Chapter 1 Questions

1. How does bone functional adaptation describe the different shapes and structures of the human skeleton? (Hint: Consider modeling and remodeling.)

2. Cross-sectional geometric properties measure the amount and distribution of skeletal tissue in a given section. What do the measurements of these properties allow bioarchaeologists to reconstruct?

3. How do the dimensions of bone cross-sections change with age? Consider the difference between the tibia and femur. How could this change affect fracture risk?

4. What is the importance of asymmetry in interpreting behavior? (Hint: Consider the discussion of handedness, mobility, and gender roles.) How do these considerations influence the understanding of sexual dimorphism throughout time?

5. What were the biomechanical changes associated with the transition from foraging to farming as exemplified in the Nile Valley? Would all populations experience these same changes? Defend your position.

Chapter 2 Questions

1. Cranial morphology is considered by most experts to be highly plastic. What changes to head shapes have bioarchaeologists observed in different populations, and what is/are their probable cause/s? Provide two examples.

2. Why have bioarchaeologists moved away from studying cranial form by typologies to a population-based approach? (Hint: Consider the history of craniometrics and craniomorphology.)

3. The transition from a hard to a soft diet is associated with changes to the cranial and dental form. What changes are observed in the cranial and dental form?

4. The craniofacial complex has been noted by experts to expand with age. Design a bioarchaeology research project that would test a hypothesis about the cause for the expansion.

5. Why does malocclusion occur? (Hint: Consider the disuse hypothesis and diet.)

6. Are there dietary differences that produce tooth wear? Explain how macro- and microwear are produced on teeth.

Chapter 3 Questions

1. What are the advantages of studying teeth as opposed to bone to understand life history? (Hint: Consider how tooth and bone surfaces change over time.)
2. Bioarchaeologists study carbon, nitrogen, hydrogen, oxygen, and strontium isotopes. What does each of these isotopes reflect in an individual's life history?
3. How is the consumption of maize reflected in isotopes? What values of carbon might be expected with the adoption of a maize-based diet? Provide one example.
4. How can marine versus terrestrial-based diets be distinguished using stable isotope analysis?
5. Choose one type of elemental analysis, and explain its use. Consider its potential in understanding health.

Chapter 4 Questions

1. How do bioarchaeologists deal with the problem of biased reference samples to construct age-at-death?
2. What is the age-at-death profile, and why have bioarchaeologists transitioned to using fertility patterns to help in understanding age-at-death?
3. What are the trends seen in the skeleton as a result of increasing age?
4. What are the recent developments among ageing techniques and methods to help solve the problem of age-at-death estimation?

Chapter 5 Questions

1. What kinds of human adaptations do bioarchaeologists study? (Hint: Think about examples of health and life history.)
2. How do bioarchaeologists interpret behavior through human remains?
3. How have osteological collections provided an understanding of modern human variation? Why are archaeological samples more useful than traditional osteological collections to understand intra-populational

variability? (Hint: Think about the representativeness of the respective samples.)

4. How can bioarchaeologists contribute to an understanding of health?
5. How have the research foci of bioarchaeological studies changed with new advances in the field? (Hint: Think about DNA analysis, genome sequencing, stable isotope analyses.)

Chapter 6 Questions

1. What causes stress at an individual level or at a population level? What kinds of stress are visible in human remains? (Hint: Think about Figure 2.1.)
2. How do bioarchaeologists measure stress in human remains?
3. Describe the effects of stress on individuals during their growth and development. Contrast the stress effects on juveniles with the effects of stress in adults. (Think about the long-term effects of low birth weight and nutritional deficiencies.)
4. What are the effects of stress on growth rate? Provide one specific example from the text.
5. How do dietary deficiencies influence growth rate or dental development? (Think about vitamins C and D.)
6. How can studies of asymmetry provide evidence for periods of stress during an individual's life?
7. Porotic hyperostosis and cribra orbitalia are representative of anemia. What future research would you perform to understand better the formation or persistence of these lesions?
8. Why are skeletal growth lines unable to be directly linked to a stress episode?
9. Why does the formation of linear enamel hypoplasias represent a period of stress?

Chapter 7 Questions

1. What is the pathogenesis of dental caries? Which teeth and locations on individual teeth are the most susceptible to carious lesions?

2. What factors predispose teeth to carious lesions, and why? What is the relationship between gender roles and carious lesion prevalence?
3. Explain the geographic variation in caries prevalence values.
4. How can social status influence diet and consequently caries prevalence?
5. What are the trends in dental disease associated with the foraging-to-farming transition?
6. What is the association between oral health and mortality? How could this association inform bioarchaeologists about the overall health of past peoples?
7. Most bioarchaeologists view periostitis and osteomyelitis as nonspecific infections. What may these conditions represent in an individual's life history?
8. Compare and contrast the evidence for the New and Old World-origin hypotheses for treponemal infections.

Chapter 8 Questions

1. What types of fractures are associated with accidental or violent origins? Why might it be difficult to distinguish these types of injuries in the archaeological record? (Hint: Consider the state of human remains.)
2. Spondylosis has an uncertain etiology but is often associated with mechanically stressful occupations. How might you test the mechanical stress hypothesis using bioarchaeological data?
3. Using the archaeological sites mentioned in the chapter, explain how violence affects a population. (Hint: Think about gender and social status.)
4. What is the archaeological evidence for cannibalism? How do the motives for cannibalism change the distribution of bones left behind?
5. What are the hallmarks of ritualized violence? How do they differ from examples of non-ritualized violence? (Hint: Consider cannibalism and sacrifice versus accidental trauma.)

Chapter 9 Questions

1. Osteoarthritis is a degenerative condition of joints. How does osteoarthritis form, and which types of joints are the most likely to exhibit it?
2. Compare and contrast the hypotheses for osteoarthritis formation.
3. How can osteoarthritis describe populational patterns of behavior? Provide two examples. (Hint: Use Figure 5.3.1.)
4. List differences between urban and rural physical activities as understood through the prevalence and degree of osteoarthritis and Schmorl's nodes. (Hint: Think about the types of activities, workload, gender roles, etc.)
5. Describe how osteoarthritis prevalence has changed with the transition from foraging to agriculture.
6. How does limb asymmetry reflect differential use patterns of limbs? Provide two examples.

Chapter 10 Questions

1. How can bioarchaeologists measure relatedness in skeletal human remains?
2. What can biodistance analyses in an archaeological population help to reconstruct?
3. What statistical techniques are used to interpret biodistance data?
4. What are the three classes of biodistance data?
5. How can biodistance data be used in repatriation cases?