of permanent incisors with enamel cracks as result of an acute trauma. *Scandinavian Journal of Dental Research* Vol. 89(2), 117-123.

Ray, D. J. (1981) *Aleut and Eskimo Art: Tradition and innovation in South Alaska*. London: C. Hurst & Company.

Ray, D. J. (1967) *Eskimo masks: Art and ceremony*. Seattle: University of Washington Press.

Razjigaeva, N. G., Ganzey, L. A., Bazarova, V. B., Arslanov, K. A., Grebennikova, T. A., Mokhova, L. M., Belyanina, N. I. and Lyashevskaya, M. S. (2019) Landscape response to the Medieval Warm Period in the South Russian Far East. *Quaternary International* Vol.519, 215-231.

Reddish, J. (2013) Labrets: Piercing and stretching on the Northwest Coast and in Amazonia. *Mundo Amazónico* Vol. 4, 57-75.

Redfern, R. C., Marshall, M., Eaton, K. and Poinar, H. N. (2017) 'Written in bone': New discoveries about the lives and burials of four Roman Londoners. *Britannia* Vol. 48, 253-277.

Redman, S. J. (2016) *Bone rooms: From scientific racism to human prehistory in museums*. Cambridge, Massachusetts: Harvard University Press.

Reed, S. G., Voronca, D., Wingate, J. S., Murali, M., Lawson, A. B., Hulsey, T. C., Ebeling, M. D., Hollis, B. W. and Wagner, C. L. (2017) Prenatal vitamin D and enamel hypoplasia in human primary maxillary central incisors: A pilot study. *Pediatric Dental Journal* Vol. 27(1), 21-28.

Reichart, P. A., Creutz, U. and Scheifele, C. (2008) Dental mutilations and associated alveolar bone pathology in African skulls of the anthropological skull collection, Charité, Berlin. *Journal of Oral Pathology & Medicine* Vol. 37(1), 50-55.

- Reid, D. J. and Dean, M. C. (2000) Brief communication: The timing of linear hypoplasias on human anterior teeth. *American Journal of Physical Anthropology* Vol. 113(1), 135-139.
- Reid, D. J. and Dean, M. C. (2006) Variation in modern human enamel formation times. *Journal of Human Evolution* Vol. 50(3), 329-346.
- Reinhardt, G. A. (1983) Relationships between attrition and lingual tilting in human teeth. *American Journal of Physical Anthropology* Vol. 61(2), 227-237.
- Ricci, S., Capecchi, G., Boschini, F., Arrighi, S., Ronchitelli, A. and Condemi, S. (2016) Toothpick use among Epigravettian humans from Grotta Paglicci (Italy). *International Journal of Osteoarchaeology* Vol. 26(2), 281-289.
- Richards, J. D. (2005) *The Vikings: A very short introduction*. Oxford: Oxford University Press.
- Richards, M. P., Hedges, R. E. M., Molleson, T. I., Vogel, J. C. (1998) Stable isotope analysis reveals variations in human diet at the Poundbury camp cemetery site. *Journal of Archaeological Sciences* Vol. 25, 1247-1252.
- Richie, S. G. (1924) The dentition of the Western and Central Eskimos. *The International Journal of Orthodontia, Oral Surgery, and Radiography* Vol. 10(1), 52-53.
- Richling, B. (2012) *In twilight and in dawn: A biography of Diamond Jenness*. Montreal: McGill-Queen's University Press.
- Rink, H. and Brown, Robert (1877) *Danish Greenland: Its people and its products*. London: Henry S. King & Co.
- Rink, H. and Brown, R. (2014) *Tales and traditions of the Eskimo: With a sketch of their habits, religion, language and other peculiarities*. Cambridge: Cambridge University Press.
- Rissech, C., Schaefer, M. and Malgosa, A. (2008) Development of the femur: Implications for age and sex determination. *Forensic Science International* Vol. 180(1), 1-9.
- Rissech, C., Wilson, J., Winburn, A., Turbón, D. and Steadman, D. (2012) A comparison of three established age estimation methods on an adult Spanish sample. *International Journal of Legal Medicine* Vol. 126(1), 145-155.
- Ritzman, T. B., Baker, B. J.; Schwartz, G. T. (2008) A fine line: A comparison of methods for estimating ages of linear enamel hypoplasia formation. *American Journal of Physical Anthropology*, Vol. 135, 348-361.
- Robb, N., Cruwys, E. and Smith, B. (1991) Is "lingual surface attrition of the maxillary teeth (LSAMAT)" caused by dental erosion? *American Journal of Physical Anthropology* Vol. 85(3), 345-347.

- Roberts-Harry, E. A., Clerehugh, V., Shore, R. C., Kirkham, J. and Robinson, C. (2000) Morphology and elemental composition of subgingival calculus in two ethnic groups. *Journal of Periodontology* Vol. 71(9), 1401-1411.
- Robertson, D. and Smith, A. J. (2009) The microbiology of the acute dental abscess. *Journal of Medical Microbiology* Vol. 58 (2), 155–162.
- Robert-Lamblin, J. (1986) *Ammassalik, East Greenland - End or Persistence of an Isolate? Anthropological and demographic study on change*. Meddeleser om Grønland, Man and Society 10.
- Rode, A. and Shephard, R. (1984) Growth, development and acculturation - A ten year comparison of Inuit children. *Human Biology* Vol. 56(2), 217-230.
- Rogers, J. S. and Anichtchenko, E. V. (2011) A whalebone mask from Amaknak Island, eastern Aleutian Islands, Alaska. *Arctic Anthropology* Vol. 48(1), 66-79.
- Roh, B.-D., Lee, Y.-E. (2006) Analysis of 154 cases of teeth with cracks. *Dental Traumatology* Vol.22 (3), 118-123.
- Roksandic, M., Alarie, K., Rodríguez Suárez, R., Huebner, E. and Roksandic, I. (2016) Not of African descent: Dental modification among Indigenous Caribbean people from Canimar Abajo, Cuba. *PLoS ONE* Vol. 11(4), e0153536.
- Romero, J. (1970) Dental Mutilation, Trephination, and Cranial Deformation. In (eds) Stewart, T. D. *Handbook of Middle American Indians*, Vol. 9. Austin: University of Texas Press. Chapter 4, 50-67.
- Rorabaugh, A. N. and Shantry, K. A. (2016) From labrets to cranial modification: Credibility enhancing displays and the changing expression of coast Salish resource commitments. *Journal of Island and Coastal Archaeology* Vol. 12(3), 380-397.
- Rose, J. C., Marks, M. K., and Tieszen, L. L. (1991) Bioarchaeology and subsistence in the central and lower portions of the Mississippi Valley. In (eds) Powell, M. L., Bridges, P. S. and Mires, A. M. *What mean these bones? Studies in Southeastern bioarchaeology*. Tuscaloosa, AL: University of Alabama Press. Chapter 1, 7–21.
- Rosebury, T. and Karshan, M. (1939) Dental caries among Eskimos of the Kuskokwim area of Alaska: III. A dietary study of three Eskimo settlements. *American Journal of Diseases of Children* Vol. 57(6), 1343-1362.
- Rosebury, T. and Waugh, L. M. (1939) Dental caries among Eskimos of the Kuskokwim area of Alaska: I. Clinical and bacteriologic findings. *American Journal of Diseases of Children* Vol. 57(4), 871-893.

- Roy, N., Bhiry, N., Woollett, J. and Delwaide, A. (2017) A 550-year record of the disturbance history of white spruce forests near two Inuit settlements in Labrador, Canada. *Journal of the North Atlantic* Vol. 2017(31), 1-14.
- Rudenko, S. I. (1961) *The ancient culture of the Bering Sea and the Eskimo Problem No. 1*. Toronto: University of Toronto Press. Translated by Paul Tolstoy.
- Ruengdit, S., Prasitwattanaseree, S., Mekjaidee, K., Sinthubua, A. and Mahakkanukrauh, P. (2018) Age estimation approaches using cranial suture closure: A validation study on a Thai population. *Journal of Forensic and Legal Medicine* Vol. 53, 79-86.
- Rupprecht, R. D., Horning, G. M., Nicoll, B. K. and Cohen, M. E. (2001) Prevalence of dehiscences and fenestrations in modern American Skulls. *Journal of Periodontology* Vol. 72(6), 722-729.
- Ryan, A. (1981) Anterior dental microwear and its relationship to diet and feeding behavior in three African primates (*Pan troglodytes troglodytes*, *Gorilla gorilla gorilla* and *Papio hamadryas*). *Primates* Vol. 22(4), 533-550.
- Ryan, A. S. (1979) Wear striation direction on primate teeth: A scanning electron microscope examination. *American Journal of Physical Anthropology* Vol. 50(2), 155-167.
- Ryan, A. S. and Johanson, D. C. (1989) Anterior dental microwear in *Australopithecus afarensis*: Comparisons with human and nonhuman primates. *Journal of Human Evolution* Vol. 18, 253-268.
- Ryan, K. and Young, Y. (2013) Identification of a Probable Aarnguaq in a Sadlermiut grave from Native Point, Southampton Island, Nunavut, Canada. *Arctic Anthropology* Vol. 50(1), 20-48.
- Sakaue, K. (2006) Application of the Suchey-Brooks system of pubic age estimation to recent Japanese skeletal material. *Anthropological Science* Vol. 114(1) 59-64.
- Saini, V. (2014) Significance of temporal changes on sexual dimorphism of cranial measurements of Indian population. *Forensic Science International* Vol. 242, 300.e1-300.e8.
- Salanitri, S. and Seow, W. K. (2013) Developmental enamel defects in the primary dentition: Aetiology and clinical management. *Australian Dental Journal* Vol. 58 (2), 133-140.
- Salisbury, R. D. (1895) The Greenland Expedition of 1895. *The Journal of Geology*, Vol. 3(8), 875-902.
- Salter, E. M. (1984) Skeletal biology of Cumberland Sound, Baffin Island, N.W.T. University of Toronto (Canada), Unpublished Ph.D. Thesis. Cited in Keenleyside, A. (1988) *A palaeopathological analysis of an historic Inuit population from southern Baffin Island, N.W.T.* The University of Alberta. Unpublished Master Thesis.

- Sanz, M. and Quirynen, M. (2005) Advances in the aetiology of periodontitis. *Journal of Clinical Periodontology* Vol. 32, 54-56.
- Sarajlić, N. and Gradašević, A. (2012) Morphological characteristics of pubic symphysis for age estimation of exhumed persons. *Bosnian Journal of Basic Medical Sciences* Vol. 12(1), 51-54.
- Sarig, R., Gopher, A., Barkai, R., Rosell, J., Blasco, R., Weber, G. W., Fornai, C., Sella-Tunis, T. and HersHKovitz, I. (2016) How did the Qesem Cave people use their teeth? Analysis of dental wear patterns. *Quaternary International* Vol. 398, 136-147.
- Sarig, R., HersHKovitz, I., Shvalb, N., Sella-Tunis, T., May, H. and Vardimon, A. D. (2014) Proximal attrition facets: Morphometric, demographic, and aging characteristics. *European Journal of Oral Sciences* Vol. 122(4), 271-278.
- Saso, A. and Kondo, O. (2019) Periodontal disease in the Neolithic Jomon: Inter-site comparisons of inland and coastal areas in central Honshu, Japan. *Anthropological Science* Vol. 127(1), 13–25.
- Sassaman, K. E. (2004) Complex hunter-gatherers in evolution and history: A North American perspective. *Journal of Archaeological Research* Vol. 12(3), 227-280.
- Sassaman, K. E. and Randall, A. R. (2012) Hunter-gatherer theory in North American archaeology. In (eds) Pauketat, T. R. *The Oxford handbook of North American archaeology*. New York: Oxford: Oxford University Press. Chapter 2, 18-27.
- Savall, F., Rérolle, C., Hérin, F., Dédouit, F., Rougé, D., Telmon, N. and Saint-Martin, P. (2016) Reliability of the Suchey-Brooks method for a French contemporary population. *Forensic Science International* Vol. 266, 586.e1-586.e5.
- Sawafuji, R., Saso, A., Suda, W., Hattori, M., and Ueda, S. (2020) Ancient DNA analysis of food remains in human dental calculus from the Edo period, Japan. *PLOS ONE* Vol.15(3). e0226654.
- Saxen, L. and Nevanlinna, H. R. (1984) Autosomal recessive inheritance of juvenile periodontitis: Test of a hypothesis. *Clinical Genetics* Vol. 25(4), 332–335.
- Savić Pavićin, I., Dumančić, J., Jukić, T. and Badel, T. (2017) The relationship between periodontal disease, tooth loss and decreased skeletal bone mineral density in ageing women. *Gerodontology* Vol. 34(4), 441-445.
- Schaefer, A. S. (2000) Genetics of periodontitis: Discovery, biology, and clinical impact. *Periodontology* Vol. 78(1), 162-173.

Schæbel, L. H., Vestergaard, H., Laurberg, P., Rathcke, C. N. and Andersen, S. (2013) Intake of traditional Inuit diet vary in parallel with inflammation as estimated from YKL-40 and hsCRP in Inuit and non-Inuit in Greenland. *Atherosclerosis* Vol. 228(2), 496-501.

Schæbel, L. K., Bonefeld-Jørgensen, E. C., Vestergaard, H. and Andersen, S. (2017) The influence of persistent organic pollutants in the traditional Inuit diet on markers of inflammation. *PLoS ONE* Vol. 12(5), e0177778-e0177797.

Schæbel, L. K., Bonefeld-Jørgensen, E. C., Laurberg, P., Vestergaard, H. and Andersen, S. (2015) Vitamin D-rich marine Inuit diet and markers of inflammation - a population-based survey in Greenland. *Journal of Nutritional Science* Vol. 4, e40-48.

Schaefer, M., Scheuer, L. and Black, S. M. (2009) *Juvenile osteology: A laboratory and field manual*. Amsterdam; Burlington, MA: Elsevier/Academic Press.

Scheinsohn, V. (2003) Hunter-gatherer archaeology in South America. *Annual Review of Anthropology* Vol. 32, 339-362.

Scheid, R. C. and Weiss, G. (2012) Woelfel's dental anatomy: Its relevance to dentistry (recall series: Osteopathic medicine). Philadelphia; London. Lippincott Williams and Wilkins. Eighth revised edition.

Schenkein, H. A. (2002) Finding genetic risk factors for periodontal diseases: Is the climb worth the view? *Periodontology* Vol. 30, 79-90.

Scherer, A. K., Wright, L. E. and Yoder, C. J. (2007) Bioarchaeological evidence for social and temporal differences in diet at Piedras Negras, Guatemala. *Latin American Antiquity* Vol. 18(1), 85-105.

Scheuer, L. and Black, S. M. (2004) *The juvenile skeleton*. London: Elsevier Science & Technology.

Schledermann, P. (1978) Preliminary results of archaeological investigations in the Bache Peninsula Region, Ellesmere Island, N. W. T. *Arctic* Vol.31 (4), 459-474.

Schmidt, C. W. (2010) On the relationship of dental microwear to dental macrowear. *American Journal of Physical Anthropology* Vol. 142(1), 67-74.

Schmidt, C. W., Remy, A., Van Sessen, R., Willman, J., Krueger, K., Scott, R., Mahoney, P., Beach, J., McKinley, J., D'Anastasio, R., Chiu, L., Buzon, M., De Gregory, J. R., Sheridan, S., Eng, J., Watson, J., Klaus, H., Da-Gloria, P., Wilson, J., Stone, A., Sereno, P., Droke, J., Perash, R., Stojanowski, C. and Herrmann, N. (2019) Dental microwear texture analysis of *Homo sapiens sapiens*: Foragers, farmers, and pastoralists. *American Journal of Physical Anthropology* Vol. 169(2), 207–226.

Schnorr, S. L. (2015) The diverse microbiome of the hunter-gatherer. *Nature* Vol. 518(7540), S14-S15.

- Schollmeyer, K. G. and Turner, C. G. (2004) Dental caries, prehistoric diet, and the pithouse-to-pueblo transition in southwestern Colorado. *American Antiquity* Vol. 69(3), 569-583.
- Schour, I. and Sarnat, B.G. (1942) Oral manifestations of occupational disease. *Journal of the American Medical Association* Vol. 120(15), 1197-1201.
- Schulting, R. (2016) Hunter-gatherer diet, subsistence, and foodways. In (eds) Cummings, V., Jordan, P. and Zvelebil, M. *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Oxford: Oxford University Press. First edition. Chapter 61, 1266-1288.
- Schulting, R. J. and McMillan, A. D. (1995) A probable case of tuberculosis from a burial cave in Barkley Sound, Vancouver Island. *Canadian Journal of Archaeology* Vol. 19, 149-153.
- Schulz, P. D. (1977) Task activity and anterior tooth grooving in prehistoric California Indians. *American Journal of Physical Anthropology* Vol. 46(1), 87-91.
- Schutkowski, H. (1993) Sex determination of infant and juvenile skeletons: I. Morphognostic features. *American Journal of Physical Anthropology* Vol. 90(2), 199-205.
- Schuurs, A. H. B. and Matos, T. (2013) *Pathology of the hard dental tissues*. Chichester: Wiley-Blackwell.
- Schwartz, J. H., Brauer, J. and Gordon-Larsen, P. (1995) Tigarán (Point Hope, Alaska) tooth drilling. *American Journal of Physical Anthropology* Vol. 97(1), 77-82.
- Schwarcz, H. P., Melbye, J., Katzenberg, M. A. and Knyf, M. (1985) Stable isotopes in human skeletons of Southern Ontario: Reconstructing Palaeodiet. *Journal of Archaeological Science* Vol. 12(3), 187-206.
- Sciulli, P. W. (1997) Dental evolution in prehistoric Native Americans of the Ohio Valley area, part 1, Wear and pathology. *International Journal of Osteoarchaeology* Vol. 7(5), 507-524.
- Sciulli, P. W. (1990) Deciduous dentition of a late Archaic population of Ohio. *Human Biology* Vol. 62(2), 221-245.
- Sciulli, P. W. (1977) A descriptive and comparative study of the deciduous dentition of prehistoric Ohio Valley Amerindians. *American Journal of Physical Anthropology* Vol. 47(1), 71-80.
- Scott, E. C. (1979) Dental wear scoring technique. *American Journal of Physical Anthropology* Vol. 51(2), 213-217.
- Scott, R. G. (2020) The Eskimo-Aleut dentition: Crown and root morphology. *Acta Stomatologica Croatica* Vol. 54(2), 194-207.

- Scott, G. R. (2016) A brief history of dental anthropology. In (eds) Irish, J. D. and Scott, G. R. *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 2, 7-17.
- Scott, G. R. (2018) *The anthropology of modern human teeth: Dental morphology and its variation in recent and fossil Homo sapiens*. Cambridge: Cambridge University Press Second edition.
- Scott, G. R. (1997) Dental anthropology. In (eds) Dulbecco, R. *Encyclopedia of human biology*. Academic Press. Second Edition. Volume 3. 789-804.
- Scott, G. R. (1991) Continuity or replacement at the Uyak Site: A physical anthropological analysis of population relationships. *University of Oregon Anthropological Papers* Vol. 44, 1-56.
- Scott, G. R. and Jolie, R. B. (2008) Tooth-tool use and yarn production in Norse Greenland. *Alaska Journal of Anthropology*, Vol. 6(1&2), 253-264.
- Scott, G. R., Maier, C. and Heim, K. (2016) Identifying and recording key morphological (nonmetric) crown and root traits. In (eds) Irish, J. D. and Scott, G. R., *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 17, 247-264.
- Scott, G. R. and Gillispie, T. E. (n. d.) The dentition of the prehistoric inhabitants of St. Lawrence Island, Alaska. In (eds) Menk, R. *The physical anthropology of St. Lawrence Island*. Unpublished. Source cited in Scott, G. R., Palmer, D. L. and Gillispie, T. E. (1984) Cranial and dental observations on the Utqiagvik skeletons from Mound 44. *Arctic Anthropology* Vol. 21(1): 65-76.
- Scott, G. R. and Irish, J. D. (2017) *Human tooth crown and root morphology: The Arizona State University Dental Anthropology System*. Cambridge: Cambridge University Press.
- Scott, G. R. and Winn, J. R. (2011) Dental chipping: Contrasting patterns of microtrauma in Inuit and European populations. *Journal of Osteoarchaeology*, Vol. 21(6) 723-731.
- Scott, G. R. and Turner, C. G. (2008) History of dental anthropology. In (eds) Irish, J. D. and Nelson, G. C. *Technique and application in dental anthropology*. Cambridge: Cambridge University Press.
- Scott, G. R. and Turner, C. G. (1997) *The anthropology of modern human teeth: Dental morphology and its variation in recent human populations*. New York: Cambridge University Press.
- Scott, G. R., Palmer, D. L. and Gillispie, T. E. (1984) Cranial and dental observations on the Utqiagvik skeletons from Mound 44. *Arctic Anthropology* Vol. 21(1), 65-76.
- Scott, G. R. and Poulson, S. R. (2012) Stable carbon and nitrogen isotopes of human dental calculus: A potentially new non-destructive proxy for paleodietary analysis. *Journal of Archaeological Science* Vol. 39(5), 1388-1393.

- Scott, R. M. and Halcrow, S. E. (2017) Investigating weaning using dental microwear analysis: A review. *Journal of Archaeological Science: Reports* Vol. 11, 1-11.
- Scott, R., Poulson, S. R. and Dorio, L. (2012) Dental calculus: A new proxy for estimating stable carbon and nitrogen isotope compositions. *American Journal of Physical Anthropology* Vol. 147(Suppl 54), 265-265.
- Seiler, R, Piombino-Masali, D. and Rühli, F. (2017) Dental investigation of mummies from the Capuchin Catacombs of Palermo (circa 18th–19th century CE). *HOMO - Journal of Comparative Human Biology* Vol. 68(4), 274-282.
- Sejersen, F. (2004) Local knowledge in Greenland: Arctic perspectives and contextual differences. In (eds) Anderson, D. G. and Nuttall, M. *Cultivating Arctic landscapes: Knowing and managing animals in the circumpolar North*. New York: Oxford: Berghahn. Chapter 3, 33-56.
- Senior, K. (1999) Cathepsin C deficit implicated in aetiology of periodontitis. *The Lancet* Vol. 354(9194), 1975-1975.
- Seow, W. K. (2014) Developmental defects of enamel and dentine: Challenges for basic science research and clinical management. *Australian Dental Journal* Vol.59 (s1), 143-154.
- Seward, A. C. (1922) *A summer in Greenland*. Cambridge: Cambridge University Press.
- Shahmoradi, M., Bertassoni, L. E., Elfallah, H. M. and Swain, M. (2014). Fundamental structure and properties of enamel, dentin and cementum. In (eds) Ben-Nissan, B. *Advances in calcium phosphate biomaterials*. New York: Springer, Chapter 17, 511–547.
- Sharman, J. A. (2013) *Age, sex and the life course: Population variability in human ageing and implications for bioarchaeology*. Unpublished Ph.D. Thesis Ph.D. Durham University.
- Sheehan, M. J. and Nachman, M. W. (2014) Morphological and population genomic evidence that human faces have evolved to signal individual identity. *Nature Communications* Vol. 5(1), 4800.
- Sheiham, A. (1983) Sugars and dental decay. *Lancet* Vol. 321(8319), 282-284.
- Shephard, R. J. and Rode, A. (1996) *The health consequences of "modernization": Evidence from circumpolar peoples*. Cambridge: Cambridge University Press.
- Shetty, P., Adyanthaya, A., Adyanthaya, S., Sreelatha, S. V. (2012) The prevalence of hypodontia and supernumerary teeth in 2468 school children of the Indian population: An epidemiological study. *Indian Journal of Stomatology* Vol. 3(3), 150-152.

- Shimada, I., Shinoda, K., Farnum, J., Corruccini, R. and Watanabe, H. (2004) An integrated analysis of pre-Hispanic mortuary practices. *Current Anthropology* Vol. 45(3), 369-402.
- Sholts, S. B., Clement, A. F. and Wärmländer, S. K. T. S. (2010) Brief communication: Additional cases of maxillary canine-first premolar transposition in several prehistoric skeletal assemblages from the Santa Barbara Channel Islands of California. *American Journal of Physical Anthropology* Vol. 143(1), 155-160.
- Sierp, I. and Henneberg, M. (2015) Can ancestry be consistently determined from the skeleton? *Anthropological Review* Vol.78 (1), 21-31.
- Sigman, M. (2018) *Entangled: People and ecological change in Alaska's Kachemak Bay*. Fairbanks, Alaska. University of Alaska Press; 1st ed.
- Silk, H., Douglass, A. B., Douglass, J. M., and Silk, L. (2008) Oral health during pregnancy. *American Family Physician* Vol. 77(8), 1139–1144.
- Silva, A. M., Pedro, G., Soares, J., Tavares da Silva, C. (2016) Short report: Evidence of non-masticatory dental use in Bronze Age individuals exhumed from the Necropolis of Casas Velhas (Portugal). *Bulletin - International Association for Paleodontology*, Vol. 10(1), 31-38.
- Simpson, S. W. and Kunos, C. A. (1998) A radiographic study of the development of the human mandibular dentition. *Journal of Human Evolution* Vol. 35(4-5), 479-505.
- Sinclair, H. M. (1953) The diet of Canadian Indians and Eskimos. *Proceedings of the Nutrition Society* Vol. 12(1), 69-82.
- Skarland, I. (1963) Noted in Appendix 1. In Turner, C. G. (1967) *The dentition of Arctic peoples*. University of Wisconsin. Unpublished Ph.D. Thesis. Appendix 1.
- Skinner, M. F., Imbrasas, M. D., Byra, C. and Skinner, M. M. (2019) Growth response of dental tissues to developmental stress in the domestic pig (*Sus scrofa*). *American Journal of Physical Anthropology* Vol. 168, 764–788.
- Smith, P. (1972) Diet and attrition in the Natufians. *American Journal of Physical Anthropology* Vol. 37(2), 233-238.
- Smith, P. (1970) *Dental morphology and pathology in the Natufians: The dental evidence for dietary specializations*. The University of Chicago. Unpublished Ph.D. Thesis.
- Smith, B. H. (1984) Patterns of molar wear in hunter–gatherers and agriculturalists. *American Journal of Physical Anthropology* Vol. 63(1), 39-56.

- Smith, S. E., Hayes, M. G., Cabana, G. S., Huff, C., Coltrain, J. B. and O'Rourke, D. H. (2009) Inferring population continuity versus replacement with aDNA: A cautionary tale from the Aleutian Islands. *Human Biology* Vol. 81(4), 407-426.
- Smith, P., Wax, Y. and Adler, F. (1989) Population variation in tooth, jaw, and root size: A radiographic study of two populations in a high-attrition environment. *American Journal of Physical Anthropology* Vol. 79(2), 197-206.
- Snow, D. R. (1976) *The archaeology of North America*. New York: Viking Press.
- So, J. K. (1980) Human biological adaptation to Arctic and Subarctic zones. *Annual Review of Anthropology* Vol. 9, 63-82.
- Soames, J. V. and Southam, J. C. (2005) *Oral pathology*. Oxford: Oxford University Press: 4th edition.
- Soares, T. R. C., Fidalgo, T. K. da S., Quirino, A. S., Ferreira, D. M. T. P., Chianca, T. K., Risso, P. de A. and Maia, L. C. (2017) Is caries a risk factor for dental trauma? A systematic review and meta-analysis. *Dental Traumatology* Vol. 33(1), 4-12.
- Sorrentino, R., Bortolini, E., Lugli, F., Mancuso, G., Buti, L., Oxilia, G., Vazzana, A., Figus, C., Serrangeli, M. C., Margherita, C., Penzo, A., Gruppioni, G., Gottarelli, A., Jochum, K. P., Belcastro, M. G., Cipriani, A., Feeney, R. N. M. and Benazzi, S. (2018) Unravelling biocultural population structure in 4th/3rd century BC Monterenzio Vecchio (Bologna, Italy) through a comparative analysis of strontium isotopes, non-metric dental evidence, and funerary practices. *PLoS ONE* Vol. 13(3), e0193796(25).
- Soulier, M.-C. (2021) Exploring meat processing in the past: Insights from the Nunamiut people. *PloS One* Vol. 16(1), e0245213.
- Spaulding, A. C. (1962) *Archaeological investigations on Agattu, Aleutian Islands*. Anthropological Papers Vol.18, Museum of Anthropology, University of Michigan. Ann Arbor. Cited in Turner, C. G. (1967) *The dentition of Arctic peoples*. University of Wisconsin. Unpublished Ph.D. Thesis.
- Sperduti, A., Giuliani, M. R., Guida, G., Petrone, P. P., Rossi, P. F., Vaccaro, S., Frayer, D. W. and Bondioli, L. (2018) Tooth grooves, occlusal striations, dental calculus, and evidence for fiber processing in an Italian Eneolithic/Bronze age cemetery. *American Journal of Physical Anthropology* Vol.167 (2), 234-243.
- Spencer, F. S. (1959) *The North Alaskan Eskimo: A study in ecology and society*. Washington D.C.: Smithsonian Institute.
- Spradley, M. K. and Jantz, R. L. (2011) Sex estimation in forensic anthropology: Skull versus postcranial elements. *Journal of Forensic Sciences* Vol. 56(2), 289-296.

- Spradley, M. K. and Stull, K. E. (2018) Advancements in sex and ancestry estimation. In (eds) Latham, K. E., Bartelink, E. J. and Finnegan, M. *New perspectives in forensic human skeletal identification*. London, United Kingdom; San Diego, CA, United States: Elsevier/Academic Press. Chapter 3, 13-22.
- Sprenger, M. (2008) *The developing brain birth to age eight*. Thousand Oaks, California: Corwin.
- Spielmann, K. A. (2014) The emergence of forager–farmer interaction in North America. In (eds) Cummings, V., Jordan, P. and Zvelebil, M. *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Oxford: Oxford University Press. Chapter 41, 881-902.
- Steckel, R. H. and Rose, J. Carl. (2002) *The backbone of history: Health and nutrition in the western hemisphere*. Cambridge: Cambridge University Press.
- Stein, P. and Rowe, B. M. (2006) *Physical anthropology*. New York. McGraw-Hill. Ninth Edition.
- Steinberg, B. J. (2000) Women’s oral health issues. *Journal of the California Dental Association* Vol. 28(9), 663–667.
- Stefansson, V. (1926) *My life with the Eskimo*. New York: Macmillan. Cited in, Crass, B. A. (2000) Gender in Inuit Burial Practices. In (eds) Rautman, A. E. *Reading the body: Representations and remains in the archaeological record*. Gender and Archaeology Conference (4th: 1996: Michigan State University). Philadelphia, Pa.: University of Pennsylvania Press. Chapter 6, 68-76.
- Stefansson, V. (1914) *The Stefánsson-Anderson Arctic Expedition of the American Museum: Preliminary ethnological report*. Anthropological papers of the AMNH; v. 14, pt. 1. American Museum of Natural History.
- Steffian, A. F. and Saltonstall, P. G. (2001) Markers of identity: Labrets and social organization in the Kodiak Archipelago. *Alaska Journal of Anthropology*, Vol. 1(1), 1-27.
- Steffian, A. F., Pontti Eufemio, E. and Saltonstall, P. G. (2002) Early sites and micro blade technologies from the Kodiak Archipelago. *Archaeological Papers of the University of Alaska*, Vol. 2(1) 1-38.
- Steele, J. G., Sanders, A. E., Slade, G. D., Allen, P. F., Lahti, S., Nuttall, N. and Spencer, A. J. (2004) How do age and tooth loss affect oral health impacts and quality of life? A study comparing two national samples. *Community Dentistry and Oral Epidemiology* Vol. 32(2), 107-114.
- Steward, J. H. (1963) *Handbook of South American Indians*. Smithsonian Institution. Bureau of American Ethnology. New York: Cooper Square Publishers.
- Steward, J. H. (1955) *Theory of culture change: The methodology of multilineal evolution*. Urbana; London: University of Illinois Press.

- Stewart, T. D. and Strong, W. D. (1939) Anthropometric observations on the Eskimos and Indians of Labrador. *Publications of the Field Museum of Natural History. Anthropological Series* Vol. 31(1), 1-163.
- Stewart, T. D. (1934) Sequence of epiphyseal union, third molar eruption and suture closure in Eskimos and American Indians. *American Journal of Physical Anthropology* Vol. 19(3), 433-452.
- St. Hoyme, L. E. and Koritzer, R. T. (1976) Ecology of dental disease. *American Journal of Physical Anthropology* Vol. 45(3), 673-685.
- St Hoyme, L. E. and Koritzer, R. T. (1971) Significance of canine wear in Pongid evolution. *American Journal of Physical Anthropology* Vol. 35(1), 145-147.
- St Hoyme, L. E. (1969) On the origins of New World paleopathology. *American Journal of Physical Anthropology* Vol. 31(3), 295-302.
- Stock, J. T. (2006) Hunter-gatherer postcranial robusticity relative to patterns of mobility, climatic adaptation, and selection for tissue economy. *American Journal of Physical Anthropology* Vol. 131(2), 194-204.
- Stojanowski, C. M., Carver, C. L. and Miller, K. A. (2014) Incisor avulsion, social identity and Saharan population history: New data from the Early Holocene southern Sahara. *Journal of Anthropological Archaeology*, Vol. 35, 79-91.
- Stojanowski, C. M., Johnson, K. M., Paul, K. S. and Carver, C. L. (2016) Indicators of idiosyncratic behavior in the dentition. In (eds) Irish, J. D. and Scott, G. R. *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons, Chapter 23, 377-395.
- Suby, A. J. (2014) Porotic hyperostosis and cribra orbitalia in human remains from southern Patagonia. *Anthropological Science*, Vol. 122(2), 69-79.
- Sujon, M. K., Alam, M. K. and Rahman, S. A. (2016) Prevalence of third molar agenesis: Associated dental anomalies in non-syndromic 5923 Patients. *PLoS ONE* Vol. 11(8), e0162070.
- Sun, C., Xing, S., Martin - Frances, L., Bae, C., Liu, L., Wei, G. and Liu, W. (2014) Interproximal grooves on the Middle Pleistocene hominin teeth from Yiyuan, Shandong Province: New evidence for tooth-picking behavior from eastern China. *Quaternary International* Vol. 354, 162-167.
- Sutherland, P. (2003) Variability and change in Palaeo-Eskimo architecture: A view from the Canadian High Arctic. *Études/Inuit/Studies* Vol. 27(1-2), 191-212.
- Swanson, W., and Riedel, R. A. and D'Anna, J. A. (1975) Postretention study: Incidence and stability of rotated teeth in humans. *The Angle Orthodontist* Vol. 45(3), 198-203.

Symchych, N. (2016) *An ecogeographic study of body proportion development in the Sadlermiut Inuit of Southampton Island, Nunavut*. Unpublished Ph.D. Thesis. University of Toronto.

Szathmáry, E. J. E. (2015) Pre-contact diets of indigenous Subarctic peoples of North America. In (eds) Lee-Thorp, J. A. and Katzenberg, M. A. *The Oxford handbook of the archaeology of diet*. Oxford: Oxford University Press. Chapter 27, 1-18.

Tafuri, M. A., Zangrando, A. F. J., Tessone, A., Kochi, S., Cecchi, J. M., Di Vincenzo, F., Profico, A. and Manzi, G. (2017) Dietary resilience among hunter-gatherers of Tierra del Fuego: Isotopic evidence in a diachronic perspective. *PLoS ONE* Vol. 12(4), e0175594.

Tal, H. (1983) Alveolar dehiscences and fenestrae in dried south African Negro mandibles. *American Journal of Physical Anthropology* Vol. 61(2), 173-179.

Tamm, E., Kivisild, T., Reidla, M., Metspalu, M., Smith, D. G., Mulligan, C. J., Bravi, C. M., Rickards, O., Martinez-Labarga, C., Khusnutdinova, E. K., Fedorova, S. A., Golubenko, M. V., Stepanov, V. A., Gubina, M. A., Zhadanov, S. I., Ossipova, L. P., Damba, L., Voevoda, M. I., Dipierri, J. E., Villems, R., Malhi, R. S. and Carter, D. (2007) Beringian standstill and spread of Native American founders. *PLoS ONE* Vol. 2(9), e829.

Tang, N., Le Cabec, A. and Antoine, D. (2016) Dentine and cementum structure and properties. In (eds) Irish, J. D. and Scott, G. R., *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 15, 204-222.

Tasa, G. L. (1997) *Skeletal and dental variation of Pacific Coast Athapaskans: Implications for Oregon prehistory and peopling of the New World*. University of Oregon. Unpublished Ph.D. Thesis.

Tay, A. B. G., Lai, J. B., Lye, K. W., Wong, W. Y., Nadkarni, N. V., Li, W. and Bautista, D. (2015) Inferior alveolar nerve injury in trauma-induced mandible fractures. *Journal of Oral and Maxillofacial Surgery* Vol. 73(7), 1328-1340.

Taylor, W. E. (1960) A description of Sadlermiut houses excavated at Native Point, Southampton Island, N.W.T. *National Museums of Canada Bulletin* Vol. 162, 53-100.

Temple, D. H. (2011) Variability in dental caries prevalence between male and female foragers from the Late/Final Jomon period: Implications for dietary behavior and reproductive ecology. *American Journal of Human Biology* Vol. 23(1), 107-117.

Temple, D. H. (2016) Caries: The ancient scourge. In (eds) Irish, J. D. and Scott, G. R., *A companion to dental anthropology*. Chichester, UK; Malden, MA: John Wiley & Sons. Chapter 26, 433-449.

- Temple, D. H. and Stojanowski, C. M. (2019) *Hunter-gatherer adaptation and resilience: A bioarchaeological perspective*. Cambridge: Cambridge University Press.
- Temple, D. H., Kusaka, S. and Sciulli, P. (2011) Patterns of social identity in relation to tooth ablation among prehistoric Jomon foragers from the Yoshigo site, Aichi prefecture, Japan. *International Journal of Osteoarchaeology*, Vol. 21(3), 323-335.
- ten Bruggencate, R. E., Stup, J. P., Milne, S. B., Stenton, D. R., Park, R. W. and Fayek, M. (2016) A human-centered GIS approach to modeling mobility on southern Baffin Island, Nunavut, Canada. *Journal of Field Archaeology* Vol. 41(6), 684-698.
- Tennie, C., Hedwig, D., Call, J. and Tomasello, M. (2008) An experimental study of nettle feeding in captive gorillas. *American Journal of Primatology* Vol. 70(6), 584-593.
- Anonymous (1983) Eskimo diets and diseases. *The Lancet*, Vol. 321(8334), 1139-1141.
- Thomaz, E. B. A. F., Cangussu, M. C. T., Assis, A. M. O. and Da Silva, A. A. M. (2010) Is malnutrition associated with crowding in permanent dentition? *International Journal of Environmental Research and Public Health* Vol. 7(9), 3531-3544.
- Thompson, J. L., Alfonso-Durruty, M. P., Crandall, J. J., and Larsen, C. S. (2014) *Tracing childhood: Bioarchaeological investigations of early lives in antiquity*. Gainesville: University Press of Florida.
- Thompson, D. D., Salter, E. M. and Laughlin, W. S. (1981) Bone core analysis of Baffin Island skeletons. *Arctic Anthropology* Vol. 18(1), 87-96.
- Stefansson, H. R., William, M. and Thornton, N. (1931) *Among the Eskimos of Wales, Alaska, 1890-93*. Baltimore; London: Johns Hopkins Press.
- Thuesen, S. T. (1999) Local identity and history of a Greenlandic town: The making of the town of Sisimiut (Holsteinsborg) from the 18th to the 20th century. *Études/Inuit/Studies* Vol. 23(1/2) 55-67.
- Todd, T. W. (1920a) Age changes in the pubic bone: I. The white male pubis. *American Journal of Physical Anthropology* Vol. 3(3), 285-334.
- Todd, T. W. (1920b) Age changes in the pubic bone. *American Journal of Physical Anthropology* Vol. 4(1), 1-70.
- Tomczyk, J., Turska-Szybka, A., Zalewska, M. and Olczak-Kowalczyk, D. (2017) Reliability of the assessment of periodontal disease in historical Populations: Periodontitis in historical populations. *International Journal of Osteoarchaeology* Vol. 27(2), 206-216.

- Tomenchuk, J. and Mayhall, J. T. (1979) A correlation of Igloodik Eskimos. *American Journal of Physical Anthropology* Vol. 51, 67-78.
- Tompkins, R. L. (1996) Human population variability in relative dental development. *American Journal of Physical Anthropology* Vol. 99(1), 79-102.
- Torres-Rouff, C. (2003) Oral implications of labret use: A case from pre-Columbian Chile. *International Journal of Osteoarchaeology* Vol. 13(4), 247-251.
- Torres-Rouff, C., Knudson, K. J., Pestle, W. J. and Stovel, E. M. (2015) Tiwanaku influence and social inequality: A bioarchaeological, biogeochemical, and contextual analysis of the Larache cemetery, San Pedro de Atacama, Northern Chile. *American Journal of Physical Anthropology* Vol. 158(4), 592-606.
- Towle, I., Davenport, C., Irish, J. and De Groote, I. (2017) Dietary and behavioral inferences from dental pathology and non-masticatory wear on dentitions from a British medieval town. *BioRxiv* 222091.
- Towle, I., Irish, J. D., Elliott, M. and De Groote, I. (2018) Root grooves on two adjacent anterior teeth of *Australopithecus africanus*. *International Journal of Paleopathology* Vol. 22, 163-167.
- Towle, I. and Loch, C. (2021) Tooth chipping prevalence and patterns in extant primates. *American Journal of Physical Anthropology* Vol. 175(1), 292-299.
- Townsend, J. B. (1970) Tanaina archaeology in the Iliamna Lake region; Alaska. *Canadian Archaeological Association* No. 2, 34-41.
- Townsend, J. (1963) Ethnographic notes on the Pedro Bay Tanaina. *Anthropologica* Vol. 5(2), 209-223.
- Townsend, J. B. and Townsend, S.-J. (1961) Archaeological investigations at Pedro Bay, Alaska. *Anthropological Papers of the University of Alaska*, Vol. 10(1), 25-58.
- Trakinienė, G., Andriuškevičiūtė, I., Šalomskienė, L., Vasiliauskas, A., Trakinis, T. and Šidlauskas, A. (2019) Genetic and environmental influences on third molar root mineralization. *Archives of Oral Biology* Vol. 98, 220-225.
- Tremayne, A. H. (2015) The design of Arctic Small Tool Tradition toolkits: An example from Matcharak Lake, Alaska. *North American Archaeologist* Vol. 36(1), 1-31.
- Trombley, T. M., Agarwal, S. C., Beauchesne, P. D., Goodson, C., Candilio, F., Coppa, A. and Rubini, M. (2019) Making sense of medieval mouths: Investigating sex differences of dental pathological lesions in a late medieval Italian community. *American Journal of Physical Anthropology* Vol. 169, 253–269.

- Tromley, T. M., Agarwal, S. C., Beauchesne, P. and Goodson, C. (2018) Evidence for teeth-as-tools and palliative oral hygiene at Late Medieval Villamagna. *Stabl Research Report*, Vol.26, 1-28.
- Tromp, M. and Dudgeon, J. (2012) Dietary microfossils from Rapa Nui dental calculus: Does regional variability provide evidence for subsistence practices? *American Journal of Physical Anthropology* Vol. 147(Suppl. 54) 289-289.
- Trope, M. (2002) Root resorption due to dental trauma. *Endodontic Topics* Vol.1 (1), 79-100.
- Tschammler, C., Simon, A., Brockmann, K., Röbl, M. and Wiegand, A. (2019) Erosive tooth wear and caries experience in children and adolescents with obesity. *Journal of Dentistry* Vol.83, 77-86.
- Tung, T. and Knudson, K. (2011) Identifying locals, migrants, and captives in the Wari Heartland: A bioarchaeological and biogeochemical study of human remains from Conchopata, Peru. *Journal of Anthropological Archaeology* Vol. 30(3), 247-261.
- Turbon, D., Arenas, C. and Cuadras, C. M. (2017) Fueguian crania and the circum-Pacific rim variation. *American Journal of Physical Anthropology* Vol. 163(2), 295-316.
- Turner, C. G. and Cacciatore, E. (1998) Interproximal tooth grooves in Pacific Basin, East Asian, and New World populations. *Anthropological Science* Vol. 106, 85-94.
- Turner, C. G. and Cadien, J. D. (1969) Dental chipping in Aleuts, Eskimos and Indians. *American Journal of Physical Anthropology* Vol. 31(3), 303-310.
- Turner, C. G., Irish, J. D. and Machodo, L. M. C. (1991) Reply to Robb, Cruwys, and Smith, with additional remarks on LSAMAT. *American Journal of Physical Anthropology* Vol. 85(3), 348-351.
- Turner, C. G. and Machado, L. M. C. (1983) A new dental wear pattern and evidence for high carbohydrate consumption in a Brazilian Archaic skeletal population. *American Journal of Physical Anthropology* Vol. 61(1), 125-130.
- Turner, C. G. (1979) Dental anthropological indications of agriculture among the Jomon people of central Japa. X. Peopling of the Pacific. *American Journal of Physical Anthropology* Vol. 51(4), 619-635.
- Turner, C. G. (1971) Three-rooted mandibular first permanent molars and the question of American Indian origins. *American Journal of Physical Anthropology* Vol. 34(2), 229-241.
- Turner, C. G. (1967) *The dentition of Arctic peoples*. University of Wisconsin. Unpublished Ph.D. Thesis.

- Tuteja, M., Bahirwani, S. and Balaji, P. (2012) An evaluation of third molar eruption for assessment of chronologic age: A panoramic study. *Journal of Forensic Dental Sciences* Vol. 4(1), 13-18.
- Ubelaker, D. H. (1999) *Human skeletal remains: Excavation, analysis, interpretation*. Washington: Taraxacum. Third Edition.
- Ubelaker, D. H. (1996) Pipe wear: Dental impact of colonial American culture. *Anthropologie* Vol. 34(3), 321-327.
- Ubelaker, D. H., Katzenberg, M. A. and Doyon, L. G. (1995) Status and diet in precontact highland Ecuador. *American Journal of Physical Anthropology* Vol. 97(4), 403-411.
- Ubelaker, D. H., Phenice, T. W. and Bass, W. M. (1969) Artificial interproximal grooving of the teeth in American Indians. *American Journal of Physical Anthropology* Vol. 30(1), 145-149.
- Uchiyama, J. (2016) *Beyond affluent foragers: Rethinking hunter-gatherer complexity*. *International Council of Archaeozoology. Conference 2002*. Oxford: Oxbow.
- Uliaszek, S. J. (2015) Diet, nutrition, and disease across the lifespan. In (eds) Lee-Thorp, J. and Katzenberg, M. A. *The Oxford handbook of the archaeology of diet*. Oxford: Oxford University Press Chapter 22, 1-19.
- Ungar, P. S., Livengood, S. V. and Crittenden, A. N. (2019) Dental microwear of living Hadza foragers. *American Journal of Physical Anthropology* Vol. 169, 356 –367.
- Ungar, P. S., Grine, F. E., Teafor, M. F. and Pérez-Pérez, A. (2001) A review of interproximal wear grooves on fossil hominin teeth with new evidence from Olduvai Gorge. *Archives of Oral Biology* Vol. 46(4), 285-292.
- Unnamed (1932) *Sailing directions for Siberia and chosen from Cape Syeverni and Wrangell Island to the Oryoku Ko (Yalu River) including Sakhalin Island*. Washington: United States Government Printing Office. 3rd Edition.
- Urbani, G., Lombardo, G., Filippini, P. and Nocini, P. F. (1991) Dehiscence and fenestration: Study of distribution and incidence in a homogeneous population model. *Stomatologia Mediterranea*, Vol. 11, 113-118.
- Usai, D., Salvatori, S., Jakob, T. and David, R. (2014) The Al Khiday cemetery in central Sudan and its "classic/late Meroitic" period graves. *Journal of African Archaeology* Vol. 12(2), 183-204.
- Utermohle, C. J. (1984) *From Barrow eastward- cranial variation of the Eastern Eskimo (Vol. I and II)*. Arizona State University. Unpublished Ph.D. Thesis.
- Utermohle, C. J. and Zegura, S. L. (1982) Intra- and interobserver error in craniometry: A cautionary tale. *American Journal of Physical Anthropology* Vol. 57(3), 303-310.

- Van Dyke, T. E., Schweinebraten, M., Cianciola, L.J., Offenbacher, S. and Genco, R. J. (1985) Neutrophil chemotaxis in families with localized juvenile periodontitis. *Journal of Periodontal Research* Vol. 20(5), 503–514.
- VanStone, J. W. (1994) *The Noice collection of Copper Inuit material culture*. Chicago, Illinois. Field Museum of Natural History.
- VanStone, J. W. (1976) The Bruce Collection of Eskimo material culture from Port Clarence, Alaska. *Fieldiana. Anthropology* Vol. 67, i-117.
- Varrela, J. (2006) Masticatory function and malocclusion: A clinical perspective. *Seminars in Orthodontics* Vol. 12(2), 102-109.
- Varrela, J. (1992) Dimensional variation of craniofacial structures in relation to changing masticatory-functional demands. *European Journal of Orthodontics* Vol. 14(1), 31-36.
- Varrela, T. M., Paunio, K., Wouters, F. R., Tiekso, J. and Söder, P.-Ö. (1995) The relation between tooth eruption and alveolar crest height in a human skeletal sample. *Archives of Oral Biology* Vol. 40(3), 175-180.
- Vaudrin, B. (1981) *Tanaina tales from Alaska (The civilization of the American Indian Series)*. Norman: University of Oklahoma Press.
- Veile, A. (2018) Hunter-gatherer diets and human behavioral evolution. *Physiology & Behavior* Vol. 193, 190-195.
- Veltre, D. W. and Smith, M. A. (2010) Historical overview of archaeological research in the Aleut region of Alaska. *Human Biology* Vol. 82(5/6), 487-506.
- Veniaminov, W. (1840) Notes on the Islands of the Unalaska Division. St. Petersburg. Cited in Laughlin, W. S. (1963) Eskimos and Aleuts: Their origins and evolution. *Science* Vol. 142(3593), 633-645.
- Veroni, A., Nikitovic, D. and Schillaci, M. A. (2010) Brief communication: Sexual dimorphism of the juvenile basicranium. *American Journal of Physical Anthropology* Vol. 141(1), 147-151.
- Verzeletti, A., Terlisio, M. and De Ferrari, F. (2013) Age-at-death estimation in Caucasian females from the morphological analysis of the sternal end of the fourth rib. *Legal Medicine* Vol. 15(1), 47-49.
- Viciano, J., De Luca, S., Irurita, J. and Alemán, I. (2018) Age estimation of infants through metric analysis of developing anterior deciduous teeth. *Journal of Forensic Sciences* Vol. 63(1), 20-30.

- Viciano, J., D' Anastasio, R. and Capasso, L. (2015) Timing of maxillofacial–oral injuries in an individual of the ancient city of Herculaneum (79 AD, Naples, Italy): A case report. *Dental Traumatology* Vol. 31(3), 215-227.
- Viciano, J., Lopez-Lazaro, S., Cesana, D. T., D'anastasio, R. and Capasso, L. (2012) Multiple traumatic dental injuries: A case report in a young individual from the Samnitic necropolis of Opi Val Fondillo (VI-V century BC; Central Italy). *Journal of Archaeological Science* Vol. 39(2), 566-572.
- Vilchez-Perez, M. A., Fuster-Torres, A., Figueiredo, R., Valmaseda-Castellón, E. and Gay-Escoda, C. (2009) Periodontal health and lateral lower lip piercings: A split-mouth cross-sectional study. *Journal of Clinical Periodontology* Vol. 36(7), 558-563.
- Vilela, A. B. F., Soares, P. B. F., Oliveira, F. S., Garcia-Silva, T. C., Estrela, C., Versluis, A. and Soares, C. J. (2019) Dental trauma on primary teeth at different root resorption stages – A dynamic finite element impact analysis of the effect on the permanent tooth germ. *Dental Traumatology* Vol. 35(2), 101-108.
- Villa, G. and Giacobini, G. (1995) Subvertical grooves of interproximal facets in Neandertal posterior teeth. *American Journal of Physical Anthropology* Vol. 96(1), 51-62.
- Villmoare, B., Kuykendall, K., Rae, T. C. and Brimacombe, C. S. (2013) Continuous dental eruption identifies Sts 5 as the developmentally oldest fossil hominin and informs the taxonomy of *Australopithecus africanus*. *Journal of Human Evolution* Vol. 65(6), 798-805.
- Villotte, S., Churchill, S. E., Dutour, O. J. and Henry-Gambier, D. (2010) Subsistence activities and the sexual division of labor in the European Upper Paleolithic and Mesolithic: Evidence from upper limb enthesopathies. *Journal of Human Evolution* Vol. 59(1), 35-43.
- Vincent, M. (2020) *Criminal subculture in the Gulag: Prisoner society in the Stalinist labour camps, 1924-53*. London: Bloomsbury Academic.
- Von Cramon-Taubadel, N. (2011) Global human mandibular variation reflects differences in agricultural and hunter-gatherer subsistence strategies. *Proceedings of the National Academy of Sciences* Vol. 108(49), 19546-19551.
- Wakeham, W. (1898) *Report of the Expedition to Hudson Bay and Cumberland Gulf In the Steamship Diana under the command of Wm. Wakeham*. Ottawa: Marine and Fisheries 1897, Canada.
- Waldron, T. (2008) *Palaeopathology*. Cambridge University Press. First edition.
- Waldron, T. (2020) *Palaeopathology*. Cambridge University Press. Second edition.

Waldron, T. (2007) *Palaeoepidemiology: The epidemiology of human remains*. Walnut Creek, California: Left Coast Press.

Waldron, T. (1987) The relative survival of the human skeleton: implications for palaeopathology. In (eds) Boddington, A., Garland, A. N. and Janaway, R. C. *Death, decay and reconstruction. Approaches to archaeology and forensic science*. Manchester: Manchester University Press. Chapter 6, 55–64.

Walker, P. L. (2008) Sexing skulls using discriminant function analysis of visually assessed traits. *American Journal of Physical Anthropology* Vol. 136(1), 39-50.

Walker, P. L. (2005) Greater sciatic notch morphology: Sex, age, and population differences. *American Journal of Physical Anthropology* Vol. 127(4), 385-391.

Walker, R. S., Hill, K. R., Flinn, M. V., Ellsworth, R. M. and Michalak, P. (2011) Evolutionary history of hunter-gatherer marriage practices (phylogenetics of marriage). *PLoS ONE* Vol. 6(4), e19066.

Wallace, I., Nesbitt, A., Mongle, C., Gould, E. and Grine, F. (2014) Age-related variation in limb bone diaphyseal structure among Inuit foragers from Point Hope, northern Alaska. *Archives of Osteoporosis* Vol. 9(1), 1-11.

Wallace, J. A., Barrett, M. J., Brown, T., Brace, C. L., Howells, W. W., Koritzer, R. T., Sakura, H., Stloukal, M., Wolpoff, M. H. and Žlábek, K. (1975) Did La Ferrassie I use his teeth as a tool? [and comments and reply]. *Current Anthropology* Vol. 16(3), 393-401.

Wallace, J. A. (1974) Approximal grooving of teeth. *American Journal of Physical Anthropology* Vol. 40(3), 385-390.

Wallis, R. J. (2014) Re-examining stone 'wrist-guards' as evidence for falconry in later prehistoric Britain. *Antiquity* Vol. 88(340), 411-424.

Walrath, D. E., Turner, P. and Bruzek, J. (2004) Reliability test of the visual assessment of cranial traits for sex determination. *American Journal of Physical Anthropology* Vol. 125(2), 132-137.

Walker, P. L. and Erlandson, J. M. (1986) Dental evidence for prehistoric dietary change on the Northern Channel Islands, California. *American Antiquity* Vol. 51(2), 375-383.

Walker, P. L., Dean, G. and Shapiro, P. (1991) Estimating age from tooth wear in archaeological populations, in (eds) Kelley, M. A. & Larsen, C. S. *Advances in dental anthropology*. New York: Wiley-Liss, Chapter 9, 169-178.

Walter, B. S. and Dewitte, S. N. (2017) Urban and rural mortality and survival in Medieval England. *Annals of Human Biology* Vol. 44(4), 338-348.

- Warren, J. J., Fontana, M., Blanchette, D. R., Dawson, D. V., Drake, D. R., Levy, S. M., Kolker, J. L. and Phipps, K. R. (2016) Timing of primary tooth emergence among U.S. racial and ethnic groups. *Journal of Public Health Dentistry* Vol. 76(4), 259-262.
- Waters-Rist, A. (2011) *Biocultural diversity in Holocene period hunter-fisher-gatherers of Cis-Baikal, Siberia: Ancestry, activity, diet and health*. Unpublished Ph.D. Thesis. University of Calgary.
- Waters-Rist, A., Bazaliiskii, V. I., Weber, A., Goriunova, O. I. and Katzenberg, M. A. (2010) Activity-induced dental modification in Holocene Siberian hunter-fisher-gatherers. *American Journal of Physical Anthropology* Vol. 143(2), 266-278.
- Wasterlain, S. N., Neves, M. J. and Ferreira, M. T. (2016) Dental modifications in a skeletal sample of enslaved Africans found at Lagos (Portugal). *International Journal of Osteoarchaeology* Vol. 26(4), 621-633.
- Watson, J. T. (2008) Changes in food processing and occlusal dental wear during the early agricultural period in northwest Mexico. *American Journal of Physical Anthropology* Vol. 135(1), 92-99.
- Watson, J. T., Arriaza, B., Standen, V. and Muñoz Ovalle, I. (2013) Tooth wear related to marine foraging, agro-pastoralism and the Formative Transition on the Northern Chilean Coast. *International Journal of Osteoarchaeology* Vol. 23(3), 287-302.
- Watson, J. T. and García, C. M. (2017) Dental modification and the expansion and manipulation of Mesoamerican identity into Northwest Mexico. In (eds) Burnett, S. E. and Irish, J. D. *A world view of bioculturally modified teeth*. Gainesville: University Press of Florida. Chapter 19, 298-314.
- Watson, J. T., Ovalle, I. M. and Arriaza, B. T. (2010) Formative adaptations, diet, and oral health in the Azapa Valley of Northwest Chile. *Latin American Antiquity* Vol. 21(4), 423-439.
- Waugh, L. M. (1937b) Influence of diet on the jaws and face of the American Eskimo. *The Journal of the American Dental Association and the Dental Cosmos* Vol. 24(10), 1640-1647.
- Wayman, M. L., Smith, R. R., Hickey, C. G. and Duke, M. J. M. (1985) The analysis of copper artifacts of the Copper Inuit. *Journal of Archaeological Science* Vol. 12(5), 367-375.
- Webb, S. (1995) *Palaeopathology of Aboriginal Australians: Health and disease across a hunter-gatherer continent*. Cambridge: Cambridge University Press.
- Webb, S. (1984) *Prehistoric stress in Australian Aborigines: A palaeopathological survey of a hunter-gatherer population*. Unpublished Ph.D. Thesis. Australian National University.

- Weber, A. W. and Goriunova, O. I. (2013) Hunter–gatherer migrations, mobility and social relations: A case study from the Early Bronze Age Baikal region, Siberia. *Journal of Anthropological Archaeology* Vol. 32(3), 330-346.
- Weijjs, W. A. and Hillen, B. (1986) Correlations between the cross-sectional area of the jaw muscles and craniofacial size and shape. *American Journal of Physical Anthropology* Vol. 70(4), 423-431.
- Welch, P. D. and Scarry, C. M. (1995) Status-related variation in foodways in the Moundville chiefdom. *American Antiquity* Vol. 60(3), 397-420.
- West, C. F. (2009) Kodiak Island’s prehistoric fisheries: Human dietary response to climate change and resource availability. *Journal of Island and Coastal Archaeology* Vol. 4(2), 223–239.
- West, D. L., Lefèvre, C., Corbett, D. G and Crockford, S. J. (2003) A burial cave in the Western Aleutian Islands, Alaska. *Arctic Anthropology* Vol. 40(1), 70-86.
- Weyer, E. M. (1929) *An Aleutian burial*. New York City: The American Museum of Natural History.
- Weyer, E. M. (1928) Field catalogue of material from the Aleutian sarcophagus discovered on Fortress Island near Unalaska by The Stoll-McCracken expedition. *Central Archives 1928-80, Stall-McCracken Expedition, (E. M. Weyer Jr and Harold McCracken Collector), 99/9428-9432, 9456-9482, 9674*. American Museum of Natural History.
- Weyrich, L. S., Duchene, S., Soubrier, J., Arriola, L., Llamas, B., Breen, J., Morris, A. G., Alt, K. W., Caramelli, D., Dresely, V., Farrell, M., Farrer, A. G., Francken, M., Gully, N., Haak, W., Hardy, K., Harvati, K., Held, P., Holmes, E. C., Kaidonis, J., Lalueza-Fox, C., De La Rasilla, M., Rosas, A., Semal, P., Soltysiak, A., Townsend, G., Usai, D., Wahl, J., Huson, D. H., Dobney, K. and Cooper, A. (2017) Neanderthal behaviour, diet, and disease inferred from ancient DNA in dental calculus. *Nature* Vol. 544(7650), 357-361.
- Wheat, M. M. (1967) *Survival arts of the primitive Paiutes*. Reno: University of Nevada Press. Cited in Larsen, C. S. (1985) Dental modifications and tool use in the western Great Basin. *American Journal of Physical Anthropology* Vol. 67(4), 393-402.
- White, T. D., Black, M. T. and Folkens, P. A. (2012) *Human osteology*. San Diego, California: Academic Press 3rd ed.
- White, T. D., DeGusta, D., Richards, G. D. and Baker, S. G. (1997) Prehistoric dentistry in the American Southwest: A drilled canine from Sky Aerie, Colorado. *American Journal of Physical Anthropology* Vol. 103(3), 409-414.
- White, T. D. and Folkens, P. A. (2005) *The human bone manual*. Amsterdam; Boston: Elsevier Academic.

- Whittaker, D. K., Griffiths, S., Robson, A., Roger-Davies, P., Thomas, G. and Molleson, T. (1990) Continuing tooth eruption and alveolar crest height in an eighteenth-century population from Spitalfields, east London. *Archives of Oral Biology* Vol. 35(2), 81–85.
- Whittaker, D. K. and Molleson, T. (1996) Caries prevalence in the dentition of a late eighteenth century population. *Archives of Oral Biology* Vol. 41(1), 55-61.
- Whitley, D. S. and Loendorf, L. L. (1994) *New light on old art: Recent advances in hunter-gatherer rock art research*. Los Angeles: Institute of Archaeology, University of California, Los Angeles.
- Whitridge, P. (2016) Classic Thule [Classic Precontact Inuit]. In (eds) Friesen, T. M. and Mason, O. K. *The Oxford handbook of the prehistoric Arctic*. New York, NY: Oxford University Press. Chapter 35, 827-850.
- Wickham-Jones, C. R. (2014) Coastal Adaptations. In (eds) Cummings, V., Jordan, P. and Zvelebil, M. *The Oxford handbook of the archaeology and anthropology of hunter-gatherers*. Oxford: Oxford University Press. Chapter 31, 694-711.
- Wiley, P. and Ubelaker, D. H. (1976) Notched teeth from the Texas Panhandle. *Journal of the Washington Academy of Sciences* Vol. 66(4), 239-246.
- Williams, J. S. and White, C. D. (2006) Dental modification in the postclassic population from Lamanai, Belize. *Ancient Mesoamerica* Vol. 17(1), 139-151.
- Williams, R., Thomas, A., Bajada, S., Antonios, T., Morgan-Jones, R., Bekvalac, J. and Adds, P. (2018) Reliability evaluation of inter-eminence line, Akagi and Dalury lines for intraoperative tibial rotation: An osteology-based study. *The Knee* Vol. 25(3), 453-458.
- Willman, J. C. and Lacy, S. A. (2020) Oral pathological conditions of an Early Epipaleolithic human from Southwest Asia: Ohalo II H2 as a probable case of intentional dental ablation. *International Journal of Paleopathology* Vol.30, 68-76.
- Willmann, C., Mata, X., Hanghoej, K., Tonasso, L., Tisseyre, L., Jeziorski, C., Cabot, E., Chevet, P., Crubezy, E., Orlando, L., Esclassan, R. and Theves, C. (2018) Oral health status in historic population: Macroscopic and metagenomic evidence. *PLoS ONE* Vol. 13(5), e0196482.
- Willoughby, P. R., Compton, T., Bello, S. M., Bushozi, P. M., Skinner, A. R., Stringer, C. B. and Macchiarelli, R. (2018) Middle Stone Age human teeth from Magubike rockshelter, Iringa Region, Tanzania. *PloS One* Vol. 13(7), e0200530-e0200530.
- Wilmerding, E. G. and Hatfield, V. (2012) Six Thousand Years of Lithic Technology on Adak in a Broader Aleutian Context. In (eds) West, D., Hatfield, V., Wilmerding, E. G., Lefèvre, C. and Gualtieri, L. *The people*

before: *The geology, paleoecology and archaeology of Adak Island, Alaska*. Oxford: Archaeopress, Chapter 12, 211-237.

Wilson, L. A., Macleod, N. and Humphrey, L. T. (2008) Morphometric criteria for sexing juvenile human skeletons using the ilium. *Journal of Forensic Sciences* Vol. 53(2), 269-278.

Winterhalder, B. and Smith, E. A. (1981) *Hunter-gatherer foraging strategies: Ethnographic and archeological analyses*. Chicago: University of Chicago Press.

Wobst, H. M. (2004) Indigenous archaeologies: A worldwide perspective on human materialities and human rights. In (eds) Smith, C. and Wobst, H. M. *Indigenous archaeologies: Decolonizing theory and practice*. Routledge.

Woelber, J. P. and Tennert, C. (2020) Diet and periodontal disease. In (eds) Zohoori, F. V. and Duckworth, R. M. *Impact of diet and nutrition on oral health*. Basal: Monographs of Oral Science. Chapter 13, 125-133.

Wolff, K., Hadadi, E. and Vas, Z. (2013) A novel multidisciplinary approach toward a better understanding of cranial suture closure: The first evidence of genetic effects in adulthood. *American Journal of Human Biology* Vol. 25(6), 835-843.

Wood, J. W., Milner, G. R., Harpending, H. C., Weiss, K. M., Cohen, M. N., Eisenberg, L. E., Hutchinson, D. L., Jankauskas, R., Cesnys, G., Katzenberg, M. A., Lukacs, J. R., McGrath, J. W., Roth, E. A., Ubelaker, D. H. and Wilkinson, R. G. (1992) The osteological paradox: Problems of inferring prehistoric health from skeletal samples [and comments and reply]. *Current Anthropology* Vol. 33(4), 343-370.

Wood, B. F. (1971) Malocclusion in the modern Alaskan Eskimo. *American Journal of Orthodontics*, Vol. 60(4), 344-354.

Wood, S. R. (1992) *Tooth wear and the sexual division of labour in an Inuit population*. Unpublished Master of Arts Thesis. Simon Fraser University, Canada.

Wordie, J. M., Manley, G., White, P. F. and Johnson, D. McI. (1927) The Cambridge Expedition to East Greenland in 1926. *The Geographical Journal*, Vol. 70(3), 225-265.

Wordie, J. M. and Whittard, W. F. (1930) A contribution to the geology of the country between Petermann Peak and Kjerulf Fjord, East Greenland. *Geological Magazine* Vol. 67(4), 145-158.

Workman, W. B. (1998) Archaeology of the southern Kenai Peninsula. *Arctic Anthropology* Vol. 35(1), 146-159.

Workman, W. B. (1966) Prehistory at Port Moller, Alaska Peninsula, in light of field work in 1960. *Arctic Anthropology* Vol. 3(2) 132-153.

- Workman, W. B., Lobdell, J. E. and Workman, K. W. (1980) Recent archaeological work in Kachemak Bay, Gulf of Alaska. *Arctic* Vol. 33(3), 385-399.
- Wylleman, A., Van der Veken, D., Teughels, W., Quirynen, M. and Laleman, I. (2020) Alveolar bone level at deciduous molars in Flemish children: A retrospective, radiographic study. *Journal of Clinical Periodontology* Vol.47 (6), 660-667.
- Xanthopoulou, P., Valakos, E., Youlatos, D. and Nikita, E. (2018) Assessing the accuracy of cranial and pelvic ageing methods on human skeletal remains from a modern Greek assemblage. *Forensic Science International* Vol. 286, 266.e1-266.e8.
- Yamamoto, T., Hasegawa, T., Yamamoto, T., Hongo, H. and Amizuka, N. (2016) Histology of human cementum: Its structure, function, and development. *Japanese Dental Science Review* Vol. 52(3), 63-74.
- Y'Edynak, G. (1976) Long bone growth in western Eskimo and Aleut skeletons. *American Journal of Physical Anthropology* Vol. 45(3), 569-574.
- Yesner, D. R. (1989) Osteological remains from Larsen Bay, Kodiak Island, Alaska. *Arctic Anthropology*, Vol. 26(2), 96-106.
- Yesner, D. R. (2004) Prehistoric maritime adaptations of the subarctic and subantarctic zones: The Aleutian/Fuegian connection reconsidered. *Arctic Anthropology* Vol. 41(2), 76-97.
- Yesner, D. R., Ayres, W. S., Carlson, D. L., Davis, R. S., Dewar, R., Hassan, F. A., Hayden, B., Lischka, J. J., Sheets, P. D., Osborn, A., Pokotylo, D. L., Rogers, T., Spanier, E., Turner, B. L. and Wreschner, E. E. (1980) Maritime hunter-gatherers: Ecology and prehistory [and comments and reply]. *Current Anthropology* Vol. 21(6), 727-750.
- Yoder, C., Ubelaker, D. H. and Powell, J. F. (2001) Examination of variation in sternal rib end morphology relevant to age assessment. *Journal of Forensic Sciences* Vol. 46(2), 223-227.
- Yu, O. Y., Zhao, I. S., Mei, M. L., Lo, E. C. M. and Chu, C. H. (2018) Caries-arresting effects of silver diamine fluoride and sodium fluoride on dentine caries lesions. *Journal of Dentistry* Vol.78, 65-71.
- Żądzińska, E., Karasińska, M., Jedrychowska-Dańska, K., Watała, C. and Witas, H. W. (2008) Sex diagnosis of subadult specimens from Medieval Polish archaeological sites: Metric analysis of deciduous dentition. *HOMO - Journal of Comparative Human Biology* Vol. 59(3), 175-187.
- Zawadski, K. U. (2018) Lines of discovery on Inuit needle cases, Kakpiit, in museum collections. *Museum Anthropology* Vol. 41(1), 61-75.

- Zegura, S. L. (1978) The Eskimo population system: Linguistic framework and skeletal remains. In (eds) Jamison, P. L., Zegura, S. L. and Frederick, A. M. *Eskimos of the Northwestern Alaska. A biological perspective*. Stroudsburg, Pennsylvania: Dowden, Hutchison & Ross. Chapter 2, 8-30.
- Zegura, S. L. (1975) Taxonomic congruence in Eskimoid populations. *American Journal of Physical Anthropology* Vol. 43(2), 271-284.
- Zhan, Y., Samietz, S., Holtfreter, B., Hannemann, A., Meisel, P., Nauck, M., Völzke, H., Wallaschofski, H., Dietrich, T. and Kocher, T. (2014) Prospective study of serum 25-hydroxy Vitamin D and tooth loss. *Journal of Dental Research* Vol. 93(7), 639-644.
- Zhang, H., Merrett, D. C., Xiao, X., Zhang, Q., Wei, D., Wang, L., Ma, X., Zhu, H. and Yang, D. Y. (2016a) A comparative study of oral health in three Late Bronze Age populations with different subsistence practices in North China. *Quaternary International* Vol. 405, 44-58.
- Zhang, H., Merrett, D. C., Jing, Z., Tang, J. and He, Y., et al. (2016b) Osteoarchaeological Studies of Human Systemic Stress of Early Urbanization in Late Shang at Anyang, China. *PLOS ONE* 11(4), e0151854.
- Zhang, Y., Leung, D. Y., Richers, B. N., Liu, Y., Remigio, L. K., Riches, D. W., and Goleva, E. (2012) Vitamin D inhibits monocyte/macrophage proinflammatory cytokine production by targeting MAPK phosphatase-1. *The Journal of Immunology* Vol. 188(5), 2127–2135.
- Zhao, Y., Guo, L., Xiao, Y., Niu, Y., Zhang, X., He, D. and Zeng, W. (2020) Osteological characteristics of Chinese foot-binding in archaeological remains. *International Journal of Paleopathology* Vol. 28, 48-58.
- Zhao, Y., Kershaw, T., Ettinger, A., Higgins, C., Lu, M. and Chao, S. (2015) Association between life event stressors and low birth weight in African American and White populations: Findings from the 2007 and 2010 Los Angeles mommy and baby (LAMB) Surveys. *Maternal and Child Health Journal* Vol. 19(10), 2195-2205.
- Zhou, J., Zhao, Y. F., Xia, C. Y. and Jiang, L. (2012) Periodontitis with hypercementosis: Report of a case and discussion of possible aetiologic factors. *Australian Dental Journal* Vol. 57(4), 511-514.
- Ziker, J. P. (2015) Diets of hunter-gatherers in the Arctic and Subarctic. In (eds) Lee-Thorp, J. A. and Katzenberg, M. A. *The Oxford handbook of the archaeology of diet*. Oxford: Oxford University Press. Chapter 28, 1-20.
- Zimmerman, M. R. (2012) The analysis and interpretation of mummified remains. In (eds) Grauer, A. L. *A companion to paleopathology*, Chichester, West Sussex; Malden, Massachusetts: Blackwell Publishing Ltd. Chapter 9, 152-168.

- Zimmerman, M. R. (1998) Alaskan and Aleutian mummies. In (eds) Cockburn, T. A., Cockburn, E. and Reyman, T. A. *Mummies, disease and ancient cultures*. Cambridge: Cambridge University Press.
- Zimmerman, M. R. and Aufderheide, A. C. (1984) The frozen family of Utqiagvik: The autopsy findings. *Arctic Anthropology*, Vol. 21(1), 53-64.
- Zimmerman, M. R., Yeatman, G. W., Sprinz, H. and Titterington, W. P. (1971) Examination of an Aleutian mummy. *Bulletin of the New York Academy of Medicine* Vol. 47(1), 80-103.
- Zimmerman, M. R., Jensen, A. M. and Sheehan, G. W. (2000) Agnaiyaaq: The Autopsy of a Frozen Thule Mummy. *Arctic Anthropology*, Vol. 37(2), 52-59.
- Zságer, L. Z. (2010) Miniature carvings in the Canadian Dorset culture: The Paleo-Eskimo belief system. *Perspectivas Colombo-Canadienses* Vol. 3, 108–21.
- Zvelebil, M. and Weber, A. W. (2013) Human bioarchaeology: Group identity and individual life histories – Introduction. *Journal of Anthropological Archaeology* Vol. 32(3), 275-279.

Appendices

To accompany the thesis by C. S. McElvaney

Table of Contents

I.	List of Appendix Tables	ii
II.	List of Appendix Images	vii
1	Appendix - Tables.....	1
2	Appendix – Supplementary Information	337
2.1	Skeletal Morphological Characteristics.....	337
2.2	Maturation Patterns	339
2.3	Problems.....	340
2.4	Proposals	341
2.5	Summary.....	342
I.	<u>List of Appendix Tables</u>	
	Appendix Table 1 Material - All individuals.....	1
	Appendix Table 2 Material - Locations.....	93
	Appendix Table 3 Methods - Sex estimation categories.....	97
	Appendix Table 4 Methods - Y'Edynak (1976)	98
	Appendix Table 5 Method – Linear enamel hypoplasia.....	99
	Appendix Table 6 Methods - Row 46-Alveolar bone alterations	100
	Appendix Table 7 Methods - Row 47-Periodontal grades.....	102
	Appendix Table 8 Intra-observer error - sex.....	103
	Appendix Table 9 Intra-observer error - age	103
	Appendix Table 10 Tooth Presence – Amaknak Island females	104
	Appendix Table 11 Tooth Presence – Amaknak Island males.....	105
	Appendix Table 12 Tooth Presence – Amaknak Island subadults.....	106
	Appendix Table 13 Tooth Presence – Canada Unknown females	107
	Appendix Table 14 Tooth Presence – Canada Unknown males	108
	Appendix Table 15 Tooth Presence – Canada Unknown subadults.....	109
	Appendix Table 16 Tooth Presence – Coats Island females	110
	Appendix Table 17 Tooth Presence – Coats Island males	111
	Appendix Table 18 Tooth Presence – Coats Island subadults.....	112
	Appendix Table 19 Tooth Presence – East Greenland females	113
	Appendix Table 20 Tooth Presence – East Greenland males.....	114
	Appendix Table 21 Tooth Presence – Greenland Unknown females	115
	Appendix Table 22 Tooth Presence – Greenland Unknown males.....	116
	Appendix Table 23 Tooth Presence – Greenland Unknown subadults	117
	Appendix Table 24 Tooth Presence – Hudson Bay females	118
	Appendix Table 25 Tooth Presence – Hudson Bay males	119
	Appendix Table 26 Tooth Presence – Hudson Bay subadults.....	120
	Appendix Table 27 Tooth Presence – North Alaska females	121
	Appendix Table 28 Tooth Presence – North Alaska males.....	122
	Appendix Table 29 Tooth Presence – North Alaska subadults	123
	Appendix Table 30 Tooth Presence – North Greenland females	124
	Appendix Table 31 Tooth Presence – North Greenland males.....	125
	Appendix Table 32 Tooth Presence – North Greenland subadults	126
	Appendix Table 33 Tooth Presence – Nunavut females	127
	Appendix Table 34 Tooth Presence – Nunavut males.....	128
	Appendix Table 35 Tooth Presence – Nunavut subadults	129
	Appendix Table 36 Tooth Presence – South Alaska females.....	130
	Appendix Table 37 Tooth Presence – South Alaska males	131
	Appendix Table 38 Tooth Presence – South Alaska subadults.....	132
	Appendix Table 39 Tooth Presence – South Greenland females.....	133
	Appendix Table 40 Tooth Presence – South Greenland males	134
	Appendix Table 41 Tooth Presence – St. Lawrence Island females	135
	Appendix Table 42 Tooth Presence – St Lawrence Island males.....	136
	Appendix Table 43 Tooth Presence – Vancouver Island females.....	137

Appendix Table 44 Tooth Presence – Vancouver Island males	138
Appendix Table 45 Tooth Presence – Vancouver Island subadults	139
Appendix Table 46 Tooth Presence – West Aleutians females	140
Appendix Table 47 Tooth Presence – West Aleutians males.....	141
Appendix Table 48 Tooth Presence – West Aleutians subadults	142
Appendix Table 49 Tooth Presence – West Greenland females	143
Appendix Table 50 Tooth Presence – West Greenland males.....	144
Appendix Table 51 Tooth Presence – West Greenland subadults.....	145
Appendix Table 52 Malpositions (Row 1 - score 15) - percentages	146
Appendix Table 53 Occlusal surface caries in premolars and molars (Row 2) – females.....	147
Appendix Table 54 Occlusal surface caries in premolars and molars (Row 2) – males.....	148
Appendix Table 55 Occlusal surface caries in premolars and molars (Row 2) – subadults	149
Appendix Table 56 Pit sites in molars and upper incisors (Row 3) – all.....	150
Appendix Table 57 Occlusal attrition facet enamel edge chipping and caries (Row 6) – all.....	150
Appendix Table 58 Mesial approximal attrition score (Row 7) – adults.....	154
Appendix Table 59 Mesial approximal attrition score (Row 7) – subadults	155
Appendix Table 60 Mesial contact area caries (Row 8) – females	156
Appendix Table 61 Mesial contact area caries (Row 8) – males	157
Appendix Table 62 Mesial contact area caries (Row 8) – subadults.....	158
Appendix Table 63 Mesial root surface caries (Row 9) – females	159
Appendix Table 64 Mesial root surface caries (Row 9) – males	160
Appendix Table 65 Mesial root surface caries (Row 9) – subadults.....	161
Appendix Table 66 Distal approximal attrition score (Row 11) – females	162
Appendix Table 67 Distal approximal attrition score – males	163
Appendix Table 68 Distal approximal attrition score – subadults.....	164
Appendix Table 69 Distal contact area caries (Row 12) – females.....	165
Appendix Table 70 Distal contact area caries (Row 12) – males	166
Appendix Table 71 Distal contact area caries (Row 12) – subadults	167
Appendix Table 72 Distal root surface caries (Row 13) – females.....	168
Appendix Table 73 Distal root surface caries (Row 13) – males	169
Appendix Table 74 Distal root surface caries (Row 13) – subadults.....	170
Appendix Table 75 Lingual root surface caries (Row 19) – females	171
Appendix Table 76 Lingual root surface caries (Row 19) – males	172
Appendix Table 77 Lingual root surface caries (Row 19) – subadults.....	173
Appendix Table 78 Wear (Extent) (Row 35) - most frequent score - females	174
Appendix Table 79 Wear (Extent) (Row 35) - most frequent score - males.....	175
Appendix Table 80 Wear (Extent) (Row 35) - most frequent score - subadults.....	176
Appendix Table 81 Wear (Gradient) (Row 36) - most frequent score - females	177
Appendix Table 82 Wear (Gradient) (Row 36) - most frequent score - males.....	178
Appendix Table 83 Wear (Gradient) (Row 36) - most frequent score - subadults	179
Appendix Table 84 - Caries – total	180
Appendix Table 85 Alveolar bone resorption – Mesial (Row 10) – Mean.....	181
Appendix Table 86 Alveolar bone resorption – Distal (Row 14) – Mean.....	182
Appendix Table 87 Alveolar bone resorption – Buccal (Row 17) – Mean	183
Appendix Table 88 Alveolar bone resorption – lingual (Row 20) – mean.....	184
Appendix Table 89 – Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) – female pooled	185
Appendix Table 90 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - female YA	185
Appendix Table 91 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - female MA	185
Appendix Table 92 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - male pooled.....	186
Appendix Table 93 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - male YA.....	186

Appendix Table 94 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - male MA.....	186
Appendix Table 95 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - subadult pooled.....	187
Appendix Table 96 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - subadult child	187
Appendix Table 97 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – female pooled.....	187
Appendix Table 98 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – female YA.....	187
Appendix Table 99 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – male pooled	187
Appendix Table 100 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – male YA	187
Appendix Table 101 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – subadult pooled	187
Appendix Table 102 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – subadult child	188
Appendix Table 103 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Amaknak Island	189
Appendix Table 104 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Canada Unknown - adults.....	189
Appendix Table 105 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Coats Island - adults.....	190
Appendix Table 106 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Coats Island - subadults.....	190
Appendix Table 107 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – East Greenland - adults.....	191
Appendix Table 108 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Greenland Unknown - adults	191
Appendix Table 109 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Hudson Bay - adults.....	192
Appendix Table 110 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Hudson Bay - subadults.....	192
Appendix Table 111 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – North Alaska - adults	193
Appendix Table 112 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – North Greenland - adults	193
Appendix Table 113 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Nunavut - adults	194
Appendix Table 114 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – subadults	194
Appendix Table 115 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – South Alaska- adults.....	195
Appendix Table 116 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – South Greenland- adults.....	195
Appendix Table 117 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – St. Lawrence Island - adults	196
Appendix Table 118 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Vancouver Island - adults.....	196
Appendix Table 119 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – West Aleutians - adults	197
Appendix Table 120 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – West Greenland - adults	197
Appendix Table 121 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – West Greenland - subadults.....	198

Appendix Table 122 Traumatic enamel macrofracture (notching) - females true prevalence rates.....	199
Appendix Table 123 Traumatic enamel macrofracture (notching) - males true prevalence rates	203
Appendix Table 124 Traumatic enamel macrofracture (notching) - subadults true prevalence rates.....	207
Appendix Table 125 Traumatic enamel macrofracture (chipping) - females true prevalence rates	214
Appendix Table 126 Traumatic enamel macrofracture (chipping) - males true prevalence rates.....	217
Appendix Table 127 Traumatic enamel macrofracture (chipping) - subadults true prevalence rates.....	221
Appendix Table 128 – Linear enamel hypoplasia – Prevalence – Hudson Bay	228
Appendix Table 129 Linear enamel hypoplasia - Prevalence - North Greenland.....	228
Appendix Table 130 Linear enamel hypoplasia - Prevalence - Nunavut.....	229
Appendix Table 131 Linear enamel hypoplasia - Prevalence - South Alaska	229
Appendix Table 132 – Linear enamel hypoplasia and antemortem tooth loss – tooth	230
Appendix Table 133 Calculus – buccal (Row 40) – female YA	231
Appendix Table 134 Calculus – buccal (Row 40) – female MA	231
Appendix Table 135 Calculus – buccal (Row 40) – male YA.....	232
Appendix Table 136 Calculus – buccal (Row 40) – male MA.....	232
Appendix Table 137 Calculus – buccal (Row 40) – subadult infant.....	233
Appendix Table 138 Calculus – buccal (Row 40) – subadult child	233
Appendix Table 139 Calculus – buccal (Row 40) – subadult adolescent	233
Appendix Table 140 Calculus – lingual (Row 41) – female YA	234
Appendix Table 141 Calculus – lingual (Row 41) – female MA	234
Appendix Table 142 Calculus – lingual (Row 41) – male YA	235
Appendix Table 143 Calculus – lingual (Row 41) – male MA	235
Appendix Table 144 Calculus – lingual (Row 41) – subadult infant	236
Appendix Table 145 Calculus – lingual (Row 41) – subadult child	236
Appendix Table 146 Calculus – lingual (Row 41) – subadult adolescent	237
Appendix Table 147 Calculus – distal (Row 42) – female YA	237
Appendix Table 148 Calculus – distal (Row 42) – female MA	238
Appendix Table 149 Calculus – distal (Row 42) – male YA.....	238
Appendix Table 150 Calculus – distal (Row 42) – male MA.....	239
Appendix Table 151 Calculus – distal (Row 42) – subadult infant.....	239
Appendix Table 152 Calculus – distal (Row 42) – subadult child	240
Appendix Table 153 Calculus – distal (Row 42) – subadult adolescent	240
Appendix Table 154 Calculus – mesial (Row 43) – female YA	241
Appendix Table 155 Calculus – mesial (Row 43) – female MA.....	241
Appendix Table 156 Calculus – mesial (Row 43) – male YA.....	242
Appendix Table 157 Calculus – mesial (Row 43) – male MA	242
Appendix Table 158 Calculus – mesial (Row 43) – subadult infant.....	243
Appendix Table 159 Calculus – mesial (Row 43) – subadult child.....	243
Appendix Table 160 Calculus – mesial (Row 43) – subadult adolescent.....	244
Appendix Table 161 Calculus – occlusal (Row 44) - female YA	244
Appendix Table 162 Calculus – occlusal (Row 44) - female MA.....	245
Appendix Table 163 Calculus – occlusal (Row 44) - male YA.....	245
Appendix Table 164 Calculus – occlusal (Row 44) - male MA.....	246
Appendix Table 165 Calculus – occlusal (Row 44) - subadult infant.....	246
Appendix Table 166 Calculus – occlusal (Row 44) – subadult child.....	246
Appendix Table 167 Calculus – occlusal (Row 44) - subadult adolescent.....	247
Appendix Table 168 Calculus buccal (Row 40) females - true prevalence rates	248
Appendix Table 169 Calculus buccal (Row 40) males - true prevalence rates.....	250
Appendix Table 170 Calculus buccal (Row 40) subadults - true prevalence rates	252
Appendix Table 171 Calculus lingual (Row 41) females - true prevalence rates	256
Appendix Table 172 Calculus lingual (Row 41) males - true prevalence rates.....	258
Appendix Table 173 Calculus lingual (Row 41) subadults - true prevalence rates	260
Appendix Table 174 Calculus distal (Row 42) – females - true prevalence rates	263
Appendix Table 175 Calculus distal (Row 42) – males - true prevalence rates.....	265
Appendix Table 176 Calculus distal (Row 42) – subadults - true prevalence rates.....	267
Appendix Table 177 Calculus mesial (Row 43) – females true prevalence rates.....	270

Appendix Table 178 Calculus mesial (Row 43) – males true prevalence rates	272
Appendix Table 179 Calculus mesial (Row 43) – subadults true prevalence rates.....	274
Appendix Table 180 Calculus occlusal (Row 44) – females true prevalence rates	277
Appendix Table 181 Calculus occlusal (Row 44) – males true prevalence rates	279
Appendix Table 182 Calculus occlusal (Row 44) – subadults true prevalence rates.....	281
Appendix Table 183 Periodontal Disease – using methods by Kerr (1991) (Row 50) – female YA	285
Appendix Table 184 Periodontal Disease – using methods by Kerr (1991) (Row 50) – female MA	285
Appendix Table 185 Periodontal Disease – using methods by Kerr (1991) (Row 50) – male YA	286
Appendix Table 186 Periodontal Disease – using methods by Kerr (1991) (Row 50) – male MA	286
Appendix Table 187 Periodontal Disease – using methods by Kerr (1991) (Row 50) – subadult child ...	287
Appendix Table 188 Periodontal Disease – using methods by Kerr (1991) (Row 50) – subadult adolescent	287
Appendix Table 189 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Amaknak Island females	288
Appendix Table 190 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Amaknak Island males	288
Appendix Table 191 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Canada Unknown females	289
Appendix Table 192 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Canada Unknown males	289
Appendix Table 193 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Canada Unknown subadults	290
Appendix Table 194 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Coats Island females	290
Appendix Table 195 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Coats Island males	291
Appendix Table 196 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Coats Island subadults	292
Appendix Table 197 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – East Greenland females	292
Appendix Table 198 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – East Greenland males	293
Appendix Table 199 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Greenland Unknown females	293
Appendix Table 200 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Greenland Unknown males	294
Appendix Table 201 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Greenland Unknown - subadults	294
Appendix Table 202 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Hudson Bay females	295
Appendix Table 203 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Hudson Bay males	296
Appendix Table 204 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Hudson Bay subadults	297
Appendix Table 205 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – North Greenland females	297
Appendix Table 206 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – North Greenland males	298
Appendix Table 207 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – North Greenland subadults	298
Appendix Table 208 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Nunavut females	299
Appendix Table 209 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Nunavut males	300
Appendix Table 210 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Nunavut subadults	300

Appendix Table 211 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Alaska females	301
Appendix Table 212 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Alaska males	301
Appendix Table 213 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Alaska subadults	302
Appendix Table 214 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Greenland females	302
Appendix Table 215 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Greenland males	303
Appendix Table 216 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – St. Lawrence females	303
Appendix Table 217 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – St. Lawrence males	304
Appendix Table 218 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Vancouver Island females	304
Appendix Table 219 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Vancouver Island males	305
Appendix Table 220 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Vancouver Island subadults	305
Appendix Table 221 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Aleutians females	306
Appendix Table 222 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Aleutians males	306
Appendix Table 223 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Aleutians subadults	307
Appendix Table 224 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Greenland females	307
Appendix Table 225 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Greenland males	308
Appendix Table 226 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Greenland subadults	308
Appendix Table 227 Row 1, score 16 (root resorption)	309
Appendix Table 228 Row 1, score 16 – total and percentages for all occurrences by age/sex class	310
Appendix Table 229 - PMDA - presence/absence	311
Appendix Table 230 - PMDA-Type	312
Appendix Table 231 Paramasticatory Dental Activities - prevalence of feature presence	313
Appendix Table 232 - PMDA - published literature	315
Appendix Table 233 – Paramasticatory dental activities – Prevalence – facets – Amaknak Island	323
Appendix Table 234 Paramasticatory dental activities – Prevalence – facets – South Alaska	323
Appendix Table 235 Paramasticatory dental activities – Prevalence – facets – West Aleutians	324
Appendix Table 236 Paramasticatory dental activities – Prevalence – facets – West Greenland	324
Appendix Table 237 Paramasticatory dental activities – Prevalence – striae – Amaknak Island	325
Appendix Table 238 Paramasticatory dental activities – Prevalence – striae – Coats Island	325
Appendix Table 239 Paramasticatory dental activities – Prevalence – striae – Hudson Bay	326
Appendix Table 240 Paramasticatory dental activities – Prevalence – striae – North Alaska	326
Appendix Table 241 Paramasticatory dental activities – Prevalence – striae – South Alaska	327
Appendix Table 242 Paramasticatory dental activities – Prevalence – striae – South Greenland	327
Appendix Table 243 Paramasticatory dental activities – Prevalence – striae – West Greenland	328
Appendix Table 244 Length and width of largest of the lingual distal features	329
Appendix Table 245 - Dental features and periodontal disease - Ogden (2008)	330
Appendix Table 246 Cranial and odontological morphology and characteristics	338

II. List of Appendix Images

Appendix Image 1 Recording sheet – 1	331
Appendix Image 2 Recording sheet – 2	331

Appendix Image 3 Recording sheet – 3	332
Appendix Image 4 Recording sheet – 4	332
Appendix Image 5 Recording sheet – 5	333
Appendix Image 6 Recording sheet – 6	333
Appendix Image 7 Recording sheet – 7	334
Appendix Image 8 Recording sheet – 8	334
Appendix Image 9 Recording sheet – 9	335
Appendix Image 10 Recording sheet – 10	335
Appendix Image 11 Recording sheet – 11	336
Appendix Image 12 Recording sheet – 12	336

1 Appendix - Tables

Appendix Table 1 Material - All individuals

All individuals analysed in this study, including those which lacked dental remains or alveolar bone remains

Sample	Skeletal ID	Sex	Age	Temporal context	Held
Nunavut	IX-C:4718	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
North Alaska	IX:B-410	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	JcDe-10-TN01	Indeterminate	Early middle adult	Late Prehistoric	CMH
Nunavut	JcDe-6-TN01	Indeterminate	Adolescent	Late Prehistoric	CMH
Nunavut	JcDe-6TN02	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	KfDe-5:930	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	KfDf-2:392	Unknown due to age	Early post-natal infant	Late Prehistoric	CMH
Hudson Bay	KfDf-2:60	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	KfJn-11:464	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	KfJn-11:465	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	KfJn-11:474	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	KfJn-11:477	Indeterminate	Adult unknown	Late Prehistoric	CMH
Canada Unknown	Kk-Jg-1:744	Indeterminate	Adult unknown	Unknown	CMH

Nunavut	KkDo-1:2674	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	KkDo-1:2811	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Coats Island	KkHh-1:1049	Indeterminate	Young adult	Historic	CMH
Nunavut	KkHh-2:231	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	KkHh-2:277	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	KkHh-2:282	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	KkHh-2:291	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	KkHh-2:318	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	KkHh-2:319	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	KkHh-2:329	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	KkHh-3:154	Indeterminate	Adolescent	Late Prehistoric	CMH
Coats Island	KkHh-3:296	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	KkHh-3:374	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	KkHh-3:400	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	KkHh-3:558	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	KkHh-3:720	Indeterminate	Adult unknown	Late Prehistoric	CMH

Coats Island	KkHh-3:783	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	KkHh-5:14	Indeterminate	Adult unknown	Prehistoric/Historic	CMH
Coats Island	KkHh-5:40	Indeterminate	Adult unknown	Prehistoric/Historic	CMH
Coats Island	KkHh-5:41	Indeterminate	Young adult	Prehistoric/Historic	CMH
Coats Island	KkHh-5:98	Indeterminate	Adult unknown	Prehistoric/Historic	CMH
Coats Island	KkHh-5:99	Indeterminate	Young adult	Prehistoric/Historic	CMH
Coats Island	KkHh-5:T3-15-1	Indeterminate	Adult unknown	Prehistoric/Historic	CMH
Hudson Bay	KkJf-8:11	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	KkJg-1:747	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	MbNs-1:126	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	MkPk-3:700	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	NiNg-10:484	Indeterminate	Mature adult	Unknown	CMH
Hudson Bay	PeHa-1:2206	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	PfFm-1:881	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	PgHb-1:01597	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	PjLd-5:47	Indeterminate	Later middle adult	Late Prehistoric	CMH
Hudson Bay	Skeleton 2-1 (XIV-C: 61, 62, 63, 64, 65)	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	Skeleton 2-2 (XIV-C: 61, 62, 63, 64, 65)	Indeterminate	Adult unknown	Unknown	CMH

Hudson Bay	XII-E:043	Possible Female	Early middle adult	Unknown	CMH
Hudson Bay	XIV-B:003	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-B:004	Possible Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-B:005-1	Male	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:002	Male	Young adult	Unknown	CMH
Hudson Bay	XIV-C:003	Female	Young adult	Unknown	CMH
North Alaska	XIV-C:004	Unknown due to age	Early child	Unknown	CMH
Nunavut	XIV-C:005	Male	Adult unknown	Unknown	CMH
Nunavut	XIV-C:006	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:007	Possible Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:008	Possible Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:009	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:010	Possible Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:011	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:012	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-C:013	Possible Female	Later middle adult	Late Prehistoric	CMH

Hudson Bay	XIV-C:014	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:015	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:016	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:017	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:018	Unknown due to age	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:019	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:020	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:021	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:022 A AND B	Possible Female	Adult unknown	Late Prehistoric	CMH
North Alaska	XIV-C:023	Male	Later middle adult	Unknown	CMH
North Alaska	XIV-C:024	Unknown due to age	Early child	Unknown	CMH
North Alaska	XIV-C:025	Female	Adolescent	Unknown	CMH
North Alaska	XIV-C:026	Female	Adolescent	Unknown	CMH
North Alaska	XIV-C:027-1	Female	Young adult	Unknown	CMH
Hudson Bay	XIV-C:028	Female	Adolescent	Unknown	CMH
Canada Unknown	XIV-C:029	Indeterminate	Young adult	Unknown	CMH
Nunavut	XIV-C:030	Male	Early middle adult	Unknown	CMH

Nunavut	XIV-C:031	Female	Adult unknown	Unknown	CMH
Nunavut	XIV-C:032	Male	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:033	Male	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:034	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:035	Female	Young adult	Late Prehistoric	CMH
North Alaska	XIV-C:036	Possible Male	Mature adult	Unknown	CMH
Hudson Bay	XIV-C:038	Male	Young adult	Unknown	CMH
Hudson Bay	XIV-C:039	Possible Female	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:040	Female	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:041	Female	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:042	Female	Adolescent	Unknown	CMH
Hudson Bay	XIV-C:043	Male	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:044	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:045	Female	Young adult	Unknown	CMH
Nunavut	XIV-C:046	Unknown due to age	Adolescent	Historic	CMH
Nunavut	XIV-C:047	Unknown due to age	Later child	Historic	CMH
Nunavut	XIV-C:048-1	Female	Later middle adult	Historic	CMH
Nunavut	XIV-C:048-2	Unknown due to age	Subadult unknown	Historic	CMH
Nunavut	XIV-C:049	Possible Male	Mature adult	Historic	CMH

Coats Island	XIV-C:050	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:051	Male	Later middle adult	Unknown	CMH
Hudson Bay	XIV-C:052	Unknown due to age	Later child	Unknown	CMH
Nunavut	XIV-C:053	Male	Young adult	Unknown	CMH
Nunavut	XIV-C:054	Unknown due to age	Later child	Unknown	CMH
Hudson Bay	XIV-C:055	Male	Adolescent	Unknown	CMH
North Alaska	XIV-C:056	Male	Mature adult	Unknown	CMH
Canada Unknown	XIV-C:057-1	Possible Female	Mature adult	Unknown	CMH
Hudson Bay	XIV-C:057-2	Possible Female	Adult unknown	Historic	CMH
Canada Unknown	XIV-C:057-3	Indeterminate	Adult unknown	Unknown	CMH
Canada Unknown	XIV-C:057A	Male	Young adult	Unknown	CMH
Hudson Bay	XIV-C:058	Possible Male	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:059	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:060	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:061	Male	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:062	Possible Female	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:063	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:064	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:065	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:066	Unknown due to age	Later child	Historic	CMH

Hudson Bay	XIV-C:067-1	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:069	Possible Male	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:070	Unknown due to age	Later post-natal infant	Historic	CMH
Hudson Bay	XIV-C:071	Unknown due to age	Later post-natal infant	Historic	CMH
Hudson Bay	XIV-C:072-1	Unknown due to age	Later child	Historic	CMH
Hudson Bay	XIV-C:072-2	Unknown due to age	Subadult unknown	Historic	CMH
Hudson Bay	XIV-C:072-3	Unknown due to age	Subadult unknown	Historic	CMH
Hudson Bay	XIV-C:072-4	Indeterminate	Adult unknown	Unknown	CMH
Coats Island	XIV-C:074	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:075	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:076	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:077	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:078	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:079	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:080	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:083	Unknown due to age	Subadult unknown	Historic	CMH

Coats Island	XIV-C:084	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:085	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:087	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:088	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:096	Possible Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:097	Female	Young adult	Historic	CMH
Coats Island	XIV-C:098	Possible Female	Mature adult	Historic	CMH
Coats Island	XIV-C:099	Male	Mature adult	Historic	CMH
Coats Island	XIV-C:100	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:101	Female	Young adult	Historic	CMH
Coats Island	XIV-C:102	Male	Young adult	Historic	CMH
Coats Island	XIV-C:103	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:103?	Possible Female	Adult unknown	Unknown	CMH
Coats Island	XIV-C:104	Female	Later middle adult	Historic	CMH
Coats Island	XIV-C:105	Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:106	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:107	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:108	Unknown due to age	Later post-natal infant	Historic	CMH

Coats Island	XIV-C:109	Unknown due to age	Early post-natal infant	Historic	CMH
Coats Island	XIV-C:111	Male	Young adult	Historic	CMH
Coats Island	XIV-C:112	Female	Young adult	Historic	CMH
Coats Island	XIV-C:116	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:117	Male	Young adult	Historic	CMH
Coats Island	XIV-C:118	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:119	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:120	Unknown due to age	Early post-natal infant	Historic	CMH
Coats Island	XIV-C:120A	Unknown due to age	Subadult unknown	Unknown	CMH
Coats Island	XIV-C:121	Unknown due to age	Early post-natal infant	Historic	CMH
Coats Island	XIV-C:122	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:122A	Indeterminate	Adult unknown	Unknown	CMH
Coats Island	XIV-C:123	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:124	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:125	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:126	Male	Early middle adult	Historic	CMH
Coats Island	XIV-C:127	Female	Adult unknown	Historic	CMH

Coats Island	XIV-C:128	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:129	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:130-2	Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:133	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:134	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:135	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:136	Male	Young adult	Historic	CMH
Coats Island	XIV-C:137	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:138	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:141	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:142-1	Male	Early middle adult	Historic	CMH
Coats Island	XIV-C:142-2	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:143	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:144	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:145	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:146	Female	Young adult	Historic	CMH
Coats Island	XIV-C:147	Female	Adolescent	Historic	CMH
Coats Island	XIV-C:148	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:149	Female	Young adult	Historic	CMH

Coats Island	XIV-C:150	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:151	Unknown due to age	Adolescent	Historic	CMH
Canada Unknown	XIV-C:151-2	Indeterminate	Later middle adult	Unknown	CMH
Coats Island	XIV-C:152	Male	Mature adult	Historic	CMH
Canada Unknown	XIV-C:152-2	Unknown due to age	Later child	Unknown	CMH
Coats Island	XIV-C:153	Female	Young adult	Historic	CMH
Coats Island	XIV-C:154	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:155	Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:156	Male	Early middle adult	Historic	CMH
Canada Unknown	XIV-C:156-2	Indeterminate	Young adult	Unknown	CMH
Coats Island	XIV-C:157	Female	Young adult	Historic	CMH
Coats Island	XIV-C:158	Female	Adolescent	Historic	CMH
Coats Island	XIV-C:159	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:160	Unknown due to age	Early child	Unknown	CMH
Coats Island	XIV-C:161	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:162-1	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:162-2	Unknown due to age	Later post-natal infant	Historic	CMH

Coats Island	XIV-C:163	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:164	Male	Adolescent	Historic	CMH
Coats Island	XIV-C:165	Male	Early middle adult	Historic	CMH
Canada Unknown	XIV-C:165-1	Indeterminate	Adolescent	Unknown	CMH
Coats Island	XIV-C:166	Possible Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:167	Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:168	Possible Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:169	Female	Young adult	Historic	CMH
Coats Island	XIV-C:170	Male	Later middle adult	Historic	CMH
Coats Island	XIV-C:171	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:171-1	Unknown due to age	Subadult unknown	Unknown	CMH
Coats Island	XIV-C:172	Unknown due to age	Adolescent	Historic	CMH
Canada Unknown	XIV-C:172-2	Indeterminate	Adolescent	Unknown	CMH
Coats Island	XIV-C:173	Female	Young adult	Historic	CMH
Coats Island	XIV-C:174	Indeterminate	Early middle adult	Historic	CMH
Coats Island	XIV-C:175	Female	Adolescent	Historic	CMH
Coats Island	XIV-C:178	Female	Young adult	Historic	CMH
Coats Island	XIV-C:179	Male	Early middle adult	Historic	CMH

Coats Island	XIV-C:180	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:181	Male	Young adult	Historic	CMH
Canada Unknown	XIV-C:181-1	Indeterminate	Young adult	Unknown	CMH
Coats Island	XIV-C:182	Male	Early middle adult	Historic	CMH
Coats Island	XIV-C:183	Female	Young adult	Historic	CMH
Coats Island	XIV-C:184	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:185	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:186	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:187	Unknown due to age	Early post-natal infant	Historic	CMH
Coats Island	XIV-C:188	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:189	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:190	Male	Young adult	Historic	CMH
Coats Island	XIV-C:191	Possible Male	Early middle adult	Historic	CMH
Coats Island	XIV-C:192	Female	Young adult	Historic	CMH
Coats Island	XIV-C:193	Male	Adolescent	Historic	CMH
Canada Unknown	XIV-C:193-1	Indeterminate	Young adult	Unknown	CMH
Coats Island	XIV-C:194	Possible Female	Adolescent	Historic	CMH
Coats Island	XIV-C:195	Unknown due to age	Young adult	Historic	CMH
Coats Island	XIV-C:197	Possible Female	Adult unknown	Historic	CMH

Coats Island	XIV-C:198	Unknown due to age	Adolescent	Historic	CMH
Canada Unknown	XIV-C:198-1	Indeterminate	Mature adult	Unknown	CMH
Coats Island	XIV-C:199	Possible Male	Early middle adult	Historic	CMH
Coats Island	XIV-C:200	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:201	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:201-2	Unknown due to age	Subadult unknown	Unknown	CMH
Coats Island	XIV-C:202	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:203	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:204	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:205	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:206	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:207	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:208	Unknown due to age	Early post-natal infant	Historic	CMH
Coats Island	XIV-C:209-1	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:209-2	Unknown due to age	Early child	Historic	CMH

Coats Island	XIV-C:210-1	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:210-2	Unknown due to age	Subadult unknown	Unknown	CMH
Coats Island	XIV-C:210-3	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:211	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:212	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:213	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:214	Unknown due to age	Subadult unknown	Historic	CMH
Canada Unknown	XIV-C:214-1	Unknown due to age	Subadult unknown	Unknown	CMH
Coats Island	XIV-C:215	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:216	Male	Early middle adult	Historic	CMH
Canada Unknown	XIV-C:216-1	Indeterminate	Later middle adult	Unknown	CMH
Coats Island	XIV-C:217	Male	Later middle adult	Historic	CMH
Coats Island	XIV-C:219	Female	Young adult	Historic	CMH
Canada Unknown	XIV-C:219-1	Unknown due to age	Adolescent	Unknown	CMH
Coats Island	XIV-C:220	Unknown due to age	Adolescent	Historic	CMH

Coats Island	XIV-C:221	Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:222	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:223	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:224	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:225	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:226	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:227	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:228	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:229	Possible Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:230	Male	Adolescent	Historic	CMH
Coats Island	XIV-C:231	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:232	Unknown due to age	Later child	Historic	CMH
Canada Unknown	XIV-C:232-1	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:233	Female	Young adult	Historic	CMH
Coats Island	XIV-C:234	Female	Young adult	Historic	CMH
Canada Unknown	XIV-C:234-1	Indeterminate	Adolescent	Unknown	CMH

Coats Island	XIV-C:235	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:236	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:237	Female	Young adult	Historic	CMH
Coats Island	XIV-C:238	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:239	Unknown due to age	Adolescent	Historic	CMH
Coats Island	XIV-C:240	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:241	Female	Adolescent	Historic	CMH
Coats Island	XIV-C:242	Female	Young adult	Historic	CMH
Coats Island	XIV-C:243	Male	Young adult	Historic	CMH
Coats Island	XIV-C:244	Female	Later middle adult	Historic	CMH
Coats Island	XIV-C:245	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:246	Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:247	Female	Young adult	Historic	CMH
Coats Island	XIV-C:248	Female	Early middle adult	Historic	CMH
Canada Unknown	XIV-C:248-1	Indeterminate	Young adult	Unknown	CMH
Coats Island	XIV-C:249	Unknown due to age	Young adult	Historic	CMH
Coats Island	XIV-C:250-1	Unknown due to age	Adolescent	Historic	CMH
Coats Island	XIV-C:250-2	Indeterminate	Adult unknown	Historic	CMH

Coats Island	XIV-C:250-3	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:250-4	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:250-5	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:251	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:252	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:253	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:254	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:255	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:257	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:259	Female	Young adult	Historic	CMH
Coats Island	XIV-C:267	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:268-1	Possible Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:268-2	Possible Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:278	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:279	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:280	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:281	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:282-1	Unknown due to age	Later post-natal infant	Historic	CMH

Coats Island	XIV-C:282-2	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:283	Possible Female	Adolescent	Historic	CMH
Coats Island	XIV-C:284	Unknown due to age	Early post-natal infant	Historic	CMH
Canada Unknown	XIV-C:284-1	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:285	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:286	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:287	Male	Young adult	Historic	CMH
Coats Island	XIV-C:288	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:289	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:290	Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:291	Possible Male	Young adult	Historic	CMH
Coats Island	XIV-C:292	Male	Young adult	Historic	CMH
Coats Island	XIV-C:293	Female	Young adult	Historic	CMH
Hudson Bay	XIV-C:294	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:295	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Coats Island	XIV-C:296	Possible Female	Subadult unknown	Historic	CMH
Coats Island	XIV-C:297	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:298-1	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:298-2	Indeterminate	Adult unknown	Historic	CMH

Coats Island	XIV-C:299	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:300	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:301	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:302	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:303	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:304	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:305-1	Possible Male	Adult unknown	Historic	CMH
Nunavut	XIV-C:306	Male	Early middle adult	Historic	CMH
Nunavut	XIV-C:307	Possible Female	Young adult	Historic	CMH
Nunavut	XIV-C:308	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:309	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:310	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:312	Unknown due to age	Early post-natal infant	Modern	CMH
Hudson Bay	XIV-C:313	Female	Young adult	Modern	CMH
Nunavut	XIV-C:316	Possible Female	Adolescent	Modern	CMH
Nunavut	XIV-C:317	Male	Mature adult	Modern	CMH
Nunavut	XIV-C:319	Male	Later middle adult	Modern	CMH
Nunavut	XIV-C:320	Male	Adult unknown	Historic	CMH

Hudson Bay	XIV-C:321	Unknown due to age	Early post-natal infant	Modern	CMH
Hudson Bay	XIV-C:322	Unknown due to age	Early child	Historic	CMH
Nunavut	XIV-C:323	Possible Male	Young adult	Modern	CMH
Nunavut	XIV-C:324	Male	Young adult	Modern	CMH
Coats Island	XIV-C:326	Female	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:327	Possible Female	Adolescent	Historic	CMH
Hudson Bay	XIV-C:328	Male	Early middle adult	Historic	CMH
Canada Unknown	XIV-C:328-1	Unknown due to age	Early child	Historic	CMH
Nunavut	XIV-C:329	Female	Mature adult	Historic	CMH
Canada Unknown	XIV-C:131-1	Indeterminate	Young adult	Unknown	CMH
Hudson Bay	XIV-C:332	Possible Female	Young adult	Unknown	CMH
Hudson Bay	XIV-C:333	Male	Young adult	Unknown	CMH
Hudson Bay	XIV-C:334	Female	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:335	Female	Young adult	Unknown	CMH
Hudson Bay	XIV-C:336	Indeterminate	Young adult	Unknown	CMH
Hudson Bay	XIV-C:337	Unknown due to age	Later child	Unknown	CMH
Hudson Bay	XIV-C:338	Female	Young adult	Unknown	CMH
Nunavut	XIV-C:339	Possible Female	Adolescent	Late Prehistoric	CMH

Hudson Bay	XIV-C:340	Possible Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:341	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:342	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:343	Male	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:344	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:345	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:346	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:347	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:348	Possible Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:349	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:350	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:351	Possible Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:352	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:353	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:354	Unknown due to age	Early post-natal infant	Late Prehistoric	CMH

Hudson Bay	XIV-C:355	Indeterminate	Adult unknown	Late Prehistoric	CMH
Canada Unknown	XIV-C:355-2	Unknown due to age	Later child	Unknown	CMH
Hudson Bay	XIV-C:356	Male	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:357	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:358	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:359	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:360	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:361	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:362	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:363	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-C:363A	Indeterminate	Adolescent	Unknown	CMH
Hudson Bay	XIV-C:364	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:365	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:366	Male	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:367	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:368	Male	Young adult	Late Prehistoric	CMH

Hudson Bay	XIV-C:369	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:370	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:371	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:372	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:373	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:374	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:374A	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:375	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:376	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:376-A	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:377	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:378	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:379	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:380	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:381	Possible Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:382	Unknown due to age	Later child	Late Prehistoric	CMH

Hudson Bay	XIV-C:383	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:384	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:385	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:386	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:387	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:388	Indeterminate	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:389	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:390-1	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:390-2	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:391	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:392	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:393	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:393-1	Female	Adolescent	Unknown	CMH
Hudson Bay	XIV-C:393-2	Unknown due to age	Later child	Unknown	CMH
Hudson Bay	XIV-C:394	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:395	Unknown due to age	Subadult unknown	Late Prehistoric	CMH

Hudson Bay	XIV-C:396	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:397	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:398	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:399	Possible Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:400	Possible Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:401	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:402	Unknown due to age	Later post-natal infant	Late Prehistoric	CMH
Hudson Bay	XIV-C:403	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:404	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:405	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:406	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:407	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:408	Unknown due to age	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:409	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:410	Unknown due to age	Subadult unknown	Late Prehistoric	CMH

Hudson Bay	XIV-C:411	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:412	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:413	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:414	Possible Female	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:415	Male	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:416	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-C:417	Male	Mature adult	Modern	CMH
Hudson Bay	XIV-C:418	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:419	Male	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:420	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:421	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:422	Possible Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:423	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:424	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:425	Male	Mature adult	Late Prehistoric	CMH

Hudson Bay	XIV-C:426	Possible Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:427	Possible Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:428	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:429	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:430	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:431	Possible Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:432	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:433	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:434	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:435	Possible Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:436	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:437	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:438	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:439	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:440	Male	Adolescent	Late Prehistoric	CMH

Hudson Bay	XIV-C:441	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:442	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:443	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:444	Possible Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:445	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:446	Possible Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:447	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:448	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:449	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:450	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:452	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:453	Male	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:454	Possible Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:455	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:456	Unknown due to age	Subadult unknown	Late Prehistoric	CMH

Hudson Bay	XIV-C:457	Possible Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:458	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:459	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:460	Possible Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:461	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:462	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:463	Possible Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:464	Indeterminate	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:465	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-C:466	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:467	Unknown due to age	Later post-natal infant	Late Prehistoric	CMH
Hudson Bay	XIV-C:468	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:469	Possible Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:470	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:471	Unknown due to age	Subadult unknown	Late Prehistoric	CMH

Hudson Bay	XIV-C:472	Possible Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:473	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:474	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:475	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:476	Male	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:477	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:478	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:479	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:480	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:481	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:482	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:483	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-C:484	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-C:485	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:486	Possible Female	Young adult	Late Prehistoric	CMH

Hudson Bay	XIV-C:487	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:488	Indeterminate	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:489	Male	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:490	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:491	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:492	Unknown due to age	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:493	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:494	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:495	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:496	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:497	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:498	Indeterminate	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:499	Male	Young adult	Modern	CMH
Hudson Bay	XIV-C:500	Possible Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:501	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:502	Possible Male	Adult unknown	Late Prehistoric	CMH

Hudson Bay	XIV-C:503	Possible Female	Adolescent	Historic	CMH
Hudson Bay	XIV-C:504	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:505	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:506	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:507	Indeterminate	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:508	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:509	Unknown due to age	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:510	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:511	Female	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:512	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:513	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:514	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:515	Male	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:516	Indeterminate	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:516-A	Indeterminate	Young adult	Unknown	CMH
Hudson Bay	XIV-C:517	Unknown due to age	Early child	Late Prehistoric	CMH

Hudson Bay	XIV-C:518	Male	Early middle adult	Historic	CMH
Hudson Bay	XIV-C:519	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:520	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:521	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-C:522	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:523	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:524	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:525	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:526	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:527	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:528	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:529	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:530	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:531	Possible Female	Later middle adult	Historic	CMH
Nunavut	XIV-C:532	Female	Early middle adult	Late Prehistoric	CMH

Nunavut	XIV-C:533	Possible Male	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:534	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:535	Female	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:536	Possible Female	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:537	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:538	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:539	Possible Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:540	Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:541	Possible Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:542	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:543	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:544	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:545	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:546	Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:547	Unknown due to age	Later child	Late Prehistoric	CMH

Nunavut	XIV-C:548	Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:549	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:550	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:551	Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:552	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:553	Indeterminate	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:554	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:555	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:556	Unknown due to age	Subadult unknown	Historic	CMH
Nunavut	XIV-C:557	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:558	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:559	Indeterminate	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:560	Indeterminate	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:561	Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:561-A	Male	Early middle adult	Unknown	CMH

Nunavut	XIV-C:562	Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:563	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:564	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:565	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:566	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:567	Possible Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:568	Indeterminate	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:569	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:570	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:571	Possible Female	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:572	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:573	Male	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:574	Female	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:575	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:576	Female	Early middle adult	Late Prehistoric	CMH

Nunavut	XIV-C:577	Possible Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:578	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:579	Indeterminate	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:580	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:581	Indeterminate	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:582	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:583	Indeterminate	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:584	Possible Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:585	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:586	Female	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:587	Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:588	Possible Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:589	Female	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:590	Male	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:591	Possible Female	Adolescent	Late Prehistoric	CMH

Nunavut	XIV-C:592	Indeterminate	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:592-A	Indeterminate	Early middle adult	Unknown	CMH
Nunavut	XIV-C:593	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:594	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:595	Possible Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:596	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:597	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:598	Male	Later middle adult	Historic	CMH
Nunavut	XIV-C:599	Possible Female	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-C:600	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:601	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:602	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:603	Female	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:605	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:606	Unknown due to age	Subadult unknown	Late Prehistoric	CMH

Nunavut	XIV-C:607	Male	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:608	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:609	Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:610	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:611	Male	Young adult	Historic	CMH
Nunavut	XIV-C:612	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:613	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:614	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:615	Indeterminate	Adult unknown	Historic	CMH
Nunavut	XIV-C:616	Unknown due to age	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-C:617	Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:618	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:619	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:620	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:621	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:622	Female	Young adult	Late Prehistoric	CMH

Nunavut	XIV-C:623	Indeterminate	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:624	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:625	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:626	Possible Female	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:627	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:627-A	Indeterminate	Young adult	Unknown	CMH
Nunavut	XIV-C:628	Possible Male	Later middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:629	Unknown due to age	Early child	Late Prehistoric	CMH
Nunavut	XIV-C:630	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:631	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:632	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:633	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:634	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:635	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:636-1	Female	Young adult	Late Prehistoric	CMH

Nunavut	XIV-C:636-2	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:637	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:638	Unknown due to age	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-C:639	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:640	Possible Female	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-C:641	Female	Adult unknown	Historic	CMH
Nunavut	XIV-C:642	Indeterminate	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:643	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:644	Female	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:645	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:646	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:647	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:648	Male	Mature adult	Late Prehistoric	CMH
Nunavut	XIV-C:649	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:650	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:651	Indeterminate	Adult unknown	Late Prehistoric	CMH

Nunavut	XIV-C:652	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:653	Indeterminate	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:654	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:656	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:657	Indeterminate	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:658	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:659-1	Indeterminate	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:659-2	Possible Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:660	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-C:661	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:662	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:663	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:664	Male	Early middle adult	Historic	CMH
Hudson Bay	XIV-C:665	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:666	Possible Male	Young adult	Late Prehistoric	CMH

Hudson Bay	XIV-C:667	Possible Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:668	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:669	Possible Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:670	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:671	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:672	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:673	Male	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:674	Possible Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:675	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:676	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:677	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:678	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:679	Male	Mature adult	Historic	CMH
Hudson Bay	XIV-C:680	Possible Female	Later middle adult	Historic	CMH
Hudson Bay	XIV-C:681	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:682	Unknown due to age	Adolescent	Late Prehistoric	CMH

Nunavut	XIV-C:683	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:684	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:685	Indeterminate	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:686	Possible Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:687	Unknown due to age	Later post-natal infant	Late Prehistoric	CMH
Hudson Bay	XIV-C:688	Possible Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:689	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:690	Possible Female	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:691	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:692	Unknown due to age	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:693	Unknown due to age	Later child	Historic	CMH
Hudson Bay	XIV-C:694	Male	Later middle adult	Modern	CMH
Hudson Bay	XIV-C:695	Possible Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:696	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:697	Male	Early middle adult	Late Prehistoric	CMH

Hudson Bay	XIV-C:698-1	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:698-2	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:699	Possible Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:700	Male	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:701	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:702	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:703	Male	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:704	Female	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:705	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:706	Male	Early middle adult	Historic	CMH
Hudson Bay	XIV-C:708	Indeterminate	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:709	Unknown due to age	Adolescent	Late Prehistoric	CMH
Hudson Bay	XIV-C:710	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:711	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:712	Indeterminate	Adult unknown	Late Prehistoric	CMH

Nunavut	XIV-C:713	Unknown due to age	Later child	Modern	CMH
Nunavut	XIV-C:714	Unknown due to age	Early child	Modern	CMH
Nunavut	XIV-C:715	Indeterminate	Adult unknown	Historic	CMH
Nunavut	XIV-C:716	Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:717	Possible Female	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-C:718	Possible Female	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-C:719	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:720	Possible Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:721	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:722	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-C:723	Indeterminate	Adolescent	Late Prehistoric	CMH
Coats Island	XIV-C:724-1	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:724-2	Unknown due to age	Subadult unknown	Historic	CMH
Coats Island	XIV-C:724-3	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:725-1	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:725-2	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:726	Indeterminate	Adult unknown	Historic	CMH

Coats Island	XIV-C:727	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:729	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:730	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:731	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:732	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:733	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:733-U	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:734	Unknown due to age	Later post-natal infant	Historic	CMH
Hudson Bay	XIV-C:734-U-1	Indeterminate	Later middle adult	Historic	CMH
Hudson Bay	XIV-C:734-U-2	Indeterminate	Adult unknown	Historic	CMH
Hudson Bay	XIV-C:734-U-3	Indeterminate	Adult unknown	Historic	CMH
Coats Island	XIV-C:735	Unknown due to age	Later post-natal infant	Historic	CMH
Hudson Bay	XIV-C:735-U	Unknown due to age	Early post-natal infant	Historic	CMH
Hudson Bay	XIV-C:735-U-2	Unknown due to age	Later post-natal infant	Unknown	CMH
Coats Island	XIV-C:736	Male	Early middle adult	Historic	CMH
Hudson Bay	XIV-C:736-U	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:737	Male	Young adult	Historic	CMH
Hudson Bay	XIV-C:737-U	Indeterminate	Adult unknown	Historic	CMH

Hudson Bay	XIV-C:737-U-2	Indeterminate	Adolescent	Unknown	CMH
Coats Island	XIV-C:738	Unknown due to age	Later post-natal infant	Historic	CMH
Hudson Bay	XIV-C:738-N	Female	Early middle adult	Late Prehistoric	CMH
Coats Island	XIV-C:739	Female	Young adult	Historic	CMH
Hudson Bay	XIV-C:739-N	Indeterminate	Early middle adult	Late Prehistoric	CMH
Coats Island	XIV-C:740	Unknown due to age	Later post-natal infant	Historic	CMH
Hudson Bay	XIV-C:740-N	Male	Early middle adult	Late Prehistoric	CMH
Coats Island	XIV-C:741	Male	Young adult	Historic	CMH
Hudson Bay	XIV-C:741-N	Female	Mature adult	Late Prehistoric	CMH
Coats Island	XIV-C:742	Male	Young adult	Historic	CMH
Hudson Bay	XIV-C:742-N	Female	Young adult	Late Prehistoric	CMH
Coats Island	XIV-C:743	Female	Later middle adult	Historic	CMH
Hudson Bay	XIV-C:743-N	Indeterminate	Young adult	Late Prehistoric	CMH
Coats Island	XIV-C:744	Female	Young adult	Historic	CMH
Hudson Bay	XIV-C:744-N	Female	Early middle adult	Late Prehistoric	CMH
Coats Island	XIV-C:745	Male	Young adult	Historic	CMH
Hudson Bay	XIV-C:745-N	Indeterminate	Adult unknown	Late Prehistoric	CMH

Coats Island	XIV-C:746	Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:746-1	Indeterminate	Early middle adult	Historic	CMH
Hudson Bay	XIV-C:746-N	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	XIV-C:747	Female	Young adult	Historic	CMH
Hudson Bay	XIV-C:747-N	Indeterminate	Young adult	Late Prehistoric	CMH
Coats Island	XIV-C:748	Male	Early middle adult	Historic	CMH
Coats Island	XIV-C:749	Male	Early middle adult	Historic	CMH
Coats Island	XIV-C:750	Female	Young adult	Historic	CMH
Coats Island	XIV-C:751	Male	Young adult	Historic	CMH
Coats Island	XIV-C:752	Female	Young adult	Historic	CMH
Coats Island	XIV-C:753	Male	Young adult	Historic	CMH
Coats Island	XIV-C:754	Male	Young adult	Historic	CMH
Coats Island	XIV-C:755	Male	Early middle adult	Historic	CMH
Coats Island	XIV-C:756	Male	Young adult	Historic	CMH
Coats Island	XIV-C:757	Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:758	Female	Young adult	Historic	CMH
Coats Island	XIV-C:759	Male	Young adult	Historic	CMH
Coats Island	XIV-C:760-1	Female	Young adult	Historic	CMH

Coats Island	XIV-C:760-2	Unknown due to age	Later post-natal infant	Historic	CMH
Coats Island	XIV-C:761	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:761-1	Unknown due to age	Subadult unknown	Unknown	CMH
Coats Island	XIV-C:762	Indeterminate	Young adult	Historic	CMH
Coats Island	XIV-C:763	Indeterminate	Early middle adult	Historic	CMH
Coats Island	XIV-C:764	Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:765	Possible Female	Adolescent	Historic	CMH
Coats Island	XIV-C:766	Female	Young adult	Late Prehistoric	CMH
Coats Island	XIV-C:767	Female	Adolescent	Historic	CMH
Coats Island	XIV-C:768	Possible Female	Young adult	Historic	CMH
Coats Island	XIV-C:770	Male	Young adult	Historic	CMH
Coats Island	XIV-C:771	Female	Young adult	Historic	CMH
Coats Island	XIV-C:772	Male	Later middle adult	Historic	CMH
Coats Island	XIV-C:773	Male	Young adult	Historic	CMH
Coats Island	XIV-C:774	Male	Young adult	Historic	CMH
Coats Island	XIV-C:775	Female	Adult unknown	Late Prehistoric	CMH
Coats Island	XIV-C:776	Female	Young adult	Historic	CMH
Coats Island	XIV-C:777	Female	Adult unknown	Late Prehistoric	CMH
Coats Island	XIV-C:778	Male	Young adult	Historic	CMH

Coats Island	XIV-C:779	Female	Young adult	Late Prehistoric	CMH
Coats Island	XIV-C:780	Possible Female	Subadult unknown	Historic	CMH
Coats Island	XIV-C:781	Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:782	Male	Young adult	Historic	CMH
Coats Island	XIV-C:783	Female	Adult unknown	Late Prehistoric	CMH
Coats Island	XIV-C:784	Male	Early middle adult	Late Prehistoric	CMH
Coats Island	XIV-C:785	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:786	Male	Young adult	Historic	CMH
Coats Island	XIV-C:787	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:788	Possible Male	Subadult unknown	Late Prehistoric	CMH
Coats Island	XIV-C:789	Possible Male	Adult unknown	Historic	CMH
Coats Island	XIV-C:790	Possible Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:791	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:792	Female	Young adult	Historic	CMH
Coats Island	XIV-C:793	Female	Adult unknown	Historic	CMH
Coats Island	XIV-C:794	Female	Young adult	Historic	CMH
Coats Island	XIV-C:795	Possible Female	Adolescent	Historic	CMH
Coats Island	XIV-C:796	Unknown due to age	Early child	Historic	CMH
Coats Island	XIV-C:797	Male	Young adult	Historic	CMH

Coats Island	XIV-C:798-1	Unknown due to age	Early child	Unknown	CMH
Coats Island	XIV-C:798-2	Indeterminate	Early middle adult	Unknown	CMH
Coats Island	XIV-C:798-3	Unknown due to age	Subadult unknown	Unknown	CMH
Coats Island	XIV-C:799	Indeterminate	Young adult	Unknown	CMH
Coats Island	XIV-C:800	Possible Female	Later child	Unknown	CMH
Coats Island	XIV-C:801	Male	Young adult	Unknown	CMH
Coats Island	XIV-C:802	Indeterminate	Young adult	Historic	CMH
Nunavut	XIV-C:803	Unknown due to age	Later post-natal infant	Historic	CMH
Nunavut	XIV-C:804	Indeterminate	Adult unknown	Historic	CMH
Nunavut	XIV-C:805	Female	Adult unknown	Unknown	CMH
Nunavut	XIV-C:805-1	Indeterminate	Young adult	Unknown	CMH
Nunavut	XIV-C:806	Indeterminate	Young adult	Late Prehistoric	CMH
Nunavut	XIV-C:807	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:808	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	XIV-C:809	Indeterminate	Adult unknown	Prehistoric/Historic	CMH
Coats Island	XIV-C:810	Indeterminate	Adolescent	Prehistoric/Historic	CMH
Coats Island	XIV-C:811	Indeterminate	Young adult	Prehistoric/Historic	CMH
Coats Island	XIV-C:812	Indeterminate	Early middle adult	Prehistoric/Historic	CMH
Coats Island	XIV-C:813	Indeterminate	Young adult	Prehistoric/Historic	CMH

Coats Island	XIV-C:814	Indeterminate	Adolescent	Prehistoric/Historic	CMH
Coats Island	XIV-C:815	Indeterminate	Adolescent	Prehistoric/Historic	CMH
Nunavut	XIV-C:816	Indeterminate	Early middle adult	Unknown	CMH
Hudson Bay	XIV-C:817	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:817-1	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:818	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-C:819	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:820	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:821	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:822	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:823	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:824	Indeterminate	Adult unknown	Late Prehistoric	CMH
Canada Unknown	XIV-C:825	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-C:MAN-001	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:MAN-002	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:MAN-003	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:MAN-004	Possible Female	Early middle adult	Late Prehistoric	CMH

Hudson Bay	XIV-C:MAN-005	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XIV-C:MAN-006	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:MAN-007	Female	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:MAN-008	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-C:MAN-009	Possible Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-C:MAN-010	Indeterminate	Adult unknown	Late Prehistoric	CMH
Coats Island	XIV-C:SAD-001	Female	Adolescent	Historic	CMH
Coats Island	XIV-C:SAD-002	Possible Female	Adolescent	Historic	CMH
Coats Island	XIV-C:SAD-003	Female	Early middle adult	Historic	CMH
Coats Island	XIV-C:SAD-004	Unknown due to age	Later child	Historic	CMH
Coats Island	XIV-C:SAD-005	Female	Young adult	Historic	CMH
Coats Island	XIV-C:SAD-006	Possible Female	Adolescent	Historic	CMH
Coats Island	XIV-C:SAD-007	Female	Adult unknown	Historic	CMH
Canada Unknown	XIV-C:SPECIMAN NUMBER UNKNOWN	Indeterminate	Adult unknown	Unknown	CMH

Nunavut	XIV-D:004	Female	Young adult	Unknown	CMH
Nunavut	XIV-D:006	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-D:007	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-D:045	Female	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-D:046	Male	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-D:047	Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-D:048	Female	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-D:049	Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-D:050-1	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-D:050-2	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-D:087	Possible Male	Adult unknown	Unknown	CMH
Nunavut	XIV-D:093	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-D:094	Indeterminate	Adult unknown	Late Prehistoric	CMH
West Aleutians	XIV-F:001-1	Male	Later middle adult	Late Prehistoric	CMH
West Aleutians	XIV-F:002	Male	Early middle adult	Late Prehistoric	CMH
West Aleutians	XIV-F:003	Male	Later middle adult	Late Prehistoric	CMH

West Aleutians	XIV-F:004	Female	Later middle adult	Late Prehistoric	CMH
West Aleutians	XIV-F:005	Male	Adult unknown	Late Prehistoric	CMH
West Aleutians	XIV-F:006	Female	Adult unknown	Late Prehistoric	CMH
West Aleutians	XIV-F:007	Male	Adult unknown	Late Prehistoric	CMH
West Aleutians	XIV-F:008	Unknown due to age	Adolescent	Late Prehistoric	CMH
West Aleutians	XIV-F:009	Indeterminate	Adult unknown	Late Prehistoric	CMH
West Aleutians	XIV-F:010	Indeterminate	Adult unknown	Late Prehistoric	CMH
West Aleutians	XIV-F:011	Indeterminate	Young adult	Late Prehistoric	CMH
West Aleutians	XIV-F:012	Indeterminate	Young adult	Late Prehistoric	CMH
North Alaska	XIV-F:033A	Female	Early middle adult	Late Prehistoric	CMH
North Alaska	XIV-F:033B	Female	Adult unknown	Late Prehistoric	CMH
North Alaska	XIV-F:033C	Male	Later middle adult	Late Prehistoric	CMH
North Alaska	XIV-F:033D	Female	Early middle adult	Late Prehistoric	CMH
West Aleutians	XIV-F:035	Male	Later middle adult	Unknown	CMH
West Aleutians	XIV-F:036	Female	Later middle adult	Unknown	CMH

Canada Unknown	XIV-H- UNKNOWN	Indeterminate	Adolescent	Unknown	CMH
Hudson Bay	XIV-H:001	Female	Later middle adult	Unknown	CMH
Hudson Bay	XIV-H:003	Female	Young adult	Unknown	CMH
Nunavut	XIV-H:004	Male	Later middle adult	Unknown	CMH
Nunavut	XIV-H:005	Female	Young adult	Unknown	CMH
Nunavut	XIV-H:006	Unknown due to age	Young adult	Unknown	CMH
Nunavut	XIV-H:007	Possible Female	Young adult	Unknown	CMH
Nunavut	XIV-H:008	Possible Male	Mature adult	Unknown	CMH
Nunavut	XIV-H:009	Unknown due to age	Adolescent	Unknown	CMH
Vancouver Island	XIV-H:010	Female	Young adult	Unknown	CMH
North Alaska	XIV-H:011	Female	Young adult	Late Prehistoric	CMH
North Alaska	XIV-H:012-1	Male	Mature adult	Late Prehistoric	CMH
North Alaska	XIV-H:013	Male	Early middle adult	Late Prehistoric	CMH
North Alaska	XIV-H:014	Male	Young adult	Late Prehistoric	CMH
North Alaska	XIV-H:015	Female	Later middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-H:016	Male	Mature adult	Historic	CMH
Hudson Bay	XIV-H:017	Female	Adult unknown	Unknown	CMH

Hudson Bay	XIV-H:018	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-H:019-1	Male	Mature adult	Late Prehistoric	CMH
Hudson Bay	XIV-H:020	Female	Young adult	Unknown	CMH
Hudson Bay	XIV-H:021	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-H:022	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-H:023	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-H:024A	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-H:024B	Male	Young adult	Unknown	CMH
Nunavut	XIV-H:025	Female	Young adult	Late Prehistoric	CMH
Nunavut	XIV-H:026	Indeterminate	Later child	Late Prehistoric	CMH
Nunavut	XIV-H:027-1	Possible Female	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-H:027-2	Indeterminate	Later child	Late Prehistoric	CMH
Nunavut	XIV-H:027-3	Possible Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-H:028	Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:029	Male	Adult unknown	Unknown	CMH
Nunavut	XIV-H:030	Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:031	Female	Adolescent	Unknown	CMH
Hudson Bay	XIV-H:032	Indeterminate	Adult unknown	Late Prehistoric	CMH

Hudson Bay	XIV-H:033-1	Female	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-H:033-2	Unknown due to age	Subadult unknown	Late Prehistoric	CMH
South Greenland	XIV-H:034	Male	Young adult	Late Prehistoric	CMH
South Greenland	XIV-H:035	Possible Male	Young adult	Late Prehistoric	CMH
South Greenland	XIV-H:036	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-H:037	Male	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-H:038	Possible Female	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-H:040	Possible Female	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-H:041	Possible Female	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-H:042	Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-H:043	Female	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-H:044-1	Possible Female	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-H:044-2	Indeterminate	Young adult	Late Prehistoric	CMH
Nunavut	XIV-H:045	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:046	Possible Male	Adolescent	Late Prehistoric	CMH

Hudson Bay	XIV-H:047	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-H:048	Female	Mature adult	Unknown	CMH
Nunavut	XIV-H:049	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-H:050	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:051	Indeterminate	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-H:052	Possible Male	Young adult	Late Prehistoric	CMH
Nunavut	XIV-H:055	Indeterminate	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-H:056	Indeterminate	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-H:057	Indeterminate	Young adult	Late Prehistoric	CMH
Nunavut	XIV-H:058	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:059	Female	Young adult	Unknown	CMH
Nunavut	XIV-H:060	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-H:061	Male	Young adult	Unknown	CMH
North Alaska	XIV-H:062	Indeterminate	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-H:063	Male	Adult unknown	Late Prehistoric	CMH
Hudson Bay	XIV-H:064	Female	Adult unknown	Late Prehistoric	CMH
Coats Island	XIV-H:065	Indeterminate	Adult unknown	Late Prehistoric	CMH

Nunavut	XIV-H:066	Possible Male	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:067	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:068	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:069	Unknown due to age	Early child	Late Prehistoric	CMH
Nunavut	XIV-H:070	Possible Male	Adult unknown	Unknown	CMH
Nunavut	XIV-H:071	Female	Adult unknown	Unknown	CMH
Nunavut	XIV-H:072	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-H:073	Possible Male	Young adult	Unknown	CMH
Nunavut	XIV-H:074	Indeterminate	Young adult	Unknown	CMH
Hudson Bay	XIV-H:075	Female	Early middle adult	Late Prehistoric	CMH
Hudson Bay	XIV-H:076	Possible Male	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-H:077	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:078	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:079	Indeterminate	Young adult	Late Prehistoric	CMH
Nunavut	XIV-H:080	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:081	Possible Male	Young adult	Unknown	CMH
Nunavut	XIV-H:082	Male	Adult unknown	Unknown	CMH
Nunavut	XIV-H:083	Possible Male	Adult unknown	Unknown	CMH

Nunavut	XIV-H:084	Female	Adult unknown	Unknown	CMH
Nunavut	XIV-H:085	Male	Adult unknown	Unknown	CMH
Nunavut	XIV-H:086	Indeterminate	Young adult	Unknown	CMH
Nunavut	XIV-H:087	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-H:088	Female	Young adult	Unknown	CMH
Nunavut	XIV-H:089	Possible Female	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:091	Indeterminate	Adolescent	Late Prehistoric	CMH
Nunavut	XIV-H:093	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:095	Indeterminate	Early middle adult	Late Prehistoric	CMH
Nunavut	XIV-H:096	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:098	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:100	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:101	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:102	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:103	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:104	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:105	Indeterminate	Adult unknown	Late Prehistoric	CMH

Nunavut	XIV-H:109	Unknown due to age	Early child	Late Prehistoric	CMH
Hudson Bay	XIV-H:113	Male	Young adult	Unknown	CMH
Hudson Bay	XIV-H:114	Indeterminate	Adolescent	Unknown	CMH
Hudson Bay	XIV-H:115	Male	Mature adult	Unknown	CMH
Hudson Bay	XIV-H:116	Male	Adult unknown	Unknown	CMH
Hudson Bay	XIV-H:117	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-H:118	Indeterminate	Early middle adult	Unknown	CMH
Hudson Bay	XIV-H:119	Female	Mature adult	Unknown	CMH
Nunavut	XIV-H:120	Possible Male	Mature adult	Modern	CMH
Nunavut	XIV-H:121	Indeterminate	Adult unknown	Modern	CMH
Nunavut	XIV-H:122	Indeterminate	Adult unknown	Modern	CMH
Hudson Bay	XIV-H:123	Indeterminate	Adult unknown	Prehistoric	CMH
Hudson Bay	XIV-H:124	Indeterminate	Young adult	Prehistoric	CMH
Hudson Bay	XIV-H:125	Indeterminate	Young adult	Prehistoric	CMH
Hudson Bay	XIV-H:127	Indeterminate	Later middle adult	Prehistoric	CMH
North Alaska	XIV-H:128	Indeterminate	Adult unknown	Prehistoric	CMH
North Alaska	XIV-H:129	Possible Male	Young adult	Prehistoric	CMH
Nunavut	XIV-H:130	Possible Male	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:131	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:132	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:133	Indeterminate	Adult unknown	Prehistoric	CMH

Nunavut	XIV-H:134	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:135	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:136	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:137	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:138	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:139	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:140	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:141	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:142	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:143	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:144	Indeterminate	Adult unknown	Prehistoric	CMH
North Alaska	XIV-H:145	Indeterminate	Adult unknown	Prehistoric	CMH
North Alaska	XIV-H:146	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:147	Indeterminate	Young adult	Prehistoric	CMH
Hudson Bay	XIV-H:150	Indeterminate	Adult unknown	Prehistoric	CMH
Hudson Bay	XIV-H:151	Indeterminate	Adult unknown	Prehistoric	CMH
North Alaska	XIV-H:153	Indeterminate	Adult unknown	Prehistoric	CMH
Nunavut	XIV-H:154	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:155	Indeterminate	Young adult	Late Prehistoric	CMH
Hudson Bay	XIV-H:156	Indeterminate	Young adult	Prehistoric	CMH
Hudson Bay	XIV-H:157	Indeterminate	Young adult	Prehistoric	CMH

Hudson Bay	XIV-H:158	Indeterminate	Adolescent	Prehistoric	CMH
Nunavut	XIV-H:159	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-H:160	Indeterminate	Adult unknown	Late Prehistoric	CMH
Nunavut	XIV-H:164	Possible Female	Adult unknown	Unknown	CMH
Nunavut	XIV-H:165	Indeterminate	Adult unknown	Unknown	CMH
Nunavut	XIV-H:166	Possible Female	Adult unknown	Unknown	CMH
Nunavut	XIV-H:167	Unknown due to age	Later post-natal infant	Unknown	CMH
Nunavut	XIV-H:168	Unknown due to age	Subadult unknown	Unknown	CMH
Hudson Bay	XIV-H:169	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-H:170	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-H:171	Indeterminate	Adult unknown	Unknown	CMH
Hudson Bay	XIV-H:172	Indeterminate	Adult unknown	Historic	CMH
Nunavut	XIV-H:173	Indeterminate	Adult unknown	Historic	CMH
Nunavut	XIV-H:174	Indeterminate	Adult unknown	Historic	CMH
Nunavut	XIV-H:175	Indeterminate	Adult unknown	Historic	CMH
Nunavut	XIV-H:176	Indeterminate	Adult unknown	Historic	CMH
Nunavut	XIV-H:177	Unknown due to age	Later child	Late Prehistoric	CMH
Nunavut	XIV-H:178	Unknown due to age	Later child	Late Prehistoric	CMH
Hudson Bay	XVI-D:001	Possible Male	Adolescent	Unknown	CMH

South Alaska	XVII-C:001	Male	Later middle adult	Unknown	CMH
South Alaska	XVII-C:001-1	Indeterminate	Early middle adult	Unknown	CMH
South Alaska	XVII-C:002-1	Unknown due to age	Adolescent	Late Prehistoric	CMH
South Alaska	XVII-C:002-2	Possible Female	Young adult	Late Prehistoric	CMH
South Alaska	XVII-C:002-4	Indeterminate	Adult unknown	Late Prehistoric	CMH
South Alaska	XVII-C:002-5	Possible Female	Later middle adult	Late Prehistoric	CMH
South Alaska	XVII-C:002-6	Female	Young adult	Late Prehistoric	CMH
South Alaska	XVII-C:002-7	Male	Early middle adult	Unknown	CMH
South Alaska	XVII-C:002-8	Female	Later middle adult	Unknown	CMH
South Alaska	XVII-C:003	Female	Adult unknown	Unknown	CMH
Amaknak Island	AMNH PHY-7	Indeterminate	Early middle adult	Unknown	AMNH
West Aleutians	AMNH PHY-6	Indeterminate	Adolescent	Unknown	AMNH
West Aleutians	AMNH PHY-5	Indeterminate	Mature adult	Unknown	AMNH
Amaknak Island	AMNH PHY-4	Female	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99.1/2625	Female	Young adult	Unknown	AMNH
West Aleutians	AMNH 99.1/828	Indeterminate	Early middle adult	Unknown	AMNH

West Aleutians	AMNH 99.1/826	Female	Later middle adult	Unknown	AMNH
West Aleutians	AMNH 99.1/819	Male	Later middle adult	Unknown	AMNH
West Aleutians	AMNH 99.1/813	Female	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99.1/812B	Indeterminate	Adolescent	Unknown	AMNH
West Aleutians	AMNH 99.1/812	Female	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99.1/811	Unknown due to age	Later child	Unknown	AMNH
West Aleutians	AMNH 99.1/810	Possible Female	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/808	Male	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/807	Female	Young adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/806	Female	Later middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/805	Female	Young adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/804	Female	Later middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/803	Possible Male	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/802	Possible Male	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/801	Unknown due to age	Early child	Unknown	AMNH
Amaknak Island	AMNH 99.1/800	Possible Female	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/799	Indeterminate	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/798	Probable Male	Young adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/797	Indeterminate	Young adult	Unknown	AMNH

Amaknak Island	AMNH 99.1/796	Female	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/793	Female	Early middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/792	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/790	Male	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/789	Male	Later middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/788	Unknown due to age	Early child	Unknown	AMNH
Amaknak Island	AMNH 99.1/787	Male	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/786	Male	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/708	Indeterminate	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/707	Female	Later middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/706	Possible Female	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/705	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/704	Indeterminate	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/702	Female	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/701	Unknown due to age	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/700	Male	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/699	Probable Female	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/698	Male	Later middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/697	Indeterminate	Later middle adult	Unknown	AMNH

Amaknak Island	AMNH 99.1/696	Possible Male	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/695	Probable Female	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/694	Male	Later middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/693	Female	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/692	Female	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99.1/690	Female	Later middle adult	Unknown	AMNH
West Aleutians	AMNH 99/9482	Possible Female	Adolescent	Unknown	AMNH
West Aleutians	AMNH 99/9481	Unknown due to age	Later child	Unknown	AMNH
West Aleutians	AMNH 99/9479	Possible Male	Adolescent	Unknown	AMNH
West Aleutians	AMNH 99/9478	Possible Male	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9477	Indeterminate	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9476	Male	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9475	Male	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9474	Female	Young adult	Unknown	AMNH
West Aleutians	AMNH 99/9473	Male	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9472	Female	Later middle adult	Unknown	AMNH
West Aleutians	AMNH 99/9471	Possible Female	Adolescent	Unknown	AMNH
West Aleutians	AMNH 99/9469	Male	Young adult	Unknown	AMNH
West Aleutians	AMNH 99/9468	Male	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9467	Female	Young adult	Unknown	AMNH

West Aleutians	AMNH 99/9466	Possible Female	Later middle adult	Unknown	AMNH
West Aleutians	AMNH 99/9465	Probable Female	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9464	Possible Female	Adolescent	Unknown	AMNH
West Aleutians	AMNH 99/9463	Female	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9462	Male	Adult unknown	Unknown	AMNH
West Aleutians	AMNH 99/9461	Male	Later middle adult	Unknown	AMNH
West Aleutians	AMNH 99/9460	Female	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9459	Male	Later middle adult	Unknown	AMNH
West Aleutians	AMNH 99/9458	Male	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9457	Female	Adult unknown	Unknown	AMNH
West Aleutians	AMNH 99/9456	Unknown due to age	Adolescent	Unknown	AMNH
St. Lawrence	AMNH 99/3768	Female	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3767	Female	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3766	Male	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3765	Male	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3764	Female	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3721	Female	Adolescent	Unknown	AMNH
St. Lawrence	AMNH 99/3720	Female	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3719	Male	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3718	Female	Mature adult	Unknown	AMNH

St. Lawrence	AMNH 99/3711	Female	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3710	Female	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3709	Female	Mature adult	Unknown	AMNH
Amaknak Island	AMNH VL/1381	Female	Young adult	Unknown	AMNH
South Alaska	AMNH VL/220	Male	Mature adult	Unknown	AMNH
South Alaska	AMNH VL/219	Female	Later middle adult	Unknown	AMNH
South Alaska	AMNH VL/218	Male	Young adult	Unknown	AMNH
South Alaska	AMNH VL/217	Female	Mature adult	Unknown	AMNH
South Alaska	AMNH VL/216	Female	Young adult	Unknown	AMNH
South Alaska	AMNH VL/215	Male	Young adult	Unknown	AMNH
South Alaska	AMNH VL/214	Male	Mature adult	Unknown	AMNH
Amaknak Island	AMNH VL 1381 INDIV #2	Indeterminate	Later middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/713	Male	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9480	Male	Young adult	Unknown	AMNH
Nunavut	AMNH 99/105	Male	Young adult	Unknown	AMNH
Nunavut	AMNH 99/106	Female	Young adult	Unknown	AMNH
Nunavut	AMNH 99/107	Unknown due to age	Young adult	Unknown	AMNH
Nunavut	AMNH 99/108	Male	Adolescent	Unknown	AMNH
Nunavut	AMNH 99/109	Male	Later middle adult	Unknown	AMNH

Nunavut	AMNH 99/110	Male	Later middle adult	Unknown	AMNH
Nunavut	AMNH 99/111	Male	Mature adult	Unknown	AMNH
Nunavut	AMNH 99/111B	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99/679	Possible Female	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99/709	Indeterminate	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3712	Female	Later middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3713	Female	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3714	Female	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3717	Male	Later middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3769	Indeterminate	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3770	Female	Early middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3771	Male	Later middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3772	Possible Female	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3773	Possible Female	Later middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3774	Possible Female	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3775	Female	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3776	Male	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3777	Male	Early middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3778	Female	Young adult	Unknown	AMNH

St. Lawrence	AMNH 99/3779	Female	Mature adult	Unknown	AMNH
St. Lawrence	AMNH 99/3780	Female	Early middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3781	Male	Mature adult	Unknown	AMNH
St. Lawrence	AMNH 99/3782	Male	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3783	Male	Mature adult	Unknown	AMNH
St. Lawrence	AMNH 99/3783B	Indeterminate	Mature adult	Unknown	AMNH
St. Lawrence	AMNH 99/3784	Male	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3785	Female	Mature adult	Unknown	AMNH
St. Lawrence	AMNH 99/3786	Male	Later middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3787	Male	Mature adult	Unknown	AMNH
St. Lawrence	AMNH 99/3788	Female	Later middle adult	Unknown	AMNH
St. Lawrence	AMNH 99/3789	Male	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3790	Male	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3791	Male	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3792	Male	Adult unknown	Unknown	AMNH
St. Lawrence	AMNH 99/3793	Male	Mature adult	Unknown	AMNH
St. Lawrence	AMNH 99/3794	Female	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3794B	Indeterminate	Young adult	Unknown	AMNH
St. Lawrence	AMNH 99/3795	Male	Adult unknown	Unknown	AMNH
Coats Island	AMNH 99/4102	Male	Mature adult	Unknown	AMNH

Coats Island	AMNH 99/4103 (POSSIBLY)	Female	Young adult	Unknown	AMNH
Coats Island	AMNH 99/4103	Possible Female	Adult unknown	Unknown	AMNH
Coats Island	AMNH 99/4104	Male	Young adult	Unknown	AMNH
Hudson Bay	AMNH 99/4105	Female	Young adult	Unknown	AMNH
Coats Island	AMNH 99/4106	Unknown due to age	Later child	Unknown	AMNH
Coats Island	AMNH 99/4107	Female	Adolescent	Unknown	AMNH
Nunavut	AMNH 99/4197	Female	Adult unknown	Unknown	AMNH
Nunavut	AMNH 99/4652	Male	Young adult	Unknown	AMNH
Nunavut	AMNH 99/4653	Male	Young adult	Unknown	AMNH
Nunavut	AMNH 99/4654	Male	Adult unknown	Unknown	AMNH
Nunavut	AMNH 99/4655	Male	Young adult	Unknown	AMNH
Nunavut	AMNH 99/4656	Female	Adult unknown	Unknown	AMNH
Nunavut	AMNH 99/4657	Unknown due to age	Later child	Unknown	AMNH
Nunavut	AMNH 99/4658	Male	Adolescent	Unknown	AMNH
Nunavut	AMNH 99/4660	Male	Later middle adult	Unknown	AMNH
Coats Island	AMNH 99/4661	Male	Later middle adult	Unknown	AMNH
Coats Island	AMNH 99/4662	Male	Adolescent	Unknown	AMNH
Hudson Bay	AMNH 99/6686	Female	Later middle adult	Unknown	AMNH

Hudson Bay	AMNH 99/6687	Male	Later middle adult	Unknown	AMNH
Hudson Bay	AMNH 99/6689	Male	Young adult	Unknown	AMNH
Hudson Bay	AMNH 99/6690	Male	Early middle adult	Unknown	AMNH
Hudson Bay	AMNH 99/6691	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/6692	Male	Young adult	Unknown	AMNH
Hudson Bay	AMNH 99/6693	Possible Male	Early middle adult	Unknown	AMNH
North Greenland	AMNH 99/7685	Male	Later middle adult	Unknown	AMNH
North Greenland	AMNH 99/7686	Male	Later middle adult	Unknown	AMNH
North Greenland	AMNH 99/7687	Female	Young adult	Unknown	AMNH
North Greenland	AMNH 99/7688	Male	Later middle adult	Unknown	AMNH
North Greenland	AMNH 99/7689	Male	Young adult	Unknown	AMNH
North Greenland	AMNH 99/7690	Unknown due to age	Later child	Unknown	AMNH
North Greenland	AMNH 99/7691	Possible Female	Later middle adult	Unknown	AMNH
North Greenland	AMNH 99/7692	Female	Early middle adult	Unknown	AMNH
North Greenland	AMNH 99/7693	Female	Adult unknown	Unknown	AMNH
North Greenland	AMNH 99/7694	Female	Later middle adult	Unknown	AMNH

North Greenland	AMNH 99/7695	Male	Later middle adult	Unknown	AMNH
North Greenland	AMNH 99/7696	Possible Female	Mature adult	Unknown	AMNH
North Greenland	AMNH 99/7697	Female	Adolescent	Unknown	AMNH
North Greenland	AMNH 99/7698	Female	Early middle adult	Unknown	AMNH
North Greenland	AMNH 99/7699	Male	Mature adult	Unknown	AMNH
North Greenland	AMNH 99/7700	Female	Adult unknown	Unknown	AMNH
North Greenland	AMNH 99/7701	Female	Adolescent	Unknown	AMNH
North Greenland	AMNH 99/7702	Female	Adult unknown	Unknown	AMNH
North Greenland	AMNH 99/7703	Female	Later middle adult	Unknown	AMNH
North Greenland	AMNH 99/7704	Male	Young adult	Unknown	AMNH
North Greenland	AMNH 99/7705	Female	Young adult	Unknown	AMNH
North Greenland	AMNH 99/7706	Female	Adult unknown	Unknown	AMNH
North Greenland	AMNH 99/7707	Female	Young adult	Unknown	AMNH
Greenland Unknown	AMNH 99/7708	Unknown due to age	Later child	Unknown	AMNH
Greenland Unknown	AMNH 99/7709A	Indeterminate	Early middle adult	Unknown	AMNH

Greenland Unknown	AMNH 99/7709B	Possible Female	Later middle adult	Unknown	AMNH
Greenland Unknown	AMNH 99/7709C	Possible Male	Adult unknown	Unknown	AMNH
Greenland Unknown	AMNH 99/7710A	Indeterminate	Adult unknown	Unknown	AMNH
Greenland Unknown	AMNH 99/7710B	Indeterminate	Adult unknown	Unknown	AMNH
Greenland Unknown	AMNH 99/7710C	Indeterminate	Adult unknown	Unknown	AMNH
Greenland Unknown	AMNH 99/7710D	Indeterminate	Adult unknown	Unknown	AMNH
Greenland Unknown	AMNH 99/7710E	Indeterminate	Adult unknown	Unknown	AMNH
Greenland Unknown	AMNH 99/7710F	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH PHY- 4	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH PHY- 25 INDIV #1	Indeterminate	Mature adult	Unknown	AMNH
Amaknak Island	AMNH PHY- 25 INDIV #2	Indeterminate	Adolescent	Unknown	AMNH
North Greenland	AMNH VL/359	Male	Young adult	Unknown	AMNH
Greenland Unknown	AMNH VL/4666	Male	Later middle adult	Unknown	AMNH
Greenland Unknown	AMNH 99/7711A	Indeterminate	Adult unknown	Unknown	AMNH
North Alaska	AMNH 99/7765	Male	Later middle adult	Unknown	AMNH

Greenland Unknown	AMNH 99/7711B	Indeterminate	Adult unknown	Unknown	AMNH
Nunavut	AMNH 99/8013	Possible Male	Later middle adult	Unknown	AMNH
West Greenland	AMNH 99/8324	Indeterminate	Adult unknown	Unknown	AMNH
North Greenland	AMNH 99/8909	Unknown due to age	Adult unknown	Unknown	AMNH
North Greenland	AMNH 99/8910	Male	Later middle adult	Unknown	AMNH
North Greenland	AMNH 99/8910A	Possible Male	Early middle adult	Unknown	AMNH
North Greenland	AMNH 99/8910B	Indeterminate	Early middle adult	Unknown	AMNH
North Greenland	AMNH 99/8911	Male	Later middle adult	Unknown	AMNH
West Greenland	AMNH 99/8912	Male	Later middle adult	Unknown	AMNH
West Greenland	AMNH 99/8913	Male	Later middle adult	Unknown	AMNH
West Greenland	AMNH 99/8914	Female	Early middle adult	Unknown	AMNH
West Greenland	AMNH 99/8915	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8916	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8917	Male	Early middle adult	Unknown	AMNH
West Greenland	AMNH 99/8918	Possible Male	Mature adult	Unknown	AMNH

West Greenland	AMNH 99/8919	Possible Male	Adolescent	Unknown	AMNH
West Greenland	AMNH 99/8920	Possible Female	Later middle adult	Unknown	AMNH
West Greenland	AMNH 99/8921	Possible Male	Later middle adult	Unknown	AMNH
West Greenland	AMNH 99/8921B	Indeterminate	Mature adult	Unknown	AMNH
West Greenland	AMNH 99/8922	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8923	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8925	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8926	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8927	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8930	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8931	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8932	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8933	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8934	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8935	Indeterminate	Adult unknown	Unknown	AMNH

West Greenland	AMNH 99/8936	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8937	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8938	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8939	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8940	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8941	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8945	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8946	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8947	Possible Male	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8948	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8949	Possible Female	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8950	Possible Female	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8951	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8952	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8953	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8954	Indeterminate	Adult unknown	Unknown	AMNH

West Greenland	AMNH 99/8955	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8956	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8957	Unknown due to age	Subadult unknown	Unknown	AMNH
West Greenland	AMNH 99/8961	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8966	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8967	Indeterminate	Adult unknown	Unknown	AMNH
West Greenland	AMNH 99/8968	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8969	Male	Later middle adult	Unknown	AMNH
Hudson Bay	AMNH 99/8969B	Indeterminate	Young adult	Unknown	AMNH
Hudson Bay	AMNH 99/8970	Female	Later middle adult	Unknown	AMNH
Hudson Bay	AMNH 99/8971	Unknown due to age	Early post-natal infant	Unknown	AMNH
Hudson Bay	AMNH 99/8972	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8973	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8974	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8975	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8976	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8978	Indeterminate	Adult unknown	Unknown	AMNH

Hudson Bay	AMNH 99/8979	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8980	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8981	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8982	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8983	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8984	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8985	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8986	Possible Male	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8987	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8988	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8989	Possible Male	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8990	Indeterminate	Adult unknown	Unknown	AMNH
Hudson Bay	AMNH 99/8991	Female	Adult unknown	Unknown	AMNH
Coats Island	AMNH 99/9738	Female	Young adult	Unknown	AMNH
Coats Island	AMNH 99/9739	Female	Young adult	Unknown	AMNH
Hudson Bay	AMNH 99/9740	Female	Young adult	Unknown	AMNH
Nunavut	AMNH 99/9741	Female	Later middle adult	Unknown	AMNH
Hudson Bay	AMNH 99/9742	Female	Mature adult	Unknown	AMNH
Hudson Bay	AMNH 99/9743	Male	Young adult	Unknown	AMNH
West Greenland	AMNH 99/9828	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/703	Indeterminate	Adult unknown	Unknown	AMNH

Amaknak Island	AMNH 99.1/710	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/711A	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/711B	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/711C	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/711D	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/711E	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/711F	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/711G	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/711H	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/712	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/791 #3	Indeterminate	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/791 INDIV. #1	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/791	Possible Male	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/794	Male	Early middle adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/795	Female	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/809	Indeterminate	Adult unknown	Unknown	AMNH

Amaknak Island	AMNH 99.1/810B	Indeterminate	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/815	Indeterminate	Adolescent	Unknown	AMNH
Amaknak Island	AMNH 99.1/816	Female	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/817	Indeterminate	Early child	Unknown	AMNH
Amaknak Island	AMNH 99.1/818	Indeterminate	Young adult	Unknown	AMNH
Nunavut	AMNH 99.1/949	Female	Mature adult	Unknown	AMNH
Amaknak Island	AMNH 99.1/971 INDIV #2	Possible Female	Adult unknown	Unknown	AMNH
Amaknak Island	AMNH 99.1/691	Female	Mature adult	Unknown	AMNH
West Aleutians	AMNH 99/9470	Male	Early middle adult	Unknown	AMNH
Vancouver Island	NA 94	Unknown due to age	Early child	Unknown	Duck
Vancouver Island	NA 100	Unknown due to age	Later child	Unknown	Duck
Vancouver Island	NA 91	Unknown due to age	Adolescent	Unknown	Duck
Vancouver Island	NA 109	Female	Young adult	Unknown	Duck
Vancouver Island	NA 097	Female	Young adult	Unknown	Duck
Vancouver Island	NA 104	Female	Young adult	Unknown	Duck
Vancouver Island	NA 103	Female	Later middle adult	Unknown	Duck
Vancouver Island	NA 093	Female	Adult unknown	Unknown	Duck
Vancouver Island	NA 106	Female	Adult unknown	Unknown	Duck

Vancouver Island	NA 098	Male	Adolescent	Unknown	Duck
Vancouver Island	NA 095	Male	Young adult	Unknown	Duck
Vancouver Island	NA 102	Male	Young adult	Unknown	Duck
Vancouver Island	NA 101	Male	Early middle adult	Unknown	Duck
Vancouver Island	NA 110	Male	Early middle adult	Unknown	Duck
Vancouver Island	NA 092	Male	Later middle adult	Unknown	Duck
Vancouver Island	NA 099	Male	Adult unknown	Unknown	Duck
Vancouver Island	NA 105	Possible Male	Later middle adult	Unknown	Duck
Vancouver Island	NA 107	Possible Male	Later middle adult	Unknown	Duck
Vancouver Island	NA 096	Indeterminate	Adult unknown	Unknown	Duck
Vancouver Island	NA 108	Indeterminate	Later middle adult	Unknown	Duck
Nunavut	NA 162	Female	Young adult	Unknown	Duck
Nunavut	NA 155	Female	Early middle adult	Unknown	Duck
Nunavut	NA 161	Female	Later middle adult	Unknown	Duck
Nunavut	NA 163	Female	Later middle adult	Unknown	Duck
Nunavut	NA 154	Female	Adult unknown	Unknown	Duck
Canada Unknown	NA 157	Unknown due to age	Early child	Unknown	Duck

Canada Unknown	NA 171	Unknown due to age	Later child	Unknown	Duck
Canada Unknown	NA 165	Female	Adolescent	Unknown	Duck
Canada Unknown	NA 164	Female	Young adult	Unknown	Duck
Canada Unknown	NA 153 Cra / NA 159	Female	Later middle adult	Unknown	Duck
Canada Unknown	NA 170	Female	Adult unknown	Unknown	Duck
Canada Unknown	NA 173	Female	Adult unknown	Unknown	Duck
Canada Unknown	NA 167	Possible Female	Later middle adult	Unknown	Duck
Canada Unknown	NA 156	Male	Adult unknown	Unknown	Duck
Canada Unknown	NA 168	Male	Adult unknown	Unknown	Duck
Canada Unknown	NA 174	Male	Adult unknown	Unknown	Duck
Canada Unknown	NA 153 Man	Possible Male	Early middle adult	Unknown	Duck
Canada Unknown	NA 149 / NA 160	Male	Later middle adult	Unknown	Duck
Canada Unknown	NA 158	Indeterminate	Young adult	Unknown	Duck
Canada Unknown	NA 169	Indeterminate	Later middle adult	Unknown	Duck
Canada Unknown	NA 172	Indeterminate	Later middle adult	Unknown	Duck
Canada Unknown	NA 166	Female	Adult unknown	Unknown	Duck
Hudson Bay	NA 113	Female	Young adult	Unknown	Duck
Hudson Bay	NA 112	Male	Adolescent	Unknown	Duck
Hudson Bay	NA 119	Possible Female	Young adult	Unknown	Duck

Hudson Bay	NA 120	Male	Young adult	Unknown	Duck
Hudson Bay	NA 114	Male	Early middle adult	Unknown	Duck
Hudson Bay	NA 115A	Unknown due to age	Later child	Unknown	Duck
Hudson Bay	NA 115B	Indeterminate	Adolescent	Unknown	Duck
Hudson Bay	NA 115C	Unknown due to age	Adolescent	Unknown	Duck
Hudson Bay	NA 116	Indeterminate	Adult unknown	Unknown	Duck
Hudson Bay	NA 117	Indeterminate	Adult unknown	Unknown	Duck
Hudson Bay	NA 118	Indeterminate	Adult unknown	Unknown	Duck
East Greenland	NA 127	Unknown due to age	Early child	Unknown	Duck
East Greenland	NA 122	Female	Adolescent	Unknown	Duck
East Greenland	NA 146	Female	Young adult	Unknown	Duck
East Greenland	NA 132	Female	Young adult	Unknown	Duck
East Greenland	NA 134	Female	Young adult	Unknown	Duck
East Greenland	NA 135	Female	Young adult	Unknown	Duck
East Greenland	NA 129	Male	Adult unknown	Unknown	Duck
East Greenland	NA 133	Male	Early middle adult	Unknown	Duck
East Greenland	NA 121	Possible Male	Later middle adult	Unknown	Duck

East Greenland	NA 128	Indeterminate	Adult unknown	Unknown	Duck
West Greenland	NA 145	Female	Early middle adult	Unknown	Duck
West Greenland	NA 144	Male	Later middle adult	Unknown	Duck
South Greenland	NA 150	Possible Female	Young adult	Unknown	Duck
Greenland Unknown	NA 141	Female	Adolescent	Unknown	Duck
Greenland Unknown	NA 139	Female	Young adult	Unknown	Duck
Greenland Unknown	NA 140	Female	Early middle adult	Unknown	Duck
Greenland Unknown	NA 123	Female	Early middle adult	Unknown	Duck
Greenland Unknown	NA 124	Female	Early middle adult	Unknown	Duck
Greenland Unknown	NA 151	Female	Early middle adult	Unknown	Duck
East Greenland	NA 130/131	Female	Later middle adult	Unknown	Duck
East Greenland	NA 142	Female	Early middle adult	Unknown	Duck
Greenland Unknown	NA 137	Female	Mature adult	Unknown	Duck
Greenland Unknown	NA 125	Female	Adult unknown	Unknown	Duck
Greenland Unknown	NA 138	Male	Young adult	Unknown	Duck

Greenland Unknown	NA 147	Male	Early middle adult	Unknown	Duck
Greenland Unknown	NA 136	Male	Mature adult	Unknown	Duck
Greenland Unknown	NA 152	Male	Adult unknown	Unknown	Duck
Greenland Unknown	NA 148	Possible Male	Mature adult	Unknown	Duck
Greenland Unknown	NA 126	Indeterminate	Adult unknown	Unknown	Duck
South Greenland	1-Aa.113M	Male	Mature adult	Unknown	UL
South Greenland	3-Aa.113F	Female	Mature adult	Unknown	UL
Greenland Unknown	6-Sam94	Male	Adult unknown	Unknown	UL
South Greenland	9-Aa.113F	Female	Young adult	Unknown	UL
West Greenland	11-Aa.113M	Female	Young adult	Unknown	UL
Greenland Unknown	13-Aa.113M	Male	Adult unknown	Unknown	UL
West Greenland	15-Aa.113M	Indeterminate	Mature adult	Unknown	UL
Greenland Unknown	16-Aa.113F	Female	Adult unknown	Unknown	UL
West Greenland	21-Aa.113M	Male	Adult unknown	Unknown	UL
South Greenland	24-Aa.113F	Female	Young adult	Unknown	UL

West Greenland	37-Aa.113F	Indeterminate	Later child	Unknown	UL
West Greenland	43-Aa.113.30M	Male	Young adult	Unknown	UL
South Greenland	44-AA.113F	Female	Young adult	Unknown	UL
Greenland Unknown	45-Sam58, II	Female	Early middle adult	Unknown	UL
South Greenland	46-Aa.113M	Indeterminate	Adult unknown	Unknown	UL
West Greenland	53-Aa.113F	Female	Young adult	Unknown	UL
Greenland Unknown	54-Sam66	Possible Female	Young adult	Unknown	UL
West Greenland	56-Aa.113	Female	Early middle adult	Unknown	UL

Appendix Table 2 Material - Locations

The locations where all the HSR were found	
Sample	Location
Amaknak Island and area	Amaknak Island, Sites A, B, D, DD, DD1, DD2, DD3
	Unalaska
Canada Unknown	Canada
St. Lawrence and Cape Chaplino	Cape Chaplino
	St. Lawrence Island
Coats Island, Frozen Strait, Southampton Island, Walrus Island	Coats Island, Sadlermiut, Native Point/Tunirmiut 1 and 3, Manico Point
	Frozen Strait
East Greenland	Eleonoren Bay
	Skjoldungen, Frederick VI Coast
	Angmaksalik
Greenland Unknown	Greenland
Hudson Bay and Baffin Island, Bay and Area	Joy Bay
	Bush Island 4
	Kuyait
	Diana River, Inniturlu/Opingivik 29, Amittuq 25, Cordeau Site, Suunirlait 20
	Winchester Inlet
	Saatut
	Button Point
	Nunguvik
	Chesterfield Inlet
	Ungava Bay, Port Burwell
	Tyara site
	Cape Fullerton
	Arviat
	Mittimatalik/Mittima's Grave/Pond's Inlet
	Qilalukan
	Cape Dorset
	Arctic Bay
	Pangnirtung
	Repulse Bay
	Frobisher Bay
	Igloolik
	Lady Franklin Site
	Baker Lake
	Cullaton Lake
	Victory Lake
	Ennadai Lake

	Baker's Dozen Island
	Belcher's Island
	Mansel Island, Amulet Creek, Angekok
	Silumiut Island
	Inuksivik North
	Kulaiktuijavik/Yellow Bluff/Inuksivik
	Ukusialuk
	Big Island
	Blacklead Island
	West Foxe Basin
	Nunguvik III
	Cape Garry
	Igloolik Point
	Dexterity Harbour
	Crystal II
	Talagwak
	Kivitoo 2
	Booth Point (Kung-e-ark-le-ar-u)
	Iglulik Fury and Hecla Strait
North Alaska/Canada	Dundas Harbour
	Croker Bay
	Collinson Point
	Port Refuge
	Fellfoot Point
	Porden Point Brook Village
	Mount Oliver/Qariaraqyuk
	Central Inuit
North Greenland	Etah
	Peternawick, Greenland
	Sulwuddy
	Nerki
	North Star Bay
	Upernavik
	Saunders Island
Nunavut	Adelaide Peninsula
	Akulialuk C
	Kamaiyuk
	Peale Point
	Lake Site
	Nadlock
	Bloody Falls (Kallak)
	Menez

	Matoos
	Imaha
	Simpson Strait
	Avartok
	Smith Island, Ellesmere Island
	Fairman Point
	Cape Adelaide
	Seven Pound Island
	Crossing Point Loc 2
	Melville Peninsula
	Oftedal Lake
	Griffin Lake
	Fisk Hook Island Loc 2
	Caribou Point 1
	Netsilik River
	Igluligardjuk
	Kamarvik
	Ekalluk River
	Igliligardjuk
	Near Finger Point
	Two Falcons
	Young Point
	DEW Line (PIN CHARLIE)
	Coppermine River
	Clachan
	Cape Williams
	Cornwallis Island
	Cape Jermain
	Lindstrom Peninsula
	Bathurst Island
	Ferguson Lake/Ekalluk River
	Craig Harbour
	Angmat-Nord III
	Ferguson Lake
	Resolute Bay
	Kae Site (Resolute)
	Resolute: House X
	Gjoa Haven
	Learmonth Site
	Quoak Site
	Eta Island
	Cape Seaforth

	Resolute
	DEW Line (station 30)
	Brooman Point Village
	Akulialik C
	Ruggles Outlet
	S. Coast Devon Is. Maxwell Bay
	High / M1
	Lake Site (Resolute)
	Alarnerk
	Rocky Point
	Bay 1', Graham Gore Peninsula, King William Island
	Boat Place
	Co-Op
	Smith Sound
	Maluksitak, Melville Peninsula
	Sculpin Island, Labrador
	Ontario, Labrador, Cape Ailek
	Ontario, Labrador, Hopedale, Black Head
	Ontario, Labrador
South Alaska, Kodiak and Sitkinak Islands	Kenal, Tanaina
	Kodiak Island, Crag Point
	Kodiak Island, Kizhuyak Bay (Anton Larsen)
	Sitkinak Island
	Kodiak Island
	Cook Inlet
South Greenland	Eqaluit III
	Holsteinborg
	King Frederick VII. Island, Holstensborg Fiord
Vancouver Island and area	Read Island
	Richardson Point
	Vancouver's Island, Stickeev
	Vancouver's Island (Nanaimo skull)
	Vancouver's Island, Barclay Sound (Shushats skull)
	Vancouver's Island, Comox, near Fort Raper
	Vancouver's Island, Nimkish
West Aleutians, Aleutians Unknown and Nome	Nome, Port Clarence
	Nome, Wales
	Aleutians Island
	Attu Island
	Kiska
	Shemya Usland
	Sledge Island

West Greenland	Ikertok Fiord
	Rode Bay, North of Jacobshavn
	West, Ikerasak
	Christianshaab
	Storoer Island, Umanak Fjord

Appendix Table 3 Methods - Sex estimation categories

Taken from (White et al. 2012)

The current researcher (2018) added codes 1-9, as the age (and sex) codes are qualitative variables.

The possible females/ males and probable females/ males were merged into a probable category. However, the possible females/ males descriptions are retained in the table to maintain consistency with the published literature.

Term	Code	Sex	Meaning
F	1	Female	Analyst has full confidence in the determination of the sex of the remains
M	2	Male	
(F)	3	Probable Female	Analyst does not have full confidence in the determination, but feels the remains are probably the stated sex
(M)	4	Probable Male	
F?	5	Possible Female	Analyst does not have confidence in the determination, but feels the available evidence hints at the stated sex
M?	6	Possible Male	
ind.	7	Indeterminate	The remains have been analysed, but are lacking sufficient diagnostic morphology for a determination of sex
unk.	8	Unknown	The remains have not been analysed; no determination of sex has been attempted
Subadult	9	Unknown due to age	The individual has not yet reached sexual maturity, so sex assessment cannot be conducted.

Appendix Table 4 Methods - Y'Edynak (1976)

Age estimation - mean long bone lengths

From Y'Edynak (1976, Table 3)

Y'Edynak (1976) does not specify the measurements, e.g. centimetres; the current researcher has used millimetres

Sex	Male	Female	Sex	Male	Female
Estimated age	Mean	Mean	Estimated age	Mean	Mean
Humerus			Femur		
2-3.9	112	112	2-3.9	142.8	143
4-5.9	136	141.9	4-5.9	176.8	185
6-7.9	174.2	168.3	6-7.9	233.4	264.3
8-9.9	190.5	180.3	8-9.9	243	247.3
10-11.9	206	200	10-11.9	289	279
12-13.9	222.5	230.8	12-13.9	300	327.5
14-15.9	235.1	232.5	14-15.9	343.3	338.5
16-17.9	246	-	16-17.9	358.7	-
18-19.9	-	243.8	18-19.9	-	354.5
Radius			Tibia		
2-3.9	88.3	84	2-3.9	122.8	115
4-5.9	96.2	101.4	4-5.9	141.3	145
6-7.9	127.5	129	6-7.9	188.2	205
8-9.9	-	130	8-9.9	206	192
10-11.9	143	149	10-11.9	222	206
12-13.9	152.5	171.7	12-13.9	236.7	260.7
14-15.9	187.5	172.5	14-15.9	264.4	268.5
16-17.9	193	-	16-17.9	279.5	-
18-19.9	-	191	18-19.9	-	280.3
Ulna			Fibula		
2-3.9	97	93.7	2-3.9	119	110.8
4-5.9	108.4	115.3	4-5.9	140.3	144.9
6-7.9	137.3	147.3	6-7.9	189.4	194.3
8-9.9	158.5	143.3	8-9.9	205.5	185.3
10-11.9	160	166	10-11.9	220.5	217
12-13.9	176.3	193	12-13.9	227	256.5
14-15.9	52.3	201.5	14-15.9	265.9	265
16-17.9	44	-	16-17.9	266	-
18-19.9	-	219	18-19.9	-	282.5

Appendix Table 5 Method – Linear enamel hypoplasia

LEH age formation from Reid and Dean (2006)

Maxillary Teeth						
Tooth	18/28	17/27	16/26	13/23	12/22	11/21
Score	Age (years)					
1	11.3/11.4	6.4/6.3	3.0/3.0	4.8/5.3	4.8/5.1	4.2/5.0
2	10.9/10.9	6.1/5.9	2.7/2.9	4.4/4.8	4.4/4.6	3.8/4.4
3	10.6/10.6	5.7/5.6	2.4/2.7	4.0/4.3	3.9/4.1	3.4/3.9
4	10.3/10.3	5.5/5.3	2.1/2.4	3.5/3.8	3.5/3.7	2.9/3.4
5	10.1/10.1	5.2/5.1	1.9/2.1	3.1/3.4	3.2/3.3	2.5/2.9
6	9.9/9.9	5.0/4.9	1.8/1.9	2.8/3.0	2.9/2.9	2.2/2.4
7	9.8/9.8	4.9/4.8	1.5/1.8	2.5/2.7	2.6/2.7	1.9/2.0
8	9.7/9.7	4.7/4.6	1.3/1.6	2.3/2.4	2.4/2.4	1.7/1.8
9	9.5/9.6	4.6/4.5	1.2/1.5	2.1/2.2	2.2/2.2	1.5/1.6
10	9.4/9.5	4.5/4.4	1.2/1.4	1.9/1.9	2.0/2.0	1.3/1.3
11	9.3/9.4	4.4/4.3	1.1/1.3	1.7/1.7	1.8/1.8	1.1/1.1
Mandibular Teeth						
Tooth	38/48	37/47	26/46	33/43	32/42	31/41
Score	Age (years)					
1	9.3/9.3	4.2/4.2	1.0/1.3	1.4/1.5	1.0/1.0	0.8/1.0
2	9.4/9.4	4.3/4.3	1.1/1.4	1.6/1.7	1.2/1.1	1.0/1.1
3	9.6/9.5	4.4/4.4	1.2/1.5	1.9/2.0	1.3/1.3	1.1/1.3
4	9.7/9.6	4.6/4.6	1.4/1.6	2.1/2.3	1.5/1.5	1.3/1.5
5	9.9/9.7	4.7/4.7	1.5/1.8	2.4/2.7	1.7/1.8	1.5/1.7
6	10.0/9.8	4.9/4.9	1.7/1.9	2.8/3.1	1.9/2.1	1.7/2.0
7	10.2/10.0	5.2/5.0	1.9/2.1	3.2/3.6	2.2/2.4	2.0/2.3
8	10.4/10.3	5.4/5.3	2.2/2.4	3.7/4.2	2.6/2.8	2.3/2.6
9	10.7/10.5	5.7/5.6	2.5/2.7	4.2/4.9	3.0/3.3	2.7/3.0
10	11.0/10.9	6.0/5.9	2.8/3.0	4.7/5.6	3.4/3.7	3.1/3.4
11	11.3/11.2	6.2/6.2	3.1/3.3	5.2/6.2	3.8/4.2	3.4/3.8

Appendix Table 6 Methods - Row 46-Alveolar bone alterations

Defined by Karn et al. (1984), codes by researcher B=buccal, L=lingual, M=mesial and D=distal

Term	Description	Score									
Crater	A crater is formed as a result of loss of alveolar bone and a portion of the contiguous supporting alveolar bone from only one surface of a tooth. Craters are identified by the tooth surface involved (mesial, distal, facial or lingual). Craters may be confluent if they occur on adjacent proximal surfaces, in which case they are called two-surface craters (affecting two tooth surfaces) and are named for the two teeth involved.	Prefix	B	L	M	D					
		1	1	2	3	4					
Trench	This term is applied when such bone loss (see above) affects two of three confluent surfaces of the same tooth. Trenches can be similarly identified by the tooth surfaces involved (e.g., mesiofacial, meso-lingual-distal, etc.). Since trenches involve either two or three surfaces of the same tooth there are eight possible types	Prefix	BL	MDB	MLB	BDL	DBL	MB	ML	BD	
		2	1	2	3	4	5	6	7	8	
Moat	When the previously described deformity involves all four surfaces of a tooth, it is described as a moat. Since the term “moat” is applied to a deformity totally encircling a tooth, only the tooth number is necessary to identify it.	3									

Ramp	In its purest form the term ramp describes a deformity that results when both alveolar bone and its supporting bone are lost to the same degree in such a manner that the margins of the deformity are at different levels. Ramps are names for the tooth surface aspect from which the greatest bone loss has occurred and the teeth involved.	Prefix	B	L	M	D	VD	BD	ML	DL
		4	1	2	3	4	5	6	7	8
Plane	This term is applied when both the alveolar bone and supporting bone is lost to the same degree such that the margins of the deformity are at the same level. It can be considered horizontal bone loss about one tooth or portion of a tooth.	5								
Ramp into crater/trench	It differs from the cratered ramp in that the most coronal aspect of the deformity is distinctly a ramp and the apical portion is distinctly a crater or trench.	Prefix	B	L	M	D	MD	BD	ML	DL
		7	1	2	3	4	5	6	7	8

Appendix Table 7 Methods - Row 47-Periodontal grades

From Kerr (1991) with researchers' modification.

Score	Description	Periodontal Score
Category 0.1	Unrecordable – tooth on either side of the septum lost ante-mortem	N/A
Category 0.2	Unrecordable – tooth on either side of the septum damaged post-mortem	N/A
Category 0.3	Tooth has not erupted	N/A
Category 1	Septal form characteristic of its region (e.g. convex in the incisor region grading to flat in the molar region); the cortical surface smooth and virtually uninterrupted by foramina or grooves. Such a situation is considered to represent the “healthy” situation	Good periodontal health
Category 2	Septal form characteristic of the region; cortical surface showing a range from many small foramina and/or shallow grooves to a cortical surface showing larger foramina and/or prominent grooves or ridges. In a few instances there may be gross disruption of the cortical layer, but normal contour. This category is indicative of inflammation in the overlaying soft tissue and a clinical diagnosis of gingivitis	Had gingivitis
Category 3	Septal form showing a breakdown of contour with bone loss in the form of a shallow depression extending across the interspace from the buccal to lingual aspect, or as one or two smaller discrete areas of bone destruction, the essential distinguishing feature being a sharp and ragged texture to the bone defect. Such a defect is representative of an acute burst of periodontitis	Had periodontitis
Category 4	Septal form showing breakdown of contour with bone loss similar to that seen in category three, the essential different being that the bone surface, instead of being ragged in appearance, shows a porous or smooth honeycomb effect with all defects rounded. This defect is considered to be a previously acute periodontitis that has reverted to a quiescent phase	Had periodontitis
Category 5	Presence of a deep intra-bony defect with sides sloping at 45 degrees or more and with a depth of 3 mm or more. The defect is more likely to be mesio-distally but may be bucco-lingually inclined. The surface may be sharp and ragged or smooth and honeycombed. This defect is equivalent to a more aggressive periodontitis in either an acute or quiescent phase. Only septa associated with the teeth of the permanent dentition were included in the study	Had periodontitis

Appendix Table 8 Intra-observer error - sex

Count of Score 1 Sex	1	2	3	4	5	6	7	9	Grand Total
1	126	10	1				1	1	139
2	9	97		1			1		108
3		1	2						3
4				1					1
5		9			14	1		1	25
6		3			10				13
7	1	1				59		1	62
9	3							83	86
Grand Total	149	111	3	1	15	10	62	86	437
Same									392
									89.70%
Close									3
Same + close									395
									90.40%

Appendix Table 9 Intra-observer error - age

Count of Score 1 Age	0	2	3	4	5	6	7	8	9	10	11	Grand Total
2		6										6
3			15									15
4				17								17
5	1				17							18
6	1				1	43	1		2			48
7				1		2	102	3	5	2		115
8							8	34	4	2		48
9						1	2	2	27	12	1	45
10							2	6	2	38	1	49
11								1	1	4	49	55
12						20					1	21
Grand Total	2	6	15	18	18	66	115	46	41	58	52	437
Same												348
												79.60%
Close												63
Same + close												411
												94.10%

Appendix Table 10 Tooth Presence – Amaknak Island females

Row 1 - Females - Totals - Amaknak Island

	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	47	46	40	32	23	18	13	12	9	6	10	12	15	11	7
AMTL	34	15	9	10	6	0	0	0	0	0	29	13	7	8	6
Agenesis	1	0	0	0	8	1	0	0	0	3	0	0	0	0	3
PMTL	62	44	5	11	14	17	11	0	3	3	26	22	2	4	6
AMTL %	23.78%	14.29%	16.67%	18.87%	13.95%	0.00%	0.00%	0.00%	0.00%	0.00%	44.62%	27.66%	29.17%	34.78%	31.58%
Agenesis %	0.69%	0.00%	0.00%	0.00%	15.69%	2.78%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	13.64%
PMTL %	43.06%	41.90%	9.26%	20.75%	27.45%	47.22%	45.83%	0.00%	25.00%	25.00%	40.00%	46.81%	8.33%	17.39%	27.27%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	47	46	40	32	23	18	13	12	9	6	10	12	15	11	7
AMTL	34	15	9	10	6	0	0	0	0	0	29	13	7	8	6
Agenesis	1	0	0	0	8	1	0	0	0	3	0	0	0	0	3
PMTL	62	44	5	11	14	17	11	0	3	3	26	22	2	4	6
AMTL %	23.78%	14.29%	16.67%	18.87%	13.95%	0.00%	0.00%	0.00%	0.00%	0.00%	44.62%	27.66%	29.17%	34.78%	31.58%
Agenesis %	0.69%	0.00%	0.00%	0.00%	15.69%	2.78%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	13.64%
PMTL %	43.06%	41.90%	9.26%	20.75%	27.45%	47.22%	45.83%	0.00%	25.00%	25.00%	40.00%	46.81%	8.33%	17.39%	27.27%

Appendix Table 11 Tooth Presence – Amaknak Island males

Row 1 - Males - Totals - Amaknak Island															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	53	46	31	24	21	1	4	2	2	2	20	15	13	9	8
AMTL	16	3	0	2	2	0	0	0	0	0	4	2	0	0	1
Agenesis	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
PMTL	39	23	5	10	11	5	0	0	0	0	18	11	1	5	3
AMTL %	14.81%	4.17%	0.00%	5.56%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	9.52%	7.14%	0.00%	0.00%	8.33%
Agenesis %	0.00%	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%
PMTL %	36.11%	31.94%	13.89%	27.78%	30.56%	83.33%	0.00%	0.00%	0.00%	0.00%	42.86%	39.29%	7.14%	35.71%	21.43%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	53	46	31	24	21	1	4	2	2	2	20	15	13	9	8
AMTL	16	3	0	2	2	0	0	0	0	0	4	2	0	0	1
Agenesis	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
PMTL	39	23	5	10	11	5	0	0	0	0	18	11	1	5	3
AMTL %	14.81%	4.17%	0.00%	5.56%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	9.52%	7.14%	0.00%	0.00%	8.33%
Agenesis %	0.00%	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%
PMTL %	36.11%	31.94%	13.89%	27.78%	30.56%	83.33%	0.00%	0.00%	0.00%	0.00%	42.86%	39.29%	7.14%	35.71%	21.43%

Appendix Table 12 Tooth Presence – Amaknak Island subadults

Row 1 - Subadults - Totals - Amaknak Island															
	Pooled					Child					Adolescent				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	2	0	7	0	0	2	0	7	0	0	0	0	0	0	0
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PMTL	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%		0.00%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	100.00%		0.00%		0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	4		8	6	0	2		7	6	0	2		1	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	1	0	0		0	0	0	0		0	1	0
PMTL	23		0	1	0	19		0	1	0	4		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	12.50%		0.00%		0.00%	0.00%		0.00%		0.00%	100.00%	
PMTL %	85.19%		0.00%	12.50%		90.48%		0.00%	14.29%		66.67%		0.00%	0.00%	
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	6	0	15	6	0	4	0	14	6	0	2	0	1	0	0
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
PMTL	23	0	0	3	0	19	0	0	3	0	4	0	0	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
PMTL %	79.31%	0.00%	0.00%	30.00%	0.00%	82.61%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%	0.00%	0.00%	0.00%

Appendix Table 13 Tooth Presence – Canada Unknown females

Row 1 - Females - Totals - Canada Unknown															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	5	6	4	1	0	0	2	0	1	0	0	1	0	0
AMTL	1	0	5	6	3	0	0	0	0	0	0	0	1	1	1
Agenesis	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
PMTL	39	25	4	5	6	6	4	0	2	1	6	4	0	1	1
AMTL %	2.22%	0.00%	33.33%	40.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%	50.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	28.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	86.67%	83.33%	26.67%	33.33%	42.86%	100.00%	100.00%	0.00%	100.00%	50.00%	100.00%	100.00%	0.00%	50.00%	50.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	5	6	4	1	0	0	2	0	1	0	0	1	0	0
AMTL	1	0	5	6	3	0	0	0	0	0	0	0	1	1	1
Agenesis	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
PMTL	39	25	4	5	6	6	4	0	2	1	6	4	0	1	1
AMTL %	2.22%	0.00%	33.33%	40.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%	50.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	28.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	86.67%	83.33%	26.67%	33.33%	42.86%	100.00%	100.00%	0.00%	100.00%	50.00%	100.00%	100.00%	0.00%	50.00%	50.00%

Appendix Table 14 Tooth Presence – Canada Unknown males

Row 1 - Males - Totals - Canada Unknown										
	Pooled					YA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	5	10	6	4	5	3	4	3	1
AMTL	7	0	0	1	3	0	0	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	30	23	4	7	4	7	5	0	1	1
AMTL %	16.67%	0.00%	0.00%	7.14%	27.27%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	71.43%	82.14%	28.57%	50.00%	36.36%	58.33%	62.50%	0.00%	25.00%	50.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0		0	0	0	0		0	0	0
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	5	10	6	4	5	3	4	3	1
AMTL	7	0	0	1	3	0	0	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	30	23	4	7	4	7	5	0	1	1
AMTL %	16.67%	0.00%	0.00%	7.14%	27.27%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	71.43%	82.14%	28.57%	50.00%	36.36%	58.33%	62.50%	0.00%	25.00%	50.00%

Appendix Table 15 Tooth Presence – Canada Unknown subadults

Row 1 - Subadults - Totals - Coats Island																				
	Pooled					Infant					Child					AD				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	3	7	6	5	0						2	7	6	5	0	1	0	0	0	0
AMTL	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0
Agenesis	2	0	0	0	4						2	0	0	0	4	0	0	0	0	0
PMTL	7	1	0	0	0						7	1	0	0	0	0	0	0	0	0
AMTL %	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0
Agenesis %	16.67 %	0.00%	0.00 %	0.00 %	100.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	18.18 %	0.00%	0.00 %	0.00 %	100.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
PMTL %	58.33 %	12.50 %	0.00 %	0.00 %	0.00%	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	63.64 %	12.50 %	0.00 %	0.00 %	0.00%	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	1		0	2	0	1		0	0	0	0		0	2	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0	0	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis %	0.00%		0.00 %	0.00 %	0.00%	0.00 %		0.00 %	0.00 %	0.00 %	0.00%		0.00 %	0.00 %	0.00%	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
PMTL %	0.00%		0.00 %	0.00 %	0.00%	0.00 %		0.00 %	0.00 %	0.00 %	0.00%		0.00 %	0.00 %	0.00%	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	4	7	6	7	0	1	0	0	0	0	2	7	6	7	0	1	0	0	0	0
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	2	0	0	0	4	0	0	0	0	0	2	0	0	0	4	0	0	0	0	0
PMTL	7	1	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0
AMTL %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis %	15.38 %	0.00%	0.00 %	0.00 %	100.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	18.18 %	0.00%	0.00 %	0.00 %	100.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
PMTL %	53.85 %	12.50 %	0.00 %	0.00 %	0.00%	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	63.64 %	12.50 %	0.00 %	0.00 %	0.00%	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %

Appendix Table 16 Tooth Presence – Coats Island females

Row 1 - Females - Totals - Coats Island															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	198	173	152	99	73	107	91	88	52	41	0	0	0	2	1
AMTL	167	96	69	86	70	78	38	26	36	31	8	0	1	0	0
Agenesis	1	4	0	2	57	1	3	0	0	28	0	0	0	0	0
PMTL	464	280	55	87	73	234	147	26	50	37	4	8	3	2	3
AMTL %	20.14%	17.49%	25.00%	31.62%	32.41%	18.62%	13.77%	18.57%	26.09%	28.44%	66.67%	0.00%	25.00%	0.00%	0.00%
Agenesis %	0.12%	0.72%	0.00%	0.73%	20.88%	0.24%	1.08%	0.00%	0.00%	20.44%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	55.90%	50.63%	19.93%	31.75%	26.74%	55.71%	52.69%	18.57%	36.23%	27.01%	33.33%	100.00%	75.00%	50.00%	75.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	2	0	0		0	2	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	198	173	152	101	73	107	91	88	54	41	0	0	0	2	1
AMTL	167	96	69	86	70	78	38	26	36	31	8	0	1	0	0
Agenesis	1	4	0	2	57	1	3	0	0	28	0	0	0	0	0
PMTL	464	280	55	87	73	234	147	26	50	37	4	8	3	2	3
AMTL %	20.14%	17.49%	25.00%	31.39%	32.41%	18.62%	13.77%	18.57%	25.71%	28.44%	66.67%	0.00%	25.00%	0.00%	0.00%
Agenesis %	0.12%	0.72%	0.00%	0.72%	20.88%	0.24%	1.08%	0.00%	0.00%	20.44%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	55.90%	50.63%	19.93%	31.52%	26.74%	55.71%	52.69%	18.57%	35.71%	27.01%	33.33%	100.00%	75.00%	50.00%	75.00%

Appendix Table 17 Tooth Presence – Coats Island males

Row 1 - Males - Totals - Coats Island															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	224	175	114	74	54	109	102	58	39	36	6	5	4	3	1
AMTL	82	61	51	71	62	27	17	17	25	18	11	11	8	8	10
Agenesis	4	1	0	0	29	3	1	0	0	12	1	0	0	0	1
PMTL	250	135	21	41	38	124	55	12	24	19	18	8	0	1	0
AMTL %	14.75%	16.44%	27.42%	38.17%	40.26%	10.38%	9.77%	19.54%	28.41%	24.66%	31.43%	45.83%	66.67%	66.67%	90.91%
Agenesis %	0.71%	0.27%	0.00%	0.00%	15.85%	1.14%	0.57%	0.00%	0.00%	14.12%	2.78%	0.00%	0.00%	0.00%	8.33%
PMTL %	44.64%	36.29%	11.29%	22.04%	20.77%	47.15%	31.43%	13.79%	27.27%	22.35%	50.00%	33.33%	0.00%	8.33%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	224	175	114	74	54	109	102	58	39	36	6	5	4	3	1
AMTL	82	61	51	71	62	27	17	17	25	18	11	11	8	8	10
Agenesis	4	1	0	0	29	3	1	0	0	12	1	0	0	0	1
PMTL	250	135	21	41	38	124	55	12	24	19	18	8	0	1	0
AMTL %	14.75%	16.44%	27.42%	38.17%	40.26%	10.38%	9.77%	19.54%	28.41%	24.66%	31.43%	45.83%	66.67%	66.67%	90.91%
Agenesis %	0.71%	0.27%	0.00%	0.00%	15.85%	1.14%	0.57%	0.00%	0.00%	14.12%	2.78%	0.00%	0.00%	0.00%	8.33%
PMTL %	44.64%	36.29%	11.29%	22.04%	20.77%	47.15%	31.43%	13.79%	27.27%	22.35%	50.00%	33.33%	0.00%	8.33%	0.00%

Appendix Table 18 Tooth Presence – Coats Island subadults

Row 1 - Subadults - Totals - Coats Island																				
	Pooled					Infant					Child					AD				
Permanen t	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	73	35	57	43	12						46	18	43	32	1	16	9	10	7	10
AMTL	0	1	0	0	0						0	0	0	0	0	0	1	0	0	0
Agenesis	73	70	0	17	63						73	70	0	17	57	0	0	0	0	5
PMTL	84	28	21	17	1						53	6	17	10	0	29	22	4	7	0
AMTL %	0	0.02	0	0	0						0	0	0	0	0	0	0.03	0	0	0
Agenesis %	31.74 %	52.24 %	0.00%	22.08 %	82.89 %	0.00%	0.00 %	0.00%	0.00%	0.00 %	42.44 %	74.47 %	0.00%	28.81 %	98.28 %	0.00%	0.00%	0.00%	0.00%	33.33 %
PMTL %	36.52 %	20.90 %	26.92 %	22.08 %	1.32%	0.00%	0.00 %	0.00%	0.00%	0.00 %	30.81 %	6.38%	28.33 %	16.95 %	0.00%	64.44 %	68.75 %	28.57 %	50.00 %	0.00%
Deciduou s	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	131		123	120	0	95		56	49	0	31		65	67	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	442		89	86	0	141		26	28	0	149		13	10	0	0		0	0	0
AMTL %	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00 %	0.00%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	77.14 %		41.98 %	41.75 %	0.00%	59.75 %		31.71 %	36.36 %	0.00 %	82.78 %		16.67 %	12.99 %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	204	35	180	163	12	95	0	56	49	0	77	18	108	99	1	16	9	10	7	10
AMTL	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Agenesis	73	70	0	17	63	0	0	0	0	0	73	70	0	17	57	0	0	0	0	5
PMTL	526	28	110	103	1	141	0	26	28	0	202	6	30	20	0	29	22	4	7	0
AMTL %	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0	0	0
Agenesis %	9.09%	52.24 %	0.00%	6.01%	82.89 %	0.00%	0.00 %	0.00%	0.00%	0.00 %	20.74 %	74.47 %	0.00%	12.50 %	98.28 %	0.00%	0.00%	0.00%	0.00%	33.33 %
PMTL %	65.50 %	20.90 %	37.93 %	36.40 %	1.32%	59.75 %	0.00 %	31.71 %	36.36 %	0.00 %	57.39 %	6.38%	21.74 %	14.71 %	0.00%	64.44 %	68.75 %	28.57 %	50.00 %	0.00%

Appendix Table 19 Tooth Presence – East Greenland females

Row 1 - Females - Totals - East Greenland										
	Pooled					YA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	11	8	19	14	12	2	5	11	7	4
AMTL	3	2	3	4	4	0	2	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	59	41	2	6	9	35	20	1	5	8
AMTL %	4.11%	3.92%	12.50%	16.67%	16.00%	0.00%	7.41%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	80.82%	80.39%	8.33%	25.00%	36.00%	94.59%	74.07%	8.33%	41.67%	66.67%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	11	8	19	14	12	2	5	11	7	4
AMTL	3	2	3	4	4	0	2	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	59	41	2	6	9	35	20	1	5	8
AMTL %	4.11%	3.92%	12.50%	16.67%	16.00%	0.00%	7.41%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	80.82%	80.39%	8.33%	25.00%	36.00%	94.59%	74.07%	8.33%	41.67%	66.67%

Appendix Table 20 Tooth Presence – East Greenland males

Row 1 - Males - Totals - East Greenland					
	Pooled				
Permanent	AN	PR	M1	M2	M3
Present	3	9	6	5	0
AMTL	8	4	2	2	2
Agenesis	0	0	0	0	4
PMTL	19	7	2	3	4
AMTL %	26.67%	20.00%	20.00%	20.00%	33.33%
Agenesis %	0.00%	0.00%	0.00%	0.00%	40.00%
PMTL %	63.33%	35.00%	20.00%	30.00%	40.00%
Deciduous	AN	PR	M1	M2	M3
Present	0		0	0	0
AMTL	0		0	0	0
Agenesis	0		0	0	0
PMTL	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3
Present	3	9	6	5	0
AMTL	8	4	2	2	2
Agenesis	0	0	0	0	4
PMTL	19	7	2	3	4
AMTL %	26.67%	20.00%	20.00%	20.00%	33.33%
Agenesis %	0.00%	0.00%	0.00%	0.00%	40.00%
PMTL %	63.33%	35.00%	20.00%	30.00%	40.00%

Appendix Table 21 Tooth Presence – Greenland Unknown females

Row 1 - Females - Totals - Greenland Unknown															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	19	17	18	12	6	4	4	3	2	2	3	2	2	0	0
AMTL	10	2	2	6	5	0	0	0	1	0	8	2	2	4	2
Agenesis	2	0	0	0	4	0	0	0	0	0	0	0	0	0	2
PMTL	44	33	6	8	11	8	4	1	1	2	1	4	0	0	0
AMTL %	13.70%	3.85%	7.69%	23.08%	22.73%	0.00%	0.00%	0.00%	25.00%	0.00%	66.67%	25.00%	50.00%	100.00%	100.00%
Agenesis %	2.67%	0.00%	0.00%	0.00%	15.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%
PMTL %	58.67%	63.46%	23.08%	30.77%	42.31%	66.67%	50.00%	25.00%	25.00%	50.00%	8.33%	50.00%	0.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	19	17	18	12	6	4	4	3	2	2	3	2	2	0	0
AMTL	10	2	2	6	5	0	0	0	1	0	8	2	2	4	2
Agenesis	2	0	0	0	4	0	0	0	0	0	0	0	0	0	2
PMTL	44	33	6	8	11	8	4	1	1	2	1	4	0	0	0
AMTL %	13.70%	3.85%	7.69%	23.08%	22.73%	0.00%	0.00%	0.00%	25.00%	0.00%	66.67%	25.00%	50.00%	100.00%	100.00%
Agenesis %	2.67%	0.00%	0.00%	0.00%	15.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%
PMTL %	58.67%	63.46%	23.08%	30.77%	42.31%	66.67%	50.00%	25.00%	25.00%	50.00%	8.33%	50.00%	0.00%	0.00%	0.00%

Appendix Table 22 Tooth Presence – Greenland Unknown males

Row 1 - Males - Totals - Greenland Unknown															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	10	7	9	5	1	3	5	4	1	0	6	1	2	1	1
AMTL	7	7	5	7	7	1	0	0	3	3	0	0	0	0	0
Agenesis	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
PMTL	43	22	4	6	9	8	3	0	0	1	12	7	2	3	2
AMTL %	11.67%	19.44%	27.78%	38.89%	41.18%	8.33%	0.00%	0.00%	75.00%	75.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	10.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	40.00%
PMTL %	71.67%	61.11%	22.22%	33.33%	47.37%	66.67%	37.50%	0.00%	0.00%	25.00%	66.67%	87.50%	50.00%	75.00%	40.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	10	7	9	5	1	3	5	4	1	0	6	1	2	1	1
AMTL	7	7	5	7	7	1	0	0	3	3	0	0	0	0	0
Agenesis	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
PMTL	43	22	4	6	9	8	3	0	0	1	12	7	2	3	2
AMTL %	11.67%	19.44%	27.78%	38.89%	41.18%	8.33%	0.00%	0.00%	75.00%	75.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	10.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	40.00%
PMTL %	71.67%	61.11%	22.22%	33.33%	47.37%	66.67%	37.50%	0.00%	0.00%	25.00%	66.67%	87.50%	50.00%	75.00%	40.00%

Appendix Table 23 Tooth Presence – Greenland Unknown subadults

Row 1 - Subadults - Totals - Greenland Unknown															
	Pooled					Child					Adolescent				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	0	8	0	0	5	0	4	0	0	0	0	4	0	0
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	7	16	0	0	8	3	8	0	0	4	4	8	0	0	4
PMTL	12	0	0	0	0	4	0	0	0	0	8	0	0	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	29.17%	100.00%	0.00%	0.00%	100.00%	25.00%	100.00%	0.00%	0.00%	100.00%	33.33%	100.00%	0.00%	0.00%	100.00%
PMTL %	50.00%	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	66.67%	0.00%	0.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		4	4	0	0		0	0	0	0		4	4	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	12		0	0	0	0		0	0	0	12		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	100.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	100.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	0	12	4	0	5	0	4	0	0	0	0	8	4	0
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	7	16	0	0	8	3	8	0	0	4	4	8	0	0	4
PMTL	24	0	0	0	0	4	0	0	0	0	20	0	0	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	19.44%	100.00%	0.00%	0.00%	100.00%	25.00%	100.00%	0.00%	0.00%	100.00%	16.67%	100.00%	0.00%	0.00%	100.00%
PMTL %	66.67%	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	83.33%	0.00%	0.00%	0.00%	0.00%

Appendix Table 24 Tooth Presence – Hudson Bay females

Row 1 - Females - Totals - Hudson Bay															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	227	238	250	207	142	99	88	97	82	66	20	23	23	17	12
AMTL	335	148	77	84	73	35	10	6	4	6	94	41	25	26	21
Agenesis	3	0	0	1	46	0	0	0	1	15	0	0	0	0	3
PMTL	707	463	92	128	154	269	166	30	47	48	75	62	13	19	24
AMTL %	26.40%	17.43%	18.38%	20.05%	19.78%	8.68%	3.79%	4.51%	3.01%	5.00%	49.74%	32.54%	40.98%	41.94%	36.84%
Agenesis %	0.24%	0.00%	0.00%	0.24%	11.08%	0.00%	0.00%	0.00%	0.75%	11.11%	0.00%	0.00%	0.00%	0.00%	5.00%
PMTL %	55.58%	54.53%	21.96%	30.48%	37.11%	66.75%	62.88%	22.56%	35.07%	35.56%	39.68%	49.21%	21.31%	30.65%	40.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	227	238	250	207	142	99	88	97	82	66	20	23	23	17	12
AMTL	335	148	77	84	73	35	10	6	4	6	94	41	25	26	21
Agenesis	3	0	0	1	46	0	0	0	1	15	0	0	0	0	3
PMTL	707	463	92	128	154	269	166	30	47	48	75	62	13	19	24
AMTL %	26.40%	17.43%	18.38%	20.05%	19.78%	8.68%	3.79%	4.51%	3.01%	5.00%	49.74%	32.54%	40.98%	41.94%	36.84%
Agenesis %	0.24%	0.00%	0.00%	0.24%	11.08%	0.00%	0.00%	0.00%	0.75%	11.11%	0.00%	0.00%	0.00%	0.00%	5.00%
PMTL %	55.58%	54.53%	21.96%	30.48%	37.11%	66.75%	62.88%	22.56%	35.07%	35.56%	39.68%	49.21%	21.31%	30.65%	40.00%

Appendix Table 25 Tooth Presence – Hudson Bay males

Row 1 - Males - Totals - Hudson Bay															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	234	231	190	140	95	79	83	66	55	45	61	59	45	30	15
AMTL	222	108	74	85	85	13	2	0	2	2	87	39	28	33	34
Agenesis	1	1	0	1	44	0	1	0	0	6	0	0	0	1	14
PMTL	443	267	44	75	73	159	88	20	27	33	80	54	5	13	12
AMTL %	24.69%	17.82%	24.03%	28.33%	33.60%	5.18%	1.16%	0.00%	2.38%	2.50%	38.16%	25.66%	35.90%	43.42%	55.74%
Agenesis %	0.11%	0.16%	0.00%	0.33%	14.81%	0.00%	0.57%	0.00%	0.00%	6.98%	0.00%	0.00%	0.00%	1.30%	18.67%
PMTL %	49.22%	43.99%	14.29%	24.92%	24.58%	63.35%	50.57%	23.26%	32.14%	38.37%	35.09%	35.53%	6.41%	16.88%	16.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	234	231	190	140	95	79	83	66	55	45	61	59	45	30	15
AMTL	222	108	74	85	85	13	2	0	2	2	87	39	28	33	34
Agenesis	1	1	0	1	44	0	1	0	0	6	0	0	0	1	14
PMTL	443	267	44	75	73	159	88	20	27	33	80	54	5	13	12
AMTL %	24.69%	17.82%	24.03%	28.33%	33.60%	5.18%	1.16%	0.00%	2.38%	2.50%	38.16%	25.66%	35.90%	43.42%	55.74%
Agenesis %	0.11%	0.16%	0.00%	0.33%	14.81%	0.00%	0.57%	0.00%	0.00%	6.98%	0.00%	0.00%	0.00%	1.30%	18.67%
PMTL %	49.22%	43.99%	14.29%	24.92%	24.58%	63.35%	50.57%	23.26%	32.14%	38.37%	35.09%	35.53%	6.41%	16.88%	16.00%

Appendix Table 26 Tooth Presence – Hudson Bay subadults

Row 1 - Subadults - Totals - Hudson Bay																				
	Pooled					Infant					Child					Adolescent				
Permanen t	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	81	50	82	49	13						57	31	66	37	3	24	19	16	12	10
AMTL	6	1	0	0	0						0	0	0	0	0	6	1	0	0	0
Agenesis	27	56	0	5	44						27	56	0	5	36	0	0	0	0	8
PMTL	79	19	14	12	3						55	3	10	6	3	24	16	4	6	0
AMTL %	0.04	0.01	0	0	0						0	0	0	0	0	0.11	0.03	0	0	0
Agenesis %	13.99 %	44.44 %	0.00%	7.58%	73.33 %	0.00%	0.00 %	0.00%	0.00%	0.00 %	19.42 %	62.22 %	0.00%	10.42 %	85.71 %	0.00%	0.00%	0.00%	0.00%	44.44 %
PMTL %	40.93 %	15.08 %	14.58 %	18.18 %	5.00%	0.00%	0.00 %	0.00%	0.00%	0.00 %	39.57 %	3.33%	13.16 %	12.50 %	7.14%	44.44 %	44.44 %	20.00 %	33.33 %	0.00%
Deciduou s	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	66		82	73	0	39		21	15	0	27		61	58	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	131		16	16	0	31		6	8	0	99		9	7	0	0		0	0	0
AMTL %	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00 %	0.00%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	66.50 %		16.33 %	17.98 %	0.00%	44.29 %		22.22 %	34.78 %	0.00 %	78.57 %		12.86 %	10.77 %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	147	50	164	122	13	39	0	21	15	0	84	31	127	95	3	24	19	16	12	10
AMTL	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0
Agenesis	27	56	0	5	44	0	0	0	0	0	27	56	0	5	36	0	0	0	0	8
PMTL	210	19	30	28	3	31	0	6	8	0	154	3	19	13	3	24	16	4	6	0
AMTL %	0.02	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0.03	0	0	0
Agenesis %	6.92%	44.44 %	0.00%	3.23%	73.33 %	0.00%	0.00 %	0.00%	0.00%	0.00 %	10.19 %	62.22 %	0.00%	4.42%	85.71 %	0.00%	0.00%	0.00%	0.00%	44.44 %
PMTL %	53.85 %	15.08 %	15.46 %	18.06 %	5.00%	44.29 %	0.00 %	22.22 %	34.78 %	0.00 %	58.11 %	3.33%	13.01 %	11.50 %	7.14%	44.44 %	44.44 %	20.00 %	33.33 %	0.00%

Appendix Table 27 Tooth Presence – North Alaska females

Row 1 - Females - Totals - North Alaska										
	Pooled					YA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	13	10	18	14	11	2	1	8	6	3
AMTL	4	2	0	2	0	0	0	0	0	0
Agenesis	0	0	0	0	4	0	0	0	0	2
PMTL	55	34	5	6	7	22	15	0	2	3
AMTL %	5.56%	4.35%	0.00%	9.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	18.18%	0.00%	0.00%	0.00%	0.00%	25.00%
PMTL %	76.39%	73.91%	21.74%	27.27%	31.82%	91.67%	93.75%	0.00%	25.00%	37.50%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	13	10	18	14	11	2	1	8	6	3
AMTL	4	2	0	2	0	0	0	0	0	0
Agenesis	0	0	0	0	4	0	0	0	0	2
PMTL	55	34	5	6	7	22	15	0	2	3
AMTL %	5.56%	4.35%	0.00%	9.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	18.18%	0.00%	0.00%	0.00%	0.00%	25.00%
PMTL %	76.39%	73.91%	21.74%	27.27%	31.82%	91.67%	93.75%	0.00%	25.00%	37.50%

Appendix Table 28 Tooth Presence – North Alaska males

Row 1 - Males - Totals - North Alaska															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	16	22	18	7	3	4	9	4	2	0	4	5	5	1	1
AMTL	8	8	6	6	6	4	4	3	4	4	2	4	2	2	2
Agenesis	1	0	0	0	4	1	0	0	0	2	0	0	0	0	0
PMTL	59	26	4	15	15	15	3	1	2	2	18	7	1	5	5
AMTL %	9.64%	14.29%	21.43%	21.43%	25.00%	17.39%	25.00%	37.50%	50.00%	66.67%	8.33%	25.00%	25.00%	25.00%	25.00%
Agenesis %	1.19%	0.00%	0.00%	0.00%	14.29%	4.17%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	70.24%	46.43%	14.29%	53.57%	53.57%	62.50%	18.75%	12.50%	25.00%	25.00%	75.00%	43.75%	12.50%	62.50%	62.50%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	16	22	18	7	3	4	9	4	2	0	4	5	5	1	1
AMTL	8	8	6	6	6	4	4	3	4	4	2	4	2	2	2
Agenesis	1	0	0	0	4	1	0	0	0	2	0	0	0	0	0
PMTL	59	26	4	15	15	15	3	1	2	2	18	7	1	5	5
AMTL %	9.64%	14.29%	21.43%	21.43%	25.00%	17.39%	25.00%	37.50%	50.00%	66.67%	8.33%	25.00%	25.00%	25.00%	25.00%
Agenesis %	1.19%	0.00%	0.00%	0.00%	14.29%	4.17%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	70.24%	46.43%	14.29%	53.57%	53.57%	62.50%	18.75%	12.50%	25.00%	25.00%	75.00%	43.75%	12.50%	62.50%	62.50%

Appendix Table 29 Tooth Presence – North Alaska subadults

Row 1 - Subadults - Totals - North Alaska										
	Pooled					Child				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	1	4	1	1	5	1	4	1	1
AMTL	0	0	0	0	0	0	0	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	3	2	2	0	0	3	2	2	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	37.50%	66.67%	33.33%	0.00%	0.00%	37.50%	66.67%	33.33%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	1		3	3	0	1		3	3	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	6	1	7	4	1	6	1	7	4	1
AMTL	0	0	0	0	0	0	0	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	3	2	2	0	0	3	2	2	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	33.33%	66.67%	22.22%	0.00%	0.00%	33.33%	66.67%	22.22%	0.00%	0.00%

Appendix Table 30 Tooth Presence – North Greenland females

Row 1 - Females - Totals - North Greenland															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	3	9	26	20	14	1	3	10	6	6	0	1	1	1	0
AMTL	25	5	1	2	0	10	1	0	0	0	2	1	1	1	0
Agenesis	0	0	0	0	8	0	0	0	0	1	0	0	0	0	2
PMTL	74	54	7	12	11	19	16	0	4	3	4	2	0	0	0
AMTL %	24.51%	7.35%	2.94%	5.88%	0.00%	33.33%	5.00%	0.00%	0.00%	0.00%	33.33%	25.00%	50.00%	50.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	24.24%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	100.00%
PMTL %	72.55%	79.41%	20.59%	35.29%	33.33%	63.33%	80.00%	0.00%	40.00%	30.00%	66.67%	50.00%	0.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	3	9	26	20	14	1	3	10	6	6	0	1	1	1	0
AMTL	25	5	1	2	0	10	1	0	0	0	2	1	1	1	0
Agenesis	0	0	0	0	8	0	0	0	0	1	0	0	0	0	2
PMTL	74	54	7	12	11	19	16	0	4	3	4	2	0	0	0
AMTL %	24.51%	7.35%	2.94%	5.88%	0.00%	33.33%	5.00%	0.00%	0.00%	0.00%	33.33%	25.00%	50.00%	50.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	24.24%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	100.00%
PMTL %	72.55%	79.41%	20.59%	35.29%	33.33%	63.33%	80.00%	0.00%	40.00%	30.00%	66.67%	50.00%	0.00%	0.00%	0.00%

Appendix Table 31 Tooth Presence – North Greenland males

Row 1 - Males - Totals - North Greenland															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	19	27	24	17	10	12	11	8	7	6	1	3	1	0	0
AMTL	23	5	3	6	7	7	1	0	0	0	0	1	1	2	2
Agenesis	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0
PMTL	65	40	9	13	15	17	12	4	5	6	5	0	0	0	0
AMTL %	21.50%	6.94%	8.33%	16.67%	21.88%	19.44%	4.17%	0.00%	0.00%	0.00%	0.00%	25.00%	50.00%	100.00%	100.00%
Agenesis %	0.93%	0.00%	0.00%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	60.19%	55.56%	25.00%	36.11%	41.67%	47.22%	50.00%	33.33%	41.67%	50.00%	83.33%	0.00%	0.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	19	27	24	17	10	12	11	8	7	6	1	3	1	0	0
AMTL	23	5	3	6	7	7	1	0	0	0	0	1	1	2	2
Agenesis	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0
PMTL	65	40	9	13	15	17	12	4	5	6	5	0	0	0	0
AMTL %	21.50%	6.94%	8.33%	16.67%	21.88%	19.44%	4.17%	0.00%	0.00%	0.00%	0.00%	25.00%	50.00%	100.00%	100.00%
Agenesis %	0.93%	0.00%	0.00%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	60.19%	55.56%	25.00%	36.11%	41.67%	47.22%	50.00%	33.33%	41.67%	50.00%	83.33%	0.00%	0.00%	0.00%	0.00%

Appendix Table 32 Tooth Presence – North Greenland subadults

Row 1 - Subadults - Totals - North Greenland										
	Pooled					Child				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0	0	0	4	0	0	0	0	4	0
AMTL	0	0	0	0	0	0	0	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	0	0	4	0	0	0	0	4	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		4	4	0	0		4	4	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	12		0	0	0	12		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	100.00%		0.00%	0.00%	0.00%	100.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0	0	4	8	0	0	0	4	8	0
AMTL	0	0	0	0	0	0	0	0	0	0
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	12	0	4	0	0	12	0	4	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	100.00%	0.00%	50.00%	0.00%	0.00%	100.00%	0.00%	50.00%	0.00%	0.00%

Appendix Table 33 Tooth Presence – Nunavut females

Row 1 - Females - Totals - Nunavut															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	147	139	123	94	71	66	58	54	50	33	14	19	8	5	1
AMTL	141	73	43	51	42	20	6	3	4	3	35	14	15	16	12
Agenesis	2	0	0	0	15	2	0	0	0	3	0	0	0	0	3
PMTL	340	208	46	55	65	128	81	14	15	29	27	17	3	4	9
AMTL %	22.45%	17.38%	20.28%	25.50%	23.60%	9.35%	4.14%	4.23%	5.80%	4.62%	46.05%	28.00%	57.69%	64.00%	54.55%
Agenesis %	0.32%	0.00%	0.00%	0.00%	7.77%	0.93%	0.00%	0.00%	0.00%	4.41%	0.00%	0.00%	0.00%	0.00%	12.00%
PMTL %	53.97%	49.52%	21.70%	27.50%	33.68%	59.26%	55.86%	19.72%	21.74%	42.65%	35.53%	34.00%	11.54%	16.00%	36.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	147	139	123	94	71	66	58	54	50	33	14	19	8	5	1
AMTL	141	73	43	51	42	20	6	3	4	3	35	14	15	16	12
Agenesis	2	0	0	0	15	2	0	0	0	3	0	0	0	0	3
PMTL	340	208	46	55	65	128	81	14	15	29	27	17	3	4	9
AMTL %	22.45%	17.38%	20.28%	25.50%	23.60%	9.35%	4.14%	4.23%	5.80%	4.62%	46.05%	28.00%	57.69%	64.00%	54.55%
Agenesis %	0.32%	0.00%	0.00%	0.00%	7.77%	0.93%	0.00%	0.00%	0.00%	4.41%	0.00%	0.00%	0.00%	0.00%	12.00%
PMTL %	53.97%	49.52%	21.70%	27.50%	33.68%	59.26%	55.86%	19.72%	21.74%	42.65%	35.53%	34.00%	11.54%	16.00%	36.00%

Appendix Table 34 Tooth Presence – Nunavut males

Row 1 - Males - Totals - Nunavut															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	259	217	159	118	70	72	66	58	43	33	43	32	28	19	7
AMTL	155	68	54	57	51	20	2	5	5	0	40	21	9	15	12
Agenesis	4	1	1	2	44	1	0	0	0	12	0	0	0	0	11
PMTL	321	208	35	65	74	119	75	9	24	27	43	31	6	7	10
AMTL %	21.09%	13.79%	21.77%	23.75%	26.15%	9.48%	1.40%	6.94%	6.94%	0.00%	31.75%	25.00%	20.93%	36.59%	41.38%
Agenesis %	0.54%	0.20%	0.40%	0.83%	18.41%	0.47%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	27.50%
PMTL %	43.44%	42.11%	14.06%	26.86%	30.96%	56.13%	52.45%	12.50%	33.33%	37.50%	34.13%	36.90%	13.95%	17.07%	25.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	1		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	1	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	100.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	260	217	159	118	70	72	66	58	43	33	43	32	28	19	7
AMTL	155	68	54	57	51	20	2	5	5	0	40	21	9	15	12
Agenesis	4	1	1	3	44	1	0	0	0	12	0	0	0	0	11
PMTL	321	208	35	65	74	119	75	9	24	27	43	31	6	7	10
AMTL %	21.06%	13.79%	21.77%	23.75%	26.15%	9.48%	1.40%	6.94%	6.94%	0.00%	31.75%	25.00%	20.93%	36.59%	41.38%
Agenesis %	0.54%	0.20%	0.40%	1.23%	18.41%	0.47%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	27.50%
PMTL %	43.38%	42.11%	14.06%	26.75%	30.96%	56.13%	52.45%	12.50%	33.33%	37.50%	34.13%	36.90%	13.95%	17.07%	25.00%

Appendix Table 35 Tooth Presence – Nunavut subadults

Row 1 - Subadults - Totals - Nunavut																				
	Pooled					Infant					Child					Adolescent				
Permanen t	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	70	32	58	41	15						66	25	52	33	5	4	7	6	8	10
AMTL	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0
Agenesis	21	32	0	3	23						21	32	0	3	22	0	0	0	0	1
PMTL	52	19	12	10	0						26	5	8	9	0	26	14	4	1	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%						0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	14.69 %	38.55 %	0.00%	5.56%	60.53 %	0.00%	0.00 %	0.00%	0.00%	0.00 %	18.58 %	51.61 %	0.00%	6.67%	81.48 %	0.00%	0.00%	0.00%	0.00%	9.09 %
PMTL %	36.36 %	22.89 %	17.14 %	18.52 %	0.00%	0.00%	0.00 %	0.00%	0.00%	0.00 %	23.01 %	8.06%	13.33 %	20.00 %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00 %
Deciduou s	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	42		55	57	0	4		3	4	0	38		52	53	0	0		0	0	0
AMTL	2		0	0	0	0		0	0	0	2		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	108		5	3	0	12		2	1	0	96		3	2	0	0		0	0	0
AMTL %	1.32%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00 %	1.47%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00 %
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00 %	0.00%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00 %
PMTL %	71.05 %		8.33%	5.00%	0.00%	75.00 %		40.00 %	20.00 %	0.00 %	70.59 %		5.45%	3.64%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00 %
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	112	32	113	98	15	4	0	3	4	0	104	25	104	86	5	4	7	6	8	10
AMTL	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Agenesis	21	32	0	3	23	0	0	0	0	0	21	32	0	3	22	0	0	0	0	1
PMTL	160	19	17	13	0	12	0	2	1	0	122	5	11	11	0	26	14	4	1	0
AMTL %	0.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00 %	0.00%	0.00%	0.00 %	0.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00 %
Agenesis %	7.12%	38.55 %	0.00%	2.63%	60.53 %	0.00%	0.00 %	0.00%	0.00%	0.00 %	8.43%	51.61 %	0.00%	3.00%	81.48 %	0.00%	0.00%	0.00%	0.00%	9.09 %
PMTL %	54.24 %	22.89 %	13.08 %	11.40 %	0.00%	75.00 %	0.00 %	40.00 %	20.00 %	0.00 %	49.00 %	8.06%	9.57%	11.00 %	0.00%	86.67 %	66.67 %	40.00 %	11.11 %	0.00 %

Appendix Table 36 Tooth Presence – South Alaska females

Row 1 - Females - Totals - South Alaska															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	31	31	16	18	11	14	12	9	9	5	9	8	3	4	0
AMTL	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	0	0	0	0	2	0	0	0	0	1	0	0	0	0	1
PMTL	35	13	5	4	9	16	8	1	1	4	3	0	1	0	3
AMTL %	0.00%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	9.09%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	25.00%
PMTL %	53.03%	29.55%	22.73%	18.18%	40.91%	53.33%	40.00%	10.00%	10.00%	40.00%	25.00%	0.00%	25.00%	0.00%	75.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	31	31	16	18	11	14	12	9	9	5	9	8	3	4	0
AMTL	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	0	0	0	0	2	0	0	0	0	1	0	0	0	0	1
PMTL	35	13	5	4	9	16	8	1	1	4	3	0	1	0	3
AMTL %	0.00%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	9.09%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	25.00%
PMTL %	53.03%	29.55%	22.73%	18.18%	40.91%	53.33%	40.00%	10.00%	10.00%	40.00%	25.00%	0.00%	25.00%	0.00%	75.00%

Appendix Table 37 Tooth Presence – South Alaska males

Row 1 - Males - Totals - South Alaska															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	25	27	18	13	7	10	10	8	6	5	8	10	6	4	2
AMTL	4	0	1	0	0	4	0	1	0	0	0	0	0	0	0
Agenesis	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
PMTL	25	9	0	5	9	10	6	0	2	3	10	2	0	2	4
AMTL %	7.41%	0.00%	5.26%	0.00%	0.00%	16.67%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	46.30%	25.00%	0.00%	27.78%	50.00%	41.67%	37.50%	0.00%	25.00%	37.50%	55.56%	16.67%	0.00%	33.33%	66.67%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	25	27	18	13	7	10	10	8	6	5	8	10	6	4	2
AMTL	4	0	1	0	0	4	0	1	0	0	0	0	0	0	0
Agenesis	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
PMTL	25	9	0	5	9	10	6	0	2	3	10	2	0	2	4
AMTL %	7.41%	0.00%	5.26%	0.00%	0.00%	16.67%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	46.30%	25.00%	0.00%	27.78%	50.00%	41.67%	37.50%	0.00%	25.00%	37.50%	55.56%	16.67%	0.00%	33.33%	66.67%

Appendix Table 38 Tooth Presence – South Alaska subadults

Row 1 - Subadults - Totals - South Alaska										
	Pooled					Adolescent				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	9	4	4	2	2	9	4	4	2	2
AMTL	0	1	0	0	0	0	1	0	0	0
Agensis	1	1	0	0	0	1	1	0	0	0
PMTL	0	0	0	2	0	0	0	0	2	0
AMTL %	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%
Agensis %	10.00%	16.67%	0.00%	0.00%	0.00%	10.00%	16.67%	0.00%	0.00%	0.00%
PMTL %	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0
Agensis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agensis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	9	4	4	2	2	9	4	4	2	2
AMTL	0	1	0	0	0	0	1	0	0	0
Agensis	1	1	0	0	0	1	1	0	0	0
PMTL	0	0	0	2	0	0	0	0	2	0
AMTL %	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%
Agensis %	10.00%	16.67%	0.00%	0.00%	0.00%	10.00%	16.67%	0.00%	0.00%	0.00%
PMTL %	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%

Appendix Table 39 Tooth Presence – South Greenland females

Row 1 - Females - Totals - South Greenland										
	Pooled					YA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	4	5	3	3	1	3	3	3	3	1
AMTL	0	0	3	3	5	0	0	3	1	3
Agenesis	0	0	0	0	1	0	0	0	0	1
PMTL	26	15	4	4	3	21	13	2	4	3
AMTL %	0.00%	0.00%	30.00%	30.00%	55.56%	0.00%	0.00%	37.50%	12.50%	42.86%
Agenesis %	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	12.50%
PMTL %	86.67%	75.00%	40.00%	40.00%	30.00%	87.50%	81.25%	25.00%	50.00%	37.50%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	4	5	3	3	1	3	3	3	3	1
AMTL	0	0	3	3	5	0	0	3	1	3
Agenesis	0	0	0	0	1	0	0	0	0	1
PMTL	26	15	4	4	3	21	13	2	4	3
AMTL %	0.00%	0.00%	30.00%	30.00%	55.56%	0.00%	0.00%	37.50%	12.50%	42.86%
Agenesis %	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	12.50%
PMTL %	86.67%	75.00%	40.00%	40.00%	30.00%	87.50%	81.25%	25.00%	50.00%	37.50%

Appendix Table 40 Tooth Presence – South Greenland males

Row 1 - Males - Totals - South Greenland															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	6	4	8	4	3	6	4	6	3	1	0	0	2	1	2
AMTL	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0
Agenesis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PMTL	24	16	1	5	7	12	8	0	3	5	12	8	1	2	2
AMTL %	0.00%	0.00%	10.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	25.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	80.00%	80.00%	10.00%	50.00%	70.00%	66.67%	66.67%	0.00%	50.00%	83.33%	100.00%	100.00%	25.00%	50.00%	50.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	6	4	8	4	3	6	4	6	3	1	0	0	2	1	2
AMTL	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0
Agenesis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PMTL	24	16	1	5	7	12	8	0	3	5	12	8	1	2	2
AMTL %	0.00%	0.00%	10.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	25.00%	0.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	80.00%	80.00%	10.00%	50.00%	70.00%	66.67%	66.67%	0.00%	50.00%	83.33%	100.00%	100.00%	25.00%	50.00%	50.00%

Appendix Table 41 Tooth Presence – St. Lawrence Island females

Row 1 - Females - Totals - St. Lawrence Island															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	27	24	25	17	7	15	16	10	9	5	2	2	4	3	0
AMTL	20	18	10	14	12	0	0	1	0	1	5	5	2	3	3
Agenesis	2	0	0	0	4	0	0	0	0	0	0	0	0	0	1
PMTL	83	45	8	12	18	21	8	1	3	4	17	8	1	1	3
AMTL %	15.38%	20.69%	23.26%	32.56%	32.43%	0.00%	0.00%	8.33%	0.00%	10.00%	20.83%	33.33%	28.57%	42.86%	50.00%
Agenesis %	1.52%	0.00%	0.00%	0.00%	9.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%
PMTL %	62.88%	51.72%	18.60%	27.91%	43.90%	58.33%	33.33%	8.33%	25.00%	40.00%	70.83%	53.33%	14.29%	14.29%	42.86%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	27	24	25	17	7	15	16	10	9	5	2	2	4	3	0
AMTL	20	18	10	14	12	0	0	1	0	1	5	5	2	3	3
Agenesis	2	0	0	0	4	0	0	0	0	0	0	0	0	0	1
PMTL	83	45	8	12	18	21	8	1	3	4	17	8	1	1	3
AMTL %	15.38%	20.69%	23.26%	32.56%	32.43%	0.00%	0.00%	8.33%	0.00%	10.00%	20.83%	33.33%	28.57%	42.86%	50.00%
Agenesis %	1.52%	0.00%	0.00%	0.00%	9.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%
PMTL %	62.88%	51.72%	18.60%	27.91%	43.90%	58.33%	33.33%	8.33%	25.00%	40.00%	70.83%	53.33%	14.29%	14.29%	42.86%

Appendix Table 42 Tooth Presence – St Lawrence Island males

Row 1 - Males - Totals - St. Lawrence Island															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	28	25	22	15	6	7	6	8	7	3	9	5	6	2	1
AMTL	35	24	14	17	16	0	0	0	0	0	9	7	2	3	3
Agenesis	1	1	0	0	10	0	0	0	0	2	1	0	0	0	3
PMTL	49	26	3	6	6	17	10	0	1	3	6	4	1	3	1
AMTL %	31.25%	32.00%	35.90%	44.74%	57.14%	0.00%	0.00%	0.00%	0.00%	0.00%	37.50%	43.75%	22.22%	37.50%	60.00%
Agenesis %	0.88%	1.32%	0.00%	0.00%	26.32%	0.00%	0.00%	0.00%	0.00%	25.00%	4.00%	0.00%	0.00%	0.00%	37.50%
PMTL %	43.36%	34.21%	7.69%	15.79%	15.79%	70.83%	62.50%	0.00%	12.50%	37.50%	24.00%	25.00%	11.11%	37.50%	12.50%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	28	25	22	15	6	7	6	8	7	3	9	5	6	2	1
AMTL	35	24	14	17	16	0	0	0	0	0	9	7	2	3	3
Agenesis	1	1	0	0	10	0	0	0	0	2	1	0	0	0	3
PMTL	49	26	3	6	6	17	10	0	1	3	6	4	1	3	1
AMTL %	31.25%	32.00%	35.90%	44.74%	57.14%	0.00%	0.00%	0.00%	0.00%	0.00%	37.50%	43.75%	22.22%	37.50%	60.00%
Agenesis %	0.88%	1.32%	0.00%	0.00%	26.32%	0.00%	0.00%	0.00%	0.00%	25.00%	4.00%	0.00%	0.00%	0.00%	37.50%
PMTL %	43.36%	34.21%	7.69%	15.79%	15.79%	70.83%	62.50%	0.00%	12.50%	37.50%	24.00%	25.00%	11.11%	37.50%	12.50%

Appendix Table 43 Tooth Presence – Vancouver Island females

Row 1 - Females - Totals - Vancouver Island										
	Pooled					YA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	7	7	10	8	2	7	5	9	8	2
AMTL	2	2	0	1	2	2	2	0	1	2
Agenesis	0	0	0	0	2	0	0	0	0	0
PMTL	18	11	0	0	3	18	11	0	0	3
AMTL %	7.41%	10.00%	0.00%	11.11%	28.57%	7.41%	11.11%	0.00%	11.11%	28.57%
Agenesis %	0.00%	0.00%	0.00%	0.00%	22.22%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	66.67%	55.00%	0.00%	0.00%	33.33%	66.67%	61.11%	0.00%	0.00%	42.86%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	7	7	10	8	2	7	5	9	8	2
AMTL	2	2	0	1	2	2	2	0	1	2
Agenesis	0	0	0	0	2	0	0	0	0	0
PMTL	18	11	0	0	3	18	11	0	0	3
AMTL %	7.41%	10.00%	0.00%	11.11%	28.57%	7.41%	11.11%	0.00%	11.11%	28.57%
Agenesis %	0.00%	0.00%	0.00%	0.00%	22.22%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	66.67%	55.00%	0.00%	0.00%	33.33%	66.67%	61.11%	0.00%	0.00%	42.86%

Appendix Table 44 Tooth Presence – Vancouver Island males

Row 1 - Males - Totals - Vancouver Island										
	Pooled					YA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	13	20	11	9	1	3	4	4	4
AMTL	0	1	2	2	2	0	0	2	2	2
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	61	32	0	9	9	17	9	0	0	0
AMTL %	0.00%	2.17%	9.09%	9.09%	10.00%	0.00%	0.00%	33.33%	33.33%	33.33%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	92.42%	69.57%	0.00%	40.91%	45.00%	94.44%	75.00%	0.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	5	13	20	11	9	1	3	4	4	4
AMTL	0	1	2	2	2	0	0	2	2	2
Agenesis	0	0	0	0	0	0	0	0	0	0
PMTL	61	32	0	9	9	17	9	0	0	0
AMTL %	0.00%	2.17%	9.09%	9.09%	10.00%	0.00%	0.00%	33.33%	33.33%	33.33%
Agenesis %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	92.42%	69.57%	0.00%	40.91%	45.00%	94.44%	75.00%	0.00%	0.00%	0.00%

Appendix Table 45 Tooth Presence – Vancouver Island subadults

Row 1 - Subadults - Totals - Vancouver Island															
	Pooled					Child					Adolescent				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	2	1	8	2	0	2	1	6	2	0	0	0	2	0	0
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	6	0	0	0	4	0	0	0	0	2	6	0	0	0	2
PMTL	4	4	0	2	0	4	0	0	0	0	0	4	0	2	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	50.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%
PMTL %	33.33%	80.00%	0.00%	50.00%	0.00%	66.67%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		5	5	0	0		5	5	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	12		1	1	0	12		1	1	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	100.00%		16.67%	16.67%	0.00%	100.00%		16.67%	16.67%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	2	1	13	7	0	2	1	11	7	0	0	0	2	0	0
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agenesis	6	0	0	0	4	0	0	0	0	2	6	0	0	0	2
PMTL	16	4	1	3	0	16	0	1	1	0	0	4	0	2	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	25.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%
PMTL %	66.67%	80.00%	7.14%	30.00%	0.00%	88.89%	0.00%	8.33%	12.50%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%

Appendix Table 46 Tooth Presence – West Aleutians females

Row 1 - Females - Totals - West Aleutians															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	37	39	31	27	23	6	9	6	4	3	13	16	7	5	5
AMTL	13	5	4	5	3	0	0	0	0	0	8	3	2	2	1
Agenesis	0	0	0	0	5	0	0	0	0	1	0	0	0	0	2
PMTL	67	37	7	11	11	12	3	0	2	2	11	3	2	5	4
AMTL %	11.11%	6.17%	9.52%	11.63%	8.11%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	13.64%	18.18%	16.67%	10.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	11.90%	0.00%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	16.67%
PMTL %	57.26%	45.68%	16.67%	25.58%	26.19%	66.67%	25.00%	0.00%	33.33%	33.33%	34.38%	13.64%	18.18%	41.67%	33.33%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	37	39	31	27	23	6	9	6	4	3	13	16	7	5	5
AMTL	13	5	4	5	3	0	0	0	0	0	8	3	2	2	1
Agenesis	0	0	0	0	5	0	0	0	0	1	0	0	0	0	2
PMTL	67	37	7	11	11	12	3	0	2	2	11	3	2	5	4
AMTL %	11.11%	6.17%	9.52%	11.63%	8.11%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	13.64%	18.18%	16.67%	10.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	11.90%	0.00%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	16.67%
PMTL %	57.26%	45.68%	16.67%	25.58%	26.19%	66.67%	25.00%	0.00%	33.33%	33.33%	34.38%	13.64%	18.18%	41.67%	33.33%

Appendix Table 47 Tooth Presence – West Aleutians males

Row 1 - Males - Totals - West Aleutians															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Permanent	53	50	38	36	24	13	9	6	7	5	4	10	9	8	3
AMTL	19	7	4	5	5	0	0	0	0	0	14	6	3	2	3
Agenesis	3	0	0	0	4	0	0	0	0	0	1	0	0	0	0
PMTL	63	35	4	5	13	11	7	2	1	3	17	8	0	2	6
AMTL %	14.07%	7.61%	8.70%	10.87%	11.90%	0.00%	0.00%	0.00%	0.00%	0.00%	40.00%	25.00%	25.00%	16.67%	25.00%
Agenesis %	2.17%	0.00%	0.00%	0.00%	8.70%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	0.00%	0.00%	0.00%
PMTL %	45.65%	38.04%	8.70%	10.87%	28.26%	45.83%	43.75%	25.00%	12.50%	37.50%	47.22%	33.33%	0.00%	16.67%	50.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	53	50	38	36	24	13	9	6	7	5	4	10	9	8	3
AMTL	19	7	4	5	5	0	0	0	0	0	14	6	3	2	3
Agenesis	3	0	0	0	4	0	0	0	0	0	1	0	0	0	0
PMTL	63	35	4	5	13	11	7	2	1	3	17	8	0	2	6
AMTL %	14.07%	7.61%	8.70%	10.87%	11.90%	0.00%	0.00%	0.00%	0.00%	0.00%	40.00%	25.00%	25.00%	16.67%	25.00%
Agenesis %	2.17%	0.00%	0.00%	0.00%	8.70%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	0.00%	0.00%	0.00%
PMTL %	45.65%	38.04%	8.70%	10.87%	28.26%	45.83%	43.75%	25.00%	12.50%	37.50%	47.22%	33.33%	0.00%	16.67%	50.00%

Appendix Table 48 Tooth Presence – West Aleutians subadults

Row 1 - Subadults - Totals - West Aleutians															
	Pooled					Child					Adolescent				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	8	4	11	8	2	8	2	7	6	0	0	2	4	2	2
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agensis	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
PMTL	10	3	1	0	0	4	1	1	0	0	6	2	0	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agensis %	10.00%	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	50.00%	42.86%	8.33%	0.00%	0.00%	28.57%	33.33%	12.50%	0.00%	0.00%	100.00%	50.00%	0.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	2		9	9	0	2		7	7	0	0		2	2	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agensis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	22		0	0	0	16		0	0	0	6		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agensis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	91.67%		0.00%	0.00%	0.00%	88.89%		0.00%	0.00%	0.00%	100.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	10	4	20	17	2	10	2	14	13	0	0	2	6	4	2
AMTL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agensis	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
PMTL	32	3	1	0	0	20	1	1	0	0	12	2	0	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agensis %	4.55%	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	72.73%	42.86%	4.76%	0.00%	0.00%	62.50%	33.33%	6.67%	0.00%	0.00%	100.00%	50.00%	0.00%	0.00%	0.00%

Appendix Table 49 Tooth Presence – West Greenland females

Row 1 - Females - Totals - West Greenland										
	Pooled					YA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	1	6	8	6	4	0	3	4	2	1
AMTL	0	0	2	1	3	0	0	0	1	3
Agenesis	0	0	0	0	1	0	0	0	0	0
PMTL	29	14	0	3	2	12	5	0	1	0
AMTL %	0.00%	0.00%	20.00%	10.00%	33.33%	0.00%	0.00%	0.00%	25.00%	75.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	96.67%	70.00%	0.00%	30.00%	20.00%	100.00%	62.50%	0.00%	25.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	1	6	8	6	4	0	3	4	2	1
AMTL	0	0	2	1	3	0	0	0	1	3
Agenesis	0	0	0	0	1	0	0	0	0	0
PMTL	29	14	0	3	2	12	5	0	1	0
AMTL %	0.00%	0.00%	20.00%	10.00%	33.33%	0.00%	0.00%	0.00%	25.00%	75.00%
Agenesis %	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	96.67%	70.00%	0.00%	30.00%	20.00%	100.00%	62.50%	0.00%	25.00%	0.00%

Appendix Table 50 Tooth Presence – West Greenland males

Row 1 - Males - Totals - West Greenland															
	Pooled					YA					MA				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	20	15	17	17	7	0	0	2	2	0	2	3	2	2	1
AMTL	2	0	1	2	3	0	0	0	0	2	0	0	0	0	0
Agenesis	0	2	0	0	4	0	0	0	0	0	0	0	0	0	0
PMTL	38	23	2	1	6	6	4	0	0	0	4	1	0	0	1
AMTL %	3.33%	0.00%	5.00%	10.00%	18.75%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	5.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	63.33%	57.50%	10.00%	5.00%	30.00%	100.00%	100.00%	0.00%	0.00%	0.00%	66.67%	25.00%	0.00%	0.00%	50.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		0	0	0	0		0	0	0	0		0	0	0
AMTL	0		0	0	0	0		0	0	0	0		0	0	0
Agenesis	0		0	0	0	0		0	0	0	0		0	0	0
PMTL	0		0	0	0	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	20	15	17	17	7	0	0	2	2	0	2	3	2	2	1
AMTL	2	0	1	2	3	0	0	0	0	2	0	0	0	0	0
Agenesis	0	2	0	0	4	0	0	0	0	0	0	0	0	0	0
PMTL	38	23	2	1	6	6	4	0	0	0	4	1	0	0	1
AMTL %	3.33%	0.00%	5.00%	10.00%	18.75%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	0.00%	5.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PMTL %	63.33%	57.50%	10.00%	5.00%	30.00%	100.00%	100.00%	0.00%	0.00%	0.00%	66.67%	25.00%	0.00%	0.00%	50.00%

Appendix Table 51 Tooth Presence – West Greenland subadults

Row 1 - Subadults - Totals - West Greenland										
	Pooled					Child				
Permanent	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0	0	2	2	0	0	0	2	2	0
AMTL	0	0	0	0	0	0	0	0	0	0
Agenesis	2	4	0	0	2	2	4	0	0	2
PMTL	4	0	0	0	0	4	0	0	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	33.33%	100.00%	0.00%	0.00%	100.00%	33.33%	100.00%	0.00%	0.00%	100.00%
PMTL %	66.67%	0.00%	0.00%	0.00%	0.00%	66.67%	0.00%	0.00%	0.00%	0.00%
Deciduous	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0		2	2	0	0		2	2	0
AMTL	0		0	0	0	0		0	0	0
Agenesis	2		0	0	0	2		0	0	0
PMTL	0		0	0	0	0		0	0	0
AMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Agenesis %	100.00%		0.00%	0.00%	0.00%	100.00%		0.00%	0.00%	0.00%
PMTL %	0.00%		0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Total	AN	PR	M1	M2	M3	AN	PR	M1	M2	M3
Present	0	0	4	4	0	0	0	4	4	0
AMTL	0	0	0	0	0	0	0	0	0	0
Agenesis	4	4	0	0	2	4	4	0	0	2
PMTL	4	0	0	0	0	4	0	0	0	0
AMTL %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Agenesis %	50.00%	100.00%	0.00%	0.00%	100.00%	50.00%	100.00%	0.00%	0.00%	100.00%
PMTL %	50.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%

Appendix Table 52 Malpositions (Row 1 - score 15) - percentages

Sex	Females				Males				Subadults			
Sample/tooth class	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	0/47 (0.00%)	0/46 (0.00%)	0/40 (0.00%)	1/32 (3.13%)	0/23 (0.00%)	0/53 (0.00%)	0/46 (0.00%)	0/31 (0.00%)	0/24 (0.00%)	0/21 (0.00%)	0/6 (0.00%)	N/A
Canada Unknown	0/5 (0.00%)	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	1/10 (10.00%)	0/6 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/7 (0.00%)
Coats Island	7/198 (3.54%)	0/173 (0.00%)	0/152 (0.00%)	2/101 (1.98%)	17/73 (23.29%)	0/224 (0.00%)	0/175 (0.00%)	6/114 (5.26%)	4/74 (5.41%)	0/54 (0.00%)	0/204 (0.00%)	0/35 (0.00%)
East Greenland	0/11 (0.00%)	0/8 (0.00%)	0/19 (0.00%)	1/14 (7.14%)	0/12 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)				
Greenland Unknown	0/19 (0.00%)	0/17 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/6 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/5 (0.00%)	#DIV/0!
Hudson Bay	4/227 (1.76%)	0/238 (0.00%)	0/250 (0.00%)	4/207 (1.93%)	6/142 (4.23%)	0/234 (0.00%)	0/231 (0.00%)	2/190 (1.05%)	3/140 (2.14%)	0/95 (0.00%)	0/147 (0.00%)	0/50 (0.00%)
North Alaska	1/13 (7.69%)	0/10 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/16 (0.00%)	0/22 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/1 (0.00%)
North Greenland	1/3 (33.33%)	0/9 (0.00%)	0/26 (0.00%)	2/20 (10.00%)	0/14 (0.00%)	0/19 (0.00%)	0/27 (0.00%)	1/24 (4.17%)	0/17 (0.00%)	0/10 (0.00%)	#DIV/0!	N/A
Nunavut	5/147 (3.40%)	0/139 (0.00%)	1/123 (0.81%)	2/94 (2.13%)	8/71 (11.27%)	0/260 (0.00%)	0/217 (0.00%)	2/159 (1.26%)	0/118 (0.00%)	0/70 (0.00%)	0/112 (0.00%)	0/32 (0.00%)
South Alaska	0/31 (0.00%)	0/31 (0.00%)	0/16 (0.00%)	0/18 (0.00%)	0/11 (0.00%)	0/25 (0.00%)	0/27 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/4 (0.00%)
South Greenland	1/4 (25.00%)	0/5 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/8 (0.00%)				
St. Lawrence	0/27 (0.00%)	0/24 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/28 (0.00%)	0/25 (0.00%)	0/22 (0.00%)				
Vancouver Island	0/7 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/5 (0.00%)	0/13 (0.00%)	0/20 (0.00%)	0/11 (0.00%)	0/9 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
West Aleutians	0/37 (0.00%)	0/39 (0.00%)	0/31 (0.00%)	0/27 (0.00%)	0/23 (0.00%)	0/53 (0.00%)	0/50 (0.00%)	1/38 (2.63%)	0/36 (0.00%)	0/24 (0.00%)	0/10 (0.00%)	0/4 (0.00%)
West Greenland	0/1 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/20 (0.00%)	0/15 (0.00%)	0/17 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	N/A	N/A

Appendix Table 53 Occlusal surface caries in premolars and molars (Row 2) – females

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Score 2	Score 3	Score 5	Total
Female Pooled						
Amaknak Island	11 (84.62%)			2 (15.38%)		13
Canada Unknown	1 (100.00%)					1
East Greenland	25 (100.00%)					25
Greenland Unknown	20 (95.24%)	1 (4.76%)				21
Hudson Bay	244 (100.00%)					244
North Alaska	22 (100.00%)					22
North Greenland	34 (100.00%)					34
Nunavut	139 (98.58%)			2 (1.42%)		141
South Alaska	20 (100.00%)					20
South Greenland	3 (100.00%)					3
St. Lawrence	20 (95.24%)	1 (4.76%)				21
Vancouver Island	4 (100.00%)					4
West Aleutians	29 (100.00%)					29
West Greenland	8 (100.00%)					8
Female YA						
Amaknak Island	7 (100.00%)					7
Canada Unknown	1 (100.00%)					1
East Greenland	12 (100.00%)					12
Greenland Unknown	7 (100.00%)					7
Hudson Bay	149 (100.00%)					149
North Alaska	8 (100.00%)					8
North Greenland	12 (100.00%)					12
Nunavut	77 (97.47%)			2 (2.53%)		79
South Alaska	19 (100.00%)					19
South Greenland	3 (100.00%)					3
St. Lawrence	11 (100.00%)					11
Vancouver Island	4 (100.00%)					4
West Aleutians	6 (100.00%)					6
West Greenland	4 (100.00%)					4
Amaknak Island	2 (50.00%)			2 (50.00%)		4
Hudson Bay	1 (100.00%)					1
Nunavut	1 (100.00%)					1
St. Lawrence		1 (100.00%)				1
West Aleutians	1 (100.00%)					1

Appendix Table 54 Occlusal surface caries in premolars and molars (Row 2) – males

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Score 2	Score 3	Score 5	Total
Male Pooled						
Amaknak Island	5 (55.56%)		2 (22.22%)	1 (11.11%)	1 (11.11%)	9
Canada Unknown	3 (100.00%)					3
Coats Island	1 (1.06%)	1 (1.06%)				94
East Greenland	3 (100.00%)					3
Greenland Unknown	4 (100.00%)					4
Hudson Bay	87 (100.00%)					87
North Alaska	3 (100.00%)					3
North Greenland	25 (100.00%)					25
Nunavut	105 (100.00%)					105
South Alaska	12 (100.00%)					12
South Greenland	5 (62.50%)	3 (37.50%)				8
St. Lawrence	16 (100.00%)					16
Vancouver Island	12 (100.00%)					12
West Aleutians	19 (95.00%)	1 (5.00%)				20
West Greenland	11 (100.00%)					11
Male YA						
Canada Unknown	1 (100.00%)					1
Greenland Unknown	4 (100.00%)					4
Hudson Bay	55 (100.00%)					55
North Alaska	3 (100.00%)					3
North Greenland	20 (100.00%)					20
Nunavut	67 (100.00%)					67
South Alaska	12 (100.00%)					12
South Greenland	5 (100.00%)					5
St. Lawrence	11 (100.00%)					11
West Aleutians	12 (100.00%)					12
West Greenland	4 (100.00%)					4
Male MA						
Amaknak Island			2 (50.00%)	1 (25.00%)	1 (25.00%)	4
Hudson Bay	4 (100.00%)					4
South Greenland		3 (100.00%)				3
St. Lawrence	1 (100.00%)					1
West Aleutians		1 (100.00%)				1

Appendix Table 55 Occlusal surface caries in premolars and molars (Row 2) – subadults

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Subadult Pooled		
Amaknak Island	14 (100.00%)	14
Canada Unknown	11 (100.00%)	11
Greenland Unknown	16 (100.00%)	16
Hudson Bay	188 (100.00%)	188
North Alaska	16 (100.00%)	16
North Greenland	8 (100.00%)	8
Nunavut	131 (100.00%)	131
South Alaska	1 (100.00%)	1
Vancouver Island	12 (100.00%)	12
West Aleutians	19 (100.00%)	19
West Greenland	2 (100.00%)	2
Subadult Infant		
Hudson Bay	8 (100.00%)	8
Subadult Child		
Amaknak Island	13 (100.00%)	13
Canada Unknown	11 (100.00%)	11
Greenland Unknown	4 (100.00%)	4
Hudson Bay	152 (100.00%)	152
North Alaska	16 (100.00%)	16
North Greenland	8 (100.00%)	8
Nunavut	114 (100.00%)	114
Vancouver Island	10 (100.00%)	10
West Aleutians	11 (100.00%)	11
West Greenland	2 (100.00%)	2
Subadult Adolescent		
Amaknak Island	1 (100.00%)	1
Greenland Unknown	12 (100.00%)	12
Hudson Bay	46 (100.00%)	46
Nunavut	21 (100.00%)	21
South Alaska	1 (100.00%)	1
Vancouver Island	2 (100.00%)	2
West Aleutians	8 (100.00%)	8

Appendix Table 56 Pit sites in molars and upper incisors (Row 3) – all

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Score 2	Total
Female Pooled				
Amaknak Island		1 (100.00%)		1
Greenland Unknown	6 (100.00%)			6
Hudson Bay	19 (95.00%)	1 (5.00%)		20
West Greenland	4 (100.00%)			4
Female YA				
Greenland Unknown	6 (100.00%)			6
Hudson Bay	7 (100.00%)			7
West Greenland	4 (100.00%)			4
Male Pooled				
Hudson Bay	1 (33.33%)	2 (66.67%)		3
St. Lawrence	1 (100.00%)			1
West Greenland	1 (50.00%)		1 (50.00%)	2
Subadult Pooled				
Hudson Bay	5 (100.00%)			5
Nunavut		1 (100.00%)		1
Subadult Child				
Hudson Bay	5 (100.00%)		5	
Nunavut		1 (100.00%)	1	

Appendix Table 57 Occlusal attrition facet enamel edge chipping and caries (Row 6) – all

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Score 2	Total
Female Pooled				
Amaknak Island	82 (72.57%)	27 (23.89%)	4 (3.54%)	113
Canada Unknown	7 (87.50%)		1 (12.50%)	8
Coats Island	232 (89.92%)	22 (8.53%)	4 (1.55%)	258
East Greenland	7 (70.00%)	3 (30.00%)		10
Hudson Bay	343 (68.60%)	150 (30.00%)	7 (1.40%)	500
North Alaska	16 (88.89%)	2 (11.11%)		18
North Greenland	6 (30.00%)	6 (30.00%)	1 (5.00%)	20
Nunavut	165 (78.20%)	42 (19.91%)	4 (1.90%)	211
South Alaska	25 (75.76%)	8 (24.24%)		33
South Greenland	2 (66.67%)	1 (33.33%)		3
St. Lawrence	52 (98.11%)	1 (1.89%)		53
Vancouver Island	3 (60.00%)	2 (40.00%)		5
West Aleutians	54 (78.26%)	15 (21.74%)		69

West Greenland	4 (40.00%)	5 (50.00%)	1 (10.00%)	10
Female YA				
Amaknak Island	25 (100.00%)			25
Canada Unknown	2 (100.00%)			2
Coats Island	120 (92.31%)	8 (6.15%)	2 (1.54%)	130
East Greenland	2 (40.00%)	3 (60.00%)		5
Hudson Bay	138 (84.66%)	23 (14.11%)	2 (1.23%)	163
North Alaska	4 (100.00%)			4
North Greenland	4 (36.36%)	4 (36.36%)		11
Nunavut	83 (85.57%)	11 (11.34%)	3 (3.09%)	97
South Alaska	4 (100.00%)			4
South Greenland	1 (50.00%)	1 (50.00%)		2
St. Lawrence	27 (100.00%)			27
Vancouver Island	2 (50.00%)	2 (50.00%)		4
West Aleutians	12 (80.00%)	3 (20.00%)		15
West Greenland		1 (50.00%)	1 (50.00%)	2
Female MA				
Amaknak Island	22 (52.38%)	16 (38.10%)	4 (9.52%)	42
Canada Unknown			1 (100.00%)	1
Coats Island	3 (100.00%)			3
Greenland Unknown				3
Hudson Bay	32 (47.76%)	34 (50.75%)	1 (1.49%)	67
North Greenland			1 (50.00%)	2
Nunavut	19 (73.08%)	6 (23.08%)	1 (3.85%)	26
South Alaska	9 (60.00%)	6 (40.00%)		15
St. Lawrence	8 (100.00%)			8
West Aleutians	20 (74.07%)	7 (25.93%)		27
Male Pooled				
Amaknak Island	74 (62.71%)	39 (33.05%)	5 (4.24%)	118
Canada Unknown	8 (72.73%)	3 (27.27%)		11
Coats Island	230 (84.25%)	37 (13.55%)	6 (2.20%)	273
East Greenland	1 (25.00%)	3 (75.00%)		4
Hudson Bay	326 (65.33%)	161 (32.26%)	12 (2.40%)	499
North Alaska	30 (78.95%)	4 (10.53%)	4 (10.53%)	38
North Greenland	15 (39.47%)	15 (39.47%)		38
Nunavut	273 (59.74%)	178 (38.95%)	6 (1.31%)	457

South Alaska	45 (83.33%)	9 (16.67%)		54
South Greenland	8 (80.00%)	1 (10.00%)	1 (10.00%)	10
St. Lawrence	47 (88.68%)	3 (5.66%)	3 (5.66%)	53
Vancouver Island	14 (73.68%)	5 (26.32%)		19
West Aleutians	107 (82.95%)	21 (16.28%)	1 (0.78%)	129
West Greenland	30 (75.00%)	9 (22.50%)	1 (2.50%)	40
Male YA				
Amaknak Island	2 (28.57%)	4 (57.14%)	1 (14.29%)	7
Canada Unknown	5 (83.33%)	1 (16.67%)		6
Coats Island	121 (90.30%)	9 (6.72%)	4 (2.99%)	134
Hudson Bay	122 (73.94%)	37 (22.42%)	6 (3.64%)	165
North Alaska	8 (100.00%)			8
North Greenland	8 (100.00%)	8 (100.00%)		8
Nunavut	78 (63.41%)	43 (34.96%)	2 (1.63%)	123
South Alaska	24 (100.00%)			24
South Greenland	5 (100.00%)			5
St. Lawrence	17 (100.00%)			17
Vancouver Island	5 (62.50%)	3 (37.50%)		8
West Aleutians	23 (100.00%)			23
Amaknak Island	30 (62.50%)	18 (37.50%)		48
Coats Island	3 (100.00%)			3
Hudson Bay	66 (47.48%)	69 (49.64%)	4 (2.88%)	139
North Alaska	10 (100.00%)			10
North Greenland				2
Nunavut	47 (54.02%)	39 (44.83%)	1 (1.15%)	87
South Alaska	13 (81.25%)	3 (18.75%)		16
South Greenland	3 (60.00%)	1 (20.00%)	1 (20.00%)	5
St. Lawrence	14 (100.00%)			14
West Aleutians	17 (80.95%)	3 (14.29%)	1 (4.76%)	21
West Greenland	4 (57.14%)	3 (42.86%)		7
Subadult Pooled				
Amaknak Island	2 (100.00%)			2
Canada Unknown	5 (83.33%)	1 (16.67%)		6
Coats Island	26 (100.00%)			26
Hudson Bay	72 (92.31%)	5 (6.41%)	1 (1.28%)	78
Nunavut	52 (86.67%)	8 (13.33%)		60
South Alaska	13 (86.67%)	2 (13.33%)		15
West Aleutians	17 (94.44%)	1 (5.56%)		18
West Greenland			1 (100.00%)	1
Subadult Infant				
Coats Island	6 (100.00%)			6
Subadult Child				
Amaknak Island	2 (100.00%)			2
Canada Unknown	5 (83.33%)	1 (16.67%)		6
Coats Island	19 (100.00%)			19
Hudson Bay	45 (91.84%)	3 (6.12%)	1 (2.04%)	49
Nunavut	52 (88.14%)	7 (11.86%)		59
West Aleutians	17 (94.44%)	1 (5.56%)		18

West Greenland			1 (100.00%)	1
Subadult Adolescent				
Hudson Bay	27 (93.10%)	2 (6.90%)		29
Nunavut		1 (100.00%)		1
South Alaska	13 (86.67%)	2 (13.33%)		15

Appendix Table 58 Mesial approximal attrition score (Row 7) – adults

Only the age and sex classes per sample which had positive data are presented

Sample	Female Pooled		Female YA		Female MA	
	Score 0	Total	Score 0	Total	Score 0	Total
Amaknak Island	146 (100.00%)	146	46 (100.00%)	46	46 (100.00%)	46
Canada Unknown	14 (100.00%)	14	3 (100.00%)	3	1 (100.00%)	1
Coats Island	91 (100.00%)	14	38 (100.00%)	3		1
East Greenland	54 (100.00%)	54	26 (100.00%)	26		0
Greenland Unknown	55 (100.00%)	55	11 (100.00%)	11	4 (100.00%)	4
Hudson Bay	667 (100.00%)	667	249 (100.00%)	249	55 (100.00%)	55
North Alaska	26 (100.00%)	26	9 (100.00%)	9		0
North Greenland	57 (100.00%)	57	22 (100.00%)	22	2 (100.00%)	2
Nunavut	344 (100.00%)	344	176 (100.00%)	176	30 (100.00%)	30
South Alaska	53 (100.00%)	53	21 (100.00%)	21	16 (100.00%)	16
South Greenland	6 (100.00%)	6	6 (100.00%)	6		0
St. Lawrence	67 (100.00%)	67	37 (100.00%)	37	7 (100.00%)	7
Vancouver Island	19 (100.00%)	19	18 (100.00%)	18		0
West Aleutians	92 (100.00%)	92	19 (100.00%)	19	29 (100.00%)	29
West Greenland	18 (100.00%)	18	6 (100.00%)	6		0
	Male Pooled		Male YA		Male MA	
Amaknak Island	128 (100.00%)	128	7 (100.00%)	7	49 (100.00%)	49
Canada Unknown	11 (91.67%)	12		0		0
Coats Island	35 (100.00%)	12	16 (100.00%)	0	10 (100.00%)	0
East Greenland	16 (100.00%)	16		0		0
Greenland Unknown	22 (100.00%)	22	7 (100.00%)	7	11 (100.00%)	11
Hudson Bay	575 (100.00%)	575	224 (100.00%)	224	128 (100.00%)	128
North Alaska	13 (100.00%)	13		0	4 (100.00%)	4
North Greenland	60 (100.00%)	60	33 (100.00%)	33	2 (100.00%)	2
Nunavut	507 (99.22%)	511	177 (100.00%)	177	82 (100.00%)	82
South Alaska	48 (100.00%)	48	29 (100.00%)	29	19 (100.00%)	19
South Greenland	3 (100.00%)	3		0	3 (100.00%)	3
St. Lawrence	67 (100.00%)	67	25 (100.00%)	25	15 (100.00%)	15
Vancouver Island	43 (97.73%)	44	13 (100.00%)	13		0
West Aleutians	115 (100.00%)	115	31 (100.00%)	31	23 (100.00%)	23
West Greenland	45 (100.00%)	45	3 (100.00%)	3	7 (100.00%)	7

Appendix Table 59 Mesial approximal attrition score (Row 7) – subadults

Only the age and sex classes per sample which had positive data are presented

Sample	Subadult Pooled		Subadult Infant		Subadult Child		Subadult Adolescent	
	Score 0	Total	Score 0	Total	Score 0	Total	Score 0	Total
Amaknak Island	18 (100.00%)	18		0	15 (100.00%)	15	3 (100.00%)	3
Canada Unknown	13 (100.00%)	13	1 (100.00%)	1	12 (100.00%)	12		0
Coats Island	55 (100.00%)	13	36 (100.00%)	1	19 (100.00%)	12		0
Greenland Unknown	33 (100.00%)	33		0	20 (100.00%)	20	13 (100.00%)	13
Hudson Bay	211 (100.00%)	211	28 (100.00%)	28	147 (100.00%)	147	33 (100.00%)	33
North Alaska	11 (100.00%)	11		0	11 (100.00%)	11		0
Nunavut	151 (100.00%)	151		0	130 (100.00%)	130	16 (100.00%)	16
Vancouver Island	15 (100.00%)	15		0	13 (100.00%)	13	2 (100.00%)	2
West Aleutians	28 (100.00%)	28		0	24 (100.00%)	24	4 (100.00%)	4
West Greenland	4 (100.00%)	4		0	4 (100.00%)	4		0

Appendix Table 60 Mesial contact area caries (Row 8) – females

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Female Pooled		
Amaknak Island	143 (100.00%)	143
Canada Unknown	14 (100.00%)	14
East Greenland	52 (100.00%)	52
Greenland Unknown	53 (100.00%)	53
Hudson Bay	660 (100.00%)	660
North Alaska	23 (100.00%)	23
North Greenland	55 (100.00%)	55
Nunavut	328 (100.00%)	328
South Alaska	53 (100.00%)	53
South Greenland	8 (100.00%)	8
St. Lawrence	70 (100.00%)	70
Vancouver Island	17 (100.00%)	17
West Aleutians	90 (100.00%)	90
West Greenland	16 (100.00%)	16
Female YA		
Amaknak Island	45 (100.00%)	45
Canada Unknown	3 (100.00%)	3
East Greenland	24 (100.00%)	24
Greenland Unknown	11 (100.00%)	11
Hudson Bay	253 (100.00%)	253
North Alaska	8 (100.00%)	8
North Greenland	21 (100.00%)	21
Nunavut	168 (100.00%)	168
South Alaska	21 (100.00%)	21
South Greenland	7 (100.00%)	7
St. Lawrence	38 (100.00%)	38
Vancouver Island	16 (100.00%)	16
West Aleutians	19 (100.00%)	19
West Greenland	4 (100.00%)	4
Female MA		
Amaknak Island	44 (100.00%)	44
Canada Unknown	1 (100.00%)	1
Greenland Unknown	3 (100.00%)	3
Hudson Bay	53 (100.00%)	53
North Greenland	2 (100.00%)	2
Nunavut	27 (100.00%)	27
South Alaska	16 (100.00%)	16
St. Lawrence	9 (100.00%)	9
West Aleutians	29 (100.00%)	29

Appendix Table 61 Mesial contact area caries (Row 8) – males

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Score 2	Total
Male Pooled				
Amaknak Island	126 (100.00%)			126
Canada Unknown	10 (100.00%)			10
East Greenland	14 (100.00%)			14
Greenland Unknown	21 (100.00%)			21
Hudson Bay	559 (100.00%)			559
North Alaska	11 (100.00%)			11
North Greenland	67 (100.00%)			67
Nunavut	498 (100.00%)			498
South Alaska	47 (100.00%)			47
South Greenland	2 (66.67%)		1 (33.33%)	3
St. Lawrence	67 (100.00%)			67
Vancouver Island	41 (97.62%)	1 (2.38%)		42
West Aleutians	115 (100.00%)			115
West Greenland	50 (100.00%)			50
Male YA				
Amaknak Island	7 (100.00%)			7
Greenland Unknown	7 (100.00%)			7
Hudson Bay	221 (100.00%)			221
North Greenland	33 (100.00%)			33
Nunavut	174 (100.00%)			174
South Alaska	29 (100.00%)			29
St. Lawrence	25 (100.00%)			25
Vancouver Island	13 (100.00%)			13
West Aleutians	31 (100.00%)			31
West Greenland	2 (100.00%)			2
Male MA				
Amaknak Island	48 (100.00%)			48
Greenland Unknown	10 (100.00%)			10
Hudson Bay	123 (100.00%)			123
North Alaska	3 (100.00%)			3
North Greenland	2 (100.00%)			2
Nunavut	77 (100.00%)			77
South Alaska	18 (100.00%)			18
South Greenland	2 (66.67%)		1 (33.33%)	3
St. Lawrence	15 (100.00%)			15
West Aleutians	23 (100.00%)			23
West Greenland	7 (100.00%)			7

Appendix Table 62 Mesial contact area caries (Row 8) – subadults

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Subadult Pooled		
Amaknak Island	18 (100.00%)	18
Canada Unknown	12 (100.00%)	12
Greenland Unknown	21 (100.00%)	21
Hudson Bay	199 (100.00%)	199
North Alaska	11 (100.00%)	11
North Greenland	8 (100.00%)	8
Nunavut	144 (100.00%)	144
Vancouver Island	15 (100.00%)	15
West Aleutians	27 (100.00%)	27
West Greenland	2 (100.00%)	2
Subadult Infant		
Canada Unknown	1 (100.00%)	1
Hudson Bay	28 (100.00%)	28
Subadult Child		
Amaknak Island	15 (100.00%)	15
Canada Unknown	11 (100.00%)	11
Greenland Unknown	9 (100.00%)	9
Hudson Bay	138 (100.00%)	138
North Alaska	11 (100.00%)	11
North Greenland	8 (100.00%)	8
Nunavut	125 (100.00%)	125
Vancouver Island	13 (100.00%)	13
West Aleutians	23 (100.00%)	23
West Greenland	2 (100.00%)	2
Subadult Adolescent		
Amaknak Island	3 (100.00%)	3
Greenland Unknown	12 (100.00%)	12
Hudson Bay	33 (100.00%)	33
Nunavut	19 (100.00%)	19
Vancouver Island	2 (100.00%)	2
West Aleutians	4 (100.00%)	4

Appendix Table 63 Mesial root surface caries (Row 9) – females

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Female Pooled		
Amaknak Island	143 (100.00%)	143
Canada Unknown	14 (100.00%)	14
Coats Island	88 (100.00%)	88
East Greenland	51 (100.00%)	51
Hudson Bay	654 (100.00%)	654
North Alaska	23 (100.00%)	23
Nunavut	329 (100.00%)	329
South Alaska	53 (100.00%)	53
South Greenland	10 (100.00%)	10
St. Lawrence	70 (100.00%)	70
Vancouver Island	17 (100.00%)	17
West Aleutians	90 (100.00%)	90
West Greenland	18 (100.00%)	18
Female YA		
Amaknak Island	45 (100.00%)	45
Canada Unknown	3 (100.00%)	3
Coats Island	38 (100.00%)	38
East Greenland	24 (100.00%)	24
Hudson Bay	247 (100.00%)	247
North Alaska	8 (100.00%)	8
Nunavut	168 (100.00%)	168
South Alaska	21 (100.00%)	21
South Greenland	9 (100.00%)	9
St. Lawrence	38 (100.00%)	38
Vancouver Island	16 (100.00%)	16
West Aleutians	19 (100.00%)	19
West Greenland	6 (100.00%)	6
Female MA		
Amaknak Island	44 (100.00%)	44
Canada Unknown	1 (100.00%)	1
Hudson Bay	53 (100.00%)	53
Nunavut	27 (100.00%)	27
South Alaska	16 (100.00%)	16
St. Lawrence	9 (100.00%)	9
West Aleutians	29 (100.00%)	29

Appendix Table 64 Mesial root surface caries (Row 9) – males

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Total
Male Pooled			
Amaknak Island	126 (100.00%)		126
Coats Island	35 (100.00%)		35
East Greenland	14 (93.33%)	1 (6.67%)	15
Greenland Unknown			21
Hudson Bay	565 (100.00%)		565
North Alaska	11 (100.00%)		11
Nunavut	498 (100.00%)		498
South Alaska	47 (100.00%)		47
South Greenland	3 (100.00%)		3
St. Lawrence	67 (100.00%)		67
Vancouver Island	42 (100.00%)		42
West Aleutians	115 (100.00%)		115
West Greenland	51 (98.08%)		52
Male YA			
Amaknak Island	7 (100.00%)		7
Hudson Bay	221 (100.00%)		221
Nunavut	174 (100.00%)		174
South Alaska	29 (100.00%)		29
St. Lawrence	25 (100.00%)		25
Vancouver Island	13 (100.00%)		13
West Aleutians	31 (100.00%)		31
West Greenland	4 (100.00%)		4
Male MA			
Amaknak Island	48 (100.00%)		48
Hudson Bay	123 (100.00%)		123
North Alaska	3 (100.00%)		3
Nunavut	77 (100.00%)		77
South Alaska	18 (100.00%)		18
South Greenland	3 (100.00%)		3
St. Lawrence	15 (100.00%)		15
West Aleutians	23 (100.00%)		23
West Greenland	7 (100.00%)		7

Appendix Table 65 Mesial root surface caries (Row 9) – subadults

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Subadult Pooled		
Amaknak Island	18 (100.00%)	18
Canada Unknown	9 (100.00%)	9
Coats Island	54 (100.00%)	54
Hudson Bay	199 (100.00%)	199
North Alaska	11 (100.00%)	11
Nunavut	144 (100.00%)	144
Vancouver Island	15 (100.00%)	15
West Aleutians	27 (100.00%)	27
West Greenland	4 (100.00%)	4
Subadult Infant		
Coats Island	36 (100.00%)	36
Hudson Bay	28 (100.00%)	28
Subadult Child		
Amaknak Island	15 (100.00%)	15
Canada Unknown	9 (100.00%)	9
Coats Island	18 (100.00%)	18
Hudson Bay	138 (100.00%)	138
North Alaska	11 (100.00%)	11
Nunavut	125 (100.00%)	125
Vancouver Island	13 (100.00%)	13
West Aleutians	23 (100.00%)	23
West Greenland	4 (100.00%)	4
Subadult Adolescent		
Amaknak Island	3 (100.00%)	3
Hudson Bay	33 (100.00%)	33
Nunavut	19 (100.00%)	19
Vancouver Island	2 (100.00%)	2
West Aleutians	4 (100.00%)	4

Appendix Table 66 Distal approximal attrition score (Row 11) – females

Only the age and sex classes per sample which had positive data are presented

Sample/Score	Score 0	Score 1	Total
Female Pooled			
Amaknak Island	146 (100.00%)		146
Canada Unknown	14 (93.33%)	1 (6.67%)	15
Coats Island	92 (100.00%)		15
East Greenland	53 (100.00%)		53
Greenland Unknown	55 (98.21%)	1 (1.79%)	56
Hudson Bay	676 (100.00%)		676
North Alaska	26 (100.00%)		26
North Greenland	57 (100.00%)		57
Nunavut	344 (100.00%)		344
South Alaska	53 (100.00%)		53
South Greenland	8 (100.00%)		8
St. Lawrence	67 (100.00%)		67
Vancouver Island	26 (100.00%)		26
West Aleutians	92 (100.00%)		92
West Greenland	18 (100.00%)		18
Female YA			
Amaknak Island	46 (100.00%)		46
Canada Unknown	3 (100.00%)		3
Coats Island	38 (100.00%)		3
East Greenland	25 (100.00%)		25
Greenland Unknown	11 (91.67%)	1 (8.33%)	12
Hudson Bay	249 (100.00%)		249
North Alaska	9 (100.00%)		9
North Greenland	22 (100.00%)		22
Nunavut	173 (100.00%)		173
South Alaska	21 (100.00%)		21
South Greenland	8 (100.00%)		8
St. Lawrence	37 (100.00%)		37
Vancouver Island	25 (100.00%)		25
West Aleutians	19 (100.00%)		19
West Greenland	6 (100.00%)		6
Female MA			
Amaknak Island	146 (100.00%)		146
Canada Unknown	1 (100.00%)		1
Greenland Unknown	4 (100.00%)		4
Hudson Bay	55 (100.00%)		55
North Greenland	2 (100.00%)		2
Nunavut	30 (100.00%)		30
South Alaska	16 (100.00%)		16
St. Lawrence	67 (100.00%)		67
West Aleutians	29 (100.00%)		29

Appendix Table 67 Distal approximal attrition score – males

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Male Pooled		
Amaknak Island	128 (100.00%)	128
Canada Unknown	12 (100.00%)	12
Coats Island	35 (100.00%)	12
East Greenland	16 (100.00%)	16
Greenland Unknown	23 (100.00%)	23
Hudson Bay	574 (100.00%)	574
North Alaska	13 (100.00%)	13
North Greenland	60 (100.00%)	60
Nunavut	510 (100.00%)	510
South Alaska	48 (100.00%)	48
South Greenland	3 (100.00%)	3
St. Lawrence	67 (100.00%)	67
Vancouver Island	44 (100.00%)	44
West Aleutians	115 (100.00%)	115
West Greenland	52 (100.00%)	52
Male YA		
Amaknak Island	7 (100.00%)	7
Coats Island	16 (100.00%)	0
Greenland Unknown	8 (100.00%)	8
Hudson Bay	224 (100.00%)	224
North Greenland	33 (100.00%)	33
Nunavut	176 (100.00%)	176
South Alaska	29 (100.00%)	29
St. Lawrence	25 (100.00%)	25
Vancouver Island	13 (100.00%)	13
West Aleutians	31 (100.00%)	31
West Greenland	4 (100.00%)	4
Male MA		
Amaknak Island	49 (100.00%)	49
Coats Island	10 (100.00%)	0
Greenland Unknown	11 (100.00%)	11
Hudson Bay	128 (100.00%)	128
North Alaska	4 (100.00%)	4
North Greenland	2 (100.00%)	2
Nunavut	82 (100.00%)	82
South Alaska	19 (100.00%)	19
South Greenland	3 (100.00%)	3
St. Lawrence	67 (100.00%)	67
West Aleutians	23 (100.00%)	23
West Greenland	7 (100.00%)	7

Appendix Table 68 Distal approximal attrition score – subadults

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Subadult Pooled		
Amaknak Island	18 (100.00%)	18
Canada Unknown	13 (100.00%)	13
Coats Island	40 (100.00%)	13
Greenland Unknown	33 (100.00%)	33
Hudson Bay	211 (100.00%)	211
North Alaska	11 (100.00%)	11
North Greenland	8 (100.00%)	8
Nunavut	150 (100.00%)	150
Vancouver Island	15 (100.00%)	15
West Aleutians	28 (100.00%)	28
West Greenland	4 (100.00%)	4
Subadult Infant		
Canada Unknown	1 (100.00%)	1
Coats Island	21 (100.00%)	1
Hudson Bay	28 (100.00%)	28
Subadult Child		
Amaknak Island	15 (100.00%)	15
Canada Unknown	12 (100.00%)	12
Coats Island	19 (100.00%)	12
Greenland Unknown	20 (100.00%)	20
Hudson Bay	147 (100.00%)	147
North Alaska	11 (100.00%)	11
North Greenland	8 (100.00%)	8
Nunavut	129 (100.00%)	129
Vancouver Island	13 (100.00%)	13
West Aleutians	24 (100.00%)	24
West Greenland	4 (100.00%)	4
Subadult Adolescent		
Amaknak Island	3 (100.00%)	3
Greenland Unknown	13 (100.00%)	13
Hudson Bay	36 (100.00%)	36
Nunavut	21 (100.00%)	21
Vancouver Island	2 (100.00%)	2
West Aleutians	4 (100.00%)	4

Appendix Table 69 Distal contact area caries (Row 12) – females

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Total
Female Pooled			
Amaknak Island	143 (100.00%)		143
Canada Unknown	14 (93.33%)	1 (6.67%)	15
East Greenland	51 (100.00%)		51
Greenland Unknown	53 (100.00%)		53
Hudson Bay	660 (100.00%)		660
North Alaska	23 (100.00%)		23
North Greenland	55 (100.00%)		55
Nunavut	328 (100.00%)		328
South Alaska	53 (100.00%)		53
South Greenland	8 (100.00%)		8
St. Lawrence	70 (100.00%)		70
Vancouver Island	17 (100.00%)		17
West Aleutians	90 (100.00%)		90
West Greenland	17 (100.00%)		17
Female YA			
Amaknak Island	45 (100.00%)		45
Canada Unknown	3 (100.00%)		3
East Greenland	23 (100.00%)		23
Greenland Unknown	11 (100.00%)		11
Hudson Bay	253 (100.00%)		253
North Alaska	8 (100.00%)		8
North Greenland	21 (100.00%)		21
Nunavut	168 (100.00%)		168
South Alaska	21 (100.00%)		21
South Greenland	7 (100.00%)		7
St. Lawrence	38 (100.00%)		38
Vancouver Island	16 (100.00%)		16
West Aleutians	19 (100.00%)		19
West Greenland	5 (100.00%)		5
Female MA			
Amaknak Island	44 (100.00%)		44
Canada Unknown	1 (100.00%)		1
Greenland Unknown	3 (100.00%)		3
Hudson Bay	53 (100.00%)		53
North Greenland	2 (100.00%)		2
Nunavut	27 (100.00%)		27
South Alaska	16 (100.00%)		16
St. Lawrence	70 (100.00%)		70
West Aleutians	29 (100.00%)		29

Appendix Table 70 Distal contact area caries (Row 12) – males

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Male Pooled		
Amaknak Island	126 (100.00%)	126
Canada Unknown	10 (100.00%)	10
East Greenland	14 (100.00%)	14
Greenland Unknown	21 (100.00%)	21
Hudson Bay	559 (100.00%)	559
North Alaska	11 (100.00%)	11
North Greenland	67 (100.00%)	67
Nunavut	498 (100.00%)	498
South Alaska	47 (100.00%)	47
South Greenland	3 (100.00%)	3
St. Lawrence	67 (100.00%)	67
Vancouver Island	42 (100.00%)	42
West Aleutians	115 (100.00%)	115
West Greenland	50 (100.00%)	50
Male YA		
Amaknak Island	7 (100.00%)	7
Greenland Unknown	7 (100.00%)	7
Hudson Bay	221 (100.00%)	221
North Greenland	33 (100.00%)	33
Nunavut	174 (100.00%)	174
South Alaska	29 (100.00%)	29
St. Lawrence	25 (100.00%)	25
Vancouver Island	13 (100.00%)	13
West Aleutians	31 (100.00%)	31
West Greenland	2 (100.00%)	2
Male MA		
Amaknak Island	48 (100.00%)	48
Greenland Unknown	10 (100.00%)	10
Hudson Bay	123 (100.00%)	123
North Alaska	3 (100.00%)	3
North Greenland	2 (100.00%)	2
Nunavut	77 (100.00%)	77
South Alaska	18 (100.00%)	18
South Greenland	3 (100.00%)	3
St. Lawrence	15 (100.00%)	15
West Aleutians	23 (100.00%)	23
West Greenland	7 (100.00%)	7

Appendix Table 71 Distal contact area caries (Row 12) – subadults

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Subadult Pooled		
Amaknak Island	18 (100.00%)	18
Canada Unknown	12 (100.00%)	12
Greenland Unknown	31 (100.00%)	31
Hudson Bay	199 (100.00%)	199
North Alaska	11 (100.00%)	11
North Greenland	8 (100.00%)	8
Nunavut	144 (100.00%)	144
Vancouver Island	15 (100.00%)	15
West Aleutians	27 (100.00%)	27
West Greenland	4 (100.00%)	4
Subadult Infant		
Canada Unknown	1 (100.00%)	1
Hudson Bay	28 (100.00%)	28
Subadult Child		
Amaknak Island	15 (100.00%)	15
Canada Unknown	11 (100.00%)	11
Greenland Unknown	19 (100.00%)	19
Hudson Bay	138 (100.00%)	138
North Alaska	11 (100.00%)	11
North Greenland	8 (100.00%)	8
Nunavut	125 (100.00%)	125
Vancouver Island	13 (100.00%)	13
West Aleutians	23 (100.00%)	23
West Greenland	4 (100.00%)	4
Subadult Adolescent		
Amaknak Island	3 (100.00%)	3
Greenland Unknown	12 (100.00%)	12
Hudson Bay	33 (100.00%)	33
Nunavut	19 (100.00%)	19
Vancouver Island	2 (100.00%)	2
West Aleutians	4 (100.00%)	4

Appendix Table 72 Distal root surface caries (Row 13) – females

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Female Pooled		
Amaknak Island	143 (100.00%)	143
Canada Unknown	14 (100.00%)	14
Coats Island	88 (100.00%)	88
East Greenland	50 (100.00%)	50
Hudson Bay	654 (100.00%)	654
North Alaska	23 (100.00%)	23
Nunavut	326 (100.00%)	326
South Alaska	53 (100.00%)	53
South Greenland	10 (100.00%)	10
St. Lawrence	70 (100.00%)	70
Vancouver Island	25 (100.00%)	25
West Aleutians	90 (100.00%)	90
West Greenland	19 (100.00%)	19
Female YA		
Amaknak Island	45 (100.00%)	45
Canada Unknown	3 (100.00%)	3
Coats Island	38 (100.00%)	38
East Greenland	22 (100.00%)	22
Hudson Bay	247 (100.00%)	247
North Alaska	8 (100.00%)	8
Nunavut	168 (100.00%)	168
South Alaska	21 (100.00%)	21
South Greenland	9 (100.00%)	9
St. Lawrence	38 (100.00%)	38
Vancouver Island	24 (100.00%)	24
West Aleutians	19 (100.00%)	19
West Greenland	7 (100.00%)	7
Female MA		
Amaknak Island	44 (100.00%)	44
Canada Unknown	1 (100.00%)	1
Hudson Bay	53 (100.00%)	53
Nunavut	27 (100.00%)	27
South Alaska	16 (100.00%)	16
St. Lawrence	9 (100.00%)	9
West Aleutians	29 (100.00%)	29

Appendix Table 73 Distal root surface caries (Row 13) – males

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Total
Male Pooled			
Amaknak Island	126 (100.00%)		126
Canada Unknown	9 (100.00%)		9
Coats Island	35 (100.00%)		35
East Greenland	14 (100.00%)		14
Greenland Unknown	1 (4.55%)	1 (4.55%)	22
Hudson Bay	559 (100.00%)		559
North Alaska	11 (100.00%)		11
Nunavut	498 (100.00%)		498
South Alaska	47 (100.00%)		47
South Greenland	3 (100.00%)		3
St. Lawrence	67 (100.00%)		67
Vancouver Island	42 (100.00%)		42
West Aleutians	115 (100.00%)		115
West Greenland	52 (100.00%)		52
Male YA			
Amaknak Island	7 (100.00%)		7
Coats Island	16 (100.00%)		16
Hudson Bay	221 (100.00%)		221
Nunavut	174 (100.00%)		174
South Alaska	29 (100.00%)		29
St. Lawrence	25 (100.00%)		25
Vancouver Island	13 (100.00%)		13
West Aleutians	31 (100.00%)		31
West Greenland	4 (100.00%)		4
Male MA			
Amaknak Island	44 (100.00%)		44
Coats Island	10 (100.00%)		10
Greenland Unknown	1 (9.09%)	1 (9.09%)	11
Hudson Bay	123 (100.00%)		123
North Alaska	3 (100.00%)		3
Nunavut	77 (100.00%)		77
South Alaska	18 (100.00%)		18
South Greenland	3 (100.00%)		3
St. Lawrence	15 (100.00%)		15
West Aleutians	23 (100.00%)		23
West Greenland	7 (100.00%)		7

Appendix Table 74 Distal root surface caries (Row 13) – subadults

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Total
Subadult Pooled		
Amaknak Island	18 (100.00%)	18
Canada Unknown	11 (100.00%)	11
Coats Island	53 (100.00%)	53
Hudson Bay	199 (100.00%)	199
North Alaska	11 (100.00%)	11
Nunavut	144 (100.00%)	144
Vancouver Island	15 (100.00%)	15
West Aleutians	27 (100.00%)	27
West Greenland	6 (100.00%)	6
Subadult Infant		
Coats Island	36 (100.00%)	36
Hudson Bay	28 (100.00%)	28
Subadult Child		
Amaknak Island	15 (100.00%)	15
Canada Unknown	11 (100.00%)	11
Coats Island	17 (100.00%)	17
Hudson Bay	138 (100.00%)	138
North Alaska	11 (100.00%)	11
Nunavut	125 (100.00%)	125
Vancouver Island	13 (100.00%)	13
West Aleutians	23 (100.00%)	23
West Greenland	6 (100.00%)	6
Subadult Adolescent		
Amaknak Island	3 (100.00%)	3
Hudson Bay	33 (100.00%)	33
Nunavut	19 (100.00%)	19
Vancouver Island	2 (100.00%)	2
West Aleutians	4 (100.00%)	4

Appendix Table 75 Lingual root surface caries (Row 19) – females

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Total
Female Pooled			
Amaknak Island	143 (100.00%)		143
Canada Unknown	14 (93.33%)	1 (6.67%)	15
Coats Island	89 (100.00%)		89
East Greenland	51 (98.08%)	1 (1.92%)	52
Hudson Bay	656 (100.00%)		656
North Alaska	23 (100.00%)		23
Nunavut	329 (100.00%)		329
South Alaska	53 (100.00%)		53
South Greenland	10 (90.91%)	1 (9.09%)	11
St. Lawrence	70 (100.00%)		70
Vancouver Island	36 (100.00%)		36
West Aleutians	90 (100.00%)		90
West Greenland	15 (100.00%)		15
Female YA			
Amaknak Island	45 (100.00%)		45
Canada Unknown	3 (100.00%)		3
Coats Island	39 (100.00%)		39
East Greenland	24 (100.00%)		24
Hudson Bay	247 (100.00%)		247
North Alaska	8 (100.00%)		8
Nunavut	168 (100.00%)		168
South Alaska	21 (100.00%)		21
South Greenland	9 (90.00%)	1 (10.00%)	10
St. Lawrence	38 (100.00%)		38
Vancouver Island	24 (100.00%)		24
West Aleutians	19 (100.00%)		19
West Greenland	5 (100.00%)		5
Female MA			
Amaknak Island	44 (100.00%)		44
Canada Unknown	1 (100.00%)		1
Hudson Bay	55 (100.00%)		55
Nunavut	27 (100.00%)		27
South Alaska	16 (100.00%)		16
St. Lawrence	9 (100.00%)		9
West Aleutians	29 (100.00%)		29

Appendix Table 76 Lingual root surface caries (Row 19) – males

Only the age and sex classes per sample which had positive data are presented

Sample	Score 0	Score 1	Total
Male Pooled			
Amaknak Island	126 (100.00%)		126
Canada Unknown	11 (100.00%)		11
Coats Island	35 (100.00%)		35
East Greenland	14 (100.00%)		14
Hudson Bay	557 (100.00%)		557
North Alaska	11 (100.00%)		11
Nunavut	492 (100.00%)		492
South Alaska	47 (100.00%)		47
South Greenland	4 (100.00%)		4
St. Lawrence	67 (100.00%)		67
Vancouver Island	42 (100.00%)		42
West Aleutians	115 (100.00%)		115
West Greenland	56 (98.25%)	1 (1.75%)	57
Male YA			
Amaknak Island	7 (100.00%)		7
Coats Island	16 (100.00%)		16
Hudson Bay	221 (100.00%)		221
Nunavut	174 (100.00%)		174
South Alaska	29 (100.00%)		29
St. Lawrence	25 (100.00%)		25
Vancouver Island	13 (100.00%)		13
West Aleutians	31 (100.00%)		31
West Greenland	4 (100.00%)		4
Male MA			
Amaknak Island	48 (100.00%)		48
Coats Island	10 (100.00%)		10
Hudson Bay	119 (100.00%)		119
North Alaska	3 (100.00%)		3
Nunavut	77 (100.00%)		77
South Alaska	18 (100.00%)		18
South Greenland	4 (100.00%)		4
St. Lawrence	15 (100.00%)		15
West Aleutians	23 (100.00%)		23
West Greenland	7 (100.00%)		7

Appendix Table 77 Lingual root surface caries (Row 19) – subadults

Only the age and sex classes per sample which had positive data are presented

Sample/Score	Score 0	Total
Subadult Pooled		
Amaknak Island	18 (100.00%)	18
Canada Unknown	9 (100.00%)	9
Coats Island	54 (100.00%)	54
Hudson Bay	206 (100.00%)	206
North Alaska	11 (100.00%)	11
Nunavut	144 (100.00%)	144
Vancouver Island	15 (100.00%)	15
West Aleutians	27 (100.00%)	27
West Greenland	6 (100.00%)	6
Subadult Infant		
Coats Island	36 (100.00%)	36
Hudson Bay	39 (100.00%)	39
Subadult Child		
Amaknak Island	15 (100.00%)	15
Canada Unknown	9 (100.00%)	9
Coats Island	18 (100.00%)	18
Hudson Bay	134 (100.00%)	134
North Alaska	11 (100.00%)	11
Nunavut	125 (100.00%)	125
Vancouver Island	13 (100.00%)	13
West Aleutians	23 (100.00%)	23
West Greenland	6 (100.00%)	6
Subadult Adolescent		
Amaknak Island	3 (100.00%)	3
Hudson Bay	33 (100.00%)	33
Nunavut	19 (100.00%)	19
Vancouver Island	2 (100.00%)	2
West Aleutians	4 (100.00%)	4

Appendix Table 78 Wear (Extent) (Row 35) - most frequent score - females

Age Class	Pooled				YA				MA			
Sample/Tooth class	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	3	3	3	2	3	4	1	0	4	3	3	1
Canada Unknown	2,4	2	4	0	N/A	2	N/A	0	N/A	4	N/A	N/A
Coats Island	4	2	0	0-1	2	2	0	0	N/A	N/A	4	4
East Greenland	0-3	0	0	0	1	1	0	0				
Greenland Unknown	0	0-1	0	0	0	0	0	0	4	4	N/A	N/A
Hudson Bay	4	1	1	1	1	1	1	1	4	4	4	4
North Alaska	4	0	0	0	1,3	1	1	0				
North Greenland	1,3	3	1	0	3	2-3	0,2	0	N/A	3	3	N/A
Nunavut	1	1	1	1	1-2	1	1	1	4	4	4	4
South Alaska	4	4	0	0	0	0	0	0	4	4	4	N/A
South Greenland	1-3	2	1	0	1-2	2	1	0				
St. Lawrence	2	1	1	0	2	1	1	0	4	3	3	N/A
Vancouver Island	3	2	0-3	1	3	2	0-3	1				
West Aleutians	4	4	4	0	3	1,4	1	0	4	4	4	3
West Greenland	4	4	1	0	N/A	1-2,3	0,1	0				

Appendix Table 79 Wear (Extent) (Row 35) - most frequent score - males

Age Class	Pooled				YA				MA			
Sample/Tooth class	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	4	4	4	4	4	4	4	4	4	4	4	4
Canada Unknown	3	2	1,2	0	3	2	2	2	N/A	N/A	N/A	N/A
Coats Island	4	2	2	0	4	2	2	0	4	4	4	4
East Greenland	3	1	1	1								
Greenland Unknown	0,2,4	2	2	4	2	1	1	N/A	0-4	3	2	4
Hudson Bay	4	4	4	4	4	1	1	1	4	4	4	4
North Alaska	2	4	2,4	4	2	2	2	1	4	4	4	4
North Greenland	1	3	1	1	1	1	1	1	3	3	N/A	N/A
Nunavut	4	4	2	2	4	2	2	1-2	4	4	4	4
South Alaska	4	4	4	0	1	0	0	0	4	4	4	4
South Greenland	2	2	1-2	0-2	2	2	2	0	N/A	3	1	1-2
St. Lawrence	4	4	4	0	0-2	2	0	0	4	4	4	4
Vancouver Island	4	2	2	0-1	1	2	2	0				
West Aleutians	4	4	4	2	1	1	1	0	4	4	4	4
West Greenland	3	4	3	0	N/A	0	0	N/A	4	4	4	4

Appendix Table 80 Wear (Extent) (Row 35) - most frequent score - subadults

Age Class	Pooled				Infant				Child				Adolescent			
Sample/Tooth class	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3				
Amaknak Island	0	0	0	0	0	0	0	0	0	0	0	0				
Canada Unknown	0	0	0	N/A	0	N/A	N/A		0	0	0	0	0	N/A	N/A	N/A
Coats Island	0	0	0	0	0	0	0		0	0	0	N/A	0	0	0	0
East Greenland																
Greenland Unknown	0	0	0	N/A	0	0	0	N/A	N/A	0	0	N/A				
Hudson Bay	0	0	0	N/A	0	0	0		0-2	0	1	N/A	2	1	1	N/A
North Alaska	0	0	0	N/A	0	0	0	N/A								
North Greenland	N/A	0	0	N/A	N/A	0	0	N/A								
Nunavut	1	1	1	0	0	N/A	N/A		1	1	1	N/A	1	1	0	0
South Alaska	2	1,3	1,2	N/A	2	1,3	1,2	N/A								
South Greenland																
St. Lawrence																
Vancouver Island	0	0	0	N/A	0	0	0	N/A	N/A	0	N/A	N/A				
West Aleutians	2	1	0	N/A	2	2	2	N/A	N/A	0-1	0	N/A				
West Greenland	N/A	0,3	3	N/A	N/A	0,3	3	N/A								

Appendix Table 81 Wear (Gradient) (Row 36) - most frequent score - females

Age Class	Pooled				YA				MA			
Sample/Tooth class	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	2	2	2	1	2	2	1	0	1	2	2	2
Canada Unknown	1	1	1	0	N/A	1	N/A	0	N/A	4	N/A	N/A
Coats Island	1	1	0	1	1	1	1	0	N/A	N/A	2	2
East Greenland	1	0	0	0	1	1	0	0				
Greenland Unknown	1	2	0	0	0	0	0	0	1	2	N/A	N/A
Hudson Bay	1	1	1	1	1	1	1	1	1	1	4	4
North Alaska	3	0,1	0,1	0	1	1	1	0				
North Greenland	1,2	2	1	0	2	2	2	0,2	N/A	4	4	N/A
Nunavut	1	1	1	1	1	1	1	1	2	3	1	2
South Alaska	2	2	0,2	1,2,4	1	1	1	0	2	2	2	N/A
South Greenland	0,1	1	0	0	0,1	1	0	0				
St. Lawrence	2	1,2	2	1	1	1,2	2	1	1,2	2	2	N/A
Vancouver Island	2	2	2,4	2,4	2	2	2,4	2,4				
West Aleutians	1	1	1	2	1	1	1	0	1	2	2	2
West Greenland	2	2	1	0,1	N/A	2	0,1	0				

Appendix Table 82 *Wear (Gradient) (Row 36) - most frequent score - males*

Age Class	Pooled				YA				MA			
Sample/Tooth class	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	2	2	2	2	1	1	4	4	1	2	1,2,3	2
Canada Unknown	3	1,2	1	0	3	2	2	2				
Coats Island	1	1	1	1	1	1	1	1	1	3	3	1
East Greenland	1	1	1	N/A								
Greenland Unknown	1	1	1	1	2	1	1	N/A	1	2	N/A	N/A
Hudson Bay	1	1	1	1	1	1	1	1	1	2	2	1,2
North Alaska	1	1	1	1,2,4	1	1	1	N/A	1,2	2	2,4	4
North Greenland	1	2	2	1,2	1	1	2,3	2	3	3	N/A	N/A
Nunavut	1	1	1	1	1	1	1	1	2	2	2	1,2
South Alaska	4	4	4	0	2	0,2	0	0	4	4	4	2,4
South Greenland	1	1	1	1	1	1	1	0	N/A	2	1	1
St. Lawrence	2	2	1	0	0	2	0	0	2	2	2	0,1
Vancouver Island	1	1	1	1	1	1	1	1				
West Aleutians	1	2	1	1	1	1	1	1	3	2	1,2	1
West Greenland	1	2	2	2	N/A	0	0	N/A	3	4	4	4

Appendix Table 83 Wear (Gradient) (Row 36) - most frequent score - subadults

Age Class	Pooled				Infant				Child				Adolescent			
Sample/Tooth class	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3				
Amaknak Island	0	0	0	N/A	0	0	0	N/A	0	N/A	0	N/A				
Canada Unknown	0	0	0	N/A	0	N/A	N/A		0	0	0	N/A	0	N/A	N/A	N/A
Coats Island	0	0	0	0	0	0	0		0	0	0	N/A	0	0	0	0
East Greenland																
Greenland Unknown	0	0	0	N/A	0	0	0	N/A	N/A	0	0	N/A				
Hudson Bay	1	1	1	N/A	0	0	0		1	1	1	N/A	1	1	1	N/A
North Alaska	1	1	1	N/A	1	1	1	N/A								
North Greenland	N/A	0	0	N/A	N/A	0	0	N/A								
Nunavut	1	1	1	0	0	N/A	N/A		1	0,1	1	N/A	1	1	0	0
South Alaska	1	1	1	N/A	1	1	1	N/A								
South Greenland																
St. Lawrence																
Vancouver Island	0	0	0	N/A	0	0	0	N/A	N/A	0	N/A	N/A				
West Aleutians	0	0	0	N/A	0	0	0	N/A	N/A	0,1	0,1	N/A				
West Greenland	N/A	0,2	2	N/A	N/A	0,2	2	N/A								

Appendix Table 84 - Caries – total

The percentages are based on the $n=\text{caries}$

Sample	Skeletal ID	Age/Sex	AN	M1	M2	M3	Quadrant	Score	<i>n</i> caries per individual	% population total	% sex class	% age class
Amaknak Island	AMNH 99.1/691	Female MA				1	1	Row 2 score 3	2	5.7	11.1	25
						1	2	Row 2 score 3				
	AMNH 99.1/793	Female Middle adult		1			3	Row 1 score 8	1	2.8	5.5	100
	AMNH 99.1/795	Female MA			1		4	Row 1 score 7	1	2.8	5.5	12.5
	AMNH 99.1/808	Male MA		1			1	Row 2 score 5	2	5.7	15.3	33.3
					1		1	Row 2 score 3				
Nunavut	AMNH 99/106	Female YA				1	1	Row 2 score 3	2	1	2.7	8
						1	2	Row 2 score 3				
West Greenland	21-Aa.113M	Male Middle adult	1				4	Row 1 score 8	1	7.1	12.5	33.3

Appendix Table 85 Alveolar bone resorption – Mesial (Row 10) – Mean

Formula = mean alveolar bone resorption in mm

Sample	Tooth	Females			Males			Subadults			
		Pooled	YA	MA	Pooled	YA	MA	Pooled	Infant	Child	AD
Amaknak Island	Permanent	0.89	0.21	0.36	1.01	0.06	0.29	0.00		0.00	0.00
	Deciduous							0.11		0.11	0.00
Canada Unknown	Permanent	0.10	0.01	0.01	0.13	0.09	0.00	0.03	0.00	0.03	0.00
	Deciduous							0.00	0.00	0.00	0.00
Coats Island	Permanent	3.79	1.95	0.06	3.89	2.08	0.15	0.38	0.00	0.21	0.00
	Deciduous							1.47	0.01	1.75	0.00
East Greenland	Permanent	0.17	0.08	0.00	0.06	0.00	0.00				
	Deciduous										
Greenland Unknown	Permanent	0.20	0.03	0.02	0.11	0.06	0.02	0.03	0.01	0.01	0.00
	Deciduous							0.20	0.13	0.07	0.00
Hudson Bay	Permanent	4.56	0.64	0.94	5.99	1.81	1.94	0.82	0.00	0.43	0.86
	Deciduous							1.69	0.00	1.69	0.00
North Alaska	Permanent	0.23	0.05	0.00	0.58	0.15	0.16	0.00		0.00	0.00
	Deciduous							0.13		0.13	0.00
North Greenland	Permanent	0.37	0.16	0.02	0.60	0.32	0.03	0.00	0.00	0.00	0.00
	Deciduous							0.12	0.12	0.00	0.00
Nunavut	Permanent	3.26	1.57	0.47	4.89	1.45	1.03	0.41	0.00	0.27	0.08
	Deciduous							1.69	0.00	1.68	0.00
South Alaska	Permanent	0.51	0.25	0.11	0.41	0.18	0.15	0.29		0.29	0.00
	Deciduous							0.00		0.00	0.00
South Greenland	Permanent	0.04	0.04	0.00	0.15	0.13	0.02				
	Deciduous										
St. Lawrence	Permanent	0.67	0.35	0.08	0.71	0.21	0.19				
	Deciduous										
Vancouver Island	Permanent	0.11	0.10	0.00	0.14	0.04	0.00	0.00		0.01	0.01
	Deciduous							0.00		0.02	0.00
West Aleutians	Permanent	0.71	0.13	0.18	1.10	0.22	0.25	0.07		0.03	0.04
	Deciduous							0.22		0.19	0.10
West Greenland	Permanent	0.08	0.04	0.00	0.46	0.01	0.08	0.01		0.01	0.00
	Deciduous							0.03		0.04	0.00

Appendix Table 86 Alveolar bone resorption – Distal (Row 14) – Mean

Formula = mean alveolar bone resorption in mm

Sample	Tooth	Females			Males			Subadults			
		Pooled	YA	MA	Pooled	YA	MA	Pooled	Infant	Child	AD
Amaknak Island	Permanent	1.11	0.62	0.44	1.25	0.08	0.30	0.00		0.00	0.00
	Deciduous							0.12		0.12	0.00
Canada Unknown	Permanent	0.10	0.21	0.01	0.16	0.11	0.00	0.03	0.00	0.03	0.00
	Deciduous							0.00	0.00	0.00	0.00
Coats Island	Permanent	3.87	2.33	0.06	4.15	2.11	0.12	0.80	0.00	0.23	0.43
	Deciduous							1.66	0.01	1.65	0.00
East Greenland	Permanent	0.15	0.93	0.00	0.07	0.00	0.00				
	Deciduous										
Greenland Unknown	Permanent	0.16	0.10	0.02	0.10	0.04	0.01	0.02	0.01	0.01	0.00
	Deciduous							0.19	0.11	0.07	0.00
Hudson Bay	Permanent	7.41	5.31	0.94	6.18	1.80	1.90	1.31	0.00	0.38	0.94
	Deciduous							1.86	0.00	1.86	0.00
North Alaska	Permanent	0.31	0.43	0.00	0.63	0.17	0.20	0.00		0.00	0.00
	Deciduous							0.13		0.13	0.00
North Greenland	Permanent	0.46	0.95	0.02	0.65	0.30	0.04	0.00	0.00	0.00	0.00
	Deciduous							0.15	0.00	0.15	0.00
Nunavut	Permanent	3.29	1.88	0.47	5.57	1.44	1.12	0.51	0.00	0.26	0.25
	Deciduous							1.90	0.00	1.89	0.00
South Alaska	Permanent	0.36	0.45	0.10	0.42	0.17	0.16	0.27		0.00	0.27
	Deciduous							0.00		0.00	0.00
South Greenland	Permanent	0.03	0.01	0.00	0.13	0.12	0.01				
	Deciduous										
St. Lawrence	Permanent	0.66	0.85	0.07	0.70	0.22	0.17				
	Deciduous										
Vancouver Island	Permanent	0.14	0.20	0.00	0.09	0.03	0.00	0.02		0.01	0.01
	Deciduous							0.13		0.13	0.00
West Aleutians	Permanent	0.70	0.15	0.21	1.19	0.20	0.24	0.07		0.02	0.04
	Deciduous							0.31		0.20	0.10
West Greenland	Permanent	0.07	0.18	0.00	0.47	0.02	0.07	0.01		0.01	0.00
	Deciduous							0.04		0.04	0.00

Appendix Table 87 Alveolar bone resorption – Buccal (Row 17) – Mean

Formula = mean alveolar bone resorption in mm

Sample	Tooth	Females			Males			Subadults			
		Pooled	YA	MA	Pooled	YA	MA	Pooled	Infant	Child	AD
Amaknak Island	Permanent	1.08	0.21	3.59	1.23	0.01	0.26	0.00		0.00	0.00
	Deciduous							0.10		0.10	0.00
Canada Unknown	Permanent	0.14	0.00	0.49	0.15	0.11	0.00	0.03	0.00	0.03	0.00
	Deciduous							0.00	0.00	0.00	0.00
Coats Island	Permanent	5.14	5.78	1.66	14.98	5.35	0.12	0.99	0.00	0.27	0.58
	Deciduous							1.88	0.00	1.88	0.00
East Greenland	Permanent	0.25	0.16	0.00	0.06	0.00	0.00				
	Deciduous										
Greenland Unknown	Permanent	0.45	0.08	4.56	0.05	0.01	0.00	0.02	0.00	0.01	0.01
	Deciduous							0.22	0.00	0.15	0.07
Hudson Bay	Permanent	8.69	9.57	7.49	5.85	4.66	2.08	1.54	0.00	0.45	1.09
	Deciduous							1.99	0.00	1.99	0.00
North Alaska	Permanent	0.41	0.13	0.00	0.55	0.14	0.09	0.00		0.00	
	Deciduous							0.10		0.10	
North Greenland	Permanent	0.48	0.06	8.11	0.50	0.17	0.02	0.00	0.00	0.00	0.00
	Deciduous							0.14	0.00	0.14	0.00
Nunavut	Permanent	4.06	4.82	4.90	4.16	3.67	1.18	0.52	0.00	0.31	0.21
	Deciduous							1.78	0.03	1.75	0.00
South Alaska	Permanent	0.60	0.34	17.60	0.47	0.10	0.09	0.30		0.00	
	Deciduous							0.00		0.00	
South Greenland	Permanent	0.08	0.06	0.00	0.09	0.09	0.00				
	Deciduous										
St. Lawrence	Permanent	0.68	0.17	28.05	0.72	0.13	0.09				
	Deciduous										
Vancouver Island	Permanent	0.16	0.18	0.00	0.29	0.04	0.00	0.02		0.02	0.00
	Deciduous							0.13		0.13	0.00
West Aleutians	Permanent	0.87	0.06	27.91	2.02	0.21	0.09	0.11		0.07	0.04
	Deciduous							0.27		0.16	0.11
West Greenland	Permanent	0.09	0.00	0.00	0.52	0.01	0.05	0.01		0.01	
	Deciduous							0.04		0.04	

Appendix Table 88 Alveolar bone resorption – lingual (Row 20) – mean

Formula = mean alveolar bone resorption in mm

Sample	Tooth	Females			Males			Subadults			
		Pooled	YA	MA	Pooled	YA	MA	Pooled	Infant	Child	AD
Amaknak Island	Permanent	0.99	0.80	0.39	1.21	0.03	0.44	0.00		0.00	0.00
	Deciduous							0.08		0.08	0.00
Canada Unknown	Permanent	0.10	0.11	0.01	0.16	0.12	0.00	0.01	0.00	0.01	0.00
	Deciduous							0.00	0.00	0.00	0.00
Coats Island	Permanent	4.50	0.60	0.06	4.74	2.47	0.27	0.88	0.00	0.29	0.39
	Deciduous							1.59	0.01	1.58	0.00
East Greenland	Permanent	0.24	0.10	0.00	0.09	0.00	0.00				
	Deciduous										
Greenland Unknown	Permanent	0.27	0.08	0.02	0.09	0.06	0.03	0.04	0.00	0.02	0.02
	Deciduous							0.25	0.00	0.18	0.07
Hudson Bay	Permanent	8.43	1.50	1.07	7.17	2.15	2.11	1.19	0.00	0.40	0.79
	Deciduous							1.70	0.00	1.70	0.00
North Alaska	Permanent	0.45	0.01	0.00	0.75	0.22	0.24	0.00		0.00	0.00
	Deciduous							0.11		0.11	0.00
North Greenland	Permanent	0.62	0.13	0.03	0.67	0.26	0.03	0.00	0.00	0.00	0.00
	Deciduous							0.10	0.00	0.10	0.00
Nunavut	Permanent	3.52	2.70	0.36	6.37	1.92	1.25	0.59	0.00	0.31	0.29
	Deciduous							1.89	0.00	1.89	0.00
South Alaska	Permanent	0.41	0.20	0.07	0.42	0.20	0.17	0.19		0.00	0.19
	Deciduous							0.00		0.00	0.00
South Greenland	Permanent	0.07	0.05	0.00	0.18	0.14	0.04				
	Deciduous										
St. Lawrence	Permanent	0.90	0.80	0.14	0.95	0.31	0.17				
	Deciduous										
Vancouver Island	Permanent	0.14	0.13	0.00	0.08	0.03	0.00	0.01		0.01	0.00
	Deciduous							0.05		0.05	0.00
West Aleutians	Permanent	0.95	0.70	0.27	1.50	0.34	0.23	0.06		0.06	0.00
	Deciduous							0.29		0.21	0.07
West Greenland	Permanent	0.12	0.14	0.00	0.53	0.01	0.08	0.00		0.00	0.00
	Deciduous							0.04		0.04	0.00

Appendix Table 89 – Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) – female pooled

Female Pooled					
Sample/Score	0	1	2	3	Total
Amaknak Island	126 (96.18%)			5 (3.82%)	131
Canada Unknown	14 (93.33%)		1 (6.67%)		15
Coats Island	460 (99.14%)			4 (0.86%)	464
Hudson Bay	749 (98.42%)		3 (0.39%)	9 (1.18%)	761
North Greenland	60 (98.36%)			1 (1.64%)	61
Nunavut	380 (98.96%)			4 (1.04%)	384
West Greenland	16 (94.12%)		1 (5.88%)		17

Appendix Table 90 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - female YA

Female YA					
Sample/Score	0	1	2	3	Total
Coats Island	258 (99.23%)			2 (0.77%)	260
Hudson Bay	305 (99.03%)		1 (0.32%)	2 (0.65%)	308
Nunavut	185 (98.40%)			3 (1.60%)	188
West Greenland	6 (85.71%)		1 (14.29%)		7

Appendix Table 91 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - female MA

Female MA					
Sample/Score	0	1	2	3	Total
Amaknak Island	35 (87.50%)			5 (12.50%)	40
Canada Unknown			1 (100.00%)		1
North Greenland	1 (50.00%)			1 (50.00%)	2
Nunavut	21 (95.45%)			1 (4.55%)	22

Appendix Table 92 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - male pooled

Male Pooled					
Sample/Score	0	1	2	3	Total
Amaknak Island	108 (91.53%)	5 (4.24%)	4 (3.39%)	1 (0.85%)	118
Coats Island	409 (98.79%)			5 (1.21%)	414
Hudson Bay	600 (98.36%)	1 (0.16%)		9 (1.48%)	610
North Alaska	45 (93.75%)			3 (6.25%)	48
Nunavut	525 (98.50%)			8 (1.50%)	533
South Greenland	17 (94.44%)		1 (5.56%)		18
St. Lawrence	53 (98.15%)			1 (1.85%)	54
West Aleutians	133 (97.79%)			2 (1.47%)	136
West Greenland	44 (83.02%)	1 (1.89%)	8 (15.09%)		53

Appendix Table 93 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - male YA

Male YA					
Sample/Score	0	1	2	3	Total
Amaknak Island	6 (85.71%)			1 (14.29%)	7
Coats Island	212 (97.70%)			5 (2.30%)	217
Hudson Bay	223 (97.38%)			6 (2.62%)	229
Nunavut	171 (98.28%)			3 (1.72%)	174
West Greenland	4 (80.00%)	1 (20.00%)			5

Appendix Table 94 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - male MA

Male MA					
Sample/Score	0	1	2	3	Total
Amaknak Island	41 (89.13%)	5 (10.87%)			46
Hudson Bay	132 (97.06%)	1 (0.74%)		3 (2.21%)	136
Nunavut	86 (98.85%)			1 (1.15%)	87
South Greenland	4 (80.00%)		1 (20.00%)		5
West Aleutians	20 (90.91%)			1 (4.55%)	22
West Greenland			7 (100.00%)		7

Appendix Table 95 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - subadult pooled

Subadult Pooled					
Sample/Score	0	1	2	3	Total
Coats Island	237 (98.75%)	3 (1.25%)			240

Appendix Table 96 Traumatic Enamel Macrofracture – Total and percentage of notches across the dentition (notching) - subadult child

Subadult Child					
Sample/Score	0	1	2	3	Total
Coats Island	147 (98.00%)	3 (2.00%)			150

Appendix Table 97 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – female pooled

Female Pooled					
Sample/Score	0	1	2	3	Total
South Greenland	7 (87.50%)	1 (12.50%)			8

Appendix Table 98 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – female YA

Female YA					
Sample/Score	0	1	2	3	Total
South Greenland	7 (87.50%)	1 (12.50%)			8

Appendix Table 99 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – male pooled

Male Pooled					
Sample/Score	0	1	2	3	Total
Nunavut	544 (99.82%)	1 (0.18%)			545

Appendix Table 100 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – male YA

Male YA					
Sample/Score	0	1	2	3	Total
Nunavut	186 (99.47%)	1 (0.53%)			187

Appendix Table 101 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – subadult pooled

Subadult Pooled					
Sample/Score	0	1	2	3	Total
Hudson Bay	265 (99.62%)	1 (0.38%)			266
West Greenland	5 (83.33%)		1 (16.67%)		6

Appendix Table 102 Traumatic Enamel Macrofracture – Total and percentage of chips across the dentition (chipping) – subadult child

Subadult Child					
Sample/Score	0	1	2	3	Total
Hudson Bay	192 (99.48%)	1 (0.52%)			193
West Greenland	5 (83.33%)		1 (16.67%)		6

Appendix Table 103 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Amaknak Island

Amaknak Island	Male			Female			Total		q=ad/n	r=bc/n	v	OR=q/r not calculated not calculated not calculated not calculated 0.5 common OR = Q/R	95% CI			
	Present	Absent	Prevalence	Present	Absent	Prevalence	Number	Prevalence								
	a	b		c	d		n									
Adolescent	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0					
YA	1	1	50.00%	0	3	0.00%	5	20.00%	0.6	0	0.24					
Early middle adult	1	1	50.00%	0	1	0.00%	3	33.30%	0.33	0	0.222222					
Late middle adult	0	3	0.00%	0	3	0.00%	6	0.00%	0	0	0					
MA	1	6	14.30%	2	6	25.00%	15	20.00%	0.4	0.8	0.64					
							N		Q	R	V	SE	EF			
Overall	3	12	20.00%	2	15	11.80%	32	15.60%	1.33	0.8	1.1	1.02	7.33	1.67	0.23	12.22

Appendix Table 104 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Canada Unknown - adults

Canada Unknown	Male			Female			Total			q=ad/ n	r=bc/ n	v	OR=q/r	95% CI	
	Presen t	Absen t	Prevalenc e	Presen t	Absen t	Prevalenc e	Numbe r	Prevalenc e							
	a	b		c	d		n								
Adolescent	0	0	n.d.	0	2	0.00%	2	0.00%	0	0	0	not calculated			
YA	3	2	60.00%	1	2	33.30%	8	50.00%	0.75	0.25	0.535714	3			
Early middle adult	0	2	0.00%	0	0	n.d.	2	0.00%	0	0	0	not calculated			
Late middle adult	0	2	0.00%	1	3	25.00%	6	16.70%	0	0.33	0.222222	not calculated			
MA	0	0	n.d.	1	2	33.30%	3	33.30%	0	0	0	not calculated			
							N		Q	R	V	SE	EF	common OR = Q/R	
Overall	3	6	33.30%	3	9	25.00%	21	28.60%	0.75	0.58	0.76	1.32	13.19	1.29	0.11 16.96

Appendix Table 105 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Coats Island - adults

Coats Island	Male			Female			Total									
	Presen t	Absen t	Prevalenc e	Presen t	Absen t	Prevalenc e	Numbe r	Prevalenc e								
	a	b		c	d		n		q=ad/ n	r=bc/ n	v			OR=q/r	95% CI	
Adolescent	0	4	0.00%	0	13	0.00%	17	0.00%	0	0	0			not calculated		
YA	3	25	10.70%	1	40	2.40%	69	5.80%	1.74	0.36	0.92195 2			4.8		
Early middle adult	0	14	0.00%	0	10	0.00%	24	0.00%	0	0	0			not calculated		
Late middle adult	0	4	0.00%	1	3	25.00%	8	12.50%	0	0.5	0.25			not calculated		
MA	0	3	0.00%	0	1	0.00%	4	0.00%	0	0	0			not calculated		
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	3	50	5.70%	2	67	2.90%	122	4.10%	1.74	0.86	1.17	0.8 8	5.6 6	2.02	0.3 6	11.4 1

Appendix Table 106 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Coats Island - subadults

Coats Island Subadult	Subadults			total									
	present	absent	prevalence	number	prevalence								
	a	b		n	q=ad/n	r=bc/n	v			OR=q/r	95% CI		
Infant	0	27	0.00%	27	0.00%	0.00%	729	0			not calculated		
Child	1	27	3.60%	28	3.60%	3.60%	756	0.035714			0		
Adolescent	0	6	0.00%	6	0.00%	0.00%	36	0			not calculated		
				N		Q	R	V	SE	EF	common OR = Q/R		
Overall	1	60	1.60%	61	1.60%	3.60%	1521	0.04	142.66	2.70E+121	0	0	6.40E+116

Appendix Table 107 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – East Greenland - adults

East Greenland	Male			Female			Total									
	Present	Absent	Prevalence	Present	Absent	Prevalence	Number	Prevalence								
	a	b		c	d		n		q=ad/n	r=bc/n	v		OR=q/r	95% CI		
Adolescent	0	0	n.d.	0	1	0.00%	1	0.00%	0	0	n.d.		not calculated			
YA	0	0	n.d.	0	4	0.00%	4	0.00%	0	0	0		not calculated			
Early middle adult	0	1	0.00%	0	1	0.00%	2	0.00%	0	0	0		not calculated			
Late middle adult	0	1	0.00%	0	1	0.00%	2	0.00%	0	0	0		not calculated			
MA	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.		n.d.			
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	0	2	0.00%	0	7	0.00%	9	0.00%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

Appendix Table 108 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Greenland Unknown - adults

Greenland Unknown	Male			Female			Total									
	Presen t	Absen t	Prevalenc e	Presen t	Absen t	Prevalenc e	Numbe r	Prevalenc e								
									q=ad/ n	r=bc/ n	v					
	a	b		c	d		n					OR=q/r	95% CI			
Adolescent	0	0	n.d.	0	1	0.00%	1	0.00%	0	0	n.d.	not calculated				
YA	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0	not calculated				
Early middle adult	0	1	0.00%	0	5	0.00%	6	0.00%	0	0	0	not calculated				
Late middle adult	0	1	0.00%	0	1	0.00%	2	0.00%	0	0	0	not calculated				
MA	0	2	0.00%	0	1	0.00%	3	0.00%	0	0	0	not calculated				
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	0	5	0.00%	0	10	0.00%	15	0.00%	0	0	n.d	n.d	n.d	not calculated		
														n.d	n.d	

Appendix Table 109 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Hudson Bay - adults

Hudson Bay	Male			Female			Total		q=ad/ n	r=bc/ n	v	OR=q/r	95% CI			
	Presen t	Absen t	Prevalenc e	Presen t	Absen t	Prevalenc e	Numbe r	Prevalenc e								
	a	b		c	d		n									
Adolescent	0	6	0.00%	0	21	0.00%	27	0.00%	0	0	0	not calculated				
YA	3	27	10.00%	1	43	2.30%	74	5.40%	1.74	0.36	0.92458 2	4.78				
Early middle adult	1	16	5.90%	3	15	16.70%	35	11.40%	0.43	1.37	0.91102	0.31				
Late middle adult	1	5	16.70%	1	16	5.90%	23	8.70%	0.7	0.22	0.36810 4	3.2				
MA	3	19	13.60%	2	17	10.50%	41	12.20%	1.24	0.93	1.11897 7	1.34				
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	8	73	9.90%	7	112	5.90%	200	7.50%	4.11	2.88	3.32	0.5 3	2.8 2	1.43	0.5 1	4.0 3

Appendix Table 110 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Hudson Bay - subadults

Hudson Bay Subadult	Subadults			total									
	present	absent	prevalence	number	prevalence								
	a	b		n	q=ad/n	r=bc/n	v			OR=q/r	95% CI		
Infant	0	6	0.00%	6	0.00%	0	36	1080			not calculated		
Child	1	31	3.10%	32	3.10%	0.03125	992	1015808			3.15E-05		
Adolescent	0	6	0.00%	6	0.00%	0	36	1080			not calculated		
				N		Q	R	V	SE	EF	common OR = Q/R		
Overall	1	43	2.30%	44	2.30%	0.03125	1064	1017968	174.9731	3.12	2.94E-05	0	0.03

Appendix Table 111 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – North Alaska - adults

North Alaska	Male			Female			Total										
	Present	Absent	Prevalence	Present	Absent	Prevalence	Number	Prevalence									
	a	b		c	d		n		q=ad/n	r=bc/n	v				OR=q/r	95% CI	
Adolescent	0	0	n.d.	0	2	0.00%	2	0.00%	0	0	0				not calculated		
YA	0	2	0.00%	0	2	0.00%	4	0.00%	0	0	0				not calculated		
Early middle adult	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0				not calculated		
Late middle adult	1	2	33.30%	0	1	0.00%	4	25.00%	0.25	0	0.1875				not calculated		
MA	1	2	33.30%	0	0	n.d.	3	33.30%	0	0	0				not calculated		
							N		Q	R	V	SE	EF	common OR = Q/R			
Overall	2	7	22.20%	0	7	0.00%	16	12.50%	0.25	0	0.19	n.d.	n.d.	not calculated	n.d.	n.d.	

Appendix Table 112 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – North Greenland - adults

North Greenland	Male			Female			Total										
	Present	Absent	Prevalence	Present	Absent	Prevalence	Number	Prevalence									
	a	b		c	d		n		q=ad/n	r=bc/n	v				OR=q/r	95% CI	
Adolescent	0	0	n.d.	0	2	0.00%	2	0.00%	0	0	0				not calculated		
YA	0	3	0.00%	0	3	0.00%	6	0.00%	0	0	0				not calculated		
Early middle adult	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0				not calculated		
Late middle adult	0	6	0.00%	0	3	0.00%	9	0.00%	0	0	0				not calculated		
MA	0	1	0.00%	1	0	100.00%	2	50.00%	0	0.5	0.25				not calculated		
							N		Q	R	V	SE	EF	common OR = Q/R			
Overall	0	11	0.00%	1	10	9.10%	22	4.50%	0	0.5	0.25	n.d.	n.d.	not calculated	n.d.	n.d.	

Appendix Table 113 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Nunavut - adults

Nunavut	Male			Female			Total		q=ad/ n	r=bc/ n	v	OR=q/r	95% CI			
	Presen t	Absen t	Prevalenc e	Presen t	Absen t	Prevalenc e	Numbe r	Prevalenc e								
	a	b		c	d		n									
Adolescent	1	3	25.00%	0	12	0.00%	16	6.30%	0.75	0	0.1875	not calculated				
YA	2	23	8.00%	2	23	8.00%	50	8.00%	0.92	0.92	0.93877 6	1				
Early middle adult	1	12	7.70%	0	9	0.00%	22	4.50%	0.41	0	0.24173 6	not calculated				
Late middle adult	3	10	23.10%	0	7	0.00%	20	15.00%	1.05	0	0.61065 8	not calculated				
MA	1	13	7.10%	1	6	14.30%	21	9.50%	0.29	0.62	0.42222 2	0.46				
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	8	61	11.60%	3	57	5.00%	129	8.50%	3.41	1.54	2.4	0.6 8	3.7 6	2.22	0.5 9	8.3 5

Appendix Table 114 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – subadults

Nunavut Subadult	Subadults			total			q=ad/n	r=bc/n	v	OR=q/r	95% CI	
	present a	absent b	prevalence c	number n	prevalence e	prevalence e						
Infant	0	2	0.00%	2	0.00%	0	4	8		not calculated		
Child	2	20	9.10%	22	9.10%	0.090909	440	223608		0.000207		
Adolescent	0	5	0.00%	5	0.00%	0	25	500		not calculated		
				N		Q	R	V	SE	EF	common OR = Q/R	
Overall	2	27	6.90%	29	6.90%	0.090909	469	224116	72.50139	5.17E+61	0.000194	3.75E-66 1.00E+58

Appendix Table 115 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – South Alaska- adults

South Alaska	Male			Female			Total							
	Presen	Absen	Prevalenc	Presen	Absen	Prevalenc	Numbe	Prevalenc						
	t	t	e	t	t	e	r	e						
	a	b		c	d		n		q=ad/ n	r=bc/ n	v			OR=q/r
Adolescent	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.			n.d.
YA	0	2	0.00%	0	3	0.00%	5	0.00%	0	0	0			not calculated
Early middle adult	0	1	0.00%	0	0	n.d.	1	0.00%	0	0	n.d.			not calculated
Late middle adult	0	1	0.00%	0	3	0.00%	4	0.00%	0	0	0			not calculated
MA	1	2	33.30%	0	1	0.00%	4	25.00%	0.25	0	0.187 5			not calculated
							N		Q	R	V	SE	EF	common OR = Q/R
Overall	1	6	14.30%	0	7	0.00%	14	7.10%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
												.	.	n.d.
														n.d.

Appendix Table 116 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – South Greenland- adults

South Greenland	Male			Female			Total							
	Presen	Absen	Prevalenc	Presen	Absen	Prevalenc	Numbe	Prevalenc						
	t	t	e	t	t	e	r	e						
	a	b		c	d		n		q=ad/ n	r=bc/ n	v			OR=q/r
Adolescent	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.			n.d.
YA	0	3	0.00%	1	3	25.00%	7	14.30%	0	0.43	0.24489 8			not calculated
Early middle adult	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.			n.d.
Late middle adult	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.			n.d.
MA	1	0	100.00%	0	1	0.00%	2	50.00%	0.5	0	0.25			not calculated
							N		Q	R	V	SE	EF	common OR = Q/R
Overall	1	3	25.00%	1	4	20.00%	9	22.20%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
												.	.	n.d.
														n.d.

Appendix Table 117 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – St. Lawrence Island - adults

St. Lawrence	Male			Female			Total									
	Presen	Absen	Prevalenc	Presen	Absen	Prevalenc	Numbe	Prevalenc								
	t	t	e	t	t	e	r	e								
	a	b		c	d		n		q=ad/ n	r=bc/ n	v		OR=q/r	95% CI		
Adolescent	0	0	n.d.	0	1	0.00%	1	0.00%	0	0	n.d.		not calculated			
YA	0	4	0.00%	0	6	0.00%	10	0.00%	0	0	0		not calculated			
Early middle adult	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0		not calculated			
Late middle adult	1	3	25.00%	0	3	0.00%	7	14.30%	0.43	0	0.24489 8		not calculated			
MA	0	5	0.00%	0	4	0.00%	9	0.00%	0	0	0		not calculated			
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	1	13	7.10%	0	16	0.00%	30	3.30%	0.43	0	n.d.	n.d	n.d	not calculated	n.d	n.d

Appendix Table 118 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – Vancouver Island - adults

Vancouver Island	Male			Female			Total								
	Presen	Absen	Prevalenc	Presen	Absen	Prevalenc	Numbe	Prevalenc							
	t	t	e	t	t	e	r	e	q=ad/ n	r=bc/ n	v				
	a	b		c	d		n					OR=q/r	95% CI		
Adolescent	1	0	100.00%	0	0	n.d.	1	100.00%	0	0	n.d.	not calculated			
YA	0	2	0.00%	0	4	0.00%	6	0.00%	0	0	0	not calculated			
Early middle adult	0	2	0.00%	0	0	n.d.	2	0.00%	0	0	0	not calculated			
Late middle adult	0	3	0.00%	0	1	0.00%	4	0.00%	0	0	0	not calculated			
MA	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.	n.d.			
							N		Q	R	V	SE	EF	common OR = Q/R	
Overall	1	7	12.50%	0	5	0.00%	13	7.70%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

Appendix Table 119 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – West Aleutians - adults

West Aleutians	Male			Female			Total									
	Present	Absent	Prevalence	Present	Absent	Prevalence	Number	Prevalence								
	a	b		c	d		n		q=ad/n	r=bc/n	v	OR=q/r		95% CI		
Adolescent	0	1	0.00%	0	4	0.00%	5	0.00%	0	0	0	not calculated				
YA	0	2	0.00%	0	3	0.00%	5	0.00%	0	0	0	not calculated				
Early middle adult	0	2	0.00%	0	0	n.d.	2	0.00%	0	0	0	not calculated				
Late middle adult	1	5	16.70%	0	6	0.00%	12	8.30%	0.5	0	0.25	not calculated				
MA	1	5	16.70%	0	5	0.00%	11	9.10%	0.45	0	0.247934	not calculated				
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	2	15	11.80%	0	18	0.00%	35	5.70%	0.95	0	0.5	n.d.	n.d.	not calculated	n.d.	n.d.

Appendix Table 120 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – West Greenland - adults

West Greenland	Male			Female			Total									
	Presen t	Absen t	Prevalenc e	Presen t	Absen t	Prevalenc e	Numbe r	Prevalenc e								
	a	b		c	d		n		q=ad/ n	r=bc/ n	v			OR=q/r	95% CI	
Adolescent	0	1	0.00%	0	0	n.d.	1	0.00%	0	0	n.d.			not calculated		
YA	1	0	100.00%	1	1	50.00%	3	66.70%	0.33	0	0.22222 2			not calculated		
Early middle adult	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0			not calculated		
Late middle adult	2	1	66.70%	0	1	0.00%	4	50.00%	0.5	0	0.25			not calculated		
MA	1	0	100.00%	0	0	n.d.	1	100.00%	0	0	n.d.			not calculated		
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	4	3	57.10%	1	4	20.00%	12	41.70%	0.83	0	n.d.	n.d	n.d	not calculated	n.d	n.d

Appendix Table 121 Traumatic enamel microfracture (combined notching and chipping) – Prevalence by age/sex – West Greenland - subadults

West Greenland Subadults	Subadults			total										
	present	absent	prevalence	number	prevalence									
	a	b		n	q=ad/n	r=bc/n	v					OR=q/r	95% CI	
Infant	0	0	n.d.	0	n.d.	n.d.	0	0					n.d.	
Child	1	0	100.00%	1	100.00%	1	0	0					not calculated	
Adolescent	0	0	n.d.	0	n.d.	n.d.	0	0					n.d.	
				N		Q	R	V	SE	EF	common OR = Q/R			
Overall	1	0	100.00%	1	100.00%	n.d.	0	0	n.d.	n.d.		n.d.	n.d.	n.d.

Appendix Table 122 Traumatic enamel macrofracture (notching) - females true prevalence rates

All data refers to permanent teeth, unless stated

Per. = permanent dentition Dec. = deciduous dentition

Females													
Score		Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	0	34/47 (72.34%)	35/40 (87.50%)	32/32 (100.00%)	25/23 (108.70%)	14/18 (77.78%)	12/12 (100.00%)	9/9 (100.00%)	6/6 (100.00%)	5/10 (50.00%)	11/15 (73.33%)	10/11 (90.90%)	5/7 (71.42%)
	1	0/47 (0.00%)	0/40 (0.00%)	0/32 (0.00%)	0/23 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/10 (0.00%)	0/15 (0.00%)	0/11 (0.00%)	0/7 (0.00%)
	2	0/47 (0.00%)	0/40 (0.00%)	0/32 (0.00%)	0/23 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/10 (0.00%)	0/15 (0.00%)	0/11 (0.00%)	0/7 (0.00%)
	3	0/47 (0.00%)	2/40 (5.00%)	1/32 (3.13%)	2/23 (8.70%)	0/18 (0.00%)	0/12 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/10 (0.00%)	2/15 (13.33%)	1/11 (9.09%)	2/7 (28.57%)
Canada Unknown	0	4/5 (80.00%)	5/6 (83.33%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	1	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	2	0/5 (0.00%)	1/6 (16.67%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	3	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Pre. 0	140/198 (70.71%)	149/152 (98.03%)	96/101 (96.97%)	73/73 (100.00%)	72/107 (67.29%)	87/88 (98.86%)	50/54 (96.15%)	47/41 (114.63%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)
	Dec. 0	0/198 (0.00%)	0/152 (0.00%)	2/101 (1.98%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	2/54 (3.70%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Pre. 1	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Dec. 1	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Pre. 2	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Dec. 2	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Pre. 3	0/198 (0.00%)	2/152 (1.32%)	2/101 (1.98%)	0/73 (0.00%)	0/107 (0.00%)	1/88 (1.14%)	1/54 (1.92%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)

	Dec. 3	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
East Greenland	0	9/11 (81.82%)	19/19 (100.00%)	14/14 (100.00%)	9/12 (75.00%)	0/2 (0.00%)	11/11 (100.00%)	7/7 (100.00%)	4/4 (100.00%)				
	1	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
	2	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
	3	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
Greenland Unknown	0	13/19 (68.42%)	18/18 (100.00%)	12/12 (100.00%)	6/6 (100.00%)	2/4 (50.00%)	3/3 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	1/3 (33.33%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	1	0/19 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	2	0/19 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	3	0/19 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Hudson Bay	0	160/227 (70.48%)	245/250 (98.00%)	197/207 (95.17%)	137/142 (96.47%)	70/99 (70.71%)	94/97 (96.91%)	75/82 (91.46%)	65/66 (98.48%)	13/20 (65.00%)	23/23 (100.00%)	16/17 (94.12%)	13/12 (108.33%)
	1	0/227 (0.00%)	0/250 (0.00%)	0/207 (0.00%)	0/142 (0.00%)	0/99 (0.00%)	0/97 (0.00%)	0/82 (0.00%)	0/66 (0.00%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
	2	0/227 (0.00%)	1/250 (0.40%)	1/207 (0.48%)	1/142 (0.70%)	0/99 (0.00%)	1/97 (1.03%)	0/82 (0.00%)	0/66 (0.00%)	0/20 (0.00%)	0/23 (0.00%)	1/17 (5.88%)	1/12 (8.33%)
	3	0/227 (0.00%)	2/250 (0.80%)	3/207 (1.45%)	4/142 (2.82%)	0/99 (0.00%)	0/97 (0.00%)	1/82 (1.22%)	1/66 (1.52%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
North Alaska	0	9/13 (69.23%)	18/18 (100.00%)	14/14 (100.00%)	7/11 (63.64%)	1/2 (50.00%)	8/8 (100.00%)	6/6 (100.00%)	3/3 (100.00%)				
	1	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
	2	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
	3	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
North Greenland	0	1/3 (33.33%)	26/26 (100.00%)	19/20 (95.00%)	14/14 (100.00%)	0/1 (0.00%)	10/10 (100.00%)	6/6 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	0/1 (0.00%)	0/0 (0.00%)
	1	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)
	2	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)
	3	0/3 (0.00%)	0/26 (0.00%)	1/20 (5.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	1/1 (100.00%)	0/0 (0.00%)

Nunavut	0	105/147 (71.43%)	119/123 (96.75%)	91/94 (96.81%)	65/71 (91.55%)	48/66 (72.73%)	51/54 (94.44%)	47/50 (94.00%)	33/33 (100.00%)	7/14 (50.00%)	8/8 (100.00%)	5/5 (100.00%)	1/1 (100.00%)
	1	0/147 (0.00%)	0/123 (0.00%)	0/94 (0.00%)	0/71 (0.00%)	0/66 (0.00%)	0/54 (0.00%)	0/50 (0.00%)	0/33 (0.00%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
	2	0/147 (0.00%)	0/123 (0.00%)	0/94 (0.00%)	0/71 (0.00%)	0/66 (0.00%)	0/54 (0.00%)	0/50 (0.00%)	0/33 (0.00%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
	3	0/147 (0.00%)	1/123 (0.81%)	2/94 (2.13%)	1/71 (1.41%)	0/66 (0.00%)	1/54 (1.85%)	2/50 (4.00%)	0/33 (0.00%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
South Alaska	0	21/31 (67.74%)	16/16 (100.00%)	18/18 (100.00%)	11/11 (100.00%)	10/14 (71.43%)	9/9 (100.00%)	9/9 (100.00%)	4/5 (80.00%)	7/9 (77.78%)	3/3 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	1	0/31 (0.00%)	0/16 (0.00%)	0/18 (0.00%)	0/11 (0.00%)	0/14 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
	2	0/31 (0.00%)	0/16 (0.00%)	0/18 (0.00%)	0/11 (0.00%)	0/14 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
	3	0/31 (0.00%)	0/16 (0.00%)	0/18 (0.00%)	0/11 (0.00%)	0/14 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
South Greenland	0	0/4 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	1	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
	2	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
	3	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
St. Lawrence	0	12/27 (44.44%)	24/25 (96.00%)	17/17 (100.00%)	11/7 (157.14%)	8/15 (53.33%)	10/10 (100.00%)	9/9 (100.00%)	5/5 (100.00%)	0/2 (0.00%)	4/4 (100.00%)	3/3 (100.00%)	0/0 (0.00%)
	1	0/27 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/15 (0.00%)	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
	2	0/27 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/15 (0.00%)	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
	3	0/27 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/15 (0.00%)	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
Vancouver Island	0	5/7 (71.43%)	10/10 (100.00%)	8/8 (100.00%)	2/2 (100.00%)	5/7 (71.43%)	9/9 (100.00%)	8/8 (100.00%)	2/2 (100.00%)				
	1	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
	2	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
	3	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
West	0	21/37 (56.76%)	31/31 (100.00%)	26/27 (96.30%)	17/23 (73.91%)	2/6 (33.33%)	6/6 (100.00%)	4/4 (100.00%)	3/3 (100.00%)	7/13 (53.85%)	7/7 (100.00%)	5/5 (100.00%)	3/5 (60.00%)

	1	0/37 (0.00%)	0/31 (0.00%)	0/27 (0.00%)	0/23 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/5 (0.00%)
	2	0/37 (0.00%)	0/31 (0.00%)	0/27 (0.00%)	0/23 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/5 (0.00%)
	3	0/37 (0.00%)	0/31 (0.00%)	0/27 (0.00%)	0/23 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/5 (0.00%)
West Greenland	0	0/1 (0.00%)	6/8 (75.00%)	6/6 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	2/2 (100.00%)	1/1 (100.00%)				
	1	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				
	2	0/1 (0.00%)	1/8 (12.50%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	1/4 (25.00%)	0/2 (0.00%)	0/1 (0.00%)				
	3	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				

Appendix Table 123 Traumatic enamel macrofracture (notching) - males true prevalence rates

All data refers to permanent teeth, unless stated

Per. = permanent dentition Dec. = deciduous dentition

Males													
Score		Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	0	38/53 (71.70%)	25/31 (80.65%)	22/24 (91.67%)	20/21 (95.24%)	1/1 (100.00%)	1/2 (50.00%)	2/2 (100.00%)	2/2 (100.00%)	14/20 (70.00%)	10/13 (76.92%)	10/9 (111.11%)	7/8 (87.50%)
	1	1/53 (1.89%)	2/31 (6.45%)	1/24 (4.17%)	1/21 (4.76%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	1/20 (5.00%)	2/13 (15.38%)	1/9 (11.11%)	1/8 (12.50%)
	2	1/53 (1.89%)	2/31 (6.45%)	1/24 (4.17%)	0/21 (0.00%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	0/13 (0.00%)	0/9 (0.00%)	0/8 (0.00%)
	3	0/53 (0.00%)	1/31 (3.23%)	0/24 (0.00%)	0/21 (0.00%)	0/1 (0.00%)	1/2 (50.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	0/13 (0.00%)	0/9 (0.00%)	0/8 (0.00%)
Canada Unknown	0	3/5 (60.00%)	9/10 (90.00%)	6/6 (100.00%)	4/4 (100.00%)	3/5 (60.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	1	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
	2	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
	3	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
Coats Island	Pre. 0	163/224 (72.77%)	109/114 (95.61%)	74/74 (100.00%)	62/54 (114.81%)	79/109 (72.48%)	55/58 (94.83%)	39/39 (100.00%)	36/36 (100.00%)	5/6 (83.33%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)
	Dec. 0	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/1 (0.00%)
	Pre. 1	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
	Dec. 1	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/1 (0.00%)
	Pre. 2	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
	Dec. 2	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Pre. 3	0/224 (0.00%)	4/114 (3.51%)	0/74 (0.00%)	1/54 (1.85%)	0/109 (0.00%)	4/58 (6.90%)	0/39 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/3 (0.00%)	0/0 (0.00%)

	Dec. 3	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
East Greenland	0	2/3 (66.67%)	6/6 (100.00%)	5/5 (100.00%)	0/0 (0.00%)								
	1	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
	2	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
	3	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
Greenland Unknown	0	6/10 (60.00%)	9/9 (100.00%)	5/5 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	6/6 (100.00%)	2/2 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	1	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
	2	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
	3	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
Hudson Bay	0	176/234 (75.21%)	186/190 (97.89%)	135/140 (96.43%)	95/95 (100.00%)	59/79 (74.68%)	64/66 (96.97%)	53/55 (96.36%)	44/45 (97.77%)	44/61 (72.13%)	45/45 (100.00%)	27/30 (90.00%)	13/15 (86.66%)
	1	0/234 (0.00%)	0/190 (0.00%)	0/140 (0.00%)	1/95 (1.05%)	0/79 (0.00%)	0/66 (0.00%)	0/55 (0.00%)	0/45 (0.00%)	0/61 (0.00%)	0/45 (0.00%)	0/30 (0.00%)	1/15 (6.67%)
	2	0/234 (0.00%)	0/190 (0.00%)	0/140 (0.00%)	0/95 (0.00%)	0/79 (0.00%)	0/66 (0.00%)	0/55 (0.00%)	0/45 (0.00%)	0/61 (0.00%)	0/45 (0.00%)	0/30 (0.00%)	0/15 (0.00%)
	3	1/234 (0.43%)	2/190 (1.05%)	4/140 (2.86%)	2/95 (2.11%)	1/79 (1.27%)	2/66 (3.03%)	2/55 (3.64%)	1/45 (2.22%)	0/61 (0.00%)	0/45 (0.00%)	2/30 (6.67%)	1/15 (6.67%)
North Alaska	0	16/16 (100.00%)	18/18 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/4 (100.00%)	4/4 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	5/5 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	1	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
	2	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
	3	0/16 (0.00%)	1/18 (5.56%)	1/7 (14.29%)	1/3 (33.33%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
North Greenland	0	11/19 (57.89%)	24/24 (100.00%)	17/17 (100.00%)	10/10 (100.00%)	6/12 (50.00%)	8/8 (100.00%)	7/7 (100.00%)	6/6 (100.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	1	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	2	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	3	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Nuna	0	188/259 (72.59%)	154/159 (96.86%)	114/118 (96.61%)	69/70 (98.57%)	47/72 (65.28%)	54/58 (93.10%)	38/43 (88.37%)	32/33 (96.97%)	33/43 (76.74%)	27/28 (96.43%)	18/19 (94.74%)	7/7 (100.00%)

	1	0/259 (0.00%)	0/159 (0.00%)	0/118 (0.00%)	0/70 (0.00%)	0/72 (0.00%)	0/58 (0.00%)	0/43 (0.00%)	0/33 (0.00%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	0/7 (0.00%)
	2	0/259 (0.00%)	0/159 (0.00%)	0/118 (0.00%)	0/70 (0.00%)	0/72 (0.00%)	0/58 (0.00%)	0/43 (0.00%)	0/33 (0.00%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	0/7 (0.00%)
	3	0/259 (0.00%)	3/159 (1.89%)	2/118 (1.69%)	3/70 (4.29%)	0/72 (0.00%)	0/58 (0.00%)	2/43 (4.65%)	1/33 (3.03%)	0/43 (0.00%)	1/28 (3.57%)	0/19 (0.00%)	0/7 (0.00%)
South Alaska	0	13/25 (52.00%)	18/18 (100.00%)	13/13 (100.00%)	7/7 (100.00%)	6/10 (60.00%)	8/8 (100.00%)	6/6 (100.00%)	5/5 (100.00%)	4/8 (50.00%)	6/6 (100.00%)	4/4 (100.00%)	2/2 (100.00%)
	1	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
	2	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
	3	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
South Greenland	0	4/6 (66.67%)	6/8 (75.00%)	4/4 (100.00%)	3/3 (100.00%)	4/6 (66.67%)	5/6 (83.33%)	3/3 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	1/2 (50.00%)	1/1 (100.00%)	2/2 (100.00%)
	1	0/6 (0.00%)	0/8 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/2 (0.00%)
	2	0/6 (0.00%)	1/8 (12.50%)	0/4 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/1 (0.00%)	0/2 (0.00%)
	3	0/6 (0.00%)	0/8 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/2 (0.00%)
St. Lawrence	0	10/28 (35.71%)	19/22 (86.36%)	15/15 (100.00%)	6/6 (100.00%)	2/7 (28.57%)	8/8 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/9 (44.44%)	5/6 (83.33%)	2/2 (100.00%)	1/1 (100.00%)
	1	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	2	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	3	0/28 (0.00%)	1/22 (4.55%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
Vancouver Island	0	2/5 (40.00%)	20/20 (100.00%)	11/11 (100.00%)	8/9 (88.89%)	0/1 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	4/4 (100.00%)				
	1	0/5 (0.00%)	0/20 (0.00%)	0/11 (0.00%)	0/9 (0.00%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
	2	0/5 (0.00%)	0/20 (0.00%)	0/11 (0.00%)	0/9 (0.00%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
	3	0/5 (0.00%)	0/20 (0.00%)	0/11 (0.00%)	0/9 (0.00%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
West	0	34/53 (64.15%)	37/38 (97.37%)	34/36 (94.44%)	28/24 (116.67%)	10/13 (76.92%)	6/6 (100.00%)	7/7 (100.00%)	4/4 (100.00%)	2/4 (50.00%)	8/9 (88.89%)	6/8 (75.00%)	3/3 (100.00%)
	1	0/53 (0.00%)	0/38 (0.00%)	0/36 (0.00%)	0/24 (0.00%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/3 (0.00%)

	2	0/53 (0.00%)	0/38 (0.00%)	1/36 (2.78%)	0/24 (0.00%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/9 (0.00%)	1/8 (12.50%)	0/3 (0.00%)
	3	1/53 (1.89%)	1/38 (2.63%)	0/36 (0.00%)	0/24 (0.00%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	1/9 (11.11%)	0/8 (0.00%)	0/3 (0.00%)
West Greenland	0	8/20 (40.00%)	15/17 (88.24%)	13/17 (76.47%)	7/7 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	1/2 (50.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	1	0/20 (0.00%)	0/17 (0.00%)	1/17 (5.88%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	2	2/20 (10.00%)	2/17 (11.76%)	3/17 (17.65%)	1/7 (14.29%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	1/1 (100.00%)
	3	0/20 (0.00%)	0/17 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/1 (0.00%)

Appendix Table 124 Traumatic enamel macrofracture (notching) - subadults true prevalence rates

Per. = permanent dentition Dec. = deciduous dentition

Subadults																	
Score		Pooled				Infant				Child				AD			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Per . 0	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 0	2/4 (50.00%)	7/8 (87.50%)	6/6 (100.00%)	0/0 (0.00%)					0/2 (0.00%)	7/7 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 1	0/4 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 2	0/4 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 3	0/4 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Canada Unknown	Per . 0	3/3 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	0/0 (0.00%)	1/ (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 0	0/1 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

	De c. 1	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 2	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 3	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Per . 0	32/73 (43.84%)	38/57 (66.67%)	10/43 (23.26%)	5/12 (41.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/46 (28.26%)	24/43 (55.81%)	0/32 (0.00%)	0/1 (0.00%)	12/16 (75.00%)	10/10 (100.00%)	6/7 (85.71%)	3/10 (30.00%)
	De c. 0	36/131 (27.48%)	62/123 (50.41%)	54/120 (45.00%)	0/0 (0.00%)	27/95 (28.42%)	10/56 (17.86%)	4/49 (8.16%)	0/0 (0.00%)	8/31 (25.81%)	52/65 (80.00%)	50/67 (74.63%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	De c. 1	0/131 (0.00%)	0/123 (0.00%)	3/120 (2.50%)	0/0 (0.00%)	0/95 (0.00%)	0/56 (0.00%)	0/49 (0.00%)	0/0 (0.00%)	0/31 (0.00%)	0/65 (0.00%)	3/67 (4.48%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	De c. 2	0/131 (0.00%)	0/123 (0.00%)	0/120 (0.00%)	0/0 (0.00%)	0/95 (0.00%)	0/56 (0.00%)	0/49 (0.00%)	0/0 (0.00%)	0/31 (0.00%)	0/65 (0.00%)	0/67 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	De c. 3	0/131 (0.00%)	0/123 (0.00%)	0/120 (0.00%)	0/0 (0.00%)	0/95 (0.00%)	0/56 (0.00%)	0/49 (0.00%)	0/0 (0.00%)	0/31 (0.00%)	0/65 (0.00%)	0/67 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Greenla	Per . 0	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

Hudson Bay	De c. 0	0/0 (0.00%)	8/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	4/0 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 1	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 2	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 3	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 0	34/81 (41.98%)	62/82 (75.61%)	15/49 (30.61%)	2/13 (15.38%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/57 (22.81%)	46/66 (69.70%)	4/37 (10.81%)	0/3 (0.00%)	21/24 (87.50%)	16/16 (100.00%)	11/12 (91.67%)	2/10 (20.00%)
	De c. 0	23/66 (34.85%)	64/82 (78.05%)	65/73 (89.04%)	0/0 (0.00%)	7/39 (17.95%)	8/21 (38.10%)	8/15 (53.33%)	0/0 (0.00%)	16/27 (59.26%)	56/61 (91.80%)	57/58 (98.28%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	De c. 1	0/66 (0.00%)	0/82 (0.00%)	0/73 (0.00%)	0/0 (0.00%)	0/39 (0.00%)	0/21 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/27 (0.00%)	0/61 (0.00%)	0/58 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	De c. 2	0/66 (0.00%)	0/82 (0.00%)	0/73 (0.00%)	0/0 (0.00%)	0/39 (0.00%)	0/21 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/27 (0.00%)	0/61 (0.00%)	0/58 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)

	De c. 3	0/66 (0.00%)	0/82 (0.00%)	0/73 (0.00%)	0/0 (0.00%)	0/39 (0.00%)	0/21 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/27 (0.00%)	0/61 (0.00%)	0/58 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
North Alaska	Per . 0	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	De c. 0	0/1 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	0/0 (0.00%)					0/1 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	0/0 (0.00%)				
	Per . 1	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	De c. 1	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)					0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)				
	Per . 2	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	De c. 2	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)					0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)				
	Per . 3	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	De c. 3	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)					0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)				
North Greenland	Per . 0	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	De c. 0	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)					0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				
	Per . 1	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	De c. 1	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Per . 2	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				

	De c. 2	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Per . 3	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	De c. 3	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
Nunavut	Per . 0	15/70 (35.71%)	36/58 (65.45%)	12/41 (21.05%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/66 (34.21%)	30/52 (57.69%)	4/33 (7.55%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 0	22/42 (19.64%)	49/55 (43.36%)	46/57 (46.94%)	0/0 (0.00%)	2/4 (50.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	20/38 (19.23%)	49/52 (47.12%)	46/53 (53.49%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 1	0/42 (0.00%)	0/55 (0.00%)	0/57 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/38 (0.00%)	0/52 (0.00%)	0/53 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 2	0/42 (0.00%)	0/55 (0.00%)	0/57 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/38 (0.00%)	0/52 (0.00%)	0/53 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 3	0/42 (0.00%)	0/55 (0.00%)	0/57 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/38 (0.00%)	0/52 (0.00%)	0/53 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
South Alaska	Per . 0	7/9 (77.78%)	4/4 (100.00%)	2/2 (100.00%)	1/2 (50.00%)									7/9 (77.78%)	4/4 (100.00%)	2/2 (100.00%)	1/2 (50.00%)
	De c. 0	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)									0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)									0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 1	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)									0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

	Per . 2	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)						0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 2	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)						0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)						0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 3	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)						0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Vancouver Island	Per . 0	1/2 (50.00%)	4/8 (50.00%)	0/2 (0.00%)	0/0 (0.00%)		1/2 (50.00%)	2/6 (33.33%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 0	0/0 (0.00%)	5/5 (100.00%)	5/5 (100.00%)	0/0 (0.00%)		0/0 (0.00%)	5/5 (100.00%)	5/5 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/2 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 1	0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/2 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 2	0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/2 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 3	0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
West Aleutians	Per . 0	0/8 (0.00%)	9/11 (81.82%)	2/8 (25.00%)	1/2 (50.00%)		0/8 (0.00%)	7/7 (100.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/4 (50.00%)	2/2 (100.00%)	1/2 (50.00%)
	De c. 0	0/2 (0.00%)	9/9 (100.00%)	9/9 (100.00%)	0/0 (0.00%)		0/2 (0.00%)	7/7 (100.00%)	7/7 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)
	Per . 1	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)		0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)

West Greenland	De c. 1	0/2 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/7 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
	Per . 2	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)		0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 2	0/2 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/7 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
	Per . 3	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)		0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 3	0/2 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/7 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
	Per . 0	0/0 (0.00%)	2/2 (100.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	2/2 (100.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 0	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)		0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 1	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 2	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 3	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

Appendix Table 125 Traumatic enamel macrofracture (chipping) - females true prevalence rates

All data refers to permanent teeth, unless stated

Per. = permanent dentition Dec. = deciduous dentition

Females													
Score		Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	0	34/47 (72.34%)	37/40 (92.50%)	32/32 (100.00%)	23/23 (100.00%)	14/18 (77.78%)	12/12 (100.00%)	9/9 (100.00%)	6/6 (100.00%)	5/10 (50.00%)	13/15 (86.67%)	11/11 (100.00%)	7/7 (100.00%)
	1	0/47 (0.00%)	0/40 (0.00%)	0/32 (0.00%)	0/23 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/10 (0.00%)	0/15 (0.00%)	0/11 (0.00%)	0/7 (0.00%)
	2	0/47 (0.00%)	0/40 (0.00%)	0/32 (0.00%)	0/23 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/10 (0.00%)	0/15 (0.00%)	0/11 (0.00%)	0/7 (0.00%)
	3	0/47 (0.00%)	0/40 (0.00%)	0/32 (0.00%)	0/23 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/10 (0.00%)	0/15 (0.00%)	0/11 (0.00%)	0/7 (0.00%)
Canada Unknown	0	4/5 (80.00%)	5/6 (83.33%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	1	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	2	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	3	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Per. 0	140/198 (70.71%)	151/152 (99.34%)	98/101 (98.99%)	73/73 (100.00%)	72/107 (67.29%)	88/88 (100.00%)	51/54 (98.08%)	41/41 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)
	Per. 1	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Per. 2	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Per. 3	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Dec. 0	0/198 (0.00%)	0/152 (0.00%)	2/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	2/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Dec. 1	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Dec. 2	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	Dec. 3	0/198 (0.00%)	0/152 (0.00%)	0/101 (0.00%)	0/73 (0.00%)	0/107 (0.00%)	0/88 (0.00%)	0/54 (0.00%)	0/41 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)

East Greenland	0	9/11 (81.82%)	19/19 (100.00%)	14/14 (100.00%)	9/12 (75.00%)	0/2 (0.00%)	11/11 (100.00%)	7/7 (100.00%)	4/4 (100.00%)				
	1	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
	2	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
	3	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
Greenland Unknown	0	13/19 (68.42%)	18/18 (100.00%)	12/12 (100.00%)	6/6 (100.00%)	2/4 (50.00%)	3/3 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	1/3 (33.33%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	1	0/19 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	2	0/19 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	3	0/19 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Hudson Bay	0	160/227 (70.48%)	248/250 (99.20%)	201/207 (97.10%)	142/142 (100.00%)	70/99 (70.71%)	95/97 (97.94%)	76/82 (92.68%)	66/66 (100.00%)	13/20 (65.00%)	23/23 (100.00%)	17/17 (100.00%)	12/12 (100.00%)
	1	0/227 (0.00%)	0/250 (0.00%)	0/207 (0.00%)	0/142 (0.00%)	0/99 (0.00%)	0/97 (0.00%)	0/82 (0.00%)	0/66 (0.00%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
	2	0/227 (0.00%)	0/250 (0.00%)	0/207 (0.00%)	0/142 (0.00%)	0/99 (0.00%)	0/97 (0.00%)	0/82 (0.00%)	0/66 (0.00%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
	3	0/227 (0.00%)	0/250 (0.00%)	0/207 (0.00%)	0/142 (0.00%)	0/99 (0.00%)	0/97 (0.00%)	0/82 (0.00%)	0/66 (0.00%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
North Alaska	0	9/13 (69.23%)	18/18 (100.00%)	14/14 (100.00%)	7/11 (63.64%)	1/2 (50.00%)	8/8 (100.00%)	6/6 (100.00%)	3/3 (100.00%)				
	1	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
	2	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
	3	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
North Greenland	0	1/3 (33.33%)	26/26 (100.00%)	20/20 (100.00%)	14/14 (100.00%)	0/1 (0.00%)	10/10 (100.00%)	6/6 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)
	1	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)
	2	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)
	3	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)
Nuna	0	105/147 (71.43%)	120/123 (97.56%)	91/94 (96.81%)	64/71 (90.14%)	48/66 (72.73%)	52/54 (96.30%)	49/50 (98.00%)	33/33 (100.00%)	7/14 (50.00%)	8/8 (100.00%)	5/5 (100.00%)	1/1 (100.00%)

	1	0/147 (0.00%)	0/123 (0.00%)	0/94 (0.00%)	0/71 (0.00%)	0/66 (0.00%)	0/54 (0.00%)	0/50 (0.00%)	0/33 (0.00%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
	2	0/147 (0.00%)	0/123 (0.00%)	0/94 (0.00%)	0/71 (0.00%)	0/66 (0.00%)	0/54 (0.00%)	0/50 (0.00%)	0/33 (0.00%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
	3	0/147 (0.00%)	0/123 (0.00%)	0/94 (0.00%)	0/71 (0.00%)	0/66 (0.00%)	0/54 (0.00%)	0/50 (0.00%)	0/33 (0.00%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
South Alaska	0	14/31 (45.16%)	12/16 (75.00%)	14/18 (77.78%)	7/11 (63.64%)	3/14 (21.43%)	5/9 (55.56%)	5/9 (55.56%)	0/5 (0.00%)	7/9 (77.78%)	3/3 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	1	0/31 (0.00%)	0/16 (0.00%)	0/18 (0.00%)	0/11 (0.00%)	0/14 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
	2	0/31 (0.00%)	0/16 (0.00%)	0/18 (0.00%)	0/11 (0.00%)	0/14 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
	3	0/31 (0.00%)	0/16 (0.00%)	0/18 (0.00%)	0/11 (0.00%)	0/14 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
South Greenland	0	0/4 (0.00%)	2/3 (66.67%)	3/3 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	2/3 (66.67%)	3/3 (100.00%)	1/1 (100.00%)				
	1	0/4 (0.00%)	1/3 (33.33%)	0/3 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	1/3 (33.33%)	0/3 (0.00%)	0/1 (0.00%)				
	2	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
	3	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
St. Lawrence	0	12/27 (44.44%)	24/25 (96.00%)	17/17 (100.00%)	7/7 (100.00%)	8/15 (53.33%)	10/10 (100.00%)	9/9 (100.00%)	5/5 (100.00%)	0/2 (0.00%)	4/4 (100.00%)	3/3 (100.00%)	0/0 (0.00%)
	1	0/27 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/15 (0.00%)	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
	2	0/27 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/15 (0.00%)	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
	3	0/27 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/15 (0.00%)	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
Vancouver Island	0	5/7 (71.43%)	10/10 (100.00%)	8/8 (100.00%)	2/2 (100.00%)	5/7 (71.43%)	9/9 (100.00%)	8/8 (100.00%)	22/2 (100.00%)				
	1	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
	2	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
	3	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
West	0	21/37 (56.76%)	32/31 (103.23%)	27/27 (100.00%)	18/23 (78.26%)	2/6 (33.33%)	6/6 (100.00%)	4/4 (100.00%)	3/3 (100.00%)	7/13 (53.85%)	7/7 (100.00%)	5/5 (100.00%)	3/5 (60.00%)
	1	0/37 (0.00%)	0/31 (0.00%)	0/27 (0.00%)	0/23 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/5 (0.00%)

	2	0/37 (0.00%)	0/31 (0.00%)	0/27 (0.00%)	0/23 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/5 (0.00%)
	3	0/37 (0.00%)	0/31 (0.00%)	0/27 (0.00%)	0/23 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/5 (0.00%)
West Greenland	0	0/1 (0.00%)	7/8 (87.50%)	6/6 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	3/4 (75.00%)	2/2 (100.00%)	1/1 (100.00%)				
	1	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				
	2	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				
	3	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				

Appendix Table 126 Traumatic enamel macrofracture (chipping) - males true prevalence rates

All data refers to permanent teeth, unless stated

Per. = permanent dentition Dec. = deciduous dentition

Males													
Score		Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	0	40/53 (75.47%)	30/31 (96.77%)	24/24 (100.00%)	21/21 (100.00%)	1/1 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	15/20 (75.00%)	12/13 (92.31%)	9/9 (100.00%)	8/8 (100.00%)
	1	0/53 (0.00%)	0/31 (0.00%)	0/24 (0.00%)	0/21 (0.00%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	0/13 (0.00%)	0/9 (0.00%)	0/8 (0.00%)
	2	0/53 (0.00%)	0/31 (0.00%)	0/24 (0.00%)	0/21 (0.00%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	0/13 (0.00%)	0/9 (0.00%)	0/8 (0.00%)
	3	0/53 (0.00%)	0/31 (0.00%)	0/24 (0.00%)	0/21 (0.00%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	0/13 (0.00%)	0/9 (0.00%)	0/8 (0.00%)
Canada Unknown	0	3/5 (60.00%)	9/10 (90.00%)	6/6 (100.00%)	4/4 (100.00%)	3/5 (60.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	1	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
	2	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
	3	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
Coats Island	Per. 0	163/224 (72.77%)	113/114 (99.12%)	74/74 (100.00%)	54/54 (100.00%)	79/109 (72.48%)	58/58 (100.00%)	39/39 (100.00%)	36/36 (100.00%)	5/6 (83.33%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)
	Per. 1	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
	Per. 2	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)

	Per. 3	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
	Dec. 0	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
	Dec. 1	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
	Dec. 2	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
	Dec. 3	0/224 (0.00%)	0/114 (0.00%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	0/58 (0.00%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
East Greenland	0	2/3 (66.67%)	6/6 (100.00%)	5/5 (100.00%)	0/0 (0.00%)								
	1	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
	2	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
	3	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
Greenland Unknown	0	6/10 (60.00%)	9/9 (100.00%)	5/5 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	6/6 (100.00%)	2/2 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	1	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
	2	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
	3	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
Hudson Bay	0	178/234 (76.07%)	187/190 (98.42%)	139/140 (99.29%)	95/95 (100.00%)	60/79 (75.95%)	66/66 (100.00%)	55/55 (100.00%)	45/45 (100.00%)	45/61 (73.77%)	44/45 (97.78%)	29/30 (96.67%)	15/15 (100.00%)
	1	0/234 (0.00%)	0/190 (0.00%)	0/140 (0.00%)	0/95 (0.00%)	0/79 (0.00%)	0/66 (0.00%)	0/55 (0.00%)	0/45 (0.00%)	0/61 (0.00%)	0/45 (0.00%)	0/30 (0.00%)	0/15 (0.00%)
	2	0/234 (0.00%)	0/190 (0.00%)	0/140 (0.00%)	0/95 (0.00%)	0/79 (0.00%)	0/66 (0.00%)	0/55 (0.00%)	0/45 (0.00%)	0/61 (0.00%)	0/45 (0.00%)	0/30 (0.00%)	0/15 (0.00%)
	3	0/234 (0.00%)	0/190 (0.00%)	0/140 (0.00%)	0/95 (0.00%)	0/79 (0.00%)	0/66 (0.00%)	0/55 (0.00%)	0/45 (0.00%)	0/61 (0.00%)	0/45 (0.00%)	0/30 (0.00%)	0/15 (0.00%)
North Alaska	0	16/16 (100.00%)	18/18 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/4 (100.00%)	4/4 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	5/5 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	1	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
	2	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
	3	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
Nort	0	11/19 (57.89%)	24/24 (100.00%)	17/17 (100.00%)	10/10 (100.00%)	6/12 (50.00%)	8/8 (100.00%)	7/7 (100.00%)	6/6 (100.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)

	1	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	2	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	3	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Nunavut	0	191/259 (73.75%)	158/159 (99.37%)	118/118 (100.00%)	70/70 (100.00%)	50/72 (69.44%)	57/58 (98.28%)	43/43 (100.00%)	33/33 (100.00%)	33/43 (76.74%)	28/28 (100.00%)	18/19 (94.74%)	7/7 (100.00%)
	1	0/259 (0.00%)	1/159 (0.63%)	0/118 (0.00%)	0/70 (0.00%)	0/72 (0.00%)	1/58 (1.72%)	0/43 (0.00%)	0/33 (0.00%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	0/7 (0.00%)
	2	0/259 (0.00%)	0/159 (0.00%)	0/118 (0.00%)	0/70 (0.00%)	0/72 (0.00%)	0/58 (0.00%)	0/43 (0.00%)	0/33 (0.00%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	0/7 (0.00%)
	3	0/259 (0.00%)	0/159 (0.00%)	0/118 (0.00%)	0/70 (0.00%)	0/72 (0.00%)	0/58 (0.00%)	0/43 (0.00%)	0/33 (0.00%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	0/7 (0.00%)
South Alaska	0	13/25 (52.00%)	18/18 (100.00%)	13/13 (100.00%)	7/7 (100.00%)	6/10 (60.00%)	8/8 (100.00%)	6/6 (100.00%)	5/5 (100.00%)	4/8 (50.00%)	6/6 (100.00%)	4/4 (100.00%)	2/2 (100.00%)
	1	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
	2	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
	3	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
South Greenland	0	4/6 (66.67%)	7/8 (87.50%)	4/4 (100.00%)	3/3 (100.00%)	4/6 (66.67%)	5/6 (83.33%)	3/3 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	1/1 (100.00%)	2/2 (100.00%)
	1	0/6 (0.00%)	0/8 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/2 (0.00%)
	2	0/6 (0.00%)	0/8 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/2 (0.00%)
	3	0/6 (0.00%)	0/8 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/2 (0.00%)
St. Lawrence	0	10/28 (35.71%)	20/22 (90.91%)	15/15 (100.00%)	6/6 (100.00%)	2/7 (28.57%)	8/8 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/9 (44.44%)	5/6 (83.33%)	2/2 (100.00%)	1/1 (100.00%)
	1	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	2	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	3	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
Vancouver	0	2/5 (40.00%)	20/20 (100.00%)	11/11 (100.00%)	8/9 (88.89%)	0/1 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	4/4 (100.00%)				
	1	0/5 (0.00%)	0/20 (0.00%)	0/11 (0.00%)	0/9 (0.00%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
	2	0/5 (0.00%)	0/20 (0.00%)	0/11 (0.00%)	0/9 (0.00%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				

	3	0/5 (0.00%)	0/20 (0.00%)	0/11 (0.00%)	0/9 (0.00%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
West Aleutians	0	35/53 (66.04%)	38/38 (100.00%)	35/36 (97.22%)	24/24 (100.00%)	10/13 (76.92%)	6/6 (100.00%)	7/7 (100.00%)	4/4 (100.00%)	2/4 (50.00%)	9/9 (100.00%)	7/8 (87.50%)	3/3 (100.00%)
	1	0/53 (0.00%)	0/38 (0.00%)	0/36 (0.00%)	0/24 (0.00%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/3 (0.00%)
	2	0/53 (0.00%)	0/38 (0.00%)	0/36 (0.00%)	0/24 (0.00%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/3 (0.00%)
	3	0/53 (0.00%)	0/38 (0.00%)	0/36 (0.00%)	0/24 (0.00%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/3 (0.00%)
West Greenland	0	10/20 (50.00%)	17/17 (100.00%)	17/17 (100.00%)	7/7 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	1/1 (100.00%)
	1	0/20 (0.00%)	0/17 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	2	0/20 (0.00%)	0/17 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
	3	0/20 (0.00%)	0/17 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/1 (0.00%)

Appendix Table 127 Traumatic enamel macrofracture (chipping) - subadults true prevalence rates

Per. = permanent dentition Dec. = deciduous dentition

Subadults																	
	Score	Pooled				Infant				Child				AD			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Per . 0	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 0	2/4 (50.00%)	7/8 (87.50%)	6/6 (100.00%)	0/0 (0.00%)					0/2 (0.00%)	7/7 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 1	0/4 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 2	0/4 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 3	0/4 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/0 (0.00%)					0/2 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Canada Unknown	Per . 0	3/3 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Dec. 0	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

Coats Island	De c. 1	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 2	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 3	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 0	32/73 (43.84%)	38/57 (66.67%)	10/43 (23.26%)	5/12 (41.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/46 (28.26%)	24/43 (55.81%)	0/32 (0.00%)	0/1 (0.00%)	12/16 (75.00%)	10/10 (100.00%)	6/7 (85.71%)	3/10 (30.00%)
	De c. 0	36/131 (27.48%)	62/123 (50.41%)	57/120 (47.50%)	0/0 (0.00%)	27/95 (28.42%)	10/56 (17.86%)	4/49 (8.16%)	0/0 (0.00%)	8/31 (25.81%)	52/65 (80.00%)	53/67 (79.10%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	De c. 1	0/131 (0.00%)	0/123 (0.00%)	0/120 (0.00%)	0/0 (0.00%)	0/95 (0.00%)	0/56 (0.00%)	0/49 (0.00%)	0/0 (0.00%)	0/31 (0.00%)	0/65 (0.00%)	0/67 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	De c. 2	0/131 (0.00%)	0/123 (0.00%)	0/120 (0.00%)	0/0 (0.00%)	0/95 (0.00%)	0/56 (0.00%)	0/49 (0.00%)	0/0 (0.00%)	0/31 (0.00%)	0/65 (0.00%)	0/67 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	De c. 3	0/131 (0.00%)	0/123 (0.00%)	0/120 (0.00%)	0/0 (0.00%)	0/95 (0.00%)	0/56 (0.00%)	0/49 (0.00%)	0/0 (0.00%)	0/31 (0.00%)	0/65 (0.00%)	0/67 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Greenla	Per . 0	5/5 (100.00%)	8/8 (100.00%)	0/0 (0.00%)	0/0 (0.00%)					5/5 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)

Hudson Bay	De c. 0	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	3/4 (75.00%)	0/0 (0.00%)
	Per . 1	0/5 (0.00%)	0/8 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 1	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
	Per . 2	0/5 (0.00%)	0/8 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 2	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
	Per . 3	0/5 (0.00%)	0/8 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 3	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
	Per . 0	34/81 (41.98%)	63/82 (76.83%)	15/49 (30.61%)	2/13 (15.38%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/57 (22.81%)	47/66 (71.21%)	4/37 (10.81%)	0/3 (0.00%)	21/24 (87.50%)	16/16 (100.00%)	11/12 (91.67%)	2/10 (20.00%)
	De c. 0	23/66 (34.85%)	64/82 (78.05%)	64/73 (87.67%)	0/0 (0.00%)	7/39 (17.95%)	8/21 (38.10%)	8/15 (53.33%)	0/0 (0.00%)	16/27 (59.26%)	56/61 (91.80%)	56/58 (96.55%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	De c. 1	0/66 (0.00%)	0/82 (0.00%)	1/73 (1.37%)	0/0 (0.00%)	0/39 (0.00%)	0/21 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/27 (0.00%)	0/61 (0.00%)	1/58 (1.72%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	De c. 2	0/66 (0.00%)	0/82 (0.00%)	0/73 (0.00%)	0/0 (0.00%)	0/39 (0.00%)	0/21 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/27 (0.00%)	0/61 (0.00%)	0/58 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)

	De c. 3	0/66 (0.00%)	0/82 (0.00%)	0/73 (0.00%)	0/0 (0.00%)	0/39 (0.00%)	0/21 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/27 (0.00%)	0/61 (0.00%)	0/58 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
North Alaska	Per . 0	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	De c. 0	0/1 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	0/0 (0.00%)					0/1 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	0/0 (0.00%)				
	Per . 1	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	De c. 1	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)					0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)				
	Per . 2	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	De c. 2	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)					0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)				
	Per . 3	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)					0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	De c. 3	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)					0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/0 (0.00%)				
North Greenland	Per . 0	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	De c. 0	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)					0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				
	Per . 1	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	De c. 1	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Per . 2	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				

	De c. 2	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Per . 3	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	De c. 3	0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
Nunavut	Per . 0	15/70 (21.43%)	36/58 (62.07%)	12/41 (29.27%)	4/15 (26.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/66 (19.70%)	30/52 (57.69%)	4/33 (12.12%)	1/5 (20.00%)	2/4 (50.00%)	6/6 (100.00%)	8/8 (100.00%)	3/10 (30.00%)
	De c. 0	21/42 (50.00%)	50/55 (90.91%)	50/57 (87.72%)	0/0 (0.00%)	2/4 (50.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	19/38 (50.00%)	50/52 (96.15%)	50/53 (94.34%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
	De c. 1	0/42 (0.00%)	0/55 (0.00%)	0/57 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/38 (0.00%)	0/52 (0.00%)	0/53 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
	De c. 2	0/42 (0.00%)	0/55 (0.00%)	0/57 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/38 (0.00%)	0/52 (0.00%)	0/53 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
	De c. 3	0/42 (0.00%)	0/55 (0.00%)	0/57 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/38 (0.00%)	0/52 (0.00%)	0/53 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
South Alaska	Per . 0	7/9 (77.78%)	4/4 (100.00%)	2/2 (100.00%)	1/2 (50.00%)									7/9 (77.78%)	4/4 (100.00%)	2/2 (100.00%)	1/2 (50.00%)
	De c. 0	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)									0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)									0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 1	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)									0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

	Per . 2	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)						0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 2	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)						0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)						0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 3	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)						0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Vancouver Island	Per . 0	1/2 (50.00%)	4/8 (50.00%)	0/2 (0.00%)	0/0 (0.00%)		1/2 (50.00%)	2/6 (33.33%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 0	0/0 (0.00%)	5/5 (100.00%)	5/5 (100.00%)	0/0 (0.00%)		0/0 (0.00%)	5/5 (100.00%)	5/5 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 1	0/2 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 1	0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 2	0/2 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 2	0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Per . 3	0/2 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	De c. 3	0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/5 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
West Aleutians	Per . 0	0/8 (0.00%)	9/11 (81.82%)	2/8 (25.00%)	1/2 (50.00%)		0/8 (0.00%)	7/7 (100.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/4 (50.00%)	2/2 (100.00%)	1/2 (50.00%)
	De c. 0	0/2 (0.00%)	9/9 (100.00%)	9/9 (100.00%)	0/0 (0.00%)		0/2 (0.00%)	7/7 (100.00%)	7/7 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)
	Per . 1	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)		0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)

West Greenland	De c. 1	0/2 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/7 (0.00%)	0/7 (0.00%)	0/0 (0.00%))	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
	Per . 2	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)		0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%))	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 2	0/2 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/7 (0.00%)	0/7 (0.00%)	0/0 (0.00%))	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
	Per . 3	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)		0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%))	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	De c. 3	0/2 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/0 (0.00%)		0/2 (0.00%)	0/7 (0.00%)	0/7 (0.00%)	0/0 (0.00%))	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
	Per . 0	0/0 (0.00%)	2/2 (100.00%))	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	2/2 (100.00%))	0/2 (0.00%)	0/0 (0.00%))				
	De c. 0	0/0 (0.00%)	2/2 (100.00%))	1/2 (50.00%)	0/0 (0.00%)		0/0 (0.00%)	2/2 (100.00%))	1/2 (50.00%)	0/0 (0.00%))				
	Per . 1	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%))				
	De c. 1	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%))				
	Per . 2	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%))				
	De c. 2	0/0 (0.00%)	0/2 (0.00%)	1/2 (50.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	1/2 (50.00%)	0/0 (0.00%))				
	Per . 3	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%))				
	De c. 3	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%))				

Appendix Table 128 – Linear enamel hypoplasia – Prevalence – Hudson Bay

Hudson Bay	male			female			total							OR=q/r not calculated not calculated not calculated not calculated common OR = Q/R not calculated	95% CI	
	present	absent	prevalence	present	absent	prevalence	number	prevalence	q=ad /n	r=bc /n	v					
	a	b		c	d		n									
Adolescent	0	6	0.00%	0	21	0.00%	27	0.00%	0	0	0					
YA	2	28	6.67%	0	44	0.00%	74	2.70%	1.19	0	0.4755					
Early middle adult	0	17	0.00%	0	19	0.00%	36	0.00%	0	0	0					
Late middle adult	0	6	0.00%	0	17	0.00%	23	0.00%	0	0	0					
MA	0	22	0.00%	0	19	0.00%	41	0.00%	0	0	0					
							N		Q	R	V	SE	EF			
Overall	2	79	2.47%	0	120	0.00%	201	1.00%	1.19	0	0.48	n.d.	n.d.	calculated	n.d.	n.d.

Appendix Table 129 Linear enamel hypoplasia - Prevalence - North Greenland

North Greenland	male			female			total										
	present	absent	prevalence	present	absent	prevalence	number	prevalence									
	a	b		c	d		n	q=ad/n	r=bc/n	v				OR=q/r	95% CI		
Adolescent	0	0	n.d.	0	2	0.00%	2	0.00%	0	0	0				not calculated		
YA	1	2	33.33%	0	3	0.00%	6	16.67%	0.5	0	0.25				not calculated		
Early middle adult	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0				not calculated		
Late middle adult	0	6	0.00%	0	3	0.00%	9	0.00%	0	0	0				not calculated		
MA	0	1	0.00%	0	1	0.00%	2	0.00%	0	0	0				not calculated		
							N	Q	R	V	SE	EF	common OR = Q/R				
Overall	1	10	9.09%	0	11	0.00%	22	4.55%	0.5	0	0.25	n.d.	n.d.	not calculated	n.d.	n.d.	

Appendix Table 130 Linear enamel hypoplasia - Prevalence - Nunavut

Nunavut	male			female			total											
	present	absent	prevalence	present	absent	prevalence	number	prevalence										
	a	b		c	d		n	q=ad/n	r=bc/n	v					OR=q/r	95% CI		
Adolescent	0	4	0.00%	0	12	0.00%	16	0.00%	0	0	0					not calculated		
YA	3	23	11.54%	1	24	4.00%	51	7.84%	1.411765	0.45098	0.939639					3.130435		
Early middle adult	0	13	0.00%	0	9	0.00%	22	0.00%	0	0	0					not calculated		
Late middle adult	0	13	0.00%	0	7	0.00%	20	0.00%	0	0	0					not calculated		
MA	0	14	0.00%	1	6	14.29%	21	4.76%	0	0.666667	0.222222					not calculated		
							N	Q	R	V	SE	EF	common OR = Q/R					
Overall	3	67	4.29%	2	58	3.33%	130	3.85%	1.411765	1.117647	1.161861	0.858111	5.375583		1.263158	0.234981	6.79021	

Appendix Table 131 Linear enamel hypoplasia - Prevalence - South Alaska

South Alaska	male			female			total										
	present	absent	prevalence	present	absent	prevalence	number	prevalence									
	a	b		c	d		n	q=ad/n	r=bc/n	v			OR=q/r	95% CI			
Adolescent	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.			n.d.			
YA	1	1	50.00%	0	3	0.00%	5	20.00%	0.6	0	0.24			not calculated			
Early middle adult	0	1	0.00%	0	0	n.d.	1	0.00%	0	0	n.d.			not calculated			
Late middle adult	0	1	0.00%	0	3	0.00%	4	0.00%	0	0	0			not calculated			
MA	0	2	0.00%	0	1	0.00%	3	0.00%	0	0	0			not calculated			
							N	Q	R	V	SE	EF	common OR = Q/R				
Overall	1	5	16.67%	0	7	0.00%	13	7.69%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

Appendix Table 132 – Linear enamel hypoplasia and antemortem tooth loss – tooth

Sample	Sex Estimation	Age Estimation	Skeletal ID	14	13	12	22	23	24	44	43	42	41	32	33	34
Nunavut	Female	Mature adult	XIV-C:589							0	1	1	10			
	Male	Young adult	XIV-C:649							10	1	10		10	1	10
South Alaska	Male	Young adult	AMNH VL/218	0	1	11	11	1	0							

1=tooth present with LEH, 0=tooth present without LEH, 10=Row 1 score 10, 11=Row 1, score 11

Appendix Table 133 Calculus – buccal (Row 40) – female YA

Only the age and sex classes per sample which had positive data are presented

Female YA					
Sample/Score	0	1	2	3	Total
Amaknak Island	28 (70.00%)	12 (30.00%)			40
Canada Unknown	2 (100.00%)				2
Coats Island	221 (85.00%)	34 (13.08%)	5 (1.92%)		260
East Greenland	23 (100.00%)				23
Greenland Unknown	2 (28.57%)		5 (71.43%)		7
Hudson Bay	283 (90.71%)	29 (9.29%)			312
North Alaska	18 (100.00%)				18
North Greenland	18 (78.26%)			5 (21.74%)	23
Nunavut	173 (91.53%)	4 (2.12%)	1 (0.53%)	11 (5.82%)	189
South Alaska	23 (71.88%)	6 (18.75%)	3 (9.38%)		32
South Greenland	7 (87.50%)	1 (12.50%)			8
St. Lawrence	23 (69.70%)	6 (18.18%)	2 (6.06%)	2 (6.06%)	33
Vancouver Island	21 (80.77%)			5 (19.23%)	26
West Aleutians	13 (81.25%)	3 (18.75%)			16
West Greenland	7 (100.00%)				7

Appendix Table 134 Calculus – buccal (Row 40) – female MA

Only the age and sex classes per sample which had positive data are presented

Female MA					
Sample/Score	0	1	2	3	Total
Amaknak Island	31 (77.50%)	3 (7.50%)	5 (12.50%)	1 (2.50%)	40
Canada Unknown	1 (100.00%)				1
Coats Island	2 (100.00%)				2
Greenland Unknown	3 (100.00%)				3
Hudson Bay	67 (100.00%)				67
North Greenland	2 (100.00%)				2
Nunavut	19 (86.36%)	3 (13.64%)			22
South Alaska	15 (100.00%)				15
St. Lawrence	8 (100.00%)				8
West Aleutians	15 (68.18%)	3 (13.64%)		4 (18.18%)	22

Appendix Table 135 Calculus – buccal (Row 40) – male YA

Only the age and sex classes per sample which had positive data are presented

Male YA					
Sample/Score	0	1	2	3	Total
Amaknak Island	7 (100.00%)				7
Canada Unknown	12 (100.00%)				12
Coats Island	201 (92.63%)	15 (6.91%)	1 (0.46%)		217
Greenland Unknown	5 (100.00%)				5
Hudson Bay	215 (93.89%)	12 (5.24%)	2 (0.87%)		229
North Alaska	17 (100.00%)				17
North Greenland	32 (100.00%)				32
Nunavut	154 (82.35%)	25 (13.37%)	8 (4.28%)		187
South Alaska	26 (100.00%)				26
South Greenland	9 (69.23%)	4 (30.77%)			13
St. Lawrence	22 (100.00%)				22
Vancouver Island		3 (25.00%)		9 (75.00%)	12
West Aleutians	22 (73.33%)	8 (26.67%)			30
West Greenland	5 (100.00%)				5

Appendix Table 136 Calculus – buccal (Row 40) – male MA

Only the age and sex classes per sample which had positive data are presented

Male MA					
Sample/Score	0	1	2	3	Total
Amaknak Island	45 (97.83%)		1 (2.17%)		46
Coats Island	15 (100.00%)				15
Greenland Unknown	10 (100.00%)				10
Hudson Bay	132 (97.78%)		2 (1.48%)	1 (0.74%)	135
North Alaska	10 (100.00%)				10
North Greenland	2 (100.00%)				2
Nunavut	86 (98.85%)		1 (1.15%)		87
South Alaska	16 (100.00%)				16
South Greenland	3 (75.00%)	1 (25.00%)			4
St. Lawrence	10 (83.33%)	2 (16.67%)			12
West Aleutians	20 (90.91%)	1 (4.55%)	1 (4.55%)		22
West Greenland	5 (71.43%)	2 (28.57%)			7

Appendix Table 137 Calculus – buccal (Row 40) – subadult infant

Only the age and sex classes per sample which had positive data are presented

Subadult Infant		
Sample/Score	1	Total
Canada Unknown	1 (100.00%)	1
Coats Island	41 (100.00%)	41
Hudson Bay	23 (100.00%)	23
Nunavut	2 (100.00%)	2

Appendix Table 138 Calculus – buccal (Row 40) – subadult child

Only the age and sex classes per sample which had positive data are presented

Subadult Child					
Sample/Score	0	1	2	3	Total
Amaknak Island	14 (100.00%)				14
Canada Unknown	13 (100.00%)				13
Coats Island	148 (98.67%)	1 (0.67%)		1 (0.67%)	150
Greenland Unknown	17 (100.00%)				17
Hudson Bay	192 (99.48%)		1 (0.52%)		193
North Alaska	10 (100.00%)				10
North Greenland	8 (100.00%)				8
Nunavut	175 (100.00%)				175
Vancouver Island	11 (84.62%)			2 (15.38%)	13
West Aleutians	21 (100.00%)				21
West Greenland	6 (100.00%)				6

Appendix Table 139 Calculus – buccal (Row 40) – subadult adolescent

Only the age and sex classes per sample which had positive data are presented

Subadult Adolescent			
Sample/Score	0	1	Total
Amaknak Island	3 (100.00%)		3
Canada Unknown	1 (100.00%)		1
Coats Island	31 (100.00%)		31
Greenland Unknown	12 (100.00%)		12
Hudson Bay	50 (100.00%)		50
Nunavut	13 (72.22%)	5 (27.78%)	18
South Alaska	18 (100.00%)		18
Vancouver Island	2 (100.00%)		2
West Aleutians	9 (100.00%)		9

Appendix Table 140 Calculus – lingual (Row 41) – female YA

Only the age and sex classes per sample which had positive data are presented

Female YA					
Sample/Score	0	1	2	3	Total
Amaknak Island	28 (68.29%)	13 (31.71%)			41
Canada Unknown	2 (100.00%)				2
Coats Island	233 (89.62%)	27 (10.38%)			260
East Greenland	22 (100.00%)				22
Greenland Unknown	4 (57.14%)	3 (42.86%)			7
Hudson Bay	285 (91.35%)	27 (8.65%)			312
North Alaska	18 (100.00%)				18
North Greenland	23 (100.00%)				23
Nunavut	170 (90.43%)	10 (5.32%)		8 (4.26%)	188
South Alaska	4 (30.77%)	7 (53.85%)	2 (15.38%)		13
South Greenland	7 (87.50%)	1 (12.50%)			8
St. Lawrence	33 (100.00%)				33
Vancouver Island	27 (100.00%)				27
West Aleutians	13 (81.25%)	3 (18.75%)			16
West Greenland	6 (100.00%)				6

Appendix Table 141 Calculus – lingual (Row 41) – female MA

Only the age and sex classes per sample which had positive data are presented

Female MA					
Sample/Score	0	1	2	3	Total
Amaknak Island	37 (92.50%)	1 (2.50%)	1 (2.50%)	1 (2.50%)	40
Canada Unknown	1 (100.00%)				1
Coats Island	2 (100.00%)				2
Greenland Unknown	3 (100.00%)				3
Hudson Bay	67 (100.00%)				67
North Greenland	2 (100.00%)				2
Nunavut	22 (100.00%)				22
South Alaska	15 (100.00%)				15
St. Lawrence	8 (100.00%)				8
West Aleutians	18 (81.82%)	4 (18.18%)			22

Appendix Table 142 Calculus – lingual (Row 41) – male YA

Only the age and sex classes per sample which had positive data are presented

Male YA					
Sample/Score	0	1	2	3	Total
Amaknak Island	5 (71.43%)	2 (28.57%)			7
Canada Unknown	12 (100.00%)				12
Coats Island	202 (93.09%)	15 (6.91%)			217
Greenland Unknown	5 (100.00%)				5
Hudson Bay	215 (93.89%)	14 (6.11%)			229
North Alaska	17 (100.00%)				17
North Greenland	32 (100.00%)				32
Nunavut	166 (88.77%)	21 (11.23%)			187
South Alaska	26 (100.00%)				26
South Greenland	13 (100.00%)				13
St. Lawrence	22 (100.00%)				22
Vancouver Island		10 (83.33%)	1 (8.33%)	1 (8.33%)	12
West Aleutians	27 (90.00%)	2 (6.67%)	1 (3.33%)		30
West Greenland	5 (100.00%)				5

Appendix Table 143 Calculus – lingual (Row 41) – male MA

Only the age and sex classes per sample which had positive data are presented

Male MA				
Sample/Score	0	1	2	Total
Amaknak Island	42 (91.30%)	2 (4.35%)	2 (4.35%)	46
Coats Island	15 (100.00%)			15
Greenland Unknown	10 (90.91%)	1 (9.09%)		11
Hudson Bay	135 (100.00%)			135
North Alaska	10 (100.00%)			10
North Greenland	2 (100.00%)			2
Nunavut	87 (100.00%)			87
South Alaska	16 (100.00%)			16
South Greenland	4 (100.00%)			4
St. Lawrence	12 (100.00%)			12
West Aleutians	22 (100.00%)			22
West Greenland	7 (100.00%)			7

Appendix Table 144 Calculus – lingual (Row 41) – subadult infant

Only the age and sex classes per sample which had positive data are presented

Subadult Infant		
Sample/Score	0	Total
Canada Unknown	1 (100.00%)	1
Coats Island	41 (100.00%)	41
Hudson Bay	23 (100.00%)	23
Nunavut	2 (100.00%)	2

Appendix Table 145 Calculus – lingual (Row 41) – subadult child

Only the age and sex classes per sample which had positive data are presented

Subadult Child			
Sample/Score	0	1	Total
Amaknak Island	14 (100.00%)		14
Canada Unknown	13 (100.00%)		13
Coats Island	150 (100.00%)		150
Greenland Unknown	17 (100.00%)		17
Hudson Bay	193 (100.00%)		193
North Alaska	10 (100.00%)		10
North Greenland	8 (100.00%)		8
Nunavut	175 (100.00%)		175
Vancouver Island	10 (76.92%)	3 (23.08%)	13
West Aleutians	21 (100.00%)		21
West Greenland	6 (100.00%)		6

Appendix Table 146 Calculus – lingual (Row 41) – subadult adolescent

Only the age and sex classes per sample which had positive data are presented

Subadult Adolescent		
Sample/Score	0	Total
Amaknak Island	3 (100.00%)	3
Coats Island	9 (100.00%)	9
Greenland Unknown	12 (100.00%)	12
Hudson Bay	13 (100.00%)	13
Nunavut	11 (100.00%)	11
South Alaska	14 (100.00%)	14
Vancouver Island	2 (100.00%)	2
West Aleutians	9 (100.00%)	9

Appendix Table 147 Calculus – distal (Row 42) – female YA

Only the age and sex classes per sample which had positive data are presented

Female YA					
Sample/Score	0	1	2	3	Total
Amaknak Island	28 (68.29%)	13 (31.71%)			41
Canada Unknown	2 (100.00%)				2
Coats Island	218 (84.17%)	41 (15.83%)			259
East Greenland	22 (100.00%)				22
Greenland Unknown	2 (28.57%)		5 (71.43%)		7
Hudson Bay	281 (91.23%)	27 (8.77%)			308
North Alaska	18 (100.00%)				18
North Greenland	23 (100.00%)				23
Nunavut	168 (90.32%)	4 (2.15%)	6 (3.23%)	8 (4.30%)	186
South Alaska	23 (71.88%)	9 (28.13%)			32
South Greenland	7 (70.00%)	2 (20.00%)		1 (10.00%)	10
St. Lawrence	31 (93.94%)			2 (6.06%)	33
Vancouver Island	24 (88.89%)		3 (11.11%)		27
West Aleutians	13 (81.25%)	3 (18.75%)			16
West Greenland	7 (100.00%)				7

Appendix Table 148 Calculus – distal (Row 42) – female MA

Only the age and sex classes per sample which had positive data are presented

Female MA					
Sample/Score	0	1	2	3	Total
Amaknak Island	33 (86.84%)	1 (2.63%)	3 (7.89%)	1 (2.63%)	38
Canada Unknown	1 (100.00%)				1
Coats Island	2 (100.00%)				2
Greenland Unknown	3 (100.00%)				3
Hudson Bay	67 (100.00%)				67
North Alaska					0
North Greenland	2 (100.00%)				2
Nunavut	22 (100.00%)				22
South Alaska	15 (100.00%)				15
South Greenland					0
St. Lawrence	8 (100.00%)				8
Vancouver Island					0
West Aleutians	15 (68.18%)	7 (31.82%)			22
West Greenland					0

Appendix Table 149 Calculus – distal (Row 42) – male YA

Only the age and sex classes per sample which had positive data are presented

Male YA					
Sample/Score	0	1	2	3	Total
Amaknak Island	7 (100.00%)				7
Canada Unknown	12 (100.00%)				12
Coats Island	199 (91.71%)	17 (7.83%)	1 (0.46%)		217
Greenland Unknown	5 (100.00%)				5
Hudson Bay	217 (94.76%)	12 (5.24%)			229
North Alaska	17 (100.00%)				17
North Greenland	32 (100.00%)				32
Nunavut	155 (82.89%)	32 (17.11%)			187
South Alaska	26 (100.00%)				26
South Greenland	9 (69.23%)	4 (30.77%)			13
St. Lawrence	22 (100.00%)				22
Vancouver Island	1 (8.33%)	10 (83.33%)		1 (8.33%)	12
West Aleutians	30 (100.00%)				30
West Greenland	5 (100.00%)				5

Appendix Table 150 Calculus – distal (Row 42) – male MA

Only the age and sex classes per sample which had positive data are presented

Male MA			
Sample/Score	0	1	Total
Amaknak Island	45 (97.83%)	1 (2.17%)	46
Coats Island	15 (100.00%)		15
Greenland Unknown	10 (100.00%)		10
Hudson Bay	131 (99.24%)	1 (0.76%)	132
North Alaska	10 (100.00%)		10
North Greenland	2 (100.00%)		2
Nunavut	87 (100.00%)		87
South Alaska	16 (100.00%)		16
South Greenland	3 (100.00%)		3
St. Lawrence	12 (100.00%)		12
West Aleutians	22 (100.00%)		22
West Greenland	7 (100.00%)		7

Appendix Table 151 Calculus – distal (Row 42) – subadult infant

Only the age and sex classes per sample which had positive data are presented

Subadult Infant		
Sample/Score	1	Total
Canada Unknown	1 (100.00%)	1
Coats Island	41 (100.00%)	41
Hudson Bay	23 (100.00%)	23
Nunavut	2 (100.00%)	2

Appendix Table 152 Calculus – distal (Row 42) – subadult child

Only the age and sex classes per sample which had positive data are presented

Subadult Child			
Sample/Score	0	1	Total
Amaknak Island	14 (100.00%)		14
Canada Unknown	13 (100.00%)		13
Coats Island	150 (100.00%)		150
Greenland Unknown	17 (100.00%)		17
Hudson Bay	193 (100.00%)		193
North Alaska	10 (100.00%)		10
North Greenland	8 (100.00%)		8
Nunavut	175 (100.00%)		175
Vancouver Island	10 (76.92%)	3 (23.08%)	13
West Aleutians	17 (100.00%)		17
West Greenland	6 (100.00%)		6

Appendix Table 153 Calculus – distal (Row 42) – subadult adolescent

Only the age and sex classes per sample which had positive data are presented

Subadult Adolescent		
Sample/Score	0	Total
Amaknak Island	3 (100.00%)	3
Canada Unknown	1 (100.00%)	1
Coats Island	31 (100.00%)	31
Greenland Unknown	12 (100.00%)	12
Hudson Bay	50 (100.00%)	50
Nunavut	19 (100.00%)	19
South Alaska	14 (100.00%)	14
Vancouver Island	2 (100.00%)	2
West Aleutians	9 (100.00%)	9

Appendix Table 154 Calculus – mesial (Row 43) – female YA

Only the age and sex classes per sample which had positive data are presented

Female YA					
Sample/Score	0	1	2	3	Total
Amaknak Island	28 (68.29%)	13 (31.71%)			41
Canada Unknown	2 (100.00%)				2
Coats Island	214 (82.31%)	46 (17.69%)			260
East Greenland	22 (100.00%)				22
Greenland Unknown	1 (14.29%)		6 (85.71%)		7
Hudson Bay	283 (90.71%)	29 (9.29%)			312
North Alaska	18 (100.00%)				18
North Greenland	23 (100.00%)				23
Nunavut	170 (90.43%)	4 (2.13%)	4 (2.13%)	10 (5.32%)	188
South Alaska	23 (71.88%)	9 (28.13%)			32
South Greenland	7 (87.50%)	1 (12.50%)			8
St. Lawrence	30 (90.91%)	1 (3.03%)		2 (6.06%)	33
Vancouver Island	27 (100.00%)				27
West Aleutians	13 (81.25%)	3 (18.75%)			16
West Greenland	7 (100.00%)				7

Appendix Table 155 Calculus – mesial (Row 43) – female MA

Only the age and sex classes per sample which had positive data are presented

Female MA					
Sample/Score	0	1	2	3	Total
Amaknak Island	33 (82.50%)	3 (7.50%)	3 (7.50%)	1 (2.50%)	40
Canada Unknown	1 (100.00%)				1
Coats Island	2 (100.00%)				2
Greenland Unknown	3 (100.00%)				3
Hudson Bay	67 (100.00%)				67
North Greenland	2 (100.00%)				2
Nunavut	22 (100.00%)				22
South Alaska	15 (100.00%)				15
St. Lawrence	8 (100.00%)				8
West Aleutians	15 (68.18%)	7 (31.82%)			22

Appendix Table 156 Calculus – mesial (Row 43) – male YA

Only the age and sex classes per sample which had positive data are presented

Male YA				
Sample/Score	0	1	2	Total
Amaknak Island	7 (100.00%)			7
Canada Unknown	12 (100.00%)			12
Coats Island	200 (92.17%)	15 (6.91%)	2 (0.92%)	217
Greenland Unknown	5 (100.00%)			5
Hudson Bay	220 (96.07%)	9 (3.93%)		229
North Alaska	17 (100.00%)			17
North Greenland	32 (100.00%)			32
Nunavut	155 (82.89%)	32 (17.11%)		187
South Alaska	26 (100.00%)			26
South Greenland	9 (69.23%)	4 (30.77%)		13
St. Lawrence	22 (100.00%)			22
Vancouver Island		8 (72.73%)	3 (27.27%)	11
West Aleutians	30 (100.00%)			30
West Greenland	5 (100.00%)			5

Appendix Table 157 Calculus – mesial (Row 43) – male MA

Only the age and sex classes per sample which had positive data are presented

Male MA			
Sample/Score	0	1	Total
Amaknak Island	45 (97.83%)	1 (2.17%)	46
Coats Island	15 (100.00%)		15
Greenland Unknown	10 (100.00%)		10
Hudson Bay	134 (99.26%)	1 (0.74%)	135
North Alaska	10 (100.00%)		10
North Greenland	2 (100.00%)		2
Nunavut	87 (100.00%)		87
South Alaska	16 (100.00%)		16
South Greenland	3 (100.00%)		3
St. Lawrence	12 (100.00%)		12
West Aleutians	22 (100.00%)		22
West Greenland	7 (100.00%)		7

Appendix Table 158 Calculus – mesial (Row 43) – subadult infant

Only the age and sex classes per sample which had positive data are presented

Subadult Infant		
Sample/Score	1	Total
Canada Unknown	1 (100.00%)	1
Coats Island	41 (100.00%)	41
Hudson Bay	23 (100.00%)	23
Nunavut	2 (100.00%)	2

Appendix Table 159 Calculus – mesial (Row 43) – subadult child

Only the age and sex classes per sample which had positive data are presented

Subadult Child			
Sample/Score	0	1	Total
Amaknak Island	14 (100.00%)		14
Canada Unknown	13 (100.00%)		13
Coats Island	150 (100.00%)		150
Greenland Unknown	17 (100.00%)		17
Hudson Bay	193 (100.00%)		193
North Alaska	10 (100.00%)		10
North Greenland	8 (100.00%)		8
Nunavut	175 (100.00%)		175
Vancouver Island	10 (83.33%)	2 (16.67%)	12
West Aleutians	21 (100.00%)		21
West Greenland	6 (100.00%)		6

Appendix Table 160 Calculus – mesial (Row 43) – subadult adolescent

Only the age and sex classes per sample which had positive data are presented

Subadult Adolescent		
Sample/Score	0	Total
Amaknak Island	3 (100.00%)	3
Canada Unknown	1 (100.00%)	1
Coats Island	31 (100.00%)	31
East Greenland		0
Greenland Unknown	12 (100.00%)	12
Hudson Bay	50 (100.00%)	50
North Alaska		0
North Greenland		0
Nunavut	19 (100.00%)	19
South Alaska	14 (100.00%)	14
South Greenland		0
St. Lawrence		0
Vancouver Island	2 (100.00%)	2
West Aleutians	9 (100.00%)	9
West Greenland		0

Appendix Table 161 Calculus – occlusal (Row 44) - female YA

Only the age and sex classes per sample which had positive data are presented

Female YA			
Sample/Score	0	1	Total
Amaknak Island	41 (100.00%)		41
Canada Unknown	2 (100.00%)		2
Coats Island	256 (98.46%)	4 (1.54%)	260
East Greenland	22 (100.00%)		22
Greenland Unknown	7 (100.00%)		7
Hudson Bay	238 (100.00%)		238
North Alaska	18 (100.00%)		18
North Greenland	23 (100.00%)		23
Nunavut	188 (100.00%)		188
South Alaska	32 (100.00%)		32
South Greenland	7 (87.50%)	1 (12.50%)	8
St. Lawrence	33 (100.00%)		33
Vancouver Island	27 (100.00%)		27
West Aleutians	13 (81.25%)	3 (18.75%)	16
West Greenland	7 (100.00%)		7

Appendix Table 162 Calculus – occlusal (Row 44) - female MA

Only the age and sex classes per sample which had positive data are presented

Female MA		
Sample/Score	0	Total
Amaknak Island	40 (100.00%)	40
Canada Unknown	1 (100.00%)	1
Coats Island	2 (100.00%)	2
Greenland Unknown	3 (100.00%)	3
North Greenland	2 (100.00%)	2
Nunavut	22 (100.00%)	22
South Alaska	15 (100.00%)	15
St. Lawrence	8 (100.00%)	8
West Aleutians	22 (100.00%)	22

Appendix Table 163 Calculus – occlusal (Row 44) - male YA

Only the age and sex classes per sample which had positive data are presented

Male YA			
Sample/Score	0	1	Total
Amaknak Island	7 (100.00%)		7
Canada Unknown	12 (100.00%)		12
Coats Island	216 (99.54%)	1 (0.46%)	217
Greenland Unknown	5 (83.33%)	1 (16.67%)	6
Hudson Bay	4 (100.00%)		4
North Alaska	17 (100.00%)		17
North Greenland	32 (100.00%)		32
Nunavut	171 (91.44%)	16 (8.56%)	187
South Alaska	26 (100.00%)		26
South Greenland	13 (100.00%)		13
St. Lawrence	22 (100.00%)		22
Vancouver Island	12 (100.00%)		12
West Aleutians	30 (100.00%)		30
West Greenland	5 (100.00%)		5

Appendix Table 164 Calculus – occlusal (Row 44) - male MA

Only the age and sex classes per sample which had positive data are presented

Male MA		
Sample/Score	0	Total
Amaknak Island	46 (100.00%)	46
Coats Island	15 (100.00%)	15
Greenland Unknown	10 (100.00%)	10
North Alaska	10 (100.00%)	10
North Greenland	2 (100.00%)	2
Nunavut	87 (100.00%)	87
South Alaska	16 (100.00%)	16
South Greenland	4 (100.00%)	4
St. Lawrence	12 (100.00%)	12
West Aleutians	22 (100.00%)	22
West Greenland	7 (100.00%)	7

Appendix Table 165 Calculus – occlusal (Row 44) - subadult infant

Only the age and sex classes per sample which had positive data are presented

Subadult Infant		
Sample/Score	0	Total
Canada Unknown	1 (100.00%)	1
Coats Island	41 (100.00%)	41
Nunavut	2 (100.00%)	2

Appendix Table 166 Calculus – occlusal (Row 44) – subadult child

Only the age and sex classes per sample which had positive data are presented

Subadult Child			
Sample/Score	0	1	Total
Amaknak Island	14 (100.00%)		14
Canada Unknown	13 (92.86%)	1 (7.14%)	14
Coats Island	150 (100.00%)		150
Greenland Unknown	17 (100.00%)		17
North Alaska	10 (100.00%)		10
North Greenland	8 (100.00%)		8
Nunavut	175 (100.00%)		175
Vancouver Island	13 (100.00%)		13
West Aleutians	21 (100.00%)		21
West Greenland	6 (100.00%)		6

Appendix Table 167 Calculus – occlusal (Row 44) - subadult adolescent

Only the age and sex classes per sample which had positive data are presented

Subadult Adolescent		
Sample/Score	0	Total
Amaknak Island	3 (100.00%)	3
Canada Unknown	1 (100.00%)	1
Coats Island	31 (100.00%)	31
Greenland Unknown	12 (100.00%)	12
Nunavut	19 (100.00%)	19
South Alaska	14 (100.00%)	14
Vancouver Island	2 (100.00%)	2
West Aleutians	9 (100.00%)	9

Appendix Table 168 Calculus buccal (Row 40) females - true prevalence rates

All calculus levels were combined

Females													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	22/47 (46.81%)	27/40 (67.50%)	22/32 (68.75%)	16/23 (69.57%)	8/18 (44.44%)	8/12 (66.67%)	7/9 (77.78%)	5/6 (83.33%)	5/10 (50.00%)	11/15 (73.33%)	8/11 (72.73%)	7/7 (100.00%)
	Present	12/47 (25.53%)	9/40 (22.50%)	11/32 (34.38%)	11/23 (47.83%)	6/18 (33.33%)	3/12 (25.00%)	2/9 (22.22%)	1/6 (16.67%)	0/10 (0.00%)	2/15 (13.33%)	4/11 (36.36%)	3/7 (42.86%)
Canada Unknown	Absent	4/5 (80.00%)	6/6 (100.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Absent	123/198 (62.12%)	133/152 (87.50%)	85/101 (85.86%)	66/73 (90.41%)	60/107 (56.07%)	78/88 (88.64%)	41/54 (78.85%)	40/41 (97.56%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)
	Present	18/198 (9.09%)	18/152 (11.84%)	13/101 (13.13%)	7/73 (9.59%)	12/107 (11.21%)	10/88 (11.36%)	10/54 (19.23%)	7/41 (17.07%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
East Greenland	Absent	8/11 (72.73%)	19/19 (100.00%)	14/14 (100.00%)	9/12 (75.00%)	0/2 (0.00%)	11/11 (100.00%)	7/7 (100.00%)	4/4 (100.00%)				
	Present	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
Greenland Unknown	Absent	12/19 (63.16%)	16/18 (88.89%)	10/12 (83.33%)	6/6 (100.00%)	1/4 (25.00%)	1/3 (33.33%)	0/2 (0.00%)	0/2 (0.00%)	1/3 (33.33%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/19 (0.00%)	2/18 (11.11%)	2/12 (16.67%)	1/6 (16.67%)	0/4 (0.00%)	2/3 (66.67%)	2/2 (100.00%)	1/2 (50.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Hudson Bay	Absent	150/227 (66.08%)	238/250 (95.20%)	198/207 (95.65%)	142/142 (100.00%)	60/99 (60.61%)	87/97 (89.69%)	74/82 (90.24%)	62/66 (93.94%)	13/20 (65.00%)	23/23 (100.00%)	17/17 (100.00%)	12/12 (100.00%)
	Present	10/227 (4.41%)	12/250 (4.80%)	5/207 (2.42%)	6/142 (4.23%)	10/99 (10.10%)	10/97 (10.31%)	4/82 (4.88%)	5/66 (7.58%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
North Alaska	Absent	9/13 (69.23%)	18/18 (100.00%)	14/14 (100.00%)	7/11 (63.64%)	1/2 (50.00%)	8/8 (100.00%)	6/6 (100.00%)	3/3 (100.00%)				
	Present	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
North Greenland	Absent	1/3 (33.33%)	24/26 (92.31%)	18/20 (90.00%)	13/14 (92.86%)	0/1 (0.00%)	8/10 (80.00%)	4/6 (66.67%)	6/6 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)
	Present	0/3 (0.00%)	2/26 (7.69%)	2/20 (10.00%)	1/14 (7.14%)	0/1 (0.00%)	2/10 (20.00%)	2/6 (33.33%)	1/6 (16.67%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)
Nunavut	Absent	100/147 (68.03%)	113/123 (91.87%)	87/94 (92.55%)	59/71 (83.10%)	43/66 (65.15%)	48/54 (88.89%)	46/50 (92.00%)	36/33 (109.09%)	7/14 (50.00%)	7/8 (87.50%)	4/5 (80.00%)	1/1 (100.00%)
	Present	6/147 (4.08%)	7/123 (5.69%)	7/94 (7.45%)	7/71 (9.86%)	5/66 (7.58%)	4/54 (7.41%)	4/50 (8.00%)	3/33 (9.09%)	0/14 (0.00%)	1/8 (12.50%)	1/5 (20.00%)	1/1 (100.00%)

South Alaska	Absent	16/31 (51.61%)	9/16 (56.25%)	11/18 (61.11%)	7/11 (63.64%)	7/14 (50.00%)	6/9 (66.67%)	6/9 (66.67%)	4/5 (80.00%)	7/9 (77.78%)	3/3 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	Present	5/31 (16.13%)	7/16 (43.75%)	7/18 (38.89%)	4/11 (36.36%)	3/14 (21.43%)	3/9 (33.33%)	3/9 (33.33%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
South Greenland	Absent	0/4 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	Present	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	1/1 (100.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
St. Lawrence	Absent	6/27 (22.22%)	23/25 (92.00%)	15/17 (88.24%)	6/7 (85.71%)	2/15 (13.33%)	9/10 (90.00%)	7/9 (77.78%)	4/5 (80.00%)	0/2 (0.00%)	4/4 (100.00%)	3/3 (100.00%)	0/0 (0.00%)
	Present	6/27 (22.22%)	1/25 (4.00%)	2/17 (11.76%)	1/7 (14.29%)	6/15 (40.00%)	1/10 (10.00%)	2/9 (22.22%)	1/5 (20.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
Vancouver Island	Absent	5/7 (71.43%)	8/10 (80.00%)	6/8 (75.00%)	1/2 (50.00%)	5/7 (71.43%)	6/9 (66.67%)	6/8 (75.00%)	1/2 (50.00%)				
	Present	0/7 (0.00%)	2/10 (20.00%)	2/8 (25.00%)	1/2 (50.00%)	0/7 (0.00%)	2/9 (22.22%)	2/8 (25.00%)	1/2 (50.00%)				
West Aleutians	Absent	17/37 (45.95%)	30/31 (96.77%)	23/27 (85.19%)	15/23 (65.22%)	2/6 (33.33%)	5/6 (83.33%)	3/4 (75.00%)	3/3 (100.00%)	3/13 (23.08%)	6/7 (85.71%)	4/5 (80.00%)	2/5 (40.00%)
	Present	4/37 (10.81%)	2/31 (6.45%)	4/27 (14.81%)	3/23 (13.04%)	0/6 (0.00%)	1/6 (16.67%)	1/4 (25.00%)	1/3 (33.33%)	4/13 (30.77%)	1/7 (14.29%)	1/5 (20.00%)	1/5 (20.00%)
West Greenland	Absent	0/1 (0.00%)	7/8 (87.50%)	6/6 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	3/4 (75.00%)	2/2 (100.00%)	1/1 (100.00%)				
	Present	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				

Appendix Table 169 *Calculus buccal* (Row 40) males - true prevalence rates

All calculus levels were combined

Males													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	33/53 (62.26%)	26/31 (83.87%)	23/24 (95.83%)	20/21 (15.23%)	1/1 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	15/20 (75.00%)	11/13 (84.62%)	9/9 (100.00%)	8/8 (100.00%)
	Present	4/53 (7.55%)	4/31 (12.90%)	1/24 (4.17%)	1/21 (4.76%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	1/13 (7.69%)	0/9 (0.00%)	0/8 (0.00%)
Canada Unknown	Absent	3/5 (60.00%)	9/10 (90.00%)	6/6 (100.00%)	4/4 (100.00%)	3/5 (60.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	Present	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
Coats Island	Absent	158/224 (70.54%)	104/114 (91.23%)	71/74 (95.95%)	51/54 (94.44%)	73/109 (66.97%)	54/58 (93.10%)	37/39 (94.87%)	34/36 (94.44%)	6/6 (100.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)
	Present	11/224 (4.91%)	10/114 (8.77%)	4/74 (5.41%)	3/54 (5.56%)	6/109 (5.50%)	4/58 (6.89%)	2/39 (5.12%)	2/36 (5.56%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
East Greenland	Absent	2/3 (66.67%)	6/6 (100.00%)	5/5 (100.00%)	0/0 (0.00%)								
	Present	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
Greenland Unknown	Absent	6/10 (60.00%)	8/9 (88.89%)	4/5 (80.00%)	1/1 (100.00%)	3/3 100.00%	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	6/6 (100.00%)	2/2 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	Present	0/10 (0.00%)	1/9 (11.11%)	1/5 (20.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
Hudson Bay	Absent	173/234 (73.93%)	177/190 (93.16%)	135/140 (96.43%)	93/95 (97.89%)	57/79 (72.15%)	60/66 (90.91%)	53/55 (96.36%)	43/45 (95.55%)	45/61 (73.77%)	41/45 (91.11%)	29/30 (96.67%)	15/15 (100.00%)
	Present	5/234 (2.14%)	11/190 (5.79%)	5/140 (3.57%)	2/95 (2.11%)	3/79 (3.80%)	6/66 (9.09%)	2/55 (3.63%)	2/45 (4.44%)	0/61 (0.00%)	3/45 (6.67%)	0/30 (0.00%)	0/15 (0.00%)
North Alaska	Absent	16/16 (100.00%)	18/18 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/4 (100.00%)	4/4 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	5/5 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	Present	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
North Greenland	Absent	15/19 (78.95%)	21/24 (87.50%)	15/17 (88.24%)	9/10 (90.00%)	10/12 (83.33%)	8/8 (100.00%)	7/7 (100.00%)	6/6 (100.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/19 (0.00%)	3/24 (12.50%)	2/17 (11.76%)	1/10 (10.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Nunavut	Absent	180/260 (69.23%)	148/159 (93.08%)	105/118 (88.98%)	68/70 (97.14%)	41/72 (56.94%)	48/58 (82.76%)	34/43 (79.07%)	31/33 (93.94%)	33/43 (76.74%)	28/28 (100.00%)	17/19 (89.47%)	8/7 (114.29%)

	Present	11/260 (4.23%)	13/159 (8.18%)	13/118 (11.02%)	6/70 (8.57%)	9/72 (12.50%)	10/58 (17.24%)	9/43 (20.93%)	5/33 (15.15%)	0/43 (0.00%)	0/28 (0.00%)	1/19 (5.26%)	0/7 (0.00%)
South Alaska	Absent	14/25 (56.00%)	18/18 (100.00%)	13/13 (100.00%)	7/7 (100.00%)	7/10 (70.00%)	8/8 (100.00%)	6/6 (100.00%)	5/5 (100.00%)	4/8 (50.00%)	6/6 (100.00%)	4/4 (100.00%)	2/2 (100.00%)
	Present	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
South Greenland	Absent	3/6 (50.00%)	3/8 (37.50%)	3/4 (75.00%)	3/3 (100.00%)	3/6 (50.00%)	3/6 (50.00%)	2/3 (66.67%)	1/1 (100.00%)	0/0 (0.00%)	0/2 (0.00%)	1/1 (100.00%)	2/2 (100.00%)
	Present	1/6 (16.67%)	3/8 (37.50%)	1/4 (25.00%)	0/3 (0.00%)	1/6 (16.67%)	2/6 (33.33%)	1/3 (33.33%)	0/1 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/1 (0.00%)	0/2 (0.00%)
St. Lawrence	Absent	10/28 (35.71%)	20/22 (90.91%)	14/15 (93.33%)	5/6 (83.33%)	2/7 (28.57%)	8/8 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/9 (44.44%)	5/6 (83.33%)	1/2 (50.00%)	0/1 (0.00%)
	Present	0/28 (0.00%)	0/22 (0.00%)	1/15 (6.67%)	1/6 (16.67%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	1/2 (50.00%)	1/1 (100.00%)
Vancouver Island	Absent	0/5 (0.00%)	2/20 (10.00%)	0/11 (0.00%)	0/9 (0.00%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
	Present	0/5 (0.00%)	18/20 (90.00%)	10/11 (90.91%)	8/9 (88.89%)	0/1 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	4/4 (100.00%)				
West Aleutians	Absent	30/53 (56.60%)	35/38 (92.11%)	29/36 (80.56%)	19/24 (79.16%)	6/13 (46.15%)	5/6 (83.33%)	5/7 (71.43%)	4/5 (80.00%)	2/4 (50.00%)	9/9 (100.00%)	6/8 (75.00%)	3/3 (66.66%)
	Present	5/53 (9.43%)	3/38 (7.89%)	6/36 (16.67%)	5/24 (20.83%)	4/13 (30.77%)	1/6 (16.67%)	2/7 (28.57%)	1/5 (20.00%)	0/4 (0.00%)	0/9 (0.00%)	1/8 (12.50%)	1/3 (33.33%)
West Greenland	Absent	10/20 (50.00%)	14/17 (82.35%)	16/17 (94.12%)	7/7 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	1/2 (50.00%)	1/2 (50.00%)	1/1 (100.00%)
	Present	0/20 (0.00%)	2/17 (11.76%)	1/17 (5.88%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	1/2 (50.00%)	1/2 (50.00%)	0/1 (0.00%)

Appendix Table 170 *Calculus buccal* (Row 40) subadults - true prevalence rates

All calculus levels were combined

Per. = permanent dentition Dec. = deciduous dentition

Subadults		Pooled				Infant			Child				AD			
Calculus		AN	M1	M2	M3	AN	M1	M2	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	2/4 (50.00%)	7/8 (87.50%)	6/6 (100.00%)	0/0 (0.00%)				0/2 (0.00%)	7/7 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	1/4 (25.00%)	3/8 (37.50%)	4/6 (66.67%)	0/0 (0.00%)				0/2 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Canada Unknown	Absent per.	3/3 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	0/1 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Absent per.	34/73 (46.58%)	37/57 (64.91%)	10/43 (23.26%)	5/12 (41.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/46 (28.26%)	23/43 (53.49%)	0/32 (0.00%)	0/1 (0.00%)	12/16 (75.00%)	10/10 (100.00%)	6/7 (85.71%)	3/10 (30.00%)
	Absent dec.	36/131 (27.48%)	62/123 (50.41%)	58/120 (48.33%)	0/0 (0.00%)	27/95 (28.42%)	10/56 (17.86%)	4/49 (8.16%)	8/31 (25.81%)	52/65 (80.00%)	52/67 (77.61%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/73 (0.00%)	1/57 (1.75%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	1/43 (2.33%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)

	Present dec.	9/131 (6.87%)	16/123 (13.01%)	15/120 (12.50%)	0/0 (0.00%)	6/95 (6.32%)	3/56 (5.36%)	0/49 (0.00%)	3/31 (9.68%)	13/65 (20.00%)	14/67 (20.90%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Greenland Unknown	Absent per.	5/5 (100.00%)	8/8 (100.00%)	0/0 (0.00%)	0/0 (0.00%)				5/5 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	Present per.	0/5 (0.00%)	0/8 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	0/0 (0.00%)	2/4 (50.00%)	2/4 (50.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)
Hudson Bay	Absent per.	34/81 (41.98%)	62/82 (75.61%)	15/49 (30.61%)	2/13 (15.38%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/57 (22.81%)	46/66 (69.70%)	4/37 (10.81%)	0/3 (0.00%)	21/24 (87.50%)	16/16 (100.00%)	11/12 (91.67%)	2/10 (20.00%)
	Absent dec.	23/66 (34.85%)	64/82 (78.05%)	65/73 (89.04%)	0/0 (0.00%)	7/39 (17.95%)	8/21 (38.10%)	8/15 (53.33%)	16/27 (59.26%)	56/61 (91.80%)	57/58 (98.28%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/81 (0.00%)	1/82 (1.22%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	1/66 (1.52%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	Present dec.	7/66 (10.61%)	16/82 (19.51%)	20/73 (27.40%)	0/0 (0.00%)	1/39 (2.56%)	2/21 (9.52%)	2/15 (13.33%)	6/27 (22.22%)	14/61 (22.95%)	18/58 (31.03%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
North Alaska	Absent per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Absent dec.	0/1 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	0/0 (0.00%)				0/1 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	0/0 (0.00%)				
	Present per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Present dec.	0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				
North Greenland	Absent per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				

	Absent t dec.	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				
	Present t per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Present t dec.	0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				
Nunavut	Absent t per.	14/42 (33.33%)	37/55 (67.27%)	10/57 (17.54%)	0/0 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	13/38 (34.21%)	33/52 (63.46%)	4/53 (7.55%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent t dec.	21/112 (18.75%)	52/113 (46.02%)	53/98 (54.08%)	0/15 (0.00%)	2/4 (50.00%)	0/3 (0.00%)	0/4 (0.00%)	19/104 (18.27%)	52/104 (50.00%)	53/86 (61.63%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
	Present t per.	0/42 (0.00%)	2/55 (3.64%)	2/57 (3.51%)	0/0 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/38 (0.00%)	0/52 (0.00%)	0/53 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present t dec.	6/112 (5.36%)	13/113 (11.50%)	15/98 (15.31%)	0/15 (0.00%)	1/4 (25.00%)	0/3 (0.00%)	0/4 (0.00%)	5/104 (4.81%)	13/104 (12.50%)	15/86 (17.44%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
South Alaska	Absent t per.	7/9 (77.78%)	4/4 (100.00%)	2/2 (100.00%)	1/2 (50.00%)								7/9 (77.78%)	4/4 (100.00%)	2/2 (100.00%)	1/2 (50.00%)
	Absent t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)								0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present t per.	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)								0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	Present t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)								0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Vancouver Island	Absent t per.	1/2 (50.00%)	2/8 (25.00%)	1/2 (50.00%)	0/0 (0.00%)				1/2 (50.00%)	0/6 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent t dec.	0/0 (0.00%)	4/5 (80.00%)	4/5 (80.00%)	0/0 (0.00%)				0/0 (0.00%)	4/5 (80.00%)	4/5 (80.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present t per.	0/2 (0.00%)	2/8 (25.00%)	0/2 (0.00%)	0/0 (0.00%)				0/2 (0.00%)	2/6 (33.33%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present t dec.	0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)				0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

West Aleutians	Absent per.	0/8 (0.00%)	9/11 (81.82%)	2/8 (25.00%)	1/2 (50.00%)				0/8 (0.00%)	7/7 (100.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/4 (50.00%)	2/2 (100.00%)	1/2 (50.00%)
	Absent dec.	0/2 (0.00%)	9/9 (100.00%)	9/9 (100.00%)	0/0 (0.00%)				0/2 (0.00%)	7/7 (100.00%)	7/7 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)
	Present per.	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	Present dec.	0/2 (0.00%)	1/9 (11.11%)	1/9 (11.11%)	0/0 (0.00%)				0/2 (0.00%)	1/7 (14.29%)	1/7 (14.29%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
West Greenland	Absent per.	0/0 (0.00%)	2/2 (100.00%)	0/2 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	2/2 (100.00%)	0/2 (0.00%)	0/0 (0.00%)				
	Absent dec.	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)				0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)				
	Present per.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				
	Present dec.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				

Appendix Table 171 Calculus lingual (Row 41) females - true prevalence rates

All calculus levels were combined

Females													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	26/47 (55.32%)	29/40 (72.50%)	28/32 (87.50%)	20/23 (86.95%)	8/18 (44.44%)	8/12 (66.67%)	7/9 (77.78%)	5/6 (83.33%)	5/10 (50.00%)	10/15 (66.67%)	2/11 (18.18%)	7/7 (100.00%)
	Present	8/47 (17.02%)	8/40 (20.00%)	4/32 (12.50%)	3/23 (13.04%)	6/18 (33.33%)	4/12 (33.33%)	2/9 (22.22%)	1/6 (16.67%)	0/10 (0.00%)	3/15 (20.00%)	0/11 (0.00%)	0/7 (0.00%)
Canada Unknown	Absent	4/5 (80.00%)	6/6 (100.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/1 (0.00%)				
	Present	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)				
Coats Island	Absent	132/198 (66.67%)	138/152 (90.79%)	89/101 (89.90%)	66/73 (90.41%)	65/107 (60.75%)	82/88 (93.18%)	44/54 (84.62%)	34/41 (85.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	1/1 (100.00%)
	Present	13/198 (6.57%)	14/152 (9.21%)	10/101 (10.10%)	7/73 (9.59%)	7/107 (6.54%)	6/88 (6.82%)	7/54 (13.46%)	7/41 (17.07%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
East Greenland	Absent	1/11 (9.09%)	5/19 (45.45%)	3/14 (21.42%)	2/12 (16.66%)	0/2 (0.00%)	3/11 (27.27%)	1/7 (14.28%)	1/4 (25.00%)				
	Present	2/11 (0.00%)	4/19 (0.00%)	5/14 (0.00%)	2/12 (0.00%)	0/2 (0.00%)	3/11 (0.00%)	3/7 (0.00%)	1/4 (25.00%)				
Greenland Unknown	Absent	12/19 (63.16%)	17/18 (94.44%)	11/12 (91.67%)	5/6 (83.33%)	1/4 (25.00%)	2/3 (66.67%)	1/2 (50.00%)	0/2 (0.00%)	1/3 (33.33%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/19 (0.00%)	1/18 (5.56%)	1/12 (8.33%)	1/6 (16.67%)	0/4 (0.00%)	1/3 (33.33%)	1/2 (50.00%)	1/2 (50.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Hudson Bay	Absent	150/227 (66.08%)	242/250 (96.80%)	199/207 (96.14%)	137/142 (96.47%)	60/99 (60.61%)	89/97 (91.75%)	74/82 (90.24%)	62/66 (92.42%)	13/20 (65.00%)	23/23 (100.00%)	17/17 (100.00%)	12/12 (100.00%)
	Present	10/227 (4.41%)	8/250 (3.20%)	4/207 (1.93%)	5/142 (3.52%)	10/99 (10.10%)	8/97 (8.25%)	4/82 (4.88%)	5/66 (7.58%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
North Alaska	Absent	9/13 (69.23%)	18/18 (100.00%)	14/14 (100.00%)	7/11 (63.64%)	1/2 (50.00%)	8/8 (100.00%)	6/6 (100.00%)	3/3 (100.00%)				
	Present	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
North Greenland	Absent	1/3 (33.33%)	26/26 (100.00%)	20/20 (100.00%)	14/14 (100.00%)	0/1 (0.00%)	10/10 (100.00%)	6/6 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)
	Present	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)

Nunavut	Absent	99/147 (67.35%)	115/123 (93.50%)	88/94 (93.62%)	60/71 (84.51%)	42/66 (63.64%)	48/54 (88.89%)	45/50 (90.00%)	29/33 (87.87%)	7/14 (50.00%)	8/8 (100.00%)	5/5 (100.00%)	1/1 (100.00%)
	Present	6/147 (4.08%)	5/123 (4.07%)	5/94 (5.32%)	6/71 (8.45%)	6/66 (9.09%)	4/54 (7.41%)	4/50 (8.00%)	4/33 (12.12%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
South Alaska	Absent	9/31 (29.03%)	5/16 (31.25%)	7/18 (38.89%)	2/11 (18.18%)	0/14 (0.00%)	2/9 (22.22%)	2/9 (22.22%)	0/5 (0.00%)	7/9 (77.78%)	3/3 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	Present	3/31 (9.68%)	5/16 (31.25%)	6/18 (33.33%)	5/11 (45.45%)	3/14 (21.43%)	3/9 (33.33%)	3/9 (33.33%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
South Greenland	Absent	0/4 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	Present	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	1/1 (100.00%)				
St. Lawrence	Absent	12/27 (44.44%)	24/25 (96.00%)	17/17 (100.00%)	7/7 (0.00%)	8/15 (53.33%)	10/10 (100.00%)	9/9 (100.00%)	5/5 (100.00%)	0/2 (0.00%)	4/4 (100.00%)	3/3 (100.00%)	0/0 (0.00%)
	Present	0/27 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/15 (0.00%)	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
Vancouver Island	Absent	5/7 (71.43%)	10/10 (100.00%)	8/8 (100.00%)	2/2 (100.00%)	5/7 (71.43%)	9/9 (100.00%)	8/8 (100.00%)	2/2 (100.00%)				
	Present	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
West Aleutians	Absent	17/37 (45.95%)	30/31 (96.77%)	25/27 (92.59%)	16/23 (69.57%)	2/6 (33.33%)	5/6 (83.33%)	3/4 (75.00%)	2/3 (66.66%)	3/13 (23.08%)	7/7 (100.00%)	5/5 (100.00%)	3/5 (60.00%)
	Present	4/37 (10.81%)	1/31 (3.23%)	1/27 (3.70%)	1/23 (4.35%)	0/6 (0.00%)	1/6 (16.67%)	1/4 (25.00%)	1/3 (33.33%)	4/13 (30.77%)	0/7 (0.00%)	0/5 (0.00%)	0/5 (0.00%)
West Greenland	Absent	0/1 (0.00%)	6/8 (75.00%)	6/6 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	2/2 (100.00%)	1/1 (100.00%)				
	Present	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				

Appendix Table 172 *Calculus lingual (Row 41) males - true prevalence rates**All calculus levels were combined*

Males													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	36/53 (67.92%)	28/31 (90.32%)	22/24 (91.66%)	19/21 (90.47%)	1/1 (100.00%)	2/2 (100.00%)	1/2 (50.00%)	1/2 (50.00%)	15/20 (75.00%)	10/13 (76.92%)	8/9 (88.8%)	7/8 (87.50%)
	Present	4/53 (7.55%)	2/31 (6.45%)	2/24 (8.33%)	2/21 (9.52%)	0/1 (0.00%)	0/2 (0.00%)	1/2 (50.00%)	1/2 (50.00%)	0/20 (0.00%)	2/13 (15.38%)	1/9 (11.11%)	1/8 (12.50%)
Canada Unknown	Absent	3/5 (60.00%)	9/10 (90.00%)	6/6 (100.00%)	4/4 (100.00%)	3/5 (60.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	Present	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
Coats Island	Absent	155/224 (69.20%)	104/114 (91.23%)	70/74 (94.59%)	48/54 (85.71%)	74/109 (67.89%)	53/58 (91.37%)	37/39 (94.87%)	34/36 (94.44%)	6/6 (100.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)
	Present	15/224 (6.70%)	10/114 (8.77%)	4/74 (5.40%)	6/54 (11.11%)	5/109 (4.59%)	5/58 (8.62%)	3/39 (7.69%)	2/36 (5.56%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
East Greenland	Absent	0/3 (0.00%)	1/6 (16.66%)	1/5 (20.00%)	0/0 (0.00%)								
	Present	1/3 (33.30%)	2/6 (33.33%)	1/5 (20.00%)	0/0 (0.00%)								
Greenland Unknown	Absent	6/10 (60.00%)	7/9 (77.78%)	4/5 (80.00%)	1/1 (100.00%)	0/3 (0.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	5/6 (83.33%)	2/2 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	Present	1/10 (10.00%)	2/9 (22.22%)	1/5 (20.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	1/6 (16.67%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
Hudson Bay	Absent	171/234 (73.08%)	179/190 (94.21%)	135/140 (96.43%)	93/95 (97.89%)	57/79 (72.15%)	60/66 (90.91%)	52/55 (94.54%)	43/45 (95.55%)	45/61 (73.77%)	44/45 (97.78%)	29/30 (96.67%)	15/15 (100.00%)
	Present	7/234 (2.99%)	9/190 (4.74%)	5/140 (3.57%)	2/95 (2.11%)	3/79 (3.80%)	6/66 (9.09%)	3/55 (5.45%)	2/45 (4.44%)	0/61 (0.00%)	0/45 (0.00%)	0/30 (0.00%)	0/15 (0.00%)
North Alaska	Absent	16/16 (100.00%)	18/18 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/4 (100.00%)	4/4 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	5/5 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	Present	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
North Greenland	Absent	15/19 (78.95%)	24/24 (100.00%)	16/17 (94.12%)	10/10 (100.00%)	10/12 (83.33%)	8/8 (100.00%)	7/7 (100.00%)	6/6 (100.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/19 (0.00%)	0/24 (0.00%)	1/17 (5.88%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

Nunavut	Absent	184/260 (71.04%)	153/159 (96.22%)	113/118 (95.76%)	67/70 (95.71%)	43/72 (59.72%)	52/58 (89.66%)	38/43 (88.37%)	30/33 (90.90%)	33/43 (76.74%)	28/28 (100.00%)	18/19 (94.74%)	7/7 (100.00%)
	Present	7/260 (2.70%)	6/159 (3.77%)	5/118 (4.24%)	3/70 (4.29%)	7/72 (9.72%)	6/58 (10.34%)	5/43 (11.63%)	3/33 (9.09%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	0/7 (0.00%)
South Alaska	Absent	14/25 (56.00%)	18/18 (100.00%)	13/13 (100.00%)	7/7 (100.00%)	7/10 (70.00%)	8/8 (100.00%)	6/6 (100.00%)	5/5 (100.00%)	4/8 (50.00%)	6/6 (100.00%)	4/4 (100.00%)	2/2 (100.00%)
	Present	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
South Greenland	Absent	4/6 (66.67%)	6/8 (75.00%)	4/4 (100.00%)	3/3 (100.00%)	4/6 (66.67%)	5/6 (83.33%)	3/3 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	1/2 (50.00%)	1/1 (100.00%)	2/2 (100.00%)
	Present	0/6 (0.00%)	0/8 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/2 (0.00%)
St. Lawrence	Absent	10/28 (35.71%)	20/22 (90.91%)	15/15 (100.00%)	6/6 (100.00%)	2/7 (28.57%)	8/8 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/9 (44.44%)	5/6 (83.33%)	2/2 (100.00%)	1/1 (100.00%)
	Present	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
Vancouver Island	Absent	2/5 (40.00%)	6/20 (30.00%)	2/11 (18.18%)	2/9 (22.22%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
	Present	1/5 (20.00%)	14/20 (70.00%)	9/11 (81.82%)	6/9 (66.67%)	0/1 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	4/4 (100.00%)				
West Aleutians	Absent	34/53 (64.15%)	36/38 (94.74%)	32/36 (88.89%)	23/24 (95.83%)	9/13 (69.23%)	6/6 (100.00%)	6/7 (85.71%)	4/5 (80.00%)	2/4 (50.00%)	9/9 (100.00%)	7/8 (87.50%)	3/3 (100.00%)
	Present	1/53 (1.89%)	0/38 (0.00%)	1/36 (2.78%)	1/24 (4.17%)	1/13 (7.69%)	0/6 (0.00%)	1/7 (14.29%)	1/5 (20.00%)	0/4 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/3 (0.00%)
West Greenland	Absent	10/20 (50.00%)	15/17 (88.24%)	16/17 (94.12%)	6/7 (85.71%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	1/1 (100.00%)
	Present	0/20 (0.00%)	1/17 (5.88%)	1/17 (5.88%)	1/7 (14.29%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/1 (0.00%)

Appendix Table 173 Calculus lingual (Row 41) subadults - true prevalence rates

All calculus levels were combined

Per. = permanent dentition Dec. = deciduous dentition

Subadults		Pooled				Infant			Child				AD			
Calculus		AN	M1	M2	M3	AN	M1	M2	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	2/4 (50.00%)	7/8 (87.50%)	6/6 (100.00%)	0/0 (0.00%)				0/2 (0.00%)	7/7 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	1/4 (25.00%)	3/8 (37.50%)	4/6 (66.67%)	0/0 (0.00%)				0/2 (0.00%)	3/7 (42.86%)	3/6 (50.00%)	0/0 (0.00%)	1/2 (50.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Canada Unknown	Absent per.	3/3 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	0/1 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Absent per.	34/73 (46.58%)	38/57 (66.67%)	10/43 (23.26%)	5/12 (41.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/46 (28.26%)	24/43 (55.81%)	0/32 (0.00%)	0/1 (0.00%)	12/16 (75.00%)	10/10 (100.00%)	6/7 (85.71%)	3/10 (30.00%)
	Absent dec.	36/131 (27.48%)	62/123 (50.41%)	59/120 (49.17%)	0/0 (0.00%)	27/95 (28.42%)	10/56 (17.86%)	4/49 (8.16%)	8/31 (25.81%)	52/65 (80.00%)	53/67 (79.10%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	Present dec.	9/131 (6.87%)	16/123 (13.01%)	14/120 (11.67%)	0/0 (0.00%)	6/95 (6.32%)	3/56 (5.36%)	0/49 (0.00%)	3/31 (9.68%)	13/65 (20.00%)	13/67 (19.40%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Greenland Unknown	Absent per.	5/5 (100.00%)	8/8 (100.00%)	0/0 (0.00%)	0/0 (0.00%)				5/5 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)

	Presen t per.	0/5 (0.00%)	0/8 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t dec.	0/0 (0.00%)	2/4 (50.00%)	2/4 (50.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)
Hudson Bay	Absen t per.	34/81 (41.98%)	63/82 (76.83%)	15/49 (30.61%)	2/13 (15.38 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/57 (22.81%)	47/66 (71.21%)	4/37 (10.81%)	0/3 (0.00%)	21/24 (87.50%)	16/16 (100.00 %)	11/12 (91.67%)	2/10 (20.00 %)
	Absen t dec.	23/66 (34.85%)	64/82 (78.05%)	65/73 (89.04%)	0/0 (0.00%)	7/39 (17.95%)	8/21 (38.10 %)	8/15 (53.33 %)	16/27 (59.26%)	56/61 (91.80%)	57/58 (98.28%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	Presen t dec.	7/66 (10.61%)	16/82 (19.51%)	20/73 (27.40%)	0/0 (0.00%)	1/39 (2.56%)	2/21 (9.52%)	2/15 (13.33 %)	6/27 (22.22%)	14/61 (22.95%)	18/58 (31.03%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
North Alaska	Absen t per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Absen t dec.	0/1 (0.00%)	3/3 (100.00 %)	3/3 (100.00 %)	0/0 (0.00%)				0/1 (0.00%)	3/3 (100.00 %)	3/3 (100.00 %)	0/0 (0.00%)				
	Presen t per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Presen t dec.	0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				
North Greenlan d	Absen t per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Absen t dec.	0/0 (0.00%)	4/4 (100.00 %)	4/4 (100.00 %)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00 %)	4/4 (100.00 %)	0/0 (0.00%)				
	Presen t per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Presen t dec.	0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				
Nunavut	Absen t per.	15/70 (21.43%)	39/58 (67.24%)	12/41 (29.27%)	4/15 (26.67 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/66 (19.70%)	33/52 (63.46%)	4/33 (12.12%)	1/5 (20.00 %)	2/4 (50.00%)	6/6 (100.00 %)	8/8 (100.00 %)	3/10 (30.00 %)
	Absen t dec.	21/42 (50.00%)	52/55 (94.55%)	53/57 (92.98%)	0/0 (0.00%)	2/4 (50.00%)	0/3 (0.00%)	0/4 (0.00%)	19/38 (50.00%)	52/52 (100.00 %)	53/53 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
	Presen t dec.	6/42 (14.29%)	13/55 (23.64%)	15/57 (26.32%)	0/0 (0.00%)	1/4 (25.00%)	0/3 (0.00%)	0/4 (0.00%)	5/38 (13.16%)	13/52 (25.00%)	15/53 (28.30%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

South Alaska	Absen t per.	7/9 (77.78%)	4/4 (100.00 %)	2/2 (100.00 %)	1/2 (50.00 %)					7/9 (77.78%)	4/4 (100.00 %)	2/2 (100.00 %)	1/2 (50.00 %)
	Absen t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)					0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	Presen t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Vancouv er Island	Absen t per.	0/2 (0.00%)	2/8 (25.00%)	0/2 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	2/2 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)
	Absen t dec.	0/0 (0.00%)	5/5 (100.00 %)	5/5 (100.00 %)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	1/2 (50.00%)	2/8 (25.00%)	0/2 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t dec.	0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)					0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
West Aleutians	Absen t per.	0/8 (0.00%)	9/11 (81.82%)	2/8 (25.00%)	1/2 (50.00 %)					0/8 (0.00%)	7/7 (100.00 %)	0/6 (0.00%)	0/0 (0.00%)
	Absen t dec.	0/2 (0.00%)	9/9 (100.00 %)	9/9 (100.00 %)	0/0 (0.00%)					0/2 (0.00%)	7/7 (100.00 %)	7/7 (100.00 %)	0/0 (0.00%)
	Presen t per.	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)					0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)
	Presen t dec.	0/2 (0.00%)	1/9 (11.11%)	1/9 (11.11%)	0/0 (0.00%)					0/2 (0.00%)	1/7 (14.29%)	1/7 (14.29%)	0/0 (0.00%)
West Greenlan d	Absen t per.	0/0 (0.00%)	2/2 (100.00 %)	0/2 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	2/2 (100.00 %)	0/2 (0.00%)	0/0 (0.00%)
	Absen t dec.	0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)					0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)
	Presen t per.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
	Presen t dec.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)					0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)

Appendix Table 174 Calculus distal (Row 42) – females - true prevalence rates

All calculus levels were combined

Females													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	28/47 (59.57%)	30/40 (75.00%)	29/32 (90.63%)	19/23 (82.60%)	8/18 (44.44%)	8/12 (66.67%)	7/9 (77.78%)	5/6 (83.33%)	5/10 (50.00%)	10/15 (66.67%)	10/11 (90.91%)	6/7 (85.71%)
	Present	6/47 (12.77%)	7/40 (17.50%)	3/32 (9.38%)	4/23 (17.39%)	6/18 (33.33%)	4/12 (33.33%)	2/9 (22.22%)	1/6 (16.67%)	0/10 (0.00%)	3/15 (20.00%)	1/11 (9.09%)	1/7 (14.29%)
Canada Unknown	Absent	4/5 (80.00%)	6/6 (100.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/1 (0.00%)				
	Present	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)				
Coats Island	Absent	114/198 (57.58%)	133/152 (87.50%)	86/101 (86.87%)	66/73 (90.41%)	56/107 (52.34%)	78/88 (88.64%)	42/54 (80.77%)	34/41 (82.92%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)
	Present	27/198 (13.64%)	17/152 (11.18%)	12/101 (12.12%)	7/73 (9.59%)	16/107 (14.95%)	9/88 (10.23%)	9/54 (17.31%)	7/41 (17.07%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
East Greenland	Absent	8/11 (72.73%)	19/19 (100.00%)	14/14 (100.00%)	8/12 (66.67%)	0/2 (0.00%)	11/11 (100.00%)	7/7 (100.00%)	4/4 (100.00%)				
	Present	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
Greenland Unknown	Absent	11/19 (57.89%)	16/18 (88.89%)	11/12 (91.67%)	5/6 (83.33%)	0/4 (0.00%)	1/3 (33.33%)	1/2 (50.00%)	0/2 (0.00%)	1/3 (33.33%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	1/19 (5.26%)	2/18 (11.11%)	1/12 (8.33%)	1/6 (16.67%)	1/4 (25.00%)	2/3 (66.67%)	1/2 (50.00%)	1/2 (50.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Hudson Bay	Absent	149/227 (65.64%)	240/250 (96.00%)	197/207 (95.17%)	138/142 (97.18%)	59/99 (59.60%)	87/97 (89.69%)	72/82 (87.80%)	62/66 (93.93%)	13/20 (65.00%)	23/23 (100.00%)	17/17 (100.00%)	12/12 (100.00%)
	Present	11/227 (4.85%)	8/250 (3.20%)	4/207 (1.93%)	4/142 (2.82%)	11/99 (11.11%)	8/97 (8.25%)	4/82 (4.88%)	4/66 (6.06%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
North Alaska	Absent	9/13 (69.23%)	18/18 (100.00%)	14/14 (100.00%)	7/11 (63.64%)	1/2 (50.00%)	8/8 (100.00%)	6/6 (100.00%)	3/3 (100.00%)				
	Present	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
North Greenland	Absent	1/3 (33.33%)	26/26 (100.00%)	20/20 (100.00%)	14/14 (100.00%)	0/1 (0.00%)	10/10 (100.00%)	6/6 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)
	Present	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)

Nunavut	Absent	97/147 (65.99%)	111/123 (90.24%)	87/94 (92.55%)	61/71 (85.92%)	42/66 (63.64%)	47/54 (87.04%)	44/50 (88.00%)	33/33 (100.00%)	7/14 (50.00%)	8/8 (100.00%)	5/5 (100.00%)	1/1 (100.00%)
	Present	6/147 (4.08%)	5/123 (4.07%)	4/94 (4.26%)	5/71 (7.04%)	6/66 (9.09%)	4/54 (7.41%)	4/50 (8.00%)	4/33 (12.12%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
South Alaska	Absent	16/31 (51.61%)	9/16 (56.25%)	11/18 (61.11%)	7/11 (63.64%)	7/14 (50.00%)	6/9 (66.67%)	6/9 (66.67%)	4/5 (80.00%)	7/9 (77.78%)	3/3 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	Present	5/31 (16.13%)	7/16 (43.75%)	7/18 (38.89%)	4/11 (36.36%)	3/14 (21.43%)	3/9 (33.33%)	3/9 (33.33%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
South Greenland	Absent	0/4 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	Present	0/4 (0.00%)	0/3 (0.00%)	1/3 (33.33%)	1/1 (100.00%)	0/3 (0.00%)	0/3 (0.00%)	1/3 (33.33%)	1/1 (100.00%)				
St. Lawrence	Absent	12/27 (44.44%)	24/25 (96.00%)	16/17 (94.12%)	6/7 (85.71%)	8/15 (53.33%)	10/10 (100.00%)	8/9 (88.89%)	4/5 (80.00%)	0/2 (0.00%)	4/4 (100.00%)	3/3 (100.00%)	0/0 (0.00%)
	Present	0/27 (0.00%)	0/25 (0.00%)	1/17 (5.88%)	1/7 (14.29%)	0/15 (0.00%)	0/10 (0.00%)	1/9 (11.11%)	1/5 (20.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
Vancouver Island	Absent	5/7 (71.43%)	10/10 (100.00%)	6/8 (75.00%)	1/2 (50.00%)	5/7 (71.43%)	9/9 (100.00%)	6/8 (75.00%)	1/2 (50.00%)				
	Present	0/7 (0.00%)	0/10 (0.00%)	2/8 (25.00%)	1/2 (50.00%)	0/7 (0.00%)	0/9 (0.00%)	2/8 (25.00%)	1/2 (50.00%)				
West Aleutians	Absent	17/37 (45.95%)	29/31 (93.54%)	25/27 (92.59%)	16/23 (69.57%)	2/6 (33.33%)	5/6 (83.33%)	3/4 (75.00%)	2/3 (66.66%)	3/13 (23.08%)	6/7 (85.71%)	4/5 (80.00%)	2/5 (40.00%)
	Present	4/37 (10.81%)	2/31 (6.45%)	2/27 (7.41%)	2/23 (8.70%)	0/6 (0.00%)	1/6 (16.67%)	1/4 (25.00%)	1/3 (33.33%)	4/13 (30.77%)	1/7 (14.29%)	1/5 (20.00%)	1/5 (20.00%)
West Greenland	Absent	0/1 (0.00%)	7/8 (87.50%)	6/6 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	3/4 (75.00%)	2/2 (100.00%)	1/1 (100.00%)				
	Present	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				

Appendix Table 175 Calculus distal (Row 42) – males - true prevalence rates

All calculus levels were combined

Males													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	33/53 (62.26%)	26/31 (83.87%)	23/24 (95.83%)	20/21 (95.23%)	1/1 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	15/20 (75.00%)	11/13 (84.62%)	9/9 (100.00%)	33/53 (62.26%)
	Present	7/53 (13.21%)	3/31 (9.68%)	1/24 (4.17%)	1/21 (4.76%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	1/13 (7.69%)	0/9 (0.00%)	7/53 (13.21%)
Canada Unknown	Absent	3/5 (60.00%)	9/10 (90.00%)	6/6 (100.00%)	4/4 (100.00%)	3/5 (60.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	3/5 (60.00%)
	Present	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/5 (0.00%)
Coats Island	Absent	155/224 (69.20%)	106/114 (92.98%)	69/74 (93.24%)	50/54 (92.59%)	73/109 (66.97%)	53/58 (91.37%)	35/39 (89.74%)	36/36 (100.00%)	6/6 (100.00%)	4/4 (100.00%)	3/3 (100.00%)	155/224 (69.20%)
	Present	15/224 (6.70%)	8/114 (7.02%)	5/74 (6.76%)	4/54 (7.41%)	6/109 (5.50%)	5/58 (8.62%)	4/39 (10.26%)	3/36 (8.33%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	15/224 (6.70%)
East Greenland	Absent	2/3 (66.67%)	6/6 (100.00%)	5/5 (100.00%)	4/4 (100.00%)								
	Present	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/4 (0.00%)								
Greenland Unknown	Absent	6/10 (60.00%)	9/9 (100.00%)	5/5 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	6/6 (100.00%)	2/2 (100.00%)	1/1 (100.00%)	6/10 (60.00%)
	Present	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/10 (0.00%)
Hudson Bay	Absent	175/234 (74.79%)	180/190 (94.74%)	136/140 (97.14%)	93/95 (97.89%)	57/79 (72.15%)	61/66 (92.42%)	53/55 (96.36%)	43/45 (95.55%)	47/61 (77.05%)	41/45 (91.11%)	27/30 (90.00%)	175/234 (74.79%)
	Present	3/234 (1.28%)	8/190 (4.21%)	4/140 (2.86%)	2/95 (2.11%)	3/79 (3.80%)	5/66 (7.58%)	2/55 (3.64%)	2/45 (4.44%)	0/61 (0.00%)	1/45 (2.22%)	0/30 (0.00%)	3/234 (1.28%)
North Alaska	Absent	16/16 (100.00%)	18/18 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/4 (100.00%)	4/4 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	5/5 (100.00%)	1/1 (100.00%)	16/16 (100.00%)
	Present	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/16 (0.00%)
North Greenland	Absent	15/19 (78.95%)	24/24 (100.00%)	17/17 (100.00%)	10/10 (100.00%)	10/12 (83.33%)	8/8 (100.00%)	7/7 (100.00%)	6/6 (100.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	15/19 (78.95%)
	Present	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/19 (0.00%)

Nunavut	Absent	178/260 (68.73%)	150/159 (94.33%)	110/118 (93.22%)	66/70 (94.28%)	37/72 (51.39%)	50/58 (86.21%)	36/43 (83.72%)	29/33 (87.87%)	33/43 (76.74%)	28/28 (100.00%)	18/19 (94.74%)	178/260 (68.73%)
	Present	13/260 (5.02%)	9/159 (5.66%)	8/118 (6.78%)	4/70 (5.71%)	13/72 (18.06%)	8/58 (13.79%)	7/43 (16.28%)	4/33 (12.12%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	13/260 (5.02%)
South Alaska	Absent	14/25 (56.00%)	18/18 (100.00%)	13/13 (100.00%)	7/7 (100.00%)	7/10 (70.00%)	8/8 (100.00%)	6/6 (100.00%)	5/5 (100.00%)	4/8 (50.00%)	6/6 (100.00%)	4/4 (100.00%)	14/25 (56.00%)
	Present	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/25 (0.00%)
South Greenland	Absent	3/6 (50.00%)	3/8 (37.50%)	3/4 (75.00%)	3/3 (100.00%)	3/6 (50.00%)	3/6 (50.00%)	2/3 (66.67%)	1/1 (100.00%)	0/0 (0.00%)	0/2 (0.00%)	1/1 (100.00%)	3/6 (50.00%)
	Present	1/6 (16.67%)	2/8 (25.00%)	1/4 (25.00%)	0/3 (0.00%)	1/6 (16.67%)	2/6 (33.33%)	1/3 (33.33%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	1/6 (16.67%)
St. Lawrence	Absent	10/28 (35.71%)	20/22 (90.91%)	15/15 (100.00%)	6/6 (100.00%)	2/7 (28.57%)	8/8 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/9 (44.44%)	5/6 (83.33%)	2/2 (100.00%)	10/28 (35.71%)
	Present	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/28 (0.00%)
Vancouver Island	Absent	2/5 (40.00%)	6/20 (30.00%)	2/11 (18.18%)	3/9 (33.33%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	1/4 (25.00%)				
	Present	0/5 (0.00%)	14/20 (70.00%)	9/11 (81.82%)	5/9 (55.56%)	0/1 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	3/4 (75.00%)				
West Aleutians	Absent	34/53 (64.15%)	34/38 (89.47%)	33/36 (91.67%)	24/24 (100.00%)	10/13 (76.92%)	6/6 (100.00%)	7/7 (100.00%)	4/4 (100.00%)	2/4 (50.00%)	9/9 (100.00%)	7/8 (87.50%)	34/53 (64.15%)
	Present	1/53 (1.89%)	2/38 (5.26%)	0/36 (0.00%)	0/24 (0.00%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	1/53 (1.89%)
West Greenland	Absent	10/20 (50.00%)	16/17 (94.12%)	17/17 (100.00%)	7/7 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	10/20 (50.00%)
	Present	0/20 (0.00%)	0/17 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)

Appendix Table 176 Calculus distal (Row 42) – subadults - true prevalence rates

All calculus levels were combined

Per. = permanent dentition Dec. = deciduous dentition

Subadults		Pooled				Infant			Child				AD			
Calculus		AN	M1	M2	M3	AN	M1	M2	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Absent dec.	2/4 (50.00%)	7/8 (87.50%)	6/6 (100.00%)	0/0 (0.00%)				2/2 (100.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Present per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Present dec.	1/4 (25.00%)	3/8 (37.50%)	4/6 (66.67%)	0/0 (0.00%)				1/2 (50.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
Canada Unknown	Absent per.	3/3 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	0/1 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Absent per.	34/73 (46.58%)	38/57 (66.67%)	10/43 (23.26%)	5/12 (41.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/46 (28.26%)	24/43 (55.81%)	0/32 (0.00%)	0/1 (0.00%)	12/16 (75.00%)	10/10 (100.00%)	6/7 (85.71%)	3/10 (30.00%)
	Absent dec.	36/131 (27.48%)	62/123 (50.41%)	59/120 (49.17%)	0/0 (0.00%)	27/95 (28.42%)	10/56 (17.86%)	4/49 (8.16%)	8/31 (25.81%)	52/65 (80.00%)	53/67 (79.10%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	Present dec.	9/131 (6.87%)	16/123 (13.01%)	14/120 (11.67%)	0/0 (0.00%)	6/95 (6.32%)	3/56 (5.36%)	0/49 (0.00%)	3/31 (9.68%)	13/65 (20.00%)	13/67 (19.40%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Greenland Unknown	Absent per.	5/5 (100.00%)	8/8 (100.00%)	0/0 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Absent dec.	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				

	Presen t per.	0/5 (0.00%)	0/8 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Presen t dec.	0/0 (0.00%)	2/4 (50.00%)	2/4 (50.00%)	0/0 (0.00%)				0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				
Hudson Bay	Absen t per.	34/81 (41.98%)	63/82 (76.83%)	15/49 (30.61%)	2/13 (15.38 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/57 (22.81%)	47/66 (71.21%)	4/37 (10.81%)	0/3 (0.00%)	21/24 (87.50%)	16/16 (100.00 %)	11/12 (91.67%)	2/10 (20.00 %)
	Absen t dec.	23/66 (34.85%)	64/82 (78.05%)	65/73 (89.04%)	0/0 (0.00%)	7/39 (17.95%)	8/21 (38.10 %)	8/15 (53.33 %)	16/27 (59.26%)	56/61 (91.80%)	57/58 (98.28%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	Presen t dec.	7/66 (10.61%)	16/82 (19.51%)	20/73 (27.40%)	0/0 (0.00%)	1/39 (2.56%)	2/21 (9.52%)	2/15 (13.33 %)	6/27 (22.22%)	14/61 (22.95%)	18/58 (31.03%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
North Alaska	Absen t per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Absen t dec.	0/1 (0.00%)	3/3 (100.00 %)	3/3 (100.00 %)	0/0 (0.00%)				0/1 (0.00%)	3/3 (100.00 %)	3/3 (100.00 %)	0/0 (0.00%)				
	Presen t per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Presen t dec.	0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				
North Greenlan d	Absen t per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Absen t dec.	0/0 (0.00%)	4/4 (100.00 %)	4/4 (100.00 %)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00 %)	4/4 (100.00 %)	0/0 (0.00%)				
	Presen t per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Presen t dec.	0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				
Nunavut	Absen t per.	15/70 (21.43%)	39/58 (67.24%)	12/41 (29.27%)	4/15 (26.67 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/66 (19.70%)	33/52 (63.46%)	4/33 (12.12%)	1/5 (20.00 %)	2/4 (50.00%)	6/6 (100.00 %)	8/8 (100.00 %)	3/10 (30.00 %)
	Absen t dec.	21/42 (50.00%)	52/55 (94.55%)	53/57 (92.98%)	0/0 (0.00%)	2/4 (50.00%)	0/3 (0.00%)	0/4 (0.00%)	19/38 (50.00%)	52/52 (100.00 %)	53/53 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
	Presen t dec.	6/42 (14.29%)	13/55 (23.64%)	15/57 (26.32%)	0/0 (0.00%)	1/4 (25.00%)	0/3 (0.00%)	0/4 (0.00%)	5/38 (13.16%)	13/52 (25.00%)	15/53 (28.30%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

South Alaska	Absen t per.	7/9 (77.78%)	4/4 (100.00 %)	2/2 (100.00 %)	1/2 (50.00 %)										
	Absen t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)										
	Presen t per.	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)										
	Presen t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)										
Vancouv er Island	Absen t per.	0/2 (0.00%)	2/8 (25.00%)	0/2 (0.00%)	0/0 (0.00%)			0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)
	Absen t dec.	0/0 (0.00%)	5/5 (100.00 %)	5/5 (100.00 %)	0/0 (0.00%)			0/0 (0.00%)	5/5 (100.00 %)	5/5 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	1/2 (50.00%)	2/8 (25.00%)	0/2 (0.00%)	0/0 (0.00%)			1/2 (50.00%)	2/6 (33.33%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t dec.	0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)			0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
West Aleutians	Absen t per.	0/8 (0.00%)	9/11 (81.82%)	2/8 (25.00%)	1/2 (50.00 %)			0/8 (0.00%)	7/7 (100.00 %)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/4 (50.00%)	2/2 (100.00 %)	1/2 (50.00 %)
	Absen t dec.	0/2 (0.00%)	7/9 (77.78%)	7/9 (77.78%)	0/0 (0.00%)			0/2 (0.00%)	5/7 (71.43%)	5/7 (71.43%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)
	Presen t per.	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)			0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	Presen t dec.	0/2 (0.00%)	1/9 (11.11%)	1/9 (11.11%)	0/0 (0.00%)			0/2 (0.00%)	1/7 (14.29%)	1/7 (14.29%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
West Greenlan d	Absen t per.	0/0 (0.00%)	2/2 (100.00 %)	0/2 (0.00%)	0/0 (0.00%)			0/0 (0.00%)	2/2 (100.00 %)	0/2 (0.00%)	0/0 (0.00%)				
	Absen t dec.	0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)			0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)				
	Presen t per.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)			0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				
	Presen t dec.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)			0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				

Appendix Table 177 Calculus mesial (Row 43) – females true prevalence rates

All calculus combined

Females													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	28/47 (59.57%)	31/40 (77.50%)	28/32 (87.50%)	19/23 (82.60%)	8/18 (44.44%)	8/12 (66.67%)	7/9 (77.78%)	5/6 (83.33%)	5/10 (50.00%)	11/15 (73.33%)	9/11 (81.82%)	5/7 (71.42%)
	Present	6/47 (12.77%)	6/40 (15.00%)	5/32 (15.63%)	4/23 (17.39%)	6/18 (33.33%)	4/12 (33.33%)	2/9 (22.22%)	1/6 (16.67%)	0/10 (0.00%)	2/15 (13.33%)	2/11 (18.18%)	2/7 (28.57%)
Canada Unknown	Absent	4/5 (80.00%)	6/6 (100.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Absent	114/198 (57.58%)	132/152 (86.84%)	84/101 (84.85%)	64/73 (87.67%)	56/107 (52.34%)	78/88 (88.64%)	40/54 (76.92%)	38/41 (92.68%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)
	Present	27/198 (13.64%)	19/152 (12.50%)	14/101 (14.14%)	9/73 (12.33%)	16/107 (14.95%)	10/88 (11.36%)	11/54 (21.15%)	9/41 (21.95%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
East Greenland	Absent	8/11 (72.73%)	19/19 (100.00%)	14/14 (100.00%)	8/12 (66.67%)	0/2 (0.00%)	11/11 (100.00%)	7/7 (100.00%)	4/4 (100.00%)				
	Present	1/11 (9.09%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
Greenland Unknown	Absent	11/19 (57.89%)	16/18 (88.89%)	10/12 (83.33%)	5/6 (83.33%)	0/4 (0.00%)	1/3 (33.33%)	0/2 (0.00%)	0/2 (0.00%)	1/3 (33.33%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	1/19 (5.26%)	2/18 (11.11%)	2/12 (16.67%)	1/6 (16.67%)	1/4 (25.00%)	2/3 (66.67%)	2/2 (100.00%)	1/2 (50.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Hudson Bay	Absent	149/227 (65.64%)	241/250 (96.40%)	199/207 (96.14%)	137/142 (96.47%)	59/99 (59.60%)	88/97 (90.72%)	74/82 (90.24%)	61/66 (92.42%)	13/20 (65.00%)	23/23 (100.00%)	17/17 (100.00%)	12/12 (100.00%)
	Present	11/227 (4.85%)	9/250 (3.60%)	4/207 (1.93%)	5/142 (3.52%)	11/99 (11.11%)	9/97 (9.28%)	4/82 (4.88%)	5/66 (7.58%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
North Alaska	Absent	9/13 (69.23%)	18/18 (100.00%)	14/14 (100.00%)	7/11 (63.64%)	1/2 (50.00%)	8/8 (100.00%)	6/6 (100.00%)	3/3 (100.00%)				
	Present	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
North Greenland	Absent	1/3 (33.33%)	26/26 (100.00%)	20/20 (100.00%)	14/14 (100.00%)	0/1 (0.00%)	10/10 (100.00%)	6/6 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)
	Present	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)

Nunavut	Absent	99/147 (67.35%)	115/123 (93.50%)	89/94 (94.68%)	60/71 (84.51%)	42/66 (63.64%)	48/54 (88.89%)	45/50 (90.00%)	29/33 (87.87%)	7/14 (50.00%)	8/8 (100.00%)	5/5 (100.00%)	1/1 (100.00%)
	Present	6/147 (4.08%)	5/123 (4.07%)	5/94 (5.32%)	7/71 (9.86%)	6/66 (9.09%)	4/54 (7.41%)	4/50 (8.00%)	4/33 (12.12%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
South Alaska	Absent	16/31 (51.61%)	9/16 (56.25%)	11/18 (61.11%)	7/11 (63.64%)	7/14 (50.00%)	6/9 (66.67%)	6/9 (66.67%)	4/5 (80.00%)	7/9 (77.78%)	3/3 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	Present	5/31 (16.13%)	7/16 (43.75%)	7/18 (38.89%)	4/11 (36.36%)	3/14 (21.43%)	3/9 (33.33%)	3/9 (33.33%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
South Greenland	Absent	0/4 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	Present	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	1/1 (100.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	1/1 (100.00%)				
St. Lawrence	Absent	12/27 (44.44%)	24/25 (96.00%)	16/17 (94.12%)	5/7 (71.42%)	8/15 (53.33%)	10/10 (100.00%)	8/9 (88.89%)	3/5 (60.00%)	0/2 (0.00%)	4/4 (100.00%)	3/3 (100.00%)	0/0 (0.00%)
	Present	0/27 (0.00%)	0/25 (0.00%)	1/17 (5.88%)	2/7 (28.57%)	0/15 (0.00%)	0/10 (0.00%)	1/9 (11.11%)	2/5 (40.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
Vancouver Island	Absent	5/7 (71.43%)	10/10 (100.00%)	8/8 (100.00%)	2/2 (100.00%)	5/7 (71.43%)	9/9 (100.00%)	8/8 (100.00%)	2/2 (100.00%)				
	Present	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
West Aleutians	Absent	17/37 (45.95%)	29/31 (93.54%)	25/27 (92.59%)	16/23 (69.57%)	2/6 (33.33%)	5/6 (83.33%)	3/4 (75.00%)	2/3 (66.66%)	3/13 (23.08%)	6/7 (85.71%)	4/5 (80.00%)	2/5 (40.00%)
	Present	4/37 (10.81%)	2/31 (6.45%)	2/27 (7.41%)	2/23 (8.70%)	0/6 (0.00%)	1/6 (16.67%)	1/4 (25.00%)	1/3 (33.33%)	4/13 (30.77%)	1/7 (14.29%)	1/5 (20.00%)	1/5 (20.00%)
West Greenland	Absent	0/1 (0.00%)	7/8 (87.50%)	6/6 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	3/4 (75.00%)	2/2 (100.00%)	1/1 (100.00%)				
	Present	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				

Appendix Table 178 *Calculus mesial (Row 43) – males true prevalence rates**All calculus combined*

Males													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	34/53 (64.15%)	26/31 (83.87%)	23/24 (95.83%)	20/21 (95.23%)	1/1 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	15/20 (75.00%)	11/13 (84.62%)	9/9 (100.00%)	34/53 (64.15%)
	Present	6/53 (11.32%)	3/31 (9.68%)	1/24 (4.17%)	1/21 (4.76%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	1/13 (7.69%)	0/9 (0.00%)	6/53 (11.32%)
Canada Unknown	Absent	3/5 (60.00%)	9/10 (90.00%)	6/6 (100.00%)	4/4 (100.00%)	3/5 (60.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	Present	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				
Coats Island	Absent	154/224 (68.75%)	106/114 (92.98%)	70/74 (94.59%)	53/54 (96.29%)	72/109 (66.06%)	54/58 (93.10%)	36/39 (92.30%)	34/36 (94.44%)	6/6 (100.00%)	4/4 (100.00%)	3/3 (100.00%)	154/224 (68.75%)
	Present	16/224 (7.14%)	8/114 (7.02%)	4/74 (5.41%)	3/54 (5.56%)	7/109 (6.42%)	5/58 (8.62%)	3/39 (7.69%)	2/36 (5.56%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	16/224 (7.14%)
East Greenland	Absent	2/3 (66.67%)	6/6 (100.00%)	5/5 (100.00%)	0/0 (0.00%)								
	Present	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
Greenland Unknown	Absent	6/10 (60.00%)	9/9 (100.00%)	5/5 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	6/6 (100.00%)	2/2 (100.00%)	1/1 (100.00%)	6/10 (60.00%)
	Present	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/10 (0.00%)
Hudson Bay	Absent	175/234 (74.79%)	181/190 (95.26%)	136/140 (97.14%)	95/95 (100.00%)	57/79 (72.15%)	62/66 (93.94%)	53/55 (96.36%)	45/45 (100.00%)	45/61 (73.77%)	43/45 (95.56%)	29/30 (96.67%)	175/234 (74.79%)
	Present	3/234 (1.28%)	7/190 (3.68%)	4/140 (2.86%)	0/95 (0.00%)	3/79 (3.80%)	4/66 (6.06%)	2/55 (3.64%)	0/45 (0.00%)	0/61 (0.00%)	1/45 (2.22%)	0/30 (0.00%)	3/234 (1.28%)
North Alaska	Absent	16/16 (100.00%)	18/18 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/4 (100.00%)	4/4 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	5/5 (100.00%)	1/1 (100.00%)	16/16 (100.00%)
	Present	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/16 (0.00%)
North Greenland	Absent	15/19 (78.95%)	24/24 (100.00%)	17/17 (100.00%)	10/10 (100.00%)	10/12 (83.33%)	8/8 (100.00%)	7/7 (100.00%)	6/6 (100.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	15/19 (78.95%)
	Present	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/19 (0.00%)

Nunavut	Absent	178/260 (68.73%)	150/159 (94.33%)	110/118 (93.22%)	66/70 (94.28 %)	37/72 (51.39%)	50/58 (86.21%)	36/43 (83.72%)	29/33 (87.87%)	33/43 (76.74%)	28/28 (100.00%)	18/19 (94.74%)	178/260 (68.73%)
	Present	13/260 (5.02%)	9/159 (5.66%)	8/118 (6.78%)	4/70 (5.71%)	13/72 (18.06%)	8/58 (13.79%)	7/43 (16.28%)	4/33 (12.12%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	13/260 (5.02%)
South Alaska	Absent	14/25 (56.00%)	18/18 (100.00%)	13/13 (100.00%)	7/7 (100.00%)	7/10 (70.00%)	8/8 (100.00%)	6/6 (100.00%)	5/5 (100.00%)	4/8 (50.00%)	6/6 (100.00%)	4/4 (100.00%)	14/25 (56.00%)
	Present	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/25 (0.00%)
South Greenland	Absent	3/6 (50.00%)	3/8 (37.50%)	3/4 (75.00%)	3/3 (100.00%)	3/6 (50.00%)	3/6 (50.00%)	2/3 (66.67%)	1/1 (100.00%)	0/0 (0.00%)	0/2 (0.00%)	1/1 (100.00%)	3/6 (50.00%)
	Present	1/6 (16.67%)	2/8 (25.00%)	1/4 (25.00%)	0/3 (0.00%)	1/6 (16.67%)	2/6 (33.33%)	1/3 (33.33%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	1/6 (16.67%)
St. Lawrence	Absent	10/28 (35.71%)	20/22 (90.91%)	15/15 (100.00%)	6/6 (100.00%)	2/7 (28.57%)	8/8 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/9 (44.44%)	5/6 (83.33%)	2/2 (100.00%)	10/28 (35.71%)
	Present	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/28 (0.00%)
Vancouver Island	Absent	2/5 (40.00%)	6/20 (30.00%)	2/11 (18.18%)	2/9 (22.22%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
	Present	0/5 (0.00%)	13/20 (65.00%)	9/11 (81.82%)	6/9 (66.67%)	0/1 (0.00%)	3/4 (75.00%)	4/4 (100.00%)	4/4 (100.00%)				
West Aleutians	Absent	34/53 (64.15%)	36/38 (94.74%)	33/36 (91.67%)	23/24 (95.83%)	10/13 (76.92%)	6/6 (100.00%)	7/7 (100.00%)	4/4 (100.00%)	2/4 (50.00%)	9/9 (100.00%)	7/8 (87.50%)	34/53 (64.15%)
	Present	1/53 (1.89%)	2/38 (5.26%)	1/36 (2.78%)	1/24 (4.17%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	1/53 (1.89%)
West Greenland	Absent	10/20 (50.00%)	16/17 (94.12%)	17/17 (100.00%)	7/7 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	10/20 (50.00%)
	Present	0/20 (0.00%)	0/17 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)

Appendix Table 179 Calculus mesial (Row 43) – subadults true prevalence rates

All calculus combined

Per. = permanent dentition Dec. = deciduous dentition

Subadults		Pooled				Infant			Child				AD			
Calculus		AN	M1	M2	M3	AN	M1	M2	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Absent dec.	2/4 (50.00%)	7/8 (87.50%)	6/6 (100.00%)	0/0 (0.00%)				2/2 (100.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Present per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Present dec.	1/4 (25.00%)	3/8 (37.50%)	4/6 (66.67%)	0/0 (0.00%)				1/2 (50.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
Canada Unknown	Absent per.	3/3 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	0/1 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Absent per.	34/73 (46.58%)	38/57 (66.67%)	10/43 (23.26%)	5/12 (41.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/46 (28.26%)	24/43 (55.81%)	0/32 (0.00%)	0/1 (0.00%)	12/16 (75.00%)	10/10 (100.00%)	6/7 (85.71%)	3/10 (30.00%)
	Absent dec.	36/131 (27.48%)	62/123 (50.41%)	59/120 (49.17%)	0/0 (0.00%)	27/95 (28.42%)	10/56 (17.86%)	4/49 (8.16%)	8/31 (25.81%)	52/65 (80.00%)	53/67 (79.10%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	Present dec.	9/131 (6.87%)	16/123 (13.01%)	14/120 (11.67%)	0/0 (0.00%)	6/95 (6.32%)	3/56 (5.36%)	0/49 (0.00%)	3/31 (9.68%)	13/65 (20.00%)	13/67 (19.40%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Greenland Unknown	Absent per.	5/5 (100.00%)	8/8 (100.00%)	0/0 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Absent dec.	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				

	Presen t per.	0/5 (0.00%)	0/8 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				
	Presen t dec.	0/0 (0.00%)	2/4 (50.00%)	2/4 (50.00%)	0/0 (0.00%)				0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				
Hudson Bay	Absen t per.	34/81 (41.98%)	63/82 (76.83%)	15/49 (30.61%)	2/13 (15.38 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/57 (22.81%)	47/66 (71.21%)	4/37 (10.81%)	0/3 (0.00%)	21/24 (87.50%)	16/16 (100.00 %)	11/12 (91.67%)	2/10 (20.00 %)
	Absen t dec.	23/66 (34.85%)	64/82 (78.05%)	65/73 (89.04%)	0/0 (0.00%)	7/39 (17.95%)	8/21 (38.10 %)	8/15 (53.33 %)	16/27 (59.26%)	56/61 (91.80%)	57/58 (98.28%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	Presen t dec.	7/66 (10.61%)	16/82 (19.51%)	20/73 (27.40%)	0/0 (0.00%)	1/39 (2.56%)	2/21 (9.52%)	2/15 (13.33 %)	6/27 (22.22%)	14/61 (22.95%)	18/58 (31.03%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
North Alaska	Absen t per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Absen t dec.	0/1 (0.00%)	3/3 (100.00 %)	3/3 (100.00 %)	0/0 (0.00%)				0/1 (0.00%)	3/3 (100.00 %)	3/3 (100.00 %)	0/0 (0.00%)				
	Presen t per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Presen t dec.	0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				
North Greenlan d	Absen t per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Absen t dec.	0/0 (0.00%)	4/4 (100.00 %)	4/4 (100.00 %)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00 %)	4/4 (100.00 %)	0/0 (0.00%)				
	Presen t per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Presen t dec.	0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				
Nunavut	Absen t per.	15/70 (21.43%)	39/58 (67.24%)	12/41 (29.27%)	4/15 (26.67 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/66 (19.70%)	33/52 (63.46%)	4/33 (12.12%)	1/5 (20.00 %)	2/4 (50.00%)	6/6 (100.00 %)	8/8 (100.00 %)	3/10 (30.00 %)
	Absen t dec.	21/42 (50.00%)	52/55 (94.55%)	53/57 (92.98%)	0/0 (0.00%)	2/4 (50.00%)	0/3 (0.00%)	0/4 (0.00%)	19/38 (50.00%)	52/52 (100.00 %)	53/53 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
	Presen t dec.	6/42 (14.29%)	13/55 (23.64%)	15/57 (26.32%)	0/0 (0.00%)	1/4 (25.00%)	0/3 (0.00%)	0/4 (0.00%)	5/38 (13.16%)	13/52 (25.00%)	15/53 (28.30%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

South Alaska	Absen t per.	7/9 (77.78%)	4/4 (100.00 %)	2/2 (100.00 %)	1/2 (50.00 %)										
	Absen t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)										
	Presen t per.	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)										
	Presen t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)										
Vancouv er Island	Absen t per.	0/2 (0.00%)	2/8 (25.00%)	0/2 (0.00%)	0/0 (0.00%)			0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)
	Absen t dec.	0/0 (0.00%)	5/5 (100.00 %)	5/5 (100.00 %)	0/0 (0.00%)			0/0 (0.00%)	5/5 (100.00 %)	5/5 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	1/2 (50.00%)	1/8 (12.50%)	0/2 (0.00%)	0/0 (0.00%)			1/2 (50.00%)	1/6 (16.67%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t dec.	0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)			0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
West Aleutians	Absen t per.	0/8 (0.00%)	9/11 (81.82%)	2/8 (25.00%)	1/2 (50.00 %)			0/8 (0.00%)	7/7 (100.00 %)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/4 (50.00%)	2/2 (100.00 %)	1/2 (50.00 %)
	Absen t dec.	0/2 (0.00%)	9/9 (100.00 %)	9/9 (100.00 %)	0/0 (0.00%)			0/2 (0.00%)	7/7 (100.00 %)	7/7 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)
	Presen t per.	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)			0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	Presen t dec.	0/2 (0.00%)	1/9 (11.11%)	1/9 (11.11%)	0/0 (0.00%)			0/2 (0.00%)	1/7 (14.29%)	1/7 (14.29%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
West Greenlan d	Absen t per.	0/0 (0.00%)	2/2 (100.00 %)	0/2 (0.00%)	0/0 (0.00%)			0/0 (0.00%)	2/2 (100.00 %)	0/2 (0.00%)	0/0 (0.00%)				
	Absen t dec.	0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)			0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)				
	Presen t per.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)			0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				
	Presen t dec.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)			0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				

Appendix Table 180 Calculus occlusal (Row 44) – females true prevalence rates

All calculus combined

Females													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	34/47 (72.34%)	37/40 (92.50%)	32/32 (100.00%)	27/23 (117.39%)	14/18 (77.78%)	12/12 (100.00%)	9/9 (100.00%)	6/6 (100.00%)	5/10 (50.00%)	13/15 (86.67%)	11/11 (100.00%)	7/7 (100.00%)
	Present	0/47 (0.00%)	0/40 (0.00%)	0/32 (0.00%)	0/23 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/10 (0.00%)	0/15 (0.00%)	0/11 (0.00%)	0/7 (0.00%)
Canada Unknown	Absent	4/5 (80.00%)	6/6 (100.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/5 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Absent	140/198 (70.71%)	150/152 (98.68%)	96/101 (96.97%)	71/73 (97.26%)	72/107 (67.29%)	88/88 (100.00%)	49/54 (94.23%)	39/41 (95.12%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)
	Present	0/198 (0.00%)	1/152 (0.66%)	2/101 (2.02%)	2/73 (2.74%)	0/107 (0.00%)	0/88 (0.00%)	2/54 (3.85%)	2/41 (4.88%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
East Greenland	Absent	9/11 (81.82%)	19/19 (100.00%)	14/14 (100.00%)	8/12 (66.67%)	0/2 (0.00%)	11/11 (100.00%)	7/7 (100.00%)	4/4 (100.00%)				
	Present	0/11 (0.00%)	0/19 (0.00%)	0/14 (0.00%)	0/12 (0.00%)	0/2 (0.00%)	0/11 (0.00%)	0/7 (0.00%)	0/4 (0.00%)				
Greenland Unknown	Absent	12/19 (63.16%)	18/18 (100.00%)	12/12 (100.00%)	6/6 (100.00%)	1/4 (25.00%)	3/3 (100.00%)	2/2 (100.00%)	1/2 (50.00%)	1/3 (33.33%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/19 (0.00%)	0/18 (0.00%)	0/12 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/3 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Hudson Bay	Absent	101/227 (44.49%)	166/250 (66.40%)	130/207 (62.80%)	104/142 (73.24%)	45/99 (45.45%)	75/97 (77.32%)	60/82 (73.17%)	58/66 (87.88%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
	Present	0/227 (0.00%)	0/250 (0.00%)	0/207 (0.00%)	0/142 (0.00%)	0/99 (0.00%)	0/97 (0.00%)	0/82 (0.00%)	0/66 (0.00%)	0/20 (0.00%)	0/23 (0.00%)	0/17 (0.00%)	0/12 (0.00%)
North Alaska	Absent	9/13 (69.23%)	18/18 (100.00%)	14/14 (100.00%)	7/11 (63.64%)	1/2 (50.00%)	8/8 (100.00%)	6/6 (100.00%)	3/3 (100.00%)				
	Present	0/13 (0.00%)	0/18 (0.00%)	0/14 (0.00%)	0/11 (0.00%)	0/2 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/3 (0.00%)				
North Greenland	Absent	1/3 (33.33%)	26/26 (100.00%)	20/20 (100.00%)	14/14 (100.00%)	0/1 (0.00%)	10/10 (100.00%)	6/6 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)
	Present	0/3 (0.00%)	0/26 (0.00%)	0/20 (0.00%)	0/14 (0.00%)	0/1 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)

Nunavut	Absent	105/147 (71.43%)	120/123 (97.56%)	93/94 (98.94%)	66/71 (92.96%)	48/66 (72.73%)	52/54 (96.30%)	49/50 (98.00%)	33/33 (100.00%)	7/14 (50.00%)	8/8 (100.00%)	5/5 (100.00%)	1/1 (100.00%)
	Present	0/147 (0.00%)	0/123 (0.00%)	0/94 (0.00%)	0/71 (0.00%)	0/66 (0.00%)	0/54 (0.00%)	0/50 (0.00%)	0/33 (0.00%)	0/14 (0.00%)	0/8 (0.00%)	0/5 (0.00%)	0/1 (0.00%)
South Alaska	Absent	21/31 (67.74%)	16/16 (100.00%)	18/18 (100.00%)	11/11 (100.00%)	10/14 (71.43%)	9/9 (100.00%)	9/9 (100.00%)	4/5 (80.00%)	7/9 (77.78%)	3/3 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	Present	0/31 (0.00%)	0/16 (0.00%)	0/18 (0.00%)	0/11 (0.00%)	0/14 (0.00%)	0/9 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/9 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/0 (0.00%)
South Greenland	Absent	0/4 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)	0/3 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				
	Present	0/4 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	1/1 (100.00%)	0/3 (0.00%)	0/3 (0.00%)	0/3 (0.00%)	1/1 (100.00%)				
St. Lawrence	Absent	12/27 (44.44%)	24/25 (96.00%)	17/17 (100.00%)	7/7 (100.00%)	8/15 (53.33%)	10/10 (100.00%)	9/9 (100.00%)	5/5 (100.00%)	0/2 (0.00%)	4/4 (100.00%)	3/3 (100.00%)	0/0 (0.00%)
	Present	0/27 (0.00%)	0/25 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/15 (0.00%)	0/10 (0.00%)	0/9 (0.00%)	0/5 (0.00%)	0/2 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/0 (0.00%)
Vancouver Island	Absent	5/7 (71.43%)	10/10 (100.00%)	8/8 (100.00%)	2/2 (100.00%)	5/7 (71.43%)	9/9 (100.00%)	8/8 (100.00%)	2/2 (100.00%)				
	Present	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/7 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				
West Aleutians	Absent	21/37 (56.76%)	30/31 (96.77%)	26/27 (96.30%)	17/23 (73.91%)	2/6 (33.33%)	5/6 (83.33%)	3/4 (75.00%)	2/3 (66.66%)	7/13 (53.85%)	7/7 (100.00%)	5/5 (100.00%)	3/5 (60.00%)
	Present	0/37 (0.00%)	1/31 (3.23%)	1/27 (3.70%)	1/23 (4.35%)	0/6 (0.00%)	1/6 (16.67%)	1/4 (25.00%)	1/3 (33.33%)	0/13 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/5 (0.00%)
West Greenland	Absent	0/1 (0.00%)	7/8 (87.50%)	6/6 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	3/4 (75.00%)	2/2 (100.00%)	1/1 (100.00%)				
	Present	0/1 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/1 (0.00%)				

Appendix Table 181 Calculus occlusal (Row 44) – males true prevalence rates

All calculus combined

Males													
Sample	Calculus	Pooled				YA				MA			
		AN	M1	M2	M3	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent	40/53 (75.47%)	30/31 (96.77%)	24/24 (100.00%)	21/21 (100.00%)	1/1 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	15/20 (75.00%)	12/13 (92.31%)	9/9 (100.00%)	8/8 (100.00%)
	Present	0/53 (0.00%)	0/31 (0.00%)	0/24 (0.00%)	0/21 (0.00%)	0/1 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/20 (0.00%)	0/13 (0.00%)	0/9 (0.00%)	0/8 (0.00%)
Canada Unknown	Absent	3/5 (60.00%)	9/10 (90.00%)	6/6 (100.00%)	4/4 (100.00%)	3/5 (60.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)				0/0 (0.00%)
	Present	0/5 (0.00%)	0/10 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)				0/0 (0.00%)
Coats Island	Absent	170/224 (75.89%)	113/114 (99.12%)	74/74 (100.00%)	54/54 (100.00%)	79/109 (72.48%)	57/58 (98.27%)	39/39 (100.00%)	36/36 (100.00%)	6/6 (100.00%)	4/4 (100.00%)	3/3 (100.00%)	1/1 (100.00%)
	Present	0/224 (0.00%)	1/114 (0.88%)	0/74 (0.00%)	0/54 (0.00%)	0/109 (0.00%)	1/58 (1.72%)	0/39 (0.00%)	0/36 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/1 (0.00%)
East Greenland	Absent	2/3 (66.67%)	6/6 (100.00%)	5/5 (100.00%)	0/0 (0.00%)								
	Present	0/3 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)								
Greenland Unknown	Absent	6/10 (60.00%)	9/9 (100.00%)	4/5 (80.00%)	1/1 (100.00%)	0/3 (0.00%)	4/4 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	6/6 (100.00%)	2/2 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	Present	0/10 (0.00%)	0/9 (0.00%)	1/5 (20.00%)	0/1 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
Hudson Bay	Absent	234/234 (100.00%)	187/190 (98.42%)	137/140 (97.85%)	92/95 (96.84%)	79/79 (100.00%)	64/66 (96.96%)	54/55 (98.18%)	44/55 (97.77%)	61/61 (100.00%)	45/45 (100.00%)	30/30 (100.00%)	15/15 (100.00%)
	Present	0/234 (0.00%)	3/190 (1.58%)	3/140 (2.14%)	3/95 (3.16%)	0/79 (0.00%)	2/66 (3.03%)	1/55 (1.82%)	1/45 (2.22%)	0/61 (0.00%)	0/45 (0.00%)	0/30 (0.00%)	0/15 (0.00%)
North Alaska	Absent	16/16 (100.00%)	18/18 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/4 (100.00%)	4/4 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/4 (50.00%)	5/5 (100.00%)	1/1 (100.00%)	1/1 (100.00%)
	Present	0/16 (0.00%)	0/18 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/5 (0.00%)	0/1 (0.00%)	0/1 (0.00%)
North Greenland	Absent	15/19 (78.95%)	24/24 (100.00%)	17/17 (100.00%)	10/10 (100.00%)	10/12 (83.33%)	8/8 (100.00%)	7/7 (100.00%)	6/6 (100.00%)	1/1 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present	0/19 (0.00%)	0/24 (0.00%)	0/17 (0.00%)	0/10 (0.00%)	0/12 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/1 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

Nunavut	Absent	184/260 (71.04%)	154/159 (97.48%)	114/118 (96.61%)	69/70 (98.57%)	43/72 (59.72%)	54/58 (93.10%)	39/43 (90.70%)	32/33 (96.96%)	33/43 (76.74%)	28/28 (100.00%)	18/19 (94.74%)	7/7 (100.00%)
	Present	7/260 (2.70%)	4/159 (2.52%)	4/118 (3.39%)	1/70 (1.43%)	7/72 (9.72%)	4/58 (6.90%)	4/43 (9.30%)	1/33 (3.03%)	0/43 (0.00%)	0/28 (0.00%)	0/19 (0.00%)	0/7 (0.00%)
South Alaska	Absent	14/25 (56.00%)	18/18 (100.00%)	13/13 (100.00%)	7/7 (100.00%)	7/10 (70.00%)	8/8 (100.00%)	6/6 (100.00%)	5/5 (100.00%)	4/8 (50.00%)	6/6 (100.00%)	4/4 (100.00%)	2/2 (100.00%)
	Present	0/25 (0.00%)	0/18 (0.00%)	0/13 (0.00%)	0/7 (0.00%)	0/10 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/5 (0.00%)	0/8 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/2 (0.00%)
South Greenland	Absent	4/6 (66.67%)	6/8 (75.00%)	4/4 (100.00%)	3/3 (100.00%)	4/6 (66.67%)	5/6 (83.33%)	3/3 (100.00%)	1/1 (100.00%)	0/0 (0.00%)	1/2 (50.00%)	1/1 (100.00%)	2/2 (100.00%)
	Present	0/6 (0.00%)	0/8 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	0/6 (0.00%)	0/6 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	0/2 (0.00%)
St. Lawrence	Absent	10/28 (35.71%)	20/22 (90.91%)	15/15 (100.00%)	6/6 (100.00%)	2/7 (28.57%)	8/8 (100.00%)	7/7 (100.00%)	3/3 (100.00%)	4/9 (44.44%)	5/6 (83.33%)	2/2 (100.00%)	1/1 (100.00%)
	Present	0/28 (0.00%)	0/22 (0.00%)	0/15 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/8 (0.00%)	0/7 (0.00%)	0/3 (0.00%)	0/9 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)
Vancouver Island	Absent	2/5 (40.00%)	18/20 (90.00%)	9/11 (81.82%)	7/9 (77.78%)	0/1 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	4/4 (100.00%)				
	Present	0/5 (0.00%)	2/20 (10.00%)	2/11 (18.18%)	1/9 (11.11%)	0/1 (0.00%)	0/4 (0.00%)	0/4 (0.00%)	0/4 (0.00%)				
West Aleutians	Absent	35/53 (66.04%)	38/38 (100.00%)	35/36 (97.22%)	24/24 (100.00%)	10/13 (76.92%)	6/6 (100.00%)	7/7 (100.00%)	4/4 (100.00%)	2/4 (50.00%)	9/9 (100.00%)	7/8 (87.50%)	3/3 (100.00%)
	Present	0/53 (0.00%)	0/38 (0.00%)	0/36 (0.00%)	0/24 (0.00%)	0/13 (0.00%)	0/6 (0.00%)	0/7 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/9 (0.00%)	0/8 (0.00%)	0/3 (0.00%)
West Greenland	Absent	10/20 (50.00%)	16/17 (94.12%)	17/17 (100.00%)	7/7 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	2/2 (100.00%)	2/2 (100.00%)	1/1 (100.00%)
	Present	0/20 (0.00%)	0/17 (0.00%)	0/17 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/1 (0.00%)

Appendix Table 182 Calculus occlusal (Row 44) – subadults true prevalence rates

All calculus combined

Per. = permanent, Dec. = deciduous

Subadults		Pooled				Infant			Child				AD			
Calculus		AN	M1	M2	M3	AN	M1	M2	AN	M1	M2	M3	AN	M1	M2	M3
Amaknak Island	Absent per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	2/4 (50.00%)	7/8 (87.50%)	6/6 (100.00%)	0/0 (0.00%)				0/2 (0.00%)	7/7 (100.00%)	6/6 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/2 (0.00%)	0/7 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	1/4 (25.00%)	3/8 (37.50%)	4/6 (66.67%)	0/0 (0.00%)				0/2 (0.00%)	3/7 (42.86%)	3/6 (50.00%)	0/0 (0.00%)	1/2 (50.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Canada Unknown	Absent per.	3/3 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	6/6 (100.00%)	1/5 (20.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	1/1 (100.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	1/1 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	1/3 (33.33%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/6 (0.00%)	0/5 (0.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	0/1 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/1 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/2 (50.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Coats Island	Absent per.	34/73 (46.58%)	38/57 (66.67%)	10/43 (23.26%)	5/12 (41.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/46 (28.26%)	24/43 (55.81%)	0/32 (0.00%)	0/1 (0.00%)	12/16 (75.00%)	10/10 (100.00%)	6/7 (85.71%)	3/10 (30.00%)
	Absent dec.	36/131 (27.48%)	62/123 (50.41%)	59/120 (49.17%)	0/0 (0.00%)	27/95 (28.42%)	10/56 (17.86%)	4/49 (8.16%)	8/31 (25.81%)	52/65 (80.00%)	53/67 (79.10%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/73 (0.00%)	0/57 (0.00%)	0/43 (0.00%)	0/12 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/46 (0.00%)	0/43 (0.00%)	0/32 (0.00%)	0/1 (0.00%)	0/16 (0.00%)	0/10 (0.00%)	0/7 (0.00%)	0/10 (0.00%)
	Present dec.	9/131 (6.87%)	16/123 (13.01%)	14/120 (11.67%)	0/0 (0.00%)	6/95 (6.32%)	3/56 (5.36%)	0/49 (0.00%)	3/31 (9.68%)	13/65 (20.00%)	13/67 (19.40%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)

Greenland Unknown	Absent per.	5/5 (100.00%)	8/8 (100.00%)	0/0 (0.00%)	0/0 (0.00%)				5/5 (100.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	0/0 (0.00%)	0/0 (0.00%)
	Absent dec.	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)
	Present per.	0/5 (0.00%)	0/8 (0.00%)	0/0 (0.00%)	0/0 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present dec.	0/0 (0.00%)	2/4 (50.00%)	2/4 (50.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)
Hudson Bay	Absent per.	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	Absent dec.	0/66 (0.00%)	0/82 (0.00%)	0/73 (0.00%)	0/0 (0.00%)	0/39 (0.00%)	0/21 (0.00%)	0/15 (0.00%)	0/27 (0.00%)	0/61 (0.00%)	0/58 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Present per.	0/81 (0.00%)	0/82 (0.00%)	0/49 (0.00%)	0/13 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/57 (0.00%)	0/66 (0.00%)	0/37 (0.00%)	0/3 (0.00%)	0/24 (0.00%)	0/16 (0.00%)	0/12 (0.00%)	0/10 (0.00%)
	Present dec.	0/66 (0.00%)	0/82 (0.00%)	0/73 (0.00%)	0/0 (0.00%)	0/39 (0.00%)	0/21 (0.00%)	0/15 (0.00%)	0/27 (0.00%)	0/61 (0.00%)	0/58 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
North Alaska	Absent per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Absent dec.	0/1 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	0/0 (0.00%)				0/1 (0.00%)	3/3 (100.00%)	3/3 (100.00%)	0/0 (0.00%)				
	Present per.	0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				0/5 (0.00%)	0/4 (0.00%)	0/1 (0.00%)	0/1 (0.00%)				
	Present dec.	0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				0/1 (0.00%)	1/3 (33.33%)	1/3 (33.33%)	0/0 (0.00%)				
North Greenland	Absent per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Absent dec.	0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				0/0 (0.00%)	4/4 (100.00%)	4/4 (100.00%)	0/0 (0.00%)				
	Present per.	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/0 (0.00%)				
	Present dec.	0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				0/0 (0.00%)	1/4 (25.00%)	1/4 (25.00%)	0/0 (0.00%)				
Nunavut	Absent per.	15/70 (21.43%)	39/58 (67.24%)	12/41 (29.27%)	4/15 (26.67%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	13/66 (19.70%)	33/52 (63.46%)	4/33 (12.12%)	1/5 (20.00%)	2/4 (50.00%)	6/6 (100.00%)	8/8 (100.00%)	3/10 (30.00%)

	Absen t dec.	21/42 (50.00%)	52/55 (94.55%)	53/57 (92.98%)	0/0 (0.00%)	2/4 (50.00%)	0/3 (0.00%)	0/4 (0.00%))	19/38 (50.00%)	52/52 (100.00 %)	53/53 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/70 (0.00%)	0/58 (0.00%)	0/41 (0.00%)	0/15 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%))	0/66 (0.00%)	0/52 (0.00%)	0/33 (0.00%)	0/5 (0.00%)	0/4 (0.00%)	0/6 (0.00%)	0/8 (0.00%)	0/10 (0.00%)
	Presen t dec.	6/42 (14.29%)	13/55 (23.64%)	15/57 (26.32%)	0/0 (0.00%)	1/4 (25.00%)	0/3 (0.00%)	0/4 (0.00%))	5/38 (13.16%)	13/52 (25.00%)	15/53 (28.30%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
South Alaska	Absen t per.	7/9 (77.78%)	4/4 (100.00 %)	2/2 (100.00 %)	1/2 (50.00%))								7/9 (77.78%)	4/4 (100.00 %)	2/2 (100.00 %)	1/2 (50.00%))
	Absen t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)								0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	
	Presen t per.	0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)								0/9 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	Presen t dec.	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)								0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
Vancouv er Island	Absen t per.	1/2 (50.00%)	4/8 (50.00%)	0/2 (0.00%)	0/0 (0.00%)				1/2 (50.00%)	2/6 (33.33%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)
	Absen t dec.	0/0 (0.00%)	5/5 (100.00 %)	5/5 (100.00 %)	0/0 (0.00%)				0/0 (0.00%)	5/5 (100.00 %)	5/5 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t per.	0/2 (0.00%)	0/8 (0.00%)	0/2 (0.00%)	0/0 (0.00%)				0/2 (0.00%)	0/6 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
	Presen t dec.	0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)				0/0 (0.00%)	1/5 (20.00%)	1/5 (20.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/0 (0.00%)
West Aleutians	Absen t per.	0/8 (0.00%)	9/11 (81.82%)	2/8 (25.00%)	1/2 (50.00%))				0/8 (0.00%)	7/7 (100.00 %)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	2/4 (50.00%)	2/2 (100.00 %)	1/2 (50.00%))
	Absen t dec.	0/2 (0.00%)	9/9 (100.00 %)	9/9 (100.00 %)	0/0 (0.00%)				0/2 (0.00%)	7/7 (100.00 %)	7/7 (100.00 %)	0/0 (0.00%)	0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)
	Presen t per.	0/8 (0.00%)	0/11 (0.00%)	0/8 (0.00%)	0/2 (0.00%)				0/8 (0.00%)	0/7 (0.00%)	0/6 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	0/4 (0.00%)	0/2 (0.00%)	0/2 (0.00%)
	Presen t dec.	0/2 (0.00%)	1/9 (11.11%)	1/9 (11.11%)	0/0 (0.00%)				0/2 (0.00%)	1/7 (14.29%)	1/7 (14.29%)	0/0 (0.00%)	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)
West Greenlan d	Absen t per.	0/0 (0.00%)	2/2 (100.00 %)	0/2 (0.00%)	0/0 (0.00%)				0/0 (0.00%)	2/2 (100.00 %)	0/2 (0.00%)	0/0 (0.00%)				
	Absen t dec.	0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)				0/0 (0.00%)	2/2 (100.00 %)	2/2 (100.00 %)	0/0 (0.00%)				

	Presen t per.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	
	Presen t dec.	0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)		0/0 (0.00%)	0/2 (0.00%)	0/2 (0.00%)	0/0 (0.00%)	

Appendix Table 183 Periodontal Disease – using methods by Kerr (1991) (Row 50) – female YA

Female YA				
Sample/Score	1	2	3	Total
Amaknak Island		69 (100.00%)		69
Canada Unknown	9 (100.00%)			9
Coats Island	116 (17.21%)	558 (82.79%)		674
Greenland Unknown	12 (48.00%)	13 (52.00%)		25
Hudson Bay	122 (15.80%)	650 (84.20%)		772
North Alaska	26 (54.17%)	22 (45.83%)		48
North Greenland	34 (64.15%)	19 (35.85%)		53
Nunavut	8 (1.96%)	399 (97.56%)	2 (0.49%)	409
South Alaska		63 (100.00%)		63
South Greenland	32 (72.73%)	10 (22.73%)	2 (4.55%)	44
St. Lawrence	26 (34.67%)	49 (65.33%)		75
Vancouver Island	45 (86.54%)	7 (13.46%)		52
West Aleutians	26 (66.67%)	13 (33.33%)		39
West Greenland	9 (47.37%)	10 (52.63%)		19

Appendix Table 184 Periodontal Disease – using methods by Kerr (1991) (Row 50) – female MA

Female MA				
Sample/Score	1	2	3	Total
Amaknak Island		76 (100.00%)		76
Canada Unknown		10 (100.00%)		10
Coats Island		16 (100.00%)		16
Greenland Unknown	16 (94.12%)	1 (5.88%)		17
Hudson Bay		213 (100.00%)		213
North Greenland		9 (100.00%)		9
Nunavut		53 (73.61%)	19 (26.39%)	72
South Alaska		24 (100.00%)		24
St. Lawrence		33 (100.00%)		33
Vancouver Island	45 (100.00%)			45
West Aleutians		56 (96.55%)	2 (3.45%)	58

Appendix Table 185 Periodontal Disease – using methods by Kerr (1991) (Row 50) – male YA

Male YA				
Sample/Score	1	2	3	Total
Amaknak Island		13 (100.00%)		13
Canada Unknown		23 (100.00%)		23
Coats Island	99 (22.10%)	330 (73.66%)	19 (4.24%)	448
Greenland Unknown	18 (94.74%)	1 (5.26%)		19
Hudson Bay	117 (23.21%)	382 (75.79%)	5 (0.99%)	504
North Alaska		32 (100.00%)		32
North Greenland		71 (100.00%)		71
Nunavut		404 (100.00%)		404
South Alaska		52 (100.00%)		52
South Greenland		39 (100.00%)		39
St. Lawrence		50 (100.00%)		50
West Aleutians	26 (50.00%)	26 (50.00%)		52
West Greenland	3 (33.33%)	6 (66.67%)		9

Appendix Table 186 Periodontal Disease – using methods by Kerr (1991) (Row 50) – male MA

Male MA				
Sample/Score	1	2	3	Total
Amaknak Island		83 (100.00%)		83
Coats Island		36 (100.00%)		36
Greenland Unknown	16 (94.12%)	1 (5.88%)		17
Hudson Bay		262 (94.24%)	16 (5.76%)	278
North Alaska		41 (100.00%)		41
North Greenland		12 (100.00%)		12
Nunavut		176 (100.00%)		176
South Alaska		34 (94.44%)	2 (5.56%)	36
South Greenland	7 (36.84%)	8 (42.11%)	1 (5.26%)	19
St. Lawrence		27 (100.00%)		27
Vancouver Island	134 (100.00%)			134
West Aleutians	13 (24.07%)	41 (75.93%)		54
West Greenland		13 (100.00%)		13

Appendix Table 187 Periodontal Disease – using methods by Kerr (1991) (Row 50) – subadult child

Subadult Child			
Sample/Score	1	2	Total
Canada Unknown	7 (100.00%)		7
Coats Island	67 (63.81%)	38 (36.19%)	105
Greenland Unknown	14 (100.00%)		14
Hudson Bay	24 (17.39%)	114 (82.61%)	138
North Greenland		4 (100.00%)	4
Nunavut	16 (25.00%)	48 (75.00%)	64
Vancouver Island	31 (100.00%)		31
West Aleutians	4 (50.00%)	4 (50.00%)	8
West Greenland	6 (100.00%)		6

Appendix Table 188 Periodontal Disease – using methods by Kerr (1991) (Row 50) – subadult adolescent

Subadult Adolescent			
Sample/Score	1	2	Total
Coats Island	6 (7.41%)	75 (92.59%)	81
Greenland Unknown	10 (100.00%)		10
Hudson Bay	12 (13.04%)	80 (86.96%)	92
Nunavut	13 (23.21%)	43 (76.79%)	56
South Alaska		10 (100.00%)	10
West Aleutians		13 (100.00%)	13

Appendix Table 189 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Amaknak Island females

Please note, only samples with positive data are represented

Females Amaknak Island															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	3 (20.00%)	23 (19.66%)	33 (80.49%)	33 (76.74%)	20 (66.67%)		2 (5.56%)	12 (100.00%)	12 (100.00%)	5 (100.00%)	2 (50.00%)	13 (37.14%)	13 (92.86%)	10 (71.43%)	6 (66.67%)
22			1 (2.44%)												
31				1 (2.33%)	1 (3.33%)									1 (7.14%)	1 (11.11%)
41	11 (73.33%)	89 (76.07%)	7 (17.07%)	9 (20.93%)	9 (30.00%)	5 (83.33%)	29 (80.56%)				2 (50.00%)	22 (62.86%)	1 (7.14%)	3 (21.43%)	2 (22.22%)
42		2 (1.71%)					2 (5.56%)								
46	1 (6.67%)	3 (2.56%)				1 (16.67%)	3 (8.33%)								
Total	15	117	41	43	30	6	36	12	12	5	4	35	14	14	9

Appendix Table 190 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Amaknak Island males

Please note, only samples with positive data are represented

Males Amaknak Island															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
11		6 (6.12%)	2 (5.88%)	2 (5.88%)	3 (8.82%)										1 (8.33%)
21	1 (7.69%)	19 (19.39%)	27 (79.41%)	27 (79.41%)	26 (76.47%)		2 (33.33%)	2 (100.00%)	2 (100.00%)	2 (100.00%)	1 (16.67%)	12 (31.58%)	10 (71.43%)	10 (71.43%)	7 (58.33%)
41	12 (92.31%)	73 (74.49%)	5 (14.71%)	5 (14.71%)	5 (14.71%)	1 (100.00%)	4 (66.67%)				5 (83.33%)	26 (68.42%)	4 (28.57%)	4 (28.57%)	4 (33.33%)
Total	13	98	34	34	34	1	6	2	2	2	6	38	14	14	12

Appendix Table 191 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Canada Unknown females

Please note, only samples with positive data are represented

Females Canada Unknown															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
11	1 (16.67%)	6 (14.29%)	1 (10.00%)	1 (12.50%)	1 (14.29%)										
21	1 (16.67%)	6 (14.29%)	8 (80.00%)	7 (87.50%)	6 (85.71%)			2 (100.00%)	2 (100.00%)	2 (100.00%)			1 (100.00%)	1 (100.00%)	1 (100.00%)
41	4 (66.67%)	30 (71.43%)	1 (10.00%)				3 (100.00%)				1 (100.00%)	6 (100.00%)			
Total	6	42	10	8	7	0	3	2	2	2	1	6	1	1	1

Appendix Table 192 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Canada Unknown males

Please note, only samples with positive data are represented

Males Canada Unknown										
Pooled						YA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21		4 (10.26%)	10 (76.92%)	11 (84.62%)	9 (90.00%)			2 (66.67%)	2 (66.67%)	2 (66.67%)
41	6 (100.00%)	33 (84.62%)	3 (23.08%)	2 (15.38%)	1 (10.00%)	2 (100.00%)	10 (83.33%)	1 (33.33%)	1 (33.33%)	1 (33.33%)
42		2 (5.13%)					2 (16.67%)			
Total	6	39	13	13	10	2	12	3	3	3

Appendix Table 193 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Canada Unknown subadults

Please note, only samples with positive data are represented

Subadults Canada Unknown						
Pooled				Adolescent		
Score	11	AN	M1	11	AN	M1
41	1 (100.00%)	4 (100.00%)	1 (100.00%)	1 (100.00%)	4 (100.00%)	1 (100.00%)
Total	1	4	1	1	4	1

Appendix Table 194 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Coats Island females

Please note, only samples with positive data are represented

Females Coats Island															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
12				1 (0.57%)					1 (1.03%)						
21	9 (10.34%)	249 (38.02%)	186 (96.88%)	172 (98.29%)	125 (98.43%)	5 (10.64%)	125 (36.66%)	106 (95.50%)	94 (96.91%)	72 (98.63%)			3 (100.00%)	4 (100.00%)	4 (100.00%)
31			1 (0.52%)					1 (0.90%)							
41	76 (87.36%)	401 (61.22%)	5 (2.60%)	2 (1.14%)	2 (1.57%)	41 (87.23%)	213 (62.46%)	4 (3.60%)	2 (2.06%)	1 (1.37%)		5 (100.00%)			
61	2 (2.30%)	5 (0.76%)				1 (2.13%)	3 (0.88%)								
Total	87	655	192	175	127	47	341	111	97	73	0	5	3	4	4

Appendix Table 195 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Coats Island males

Please note, only samples with positive data are represented

Males Coats Island															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
11	1 (1.43%)	4 (0.86%)													
21	16 (22.86%)	205 (44.28%)	107 (90.68%)	93 (91.18%)	83 (89.25%)	4 (11.43%)	83 (35.78%)	62 (92.54%)	53 (92.98%)	51 (91.07%)	1 (25.00%)	8 (40.00%)	2 (50.00%)	2 (50.00%)	1 (33.33%)
22		1 (0.22%)	1 (0.85%)	1 (0.98%)											
41	52 (74.29%)	241 (52.05%)	6 (5.08%)	4 (3.92%)	6 (6.45%)	31 (88.57%)	142 (61.21%)	1 (1.49%)		1 (1.79%)	3 (75.00%)	10 (50.00%)	2 (50.00%)	2 (50.00%)	2 (66.67%)
43		2 (0.43%)										2 (10.00%)			
44		2 (0.43%)					2 (0.86%)								
61		5 (1.08%)	4 (3.39%)	4 (3.92%)	4 (4.30%)		5 (2.16%)	4 (5.97%)	4 (7.02%)	4 (7.14%)					
63	1 (1.43%)	3 (0.65%)													
Total	70	463	118	102	93	35	232	67	57	56	4	20	4	4	3

Appendix Table 196 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Coats Island subadults

Please note, only samples with positive data are represented

Subadults Coats Island									
Pooled						Adolescent			
Score	11	AN	M1	M2	M3	11	AN	M1	M2
21	5 (23.81%)	52 (50.98%)	52 (98.11%)	25 (96.15%)	2 (66.67%)	2 (16.67%)	12 (26.09%)	35 (100.00%)	8 (100.00%)
42	14 (66.67%)	47 (46.08%)	1 (1.89%)	1 (3.85%)	1 (33.33%)	9 (75.00%)	33 (71.74%)		
61	2 (9.52%)	3 (2.94%)				1 (8.33%)	1 (2.17%)		
Total	21	102	53	26	3	12	46	35	8

Appendix Table 197 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – East Greenland females

Please note, only samples with positive data are represented

Females East Greenland										
Pooled						YA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	6 (50.00%)	44 (59.46%)	19 (90.48%)	19 (95.00%)	15 (93.75%)	2 (28.57%)	17 (40.48%)	11 (91.67%)	11 (91.67%)	11 (91.67%)
41	5 (41.67%)	26 (35.14%)	2 (9.52%)	1 (5.00%)	1 (6.25%)	4 (57.14%)	21 (50.00%)	1 (8.33%)	1 (8.33%)	1 (8.33%)
42	1 (8.33%)	4 (5.41%)				1 (14.29%)	4 (9.52%)			
Total	12	74	21	20	16	7	42	12	12	12

Appendix Table 198 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – East Greenland males

Please note, only samples with positive data are represented

Males East Greenland					
YA					
Score	11	AN	M1	M2	M3
21		10 (41.67%)	8 (100.00%)	8 (100.00%)	4 (100.00%)
41	3 (100.00%)	14 (58.33%)			
Total	3	24	8	8	4

Appendix Table 199 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Greenland Unknown females

Please note, only samples with positive data are represented

Females Greenland Unknown															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	5 (41.67%))	31 (44.93%))	14 (58.33%))	15 (60.00%))	15 (65.22%))		2 (16.67%))	2 (66.67%))	3 (75.00%))	3 (75.00%))		2 (28.57%))	2 (66.67%))	3 (75.00%))	4 (100.00%))
41	7 (58.33%))	38 (55.07%))	10 (41.67%))	10 (40.00%))	8 (34.78%))	2 (100.00%))	10 (83.33%))	1 (33.33%))	1 (25.00%))	1 (25.00%))	1 (100.00%))	5 (71.43%))	1 (33.33%))	1 (25.00%))	
Total	12	69	24	25	23	2	12	3	4	4	1	7	3	4	4

Appendix Table 200 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Greenland Unknown males

Please note, only samples with positive data are represented

Males Greenland Unknown															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	3 (42.86 %)	17 (41.46 %)	11 (91.67 %)	11 (100.00 %)	9 (100.00 %)	2 (100.00 %)	11 (100.00 %)	3 (100.00 %)	1 (100.00 %)	1 (100.00 %)		2 (16.67 %)	4 (100.00 %)	4 (100.00 %)	2 (100.00 %)
41	4 (57.14 %)	24 (58.54 %)	1 (8.33%)								2 (100.00 %)	10 (83.33 %)			
Total	7	41	12	11	9	2	11	3	1	1	2	12	4	4	2

Appendix Table 201 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Greenland Unknown - subadults

Please note, only samples with positive data are represented

Subadults Greenland Unknown						
Pooled				Child		
Score	11	AN	M1	11	AN	M1
21	2 (100.00%)	8 (100.00%)	4 (100.00%)	2 (100.00%)	8 (100.00%)	4 (100.00%)
Total	2	8	4	2	8	4

Appendix Table 202 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Hudson Bay females

Please note, only samples with positive data are represented

Females Hudson Bay															
Score	Pooled					YA					MA				
	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	6 (4.48%)	292 (31.53%)	316 (97.53%)	314 (98.13%)	264 (97.78%)	2 (3.51%)	110 (30.47%)	119 (96.75%)	118 (97.52%)	97 (97.00%)	2 (25.00%)	36 (36.73%)	31 (91.18%)	32 (91.43%)	34 (91.89%)
22			2 (0.62%)	1 (0.31%)	1 (0.37%)			2 (1.63%)	1 (0.83%)	1 (1.00%)					
41	125 (93.28%)	616 (66.52%)	6 (1.85%)	5 (1.56%)	5 (1.85%)	54 (94.74%)	242 (67.04%)	2 (1.63%)	2 (1.65%)	2 (2.00%)	6 (75.00%)	62 (63.27%)	3 (8.82%)	3 (8.57%)	3 (8.11%)
44	1 (0.75%)	10 (1.08%)					5 (1.39%)								
51	1 (0.75%)	4 (0.43%)													
66	1 (0.75%)	4 (0.43%)				1 (1.75%)	4 (1.11%)								
Total	134	926	324	320	270	57	361	123	121	100	8	98	34	35	37

Appendix Table 203 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Hudson Bay males

Please note, only samples with positive data are represented

Males Hudson Bay															
Score	Pooled					YA					MA				
	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
11		4 (0.59%)					4 (1.69%)								
21	4 (4.04%)	184 (27.26%) ()	205 (98.09%) ()	188 (98.43%) ()	159 (98.15%) ()		64 (27.00%) ()	79 (100.00%) ()	75 (100.00%) ()	73 (100.00%) ()	1 (5.56%)	49 (32.24%) ()	42 (95.45%) ()	38 (95.00%) ()	24 (92.31%) ()
22		1 (0.15%)													
31		1 (0.15%)										1 (0.66%)			
41	94 (94.95%) ()	482 (71.41%) ()	4 (1.91%)	3 (1.57%)	3 (1.85%)	38 (100.00%) ()	167 (70.46%) ()				17 (94.44%) ()	102 (67.11%) ()	2 (4.55%)	2 (5.00%)	2 (7.69%)
44	1 (1.01%)	2 (0.30%)					1 (0.42%)								
51		1 (0.15%)					1 (0.42%)								
Total	99	675	209	191	162	38	237	79	75	73	18	152	44	40	26

Appendix Table 204 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Hudson Bay subadults

Please note, only samples with positive data are represented

Subadults Hudson Bay										
Pooled						Adolescent				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	8 (32.00%)	47 (41.96%)	58 (98.31%)	23 (100.00%)	8 (100.00%)	8 (44.44%)	34 (53.13%)	42 (97.67%)	7 (100.00%)	3 (100.00%)
22			1 (1.69%)					1 (2.33%)		
41	17 (68.00%)	65 (58.04%)				10 (55.56%)	30 (46.88%)			
Total	25	112	59	23	8	18	64	43	7	3

Appendix Table 205 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – North Greenland females

Please note, only samples with positive data are represented

Females North Greenland														
Pooled						YA					MA			
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2
11		6 (7.32%)	2 (6.45%)	2 (6.45%)	2 (10.00%)									
21		22 (26.83%)	24 (77.42%)	25 (80.65%)	14 (70.00%)		5 (21.74%)	6 (60.00%)	6 (60.00%)	4 (50.00%)		1 (100.00%)	2 (100.00%)	1 (100.00%)
41	11 (100.00%)	54 (65.85%)	3 (9.68%)	3 (9.68%)	2 (10.00%)	3 (100.00%)	18 (78.26%)	3 (30.00%)	3 (30.00%)	2 (25.00%)	5 (100.00%)			
47			1 (3.23%)											
61			1 (3.23%)	1 (3.23%)	2 (10.00%)			1 (10.00%)	1 (10.00%)	2 (25.00%)				
Total	11	82	31	31	20	3	23	10	10	8	5	1	2	1

Appendix Table 206 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – North Greenland males

Please note, only samples with positive data are represented

Males North Greenland															
Score	Pooled					YA					MA				
	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
11		4 (4.60%)		2 (6.25%)	2 (6.67%)		4 (13.33%)							2 (100.00%)	2 (100.00%)
21	1 (7.69%)	18 (20.69%)	26 (81.25%)	26 (81.25%)	24 (80.00%)	1 (20.00%)	4 (13.33%)	9 (75.00%)	10 (83.33%)	10 (83.33%)		3 (50.00%)	1 (100.00%)		
41	12 (92.31%)	61 (70.11%)	3 (9.38%)	2 (6.25%)	2 (6.67%)	4 (80.00%)	20 (66.67%)				1 (100.00%)	3 (50.00%)			
45		2 (2.30%)	1 (3.13%)				2 (6.67%)	1 (8.33%)							
61		2 (2.30%)													
67			2 (6.25%)	2 (6.25%)	2 (6.67%)			2 (16.67%)	2 (16.67%)	2 (16.67%)					
Total	13	87	32	32	30	5	30	12	12	12	1	6	1	2	2

Appendix Table 207 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – North Greenland subadults

Please note, only samples with positive data are represented

Subadults North Greenland			
Pooled			Child
Score	M1	Score	M1
21	4 (100.00%)	Score 21	4 (100.00%)
Total	4	Total	4

Appendix Table 208 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Nunavut females

Please note, only samples with positive data are represented

Females Nunavut															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	4 (5.48%)	166 (34.44%)	147 (94.84%)	135 (95.74%)	109 (93.97%)	1 (3.23%)	60 (31.09%)	61 (92.42%)	60 (92.31%)	49 (90.74%)		20 (48.78%)	8 (80.00%)	7 (87.50%)	6 (75.00%)
41	69 (94.52%)	316 (65.56%)	6 (3.87%)	5 (3.55%)	5 (4.31%)	30 (96.77%)	133 (68.91%)	5 (7.58%)	5 (7.69%)	5 (9.26%)	3 (100.00%)	21 (51.22%)			
61			2 (1.29%)	1 (0.71%)	2 (1.72%)								2 (20.00%)	1 (12.50%)	2 (25.00%)
Total	73	482	155	141	116	31	193	66	65	54	3	41	10	8	8

Appendix Table 209 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Nunavut males

Please note, only samples with positive data are represented

Males Nunavut															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
13		2 (0.35%)													
14															
21	5 (6.10%)	177 (30.78%))	181 (96.79%))	167 (98.24%))	138 (97.18%))	2 (6.45%)	57 (29.23%))	64 (100.00%))	60 (100.00%))	58 (100.00%))		25 (27.17%))	31 (310.00%))	25 (250.00%))	17 (170.00%))
31		1 (0.17%)	1 (0.53%)									1 (1.08%)	1 (10.00%)		
41	76 (92.68%))	395 (68.70%))	3 (1.60%)	1 (0.59%)	2 (1.41%)	29 (93.55%))	138 (70.77%))				10 (100.00%))	66 (71.73%))			
61	1 (1.22%)		2 (1.07%)	2 (1.18%)	2 (1.41%)										
Total	82	575	187	170	142	31	195	64	60	58	10	92	32	25	17

Appendix Table 210 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Nunavut subadults

Please note, only samples with positive data are represented

Subadults Nunavut										
Pooled						Adolescent				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	2 (22.22%)	15 (34.09%)	32 (88.89%)	18 (100.00%)	7 (100.00%)	1 (25.00%)	3 (21.43%)	24 (85.71%)	10 (100.00%)	2 (100.00%)
41	7 (77.78%)	29 (65.91%)	4 (11.11%)			3 (75.00%)	11 (78.57%)	4 (14.29%)		
Total	9	44	36	18	7	4	14	28	10	2

Appendix Table 211 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Alaska females

Please note, only samples with positive data are represented

Females South Alaska															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	2 (20.00%)	24 (36.92%)	15 (75.00%)	15 (75.00%)	15 (75.00%)		5 (16.67%)	10 (100.00%)	9 (100.00%)	9 (100.00%)	1 (100.00%)	5 (45.45%)	1 (25.00%)	1 (25.00%)	1 (25.00%)
31			1 (5.00%)	1 (5.00%)	1 (5.00%)										
41	7 (70.00%)	39 (60.00%)	4 (20.00%)	4 (20.00%)	4 (20.00%)	5 (100.00%)	25 (83.33%)					6 (54.55%)	3 (75.00%)	3 (75.00%)	3 (75.00%)
67	1 (10.00%)	2 (3.08%)													
Total	10	65	20	20	20	5	30	10	9	9	1	11	4	4	4

Appendix Table 212 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Alaska males

Please note, only samples with positive data are represented

Males South Alaska															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	2 (25.00%)	14 (30.43%)	16 (100.00%)	16 (100.00%)	15 (100.00%)	1 (25.00%)	7 (29.17%)	8 (100.00%)	8 (100.00%)	8 (100.00%)	1 (33.33%)	6 (37.50%)	6 (100.00%)	6 (100.00%)	5 (100.00%)
41	6 (75.00%)	32 (69.57%)				3 (75.00%)	17 (70.83%)				2 (66.67%)	10 (62.50%)			
Total	8	46	16	16	15	4	24	8	8	8	3	16	6	6	5

Appendix Table 213 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Alaska subadults

Please note, only samples with positive data are represented

Subadults South Alaska										
Pooled						Child				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21		2 (66.67%)	2 (100.00%)	2 (100.00%)	2 (100.00%)		2 (66.67%)	2 (100.00%)	2 (100.00%)	2 (100.00%)
41	1 (100.00%)	1 (33.33%)				1 (100.00%)	1 (33.33%)			
Total	1	3	2	2	2	1	3	2	2	2

Appendix Table 214 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Greenland females

Please note, only samples with positive data are represented

Females South Greenland										
Pooled						YA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	3 (60.00%)	20 (66.67%)	6 (85.71%)	4 (100.00%)	4 (100.00%)	3 (75.00%)	20 (83.33%)	6 (85.71%)	4 (100.00%)	4 (100.00%)
41	2 (40.00%)	9 (30.00%)				1 (25.00%)	3 (12.50%)			
61		1 (3.33%)	1 (14.29%)				1 (4.17%)	1 (14.29%)		
Total	5	30	7	4	4	4	24	7	4	4

Appendix Table 215 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – South Greenland males

Please note, only samples with positive data are represented

Males South Greenland															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21		6 (21.43)	8 (88.89)	8 (100.00)	8 (100.00)		3 (16.67)	6 (100.00)	6 (100.00)	6 (100.00)		3 (30.00)	2 (66.67)	2 (100.00)	2 (100.00)
41	5 (100.00)	22 (78.57)	1 (11.11)			3 (100.00)	15 (83.33)				2 (100.00)	7 (70.00)	1 (33.33)		
Total	5	28	9	8	8	3	18	6	6	6	2	10	3	2	2

Appendix Table 216 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – St. Lawrence females

Please note, only samples with positive data are represented

Females St. Lawrence															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	2 (11.76%)	35 (32.41%)	29 (93.55%)	28 (93.33%)	23 (88.46%)		13 (36.11%)	12 (100.00%)	12 (100.00%)	9 (100.00%)		5 (26.32%)	4 (100.00%)	4 (100.00%)	3 (100.00%)
41	15 (88.24%)	73 (67.59%)	2 (6.45%)	2 (6.67%)	3 (11.54%)	6 (100.00%)	23 (63.89%)				3 (100.00%)	14 (73.68%)			
Total	17	108	31	30	26	6	36	12	12	9	3	19	4	4	3

Appendix Table 217 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – St. Lawrence males

Please note, only samples with positive data are represented

Males St. Lawrence															
Pooled						YA					MA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21		16 (22.22%)	22 (100.00%)	21 (95.45%)	14 (93.33%)		6 (25.00%)	8 (100.00%)	8 (100.00%)	6 (100.00%)		3 (27.27%)	5 (100.00%)	4 (80.00%)	2 (66.67%)
31		1 (1.39%)													
41	12 (100.00%)	55 (76.39%)		1 (4.55%)	1 (6.67%)	4 (100.00%)	18 (75.00%)				3 (100.00%)	8 (72.73%)		1 (20.00%)	1 (33.33%)
Total	12	72	22	22	15	4	24	8	8	6	3	11	5	5	3

Appendix Table 218 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Vancouver Island females

Please note, only samples with positive data are represented

Females Vancouver Island										
Pooled						YA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21		4 (16.67%)	8 (88.89%)	8 (88.89%)	5 (100.00%)		4 (16.67%)	8 (88.89%)	8 (88.89%)	5 (100.00%)
41	4 (100.00%)	20 (83.33%)				4 (100.00%)	20 (83.33%)			
Score 61			1 (11.11%)	1 (11.11%)				1 (11.11%)	1 (11.11%)	
Total	4	24	9	9	5	4	24	9	9	5

Appendix Table 219 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Vancouver Island males

Please note, only samples with positive data are represented

Males Vancouver Island										
Pooled						YA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	1 (10.00%)	23 (34.85%)	20 (100.00%)	19 (100.00%)	19 (100.00%)		7 (41.18%)	4 (100.00%)	4 (100.00%)	4 (100.00%)
41	9 (90.00%)	43 (65.15%)				2 (100.00%)	10 (58.82%)			
Total	10	66	20	19	19	2	17	4	4	4

Appendix Table 220 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – Vancouver Island subadults

Please note, only samples with positive data are represented

Subadults Vancouver Island										
Pooled						Adolescent				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21		1 (16.67%)	2 (100.00%)	2 (100.00%)	2 (100.00%)		1 (16.67%)	2 (100.00%)	2 (100.00%)	2 (100.00%)
41	1 (100.00%)	5 (83.33%)				1 (100.00%)	5 (83.33%)			
Total	1	6	2	2	2	1	6	2	2	2

Appendix Table 221 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Aleutians females

Please note, only samples with positive data are represented

Females West Aleutians															
Score	Pooled					YA					MA				
	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21	1 (6.25%)	26 (22.61%)	37 (100.00%)	34 (100.00%)	23 (100.00%)		3 (16.67%)	6 (100.00%)	6 (100.00%)	6 (100.00%)		10 (30.30%)	9 (100.00%)	9 (100.00%)	6 (100.00%)
41	15 (93.75%)	89 (77.39%)				3 (100.00%)	15 (83.33%)				3 (100.00%)	23 (69.70%)			
Total	16	115	37	34	23	3	18	6	6	6	3	33	9	9	6

Appendix Table 222 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Aleutians males

Please note, only samples with positive data are represented

Males West Aleutians															
Score	Pooled					YA					MA				
	11	AN	M1	M2	M3	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21		10 (8.47%)	41 (97.62%)	37 (97.37%)	35 (97.22%)		1 (4.17%)	8 (100.00%)	8 (100.00%)	8 (100.00%)		4 (17.39%)	8 (88.89%)	8 (88.89%)	7 (87.50%)
41	17 (100.00%)	108 (91.53%)	1 (2.38%)	1 (2.63%)	1 (2.78%)	4 (100.00%)	23 (95.83%)				3 (100.00%)	19 (82.61%)	1 (11.11%)	1 (11.11%)	1 (12.50%)
Total	17	118	42	38	36	4	24	8	8	8	3	23	9	9	8

Appendix Table 223 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Aleutians subadults

Please note, only samples with positive data are represented

Subadults West Aleutians											
Pooled						Child	Adolescent				
Score	11	AN	M1	M2	M3	M1	11	AN	M1	M2	M3
21		1 (16.67%)	10 (100.00%)	2 (100.00%)	2 (100.00%)	8 (100.00%)		1 (16.67%)	2 (100.00%)	2 (100.00%)	2 (100.00%)
41	1 (100.00%)	5 (83.33%)					1 (100.00%)	5 (83.33%)			
Total	1	6	10	2	2	8	1	6	2	2	2

Appendix Table 224 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Greenland females

Please note, only samples with positive data are represented

Females West Greenland										
Pooled						YA				
Score	11	AN	M1	M2	M3	11	AN	M1	M2	M3
21		4 (13.33%)	9 (100.00%)	7 (100.00%)	5 (100.00%)		2 (16.67%)	3 (100.00%)	1 (100.00%)	1 (100.00%)
41	5 (100.00%)	26 (86.67%)				2 (100.00%)	10 (83.33%)			
Total	5	30	9	7	5	2	12	3	1	1

Appendix Table 225 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Greenland males

Please note, only samples with positive data are represented

Males West Greenland													
Pooled						YA			MA				
Score	11	AN	M1	M2	M3	11	AN	M1	11	AN	M1	M2	M3
21		6 (10.53%)	18 (100.00%)	16 (94.12%)	11 (91.67%)		2 (33.33%)	2 (100.00%)			2 (100.00%)	2 (100.00%)	2 (100.00%)
41	10 (100.00%)	51 (89.47%)		1 (5.88%)	1 (8.33%)	1 (100.00%)	4 (66.67%)		1 (100.00%)	6 (100.00%)			
Total	10	57	18	17	12	1	6	2	1	6	2	2	2

Appendix Table 226 Periodontal Disease – using methods Karn et al. (1984) (Row 51) – West Greenland subadults

Please note, only samples with positive data are represented

Subadults West Greenland						
Pooled				Child		
Score	M1	M2	M3	M1	M2	M3
21	2 (100.00%)	2 (100.00%)	2 (100.00%)	2 (100.00%)	2 (100.00%)	2 (100.00%)
Total	2	2	2	2	2	2

Appendix Table 227 Row 1, score 16 (root resorption)

Total and percentages for occurrences of root resorptions, per delineation, tooth class

Sample	Age / Tooth	AN	M1	M2	M3	Total
Amaknak Island	Female MA	0/10 (0.00%)	1/15 (6.67%)	0/11 (0.00%)	1/7 (14.29%)	3/45 (6.98%)
Coats Island	Female Pooled	2/198 (1.01%)	2/152 (1.32%)	1/101 (0.99%)	1/73 (1.37%)	6/524 (1.15%)
	Female YA	2/107 (1.87%)	1/88 (1.14%)	1.54 (1.85%)	1/41 (2.44%)	5/290 (1.72%)
	Male Pooled	2/224 (0.89%)	2/114 (1.75%)	0/74 (0.00%)	0/54 (0.00%)	6/466 (1.29%)
Hudson Bay	Female Pooled	3/227 (1.32%)	0/250 (0.00%)	1/207 (0.48%)	2/142 (1.41%)	6/826 (0.73%)
	Female MA	0/20 (0.00%)	0/23 (0.00%)	1/17 (5.88%)	0/12 (0.00%)	1/72 (1.39%)
	Male Pooled	1/234 (0.43%)	3/190 (1.58%)	3/140 (2.14%)	3/95 (3.16%)	10/659 (1.52%)
	Male YA	0/79 (0.00%)	0/66 (0.00%)	0/55 (0.00%)	2/45 (4.44%)	2/345 (0.82%)
	Male MA	0/61 (0.00%)	2/45 (4.44%)	3/30 (30%)	1/15 (6.67)	6/151 (3.97%)
Nunavut	Female Pooled	1/147 (0.68%)	1/123 (0.81%)	0/94 (0.00%)	0/71 (0.00%)	2/435 (0.46%)
	Female MA	1/14 (7.14%)	1/8 (12.5%)	0.5 (0.00%)	0/1 (0.00%)	2/28 (7.14%)
	Male Pooled	1/260 (0.38%)	1/159 (0.63%)	1/118 (0.85%)	1/70 (1.43%)	4/607 (0.66%)
	Male MA	0/43 (0.00%)	1/28 (3.57%)	1/19 (5.26%)	1/7 (14.29)	3/97 (3.09%)
	Subadult Child	2/104 (1.92%)	0/104 (0.00%)	0/86 (0.00%)	0/5 (0.00%)	2/299 (0.67%)
South Alaska	Male Pooled	0.25 (0.00%)	1/18 (5/56%)	0/13 (0.00%)	0/7 (0.00%)	1/63 (1.59%)
	Male YA	0/10 (0.00%)	1/8 (12.5%)	0/6 (0.00%)	0/5 (0.00%)	1/29 (3.45%)
St. Lawrence	Male MA	1/9 (11.11%)	0/6 (0.00%)	0/2 (0.00%)	0/1 (0.00%)	1/18 (5.56%)

Appendix Table 228 Row 1, score 16 – total and percentages for all occurrences by age/sex class

Total and percentages for occurrences of root resorptions, per age/sex class

Sample	Female Pooled	Female YA	Female MA	Male Pooled	Male YA	Male MA	Subadult Pooled	Subadult Child	Total population
Amaknak Island	1/18 (0/33%)	0/3 (0.00%)	1/8 (0.076%)	0/13 (0.00%)	0/1 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/3 (0.00%)	1/35 (2.8%)
Coats Island	0/87 (0.00%)	3/43 (3%)	0/1 (0.00%)	0/58 (0.00%)	1/28 (3.57%)	0/0 (0.00%)	0/85 (0.00%)	0/28 (0.00%)	4/230 (1.73%)
Hudson Bay	0/139 (0.00%)	0/44 (0.00%)	1/19 (0.01%)	1/99 (0.03%)	1/30 (0.04%)	2/22 (0.03%)	0/51 (0.00%)	0/32 (0.00%)	4/289 (1.38%)
Nunavut	0/73 (0.00%)	0/25 (0.00%)	1/7 (0.01%)	1/84 (0.085)	0/26 (0.00%)	1/14 (0.03%)	2/29 (0.09%)	0/2 (0.09%)	4/186 (2.15%)
South Alaska	0/7 (0.00%)	0/3 (0.00%)	0/1 (0.00%)	0/6 (0.00%)	1/2 (0.5%)	0/2 (0.00%)	0/0 (0.00%)	0/0 (0.00%)	1/14 (7.1%)
St. Lawrence	0/22 (0.00%)	0/6 (0.00%)	0/4 (0.00%)	0/19 (0.00%)	0/4 (0.00%)	1/5 (0.2%)	0/0 (0.00%)	0/0 (0.00%)	1/41 (2.4%)

Appendix Table 229 - PMDA - presence/absence

PMDA - location and tooth B=buccal, L=lingual, M=mesial, D=distal, O=occlusal

				Location / Tooth																	
Sample	Skeletal ID	Sex	Age	18	17	16	13	12	11	21	22	23	26	27	48	47	46	43	33	36	54
Amaknak Island	AMNH 99.1/707	Female	Middle adult				B	B				B									
	AMNH 99.1/793	Female	Middle adult												B, L	B, L					
	AMNH 99.1/808	Male	MA						B	B											
	AMNH 99.1/713	Male	MA								B, D	B, D									
Coats Island	XIV-C:739	Female	YA									O							O		
Hudson Bay	XIV-C:344	Female	YA						B												
North Alaska	XIV-H:015	Female	Middle adult				B														
North Greenland	AMNH 99/7706	Female	Adult unknown														B				
Nunavut	XIV-C:327	Female	Adolescent																	L	
South Alaska	AMNH VL/215	Male	YA							B											
	AMNH VL/220	Male	MA													O					
South Greenland	1-Aa.113M	Male	MA	B																	
	24-Aa.113F	Female	YA		M	D															
West Aleutians	XIV-F:001-1	Male	Middle adult															B			

West Greenland	21-Aa.113M	Male	Middle adult			O							O			O	O				
	AMNH 99/8917	Male	Middle adult			B															
	37-Aa.113F	Subadult	Child																		O
	11-Aa.113M	Female	YA										B	B							
	53-Aa.113F	Female	YA			M								B							

Appendix Table 230 - PMDA-Type

PMDA - type and tooth 1=striae, 2=facet

				Type / Tooth																	
Sample	Skeletal ID	Sex	Age	18	17	16	13	12	11	21	22	23	26	27	48	47	46	43	33	36	54
Amaknak Island	AMNH 99.1/707	Female	Middle adult				2	2				2									
	AMNH 99.1/793	Female	Middle adult												1, 1	1, 1					
	AMNH 99.1/808	Male	MA						2	2											
	AMNH 99.1/713	Male	MA								1, 1	1, 1									
Coats Island	XIV-C:739	Female	YA									1							1		
Hudson Bay	XIV-C:344	Female	YA						1												
North Alaska	XIV-H:015	Female	Middle adult				1														
North Greenland	AMNH 99/7706	Female	Adult unknown														1				
Nunavut	XIV-C:327	Female	Adolescent																	1	
South Alaska	AMNH VL/215	Male	YA							1											

	AMNH VL/220	Male	MA													2					
South Greenland	1-Aa.113M	Male	MA	1																	
	24-Aa.113F	Female	YA		1	1															
West Aleutians	XIV-F:001-1	Male	Middle adult															2			
West Greenland	21-Aa.113M	Male	Middle adult			1							1			1	1				
	AMNH 99/8917	Male	Middle adult			2															
	37-Aa.113F	Subadult	Child																		1
	11-Aa.113M	Female	YA										1	1							
	53-Aa.113F	Female	YA			1								1							

Appendix Table 231 Paramasticatory Dental Activities - prevalence of feature presence

All results are the percentages

The table shows the prevalence of the features on each tooth type per age/sex class in the samples

The results are presented as number of feature(s) / number of teeth (percentage)

Sample	Sex	Age	18	17	16	13	12	11	21	22	23	26	27	48	47	46	43	33	36	54
Amaknak Island	Fem ale	Middle adult				1/2 (50%)	1/2 (50%)				1/2 (50%)			1/2 (50%)	1/2 (50%)					
	Male	MA						1/1 (100%)	1/1 (100%)	1/1 (100%)	1/1 (100%)									
Coats Island	Fem ale	YA									1/14 (7.14%)							1/15 (6.66%)		
Hudson Bay	Fem ale	YA						1/5 (20%)												
North Alaska	Fem ale	Middle adult				1/1 (100%)														
North Greenland	Fem ale	Adult unknown														1/1 (100%)				
Nunavut	Fem ale	Adolesce nt																	14.2 9%	

South Alaska	Male	YA							1/1 (100%)											
	Male	MA													1/1 (100%)					
South Greenland	Male	MA	1/1 (100%)																	
	Fem ale	YA		1/2 (50%)	1/2 (50%)															
West Aleutians	Male	Middle adult															1/3 (33.33) %			
West Greenland	Male	Middle adult			40.00 %							1/3 (33.33) %			1/2 (50%)	1/2 (50%)				
	Suba dult	Child																		1/1 (100%)
	Fem ale	YA			1/2 (50%)							1/2 (50%)	1/1 (100%)							

Appendix Table 232 - PMDA - published literature

Author	Location/site	Culture	Date	Individuals, sex and age	% showing PMDA	Teeth	Type	Most affected teeth/ aspect	Pathological associations	Assigned to
Ubelaker et al. (1969)	Leavenworth Site, 39C09, Arikara village, Corson County, South Dakota, USA	Arikara	1802-1832 A.D	1	1/1 individuals	2/? teeth in one individual	Grooves (interproximal)	Buccal	Periodontal disease (92.3%, $n=24/26$), caries (36.56%, $n=34/93$)	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	Kansas, USA	Hopewellian affiliation	c. 200-1000 A.D.	Not stated	Not stated	?/37	Grooves (interproximal)	No pattern	Interproximal caries in 9/? (28%) teeth.	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	39ST4	Not stated	Not stated	1	3 *No. of features per individuals	?/3	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	39ST1, South Dakota, USA	Not stated	c. 1750 A.D.	1	1 *No. of features per individuals	?/1	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	39ST16	Not stated	Not stated	1	2 *No. of features per individuals	?/2	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	39C032	Not stated	Not stated	2	5.5 *No. of features per individuals	?/11	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts

										due to alleviate discomfort
	39WW1	Not stated	Not stated	4	2 *No. of features per individuals	?/8	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, ∇ 2mm in diameter. Therapeutic attempts due to alleviate discomfort
	Indian Knoll 25CU201	Not stated	5000 B.C. *not clear if date relates to this site	6	2 *No. of features per individuals	?/12	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, ∇ 2mm in diameter. Therapeutic attempts due to alleviate discomfort
	Kaw-Kansas	Not stated	Not stated	1	4 *No. of features per individuals	?/4	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, ∇ 2mm in diameter. Therapeutic attempts due to alleviate discomfort
	Kansas	Not stated	Not stated	1	5 *No. of features per individuals	?/5	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, ∇ 2mm in diameter. Therapeutic attempts due to alleviate discomfort
	Kansas Donophin Co.	Not stated	Not stated	1	1 *No. of features per individuals	?/1	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, ∇ 2mm in diameter. Therapeutic attempts due to alleviate discomfort
	Prairie Dog Creek	Not stated	Not stated	1	2 *No. of features per individuals	?/2	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, ∇ 2mm in diameter. Therapeutic attempts due to alleviate discomfort
	Illinois	Not stated	Not stated	6	17 *No. of features per individuals	?/10	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, ∇ 2mm in diameter. Therapeutic attempts due to alleviate discomfort

	39C09	Not stated	Not stated	1	2 *No. of features per individuals	?/2	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	14GE3	Not stated	Not stated	Not stated	Not stated	?/2	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	14GE4	Not stated	Not stated	Not stated	Not stated	?/18	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	14GE5	Not stated	Not stated	Not stated	Not stated	?/2	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	14GE6	Not stated	Not stated	Not stated	Not stated	?/12	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	14GE7	Not stated	Not stated	Not stated	Not stated	?/7	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort
	14CY32	Not stated	Not stated	Not stated	Not stated	?/1	Grooves (interproximal)	Not stated	Not stated	Cylindrical object, $\nless 2$ mm in diameter. Therapeutic attempts due to alleviate discomfort

Berryman et al. (1979)	Larson site 39WW2, USA	Arikara Native Americans	c. second half 18th century+	$n=161$, +18-years-old	$n=49$ (30.4%), of the $n=49/36$ males (73.5%), 13 females (26.5%)	106/3479 (3%) grooves	Grooves (interproximal)	Grooved teeth in all positions, especially posterior, excluding the maxillary canines and 3rd premolars	35.8% of grooves associated with caries, 62.3% associated with alveolar bone resorption.	Probes and hard particles incorporated into foodstuffs
Blakely and Beck (1984)	Plum Grove (site 40Wgl7), Nolichucky River, Appalachian Mountains, Tennessee, USA	Pisgah	c. 1300-1500 A.D.	$n=23$	$n=3/23$ (13%) - all adult females	Not stated	Wear - cupped	Central and lateral incisors (max./mandibular not stated)	Not stated	Processing fibres (pulling across the occlusal surface)
		Qualla	c. 1500-1650 A.D.	$n=13$	$n=0/13$ (0%)	None	None	None	N/A	N/A
Lukacs and Pastor 1988	Mehragrah, Baluchistan, Pakistan	Not stated	Neolithic and Chalcolithic	No MNI given	Unknown	9.6% ($n=5/52$) - Neolithic, 2.8% ($n=11/36$) - Chalcolithic (Both unclear if these relate to teeth, as no MNI given)	Grooves	Molars, distobuccal, mesio-buccal, distal (data provided was combined from Neolithic and Chalcolithic populations)	None	Neolithic Mehragrah; habitual and occupational grooves, the Chalcolithic Mehragrah; therapeutic grooves

	Harappa, Punjab, Pakistan	Not stated	Bronze Age	No MNI given	Unknown	10.5% (<i>n</i> =2/19) (Unclear if these relate to teeth, as no MNI given)	Grooves (interproximal)	Incisors, mesial and distal	One individual with caries in the Harappa population	Therapeutic grooves
Erdal (2008)	Sinop, Northern Anatolia	Kovuklukay a individuals	10th Century A.D.	<i>n</i> =32 (<i>n</i> =17 males, <i>n</i> =15 females)	20% (5/25*) - with grooves, 45% (11/25*) with abrasions. *The discrepancy between female totals is not given	11*/595 *The number of grooved teeth, exclude abrasions	Grooves (occlusal) and wear (abrasion)	Grooves- incisors (maxillary and mandibular)	None	Yarn production based on ethnographic accounts
Waters-Rist et al. (2010)	Lake Baikal (south- western region), Siberia, Russian Federation	Lokomotiv	Early Neolithic	<i>n</i> =26 (observable individuals), <i>n</i> =14 - males, <i>n</i> =10 - females, <i>n</i> =2, undetermined	<i>n</i> =9/26 (34.6%), <i>n</i> =3/14 (21.4%) - males, <i>n</i> =5/10 - females, <i>n</i> =1/2 (50%) - undetermined	Not stated	Grooves (occlusal)	Not stated	Not stated	Processing sinew (marsh reeds - <i>Typha latifolia</i>)
	Lake Baikal (south- western region), Siberia, Russian Federation	Shamanka II	Early Neolithic	<i>n</i> =54 (observable individuals), <i>n</i> =37 - males, <i>n</i> =14 - females, <i>n</i> =3 - undetermined	<i>n</i> =9/54 (16.7%), <i>n</i> =5/37 (13.5%) - males, <i>n</i> =3/14 - females, <i>n</i> =1/3 (33.3%) -	Not stated	Grooves (occlusal and interproximal)	Not stated	Not stated	Processing sinew (marsh reeds - <i>Typha latifolia</i>)

					undetermined					
	Lake Baikal (south-western region), Siberia, Russian Federation	Ust'-Ida 1	Late Neolithic and Bronze Age	$n=14$ (observable individuals), $n=11$ - males, $n=3$ - females	$n=5/14$ (35.7%), $n=5/11$ (45.5%) - males, $n=0/3$ (0%) - females	Not stated	Grooves (occlusal)	Not stated	Not stated	Processing sinew (marsh reeds - <i>Typha latifolia</i>)
	Lake Baikal (south-western region), Siberia, Russian Federation	Kurma XI	Bronze Age	$n=8$ (observable individuals), $n=6$ - males, $n=2$ - females	$n=2/8$ (25%), $n=1/6$ (16.7%) - males, $n=1/2$ (50%) - females	Not stated	Grooves (occlusal)	Not stated	Not stated	Processing sinew (marsh reeds - <i>Typha latifolia</i>)
	Lake Baikal (south-western region), Siberia, Russian Federation	Khuzhir-Nuge XIV	Bronze Age	$n=21$ (observable individuals), $n=15$ - males, $n=6$ - undetermined	$n=0/21$ (0%)	Not stated	Grooves (occlusal)	Not stated	Not stated	Processing sinew (marsh reeds - <i>Typha latifolia</i>)
Lorkiewicz (2011)	Brześć Kujawski, Miechów (two sites), and Konary, (two sites) and Osłonki, Pikutkowo and Smo'lsk - Kuyavia, Poland	<i>Brześć Kujawski of Lengyel culture</i>	Neolithic (4600–4000 BC)	$n=76$	36.8% (28/76)	$n=27/?$ (?%) - females, $n=6/?$ (?%) - males	Grooves	Incisors - occlusal	Correlation with AMTL, wear association with periapical lesions	Holding pins, pulling fibres

Berbesque et al. (2012)* Contemporary population	Tanzania	Hadza	Contemporary	$n=126$ individuals, $n=7$ females, and $n=55$ males, 15+ yrs (maxillae moulds)	Not stated	15-19 yrs - $n=52/?$, 20-29 yrs $n=164/?$, 30-39 yrs - $n=98/?$, 40-49 yrs - $n=101/?$, 50-59 yrs - $n=61/?$, 60+ yrs - $n=37/?$	Wear	M1, for 15-19-years-old central incisors. Females displayed greater wear in central and lateral incisors, and 3rd premolars. Males had the greater wear in the premolars and M1s.	Not stated	Females lack of tools, resulting in greater anterior based PMDA
Madimenos (2005, 30-31 Table 4.1-4.24)	Point Hope, Alaska	Tigara	c. 800-300 years B.P. (calendar)	$n=94$ - males, $n=137$ - females**	cuts – $n=3/94$ (3.1%), notches $n=51/94$ (54.2%), striae $n=9/94$ (9.5%) for the male individuals, and cuts - $n=8/137$ (5.8%), notches – $n=61/137$ (44.5%), striae – $n=20/137$ (1.4%) for the females	males - $n=2151$, females - $n=2841$	Cuts, notches, striae	Striae = only anterior teeth, cuts = only on the molars, notches = not stated	Not stated	Cuts = use of teeth, striae and notches = processing frozen animal hides

	Point Hope, Alaska	Ipiutak	c. 1,600-1,100 years BP (calendar)	n=29 - males, n=29 - females**	cuts – n=1/29 (3.4%), notches n=11/29 (37.9%) and striae – n=3/29 (6.8%) for the male individuals and cuts - n=1/29 (3.4%), notches – n=8/29 (27.5%), and striae – n=3/29 (6.8%) for the female	males - n=606, females n=559	Cuts, notches, striae	Striae = only anterior teeth, cuts = only on the molars, notches = not stated	Not stated	Cuts = use of teeth, striae and notches = processing frozen animal hides
Trombley et al. (2018)	Villamagna, Italy	Not stated	c. AD 1350–1500, late Medieval	Individuals n=2, female n=1 (50+ yrs), male n=1 (30-49 yrs)	n=2/404 (2.6%)	One individual n=11 teeth, one individual n=22 teeth	Grooves (interproximal), TEM	Maxillary (incisors, canines, premolars and molars)	Periodontitis, caries	Hygienic/palliative for pain relief, holding objects between the teeth, use of sewing needle
Larsen (1985)	Humbolt Late Basin and Pyramide Lake Basin, Great Basin, USA	Not stated	Unknown - believed to be pre-European contact	n=167 - age and sex not give.	n=5/171 (2.9%) of dentitions, all older males	n=16/193 1	Grooves (interproximal) and wear	midocclusal aspects - anterior teeth (both maxillary and mandibular)	None	Sinew production/processing

yrs=years of age

*=note

**PMDA based on all ages

Appendix Table 233 – Paramasticatory dental activities – Prevalence – facets – Amaknak Island

Amaknak Island																
Facets	male			female			total									
	prese nt	abse nt	prevalen ce	prese nt	abse nt	prevalen ce	numb er	prevalen ce	q=ad /n	r=bc /n	v			OR=q/r	95% CI	
	a	b		c	d		n									
Adolescent	0	1	0.00%	0	2	0.00%	3	0.00%	0.00	0.00	0			not calculated		
YA	0	1	0.00%	0	3	0.00%	4	0.00%	0.00	0.00	0			not calculated		
Early middle adult	1	0	100.00%	1	0	100.00%	2	100.00%	0.00	0.00	0			not calculated		
Late middle adult	0	3	0.00%	0	3	0.00%	6	0.00%	0.00	0.00	0			not calculated		
MA	0	6	0.00%	0	8	0.00%	14	0.00%	0.00	0.00	0			not calculated		
							N		Q	R	V	S E	E F	common OR = Q/R		
											0.0	n.	n.		#VALU	#VALU
Overall	1	11	8.33%	1	16	5.88%	29	6.90%	0.00	0.00	0	d.	d.	not calculated	E!	E!

Appendix Table 234 Paramasticatory dental activities – Prevalence – facets – South Alaska

South Alaska Facets	male			female			total		q=ad/ n	r=bc/ n	v	OR=q/r	95% CI		
	prese nt	absen t	prevalen ce	prese nt	absen t	prevalen ce	numb er	prevalen ce							
	a	b		c	d		n								
Adolescent	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.	n.d.			
YA	0	2	0.00%	0	3	0.00%	5	0.00%	0	0	0	not calculated			
Early middle adult	0	1	0.00%	0	0	n.d.	1	0.00%	0	0	n.d.	not calculated			
Late middle adult	0	1	0.00%	0	1	0.00%	2	0.00%	0	0	0	not calculated			
MA	1	1	50.00%	0	0	n.d.	2	50.00%	0	0	0	not calculated			
							N		Q	R	V	SE	E F	common OR = Q/R	
Overall	1	5	16.67%	0	4	0.00%	10	10.00%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

Appendix Table 235 Paramasticatory dental activities – Prevalence – facets – West Aleutians

West Aleutians Facets	male			female			total									
	prese nt	abse nt	prevalen ce	prese nt	abse nt	prevalen ce	numb er	prevalen ce								
	a	b		c	d		n		q=ad/ n	r=bc/ n	v					
													OR=q/r	95% CI		
Adolescent	0	1	0.00%	0	4	0.00%	5	0.00%	0	0	0	not calculated				
YA	0	2	0.00%	0	3	0.00%	5	0.00%	0	0	0	not calculated				
Early middle adult	1	1	50.00%	0	0	n.d.	2	50.00%	0	0	0	not calculated				
Late middle adult	0	6	0.00%	0	6	0.00%	12	0.00%	0	0	0	not calculated				
MA	0	6	0.00%	0	5	0.00%	11	0.00%	0	0	0	not calculated				
							N		Q	R	V	SE	E F	common OR = Q/R		
Overall	1	16	5.88%	0	18	0.00%	35	2.86%	0	0	0	n.d.	n.d.	not calculated	#VALU E!	#VALU E!

Appendix Table 236 Paramasticatory dental activities – Prevalence – facets – West Greenland

West Greenland Facets	male			female			total									
	prese nt	abse nt	prevale nce	prese nt	abse nt	prevale nce	numb er	prevale nce								
	a	b		c	d		n		q=ad /n	r=bc /n	v			OR=q/r	95% CI	
Adolescent	0	1	0.00%	0	0	n.d.	1	0.00%	0	0	n.d.			not calculated		
YA	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0			not calculated		
Early middle adult	1	0	100.00%	0	2	0.00%	3	33.33%	0.6666 67	0	0.2222 22			not calculated		
Late middle adult	0	1	0.00%	0	1	0.00%	2	0.00%	0	0	0			not calculated		
MA	0	1	0.00%	0	0	n.d.	1	0.00%	0	0	n.d.			not calculated		
							N		Q	R	V	S E	E F	common OR = Q/R		
Overall	1	4	20.00%	0	5	0.00%	10	10.00%	0.6666 67	0	n.d.	n. d.	n. d.	not calculated	#VALU E!	#VALU E!

Appendix Table 237 Paramasticatory dental activities – Prevalence – striae – Amaknak Island

Amaknak Island Striae	male			female			total									
	prese nt	abse nt	prevale nce	prese nt	abse nt	prevale nce	numb er	prevale nce	q=ad /n	r=bc /n	v	OR=q/r	95% CI			
	a	b		c	d		n									
Adolescent	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0	not calculated				
YA	0	1	0.00%	0	3	0.00%	4	0.00%	0	0	0	not calculated				
Early middle adult	0	1	0.00%	1	0	100.00%	2	50.00%	0	0.5	0.25	not calculated				
Late middle adult	0	3	0.00%	0	3	0.00%	6	0.00%	0	0	0	not calculated				
MA	1	5	16.67%	0	8	0.00%	14	7.14%	0.5714 29	0	0.2448 98	not calculated				
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	1	11	8.33%	1	16	5.88%	29	6.90%	0.5714 29	0.5	0.4948 98	1.3161 09	13.190 89	1.142857	0.086 64	15.07 53

Appendix Table 238 Paramasticatory dental activities – Prevalence – striae – Coats Island

Coats Island Striae	male			female			total									
	prese nt	abse nt	prevalen ce	prese nt	abse nt	prevalen ce	numb er	prevalen ce	q=ad /n	r=bc/ n	v	OR=q/r	95% CI			
	a	b		c	d		n									
Adolescent	0	4	0.00%	0	14	0.00%	18	0.00%	0	0	0	not calculated				
YA	0	28	0.00%	1	40	2.44%	69	1.45%	0	0.4057 97	0.2411 26	not calculated				
Early middle adult	0	14	0.00%	0	10	0.00%	24	0.00%	0	0	0	not calculated				
Late middle adult	0	4	0.00%	0	4	0.00%	8	0.00%	0	0	0	not calculated				
MA	0	3	0.00%	0	1	0.00%	4	0.00%	0	0	0	not calculated				
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	0	53	0.00%	1	69	1.43%	123	0.81%	0	0.4057 97	0.2411 26	n. d.	n. d.	not calculated	#### #	#### #

Appendix Table 239 Paramasticatory dental activities – Prevalence – striae – Hudson Bay

Hudson Bay Striae	male			female			total									
	prese nt	abse nt	prevalen ce	prese nt	abse nt	prevalen ce	numb er	prevalen ce	q=ad /n	r=bc/ n	v	OR=q/r	95% CI			
	a	b		c	d		n									
Adolescent	0	6	0.00%	0	21	0.00%	27	0.00%	0	0	0	not calculated				
YA	0	30	0.00%	1	43	2.27%	74	1.35%	0	0.4054 05	0.2410 52	not calculated				
Early middle adult	0	17	0.00%	0	19	0.00%	36	0.00%	0	0	0	not calculated				
Late middle adult	0	6	0.00%	0	17	0.00%	23	0.00%	0	0	0	not calculated				
MA	0	22	0.00%	0	19	0.00%	41	0.00%	0	0	0	not calculated				
							N		Q	R	V	SE	E F	common OR = Q/R		
Overall	0	81	0.00%	1	119	0.83%	201	0.50%	0	0.4054 05	0.2410 52	n. d.	n. d.	not calculated	#VALU E!	#VALU E!

Appendix Table 240 Paramasticatory dental activities – Prevalence – striae – North Alaska

North Alaska Striae	male			female			total									
	prese nt	abse nt	prevalen ce	prese nt	abse nt	prevalen ce	numb er	prevalen ce	q=ad /n	r=bc/ n	v	OR=q/r	95% CI			
	a	b		c	d		n									
Adolescent	0	0	n.d.	0	2	0.00%	2	0.00%	0	0	0	not calculated				
YA	0	2	0.00%	0	2	0.00%	4	0.00%	0	0	0	not calculated				
Early middle adult	0	1	0.00%	1	1	50.00%	3	33.33%	0	0.3333 33	0.2222 22	not calculated				
Late middle adult	0	3	0.00%	0	1	0.00%	4	0.00%	0	0	0	not calculated				
MA	0	3	0.00%	0	0	n.d.	3	0.00%	0	0	0	not calculated				
							N		Q	R	V	SE	E F	common OR = Q/R		
Overall	0	9	0.00%	1	6	14.29%	16	6.25%	0	0.3333 33	0.2222 22	n. d.	n. d.	not calculated	#VALU E!	##VALU E!

Appendix Table 241 Paramasticatory dental activities – Prevalence – striae – South Alaska

South Alaska Striae	male			female			total									
	presen	absen	prevalenc	presen	absen	prevalenc	numbe	prevalenc	q=ad/ n	r=bc/ n	v	SE	EF	OR=q/r	95% CI	
	t	t	e	t	t	e	r	e								
	a	b		c	d		n									
Adolescent	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.			n.d.		
YA	1	1	50.00%	0	3	0.00%	5	20.00%	0.6	0	0.24			not calculated		
Early middle adult	0	1	0.00%	0	0	n.d.	1	0.00%	0	0	n.d.			not calculated		
Late middle adult	0	1	0.00%	0	3	0.00%	4	0.00%	0	0	0			not calculated		
MA	0	2	0.00%	0	1	0.00%	3	0.00%	0	0	0			not calculated		
							N		Q	R	V			common OR = Q/R		
Overall	1	5	16.67%	0	7	0.00%	13	7.69%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

Appendix Table 242 Paramasticatory dental activities – Prevalence – striae – South Greenland

South Greenland Striae	male			female			total									
	prese nt	abse nt	prevalen ce	prese nt	abse nt	prevalen ce	numb er	prevalen ce	q=ad/ n	r=bc/ n	v	SE	EF	OR=q/r	95% CI	
	a	b		c	d		n									
Adolescent	0	0	n.d.	1	0	100.00%	1	100.00%	0	0	n.d.			not calculated		
YA	0	3	0.00%	0	4	0.00%	7	0.00%	0	0	0			not calculated		
Early middle adult	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.			n.d.		
Late middle adult	0	0	n.d.	0	0	n.d.	0	n.d.	n.d.	n.d.	n.d.			n.d.		
MA	1	0	100.00%	0	1	0.00%	2	50.00%	0.5	0	0.25			not calculated		
							N		Q	R	V			common OR = Q/R		
Overall	1	3	25.00%	1	5	16.67%	10	20.00%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

Appendix Table 243 Paramasticatory dental activities – Prevalence – striae – West Greenland

West Greenland Striae	male			female			total									
	prese nt	abse nt	prevalen ce	prese nt	abse nt	prevalen ce	numb er	prevalen ce	q=ad/ n	r=bc/ n	v			OR=q/r	95% CI	
	a	b		c	d		n									
Adolescent	0	1	0.00%	2	0	100.00%	3	66.67%	0	0.6666 67	0.2222 22			not calculated		
YA	0	1	0.00%	0	2	0.00%	3	0.00%	0	0	0			not calculated		
Early middle adult	1	0	100.00%	0	2	0.00%	3	33.33%	0.6666 67	0	0.2222 22			not calculated		
Late middle adult	0	3	0.00%	0	1	0.00%	4	0.00%	0	0	0			not calculated		
MA	0	1	0.00%	0	0	n.d.	1	0.00%	0	0	n.d.			not calculated		
							N		Q	R	V	SE	EF	common OR = Q/R		
Overall	1	6	14.29%	2	5	28.57%	14	21.43%	0.6666 67	0.6666 67	n.d.	n.d. .	n.d. .	1	n.d. .	n.d. .

Appendix Table 244 Length and width of largest of the lingual distal features

All measurements in mm.

Sample	Skeletal ID	Sex	Age		Tooth													
					18	16	13	12	11	21	22	23	26	27	48	47	46	43
Amaknak Island	AMNH 99.1/707	Female	Middle adult	Length			4.2	4				5.3						
				Width			5.8	4.4				7.3						
	AMNH 99.1/793	Female	Middle adult	Length											7	7		
				Width											1	1		
	AMNH 99.1/808	Male	Mature adult	Length					4.8	4.6								
				Width					5.3	6.8								
	AMNH 99.1/713	Male	Mature adult	Length							1.7	4						
				Width							0.5	0.6						
Hudson Bay	XIV-C:344	Female	Young adult	Length					2.9									
				Width					1.3									
North Alaska	XIV-H:015	Female	Middle adult	Length			5.1											
				Width			1.7											
North Greenland	AMNH 99/7706	Female	Adult unknown	Length													10.2	
				Width													2.24	
South Alaska	AMNH VL/215	Male	Young adult	Length						2.2								
				Width						0								
South Greenland	1-Aa.113M	Male	Mature adult	Length	3.4													
				Width	1													
West Aleutians	XIV-F:001-1	Male	Middle adult	Length														7.7
				Width														5.7
West Greenland	AMNH 99/8917	Male	Middle adult	Length		2.6												
				Width		1.4												
	11-Aa.113M	Female	Young adult	Length									4	3.7				
				Width									1	0.9				
	53-Aa.113F	Female	Young adult	Length										2.7				
				Width										1.1				

Appendix Table 245 - Dental features and periodontal disease - Ogden (2008)

Numbers denote periodontal scores on the alveolar bone for a tooth presenting dental features

Sample	Skeletal ID	Sex	Age	Type / Tooth														
				18	16	13	12	11	21	22	23	26	27	28	48	47	46	43
Amaknak Island	AMNH 99.1/707	Female	Middle adult			2	2				2							
	AMNH 99.1/793	Female	Middle adult												1	1		
	AMNH 99.1/808	Male	MA					2	2									
	AMNH 99.1/713	Male	MA							2	2							
Hudson Bay	XIV-C:344	Female	YA					1										
North Alaska	XIV-H:015	Female	Middle adult			2												
North Greenland	AMNH 99/7706	Female	Adult Unknown														1	
South Alaska	AMNH VL/215	Male	YA						1									
South Greenland	1-Aa.113M	Male	MA	2														
West Aleutians	XIV-F:001-1	Male	Middle adult															2
West Greenland	AMNH 99/8917	Male	Middle adult		2													
	11-Aa.113M	Female	YA									0	3					
	53-Aa.113F	Female	YA										2					

Appendix Image 1 Recording sheet – 1

Captures data on age/sex estimations for individual NA 171

Site: Elkimo Skeletal ID: NA 171 Initials: am Date: 3/10/14 Location: Duck Scoring: 2

Adult Sex			
Method/Author	Feature	Left	Right
Walker (2008)	Nuchal Crest		
Walker (2008)	Mastoid Processes		
Walker (2008)	Supra-Orbital Rim		
Walker (2008)	Glabella		
White et al. (2012)	Frontal Bossing		
White et al. (2012)	Parietal Bossing		
Walker (2008)	Mental Emin.		
Walker (1994)	Greater Sciatic Notch		
White et al. (2012)	Pubis		
Sex Estimation			

Subadult Age			
Method/Author	Feature	Left	Right
Buikstra and Ubelaker	Clavical Medial Epip.		
Buikstra and Ubelaker	Scapula Acromion		
Buikstra and Ubelaker	Iliac Crest		
Buikstra and Ubelaker	Sacrum: S1-S2		
Buikstra and Ubelaker	Sacrum: S2-S3		
Buikstra and Ubelaker	Sacrum: S3-S5		
Buikstra and Ubelaker	Femur: Distal		
Y'Edynak (1976)	Humerus MDL		
Y'Edynak (1976)	Ulna MDL		
Y'Edynak (1976)	Radius MDL		
Y'Edynak (1976)	Femoral MDL		
Y'Edynak (1976)	Tibia MDL		
Y'Edynak (1976)	Fibula MDL		
AlQahtani et al. (2010)	Dental Devt.		
Age (in yrs)			

/ = bones missing; 0 = unfused; 1 = fusing; 2 = fused. MDL = Maximum diaphyseal length.

Cranial Sutures = ~~Scissors + Black p. 20~~

Notes: Scissors + Black p. 20 confirms to description = 12 yrs

Appendix Image 2 Recording sheet – 2

Captures data on the conditions relating to Hillson (2001) for individual NA 171 on the permanent teeth

Site: Elkimo Skeletal ID: NA 171 Initials: am Date: 3/10/14 Location: Duck Scoring: 2

	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

15- is loose from alveolar bone, as it is not present.

Appendix Image 3 Recording sheet – 3

Captures data on the paramasticatory dental activities, calculus, wear, and periodontal disease, on the permanent teeth for individual NA 171

Site: Ekimo Skeletal ID: NA 171 Initials: am Date: 8/10/14 Location: Duck Scoring: Z

	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38	
24			0																0			0											
25												0		0					0			0									0		
26																																	
27																																	
28																																	
29																																	
30																																	
31																																	
32																																	
33																																	
34																																	
35			0									0		0					0			0									0		
36			0									0		0				0			0										0		
37			0									0		0				0			0										0		
38			0									0		0				0			0										0		
39			0									0		0				0			0										0		
40			0									0		0				0			0										0		
41												0		0				0			0										0		
42																																	
43																																	
44																																	

Appendix Image 4 Recording sheet – 4

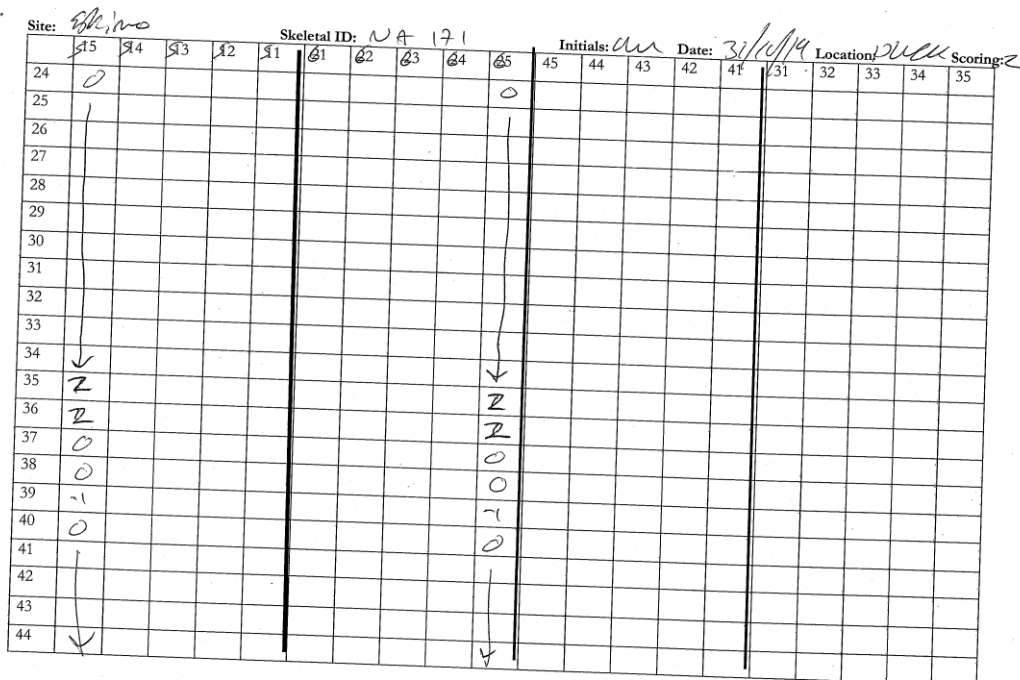
Captures data on the conditions relating to Hillson (2001) for individual NA 171 on the deciduous teeth

Site: Ekimo Skeletal ID: NA 171 Initials: am Date: 8/10/14 Location: Duck Scoring: Z

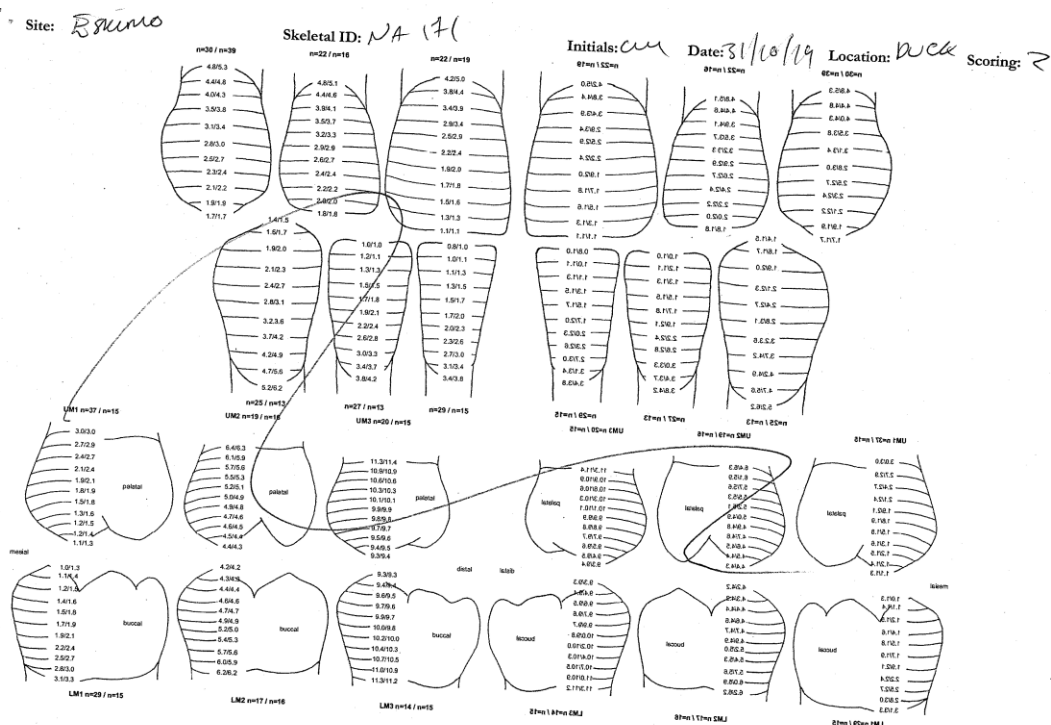
	55	54	53	52	51	61	62	63	64	65	85	84	83	82	81	71	72	73	74	75
1	0									0										
2	-1									-1										
3	-1									-1										
5	0									0										
6	0									0										
7	0									0										
8	0									0										
9	0									0										
10	-1									0										
11	0									0										
12	0									0										
13	0									0										
14	-1									0										
15	-1									-1										
16	0									0										
17	-1									-1										
18	0									-1										
19	0									0										
20	-1									-1										

	55	54	53	52	51	61	62	63	64	65
Feet										
Dist										

Captures data on the paramasticatory dental activities, calculus, wear, and periodontal disease, on the deciduous teeth for individual NA 171

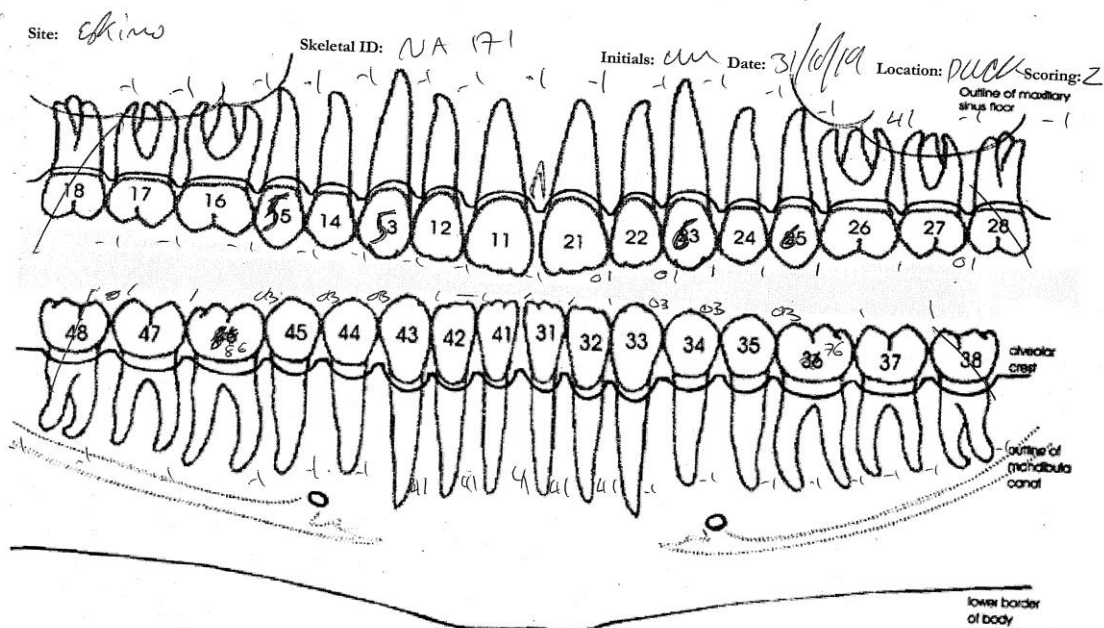


Captures data on linear enamel hypoplasia on individual NA 171



Appendix Image 7 Recording sheet – 7

Captures data on periodontal disease for individual NA 171



Appendix Image 8 Recording sheet – 8

Captures data on age/sex estimations for individual NA 135

Site: *Kagmallsalik* Skeletal ID: *NA 135* Initials: *dm* Date: *29/10/19* Location: *Duck* Scoring: *Z*

Adult Sex			
Method/Author	Feature	Left	Right
Walker (2008)	Nuchal Crest	<i>1</i>	
Walker (2008)	Mastoid Processes	<i>2</i>	<i>3</i>
Walker (2008)	Supra-Orbital Rim	<i>1</i>	<i>1</i>
Walker (2008)	Glabella	<i>1</i>	<i>1</i>
White et al. (2012)	Frontal Bossing	<i>F</i>	<i>F</i>
White et al. (2012)	Parietal Bossing	<i>F</i>	<i>F</i>
Walker (2008)	Mental Emin.	<i>1</i>	
Walker (1994)	Greater Sciatic Notch		<i>X</i>
White et al. (2012)	Pubis		<i>X</i>
Sex Estimation			

Flaring = 1-

Adult Age			
Method/Author	Feature	Left	Right
Dental Eruption	3rd molar presence	<i>P</i>	
Lovejoy (1985)	Dental Wear	<i>5</i>	
Lovejoy et al. (1985)	Auricular Surface		
Suchey-Brooks (1990)	Pubic Symphysis		
Işcan et al. (1984)	Sternal Rib (#3)		
Işcan et al. (1984)	Sternal Rib (#4)		
Işcan et al. (1984)	Sternal Rib (#5)		
Age Estimation		<i>Adult</i>	

Subadult Age			
Method/Author	Feature	Left	Right
Buikstra and Ubelaker	Clavical Medial Epip.		
Buikstra and Ubelaker	Scapula Acromion		
Buikstra and Ubelaker	Iliac Crest		
Buikstra and Ubelaker	Sacrum: S1-S2		
Buikstra and Ubelaker	Sacrum: S2-S3		
Buikstra and Ubelaker	Sacrum: S3-S5		
Buikstra and Ubelaker	Femur: Distal		
Y'Edynak (1976)	Humerus MDL		
Y'Edynak (1976)	Ulna MDL		
Y'Edynak (1976)	Radius MDL		
Y'Edynak (1976)	Femoral MDL		
Y'Edynak (1976)	Tibia MDL		
Y'Edynak (1976)	Fibula MDL		
AlQahtani et al. (2010)	Dental Devt.		
Age (in yrs)			

/ = bones missing; 0 = unfused; 1 = fusing; 2 = fused. MDL = Maximum diaphyseal length.

Cranial Sutures = *obliterated*

Notes:

*Cranium says Eskimo
+ mandible Kagmallsalik
Feb 1934 C*

KCC BSK 92.16

Appendix Image 9 Recording sheet – 9

Captures data on the conditions relating to Hillson (2001) for individual NA 135 on the permanent teeth

Site: Jajmalah Skeletal ID: NA 135 Initials: an Date: 29/10/14 Location: DUK Scoring: 2

	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
1	-1	-1	-1	0	0	0	10	10	10	10	0	0	0	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2	-1	-1	-1	0	0							0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1									
3	-1	-1	-1				-1	-1	-1	-1				-1	-1	-1	-1	-1	-1													
5	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
6	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
7	-1	-1	-1	0	0	0	-1	-1	-1	-1		0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
8	-1	-1	-1	0	0	0	-1	-1	-1	-1		0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
9	-1	-1	-1	0	0	0	-1	-1	-1	-1		0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
10	-1	-1	-1	2	3	-1	-1	-1	-1	-1		4	3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
11	-1	-1	-1	0	0	0	-1	-1	-1	-1		0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
12	-1	-1	-1	0	0	0	-1	-1	-1	-1		0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
13	-1	-1	-1	0	0	0	-1	-1	-1	-1		0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
14	-1	-1	-1	-1	4	3	-1	-1	-1	-1		4	3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
15	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
16	-1	-1	-1	0	0	0	-1	-1	-1	-1		0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
17	-1	-1	-1	3	4	-1	-1	-1	-1	-1		3	5	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
18	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
19	-1	-1	-1	0	0	0	-1	-1	-1	-1		0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
20	-1	-1	-1	5	5	3	-1	-1	-1	-1		5	5	5	5	5	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	

23 is just a root - lost PM.

Appendix Image 10 Recording sheet – 10

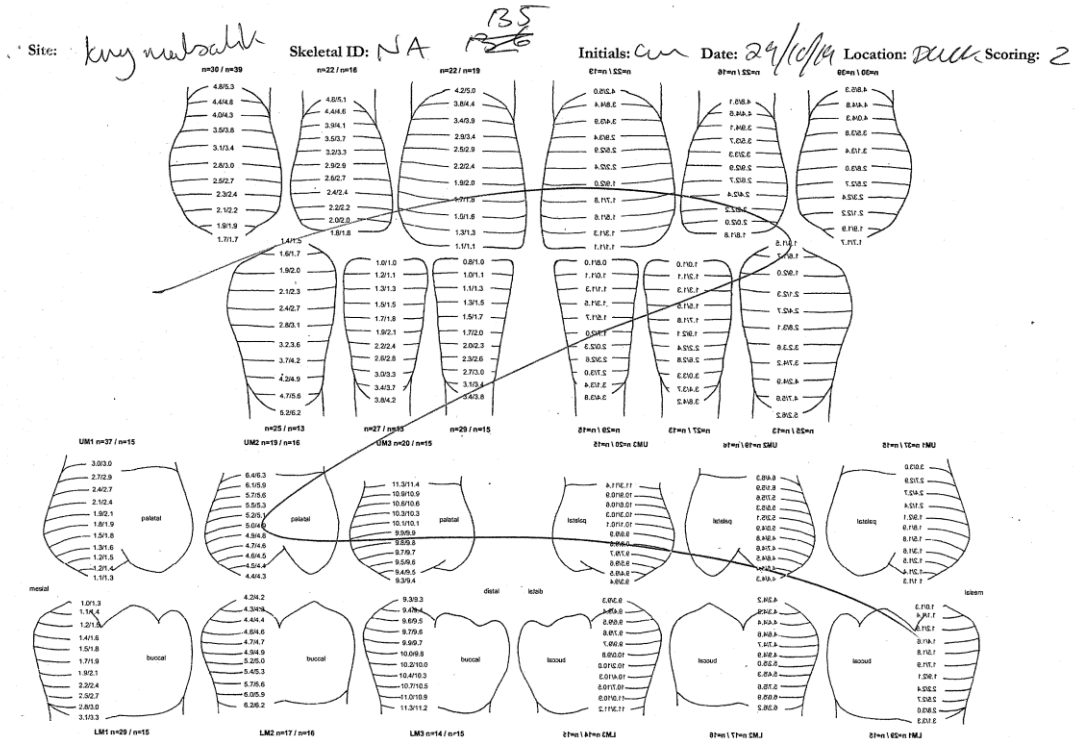
Captures data on the paramasticatory dental activities, calculus, wear, and periodontal disease, on the permanent teeth for individual NA 135

Site: my nashville Skeletal ID: NA 135 Initials: an Date: 29/10/14 (Location: DUK) Scoring: 2

	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
24				0	0	0						0	0	0	0	0												0		0	0	
25				1	1	1						1	1	1	1	1												1		1	1	
26				1	1	1						1	1	1	1	1												1		1	1	
27				1	1	1						1	1	1	1	1												1		1	1	
28				1	1	1						1	1	1	1	1												1		1	1	
29				1	1	1						1	1	1	1	1												1		1	1	
30				1	1	1						1	1	1	1	1												1		1	1	
31				1	1	1						1	1	1	1	1												1		1	1	
32				1	1	1						1	1	1	1	1												1		1	1	
33				1	1	1						1	1	1	1	1												1		1	1	
34				↓	↓	↓						↓	↓	↓	↓	↓												↓		↓	↓	
35				0	0	1						1	1	1	1	1												1		1	1	
36				0	0	1						1	1	1	1	1												1		1	1	
37				0	0	0						0	0	0	0	0												0		0	0	
38				0	0	0						0	0	0	0	0												0		0	0	
39				1	1	1						1	1	1	1	1												1		1	1	
40				0	0	0						0	0	0	0	0												0		0	0	
41				0	0	0						0	0	0	0	0												0		0	0	
42				0	0	0						0	0	0	0	0												0		0	0	
43				0	0	0						0	0	0	0	0												0		0	0	
44				0	0	0						0	0	0	0	0												0		0	0	

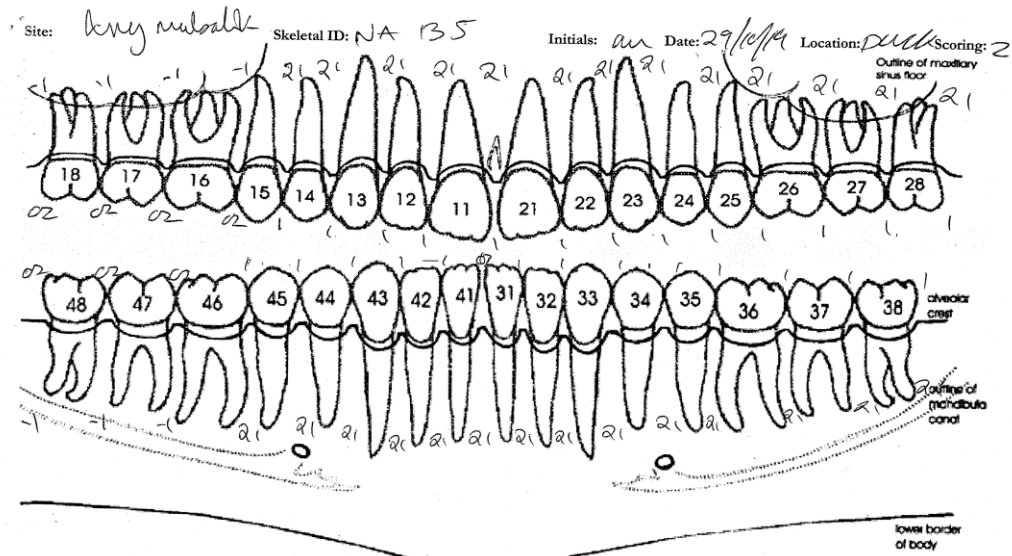
Appendix Image 11 Recording sheet – 11

Captures data on linear enamel hypoplasia on individual NA 171



Appendix Image 12 Recording sheet – 12

Captures data on periodontal disease for individual NA 171



2 Appendix – Supplementary Information

The research covered in the main text was conducted on an extensive number of individuals from a large geographic area, to examine how teeth were used as tools and cultural identifiers. The analysis focuses on Arctic/Sub-Arctic samples, who have been studied extensively, including aspects of genetic histories, lifeways, and skeletal and dental morphology (Nuger 2003; Scott and Irish 2017, 2; Scott et al. 2016, 247-248, 260; Irish et al. 2014; McIlvaine et al. 2014; Raghavan et al. 2014; Burnett et al. 2010; Aung et al. 2005; Owens 2004; Guatelli-Steinberg et al. 2001; Ousley 1995; Zegura 1975; Jamison and Zegura 1970). The results of the published studies have not been collated into one repository, assembling sample specific age/sex methods, or adjustments to the methods. During the data collection phase of the current research, distinct morphological traits and possible activity/environmental induced cranial and post-cranial skeletal alterations were noted. However, the projects' parameters prevent in-depth analysis. The aims of the sections are to collate the published and researcher's findings and observations, explain the analytical problems the findings and observations can cause, and propose adjustments to age/sex methods for studies with Arctic/Sub-Arctic samples.

2.1 Skeletal Morphological Characteristics

The following covers morphological characteristics unique to Arctic/Sub-Arctic samples. The unique features noted in the published literature are listed in Appendix Table 246. Morphological distinctions to cranial and postcranial remains were observed during the data collection phase of the research here. The first distinction is inter- and intra-sample variation in cranial robusticity/gracility. Inter-sample variation occurs in the St. Lawrence Island sample, specifically Cape Chaplin/Chaplino, with reduced gracility of the nuchal crest and mastoid processes, and excessive robusticity in the supraorbital margins and glabella. Conversely, the Greenlandic individuals have overall cranial gracility, including the nuchal crest and mastoid processes. The intra-sample exception is Greenlandic individual 21-Aa.113M, with robusticity matching St. Lawrence Island individuals. Further, many individuals have asymmetrical extent of cranial traits, as traits on one side score one level greater than the other side; the side with the greater expression of traits has greater dental wear. Post-cranially, all individuals exhibit exaggerated pelvic traits used for sex estimations, and frequently individuals score as hyper-female/male across the morphological sites. Overall, the pelvises are robust, as with the St. Lawrence Island cranial robusticity. However, unlike the cranial robusticity/gracility variations, pelvic hyper-dimorphism occurs across all samples where post-crania is present.

Activity-related effects on sexual dimorphism or skeletal morphology have been little studied in Arctic/Sub-Arctic samples (Ibáñez-Gimeno et al. 2015). The studies which have been conducted note characteristics and activity/environmental induced alterations to the human skeletal remains that can affect sex estimations; Hawkes (1916b, 209) note activity induced alterations cause the temporal crest to develop from mastication and developed temporal muscles, with masticatory forces causing non-fusion of the sagittal suture. Waugh (1937b) notes a correlation with wear and jaw robusticity amongst female individuals from Labrador, Ungava Bay, and Alaska. Knowles (1915) assigns shallow mandibular fossae in Arctic/Sub-Arctic samples (no further information given) to masticatory processes. If the results of Waugh (1937b), Hawkes (1916b, 209) and Knowles (1915) are correct, then asymmetrically conducted (para-)mastication caused the cranial robusticity here.

Appendix Table 246 Cranial and odontological morphology and characteristics

The characteristics have been noted in males and females, and the characteristics typically have greater expression in males than females

From Scott and Irish (2017, 23 and 173); Freidline et al. (2015); Irish (2016, 265); Hennessy and Stringer (2002); Schwartz et al. (1995); Wood (1992, 35); Laughlin (1979); Hylander (1972, 128); Wood (1971); Merrill (1964); Falconer (1960, 152); Moorrees (1957, 26); Pedersen (1947); McEuen (1938); Hawkes (1916b, 215-216, 209); Nelson (1900, 24-27); Meigs (1856)

Element	Characteristics
Skull	Well-developed superciliary arches
	Temporal crest well defined, robust, and raised in males
	Sagittal suture does not fuse
Maxilla	Maxillary tori*
Mandible	Mandibular torus*
	Robust
	Pronounced gonial eversion
	Shallow mandibular notches
	Oblique ascending rami which are wide and low
	Robust coronial processes, located lower than in other samples
	Exaggerated masticatory muscles
	Broad “U”-shaped maxillary arch
Anterior teeth	Greater vertical position, with edge-to-edge occlusion
	Shovel-shaped
Canines	Premolar shaped
Premolars	Evaginated odontomes
Mandibular PM4	Tricuspal
Molars	Larger crown size, buccal and lingual molar cusps, enamel pears, buccal pits and grooves, enamel extensions, supernumerary roots, and root fusion
Maxillary M1	Reduced height of cusps compared to some European samples
Mandibular M2-M3	5 cusps
3rd molars	Agenesis (congenital/impacted), pegged

* Analytically considered alongside non-metric dental, but occur on the skeleton

Post-cranial skeletal elements are less reliable than dental traits at reconstructing biological affinity (Sierp and Henneberg 2015), but can illustrate activity, environmental, and genetic characteristics. Studies have analysed Arctic/Sub-Arctic body proportions (Becker-Christensen 2003; Rode and Shephard 1984; Heller et al. 1967; Oettking 1945a; 1945b; 1945c; Hawkes 1916a), being linked to climate (Johnston et al. 1982) or activity; Hawkes (1916b, 204, 221) proposes more developed lower limbs from western Alaskan individuals compared to individuals from Greenland, eastern Canada, and the Aleutian Islands, relate to long-distance running. Wallace et al. (2014) notes age-related variations in limb bone

diaphyseal structure within Point Hope individuals. Further, the Tigara portion of the Point Hope sample display sex-based differences in activity-related sexual dimorphism in forearm rotational efficiency and humeral diaphyseal cross-sectional properties (Ibáñez-Gimeno et al. 2015). The forearm bones of the Ipiutak portion of the Point Hope sample do not show sex-based differences (Ibáñez-Gimeno et al. 2015). None of the studies analyse the pelvis, where observations were made here.

2.2 Maturation Patterns

The following concerns the maturation patterns of Arctic/Sub-Arctic samples. Subadult age estimations can utilise dental development and eruption, osteometrics, maximum diaphyseal length, and fusion timings (Alfonso-Durruty and Thompson 2011; Rissech et al. 2008; White and Folkens 2005, 373). Studies note distinct maturation patterns in Arctic/Sub-Arctic samples, with some skeletal/odontological elements reaching maturation faster during infancy and adolescence compared to non-Arctic/Sub-Arctic samples. For example, the splanchnocranium bones of Arctic/Sub-Arctic individuals reach near complete adult growth by 15.5-years-of-age, as with some (but not all) biological affinities (e.g., Khoisan) (Freidline et al. 2015). Y'Edynak (1976) analysed bone length-age correlation on pre-19th century Arctic/Sub-Arctic individuals from the Aleutian Islands ($n=24$), Western Arctic/Sub-Arctic ($n=81$), and Kodiak Island ($n=4$). Y'Edynak states Aleutian and Arctic/Sub-Arctic subadults mature 12 months earlier than Caucasian individuals. Y'Edynak's study was the only age estimation method for post-cranial skeletons of Arctic/Sub-Arctic subadults the researcher found. Research on inter- and post-War southwest Alaskan (Hrdlička 1936, 1941b) and Aleutian (Levine 1953) individuals note females reached puberty at approximately 14-years-of-age. No data on when males from these samples reach maturity has been found, other than after females. Therefore, sex estimations are possible on females at a younger age than males.

Eruption timings for contemporary Arctic/Sub-Arctic samples note distinctions in odontological maturation and eruption; Garn and Moorrees (1951) analysed permanent dentition emergence of post-1940s Aleutian (Attu, Atka, and Umnak Islands) subadults ($n=21$, sex unspecified). The results show, overall, the permanent dentition (excluding 3rd molars) erupt earlier than Caucasian individuals; individuals <10-years-of-age 1.00 ± 0.12 years, and for individuals >10-years-of-age 0.27 ± 0.12 years earlier. Mayhall et al. (1978) studied eruption timings in $n=368$ individuals aged <22 years-of-age, from Igloodik and Hall Beach (Foxye Basin, Northwest Territories, Canada), between 1968-1973; tooth presence meaning any part of crown is visible through the gingivae. Overall, there are earlier eruption timings than comparative samples – Pima from Arizona and Ojibwe, and Cree from Ontario (Mayhall et al. 1978). Boesen et al.'s (1976) analysis on two contemporary Greenlandic samples between 1957-1972, note females have earlier eruption timings. The first sample, from Tasilaq (east Greenland), has $n=319$ 6-16-year-olds, with 119 assessments on dental casts, the remainder assessed radiographically. The second sample, from Qaqortoq (west Greenland), has $n=708$ 7-17-year-olds (Boesen et al. 1976). Boesen et al. (1976) analysed permanent dentition emergence – meaning when the teeth reach the gingivae or are extracted (for any reason), excluding M1s, M3s, and mandibular central incisors (for the Qaqortoq sample maxillary also), due to the individuals' age. Boesen et al. (1976) note teeth erupt 0.5-0.6-years earlier in females than males, excluding the maxillary central incisors, and mandibular lateral incisors and canines. The mandibular canine erupts earlier by 0.8-years, females than males. The eruption timings of the maxillary central and mandibular lateral incisors are not given. The studies relate to the

permanent dentition, but other studies on non-Arctic/Sub-Arctic samples note females also have earlier eruption timings for deciduous teeth (Viciano et al. 2018; Warren et al. 2016; Kohli et al. 2014; Hillson 2008b, 307, 1996, 125; Harris and McKee 1990; Demirjian and Levesque 1980; Leigh 1925a).

2.3 Problems

The morphological characteristics and maturation patterns cause complications in applying standard bioarchaeological protocols for age/sex estimations, predominately from activity induced morphological characteristics/alterations (e.g., robusticity and dental wear). The maturation patterns can affect age estimation when using methods developed on non-Arctic/Sub-Arctic samples, resulting in individuals being assigned an older age than is correct. Sex estimation methods utilise sexually dimorphic regions (Walker 2008), which should be consistent across biological affinities, e.g., females have wider pelvises, and males have greater robusticity (Casado 2017; Petaros et al. 2015; White et al. 2012, 412; Brothwell 1981, 51-52). Therefore, methods developed on sexually dimorphic features are appropriate for use on all biological affinities (Hughes et al. 2019; White et al. 2012, 412; González et al. 2007; Logan et al. 2003). However, some activities/behaviours can alter or exaggerate morphological characteristics.

Visual age estimations are made by observing osteological changes from the natural ageing processes, which are affected by diet, activity, and disease (Xanthopoulou et al. 2018; Cerezo-Román and Hernández Espinoza 2014; Eveleth and Tanner 1976, 90). Macroscopic sex estimation methods have 80-90% reliability, with 90% reliability for the skull, depending on the skeletal preservation and the sexual dimorphism present in the sample. Preferentially, sex estimation is conducted on the highly sexually dimorphic pelvis. Owing to the requirements of parturition, it has 94% reliability (Garvin et al. 2014; Casado 2017; White et al. 2012, 408; Bastir et al. 2011; Spradley and Jantz 2011; Veroni et al. 2010). The pubic symphysis, which is unaffected by biological affinity and environmental factors (Parambathettu Sasidharan and Thomas 2017; Savall et al. 2016; Sarajlić and Gradašćević 2012; Sakaue 2006; Mulhern and Jones 2005), and auricular surface of the ilium, are known to be reliable age indicators (Xanthopoulou et al. 2018; Lovejoy et al. 1985a, 1985b, although see Murray and Murray 1991).

The skull is also used for sex estimation (Walrath et al. 2004; Utermohle and Zegura 1982, 1978), although researchers disagree on whether cranial traits are affected by age after sexual maturity has been reached (Lewis and Garvin 2016; Petaros et al. 2015; Nikita 2014). Cranial features are sexually dimorphic and sensitive to behaviour, and both can affect the extent of trait expression. For example, masticatory loading alters certain cranial features (Katz et al. 2017; Larsen 2015, 260-261; Von Cramon-Taubadel 2011; Hinton and Carlson 1979; Wood 1971); the anterior dentition places load on the temporalis and masseter muscles, resulting in greater mandibular robusticity. Meanwhile, reduced robusticity is associated with soft diets (Hoover and Williams 2016), but diet can also affect overall skeletal robusticity (Saini 2014; Collier 1993). Regarding reliability, the supraorbital margin is the only cranial trait simultaneously sexually dimorphic and not affected by biomechanically derived musculoskeletal forces (Godde 2015). The mental eminence has reduced sexual differentiation, so where possible should be used alongside other sex estimation indicators (Lewis and Garvin 2016; Krüger et al. 2015).

Activity induced alterations to cranial traits can be problematic for studies on samples who conducted excessive (para-)mastication, such as hunter-gatherers. The exaggerated cranial traits caused by excessive (para-)mastication can mean a female exhibits developed traits resulting in them being scored as a male. Whilst a male from the same sample may exhibit exaggerated traits resulting in them being scored as hyper-male. Further problems with analysing Arctic/Sub-Arctic samples relate to scoring deciduous teeth for wear and the timings of development and eruption. Most wear methods use the permanent dentition, with fewer scoring systems developed for the deciduous dentition (Bartholdy et al. 2019; Dawson and Brown 2013), despite some studies noting subadults display wear from 2-years-of-age (Jurmain 1990; Macchiarelli 1989; Højgaard 1980). The deciduous dentition is slightly underutilised within bioarchaeological studies (Scott and Halcrow 2017; Mahoney et al. 2016; Gowland and Chamberlain 2002), possibly from being underrepresented in the archaeological record (Carroll 2018, 148; Crawford et al. 2018, 3; Manifold 2013).

Dental development, which is genetically controlled, is more reliable as an age indicator than epiphyseal fusion, which is more greatly affected by life histories and environmental pressures (Gowland et al. 2018; Larsen 2015, 9; Feijóo et al. 2012; Cardoso 2007; Foster et al. 2005). Animal studies show malnutrition reduces skull growth timings (including the splanchnocranium) (Oyhenart et al. 2003; Miller and German 1999; Dressino and Pucciarelli 1997). Eruption timings are affected by physiological disturbances, including malnutrition (Dimaisip-Nabuab et al. 2018; Larsen 2015, 25; Gaur et al. 2011; Psoter et al. 2008; Cardoso 2007; Holman and Yamaguchi 2005; Kodali 1998; Alvarez 1995; Alvarez and Navia 1989; Jelliffe and Jelliffe 1973). With eruption and exfoliation postponed, under-nourished individuals may exhibit an apparent age younger by six months (Cardoso 2007; Alvarez 1995; Alvarez and Navia 1989). However, mild malnutrition is not associated with delayed development or eruption (Delgado et al. 1975), whilst adiposity is associated with earlier eruption timings (Mennella et al. 2019; Pahel et al. 2017). Therefore, divergences in fusion or eruptions timings may be from malnourishment, rather than distinct characteristics of the population.

2.4 Proposals

The morphological characteristics, and maturation patterns noted in Arctic/Sub-Arctic samples can be used to amend pre-existing sex/age estimation methods. The following section presents proposed methods when analysing Arctic/Sub-Arctic human skeletons. For sex estimations, the methods need to account for cranial characteristics relating to robusticity and activity, in parallel with a wear method. The consideration of wear is from activity induced cranial alterations (para-)mastication can cause, which may be asymmetrical. Scoring both sides of the skull for the traits used for sex estimation and wear, then using the side with the least wear to generate sex estimation, should minimise the possibility of incorrect sex estimations. For age estimations, as Arctic/Sub-Arctic samples have earlier dental eruption timings, the data from Garn and Moorrees (1951) can help modify the dental eruption method being used. For analysis conducting sex estimation on subadults, the data from Mayhall et al.'s (1978) and Boesen et al.'s (1976) studies can be used to adjust for the earlier eruption timings in females compared to males. For analyses incorporating maximum diaphyseal length (with/without subadult sex estimation), Y'Edynak (1976) is apt. As females from Arctic/Sub-Arctic populations reach puberty earlier than males, a sample may have more adolescent females than males.

2.5 Summary

In summary, the morphological characteristics, distinct dental eruption timings, maximum diaphyseal lengths of Arctic/Sub-Arctic populations have important effects on standard bioarchaeological protocols for age and sex estimation. These populations show earlier eruption timings, females reaching puberty earlier than males, robusticity, and the asymmetrical expressions of wear and traits. The proposed approaches can assist researchers to best design or amend appropriate age/sex methods when analysing Arctic/Sub-Arctic human skeletons.