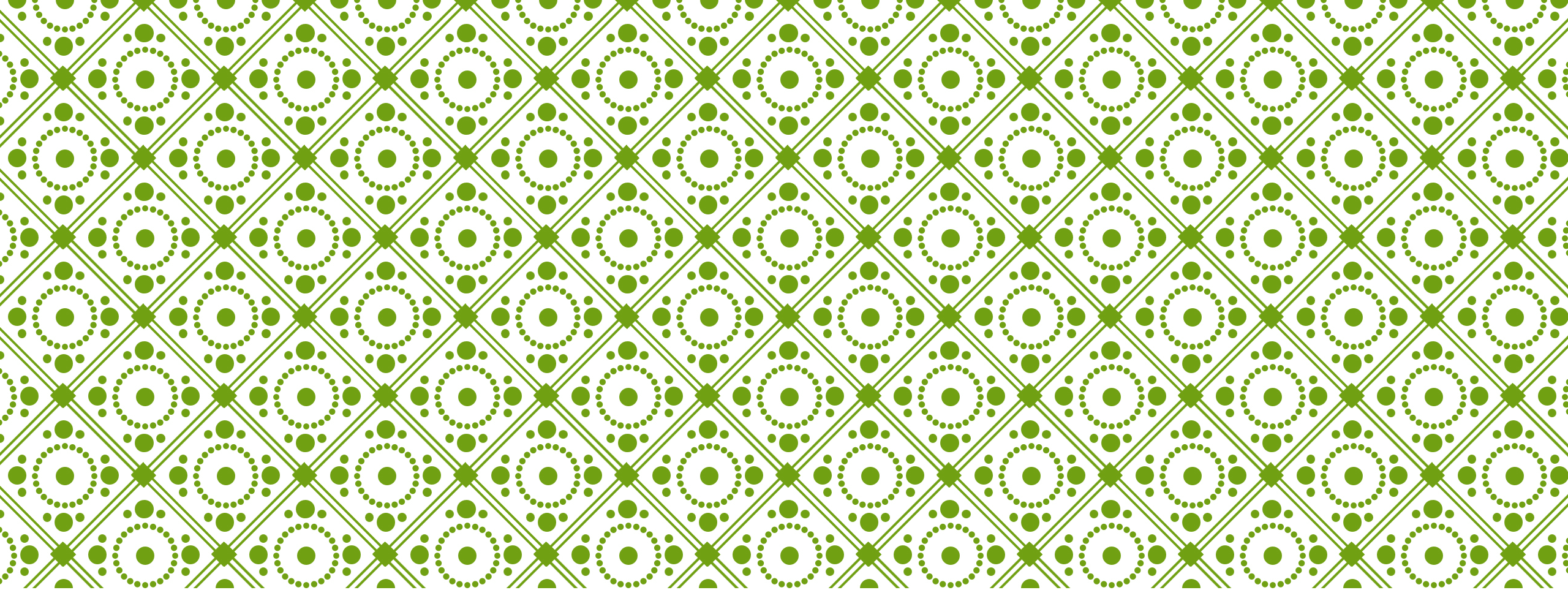


# THE HIP JOINT

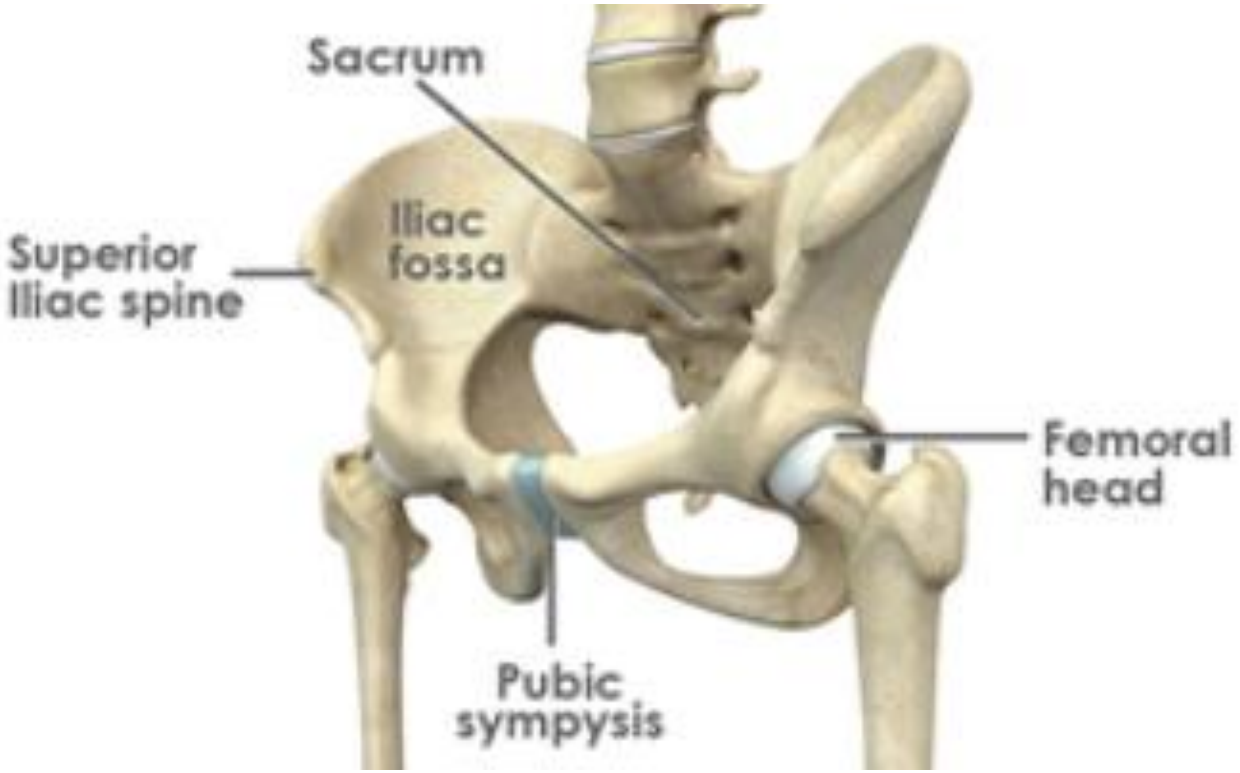
PRESENTED BY

DR. FADHIL SAHIB

# THE HIP JOINT

The hip joint is a synovial ball-and-socket joint, the femoral head functioning as a ball with the acetabular cavity or socket

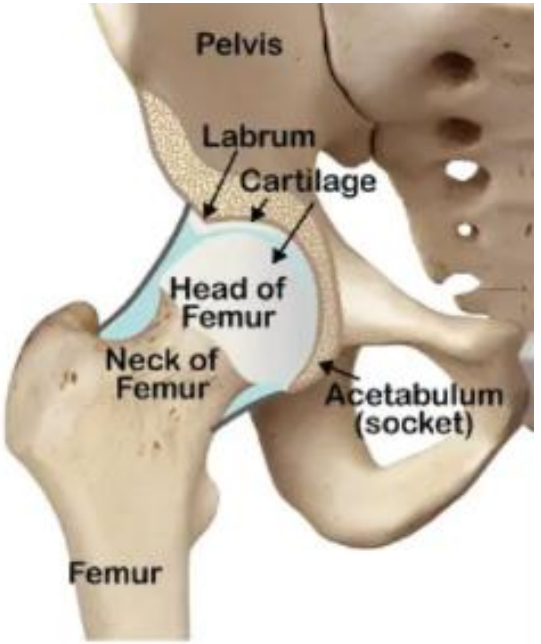
The normal acetabulum is obliquely oriented, is inclined such that the outer margin of the roof is lateral to the outer margin of the floor

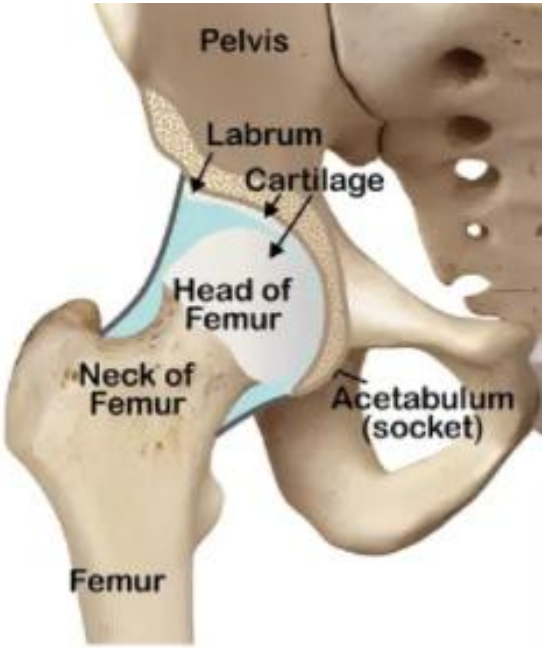


# THE ACETABULUM

Loss of normal acetabular obliquity and inclination in acetabular dysplasia predisposes to repeated subluxation and abnormal stress on the acetabular labrum which becomes degenerate and torn.

The femoral neck is anteverted to 10 ° relative to the shaft, which decreases the likelihood of posterior hip subluxation and leads to further stability at the hip joint



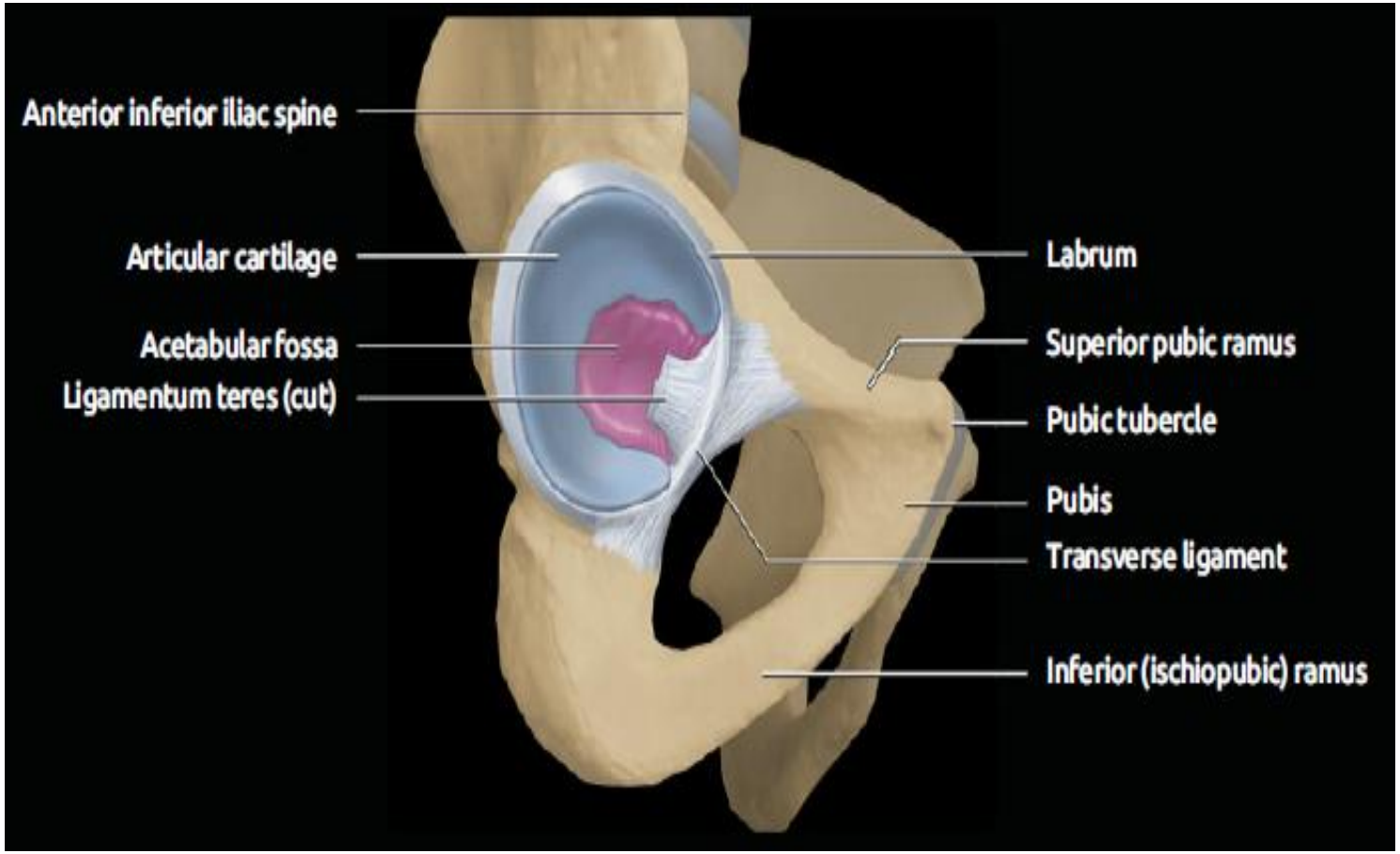
# ARTICULAR SURFACES

These are the head of the femur apart from the fovea, which is a horseshoe-shaped articular surface on the acetabulum

The articular surface is **deepened** by a fibrocartilaginous ring, the acetabular labrum

The acetabulum has a **central non-articular area for a fat pad** and the ligamentum teres

an inferior notch **bridged** by the transverse acetabular ligament, from which this ligament arises



# CAPSULE

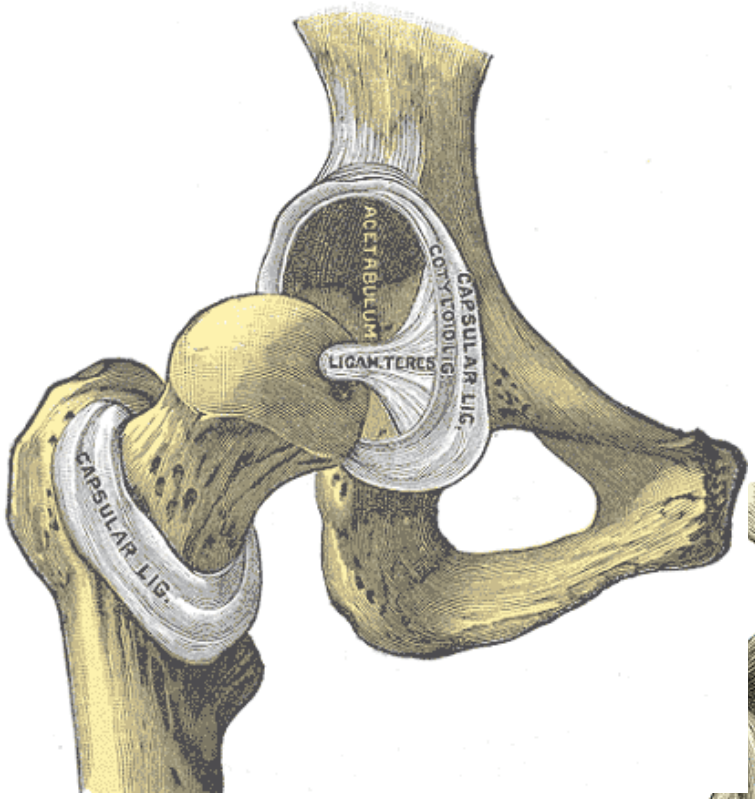
This is **attached** to the edge of the acetabulum and its labrum and the transverse acetabular ligament;

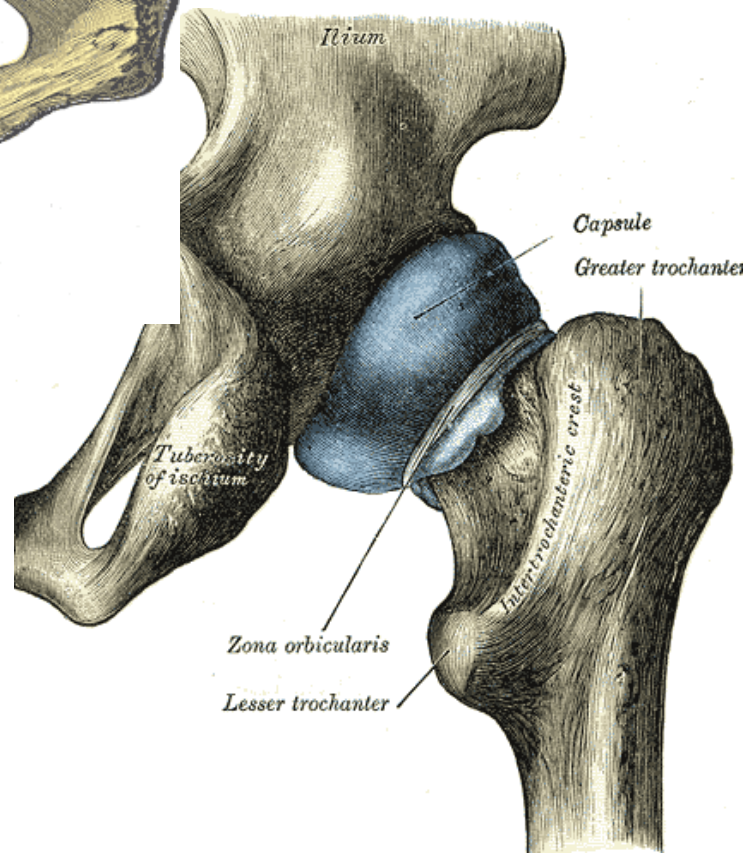
**<u>At the femoral neck</u>**

**Anteriorly** it is attached to the trochanters and the intertrochanteric line.

**Posteriorly** it is attached more proximally on the neck at the junction of its medial two-thirds and its lateral third.

**Synovium** lines the capsule and occasionally **bulges** out anteriorly as a bursa in front of the psoas muscle where this muscle passes in front of the hip joint

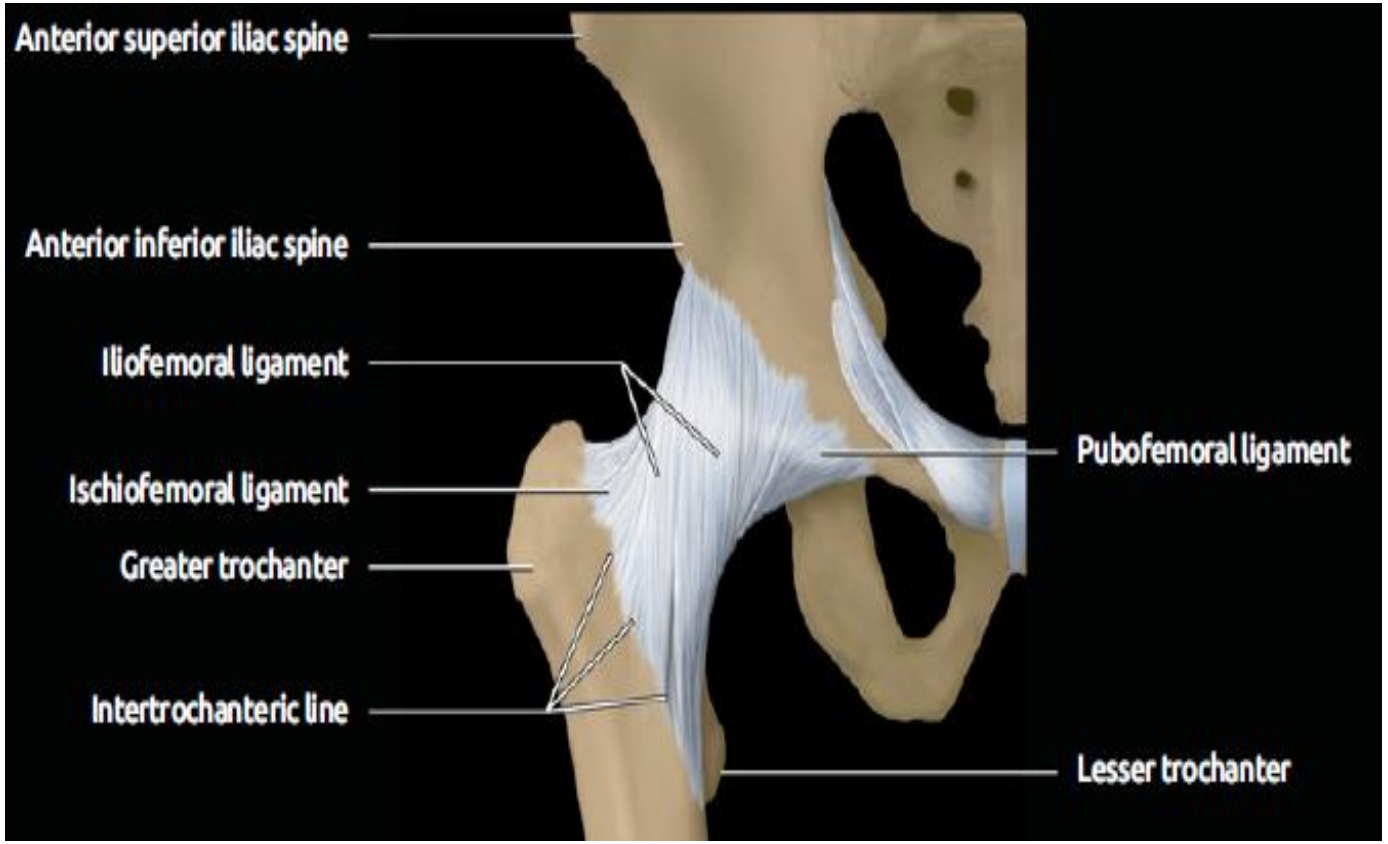


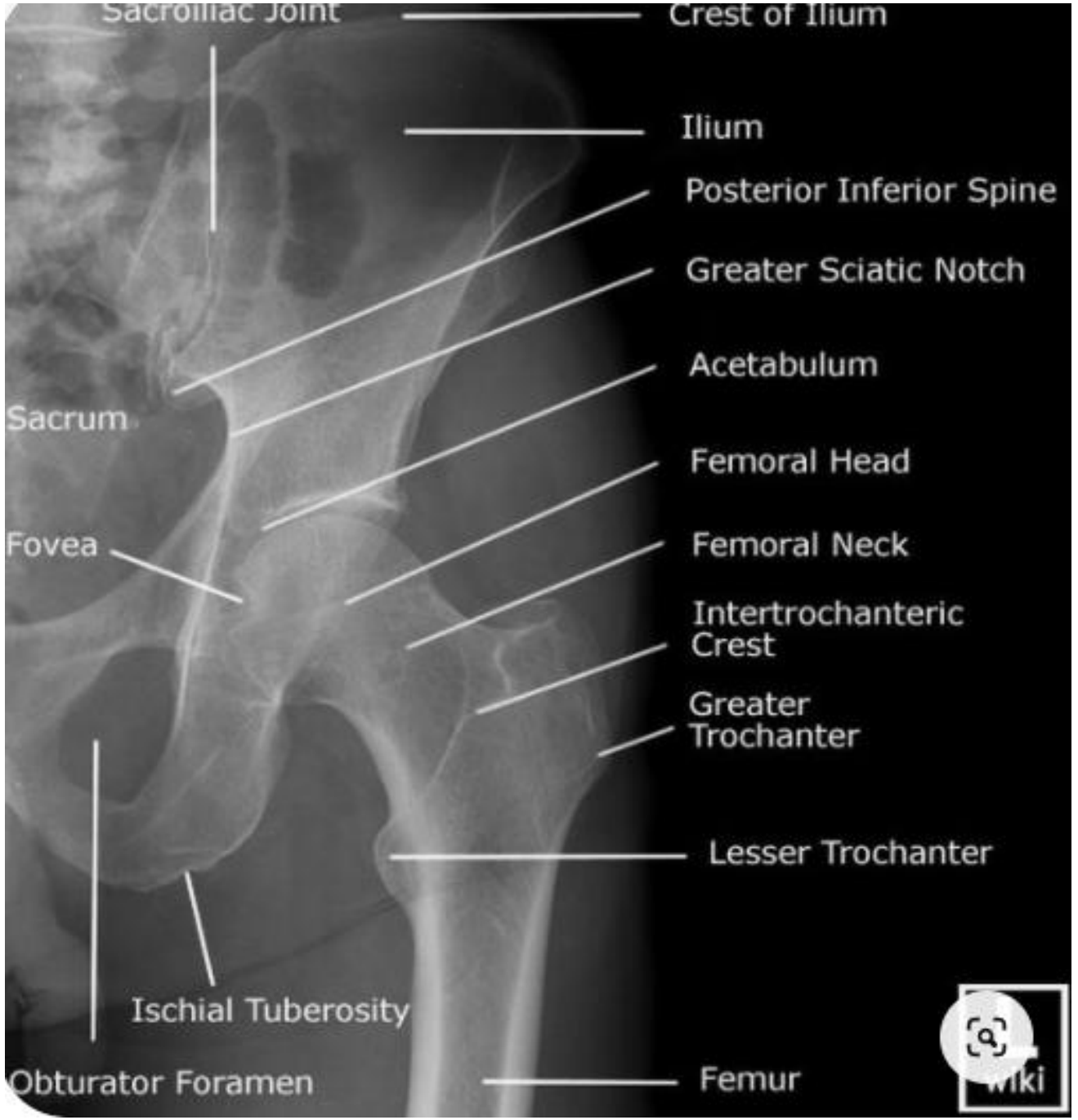



# LIGAMENTS

These are as follows:

- The **iliofemoral ligament** (Y-shaped ligament of Bigelow) is an **anterior thickening of the capsule** between the anteroinferior iliac spine and the neck of the femur to the intertrochanteric line
- The **ischiofemoral ligament** is a posterior thickening of the capsule
- The **pubofemoral ligament** is a thickening of the capsule inferiorly
- The **transverse acetabular ligament** bridges the acetabular notch
- The **ligamentum teres** lies between the central non- articular part of the acetabulum and the fovea of the head of the femur




Sacroiliac Joint
Crest of Ilium
Ilium
Posterior Inferior Spine
Greater Sciatic Notch
Acetabulum
Sacrum
Femoral Head
Fovea
Femoral Neck
Intertrochanteric Crest
Greater Trochanter
Lesser Trochanter
Ischial Tuberosity
Obturator Foramen
Femur

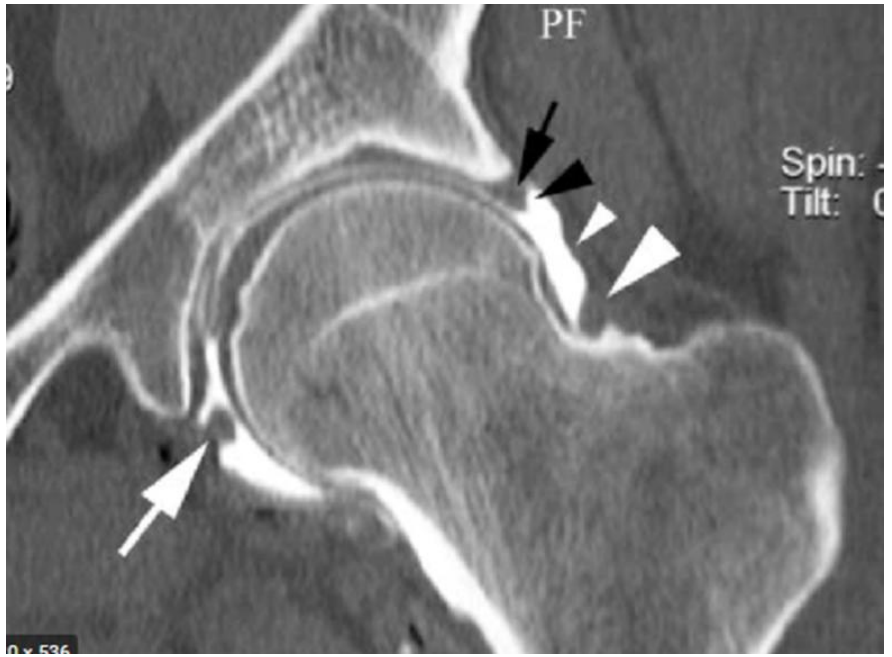
# ARTHROGRAPHY

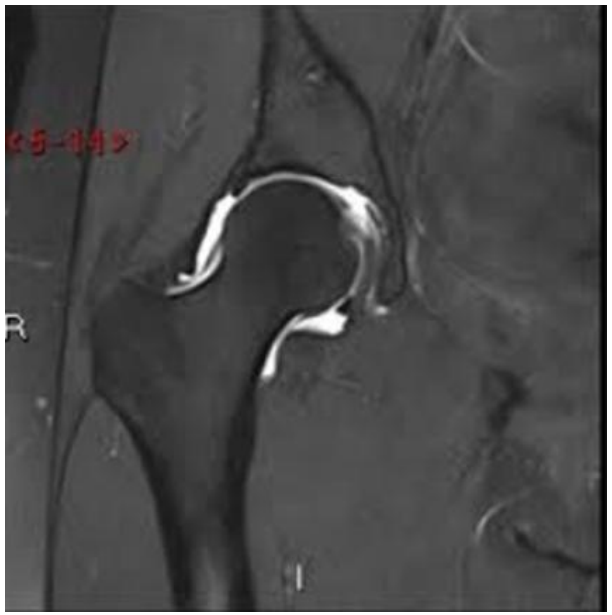
Arthrography of the hip joint is achieved by injection of contrast anteriorly just below the head of the femur

The synovial cavity, is outlined The ligamentum teres is seen as a filling defect within the joint.

the transverse ligament of the acetabulum is seen as a defect near the inferior part of the acetabulum.

The labrum is visible as a triangular filling defect around the acetabular rim

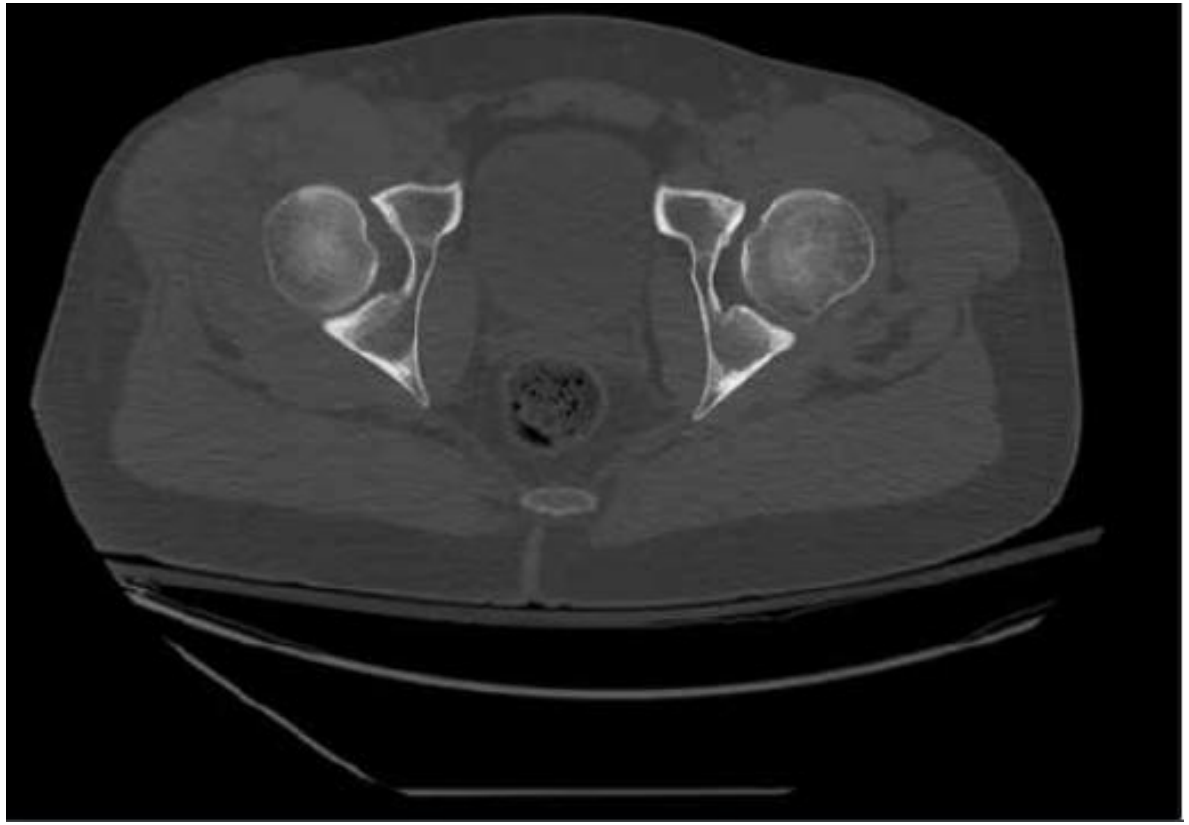


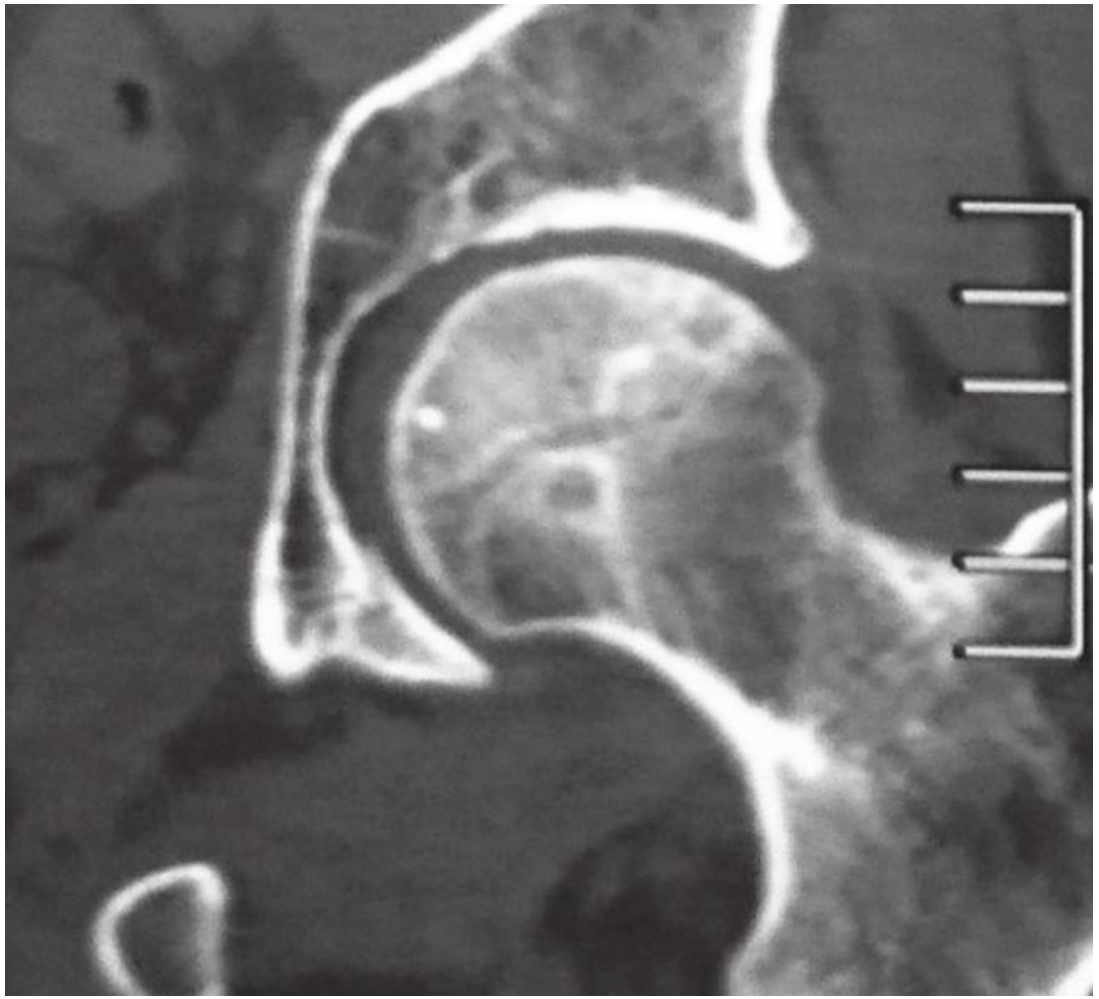
# CT OF THE HIP JOINT

In the axial plane, CT allows direct visualization of the margins of the acetabulum CT scanning allows the evaluation of the anterior and posterior walls of the acetabulum.

Axial images are routinely employed to determine the axis of the neck of the femur relative to the shaft (normally anteverted to 10 ° )



# CT IMAGES



# MAGNETIC RESONANCE IMAGING OF THE HIP ( MRI)

MR imaging of the hip may be performed using the body coil and wide 25 – 30 cm field of view, allowing simultaneous visualization of both hips and comparison of the normal and abnormal sides

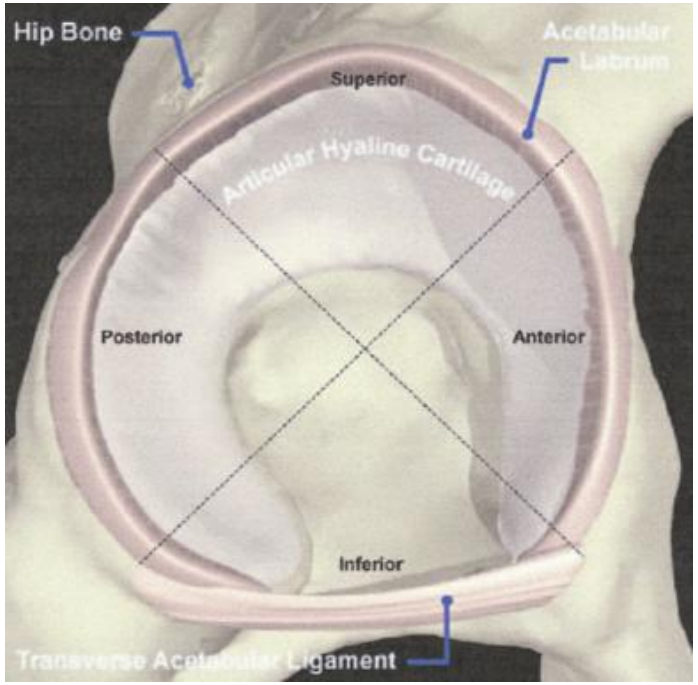
# THE ACETABULAR LABRUM.

The acetabular labrum represents a discontinuous semilunar ring of fibrocartilage marginating **the anterior, superolateral and posterior columns of the acetabulum**

**The inferior margins** of the acetabulum are bridged by the transverse acetabular ligament.

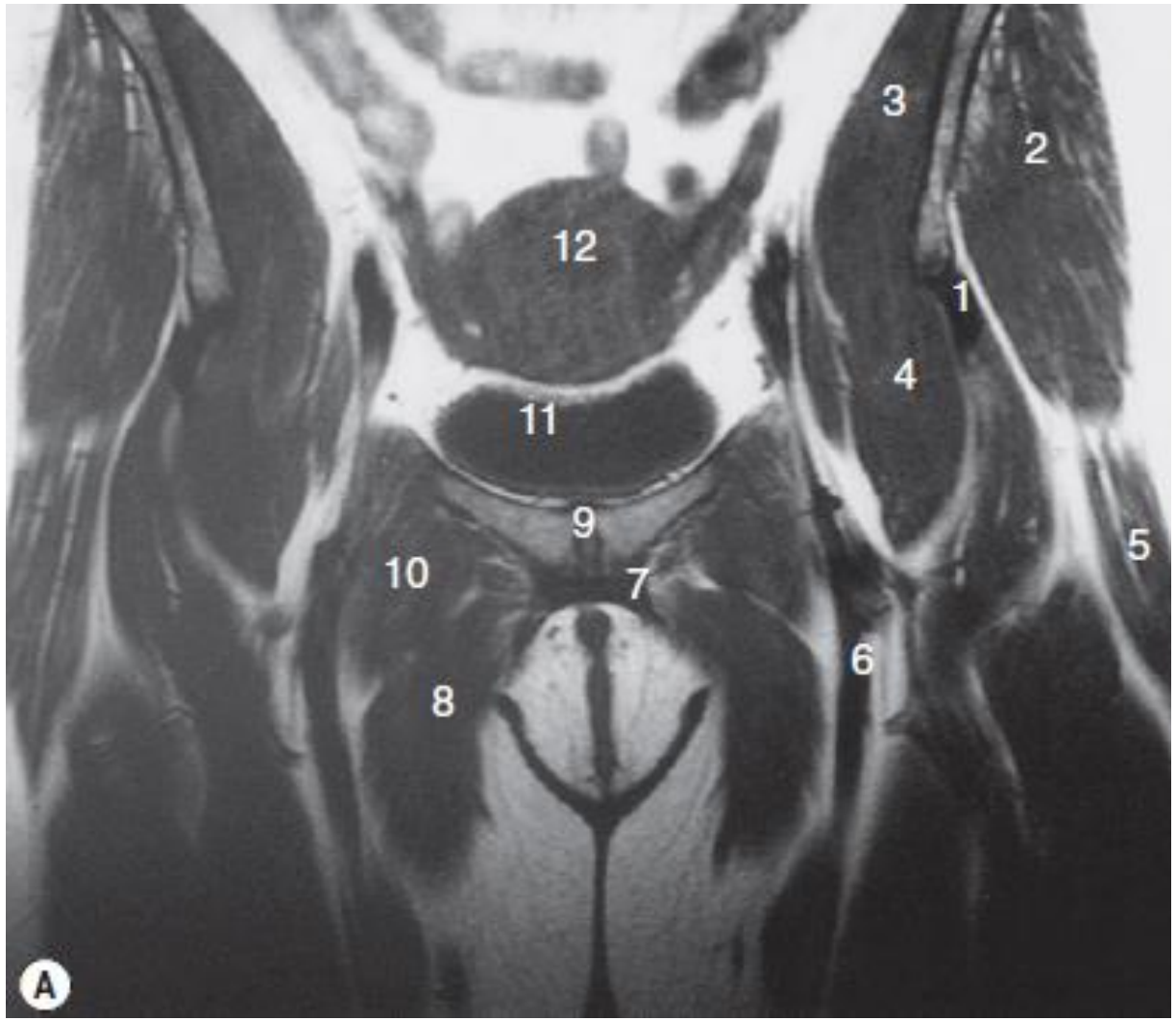
The fibrocartilaginous labrum is triangular in cross-section.

Is most frequently inverted in orientation, and is usually thicker posterosuperiorly than anteroinferiorly, reflecting its function to provide stability and prevent subluxation
The synovium-lined capsule of the hip joint arises from bone



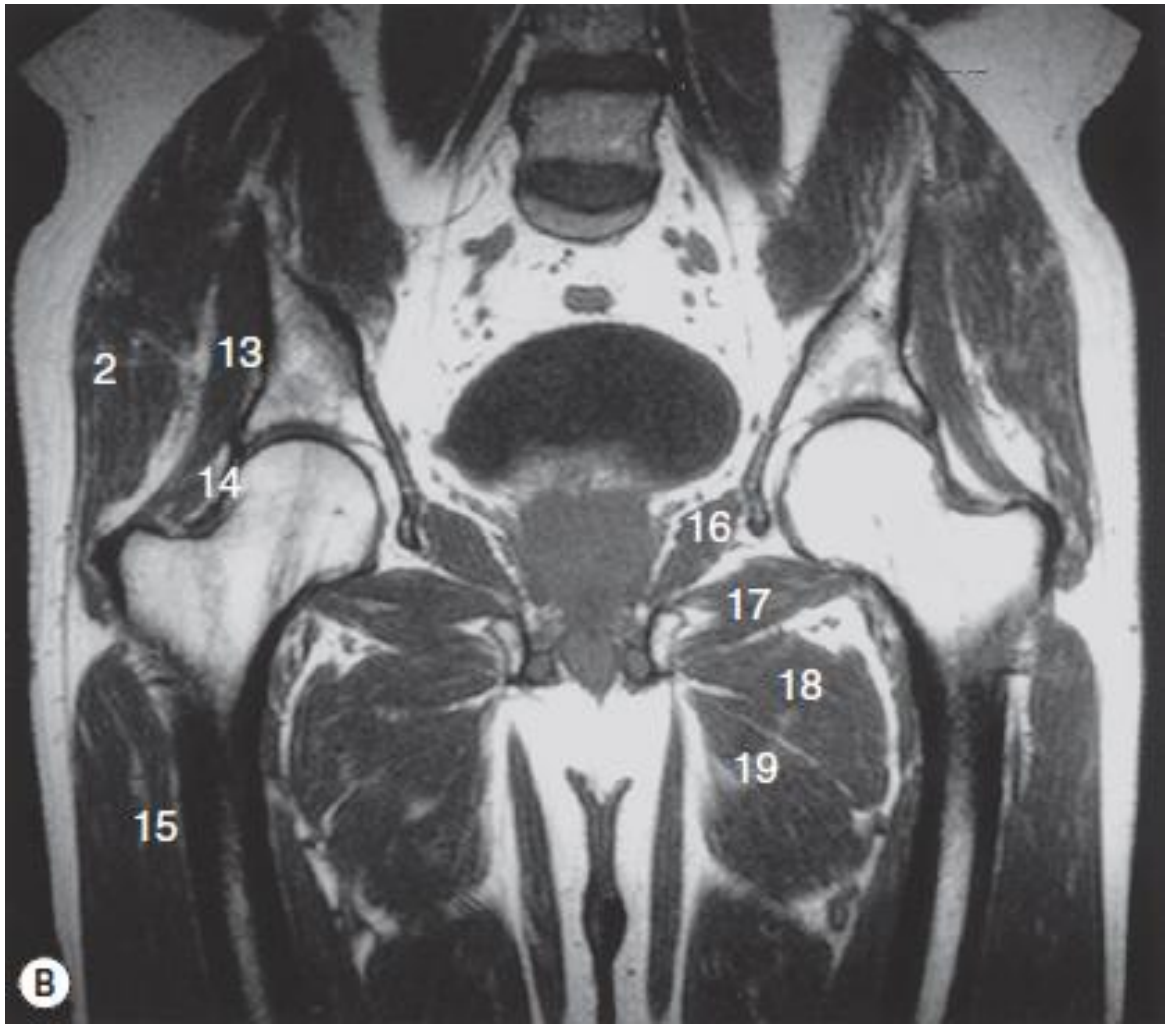

# MAGNETIC RESONANCE IMAGING OF THE HIP

1. Rectus femoris insertion
2. Gluteus medius muscle
3. Iliacus muscle
4. Iliopsoas muscle belly
5. Tensor fascia lata
6. Femoral vessels
7. Conjoined insertion of gracilis and adductor longus muscles
8. Adductor longus
9. Pubic symphysis
10. Pectineus muscle
11. Bladder
12. Uterus



# MAGNETIC RESONANCE IMAGING OF THE HIP

13. Gluteus minimus
14. Capsule (ileofemoral ligament)
15. Vastus lateralis muscle
16. Obturator internus muscle
17. Obturator externus muscle
18. Adductor brevis muscle
19. Adductor longus muscle



# MAGNETIC RESONANCE IMAGING OF THE HIP

20. Piriformis muscle

21. Gluteus maximus muscle

22. Greater trochanter

23. Ischium

24. Conjoined tendon of long head of semimembranosus and long

head of biceps femoris

25. Adductor magnus muscle

26. Semitendinosus muscle

27. Inferior gemellus muscle

28. Quadratus femoris muscle