

4.1 Skeletal System

SKELETAL SYSTEM

→ MESODERM

CONNECTIVE TISSUES

→ CONNECTIVE PROTEIN

COLLAGEN *

(Extra-cellular Protein)

1. BONE (Hardest Connective Tissue)
2. CARTILAGE
3. TENDON
4. LIGAMENTS
5. ADIPOSE TISSUES
6. BLOOD (Most Soft connective Tissue)

- SUPPORT & SHAPE
- PROTECTION
- MOVEMENT
- MINERAL HOMEOSTASIS
- HAEMO-POIESIS (Blood Formation)

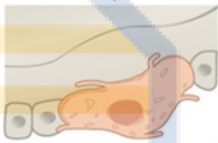
"OSTEO"

BONE CELL AND STRUCTURE

"OSTEOLOGY"

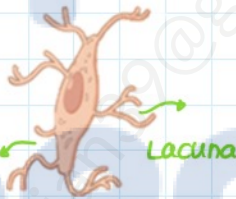
Study of Bones.

OSTEOGENIC CELLS



→ Mature cells

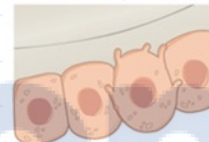
OSTEOCYTE



- Deposition
 - Organic
 - Inorganic

→ Forming

OSTEO-BLAST



- Add new bone cells

Osteoblasts ↑↑
(Bone deformities)

→ Dissolve

OSTEOCLAST



- Macrophages
 - Decomposition of worn out cells

Osteo-clast ↑↑
(Bone resorption)

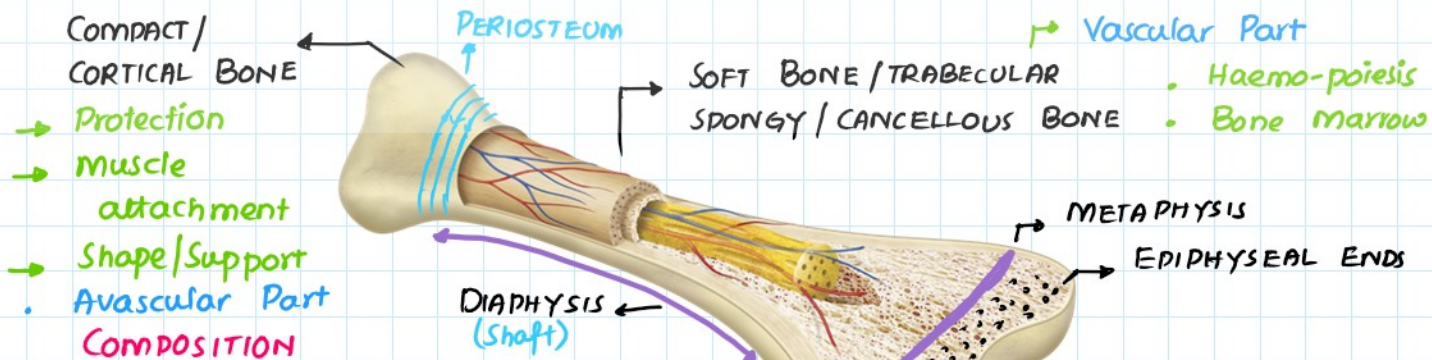
BONE → 1/3rd of Connective tissues

Connective Protein (Collagen I)

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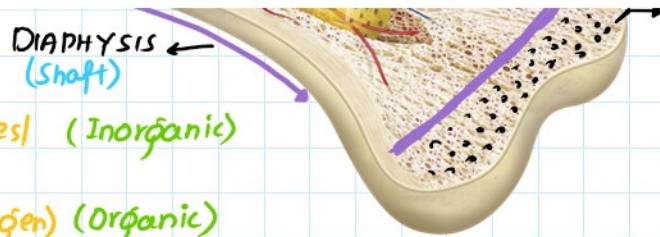
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• Avascular Part COMPOSITION

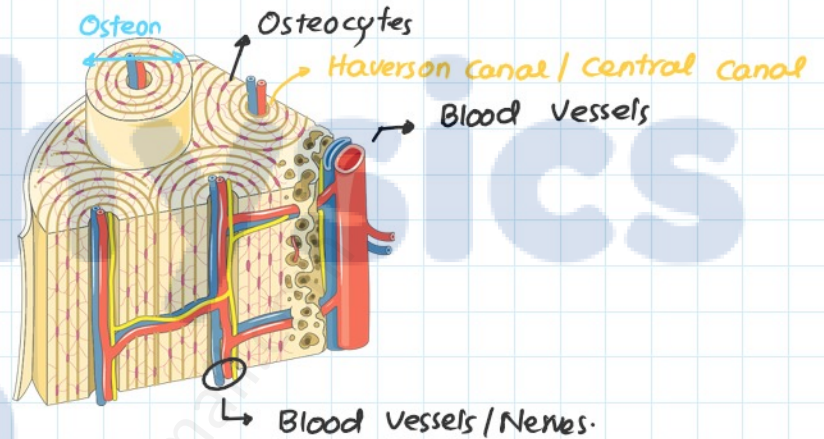
- 65% (Ca^{++} phosphates/ (Inorganic) carbonates)
- 35% (Proteins, collagen) (Organic)



• PERFORATING CANAL (Volkman's Canal)

OSTEON :

- Haversian units
- Fundamental units



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