
 Dental Palaeopathology 

Teeth can tell you a lot about an individual. Not only can dental x-rays confirm the identity of a person in a forensic context, but the pattern of carious lesions, attrition, and modifications on archaeological teeth can tell the osteologist about diet, disease, and cultural practices. In this exercise, you will split into groups of three and examine as many of the crania and mandibles as you can during class time for pathological, cultural, and congenital conditions of the teeth using the data codes listed on page 3. Each group will get an additional data set from an earlier population, to which in-class observations can be compared (see page 4). The archaeological context of these dental samples can be found on page 2.

Once all the data have been collected, answer the following questions in your four-page project write-up. Be sure to re-read chapter 3 of *Bioarchaeology* and chapter 7 of *The Archaeology of Human Bones* for information on the importance of teeth to bioarchaeological studies.

1. Describe the kinds of dental pathologies, cultural modifications, and congenital defects that are present in the Early and Late Woodland samples.
2. What do the teeth tell you about Early and Late Woodland populations in North Carolina in terms of social status, dietary habits, disease processes, and occupation?
3. How do individuals from the Late Woodland (i.e., the ones you collected information on in class) compare to the individuals from the Early Woodland in terms of dental pathologies and modifications?
4. In light of the archaeological context information below, how have social status, dietary habits, disease processes, and occupation changed through time? What hypotheses can you make about the reasons for these changes?

\* *Note:* You may use charts or graphs at your discretion to illustrate your conclusions.

## Archaeological Context:

In 1986, a building project for a townhouse community threatened the existence of a Native American archaeological site in Onslow County, North Carolina. Archaeologists from the Office of State Archaeology were called in, and salvage excavations were undertaken. The Flynt site (31ON305) was four acres in size and located on Chadwick Bay near Sneads Ferry. Both a domestic settlement and an ossuary component were discovered at the site. The village at Flynt was characterized by large quantities of ceramics, animal and fish bones, and shellfish remains. Over 50 refuse pits and hearths were recorded, as well as at least five deliberate primary dog burials. The ossuary at Flynt was discovered 100 meters from the main area of the site. Bulldozers had marred the site prior to archaeological intervention, disturbing perhaps 50% of the ossuary. The ossuary measured 1.6 meters by 1.5 meters and contained clusters of human bones along with mixed skeletal material. MNI was determined to be 158; there were 93 adults and 65 subadults. The sex ratio of the adults was slightly skewed: 64% males and 36% females. Based on pottery styles and radiocarbon dates, there were at least two periods of occupation of the Flynt site – one during the Early Woodland (1000 – 300 BCE), and one during the Late Woodland (800 – 1600 CE).

*Early Woodland dental sample* – Data on dental pathologies from the Early Woodland skeletons were collected by an osteologist in 1987. Because of the ossuary context, only 12 adult skulls (Individuals A – L) were complete enough for the osteologist to collect information on all teeth (both maxillary and mandibular). These data are provided on page 4.

*Late Woodland dental sample* – No data have been collected to date on dental pathologies from the Late Woodland skeletal remains. Only 8 complete adult skulls (Individuals 1 – 8) have been found dating to this time period.

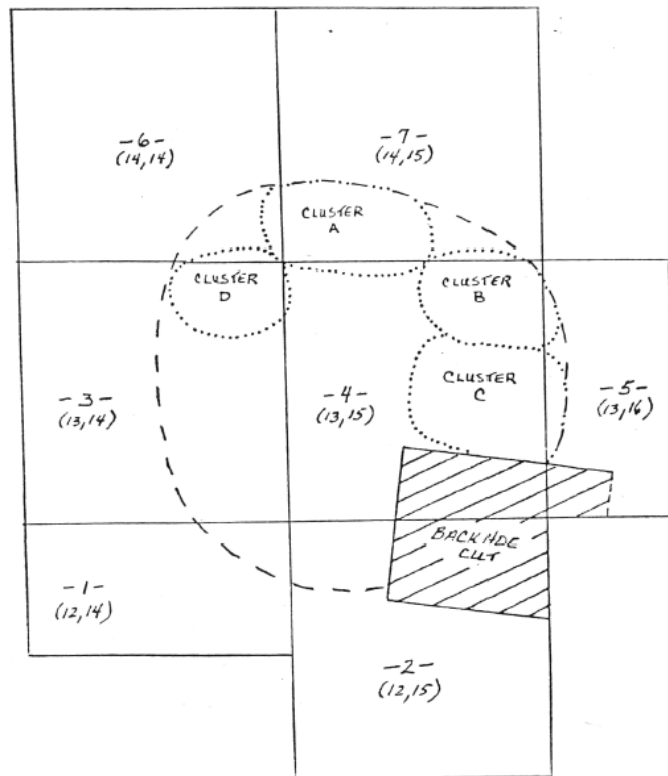


Figure 1: Excavation map of Flynt ossuary

**Pathology Codes:**

*1 – 4 = Carious lesions*

- 1 = occlusal caries
- 2 = cemento-enamel junction caries
- 3 = root caries
- 4 = interproximal caries

*5 – 7 = Wear*

- 5 = worn enamel
- 6 = exposed dentine
- 7 = exposed root

*8 – 10 = Antemortem tooth loss*

- 8 = abscess and loss
- 9 = tooth loss and complete or near-complete remodelling
- 10 = tooth loss, little to no remodelling

*11 – 13 = Chipping*

- 11 = buccal chipping
- 12 = lingual chipping
- 13 = interproximal chipping

*14 – 15 = Stress Markers*

- 14 = linear enamel hypoplasia
- 15 = pitting

*16 – 18 = Cultural Markers*

- 16 = filing (shaped teeth)
- 17 = drilling (hole through tooth)
- 18 = scratching (cross-hatch pattern)

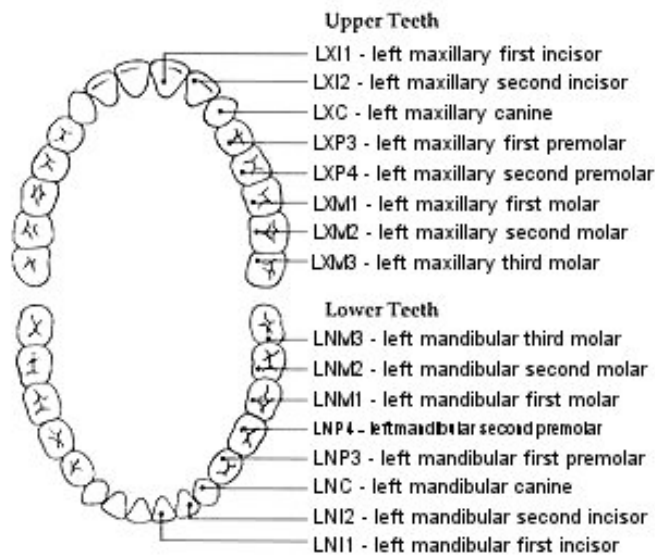
*19 – 21 = Congenital Defects*

- 19 = dental enamel pearl
- 20 = Hutchinson's incisors
- 21 = mulberry molar

*22 – 26 = Other (general processes)*

- 22 = periodontitis
- 23 = surgery
- 24 = trauma
- 25 = misarticulation (overbite)
- 26 = misarticulation (underbite)
- 27 = shovelling

**Tooth Abbreviation Diagram:**



**Data Sheet** (For a downloadable Excel version, see the course website.)

Ind iv	Se x	LX M3	LX M2	LX M1	LX P4	LX P3	LX C	LXI 2	LXI 1	RX I1	RX I2	RX C	RX P3	RX P4	RX M1	RX M2	RX M3	LN M3	LN M2	LN M1	LN P4	LN P3	LN C	LN I2	LN I1	RN I1	RN I2	RN C	RN P3	RN P4	RN M1	RN M2	RN M3	oth er		
A	M	/	1	1	/	4	4	/	2	/	/	/	4	4	/	1	/	1	/	/	1	/	/	/	/	/	/	4	4	4	9	9	10	22		
B	F	/	/	1	/	10	5	6	6	6	6	5	13	/	/	/	/	/	19	/	/	/	5	5	5	5	5	5	13	/	/	/	/			
C	M	1	9	9	/	/	5	/	/	/	/	5	/	/	/	/	/	/	/	/	/	/	5	13	2	2	13	5	/	/	9	9	1	22		
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G	M	9	9	3	/	/	/	/	/	5	5	/	/	/	/	/	/	/	2	3	/	/	13	/	5	5	/	/	/	/	/	/	/	/	22	
H	F	/	/	8	11	/	15	5	6	6	5	15	/	11	2	/	/	/	/	/	11	/	15	5	6	6	5	15	/	11	2	/	/	22		
I	F	19	/	/	/	/	14	6	18	18	6	14	/	/	4	4	/	/	/	/	/	/	14	6	18	18	6	14	/	/	/	/	/	/		
J	M	/	/	/	/	5	5	5	5	3	10	8	10	/	/	/	/	/	/	1	1	/	/	5	5	5	5	/	/	/	/	1	1	4	22	
K	F	/	/	/	9	11	11	5	7	7	5	11	11	/	/	/	/	/	/	/	10	11	11	6	7	7	6	11	11	/	/	/	/	25		
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