

LOWER EXTREMITY

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Pelvic girdle

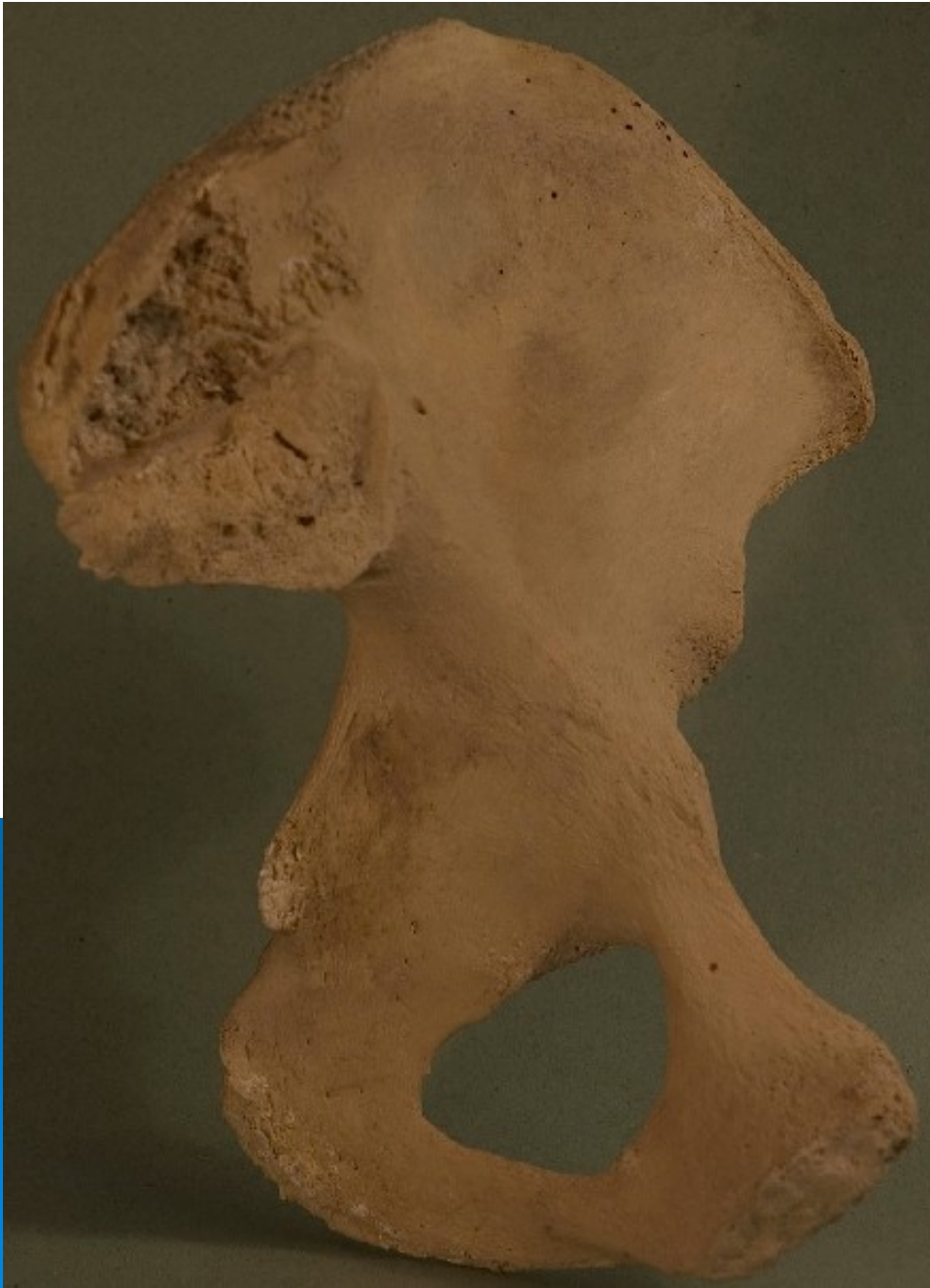


- Connects the vertebral column to the two femurs
- **Transfer weight** from the axial lower appendicular skeleton for standing and walking
- Body weight is transferred from the vertebral column through the sacroiliac joints to the pelvic girdle and through the hip joints to the femurs
- Contain and **protect the pelvic viscera**
- Consists of two hip bone (os coxae)

Hip bone – os coxae

An irregularly shaped bone, which develops from the fusion of three bones





Ilium

- **Ala (wing)**

post. sup. iliac spine

post. inf. iliac spine

- **Body**

acetabulum



Ischium

- **Body**
 - acetabulum
- **Ramus**
 - obturator foramen
 - ischial tuberosity
 - ischial spine
 - lesser sciatic notch
 - greater sciatic notch



Pubis

- **Superior ramus**

 - obturator groove

 - obturator foramen

 - pecten pubis

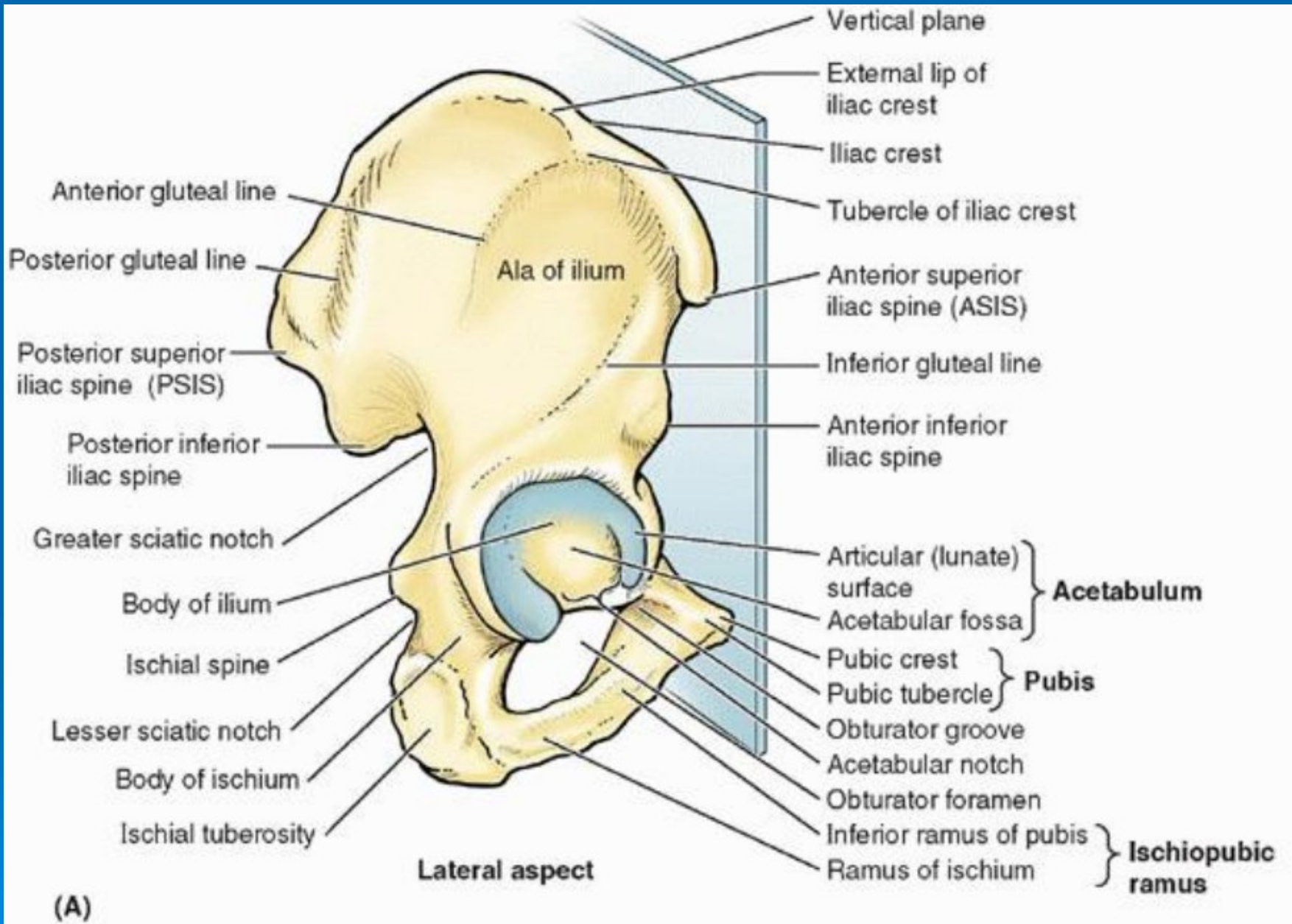
- **Inferior ramus**

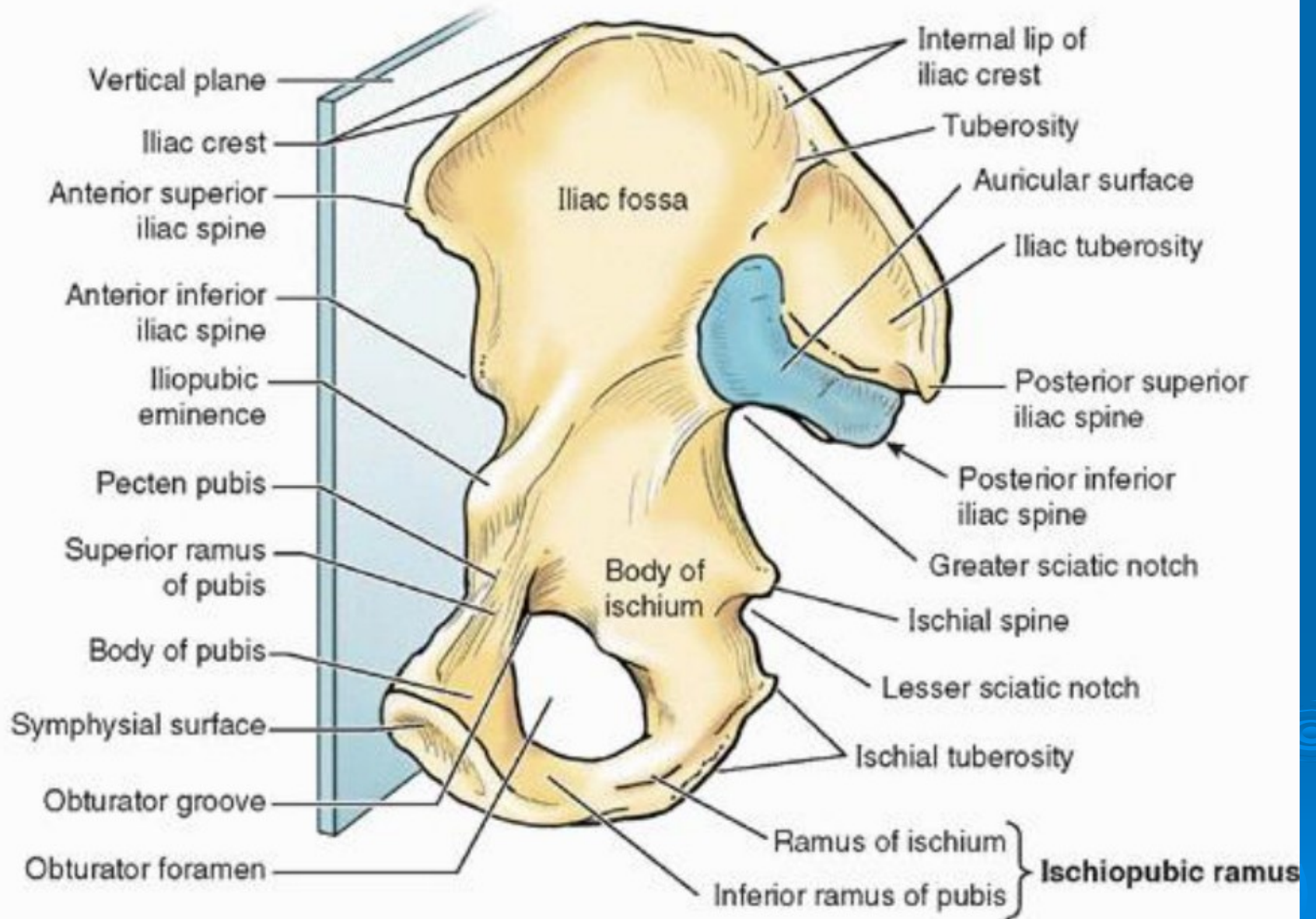
 - obturator foramen

- **Body**

 - pubis tubercle

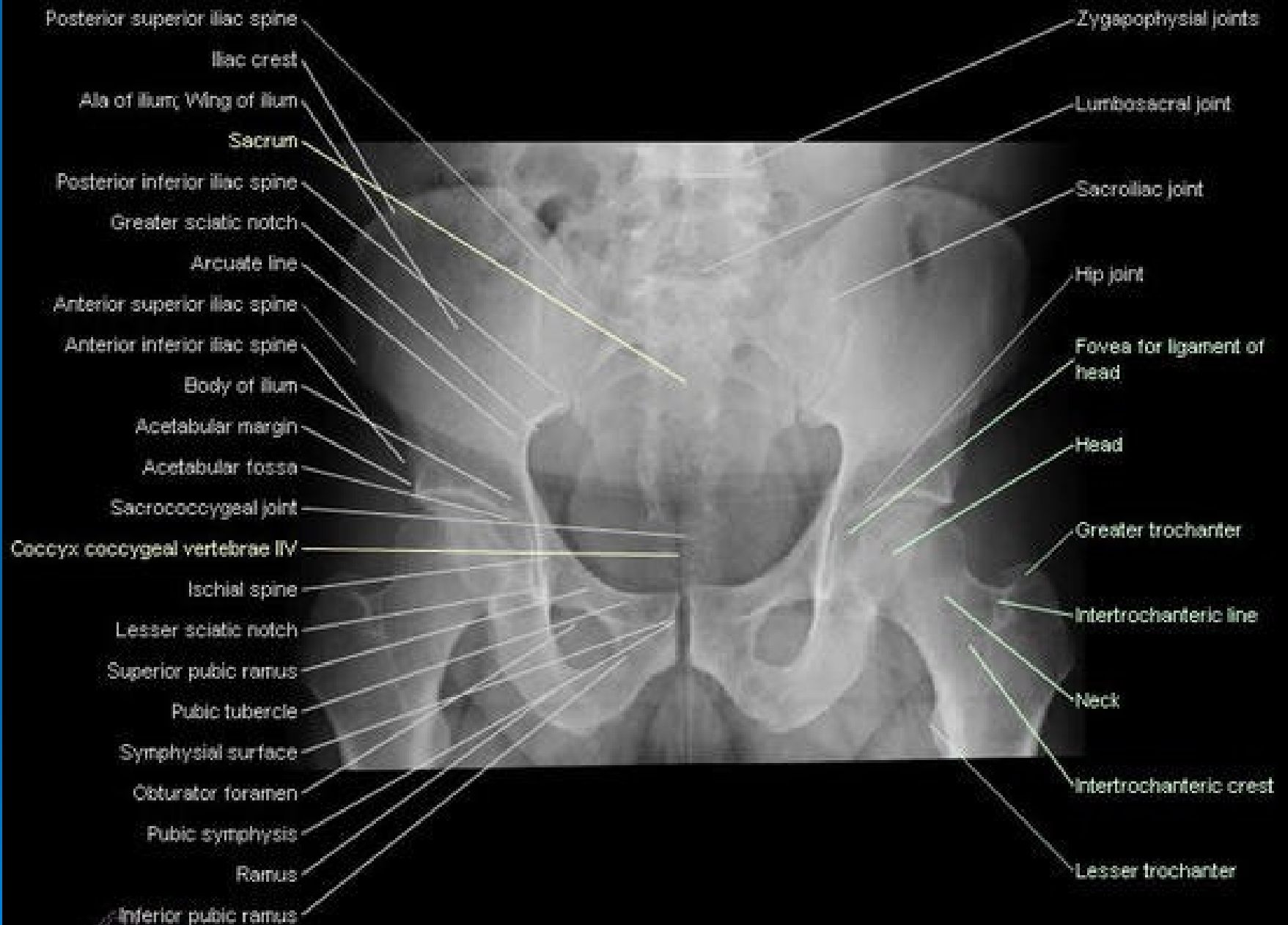
 - symphyseal surface





(B)

Medial aspect



Pelvis



- **Greater pelvis (false)**

bounded by the iliac alae posterolaterally and S1 posteriorly

- **Lesser pelvis (true)**

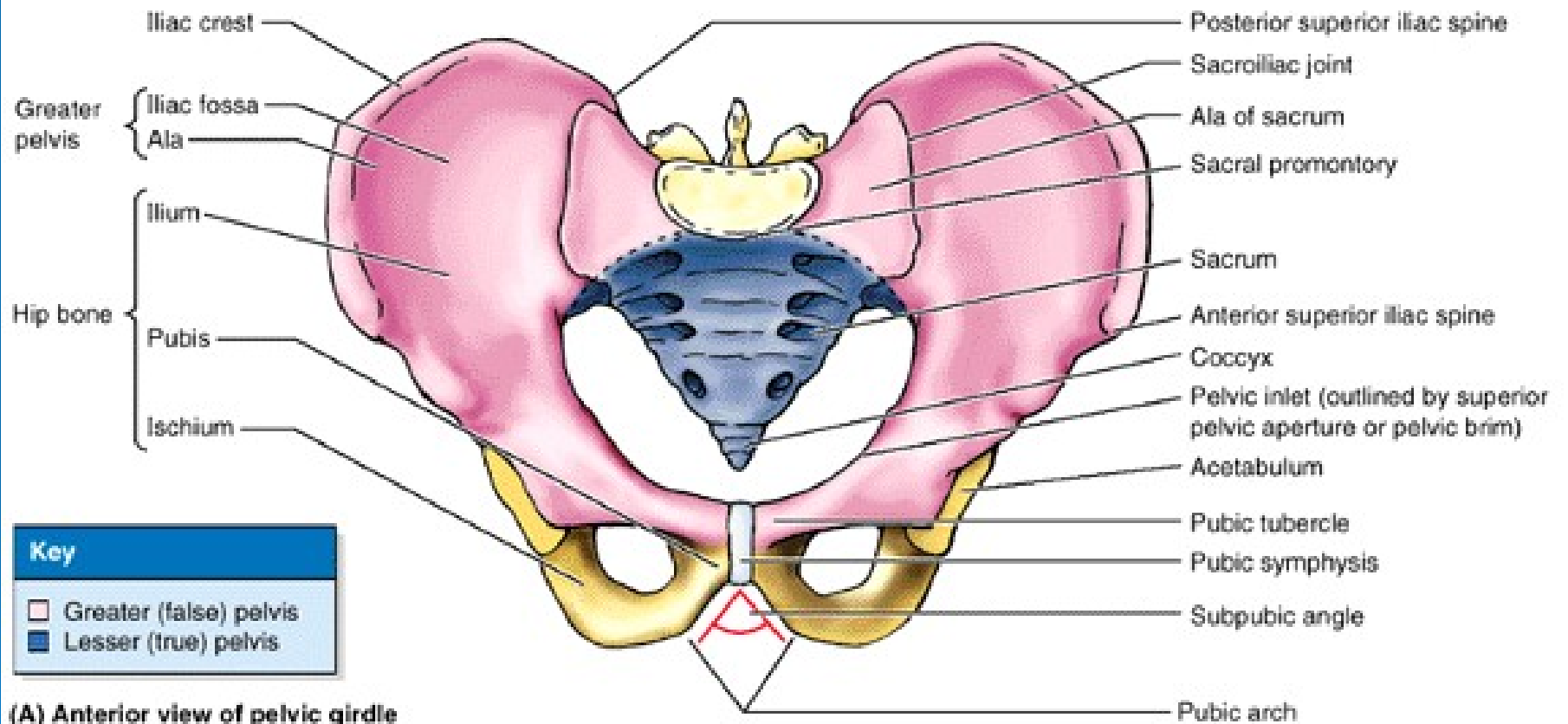
bounded by the pelvic surfaces of the hip bones, sacrum
coccyx

- **Pelvic inlet (superior pelvic aperture)**

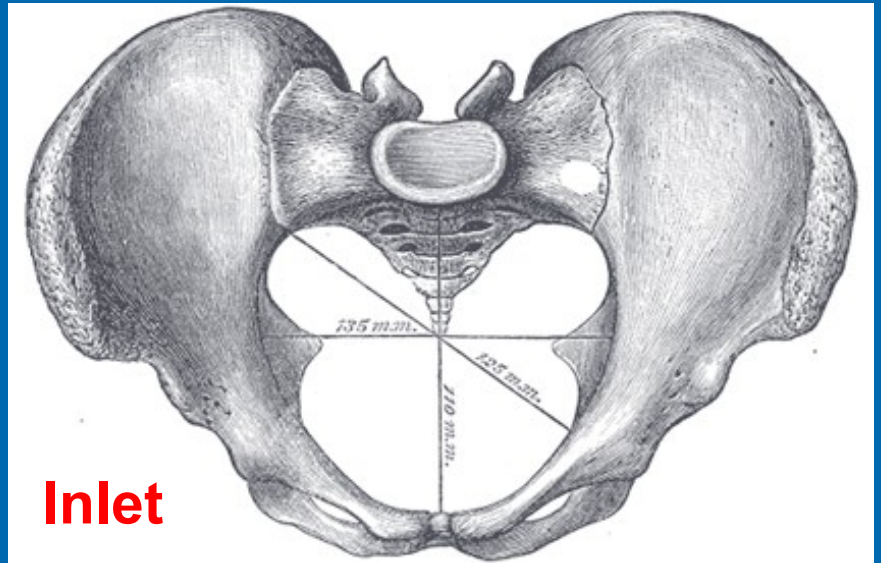
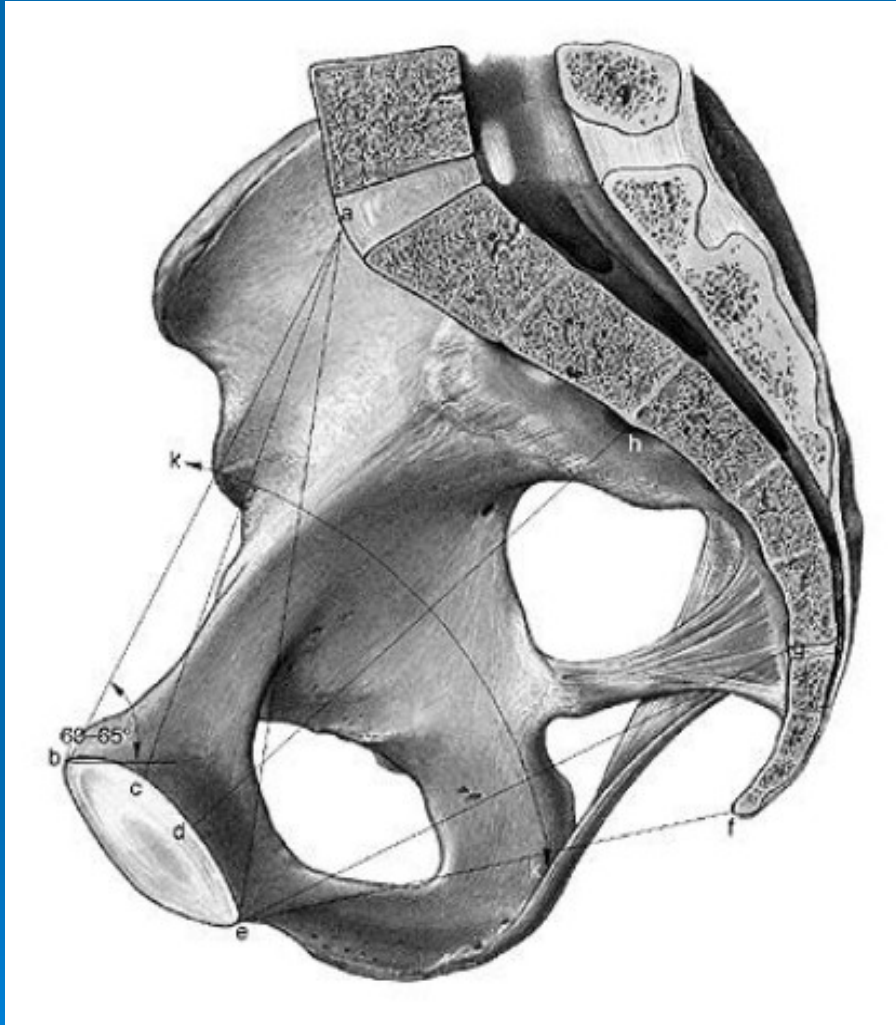
formed laterally by pectineal and arcuate lines, anteriorly by the crests of the pubes and posteriorly by sacrum

- **Pelvic outlet (inferior pelvic aperture)**

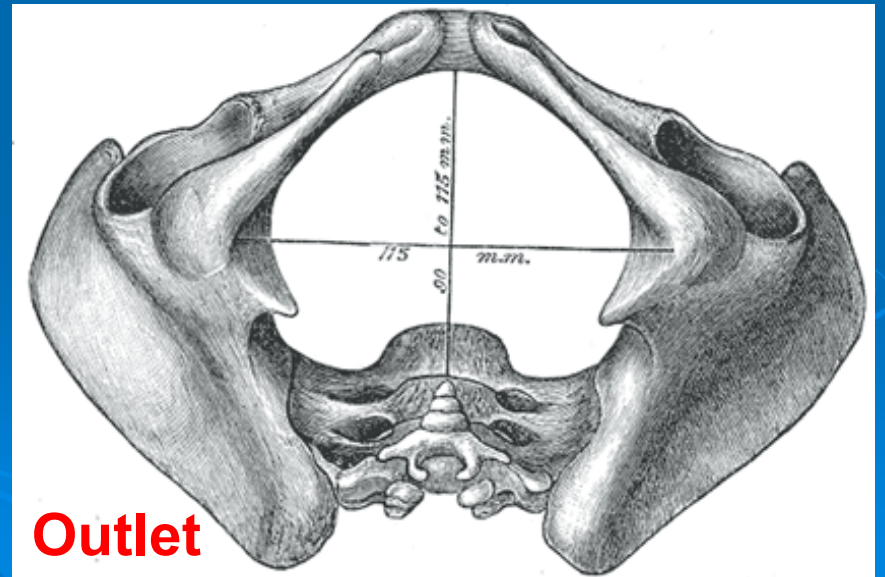
formed laterally sciatic notches, anteriorly by the pubic arch
and posteriorly by coccyx and sacrum



(A) Anterior view of pelvic girdle



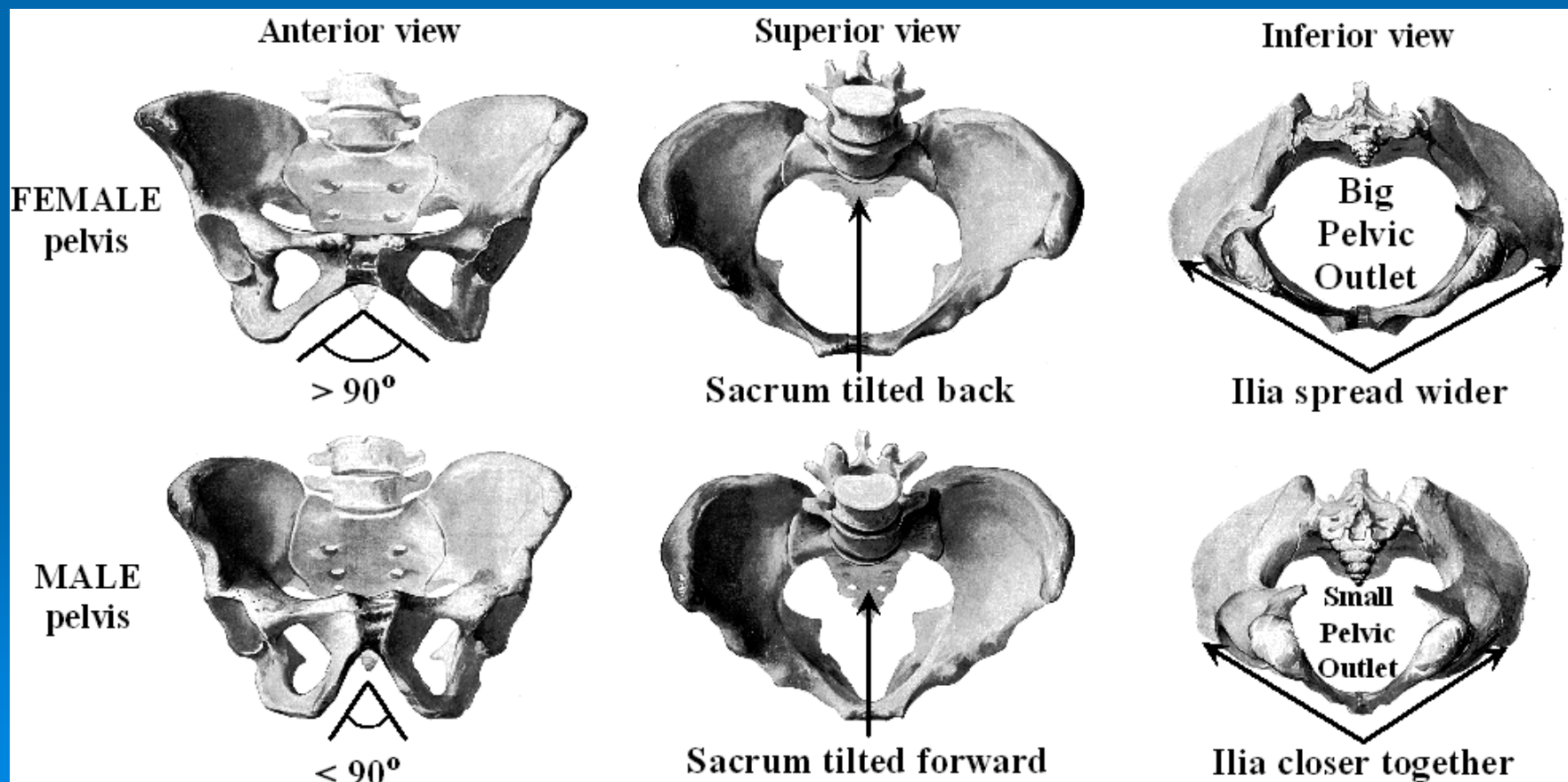
Inlet



Outlet

- **Female type of pelvis**

pelvic inlet typically has a rounded oval shape and wide transverse diameter → successful vaginal delivery of a fetus

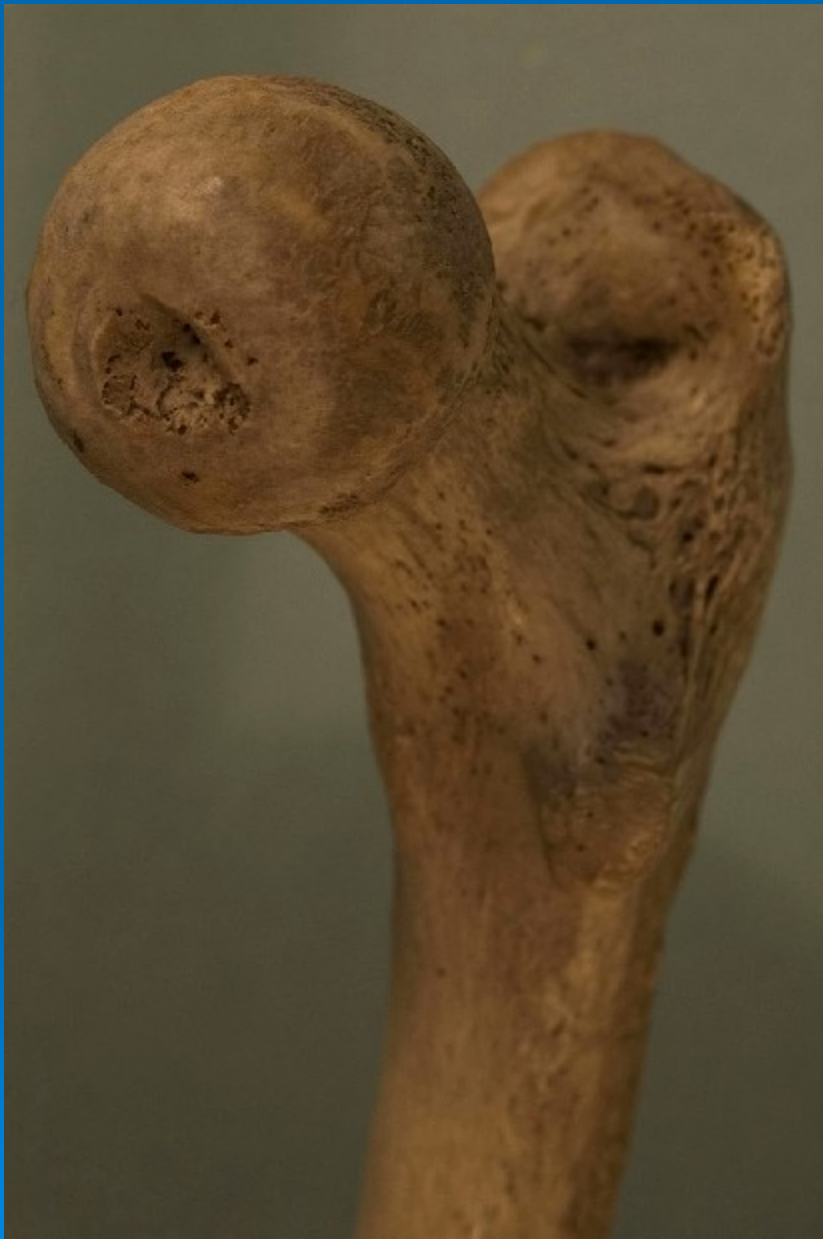


Bony Pelvis	Male (♂)	Female (♀)
General structure	Thick and heavy	Thin and light
Greater pelvis (pelvis major)	Deep	Shallow
Lesser pelvis (pelvis minor)	Narrow and deep, tapering	Wide and shallow, cylindrical
Pelvic inlet (superior pelvic aperture)	Heart-shaped, narrow	Oval and rounded; wide
Pelvic outlet (inferior pelvic aperture)	Comparatively small	Comparatively large
Pubic arch and subpubic angle	Narrow (<70°)	Wide (>80°)
Obturator foramen	Round	Oval
Acetabulum	Large	Small
Greater sciatic notch	Narrow (~70°); inverted V	Almost 90°



Femur – Thigh bone





- **Proximal epiphysis**

head

fovea for lig. of head

neck

greater trochanter

lesser trochanter

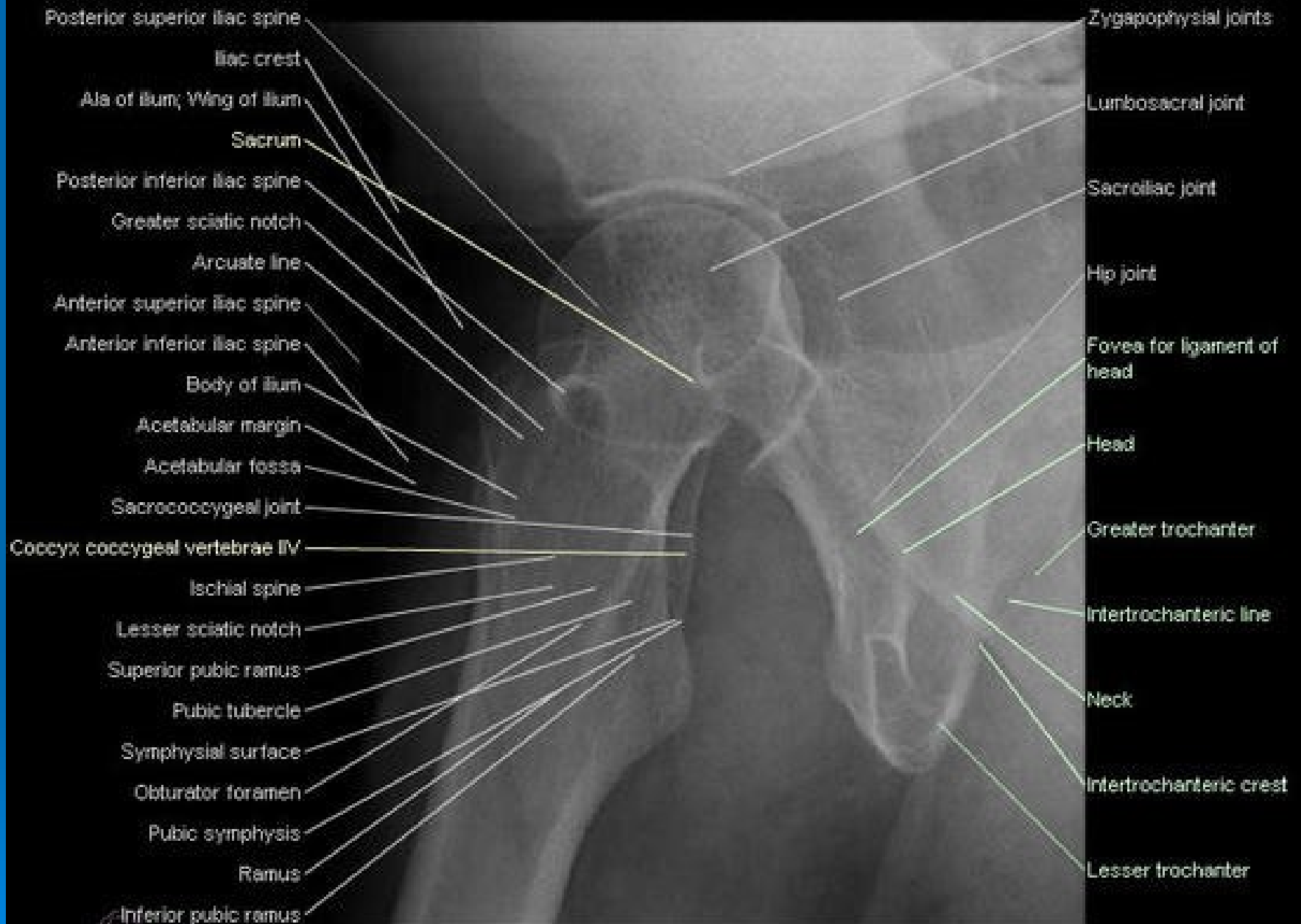
trochanteric fossa

quadratus tubercle

intertrochanteric crest

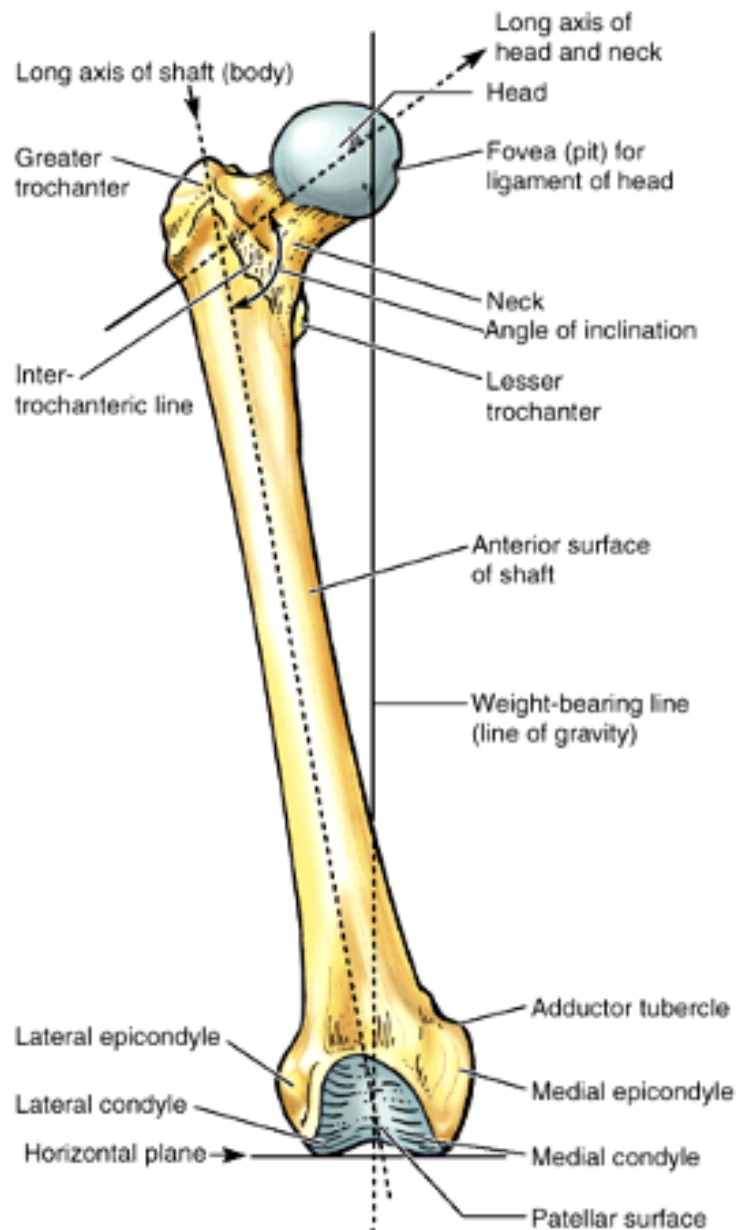
intertrochanteric line

gluteal tuberosity

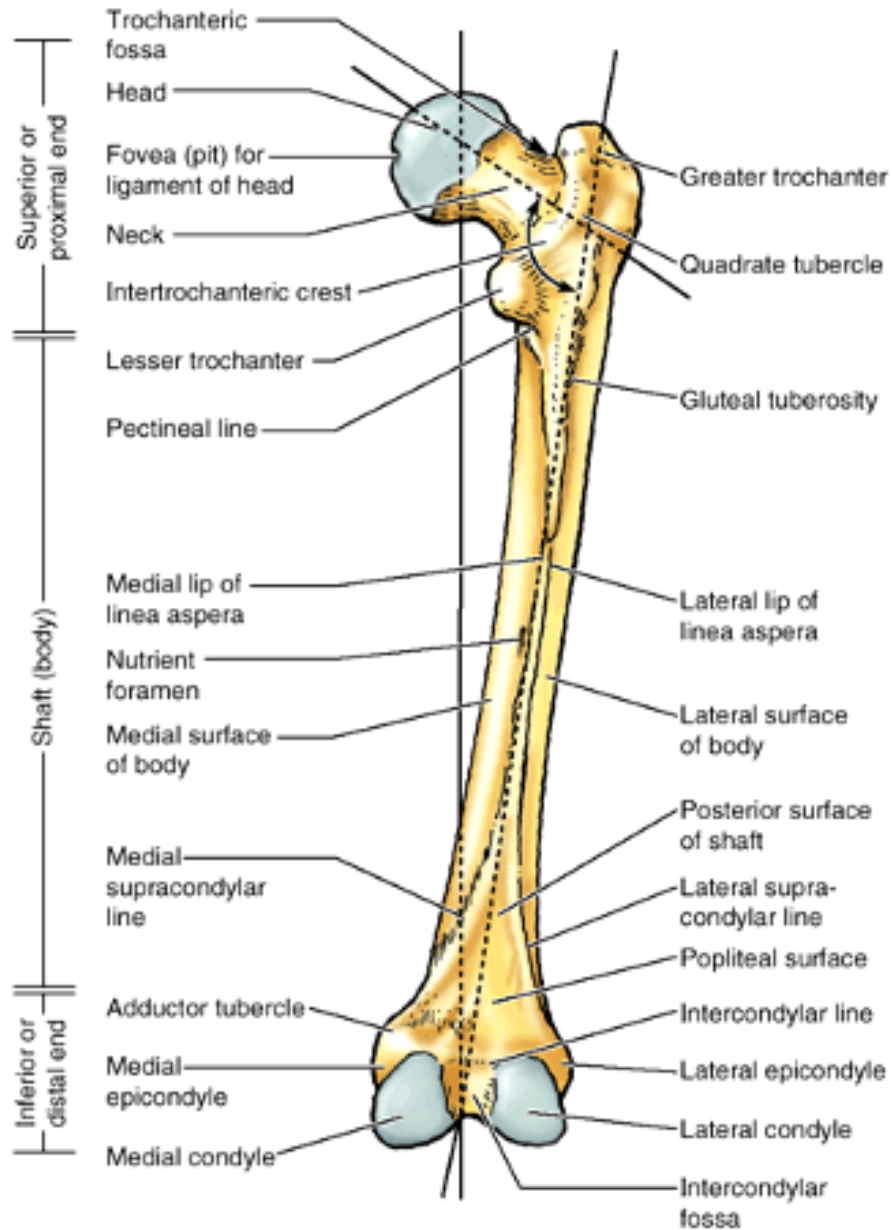




- **Diaphysis**
 - linea aspera
- **Distal epiphysis**
 - lateral condyle
 - medial condyle
 - intercondylar fossa
 - lateral epicondyle
 - medial epicondyle
 - adductor tubercle



(A) Anterior view of right femur

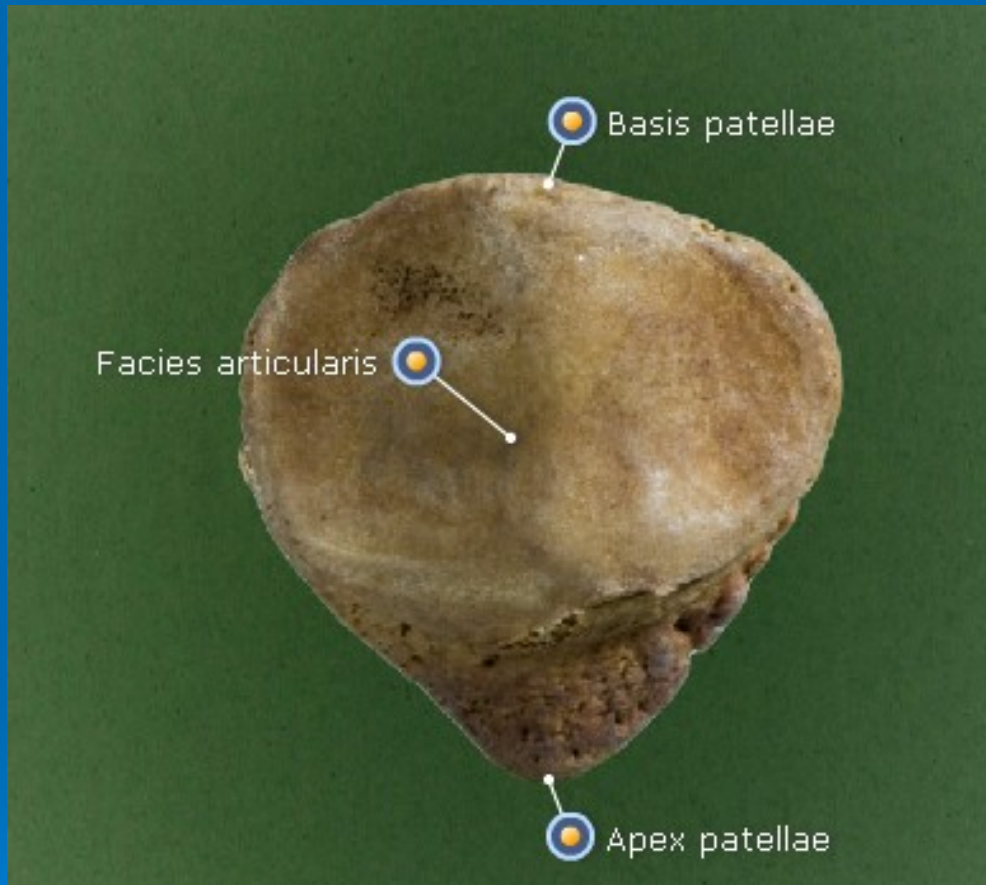


(B) Posterior view of right femur

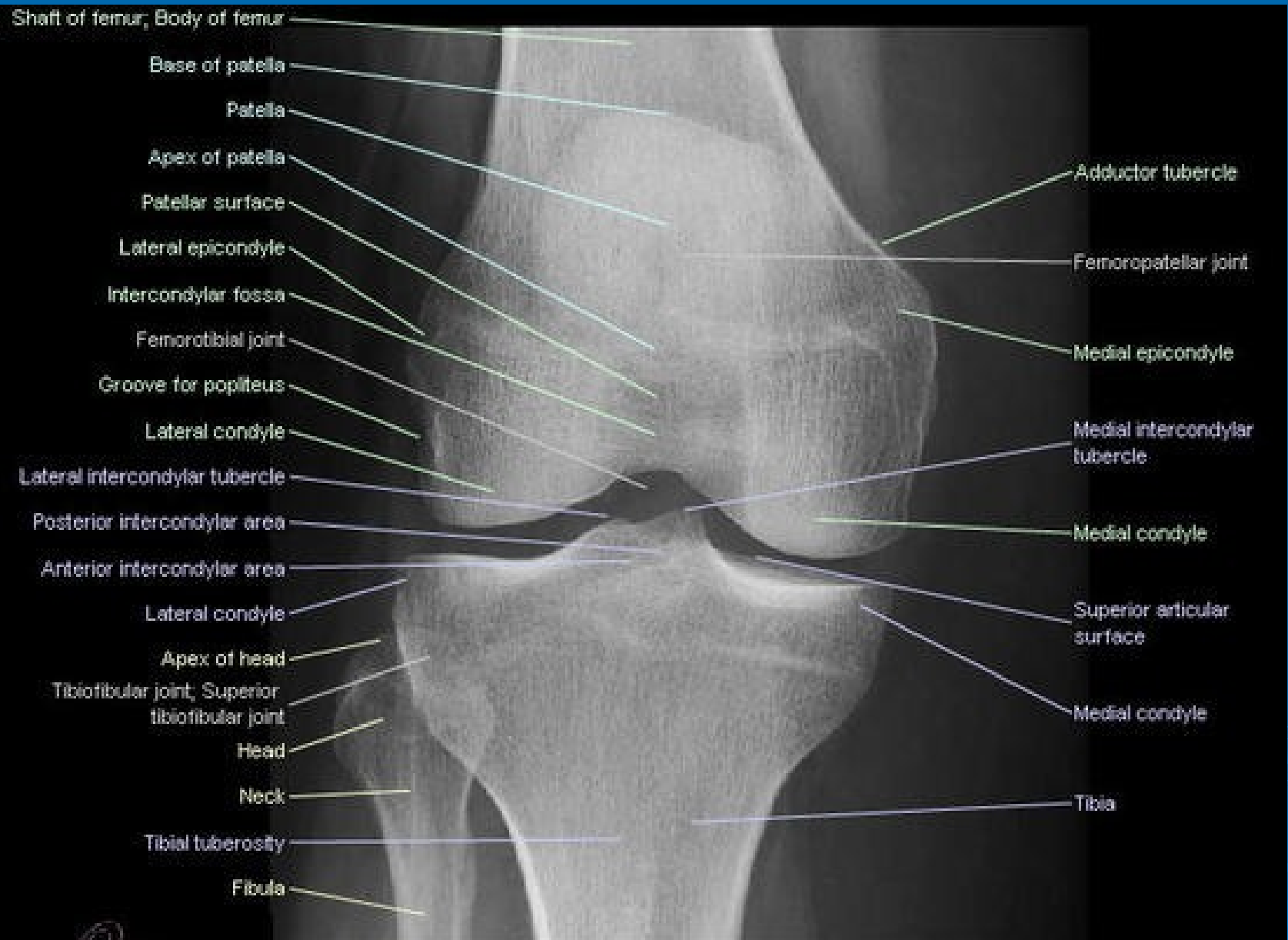
Patella

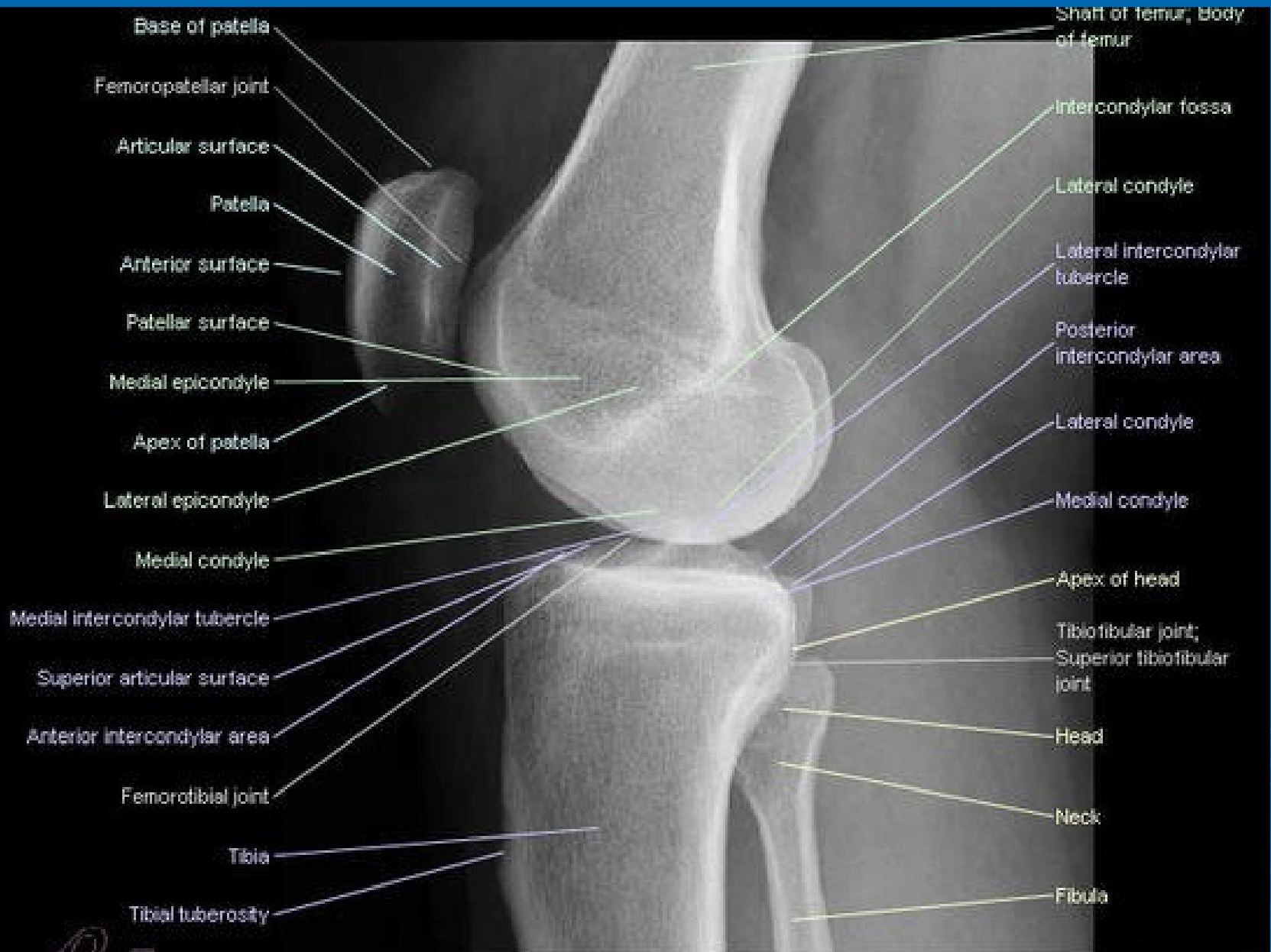
A sesamoid bone of a triangular shape embedded within the tendon of the quadriceps femoris muscle





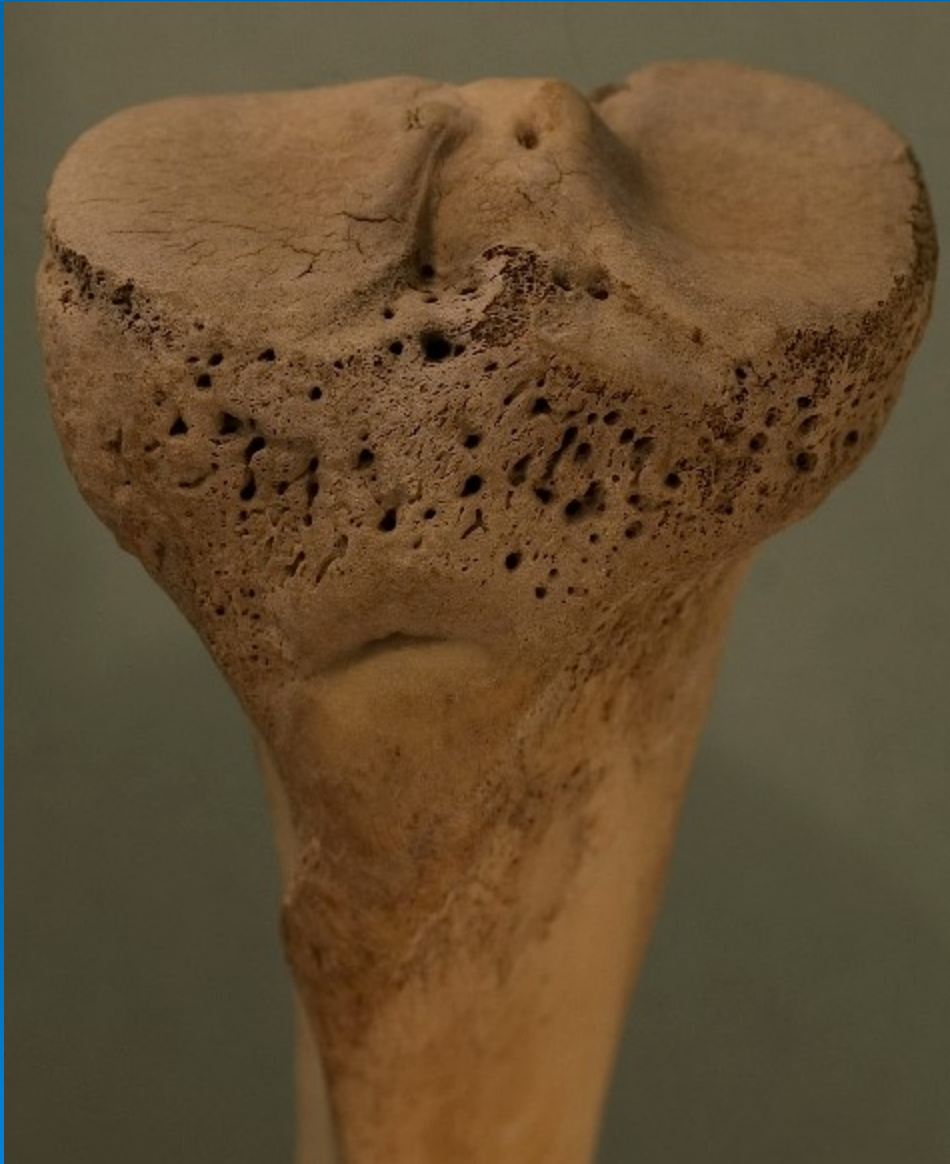
- **Base**
- **Apex**
- **Surface**
 - anterior
 - articular





Tibia – Shin bone





- **Proximal epiphysis**

- medial condyle

- lateral condyle

- intercondylar eminence

- fibular articular facet

- tibial tuberosity



- **Diaphysis**

- popliteal line

- anterior crest

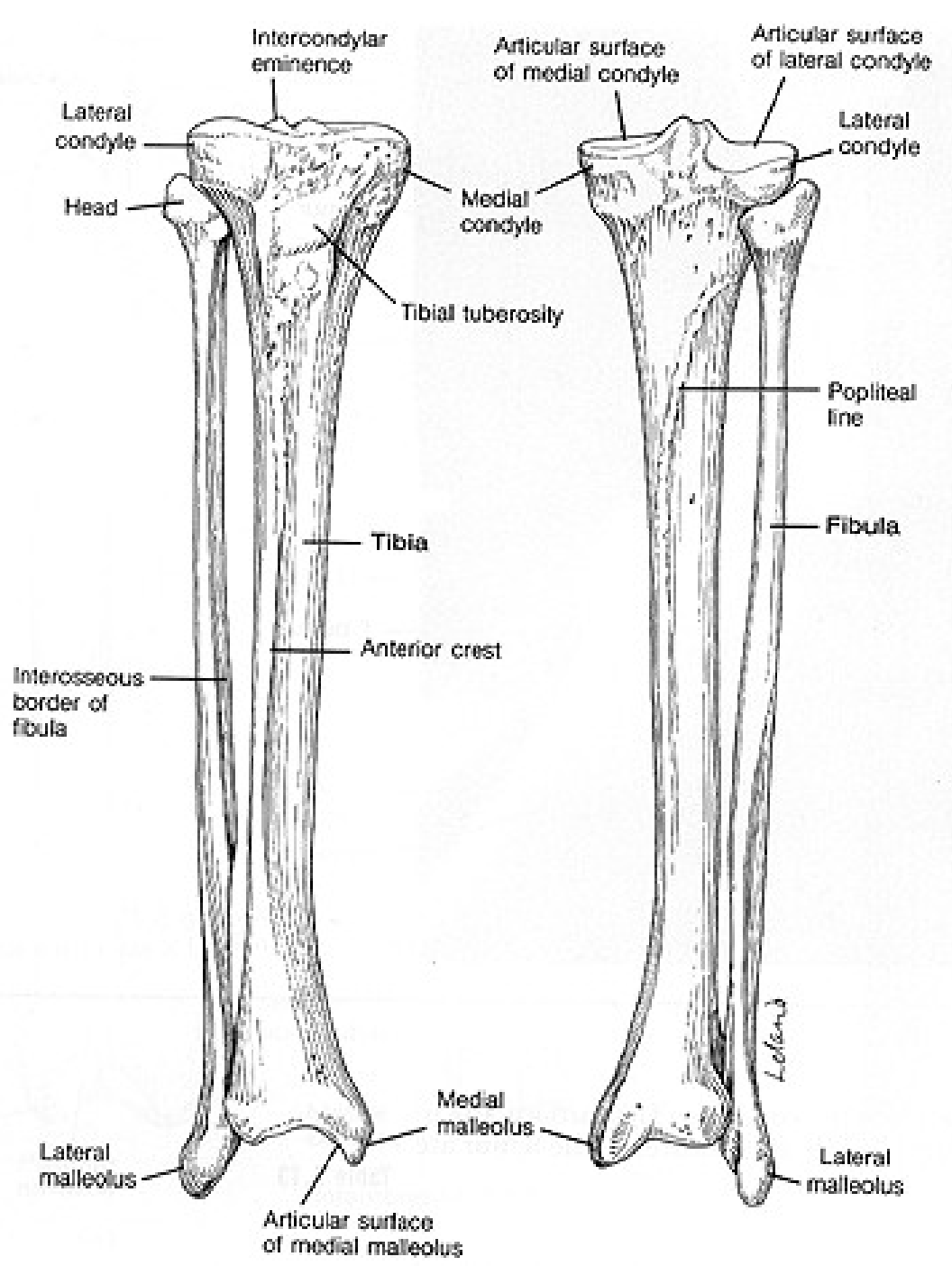
- interosseous crest

- medial border

- **Distal epiphysis**

- medial malleolus

- fibular notch

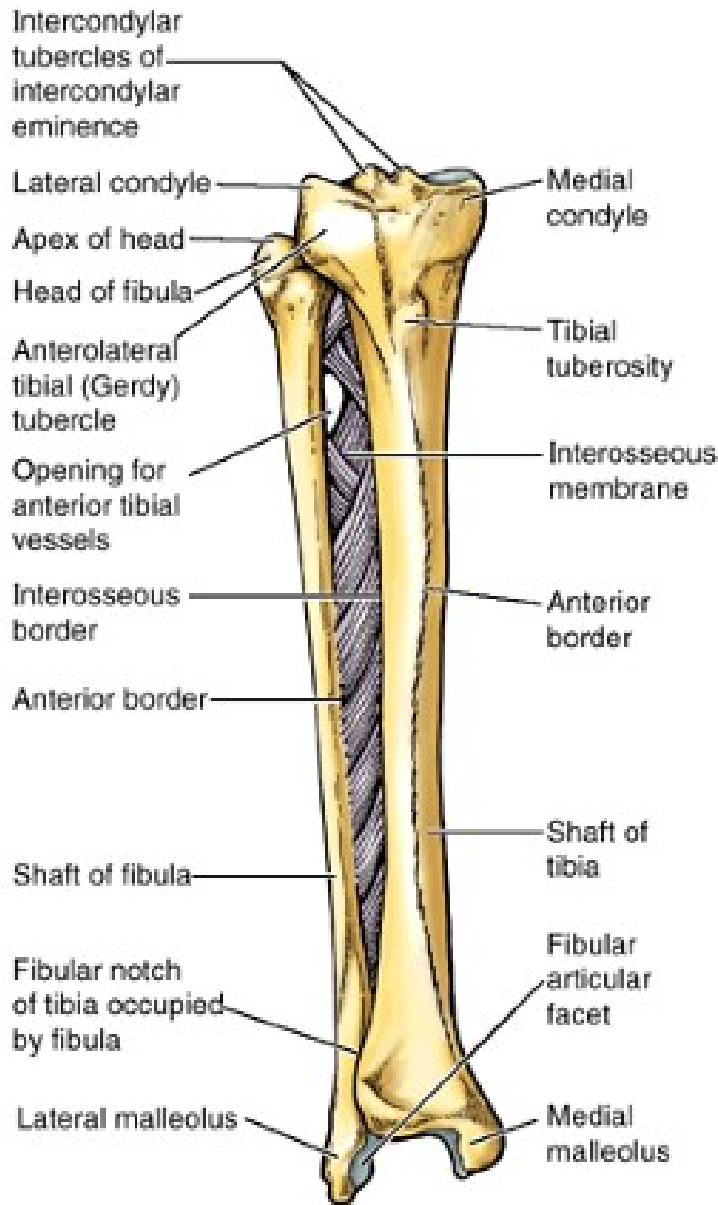


Fibula – Calf bone

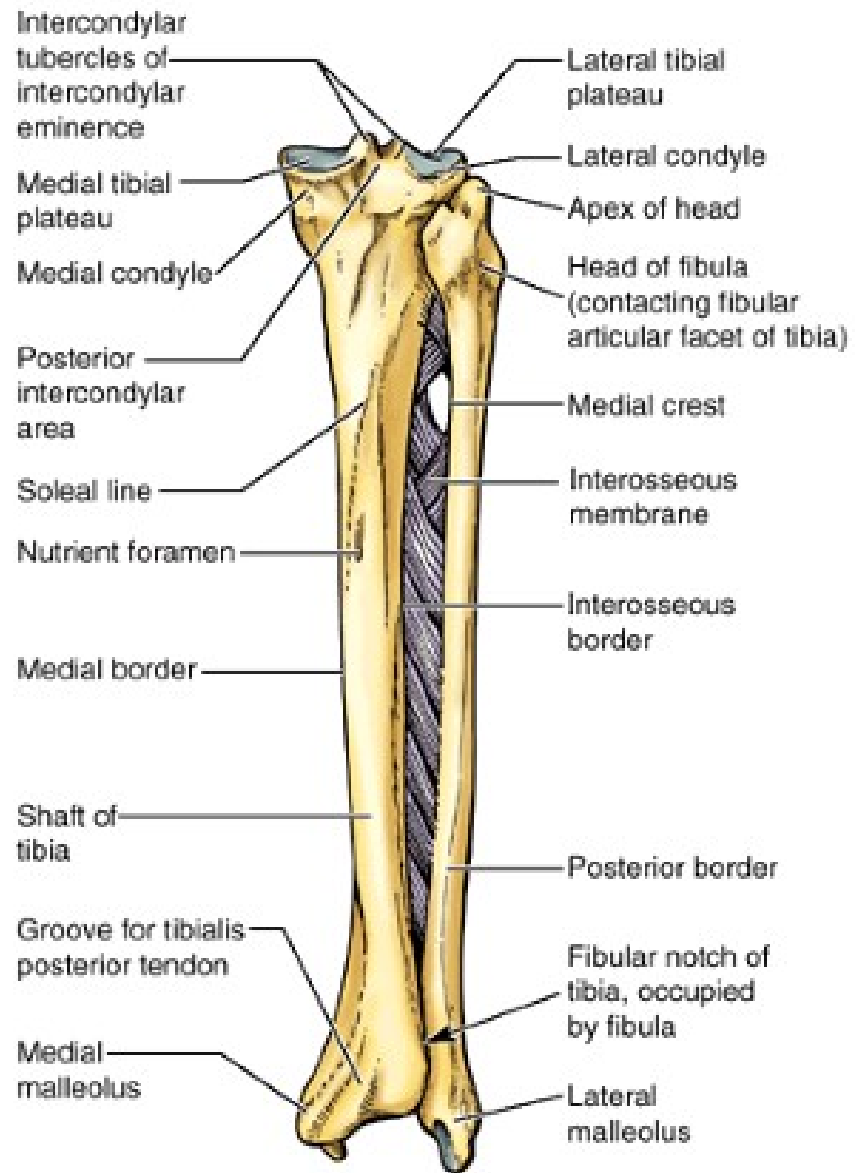




- **Proximal epiphysis**
 - styloid process
 - head
- **Diaphysis**
 - interosseous crest
 - anterior crest
- **Distal epiphysis**
 - lateral malleolus
 - malleolar fossa



Anterior view (right side)

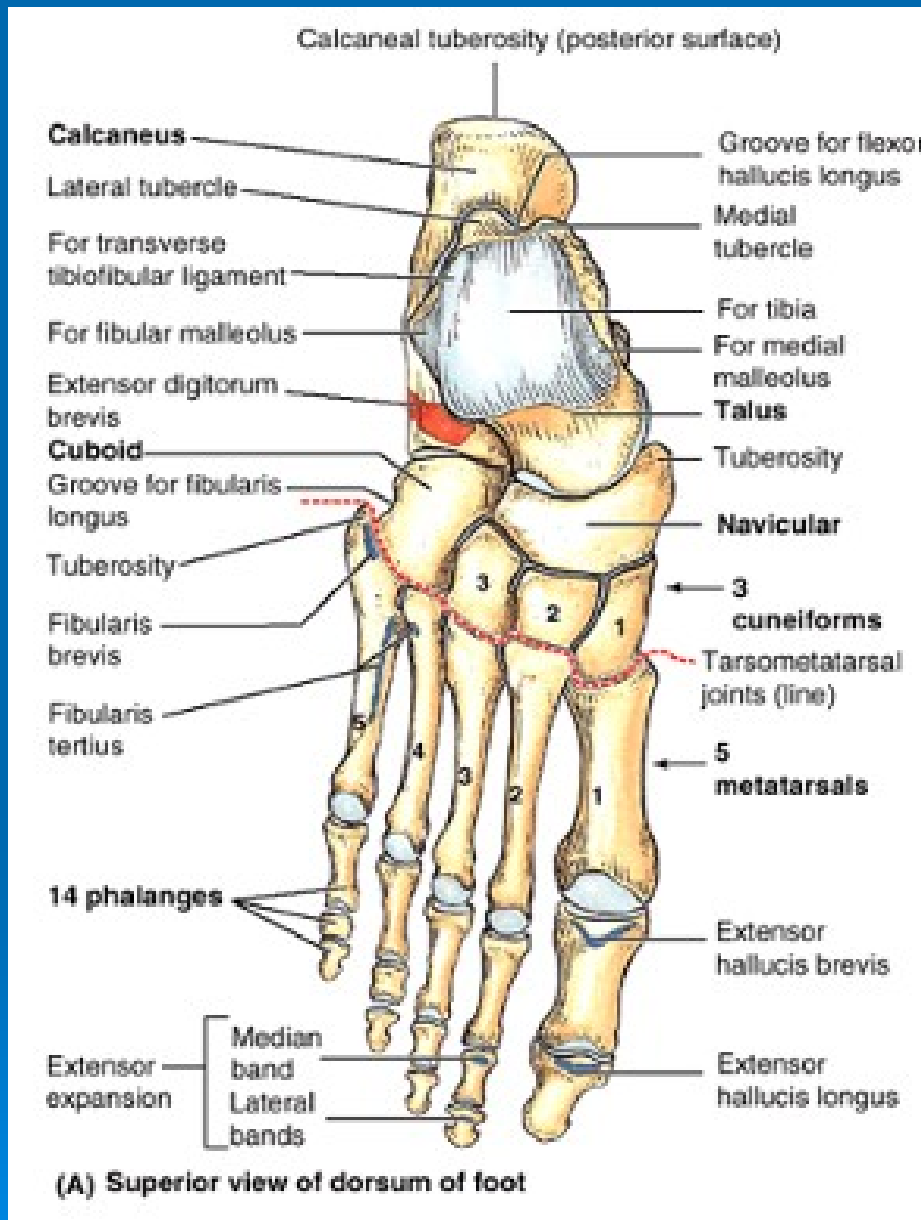


Posterior view (right side)



Tarsal bones, Metatarsals & Phalanges





- **Talus**

trochlea

neck

head

- **Calcaneus**

sustentaculum tali

tuberosity

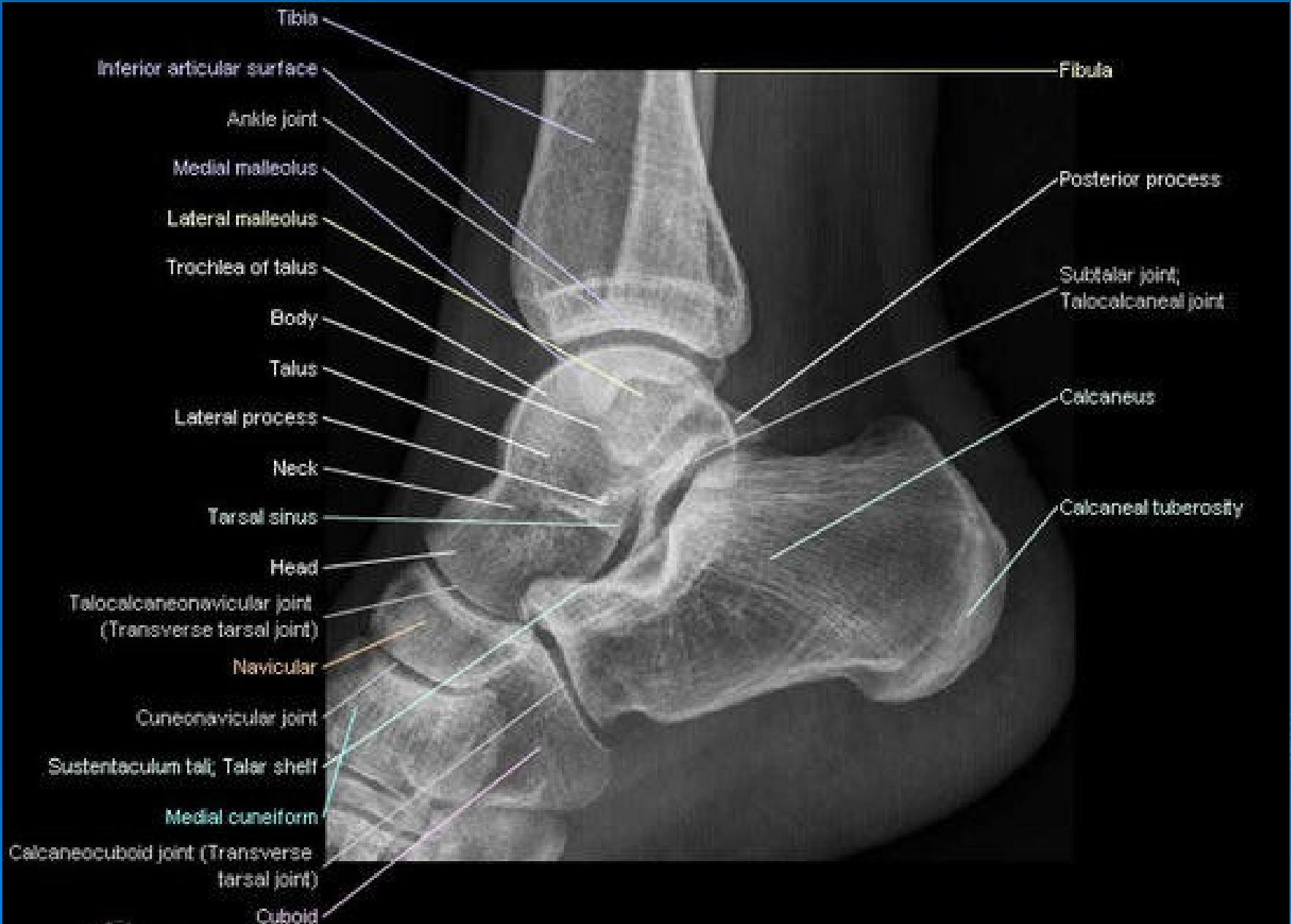
- **Navicular**

- **Cuboid**

- **Cuneiform medial**

- **Cuneiform intermediate**

- **Cuneiform lateral**



Tibia

Fibula

Inferior articular surface

Ankle joint

Posterior process

Medial malleolus

Subtalar joint;
Talocalcaneal joint

Lateral malleolus

Trochlea of talus

Calcaneus

Body

Talus

Lateral process

Calcaneal tuberosity

Neck

Tarsal sinus

Head

Talocalcaneonavicular joint
(Transverse tarsal joint)

Navicular

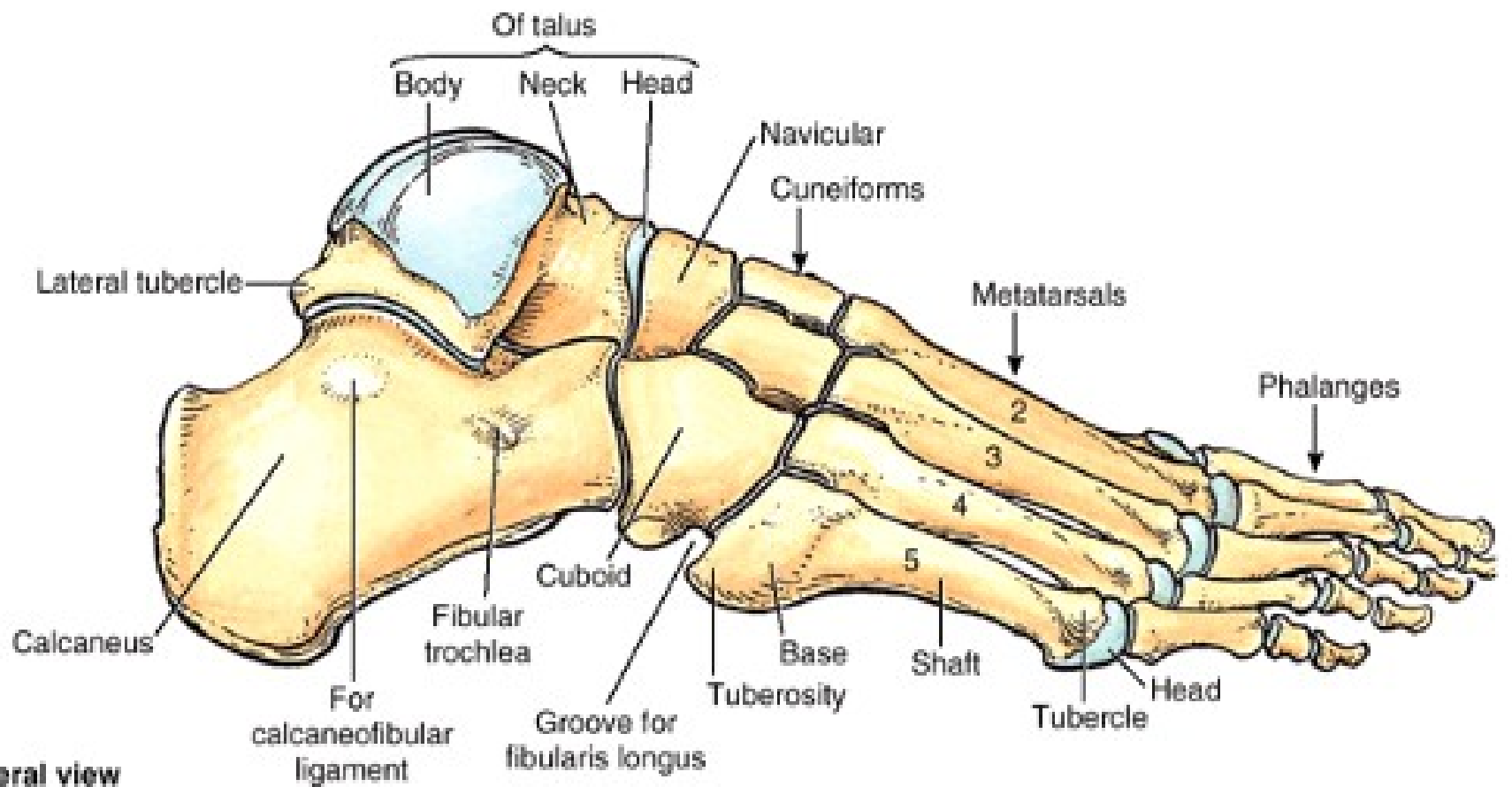
Cuneonavicular joint

Sustentaculum tali; Talar shelf

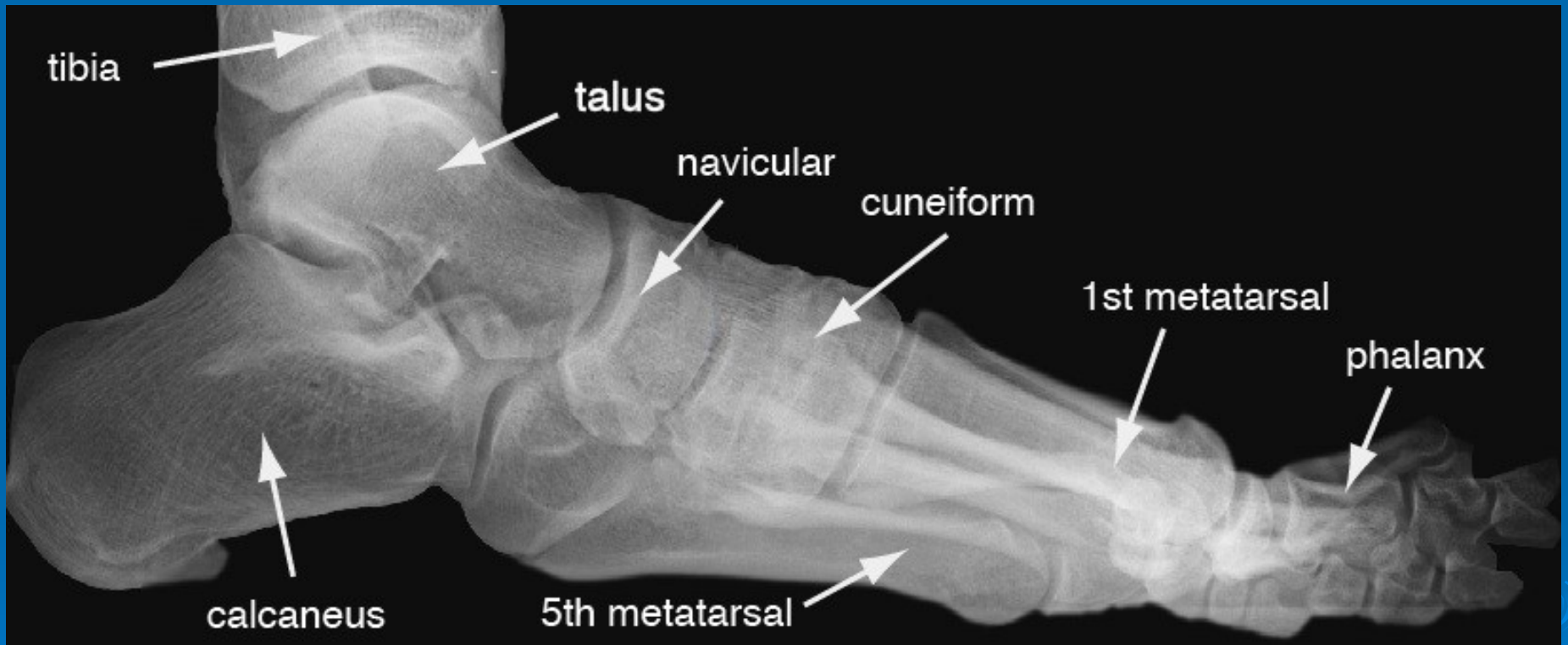
Medial cuneiform

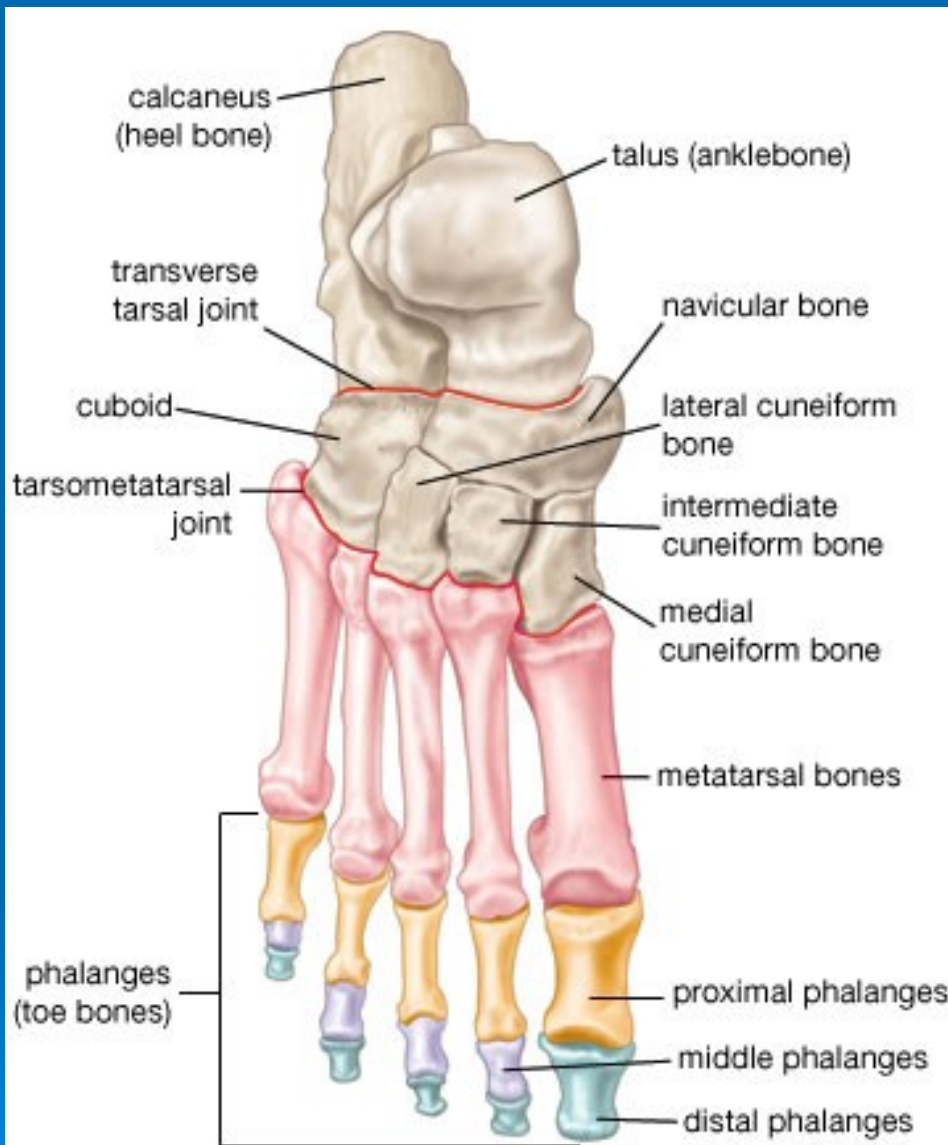
Calcaneocuboid joint (Transverse
tarsal joint)

Cuboid



(C) Lateral view





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- **Metatarsals**

5 bones

- **Phalanges**

proximal

middle (except toe)

distal

