

Skeletal System

- Joints & Movements

Joint Classification

Joint (Articulation) -

Point of contact between 2 or more bones
" " " " cartilage & bones
" " " " teeth & bones

Structural Classification -

Based on the presence or absence of a synovial (joint) cavity & the type of connecting tissue

3 types:

Fibrous

Cartilaginous

Synovial

Joint Classification

Functional Classification -

Based on degree of movement premitted

3 types: **Synarthroses** (immovable)
Amphiarthroses (partial mvmnt)
Diarthroses (freely movable)

Fibrous Joints

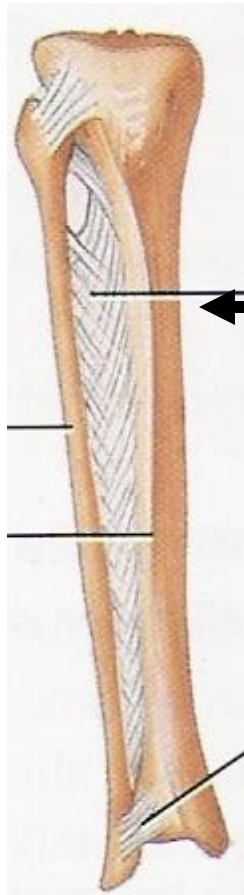
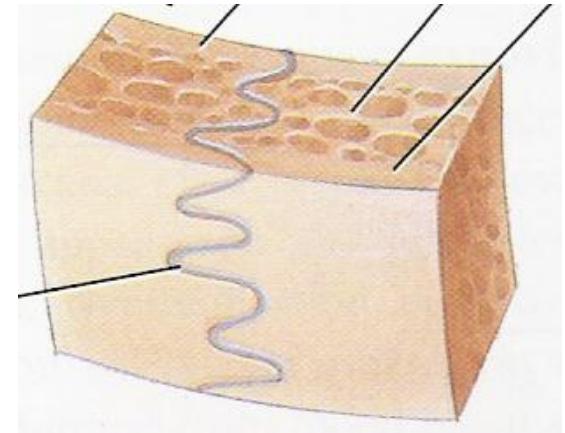
- Lack a synovial cavity
- Held together by fibrous connective tissue
- Permit little to no movement

Fibrous Joints (synarthroses - immovable)

(3 types)

1) Suture:

Composed of a thin layer of dense fibrous connective tissue that unites skull bones

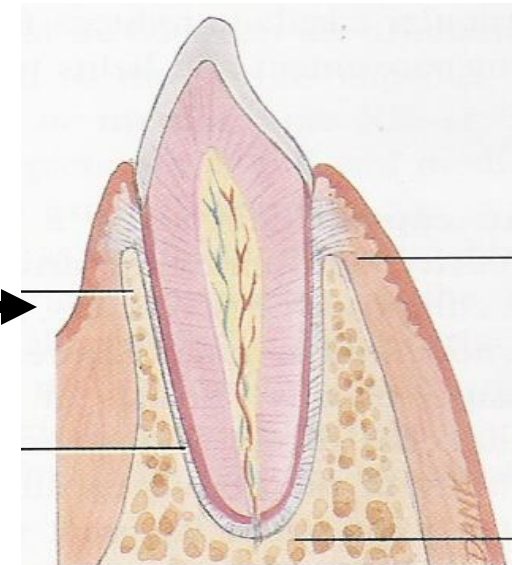


2. Syndesmosis:

More fibrous connective tissue than a suture

3. Gomphosis:

Cone-shaped peg fits in socket



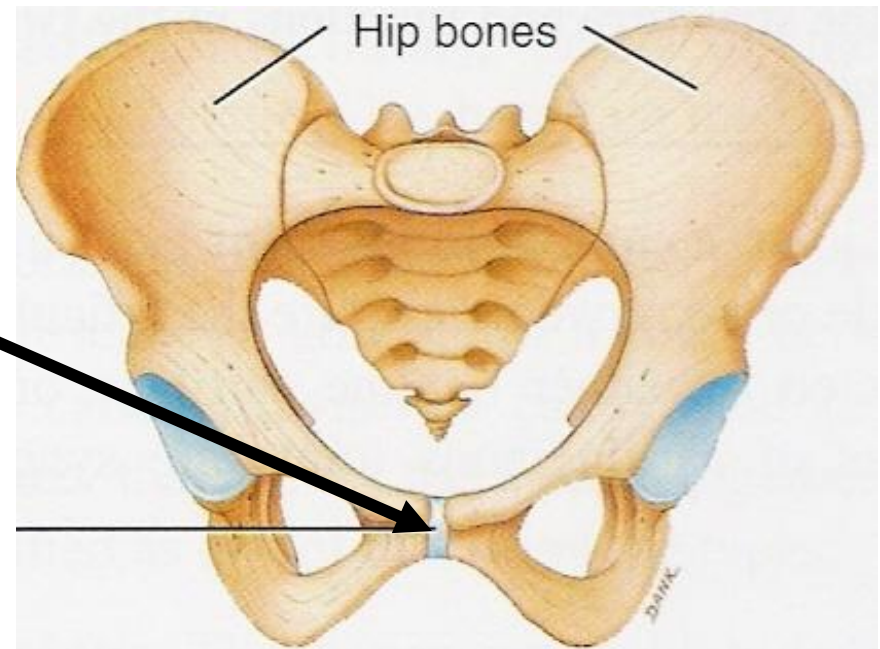
Cartilaginous Joints

Amphiarthroses
(partial mvmt)

- lack a synovial cavity
- bones connected by cartilage
- allow little or no movement

Symphysis:

Connecting material is a disc of fibrocartilage



Synovial Joints

Diarthroses (freely movable)

- have a synovial cavity between articulating bones
- are freely moveable
- Most common

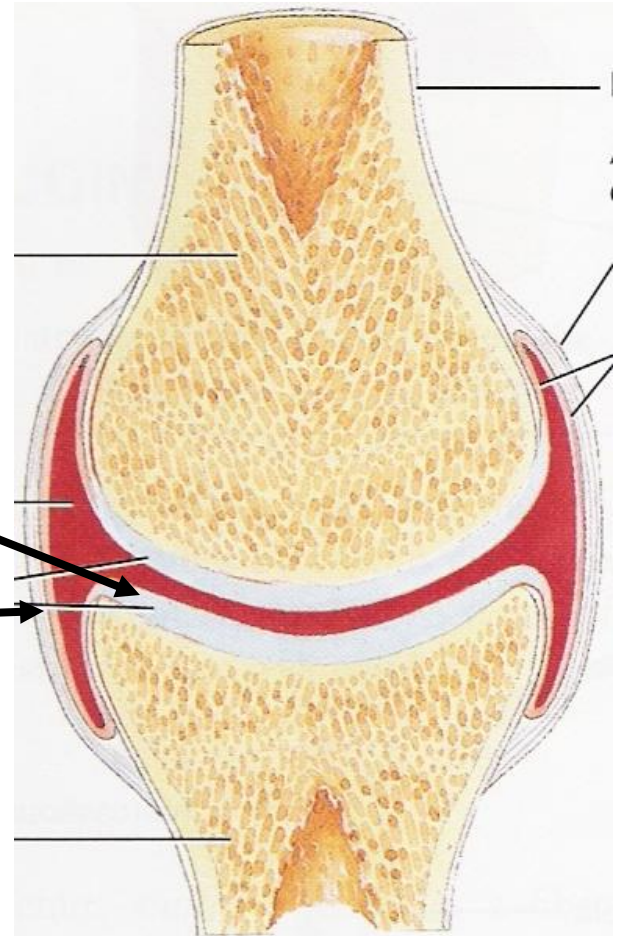
Structure

Articular cartilage

Does what?

Articular capsule

- encloses synovial cavity
- unites articulating bones



Synovial Joints

- Articular Capsule: 2 layers
 - 1. fibrous capsule (outer)
 - 2. synovial capsule (inner)
- allow for movement and strength
- Synovial fluid → secreted by synovial capsule
 - Lubricating/supplies nutrients
 - Reduces friction - shock absorbing fluid

Accessory Ligaments & Articular Discs

- Ligaments: bone to bone
 - 1. extracapsular (LCL, MCL)
 - 2. intraapsular (ACL, PCL)
- Articular discs: (menisci)
 - subdivide into +1 cavity
 - Modify shape of joint; increase stability
- Bursae:
 - Outside joint; reduce friction
 - Flattened sacs w/synovial fluid

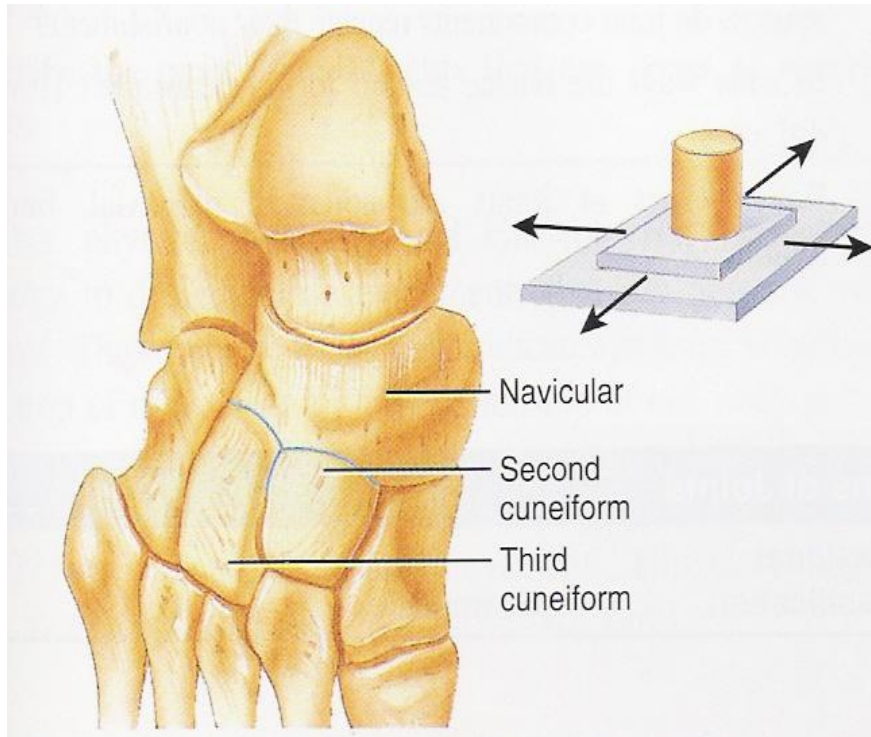


Torn Cartilage, Sprains & Strains

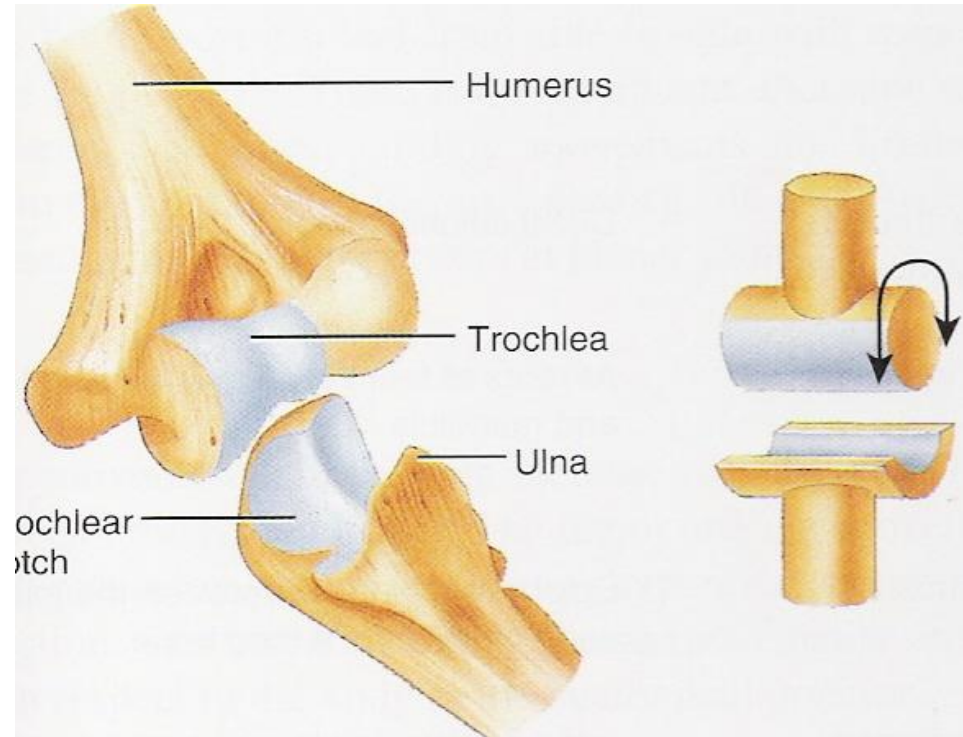
- Torn menisci= torn cartilage =arthroscopy
- Sprain -> forcible wrenching/twisting of joint
- Strain → stretched or partially torn muscle

Types of Synovial Joints

Gliding/Planar Joints

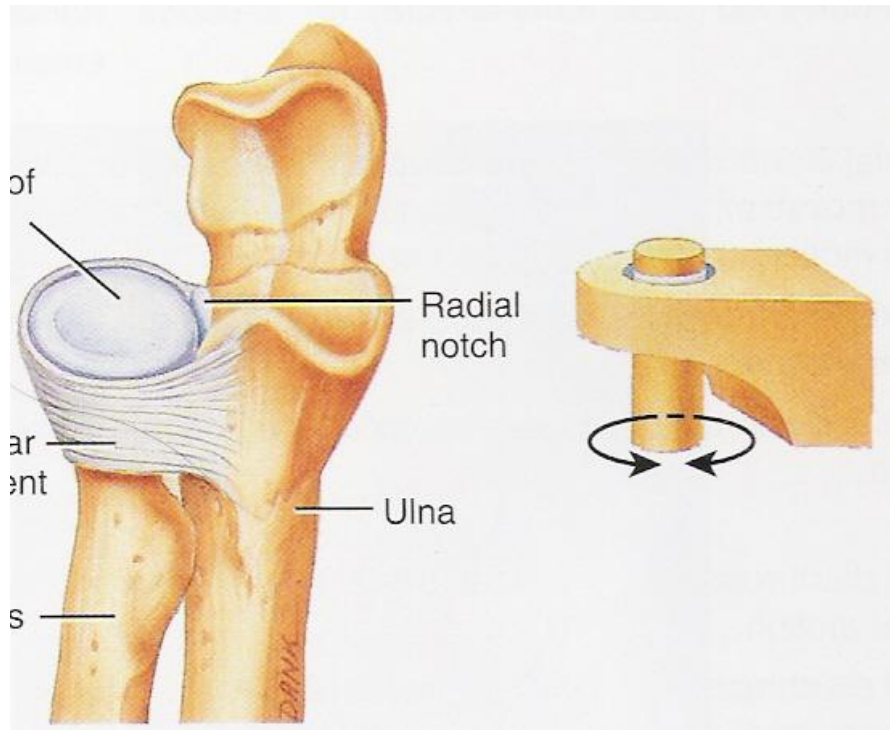


Hinge Joints

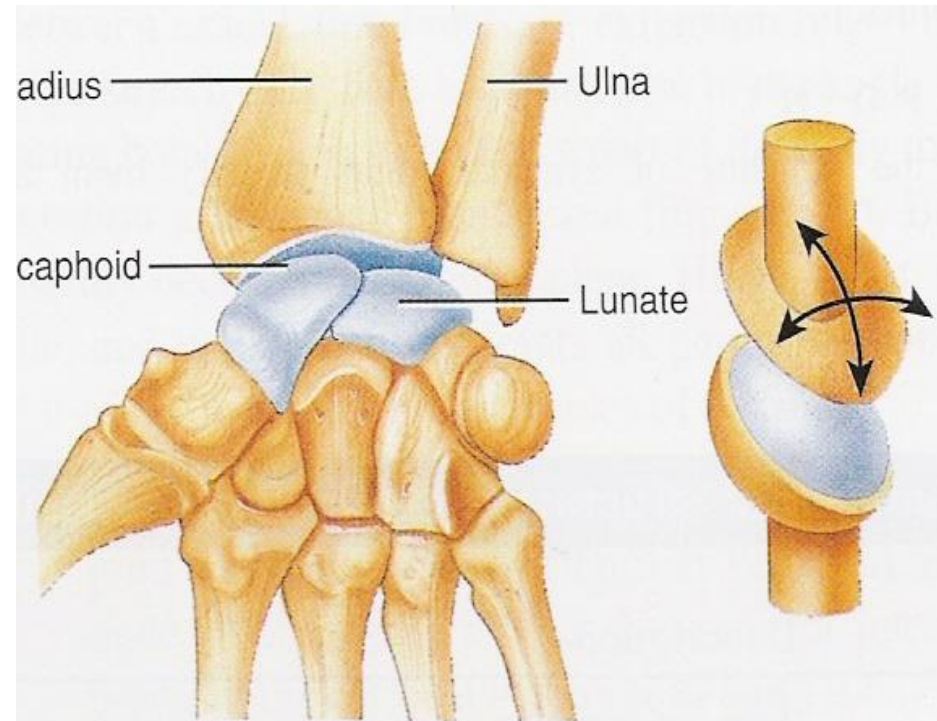


Types of Synovial Joints

Pivot Joint

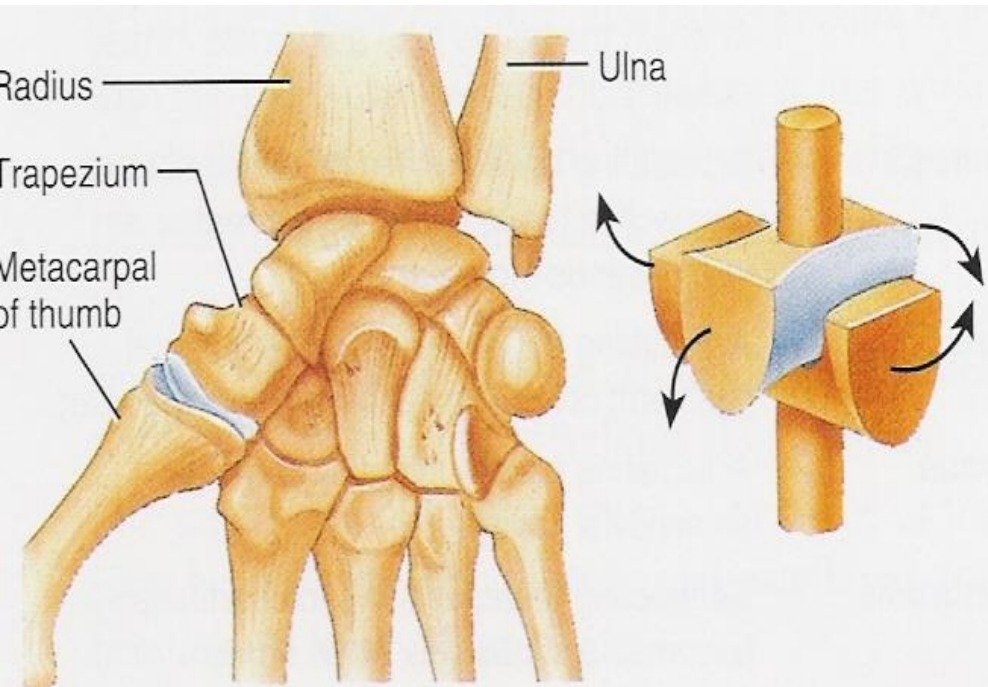


Ellipsoidal Joint

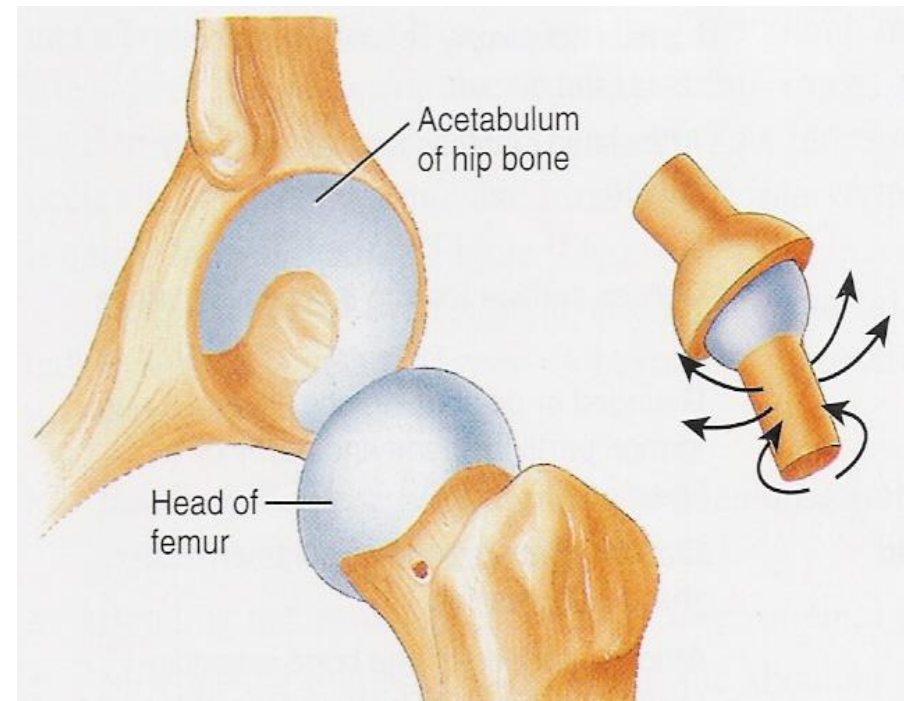


Types of Synovial Joints

Saddle Joint



Ball-and-Socket Joint



Types of Movements at Synovial Joints

- When muscle contracts/shortens, one bone is pulled toward the other bone
- Point of attachment (of tendon to bone) = insertion
- Attachment site (of tendon to bone) = origin

Movements of Synovial Joints

Extension

Rotation

Dorsiflexion

Flexion

Elevation

Plantar Flexion

Hyperextension

Depression

Supination

Lateral Flexion

Protraction

Pronation

Abduction

Retraction

Opposition

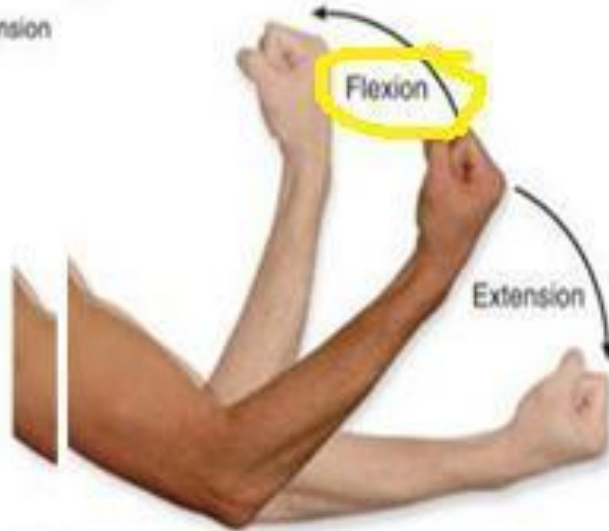
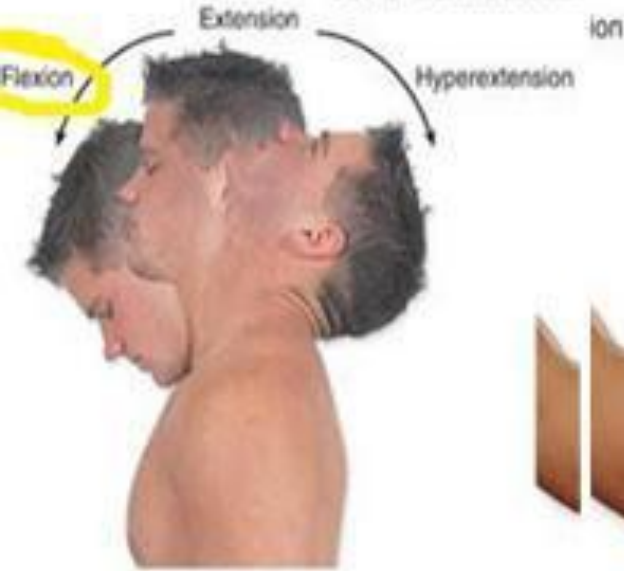
Adduction

Inversion

Circumduction

Eversion

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