APPENDIX 7

FREQUENCY AND STATISTICAL TABLES FOR CHAPTER 6

A7.1 Osteological data: frequencies

Age is divided into adults (over 18) and juveniles (under 18) in most tables. Tabulations were, however, also produced for age divided into ten age categories from foetus (pre-natal) to mature adult (45+) to facilitate understanding of pathological prevalence and burial provision amongst smaller age groups. These tables are also included where relevant. All prevalences are true prevalence rates.

Age at death	Frequency
Juvenile	380 32.1%
Adult	699 59.1%
Unaged/no osteological data	104 8.8%

Table A7.1.1. Age at death (juveniles and adults).

Age at death	Frequency
Foetus	4 0.3%
Neonate	69 5.8%
Infant	53 4.5%
Early childhood	81 6.8%
Late childhood	72 6.1%
Adolescent	49 4.1%
Young adult	96 8.1%
Young middle adult	128 10.8%
Old middle adult	105 8.9%
Mature adult	65 5.5%
Unaged/ no osteological data	461 39.0%

Table A71.2. Age at death (10 age categories).

	Adwick	Ailcy Hill	Norton	Pontefract	Spofforth	Thwing	Total
Foetus Pre-term	0 0	0 0	0 0	2 0.8	0 0	2 1.5	4 0.4
Neonate 0-1m	0 0	1 0.6	0 0	20 8.3	31 7.4	17 12.6	69 6.4
Infant 1-11m	0 0	3 1.9	0 0	22 9.1	12 2.9	16 11.9	53 4.9
Young child 1-6y	1 2.7	1 0.6	1 1.2	54 22.3	11 2.6	13 9.6	81 7.5
Older child 7-12y	2 5.4	6 3.8	4 4.7	20 8.3	28 6.7	12 8.9	72 6.7
Adolescent 13-17y	0 0	8 5.0	8 9.3	13 5.4	18 4.3	2 1.5	49 4.5
Young adult 18-25y	17 45.9	8 5.0	9 10.5	9 3.7	44 10.5	9 6.7	96 8.9
Young middle adult 26-35y	3 8.1	20 12.6	19 22.1	18 7.4	47 11.2	21 15.6	128 11.8
Old middle adult 36-45y	6 16.2	12 7.5	14 16.3	12 5.0	39 9.3	22 16.3	105 9.7
Mature adult 46y+	2 5.4	3 1.9	7 8.1	8 3.3	37 8.8	8 5.9	65 6.0
Juvenile 0-17y	0 0	19 11.9	0 0	10 4.1	21 5.0	2 1.5	52 4.8
Adult 18y+	6 16.2	78 49.1	0 0	54 22.3	132 31.4	11 8.1	281 26.0
Unaged	0 0	0 0	24 27.9	0 0	0 0	0 0	24 2.2
Total	37 100	159 100	86 100	242 100	420 100	135 100	1079 100

Table A7.1.3. Age at death at each of the six case-study sites. (Percentages in red).

Biological sex	Frequency
Male	245 20.7%
Intermediate	7 0.6%
Female	175 14.8%
Juvenile	380 32.1%
Unsexed/no osteological data	379 32.0%

Table A7.1.4. Biological sex.

	Adwick	Ailcy Hill	Norton	Pontefract	Spofforth	Thwing	Total
Male (male,?male)	13 (4, 9) 35.1	35 (23, 12) 22.0	19 (9, 10) 22.1	37 (24, 13) 15.3	105 (74, 31) 25.0	36 (31, 5) 36.7	245 (165, 80) 22.7
Intermediate	0 0	1 0.6	0 0	0 0	6 1.4	0 0	7 0.6
Female (female,?female)	10 (2, 8) 27.0	8 (2. 6) 5.0	17 (10, 7) 19.8	24 (14, 10) 9.9	84 (51, 34) 20.0	31 (29, 2) 23.0	174 (108, 67) 16.1
Unsexed	14 37.8	115 72.3	50 58.1	181 74.8	225 53.6	68 50.4	653 60.5
Total	37 100	159 100	86 100	242 100	420 100	135 100	1079 100

Table A7.1.5. Biological sex at each of the six case-study sites. (Percentages in red).

Living stature	Frequency
140-149.9	6 0.5%
150-159.9	33 2.8%
160-169.9	83 7.0%
170-179.9	85 7.2%
180-189.9	20 1.7%
190-199.9	2 0.2%
No stature data	954 80.6%

Table A7.1.6. Living stature.

	Adwick	Ailcy Hill	Norton	Pontefract	Spofforth	Thwing	Total (%)
140-149.9	0 0	2 1.3	0 0	0 0	2 0.5	2 1.5	6 0.6
150-159.9	1 2.7	3 1.9	4 4.7	6 2.5	10 2.4	9 6.7	33 3.1
160-169.9	3 8.1	6 3.8	10 11.6	5 2.1	32 7.6	27 20.0	83 7.7
170-179.9	4 10.8	14 8.8	11 12.8	3 1.2	35 8.3	18 13.3	85 7.9
180-189.9	1 2.7	6 3.8	1 1.2	0 0	11 2.6	1 0.7	20 1.9
190-199.9	0 0	0 0	0 0	1 0.4	1 0.2	0 0	2 0.2
No stature	28 75.7	128 80.5	60 69.8	227 93.8	329 78.3	78 57.8	850 78.7
Total	37 100	159 100	86 100	242 100	420 100	135 100	1079 100

Table A7.1.7. Living stature at each of the six case study sites. (Percentages in red).

	Mean stature (cm)		
	Male	Female	All individuals
Adwick	173.0	162.0	169.8
Ailcy Hill	174.1	157.0	170.6
Norton	173.9	167.2	168.6
Pontefract	171.9	160.4	163.9
Spofforth	174.1	164.3	170.1
Thwing	170.5	159.6	165.5
Total	173.0	161.7	168.4
Anglo-SA7on averages (Roberts and Cox 2003: 195)	172.0	161.0	Average: 166.5

Table A7.1.8. Male and female average living stature at each of the case-study sites.

Pathology	Present	Absent	Unobservable
Cribra orbitalia	32 2.7%	425 92.8%	726 61.4%
Tibial periostitis	39 3.3%	350 29.6%	794 67.1%
Linear enamel hypoplasia	78 (of which 13 pitted) 6.6% (of which 1.1% pitted)	394 33.3%	711 60.1%
MA7illary sinusitis	20 1.7%	194 16.4%	969 81.9%
Ectocranial lesions	8 0.7%	436 36.9%	739 62.5%
Endocranial lesions	18 1.5%	463 39.1%	700 59.2%

Table A7.1.9. Prevalences of stress-related pathologies.

Pathology	Present	Absent	Unobservable
Spinal DJD	139 19.9%	119 17.0%	442 63.1%
Appendicular OA	96 13.7%	291 41.6%	313 44.7%

Table A7.1.10. Prevalences of degenerative joint diseases (amongst adults only).

Trauma	Frequency
Fracture	27 62.8%
Dislocation	3 7.0%
Blunt force trauma	2 4.7%
Sharp force trauma	4 9.3%
Habitual	4 9.3%
Muscular exostosis	3 7.0%

Table A7.1.11. Prevalences of trauma.

Infection	Frequency
Periostitis	32 78.0%
Osteomyelitis	4 9.8%
TB	4 9.8%
Leprosy	1 2.4%

Table A7.1.12. Prevalences of infectious pathologies.

Arthropathies	Frequency
Ankylosing spondylitis	3 60%
DISH	2 40%

Table A7.1.13. Prevalences of arthropathies.

Activity related changes	Frequency
Spinal distortion	6 11.8%
Lytic lesions at the joints	37 72.5%
Asymmetry	5 9.8%
Spondylolysis	3 5.9%

Table A7.1.14. Prevalences of activity-related pathologies.

Metabolic diseases	Frequency
Scurvy	4 26.7%
Rickets	7 46.7%
Undiagnosed metabolic disease	4 26.7%

Table A7.1.15. Prevalences of metabolic diseases.

Pathology	Frequency
Deforming dysplasia	4
Metastases	4
General lytic lesion	2
Osteoporosis	1
Hearing impairment	1

Table A7.1.16. Frequency of cases of pathologies not included in other categories.

Dental pathology	Present	Absent	Unobservable
Calculus	223 18.9%	249 21.0%	711 60.1%
Caries	84 7.1%	389 32.9%	710 60.0%
Periodontal disease	128 10.8%	314 26.5%	741 62.6%
Abscess	38 3.2%	404 34.2%	741 62.6%

Table A7.1.17. Prevalences of dental pathologies (per individual with observable dentition).

A7.2 Statistical correlations between osteological and pathological data

Pathological condition	Cribra orbitalia	Tibial periostitis	Sinusitis	Cranial lesions	Endocranial lesions
Tibial periostitis	χ^2=3.165 p=0.106*[1]				
Sinusitis	χ^2=0.912 p=0.276*	χ^2=3.531 p=0.120*			
Cranial lesions	χ^2=6.436 p=0.060*	χ^2=1.306 p=0.313*	χ^2=0.563 p=0.596*		
Endocranial lesion	χ^2=22.884 p<0.001	χ^2=8.833 p=0.012	χ^2=0.837 p=0.0658	χ^2=46.459 p<0.001	
LEH	χ^2=2.309 p=0.315	χ^2=9.208 p=0.10	χ^2=21.706 p<0.001	χ^2=0.878 p=0.647	χ^2=1.527 p=0.822

Table A7.2.1. Cross-tabulations between stress-related pathologies.

[1] Statistical results marked with an asterisk have been calculated for a 2x2 table using Yate's Correction for Continuity (see chapter 5.3).

Dental condition	Calculus	Caries	Periodontal disease
Caries	χ^2=25.342 p<0.001*		
Periodontal disease	χ^2=91.882 p<0.001*	χ^2=.576 p=0.003*	
Abscess	χ^2=16.231 p<0.001*	χ^2=35.829 p<0.001*	χ^2=18.518 p<0.001*

Table A7.2.2. Cross-tabulations between dental conditions.

Pathological condition	Age at death	Present	Absent	Statistical significance
Cribra orbitalia	Juvenile	17	139	MW=21308
	Adult	13	279	p=0.009
Tibial periostitis	Juvenile	2	104	MW=7442
	Adult	37	244	p=0.005
Sinusitis	Juvenile	3	23	MW=1519
	Adult	17	103	p=0.725
Cranial lesions	Juvenile	5	164	MW=22557
	Adult	3	269	p-=0.156
Endocranial lesions	Juvenile	7	301	MW=24757
	Adult	13	159	p=0.001
LEH	Juvenile	21	104	MW=20014
	Adult	44	288	p=0.334
Spinal DJD	Juvenile	3	122	MW=7884
	Adult	139	119	p<0.001
Appendicuar OA	Juvenile	0	69	MW=24007
	Adult	96	292	p<0.001

Table A7.2.3. Age at death (juveniles and adults) vs incidence of stress-related and degenerative conditions.

Pathological condition	Age at death	Present	Absent	Statistical significance
Cribra orbitalia	Foetus	0	1	KW=18.487
	Neonate	0	28	p=0.030
	Infant	2	14	
	Early childhood	5	44	
	Late childhood	5	25	
	Adolescent	4	20	
	Young adult	6	50	
	Young middle adult	1	71	
	Old middle adult	2	71	
	Mature adult	2	35	
Tibial periostitis	Foetus	0	1	KW=12.131
	Neonate	0	16	p=0.059
	Infant	0	10	
	Early childhood	1	26	
	Late childhood	0	28	
	Adolescent	1	22	
	Young adult	7	47	
	Young middle adult	11	58	
	Old middle adult	6	55	
	Mature adult	8	28	

Sinusitis	Foetus	0	0	KW=4.941
	Neonate	0	0	p=0.667
	Infant	0	1	
	Early childhood	1	1	
	Late childhood	1	11	
	Adolescent	1	10	
	Young adult	3	19	
	Young middle adult	5	32	
	Old middle adult	3	21	
	Mature adult	5	14	
Cranial lesions	Foetus	0	1	KW=9.952
	Neonate	0	29	p=0.354
	Infant	2	20	
	Early childhood	2	52	
	Late childhood	1	30	
	Adolescent	0	21	
	Young adult	2	50	
	Young middle adult	0	68	
	Old middle adult	1	66	
	Mature adult	0	29	
Endocranial lesion	Foetus	0	1	KW=26.423
	Neonate	2	26	p=0.002
	Infant	5	18	
	Early childhood	4	51	
	Late childhood	1	32	
	Adolescent	0	21	
	Young adult	2	54	
	Young middle adult	1	76	
	Old middle adult	1	72	
	Mature adult	0	35	

LEH	Foetus	0	0	KW=22.582
	Neonate	0	20	p=0.004
	Infant	0	5	
	Early childhood	4	32	
	Late childhood	6	32	
	Adolescent	11	14	
	Young adult	9	58	
	Young middle adult	14	79	
	Old middle adult	16	71	
	Mature adult	5	45	
Spinal DJD	Adolescent	3	22	KW=13.510
	Young adult	28	29	p=0.004
	Young middle adult	28	39	
	Old middle adult	40	18	
	Mature adult	26	11	
Appendicular OA	Adolescent	0	34	KW=40.370
	Young adult	7	68	p<0.001
	Young middle adult	24	60	
	Old middle adult	30	41	
	Mature adult	20	25	

Table A7.2.4. Age at death (ten age categories) vs incidence of stress-related and degenerative conditions.

Dental condition	Age at death	Present (no individuals)	Absent (no individuals)	Statistical significance
Calculus	Juvenile	23	106	MW=13016 p<0.001
	Adult	200	141	
Caries	Juvenile	11	119	MW=19295 p=0.001
	Adult	73	268	
Periodontal disease	Juvenile	2	126	MW=12216 Sig<0.001
	Adult	126	186	
Abscess	Juvenile	3	124	MW=18122 p=0.003
	Adult	35	278	

Table A7.2.5. Age at death (juveniles and adults) vs incidence of dental conditions.

Pathological condition	Age at death	Present	Absent
Trauma	Juvenile	2 0.5%	377 99.5%
	Adult	41 5.9%	659 94.1%
Infectious	Juvenile	10 2.6%	369 97.4%
	Adult	28 4.0%	672 96%
Arthropathies	Juvenile	0 0%	379 100%
	Adult	5 0.7%	695 99.3%
Activity	Juvenile	9 2.4%	370 97.6%
	Adult	21 3.0%	679 97%
Metabolic	Juvenile	9 2.4%	370 97.6%
	Adult	6 0.9%	694 99.1%
Dysplasia	Juvenile	1 0.3%	378 99.7%
	Adult	3 0.5%	697 99.5%

Table A7.2.6. Prevalences of pathological conditions in adults and juveniles.

Pathological condition	Biological sex	Present	Absent	Statistical significance
Cribra orbitalia	Male	8	136	χ^2=0.178
	Female	7	95	p=0.788*
Tibial periostitis	Male	19	88	χ^2=1.092
	Female	11	78	p=0.325*
Sinusitis	Male	6	45	χ^2=1.057
	Female	8	33	p=0.385*
Cranial lesions	Male	1	128	χ^2=0.735
	Female	2	93	p=0.576*
Endocranial lesions	Male	2	141	χ^2=3.219
	Female	5	105	p=0.200
LEH	Male	21	125	χ^2=0.060
	Female	19	104	p=0.864*
Spinal DJD	Male	74	55	χ^2=1.174
	Female	46	46	p=0.338*
Appendicuar OA	Male	48	116	χ^2=0.001
	Female	38	91	p=1.000*

Table A7.2.7. Biological sex vs stress-related conditions.

Dental condition	Biological sex	Present	Absent	Statistical significance
Calculus	Male	96	57	χ^2=0.302
	Female	75	51	p=0.622*
Caries	Male	36	117	χ^2=0.174
	Female	27	99	p=0.774*
Periodontal disease	Male	69	72	χ^2=1.614
	Female	48	69	p=0.212*
Abscess	Male	21	121	χ^2=1.185
	Female	12	105	p=0.350*

Table A7.2.8. Biological sex vs dental pathologies.

Pathological condition	Age at death	Present (no individuals)	Absent (no individuals)
Trauma	Male	26 10.6%	219 89.4%
	Female	13 7.4%	162 92.6%
Infectious	Male	16 6.5%	229 93.5%
	Female	11 6.3%	164 93.7%
Arthropathies	Male	3 1.2%	242 98.8%
	Female	2 1.1%	173 98.9%
Activity	Male	18 7.3%	227 92.7%
	Female	23 13.1%	152 86.9%
Metabolic	Male	1 0.4%	244 99.6%
	Female	4 2.3%	171 97.7%
Dysplasia	Male	2 0.8%	243 99.2%
	Female	1 0.6%	174 99.4%

Table A7.2.9. Prevalences of pathological conditions in males and females.

Biological sex	Trauma					
	Fracture	Dislocation	Blunt force	Sharp force	No trauma	Total
Male	15 6.1%	3 1.2%	1 0.4%	3 1.2%	223 91.0%	245 100%
Female	10 5.7%	0 0%	0 0%	0 0%	165 94.2%	175 100%

Table A7.2.10. Prevalences of trauma in males and females.

A7.3. Statistical correlations between the form of burial and osteological data.

Age at death	Orientation								Total	Significance
	W-E	NW-SE	N-S	NE-SW	E-W	SE-NW	S-N	SW-NE		
Juvenile	128	7	0	0	3	1	0	5	144	MW=19885 p=0.007
Adult	242	19	1	2	5	1	0	39	309	

Table A7.3.1. Age at death vs orientation.

Age at death	Elaborations to the grave cut					Total	Significance
	Pits at head	Pits at foot	Pits at head and foot	Steps/ sockets	Pits at head and steps/ sockets		
Juvenile	1	1	4	0	0	6	MW=1452 p<0.001
Adult	5	8	12	6	1	32	

Table A7.3.2. Age at death vs grave forms (at Thwing only).

Age at death	Pits			Significance
	Absent	Present	Total	
Juvenile	58	6	64	MW=1653 p<0.001
Adult	45	26	71	

Table A7.3.3 Age at death vs pits (at Thwing only).

Age at death	Steps/ sockets			Significance
	Absent	Present	Total	
Juvenile	64	0	64	MW=2048 p=0.010
Adult	64	6	71	

Table A7.3.4. Age at death vs steps/ sockets (at Thwing only).

Grave shape	Juvenile	Adult	Significance
Linear rectangle	54	166	MW=4842 p<0.001
Ovoid	30	4	
Keyhole shaped	1	0	

Table A7.3.5. Age at death vs grave shape.

Age at death	Grave shape		Significance
	Linear rectangle	Ovoid	
Foetus	0 0%	1 3.2%	KW=101.279 p<0.001
Neonate	1 0.5%	6 19.4%	
Infant	4 2.1%	10 32.3%	
Early childhood	16 8.6%	9 29.0%	
Late childhood	21 11.2%	2 6.5%	
Adolescent	6 3.2%	0 0%	
Young adult	37 19.8%	0 0%	

Table A7.3.6. Age at death (ten categories) vs grave shape.

Age at death	Position		Total	Significance
	Extended	Flexed		
Juvenile	91	13	145	MW=13161 p=0.308
Adult	240	24	337	

Table A7.3.7. Age at death vs position.

Age at death	Position		Total	Significance
	Extended	Flexed		
Foetus	1	0	1	KW=103128
Neonate	17	1	18	p=0.340
Infant	11	1	12	
Early childhood	19	3	22	
Late childhood	23	6	29	
Adolescent	16	2	18	
Young adult	48	7	55	
Young middle adult	72	2	74	
Old middle adult	55	7	62	
Mature adult	28	2	30	
Total	290	31	321	

Table A7.3.8. Age at death (ten categories) vs position.

Age at death	Side				Total	Significance
	Supine	Left	Right	Prone		
Juvenile	83	10	12	0	105	MW=13130 p=0.322
Adult	198	19	39	7	263	

Table A7.3.9. Age at death vs side.

	Side		Total	Significance
	Left	Right		
Juvenile	10	12	22	MW=557
Adult	19	39	58	p=0.295
Total	29	51	80	

Table A7.3.10. Age at death vs side (left and right only).

	Side				Total	Significance
	Supine	Left	Right	Prone		
Foetus	1	0	0	0	1	KW=7.935
Neonate	17	1	1	0	19	p=0.541
Infant	12	1	1	0	14	
Early childhood	16	0	4	0	20	
Late childhood	20	5	3	0	28	
Adolescent	12	3	3	0	18	
Young adult	39	8	6	2	55	
Young middle adult	62	0	12	2	76	
Old middle adult	43	4	15	1	63	
Mature adult	25	0	4	1	30	
Total	247	22	49	6	324	

Table A7.3.11. Age at death (ten categories) vs side.

	Side		Total	Significance
	Left	Right		
Neonate	1	1	2	KW=19.463
Infant	1	1	2	P=0.013
Early childhood	0	4	4	
Late childhood	5	3	8	
Adolescent	3	3	6	
Young adult	8	6	14	
Young middle adult	0	12	12	
Old middle adult	4	15	19	
Mature adult	0	4	4	
Total	22	49	71	

Table A7.3.12. Age at death (ten categories) vs side (left and right only).

Age at death	Head facing				Total	Significance
	Ahead	Left	Right	Down		
Juvenile	16	12	18	0	47	MW=2330 p=0.034
Adult	22	39	62	3	134	

Table A7.3.13. Age at death vs head direction.

	Head facing				Total	Significance
	Ahead	Left	Right	Down		
Neonate	2	1	1	0	4	KW=8.478
Infant	2	1	1	0	4	p=0.388
Early childhood	5	1	6	0	12	
Late childhood	5	8	5	0	18	
Adolescent	2	1	4	0	7	
Young adult	6	15	12	0	33	
Young middle adult	4	10	19	0	33	
Old middle adult	7	8	18	1	34	
Mature adult	5	3	9	1	18	
Total	38	48	75	2	163	

Table A7.3.14. Age at death (ten categories) vs head direction.

	L arm							Significan-ce
	Extended	To pelvis	To chest	To shoulder	To head	Behind back	Total	
Juvenile	24	19	2	0	1	0	46	MW=2574
Adult	47	76	10	5	2	1	141	p=0.020
Total	71	95	12	5	3	1	187	

Table A7.3.15. Age at death vs left arm position.

	R arm								Significa-nce
	Extend-ed	To pelvis	To chest	To shoulder	To head	Behind back	Under body	Total	
Juvenile	26	14	1	0	0	0	0	41	MW=2244
Adult	66	49	9	4	2	1	1	132	p=0.066
Total	92	63	10	4	2	1	1	173	

Table A7.3.16. Age at death vs right arm position.

	Arms		Total	Significance
	Not crossed	Crossed		
Juvenile	20	5	25	MW=952
Adult	59	27	86	p=0.270
Total	79	32	111	

Table A7.3.17. Age at death vs arm position.

	L leg					Total	Significance
	Extended	Bent to left	Bent to right	Flexed	Bent		
Juvenile	35	2	4	10	1	52	MW=3811
Adult	128	2	4	18	10	162	p=0.166
Total	163	4	8	28	11	214	

Table A7.3.18. Age at death vs left leg position.

	R leg					Total	Significance
	Extended	Bent to left	Bent to right	Flexed	Bent		
Juvenile	37	2	4	10	1	54	MW=4073
Adult	121	4	3	18	13	159	p=0.464
Total	158	6	7	28	14	213	

Table A7.3.19. Age at death vs right leg position.

	Legs		Total	Significance
	Not crossed	Crossed		
Juvenile	25	2	27	MW=11085
Adult	75	21	96	p=0.090
Total	100	23	123	

Table A7.3.20. Age at death vs leg position.

	Multiple burial			Total	Significance
	Single burial	Double burial	Triple burial		
Juvenile	332	3	4	380	MW=109753
Adult	636	11	2	699	p=0.926
Total	968	14	6	1079	

Table A7.3.21. Age at death vs multiple burial.

	Other position					Total	Significance
	Tied up?	Cramped into grave	Grave too big	Shrouded	Contorted		
Juvenile	0	1	0	3	0	4	MW=69
Adult	2	2	1	34	1	40	p=0.679
Total	2	3	1	37	1	44	

Table A7.3.22. Age at death vs other burial positions.

	Orientation								Significan-ce
	W-E	NW-SE	NE-SW	E-W	SE-NW	SW-NE	NWW-SEE	Total	
Male	123	1	1	1	0	13	4	143	χ^2=7.758
Intermediate	3	0	0	0	0	0	0	3	p=0.804
Female	73	0	1	0	1	17	3	95	
Total	199	1	2	1	1	30	7	241	

Table A7.3.23. Biological sex vs orientation.

	Grave shape		Total	Significance
	Linear	Round		
Male	75	2	77	χ^2=0.255
Intermediate	1	0	1	p=0.893
Female	65	1	66	
Total	141	3	144	

Table A7.3.24. Biological sex vs grave shape.

	Grave form						Significance
	Pits at head	Pits at foot	Pits at head and foot	Steps/ sockets	Pits at head and steps/ sockets	Total	
Male	1	4	6	3	1	15	χ^2=2.963
Female	4	4	7	2	0	17	p=0.564
Total	5	8	13	5	1	32	

Table A7.3.25. Biological sex vs grave form (at Thwing only).

	Position		Total	Significance
	Extended	Flexed		
Male	117	7	124	χ^2=1.374
Intermediate	3	0	3	p=0.503
Female	76	8	84	
Total	196	15	211	

Table A7.3.26. Biological sex vs position.

	Side				Total	Significance
	Supine	Left	Right	Prone		
Male	93	6	21	5	125	χ^2=1.925
Intermediate	3	0	0	0	3	p=0.936
Female	64	3	17	2	86	
Total	160	9	38	7	214	

Table A7.3.27. Biological sex vs side.

		Side		Total	
		Left	Right		
Sex_2	Male	6	21	27	χ^2=0.387
	Female	3	17	20	p=0.713*
Total		9	38	47	

Table A7.3.28. Biological sex (male and female only) vs side (left and right only).

	Head facing				Total	Significance
	Ahead	Left	Right	Down		
Male	12	19	31	1	63	χ^2=2.134
Intermediate	0	0	2	0	2	p=0.907
Female	10	14	28	1	53	
Total	22	33	61	2	118	

Table A7.3.29. Biological sex vs head direction.

	L arm							Significance
	Extended	To pelvis	To chest	To shoulder	To head	Behind back	Total	
Male	24	47	5	3	0	0	79	χ^2=9.755
Intermediate	2	1	0	0	0	0	3	p=0.462
Female	18	25	5	0	2	1	51	
Total	44	73	10	3	2	1	133	

Table A7.3.30. Biological sex vs left arm position.

	R arm							Total	Significance
	Extended	To pelvis	To chest	To shoulder	To head	Behind back	Under body		
Male	32	28	5	3	1	0	1	70	χ^2=6.929
Intermediate	3	0	0	0	0	0	0	3	p=0.862
Female	29	19	2	1	1	1	0	53	
Total	64	47	7	4	2	1	1	126	

Table A7.3.31. Biological sex vs right arm position.

	Arms		Total	Significance
	Not crossed	Crossed		
Male	31	13	44	χ^2=0.908
Intermediate	2	0	2	p=0.635
Female	26	12	38	
Total	59	25	84	

Table A7.3.32. Biological sex vs arm position.

	L leg					Total	Significance
	Extended	Bent to left	Bent to right	Flexed	Bent		
Male	66	1	1	9	4	81	χ^2=2.695
Intermediate	2	0	0	0	0	2	p=0.952
Female	43	1	3	7	3	57	
Total	111	2	4	16	7	140	

Table A7.3.33. Biological sex vs left leg position.

	R leg					Total	Significance
	Extended	Bent to left	Bent to right	Flexed	Bent		
Male	60	3	1	10	5	79	χ^2=2.010
Intermediate	2	0	0	0	0	2	p=0.981
Female	43	1	2	6	4	56	
Total	105	4	3	16	9	137	

Table A7.3.34. Biological sex vs right leg position.

	Legs		Total	Significance
	Not crossed	Crossed		
Male	34	11	45	χ^2=0.642
Intermediate	2	0	2	p=0.725
Female	30	9	39	
Total	66	20	86	

Table A7.3.35. Biological sex vs leg position.

	Multiple burial			Total	Significance
	Single burial	Double burial	Triple burial		
Male	213	5	2	220	χ^2=7.086
Intermediate	6	1	0	7	p=0.131
Female	153	2	0	155	
Total	372	8	2	382	

Table A7.3.36. Biological sex vs multiple burial.

	Other position					Total	Significance
	Tied up?	Cramped into grave	Grave too big	Shrouded	Contorted		
Male	1	2	0	13	1	17	χ^2=3.627
Female	1	0	1	10	0	12	p=0.457
Total	2	2	1	23	1	29	

Table A7.3.37. Biological sex vs other burial positions.

Burial form		Cribra orbitalia		Significance
		Present	Absent	
Orientation	W-E	14	230	χ^2=0.939 p=0.988
	NW-SE	0	1	
	N-S	0	0	
	NE-SW	0	2	
	E-W	0	6	
	SE-NW	0	1	
	SW-NE	1	30	
	NWW-SEE	1	2	
Grave shape	Linear	7	142	χ^2=0.295 p=1.000*
	Ovoid	0	6	
Grave form	Pits at head	0	4	N/A
	Pits at foot	0	7	
	Pits at both	0	13	
	Steps/sockets	0	3	
	Pits and steps/sockets	0	1	
Position	Extended	13	219	χ^2=1.123 p=0.607*
	Flexed	0	19	
Side	Supine	12	187	χ^2=1.722 p=0.632
	Left	0	15	
	Right	1	31	
	Prone	0	6	
Head	Ahead	6	26	χ^2=8.118 p=0.044
	Left	1	39	
	Right	3	58	
	Down	0	2	
Multiple burial	Single	31	369	χ^2=0.809 p=0.937
	Double	1	6	
	Triple	0	4	

Table A7.3.38. Cribra orbitalia vs burial forms.

Burial form		Tibial periostitis		Significance
		Present	Absent	
Orientation	W-E	29	204	χ^2=6.823 p=0.448
	NW-SE	0	1	
	N-S	0	1	
	NE-SW	0	2	
	E-W	0	5	
	SE-NW	0	2	
	SW-NE	0	37	
	NWW-SEE	1	12	
Grave shape	Linear	17	129	N/A
	Ovoid	0	0	
Grave form	Pits at head	0	4	χ^2=5.971 p=0.201 Exp count 80%
	Pits at foot	0	8	
	Pits at both	0	10	
	Steps/sockets	1	3	
	Pits and steps/sockets	0	1	
Position	Extended	30	193	χ^2=3.826 p=0.052*
	Flexed	0	25	
Side	Supine	27	156	χ^2=9.507 p=0.023
	Left	0	19	
	Right	1	37	
	Prone	2	4	
Head	Ahead	4	17	χ^2=4.503 p=0.212
	Left	2	31	
	Right	7	44	
	Down	1	1	
Multiple burial	Single	38	295	χ^2=1.155 p=0.561
	Double	0	6	
	Triple	0	3	

Table A7.3.39. Tibial periostitis vs burial forms.

Burial form		LEH		Significance
		Present	Absent	
Orientation	W-E	45	195	χ^2=4.323 p=0.977
	NW-SE	0	1	
	N-S	0	0	
	NE-SW	0	2	
	E-W	1	4	
	SE-NW	0	1	
	SW-NE	4	32	
	NWW-SEE	4	12	
Grave shape	Linear	21	144	χ^2=0.378 p=0.828
	Ovoid	1	1	
Grave form	Pits at head	1	4	χ^2=5.775 p=0.217
	Pits at foot	0	8	
	Pits at both	0	16	
	Steps/sockets	0	3	
	Pits and steps/sockets	0	1	
Position	Extended	43	189	χ^2=1.451 p=0.484
	Flexed	4	21	
Side	Supine	38	157	χ^2=14.761 p=0.022
	Left	4	15	
	Right	3	34	
	Prone	1	5	
Head	Ahead	6	25	χ^2=3.347 p=0.764
	Left	7	38	
	Right	7	57	
	Down	0	2	
Multiple burial	Single	75	344	χ^2=8.120 p=0.087
	Double	0	8	
	Triple	2	1	

Table A7.3.40. Enamel hypoplasia vs burial forms.

Burial form		Cranial lesions		Significance
		Present	Absent	
Orientation	W-E	5	226	χ^2=1.409 p=0.965
	NW-SE	0	1	
	N-S	0	0	
	NE-SW	0	2	
	E-W	0	4	
	SE-NW	0	1	
	SW-NE	0	35	
	NWW-SEE	0	21	
Grave shape	Linear	3	151	χ^2=0.139 p=1.000*
	Ovoid	0	7	
Grave form	Pits at head	0	5	χ^2=1.327 p=0.857
	Pits at foot	0	8	
	Pits at both	1	13	
	Steps/sockets	0	4	
	Pits and steps/sockets	0	1	
Position	Extended	5	207	χ^2=0.578 p=1.000*
	Flexed	0	24	
Side	Supine	4	180	χ^2=2.159 p=0.540
	Left	1	15	
	Right	0	34	
	Prone	0	4	
Head	Ahead	2	28	χ^2=3.718 p=0.294
	Left	1	36	
	Right	0	56	
	Down	0	1	
Multiple burial	Single	7	373	χ^2=0.150 p=0.928
	Double	0	5	
	Triple	0	3	

Table A7.3.41. Cranial lesions vs burial forms.

Burial form		Endocranial lesions		Significance
		Present	Absent	
Orientation	W-E	11	242	χ^2=2.883 p=0.996 Exp count 81%
	NW-SE	0	1	
	N-S	0	0	
	NE-SW	0	2	
	E-W	0	4	
	SE-NW	0	1	
	SW-NE	0	35	
	NWW-SEE	0	21	
Grave shape	Linear	7	160	χ^2=2.577 p=0.276
	Ovoid	1	5	
Grave form	Pits at head	0	5	N/A
	Pits at foot	0	8	
	Pits at both	0	14	
	Steps/sockets	0	4	
	Pits and steps/sockets	0	1	
Position	Extended	8	226	χ^2=0.847 p=0.655*
	Flexed	0	24	
Side	Supine	8	192	χ^2=2.394 p=0.880
	Left	0	16	
	Right	0	37	
	Prone	0	5	
Head	Ahead	3	29	χ^2=7.919 p=0.244
	Left	1	41	
	Right	1	63	
	Down	0	1	
Multiple burial	Single	20	396	χ^2=0.555 p=0.968
	Double	0	8	
	Triple	0	3	

Table A7.3.42. Endocranial lesions vs burial forms.

Burial form		Spinal DJD		Significance
		Present	Absent	
Orientation	W-E	99	59	χ^2=19.113 p=0.004
	NW-SE	0	1	
	N-S	0	0	
	NE-SW	0	1	
	E-W	0	3	
	SE-NW	1	0	
	SW-NE	4	10	
	NWW-SEE	1	8	
Grave shape	Linear	58	42	N/A
	Ovoid	0	0	
Grave form	Pits at head	0	4	χ^2=6.933 p=0.139
	Pits at foot	1	5	
	Pits at both	5	5	
	Steps/sockets	2	1	
	Pits and steps/sockets	1	0	
Position	Extended	70	88	χ^2=0.146 p=0.769*
	Flexed	6	6	
Side	Supine	70	60	χ^2=2.219 p=0.528
	Left	5	3	
	Right	15	13	
	Prone	5	1	
Head	Ahead	8	4	χ^2=1.045 p=0.790
	Left	17	9	
	Right	26	21	
	Down	1	1	
Multiple burial	Single	120	104	χ^2=2.812 p=0.245
	Double	6	1	
	Triple	1	1	

Table A7.3.43. Spinal DJD vs burial forms.

Burial form		Appendicular OA		Significance
		Present	Absent	
Orientation	W-E	68	135	19.455
	NW-SE	0	0	0.002
	N-S	0	0	
	NE-SW	0	2	
	E-W	1	2	
	SE-NW	0	1	
	SW-NE	0	36	
	NWW-SEE	2	11	
Grave shape	Linear	40	107	N/A
	Ovoid	0	0	
Grave form	Pits at head	1	4	4.563
	Pits at foot	3	5	0.335
	Pits at both	2	10	
	Steps/sockets	2	2	
	Pits and steps/sockets	1	0	
Position	Extended	63	147	2.008
	Flexed	3	17	0.200*
Side	Supine	52	123	2.027
	Left	2	13	0.567
	Right	11	36	
	Prone	1	4	
Head	Ahead	5	15	1.403
	Left	10	25	0.705
	Right	21	37	
	Down	1	1	
Multiple burial	Single	85	254	0.715
	Double	2	5	0.699
	Triple	0	2	

Table A7.3.44. Appendicular OA vs burial forms.

A7.4. Statistical correlations between grave elaborations/grave goods and osteological data.

	Grave elaborations		Total	Significance
	Absent	In situ elaboration		
Juvenile	335	39	380	MW=125055
Adult	597	91	699	P=0.184
Total	932	130	1079	

Table A7.4.1. Age at death vs grave elaborations.

	Grave elaborations		Total	Significance
	Absent	In situ elaboration		
Foetus	4	0	4	KW=20.153
Neonate	61	6	69	P=0.017
Infant	45	8	53	
Early childhood	73	7	81	
Late childhood	57	13	72	
Adolescent	44	5	49	
Young adult	78	13	96	
Young middle adult	104	22	128	
Old middle adult	78	27	105	
Mature adult	47	17	65	
Total	591	118	722	

Table A7.4.2. Age at death (ten categories) vs grave elaborations.

	Grave inclusions		Total	Significance
	Absent	In situ inclusion		
Juvenile	371	8	380	MW=128426
Adult	663	34	699	P=0.025
Total	1034	42	1079	

Table A7.4.3. Age at death vs grave inclusions.

	Grave inclusions		Total	Significance
	Absent	In situ inclusion		
Foetus	4	0	4	KW=23.749
Neonate	68	1	69	P=0.005
Infant	53	0	53	
Early childhood	79	2	81	
Late childhood	68	3	72	
Adolescent	47	2	49	
Young adult	83	12	96	
Young middle adult	122	5	128	
Old middle adult	94	11	105	
Mature adult	63	2	65	
Total	681	38	722	

Table A7.4.4. Age at death (ten categories) vs grave inclusions.

	Chest fittings			Total	Significance
	No fittings	Out of context chest	In situ chest		
Juvenile	349	9	11	380	MW=121717
Adult	624	17	37	699	p=0.121
Total	973	26	48	1079	

Table A7.4.5. Age at death vs chest fittings.

	Chest fittings				Significance
	No fittings	Out of context chest	In situ chest	Total	
Foetus	4	0	0	4	KW=11.515
Neonate	63	3	0	69	p=0.242
Infant	50	2	1	53	
Early childhood	75	1	3	81	
Late childhood	62	2	5	72	
Adolescent	44	0	2	49	
Young adult	85	3	5	96	
Young middle adult	111	3	11	128	
Old middle adult	86	0	13	105	
Mature adult	50	3	6	65	
Total	630	17	46	722	

Table A7.4.6. Age at death (ten categories) vs chest fittings.

	Chest fittings		Total	Significance
	No fittings	In situ chest		
Juvenile	349	11	380	MW=115828
Adult	624	37	699	p=0.069
Total	973	48	1079	

Table A7.4.7. Age at death vs chest fittings (excluding out of context fittings).

	Chest fittings		Total	Significance
	No fittings	In situ chest		
Foetus	4	0	4	KW=17.057
Neonate	63	0	69	p=0.048
Infant	50	1	53	
Early childhood	75	3	81	
Late childhood	62	5	72	
Adolescent	44	2	49	
Young adult	85	5	96	
Young middle adult	111	11	128	
Old middle adult	86	13	105	
Mature adult	50	6	65	
Total	630	46	722	

Table A7.4.8. Age at death (ten categories) vs chest fittings (excluding out of context fittings).

	Key			Total	Significance
	No key	Key	Lock		
Juvenile	378	1	1	380	MW=131834
Adult	691	4	4	699	p=0.314
Total	1069	5	5	1079	

Table A7.4.9. Age at deth vs key or lock.

	Metal							Total	Significance
	No metal	Pin	Staple	Strip	Object	Knife/ buckle	Knife/ strike-a-light		
Juvenile	378	0	0	0	2	0	0	380	MW=131263.5
Adult	688	2	1	1	1	5	1	699	p=0.133
Total	1066	2	1	1	3	5	1	1079	

Table A7.4.10. Age at death vs metal.

	Cu alloy				Total	Significance
	No copper alloy	Pin	Sheet	Ring		
Juvenile	377	2	0	1	380	MW=132171.5
Adult	696	0	1	2	699	P=0.447
Total	1073	2	1	3	1079	

Table A7.4.11. Age at death vs copper alloy.

	Grave elaborations		Total	Significance
	Absent	In situ elaboration		
Male	190	47	237	χ^2=0.025
Female	136	35	171	p=0.901*
Total	326	82	408	

Table A7.4.12. Biological sex vs grave elaborations.

	Grave inclusions		Total	Significance
	Absent	In situ inclusion		
Male	227	17	244	χ^2=0.001
Female	162	12	174	p=1.000*
Total	389	29	418	

Table A7.4.13. Biological sex vs grave inclusions.

	Chest fittings		Total	Significance
	No fittings	In situ chest		
Male	206	17	223	χ^2=0.608
Female	146	16	162	p=0.464*
Total	352	33	385	

Table A7.4.14. Biological sex vs chest fittings.

	Key			Total	Significance
	No key	Key	Lock		
Male	240	1	4	245	χ^2=1.167
Intermediate	7	0	0	7	p=0.884
Female	173	1	1	175	
Total	420	2	5	427	

Table A7.4.15. Biological sex vs key or lock.

	Metal							Total	Significance
	No metal	Pin	Staple	Strip	Object	Knife/ buckle	Knife/ strike-a-light		
Male	239	2	1	1	0	2	0	245	χ^2=6.039
Intermediate	7	0	0	0	0	0	0	7	p=0.914
Female	171	0	0	0	1	2	1	175	
Total	417	2	1	1	1	4	1	427	

Table A7.4.16. Biological sex vs metal.

	Cu alloy				Total	Significance
	No copper alloy	Pin	Sheet	Ring		
Male	243	1	1	0	245	χ^2=4.367
Intermediate	7	0	0	0	7	p=0.627
Female	173	0	0	2	175	
Total	423	1	1	2	427	

Table A7.4.17. Biological sex vs copper alloy.

		Cribra orbitalia		Significance
		Present	Absent	
Elaborations	Present	3	80	χ^2=2.279
	Absent	30	331	p=0.320*
Inclusions	Present	2	28	χ^2=0.149
	Absent	32	394	p=0.928*
Chest fittings	Present	1	32	χ^2=1.028
	Absent	30	356	p=0.598*

Table A7.4.18. Cribra orbitalia vs burial elaborations and grave goods.

		Tibial periostitis		Significance
		Present	Absent	
Elaborations	Present	6	67	χ^2=0.301
	Absent	32	277	p=0.670*
Inclusions	Present	4	25	χ^2=0.493
	Absent	35	325	p=0.515*
Chest fittings	Present	2	25	χ^2=0.178
	Absent	33	300	p=1.000*

Table A7.4.19. Tibial periostitis vs burial elaborations and grave goods.

		LEH		Significance
		Present	Absent	
Elaborations	Present	21	72	χ^2=2.939
	Absent	56	312	p=0.230*
Inclusions	Present	6	28	χ^2=0.027
	Absent	72	363	p=0.986*
Chest fittings	Present	9	30	χ^2=2.958
	Absent	50	333	p=0.228*

Table A7.4.20. Enamel hypoplasia vs burial elaborations and grave goods.

Burial form		Cranial lesions		Significance
		Present	Absent	
Elaborations	Present	2	83	χ^2=0.155
	Absent	3	344	p=0.657*
Inclusions	Present	0	31	χ^2=0.613
	Absent	8	404	p=1.000*
Chest fittings	Present	0	34	χ^2=0.734
	Absent	8	370	p=1.000*

Table A7.4.21. Cranial lesions vs burial elaborations and grave goods.

Burial form		Endocranial lesions		Significance
		Present	Absent	
Elaborations	Present	2	88	χ^2=1.257
	Absent	18	364	p=0.533*
Inclusions	Present	0	31	χ^2=1.434
	Absent	20	431	p=0.488*
Chest fittings	Present	0	37	χ^2=1.684
	Absent	18	394	p=0.431*

Table A7.4.22. Endocranial lesions vs burial elaborations and grave goods.

Burial form		Spinal DJD		Significance
		Present	Absent	
Elaborations	Present	97	90	χ^2=0.891
	Absent	37	26	p=0.383*
Inclusions	Present	13	8	χ^2=0.616
	Absent	124	110	p=0.498*
Chest fittings	Present	19	9	χ^2=2.657
	Absent	105	99	p=0.111*

Table A7.4.23. Spinal DJD vs grave elaborations and grave goods.

Burial form		Appendicular OA		Significance
		Present	Absent	
Elaborations	Present	32	44	χ^2=15.843
	Absent	61	242	p<0.001
Inclusions	Present	10	19	χ^2=1.504
	Absent	86	268	p=0.264
Chest fittings	Present	15	16	χ^2=12.228
	Absent	67	257	p=0.001*

Table A7.4.24. Appendicular OA vs grave elaborations and grave goods.

	Appendicular OA	Grave elaborations		Total	Significance
		Absent	In situ elaboration		
Young adult	Absent	55	11	66	χ^2=0.184
	Present	3	1	4	p=0.537
	Total	58	12	70	
Young middle adult	Absent	47	12	59	χ^2=0.753
	Present	17	7	24	p=0.400
	Total	64	19	83	
Old middle adult	Absent	30	11	41	χ^2=2.099
	Present	17	13	30	p=0.205
	Total	47	24	71	
Mature adult	Absent	19	6	25	χ^2=2.205
	Present	11	9	20	p=0.205
	Total	30	15	45	

Table A7.4.25. Prevalences of appendicular OA and occurrence of grave elaborations amongst adults of various ages.

	Appendicular OA	Chest fittings		Total	Significance
		No fittings	In situ chest		
Young adult	Absent	61	3	64	χ^2=1.991
	Present	4	1	5	p=0.265
	Total	65	4	69	
Young middle adult	Absent	50	7	57	χ^2=0.361
	Present	19	4	23	p=0.721
	Total	69	11	80	
Old middle adult	Absent	34	5	39	χ^2=1.167
	Present	20	6	26	p=0.325
	Total	54	11	65	
Mature adult	Absent	20	1	21	χ^2=3.510
	Present	11	4	15	p=0.138
	Total	31	5	36	

Table A7.4.26. Prevalences of appendicular OA and occurrence of chest fittings amongst adults of various ages.