Bone remodeling = remove old bone (osteoclasts (reabsorb)) & deposit new bone by osteoblasts (ossification)

[redacted]

A&P → continuously changes form & composition

→ Bone = storage site for inorganic material such as calcium & phosphorus

→ has organic material (collagen) & inorganic material

→ ~~internal~~ In & external growth/remodeling ongoing process very throughout life

→ classification of bone

↳ cortical bone (compact & dense) or cancellous (spongy)

↳ ~~cort~~ cortical bone → osteons (Haversian system) come together to form dense bone structure

↳ osteons canal runs parallel to bone long axis (contain the blood vessels that travel to the bones ~~intern~~ interior from periosteum

↳ Around osteons are rings (lamellae) = indicate mature bone

↳ Smaller canals (canaliculi) go from the osteons canals to lacunae (mature bone cells embedded)

↳ cancellous bone → lamellae is along the lines of max stress places on the bone

↳ filled w/ red or yellow marrow → blood reaches cell passing through spaces in the marrow

→ 3 types of bone cells

↳ osteoblast → make organic bone matrix (collagen) (basic bone forming cells)

↳ osteocytes → mature bone cells ↳ osteoclasts → take part in bone remodeling by breakdown bone tissue

Anatomical structure

→ Epiphysis → widened area at (each) end of long bone, mostly cancellous bone

↳ main location for muscle attachment → Articular cartilage covering

→ Diaphysis → tubular structure allows for it to withstand twisting & bending → main shaft of long bone, provides structural support & composed of cortical bone

→ metaphysis → flared area btw epiphysis & diaphysis, composed of cancellous bone

→ Epiphyseal plate (growth plate) → cartilage area btw epiphysis & metaphysis

↳ chondrocytes that make mature bone

↳ Division causes longitudinal bone growth in kids

→ Periosteum → composed of fibrous connective tissue cover bone

↳ tiny blood vessels penetrate the periosteum to bring nutrition to underlying bone

↳ Collagen bundles attach the inner layer of Periosteum to bone

→ The medullary (marrow) cavity → center of diaphysis

↳ contain either yellow or red bone marrow

↳ Adults → red mainly in flat bones (Pelvis, scapula) & In cancellous bone at end of long bone such as femur & humerus

↳ Yellow bone marrow (mainly adipose tissue)

↳ Storage site of triglycerides (involved in hematopoiesis In time of great blood cell need

Joints = Place where ent or 2 bones are close & move in relation to eachother

HYaline cartilage → Found in the trachea

Elastic cartilage → more flexable than ↑ found in ear, & larynx

Fibrous cartilage → tough & function as shock absorber

Muscles

→ smooth → found in walls of hollow structures

→ cardia → In heart, contractions spontaneous

→ skeletal → requires neuronal stimulation for contraction