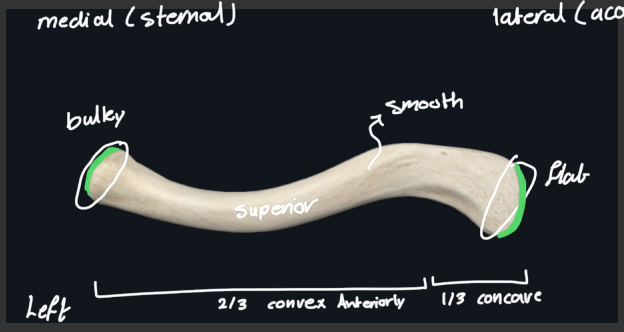
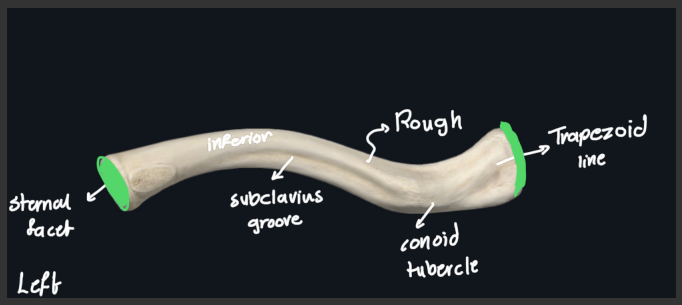
1) clvicle

- long bone
- No medullary
- 2 surfaces (upper & lower)
- 2 borders (anterior & posterior)





- transmitting weight from U.L to axial skeleton.
- protecting vessels & nerves.
- middle 1/3 most commone to be fractured.

① sternoclavicular joint

Sternal end ⟷ sternum

- synovial plane

② Acromioclavicular joint

Acromial end ⟷ Acromion

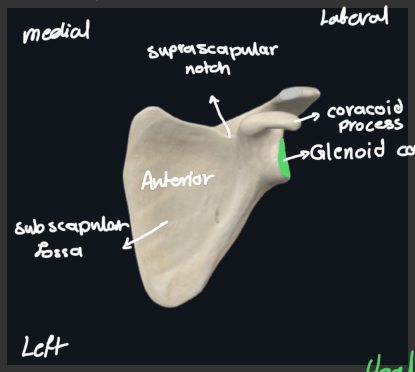
- synovial plane

2) scapula

- flat bone
- oblique

suprascapular notch + coracoid process laterly

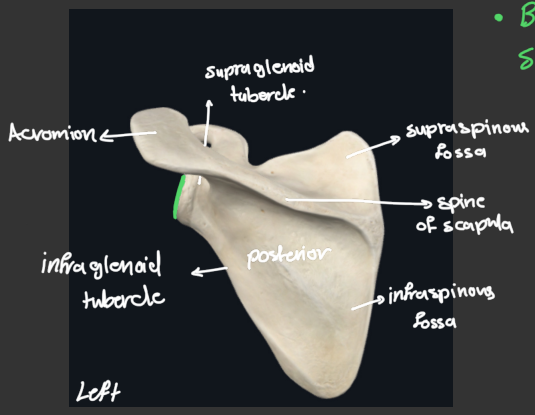
- 2 surfaces [Anterior & posterior]
- 3 borders [Medial, Lateral & superior]
- 3 angles [Lateral, superior & inferior]
  - ↓ lateral: • head • neck • glenoid cavity
  - ↓ superior: 2nd Thoracic spine
  - ↓ inferior: 7th Thoracic spine



① sholder joint

Head of Humerus ⟷ glenoid cavity

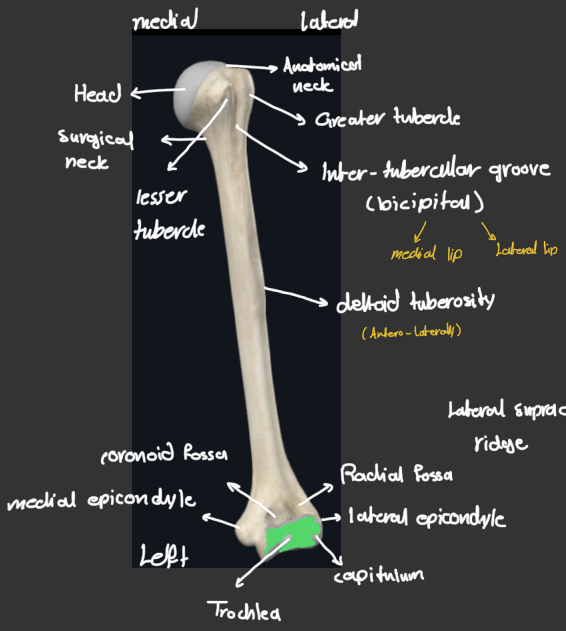
- Ball & socket
- synovial plane

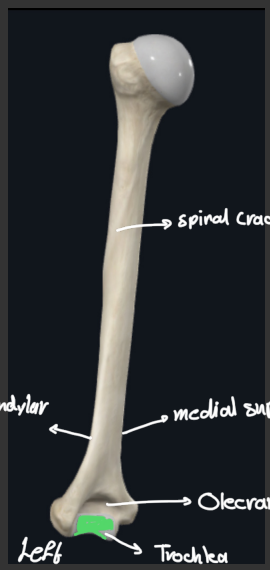


3) Humerus

- long bone

- 3 surfaces [Antero-medial + Antero-Lateral + posterior]
- 3 borders [Anterior + medial + lateral]





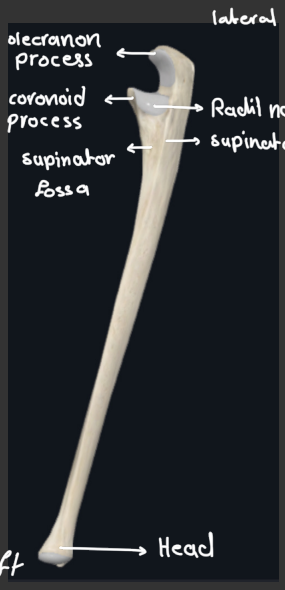
① Elbow joint

Trochlea & capitulum of Humerus ⟷ Trochlear notch of ulna & Head of radius

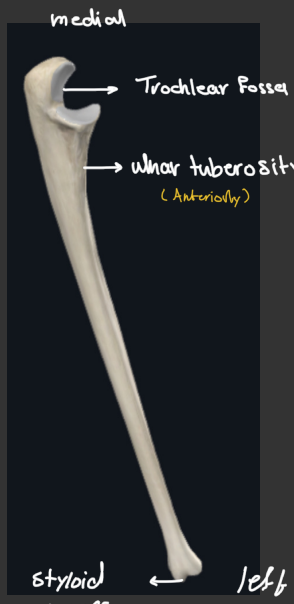
- Hinge synovial plane

4) Ulna

- long bone
- 3 surfaces [Anterior, Posterior & medial]
- 3 borders [Anterior, posterior & lateral (interosseous)]



- only bone with lower head



(postero - medially)

① proximal Radioulnar joint

Head of Radius ⟷ Radial notch + annular ligament

- Pivot synovial

② Distal Radioulnar joint

Head of ulna ⟷ ulnar notch

- Pivot synovial

5) Radius

- long bone
- 3 surfaces [Anterior, Posterior, Lateral]
- 3 borders [Anterior, Posterior, Medial (interosseous)]

(posteriorly)

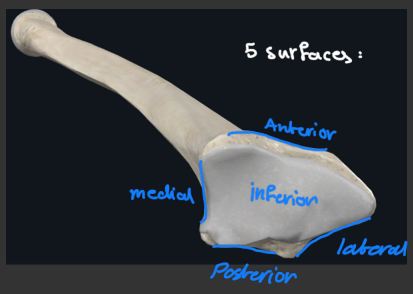
(laterally)

③ Wrist joint

Inferior Radium + articular disc of Distal radio ulnar joint ⟷ Scaphoid + lunate + triquetrum

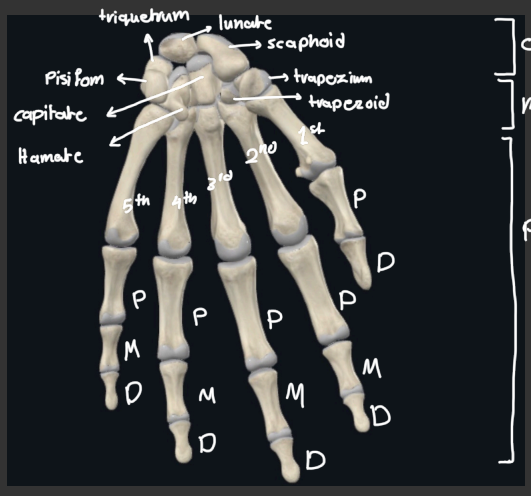
- synovial condyloid

~~X~~ Ulna is not sharing in wrist joint



6) Hand

- short bone



① Intercarpal joint

carpals ⟷ carpals

- plane synovial

② Carpometacarpal joint (4 fingers)

carpals ⟷ medial 4 metacarpals

- plane synovial

③ Carpometacarpal joint (thumb)

Trapezium ⟷ 1st metacarpal

- saddle synovial

④ Metacarpophalangeal joint

Head of metacarpals ⟷ base of proximal

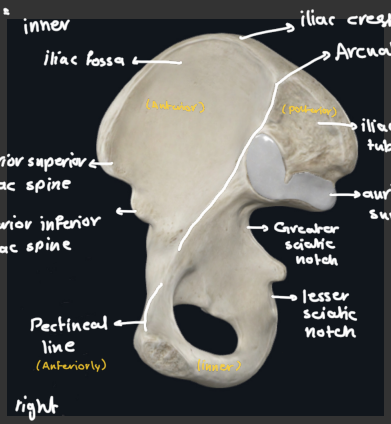
- Synovial condyloid

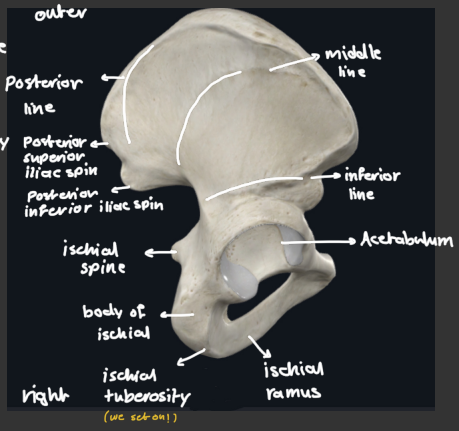
⑤ proximal / Distal Interphalangeal joint > Hinge Synovial

proximal ⟷ middle / middle ⟷ distal

7) Hip bone

- Irregular bone
- 2 surfaces [inner/pelvic, outer/gluteal]
- 3 borders [superior, Anterior, Posterior]





vertebropelvic ligaments:

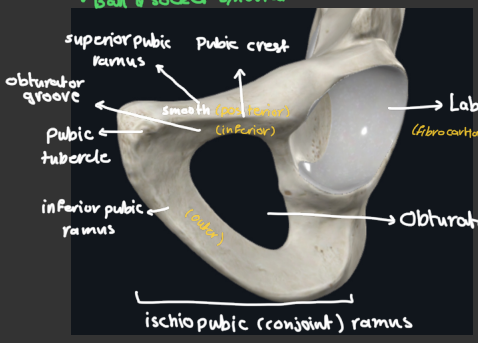
1. **iliolumbar** — fib L5 ⟶ iliac crest
2. **Lumbosacral** — inferior L5 ⟶ lateral ala of sacrum

] prevent anteroinferior displacement of L5 under effect of body weight

3. **sacro tuberous** — ischial tuberosity + posterior iliac spines ⟶ lower sacrum & coccyx
4. **sacrospinous** — ischial spine ⟶ lateral sacrum & coccyx

] ① convert greater & lesser sciatic notches into foramina ② prevent upward tilting of low part of sacrum under effect of body weight

1. **symphysis pubis** — Right superior pubic ramus ⟷ left one
   - Secondary cartilaginous joint
2. **Sacro iliac joint** (weight transmission from axial to lower limb) — Sacrum ⟷ auricular surface of ilium
   - plane synovial
3. **Hip joint** — Acetabulum ⟷ Head of Femur
   - Ball & socket synovial

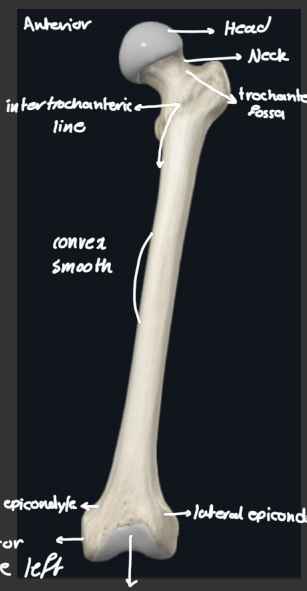


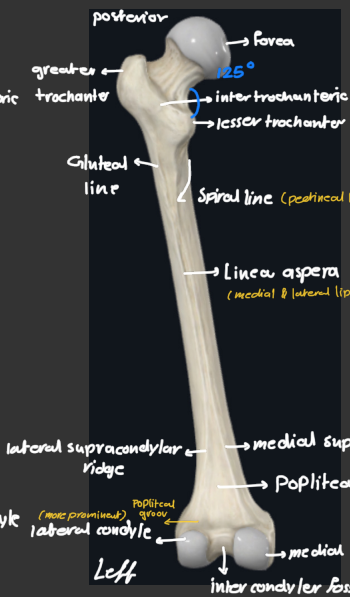
ligaments:

1. **iliofemoral** — overextension
2. **pubofemoral** — extension & abduction
3. **ischiofemoral** — extension
4. **Head of Femur** [Fovea of Head ⟶ sides of acetabulum] — blood supply for the head

8) Femur

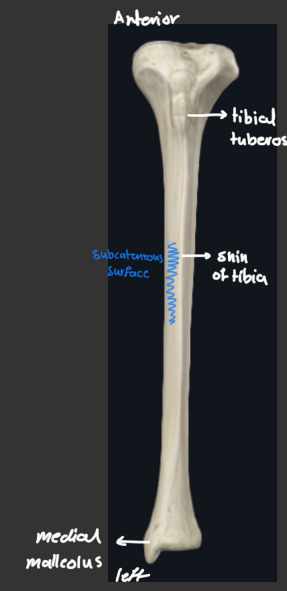
- long bone
- longest & strongest
- 2 surfaces [Anterior & posterior]





9) Tibia

- long bone
- weight transmitter
- 3 surfaces [medial, lateral, posterior]
- 3 borders [medial, lateral, Anterior] (shin of tibia)



10) Fibula

- long bone
- doesn't transmit weight
- 3 surfaces [Anterior, Posterior, Lateral]
- 3 borders [Anterior, Posterior, medial]

* bone graft in plastic surgery

1. **Superior tibiofibular joint**
   - Fibular Faces ⟶ Head of fibula
   - plane synovial
2. **Inferior tibiofibular joint**
   - Fibular notch ⟶ lower end of fibular shaft
   - fibrous [syndesmoses]

1. **knee joint** — Condyles of Femur ⟷ condyles of tibia & patella
   - * Fibula does not share in knee
   - modified Hinge synovial

Ligaments of knee:

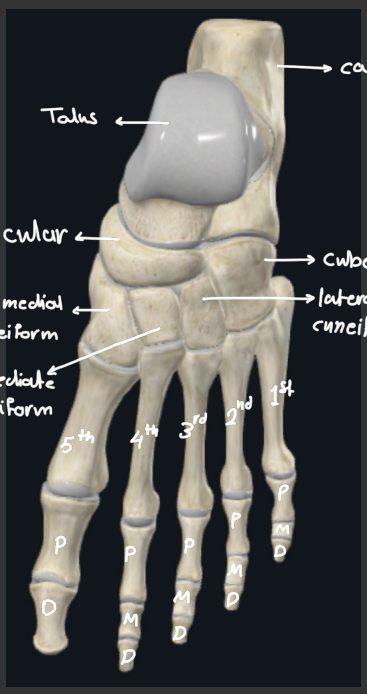
* Extracapsular

1. **Tibial collateral ligament** — medial Femoral epicondyle ⟶ medial tibial condyle
2. **Fibular collateral ligament** — lateral Femoral epicondyle ⟶ head of Fibula
3. **ligamentum patellae** — apex of patella ⟶ tibial tuberosity

intracapsular

1. **Lateral meniscus**
   - O-shaped
   - separated from Fibular collateral by tendon of popliteus
   - Free to move/less injury
2. **medial meniscus**
   - C-shaped
   - attached with tibial collateral
   - Fixed / more injury
3. **Anterior cruciate ligament** — lateral Femoral condyle ⟶ Anterior part of intercondylar area
   - prevent anterior displacement of tibia
   - Tense in extension
4. **Posterior cruciate ligament** — medial Femoral condyle ⟶ posterior part of intercondylar area
   - prevent posterior displacement of tibia
   - Tense in flexion

11) Foot



1 Ankle joint

lower end of tibia, medial malleolus and lateral malleolus of fibula ⟷ trochlear surface of talus

- Hinge synovial ✲ dorsiflexion / plantarflexion

Ligaments supporting Ankle :

1. Medial (deltoid) ligament
2. lateral ligament : 3 bands
   - Anterior talofibular
   - Posterior talofibular
   - Calcaneofibular

2 joints of Foot

Subtalar

Talus ⟷ calcaneum

- plane synovial

Mid tarsal joints

talocalcaneonavicular ⟷ calcaneocuboid

- plane synovial

✲ Inversion / Eversion

✲ Inversion more free than eversion

Why? lateral malleolus is shorter than medial malleolus