

Bone Tissue  
Chapter Seven Study Guide

1. What is another name for bone? Tissue type?
2. What is the difference between compact bone and spongy bone? Which bone type is harder? What less weight? Why do you think evolution produced two bone types?
3. What is the anatomy of a long bone (lecture and lab objective)?
4. What is the functional unit of bone (lecture and lab objective)?
5. Define the structure and function for the following terms: articular cartilage, red bone marrow, yellow bone marrow, periosteum, nutrient foramen, endosteum, epiphyseal line, epiphyseal plate, diaphysis, epiphysis, osteon, and perforating fibers.
6. Define the following terms: concentric lamellae, circumferential lamellae, lacuna, canaliculi, central canal, perforating canal, osteoblast, osteoclast, osteocyte.
7. What is inside the lacuna?
8. What is located in the central canal? How is the central canal connected to the systemic circuit (blood)?
9. What is the difference between red and yellow bone marrow?
10. In fetal development, where is red bone marrow located? In the adult stage, where is red bone marrow located?
11. What is intramembranous ossification? When does this occur? What bone type is formed?
12. What is endochondral ossification? When does this occur? What type of bones use this type of growth?
13. What is interstitial growth? When does this occur? Location? At what age does it stop?
14. What is appositional growth? When does this occur? Location? At what age does it stop?
15. Why do fetal and adult bone features (e.g. the lines, trochanters, ridges, ect.) differ? Why? Explain this phenomena using Wolf's Law of the Bone.
16. What is calcitriol? Common name? Function related to bone?
17. What is the significance of calcitonin and parathyroid hormone? Regulatory relationship? Why may you compare this mechanism to a banking system?
18. What occurs during hypo-calcemia? Clinical danger?
19. What occurs during hyper-calcemia? Clinical danger?
20. What four steps occur as a bone fracture heals?
21. What occurs to bone when estrogen secretions stop? Why? When? What disease often occurs? How may you protect yourself from this outcome?
22. What is osteoporosis? Cause?
23. How does vitamin A effect bone?
24. How does vitamin C effect bone?
25. Why is lead in water at any concentration dangerous? Where is lead concentrated in the human body? Why does lead inhibit the development of the nervous system? Can this damage be reversed? In societies with endemic lead poisoning, what might you expect to rise? Did this occur in the United States? Think about big oil!!!