TOPIC: SPECIALIZED CONNECTIVE TISSUE: BONE

2. Bone (Osseous Tissue)

Characteristics:

- Tissue with rock-like hardness.
- _____ vascularized (allows for healing).
  - Vessels travel through central canals.
- Extremely _____.

ECM:

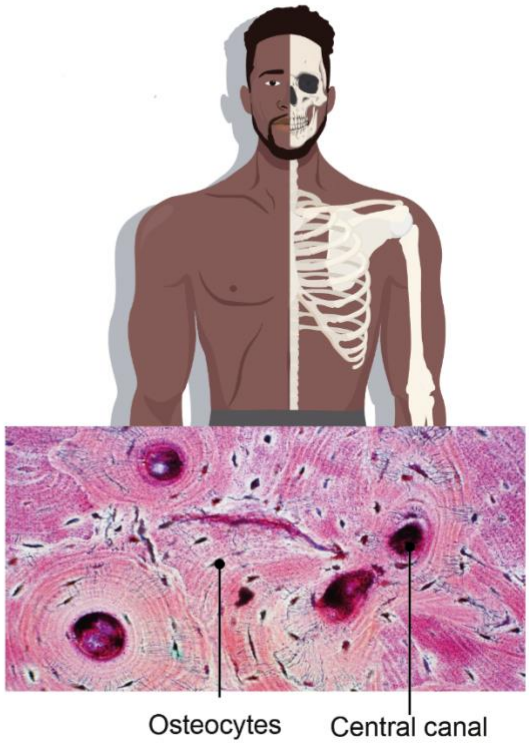
- Organic: collagen fibers.
- Inorganic: _____ phosphate crystals.

2 Main Cell Types: _____ = Bone

- Osteoblasts: secretes matrix.
- Osteocytes: maintains matrix.
  - Lacunae: chambers that house osteocytes.

Functions:

- Structural support.
- Stores calcium, minerals, & fat.
- Hematopoiesis: blood cell formation.



EXAMPLE: Osteoporosis is a condition where bone mass decreases making bones brittle and susceptible to fracture. Based on the structure of bone tissue, is osteoporosis caused by an issue with the osteoblasts or the osteocytes and why?

_____

PRACTICE: How does the ECM of bone differ from the ECM of cartilage?

a) ECM of cartilage is flexible: ECM of bone is rigid.

b) ECM of cartilage is rigid: ECM of bone is flexible.

c) Bone and cartilage have the same ECM.

d) The difference between the ECM can't be determined.

PRACTICE: Osteonecrosis is a condition where blood flow to bones is cut off resulting in tissue death. Which of the following would you expect to be most directly affected by the loss of blood flow?

a) The inorganic matrix.

b) Collagen fibers.

c) Osteocytes.

d) A-C are correct.