

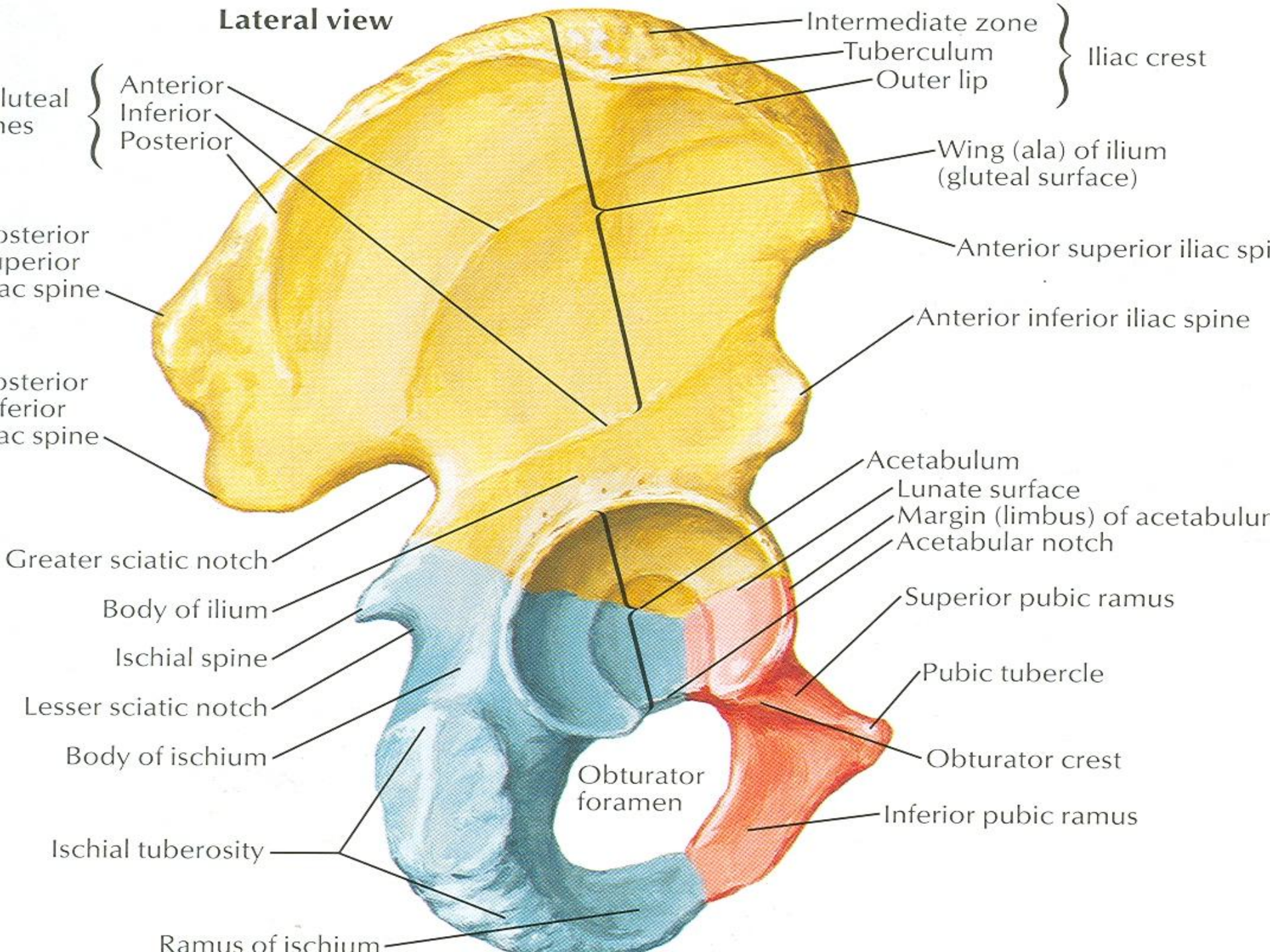
Anatomy of Hip Joint

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Articulation

- The hip joint is the articulation between the hemispherical head of femur and the cup shaped acetabulum of the hip bone
- The articular surface of the acetabulum is horseshoe shaped and is deficient inferiorly at the acetabular notch

Lateral view



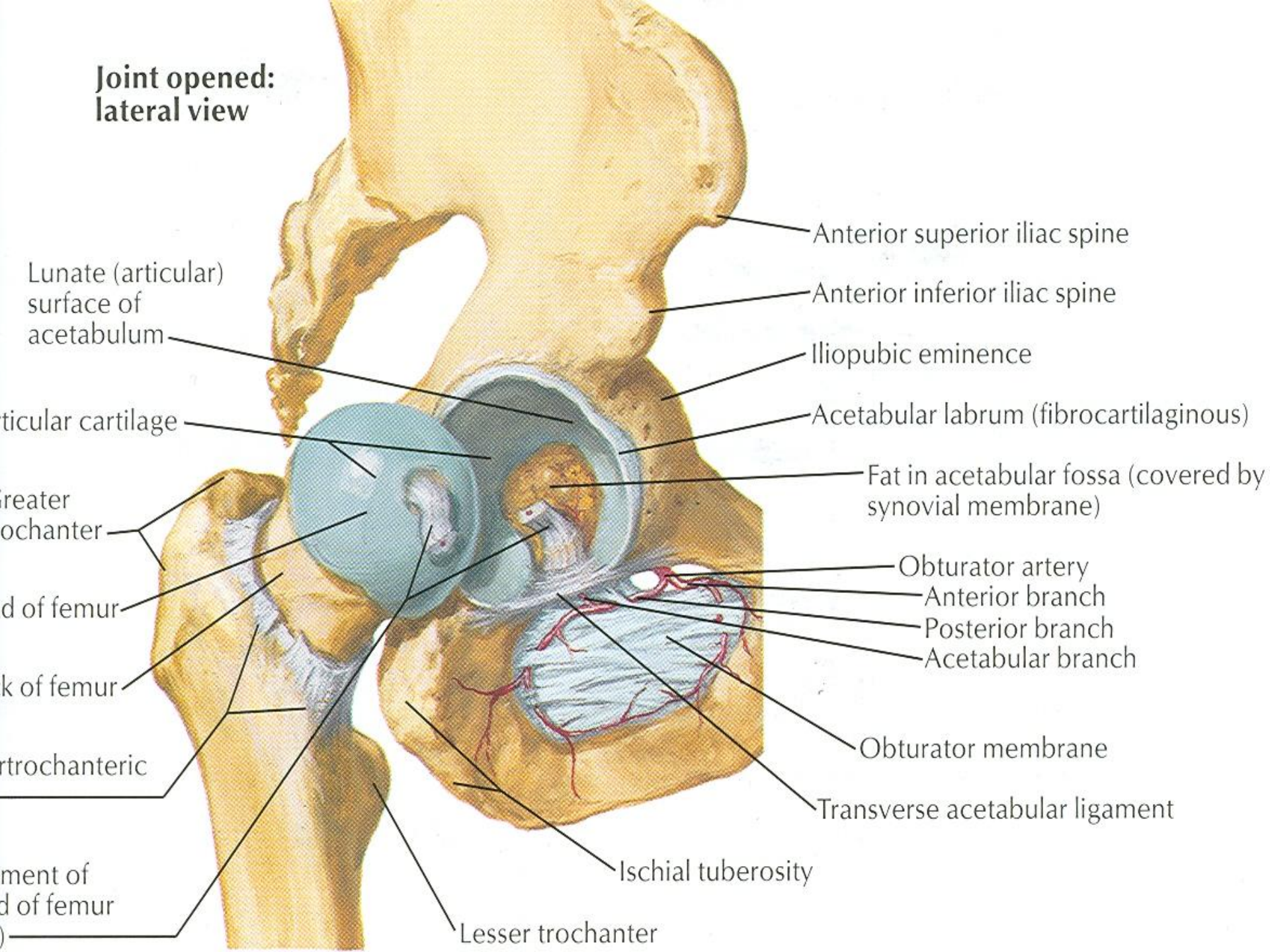
Articulation

- The cavity of acetabulum is deepened by the presence of a fibrocartilaginous rim called acetabular labrum
- The labrum bridges across the acetabular notch and is here called the transverse acetabular ligament
- The articular surfaces are covered with hyaline cartilage

Type & Capsule

- It is a synovial ball and socket joint
- The capsule encloses the joint and is attached to the acetabular labrum medially
- Laterally it is attached to the intertrochanteric line of the femur in front and along the posterior aspect of the neck of the bone behind

**Joint opened:
lateral view**



Lunate (articular)
surface of
acetabulum

Articular cartilage

Greater
trochanter

Head of femur

Neck of femur

Intertrochanteric

Distal end of femur

Anterior superior iliac spine

Anterior inferior iliac spine

Iliopubic eminence

Acetabular labrum (fibrocartilaginous)

Fat in acetabular fossa (covered by
synovial membrane)

Obturator artery

Anterior branch

Posterior branch

Acetabular branch

Obturator membrane

Transverse acetabular ligament

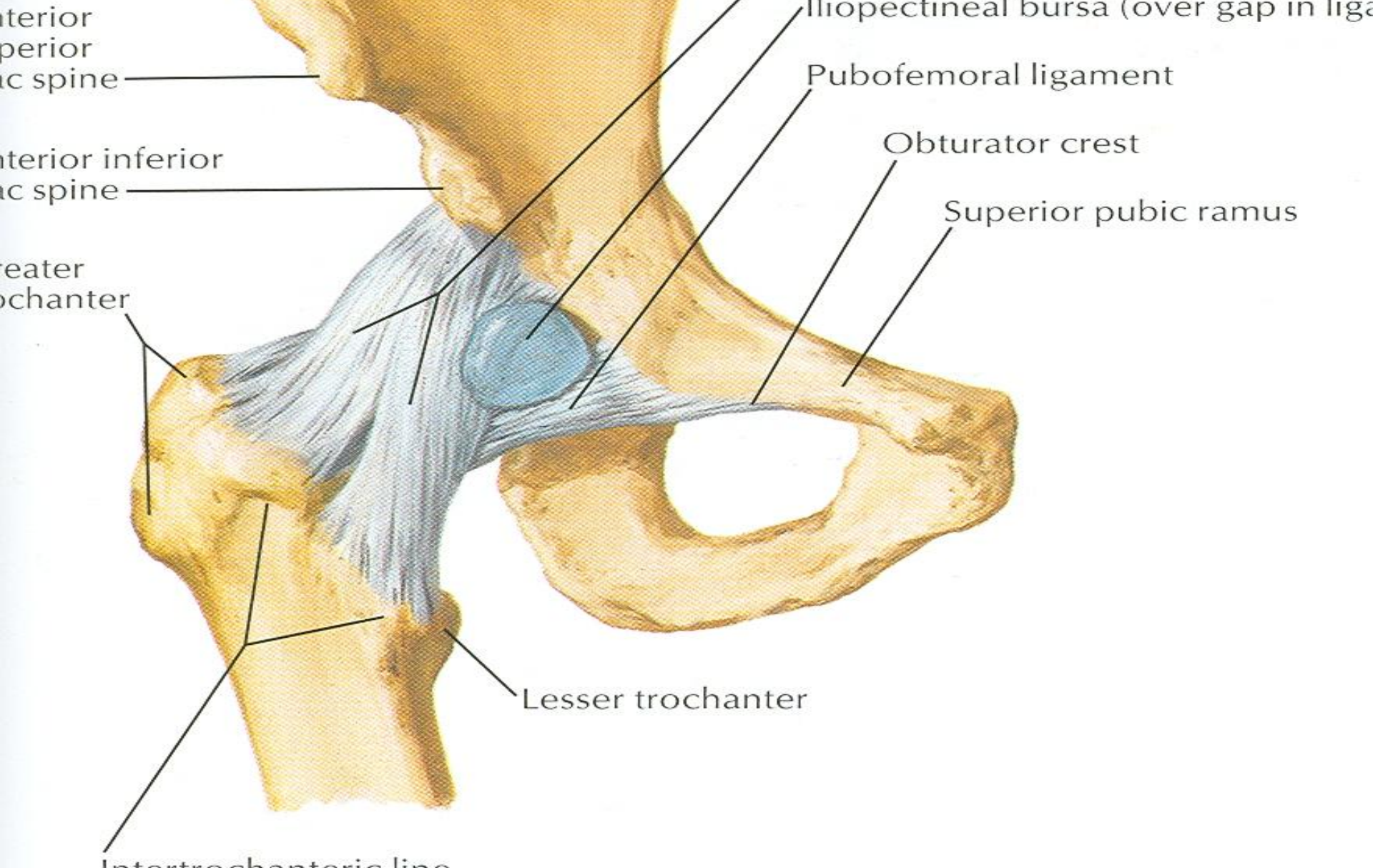
Ischial tuberosity

Lesser trochanter

Iliofemoral Ligaments

- It is a strong, inverted Y-shaped ligament
- Its base is attached to the anterior inferior iliac spine above
- Below the two limbs of Y are attached to the upper and lower parts of the intertrochanteric line of the femur
- The strong ligament prevents overextension during standing

Anterior view



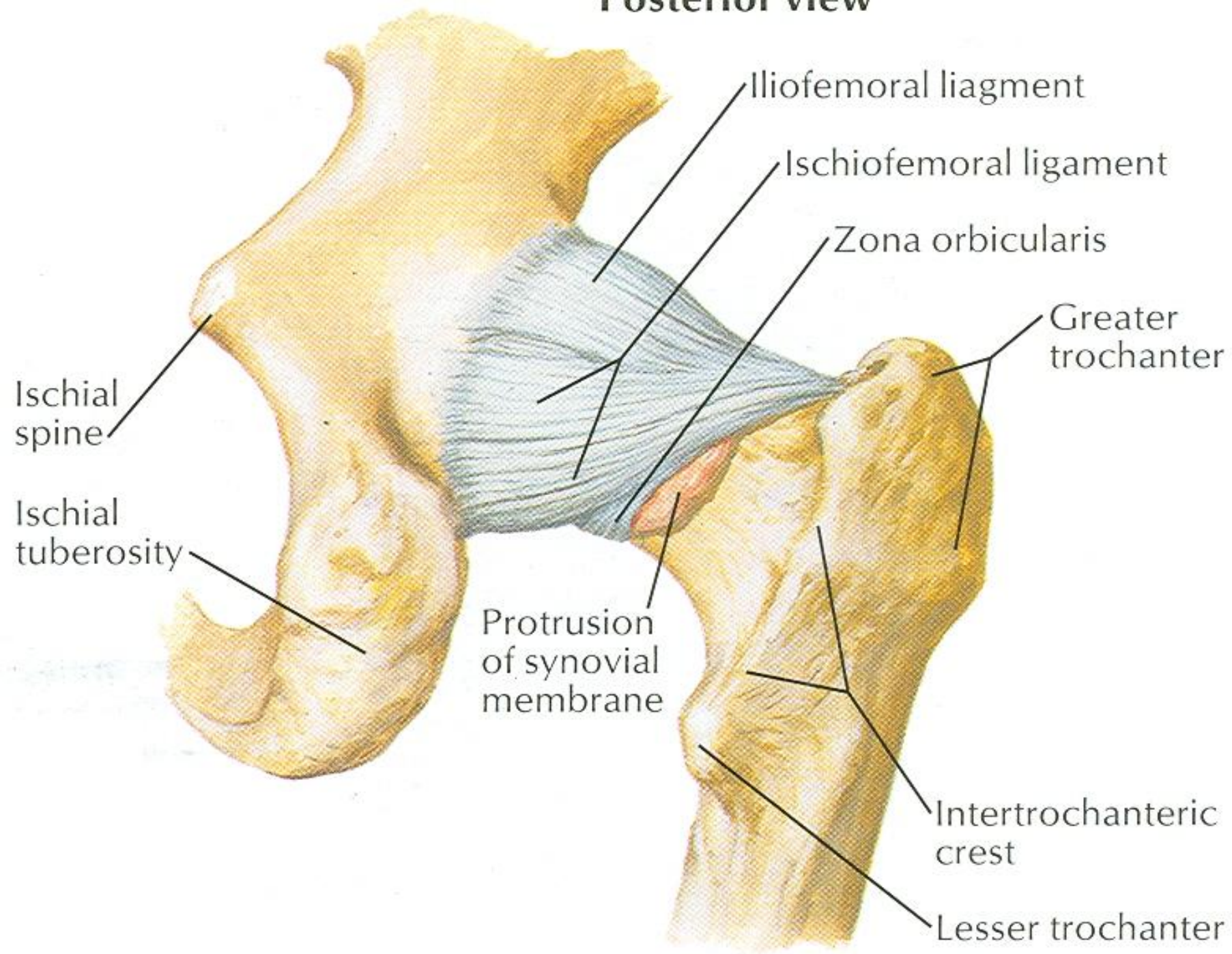
Pubofemoral Ligament

- It is a triangular ligament
- The base of the ligament is attached to the superior ramus of the pubis
- The apex is attached below to the lower part of the intertrochanteric line
- This ligament limits extension and abduction

Ischiofemoral Ligament

- It is a spiral shaped ligament
- Attached to the body of the ischium near the acetabular margin
- Fibers pass upward and laterally and attached to the greater trochanter
- This ligament limits the extension

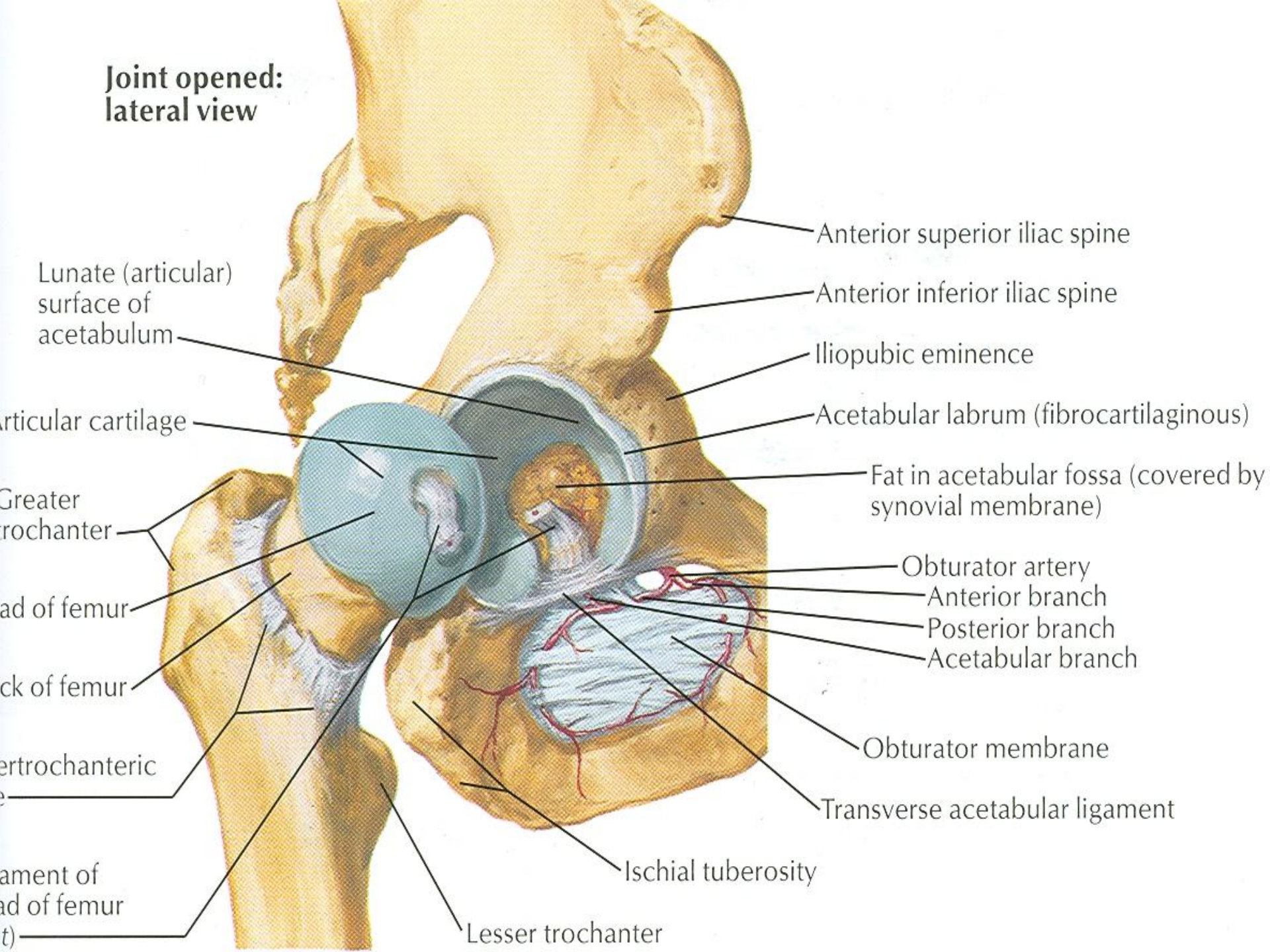
Posterior view



Transverse Acetabular Ligament

- It is formed by the acetabular labrum as it bridges the acetabular notch
- It converts the notch into a tunnel through which blood vessels and nerves enter the joint

**Joint opened:
lateral view**



Lunate (articular)
surface of
acetabulum

Articular cartilage

Greater
trochanter

Head of femur

Neck of femur

Intertrochanteric
line

Ligament of
head of femur
(t)

Anterior superior iliac spine

Anterior inferior iliac spine

Iliopubic eminence

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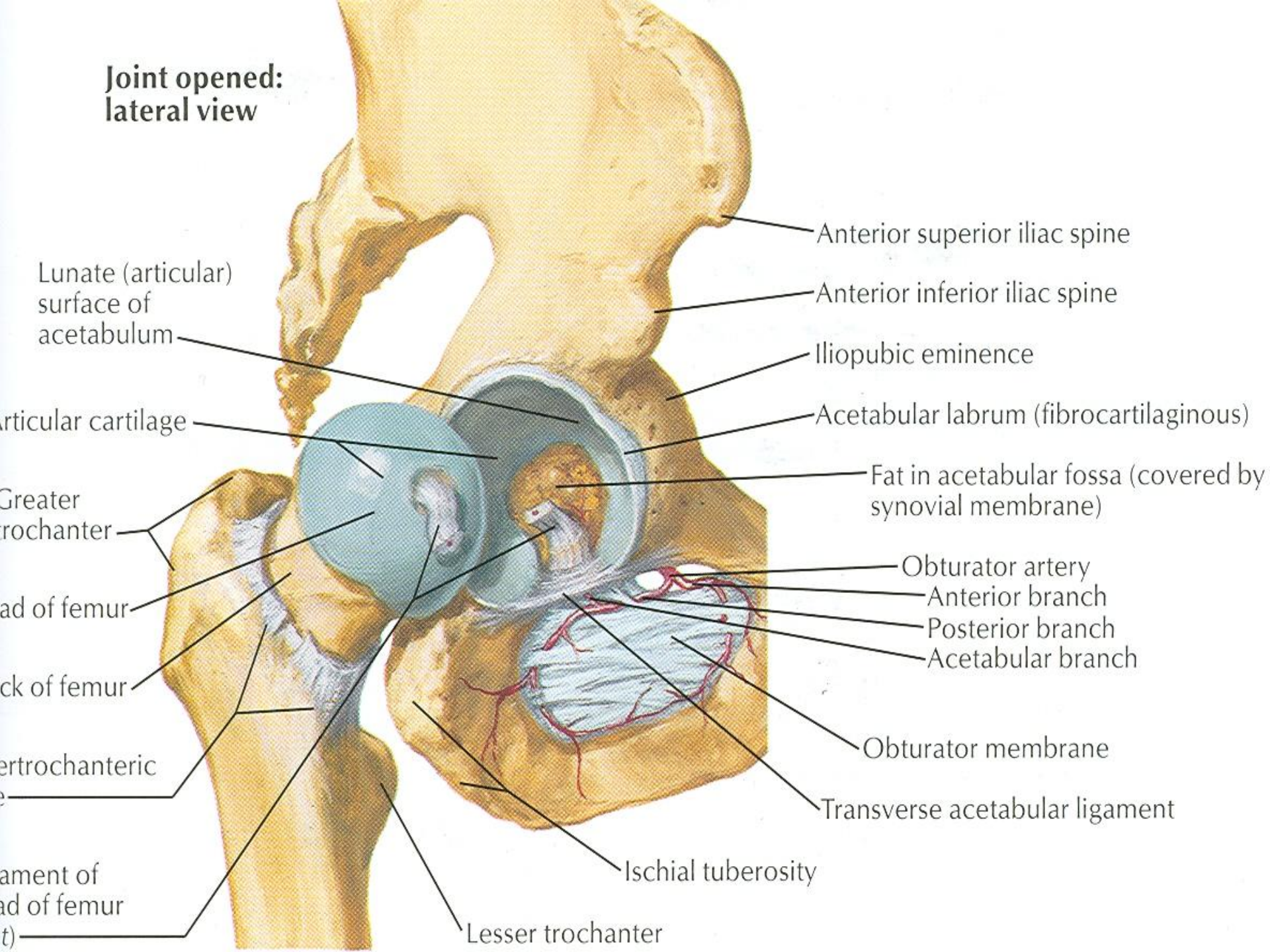
Ligament of Head of Femur

- It is flat and triangular ligament
- It is attached by its apex to the pit on the head of the femur (fovea capitis)
- Attached by its base to the transverse ligament and the margins of the acetabular notch
- It lies within the joint and is ensheathed by synovial membrane

Synovial Membrane

- The synovial membrane lines the capsule
- It is attached to the margins of the articular surfaces
- It covers the portion of the neck of the femur that lies within the joint capsule
- It ensheathes the ligament of the head of the femur

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lateral view**



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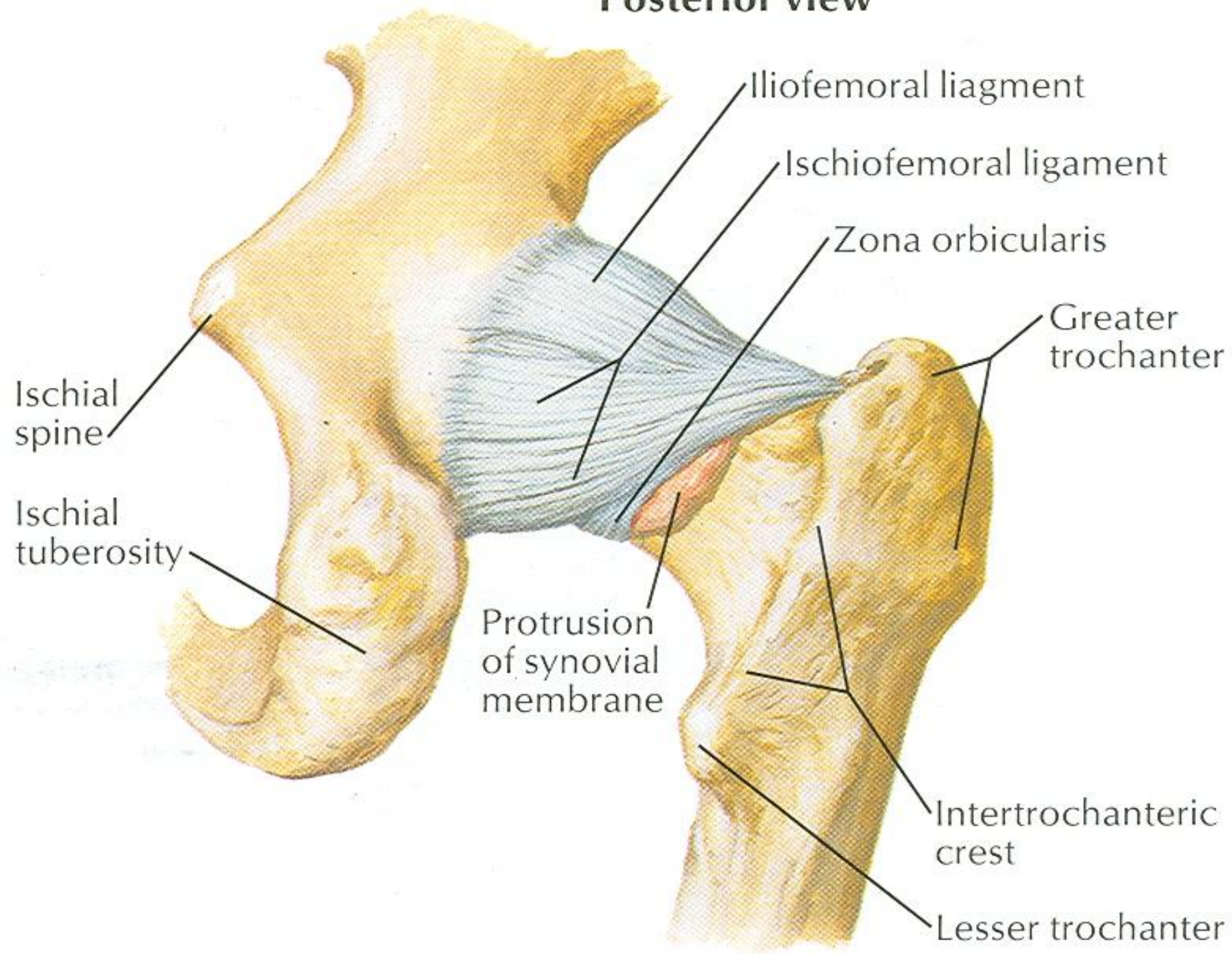
Transverse acetabular ligament

Ischial tuberosity

Synovial Membrane

- It covers the pad of fat contained in the acetabular fossa
- A pouch of synovial membrane frequently protrudes through a gap in the anterior wall of the capsule
- Forms the psoas bursa beneath the psoas tendon

Posterior view



Nerve Supply

- Femoral nerve
- Obturator nerve
- Sciatic nerve
- Nerve to the quadratus femoris

Movements

- The hip joint has a wide range of movement but less so than the shoulder joint
- Some of the movement has been sacrificed to provide strength and stability
- The strength of the joint depends largely on the shape of the bones taking part in the articulation and on strong ligaments

Movements

- Flexion: It is performed by the iliopsoas, rectus femoris, sartorius, also by adductor muscles
- Extension: it is performed by the gluteus maximus and the hamstring muscles
- Abduction: It is performed by the gluteus medius and minimus, assisted by sartorius, tensor fasciae latae, and piriformis

Movements

- Adduction: It is performed by the adductor longus and brevis and the adductor fibers of the adductor magnus
- Lateral rotation: It is performed by the piriformis, obturator internus and externus, superior and inferior gemelli
- Medial rotation: It is performed by the anterior fibers of gluteus medius and gluteus minimus and the tensor fasciae latae
- Circumduction: It is a combination of the previous movements

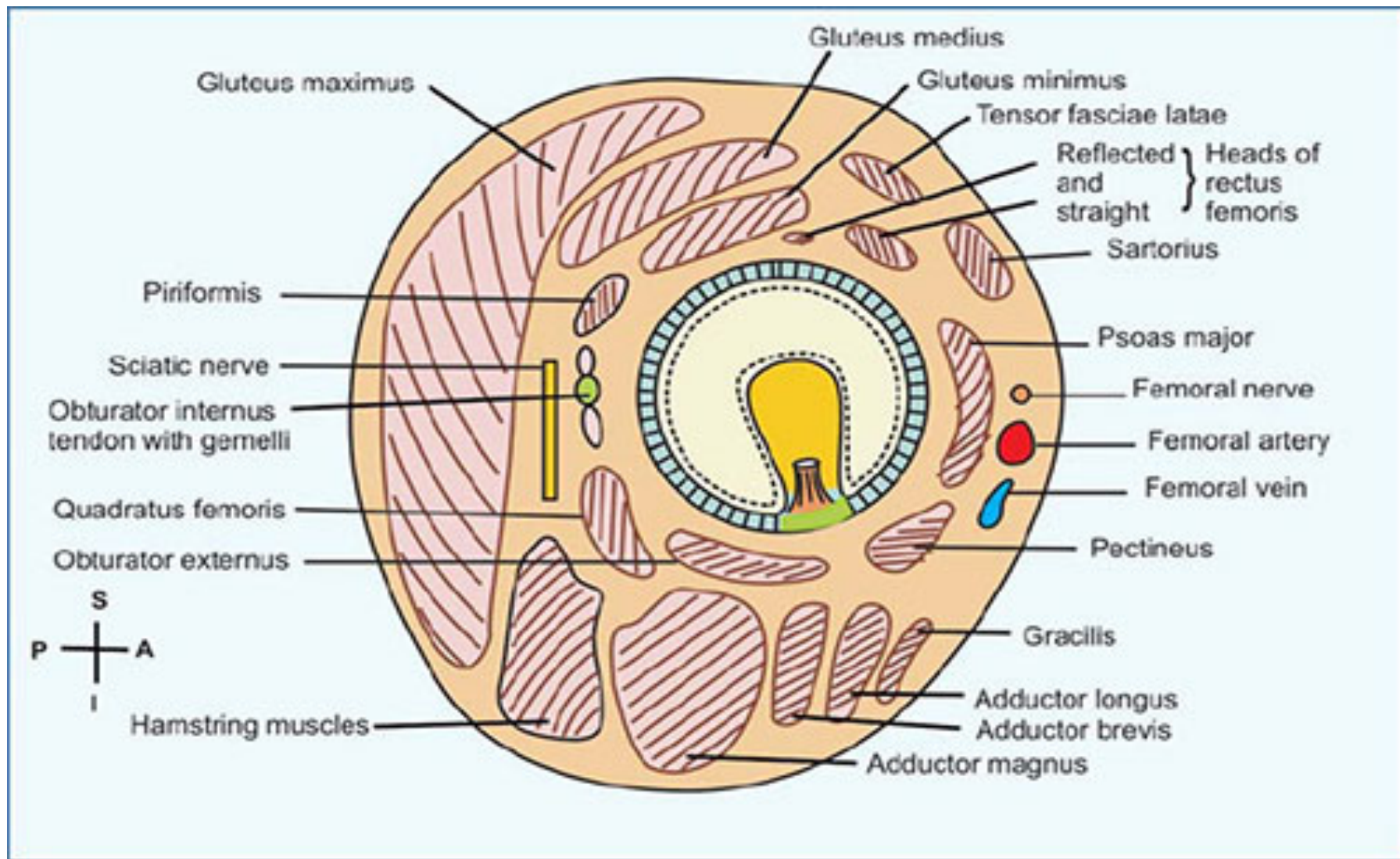
Movements

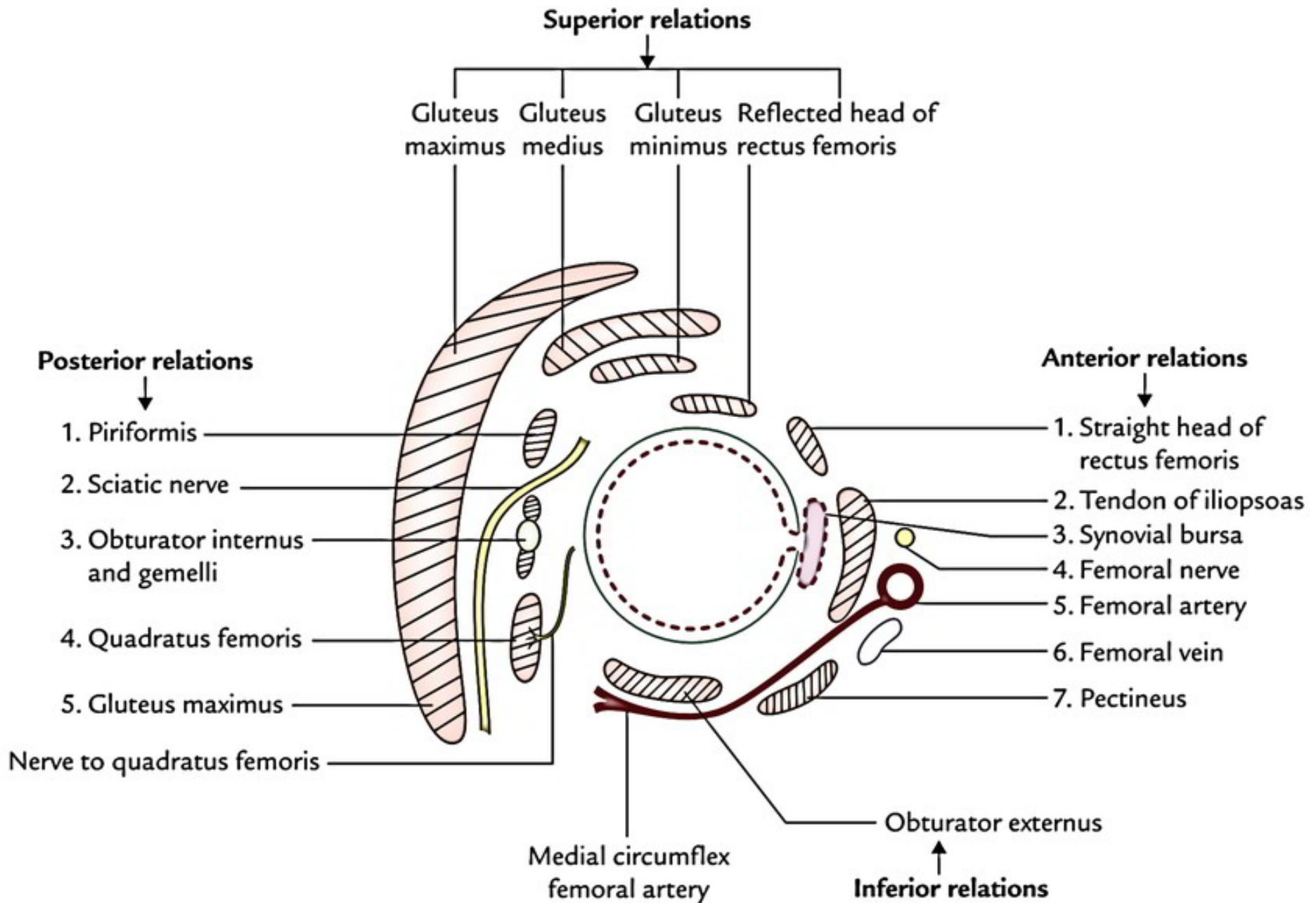
- The extensor group of muscles is more powerful than the flexor group
- The lateral rotators are more powerful than the medial rotators

Relations

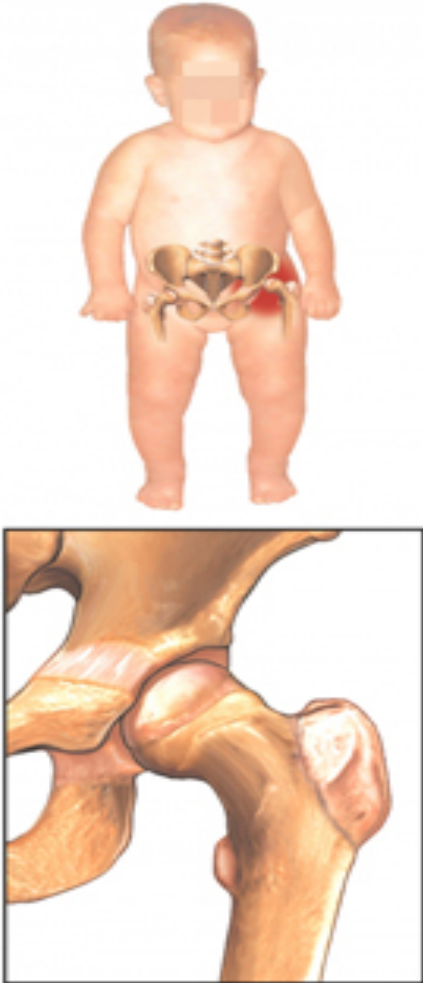
- Anteriorly: Iliopsoas, pectineus, and rectus femoris
- Posteriorly: The obturator internus, the gemelli, and the quadratus femoris muscle separate the joint from sciatic nerve
- Superiorly: Piriformis and gluteus minimus
- Inferiorly: Obturator externus tendon

Relations of Hip joint

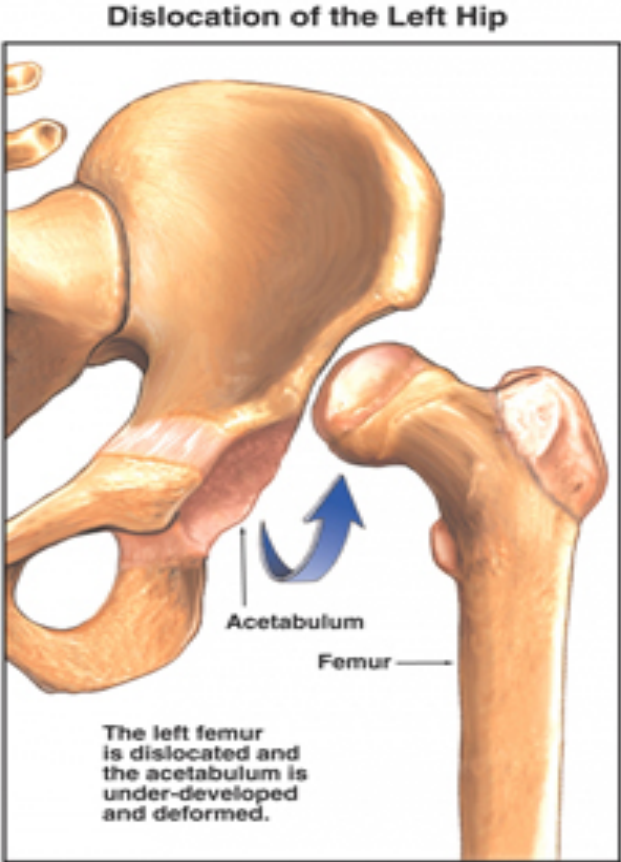




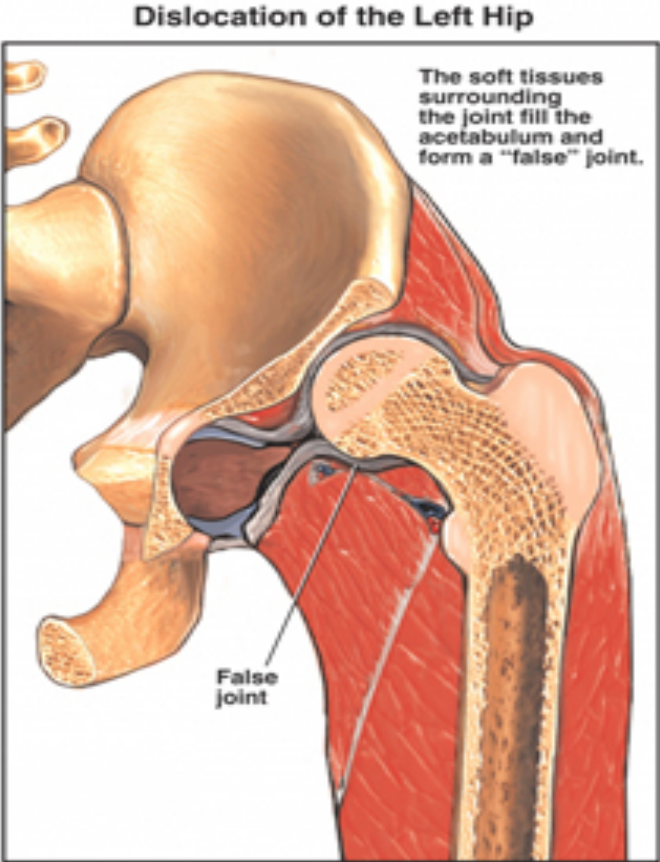
Congenital dislocation of hip joint



Anatomy of a Normal Left Hip



Anterior view of the left hip



Cut-away view of the left hip

Traumatic dislocation of hip joint



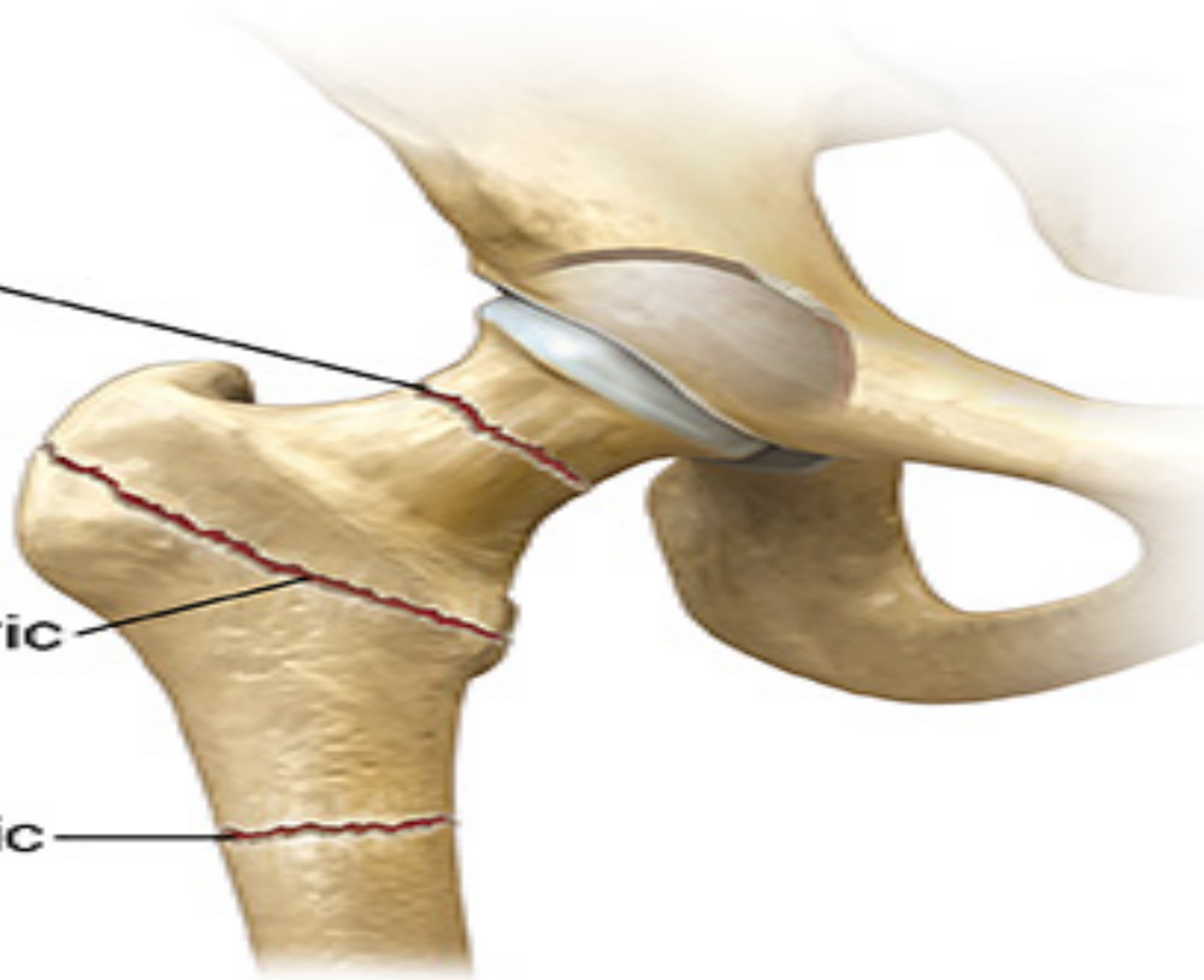
Fracture neck of femur

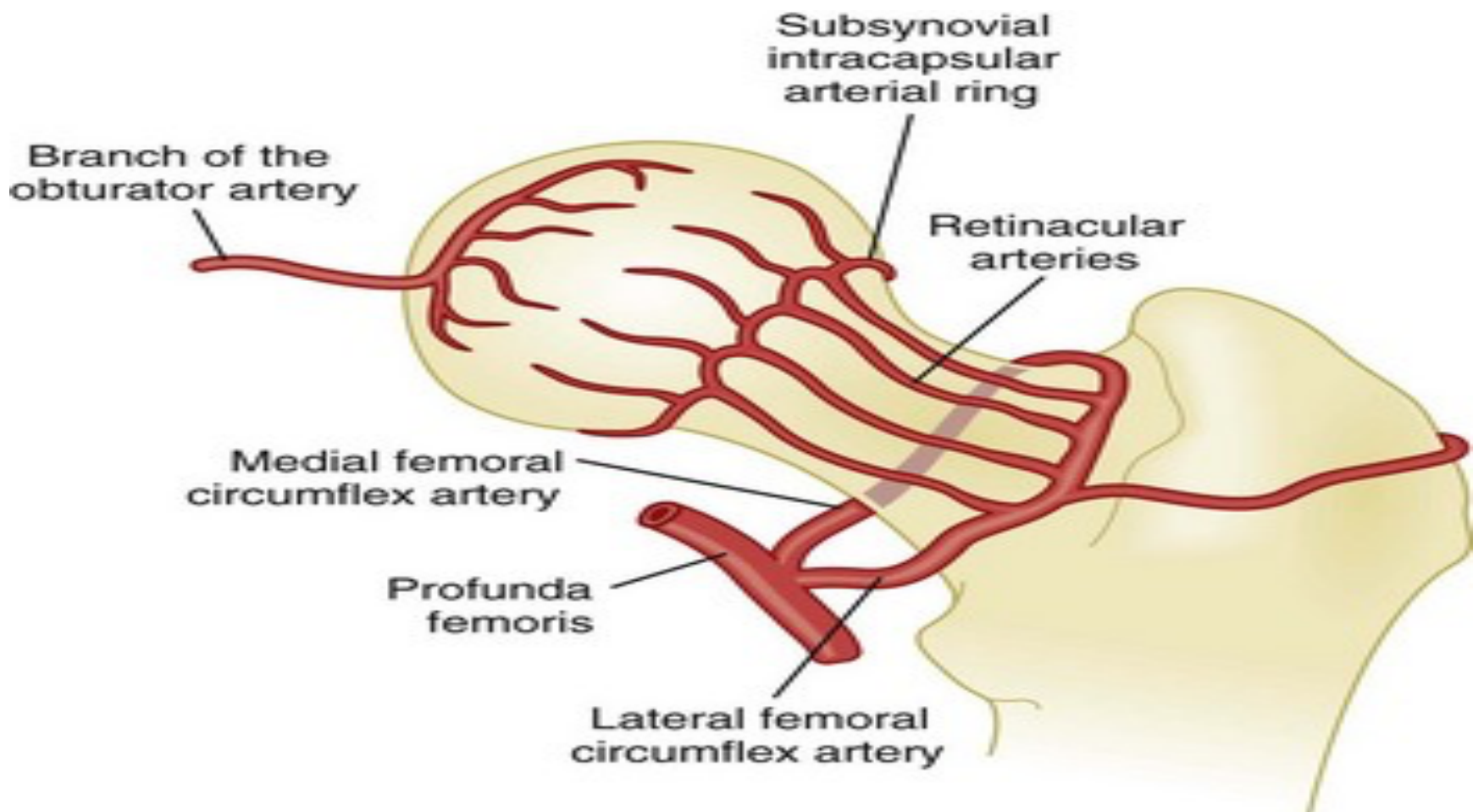


**Transcervical
fracture**

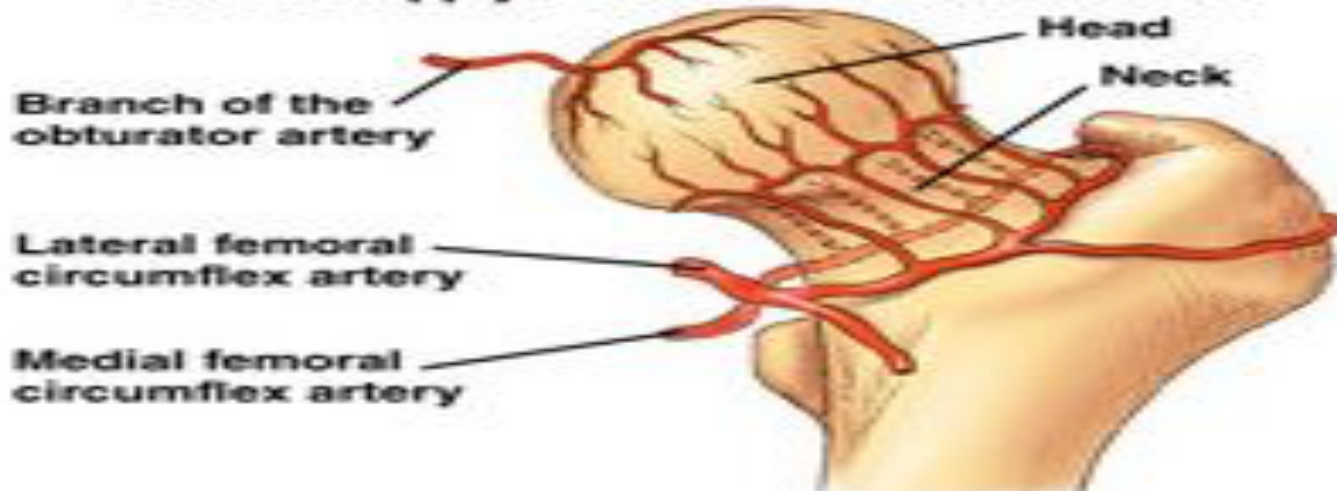
**Intertrochanteric
fracture**

**Subtrochanteric
fracture**





Blood Supply to Head and Neck of Femur



Normal Head

Avascular Necrosis Head

