

Introduction to Clinical Assessment – Hip Anatomy

Aim: The aim of this session is to enable you to develop knowledge and understanding of the musculoskeletal anatomy of the hip joint to underpin professional practice and to facilitate your educational development

Learning Outcomes

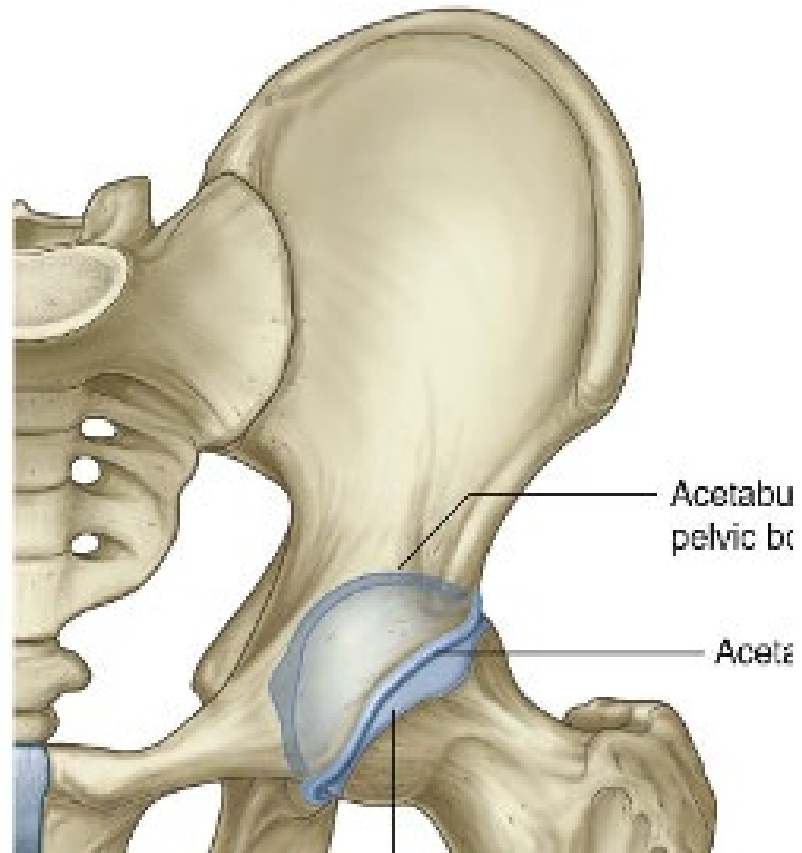
- To identify the musculoskeletal structures and specifically the osteology
- To explain the significance of the structures in relation to the other anatomy of the area

Resources for learning

- Anatomy and Human Movement. Palastanga.
- Kinesiology of the Musculoskeletal System. Neumann.

Hip Joint

- The largest synovial joint
- A ball & socket joint
- Enables a wide range of movement



The Hip joint

Function

- **Movement,**

the joint is surrounded by a large complex musculature that enables movement of the limb in relation to the pelvis,

- **Balance and stability,**

the pelvis is supported on the femoral heads,

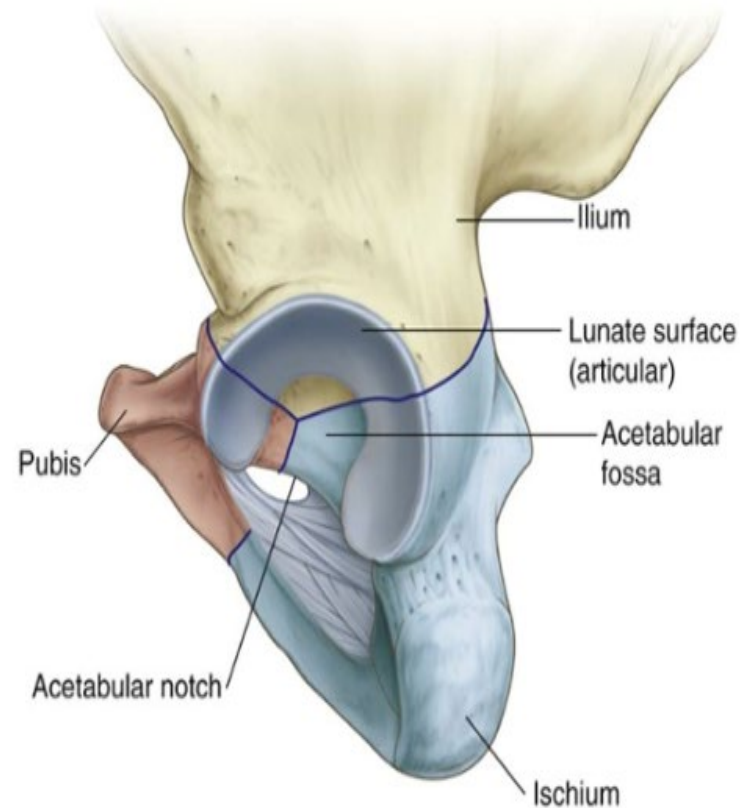
stability comes from the shape of the articular surfaces, capsular and ligamentous strength and the muscles, which must be capable of maintaining set positions i.e. sitting and immediate controlled power, i.e. running upstairs

- **Transmission of body weight,**

From the vertebral column, through the pelvis to the femora when standing and onto the ischial tuberosities when sitting

Acetabulum

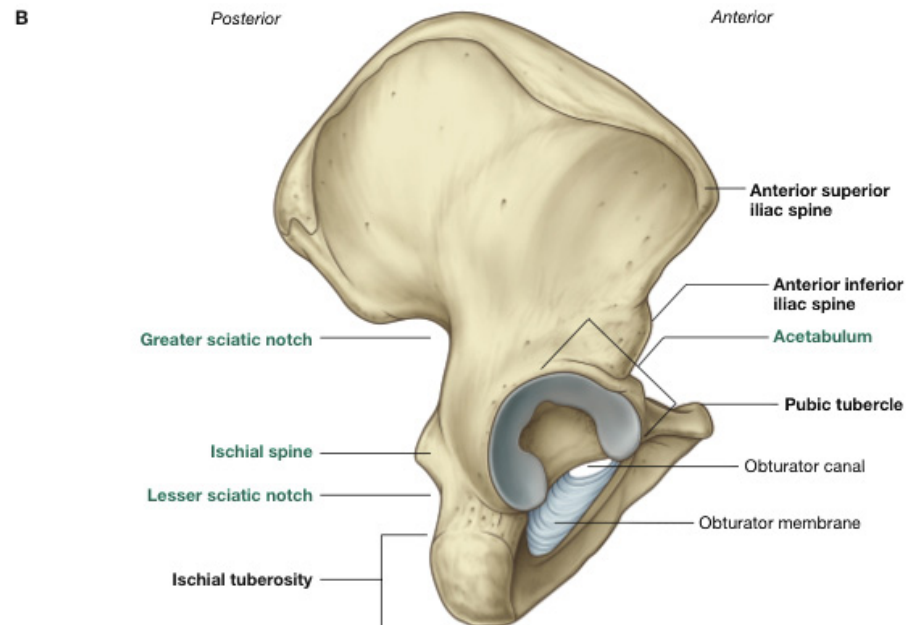
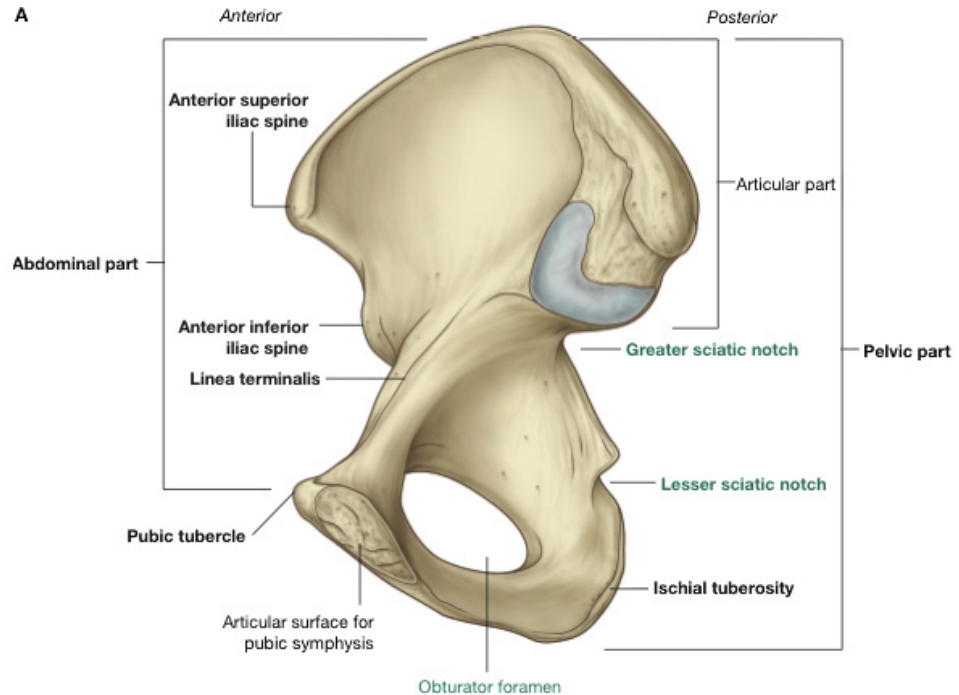
- A socket formed by three bones comprising the innominate bone.



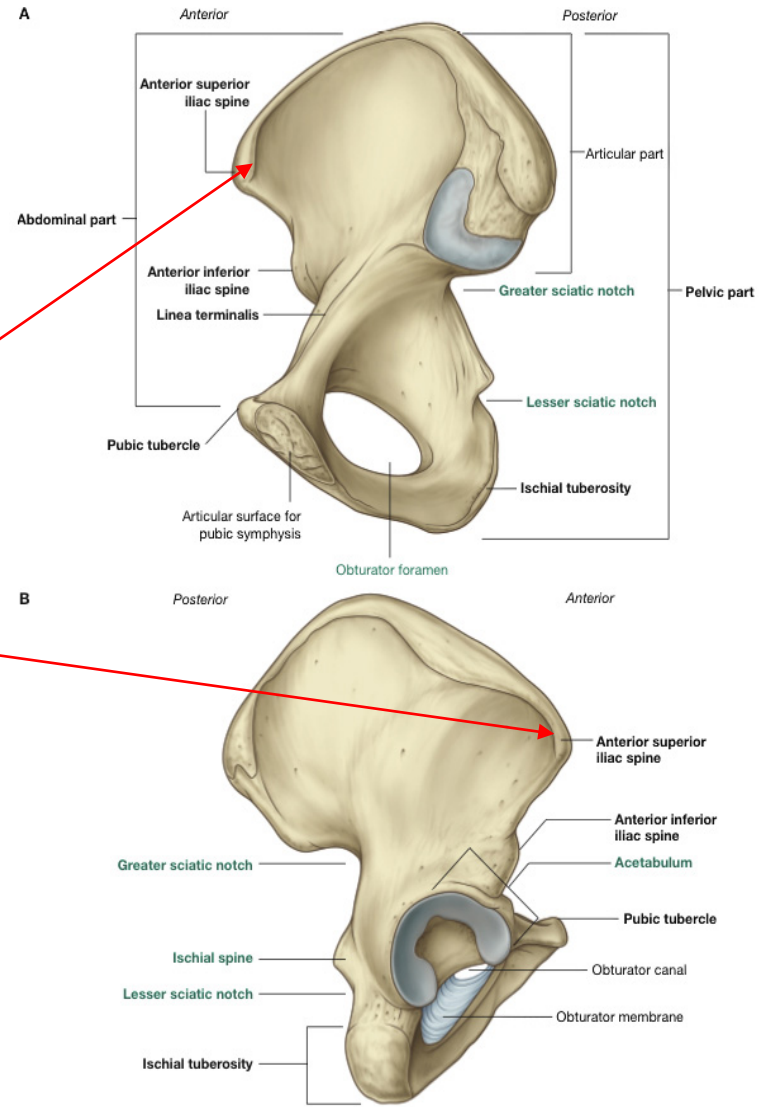
Acetabulum

- At birth, most structures are cartilaginous. At aged 10yrs, the 3 bones are separated by a tri-radiate strip of cartilage. Full ossification occurs around puberty
- Cartilage is horse shoe shaped in the acetabulum, the lower gap is bridged by the transverse ligament & is continuous with the fibrocartilage labrum which forms a rim & tight fit around the neck of femur.
- Consider the shape ? Acetabulum is the Latin term for 'vinegar **cup**'

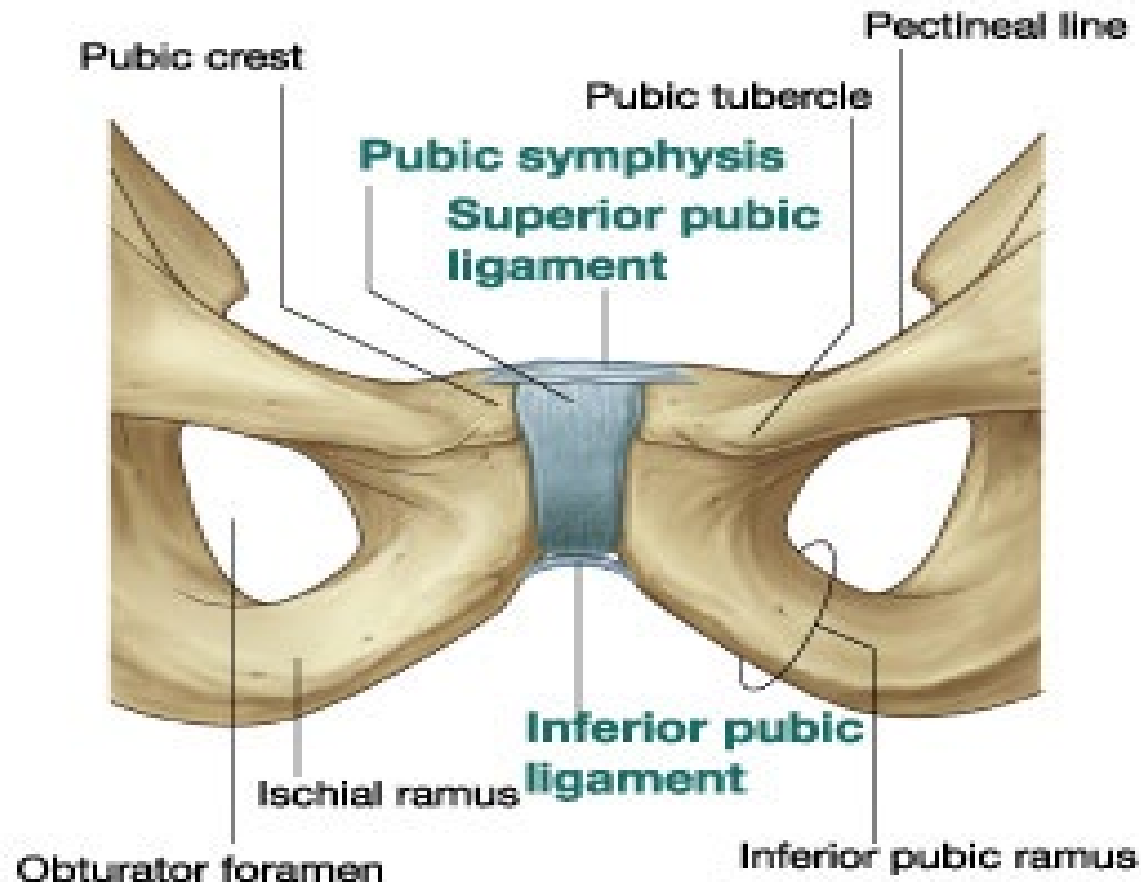
Key Bony Landmarks around the Pelvis



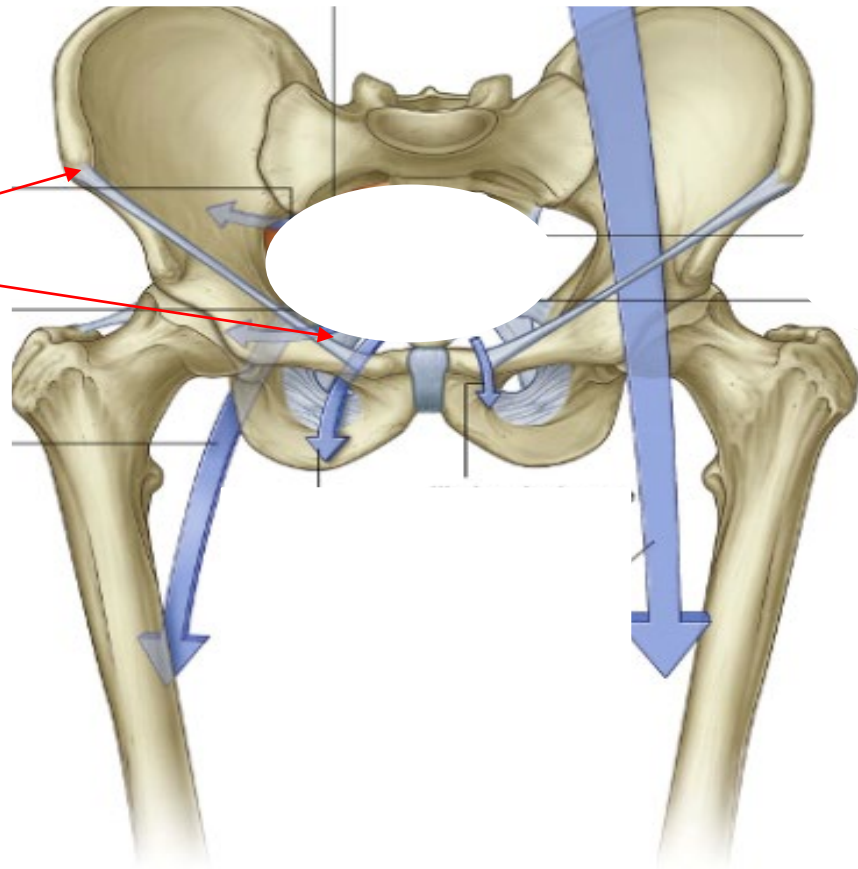
Anterior Superior Iliac Spine



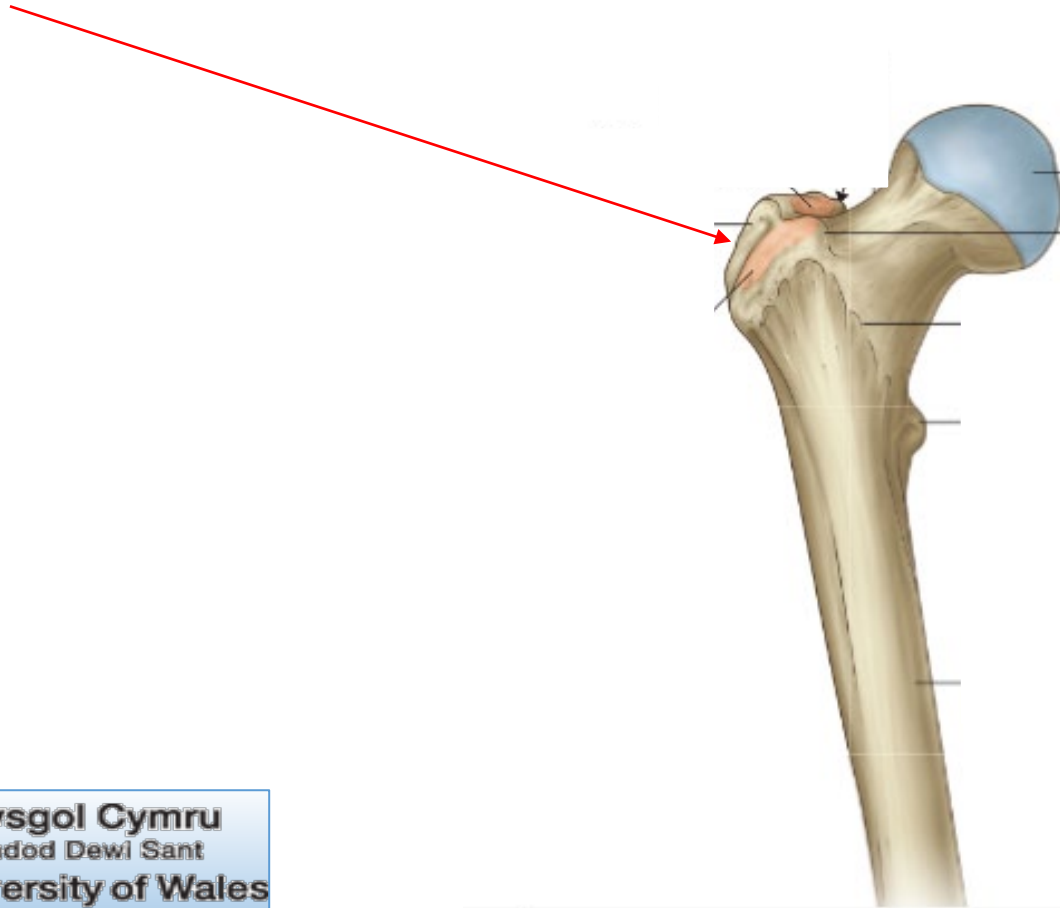
Pubic Symphysis



Inguinal Ligament

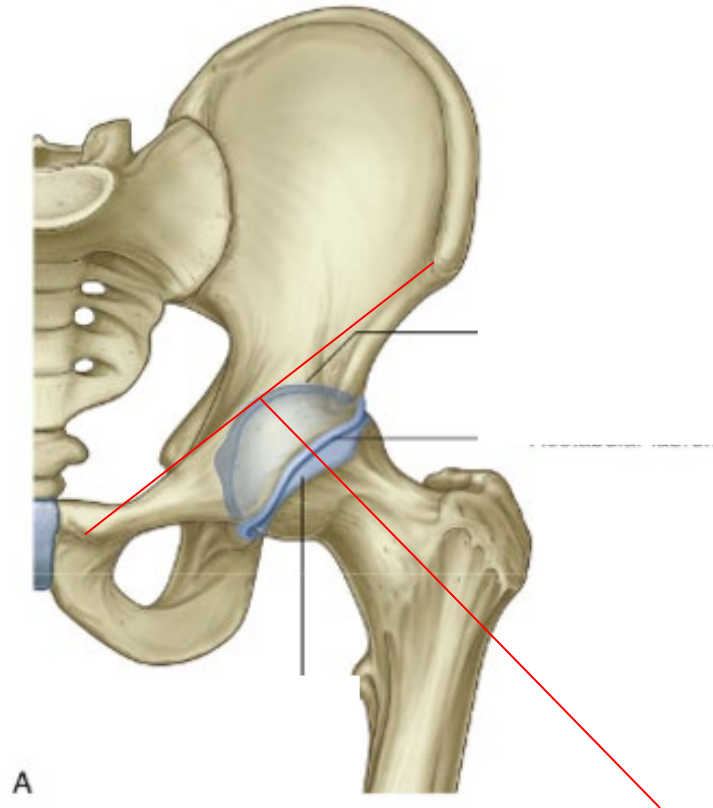


Greater Trochanter

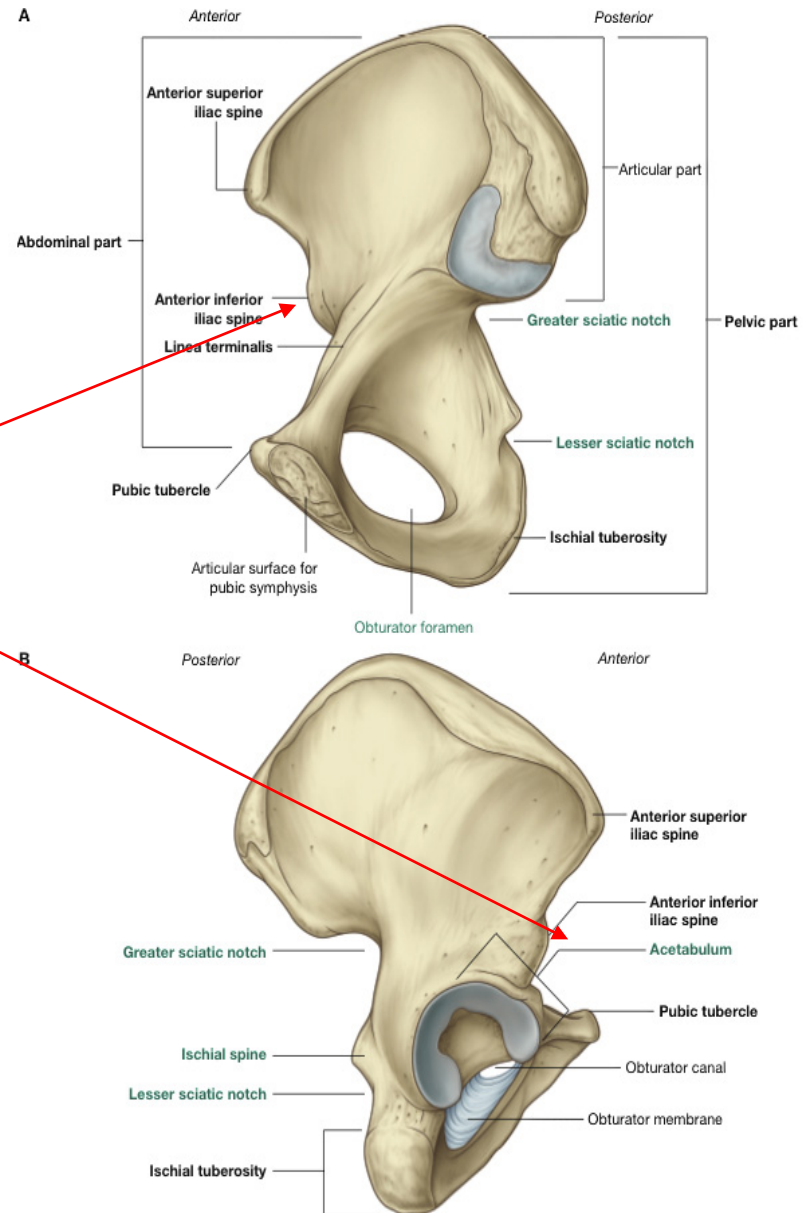


Hip Joint - Femoroacetabular Joint Line

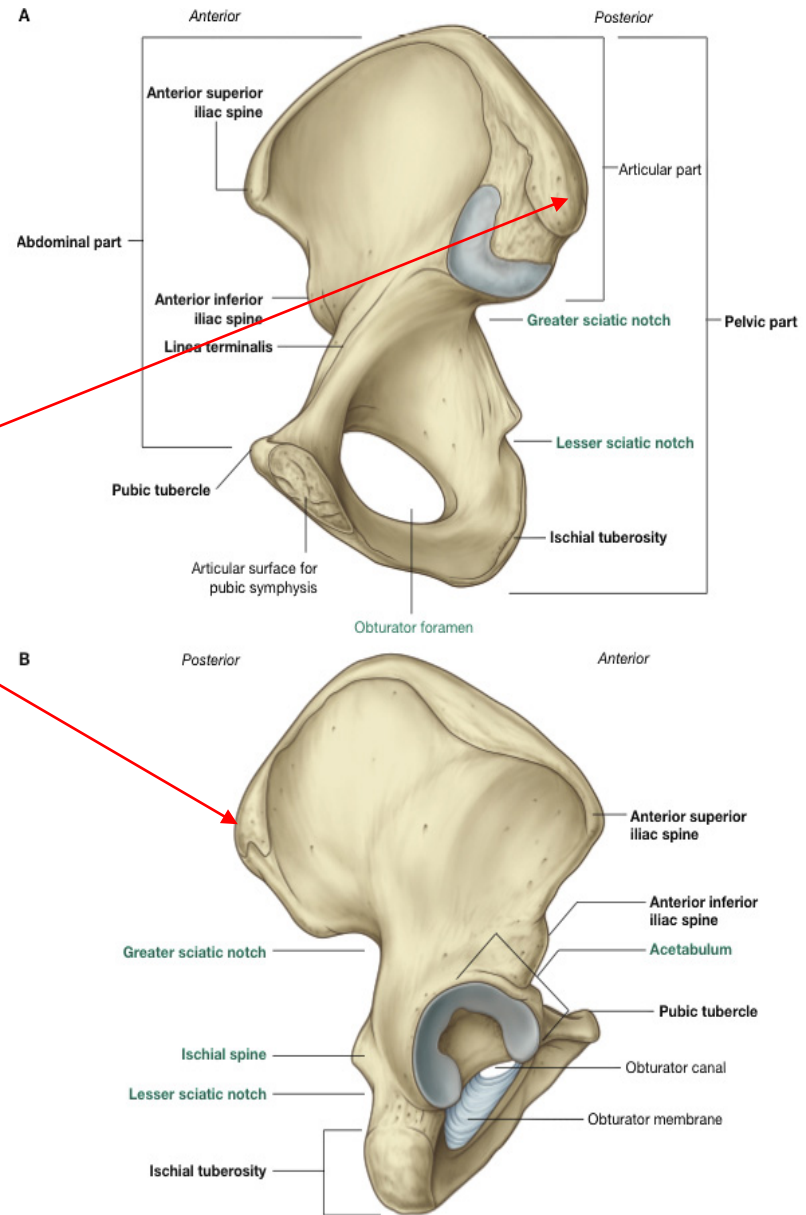
- ASIS to Pubic Symphysis
- Intersect with Greater Trochanter
- Roughly in the region of the joint line



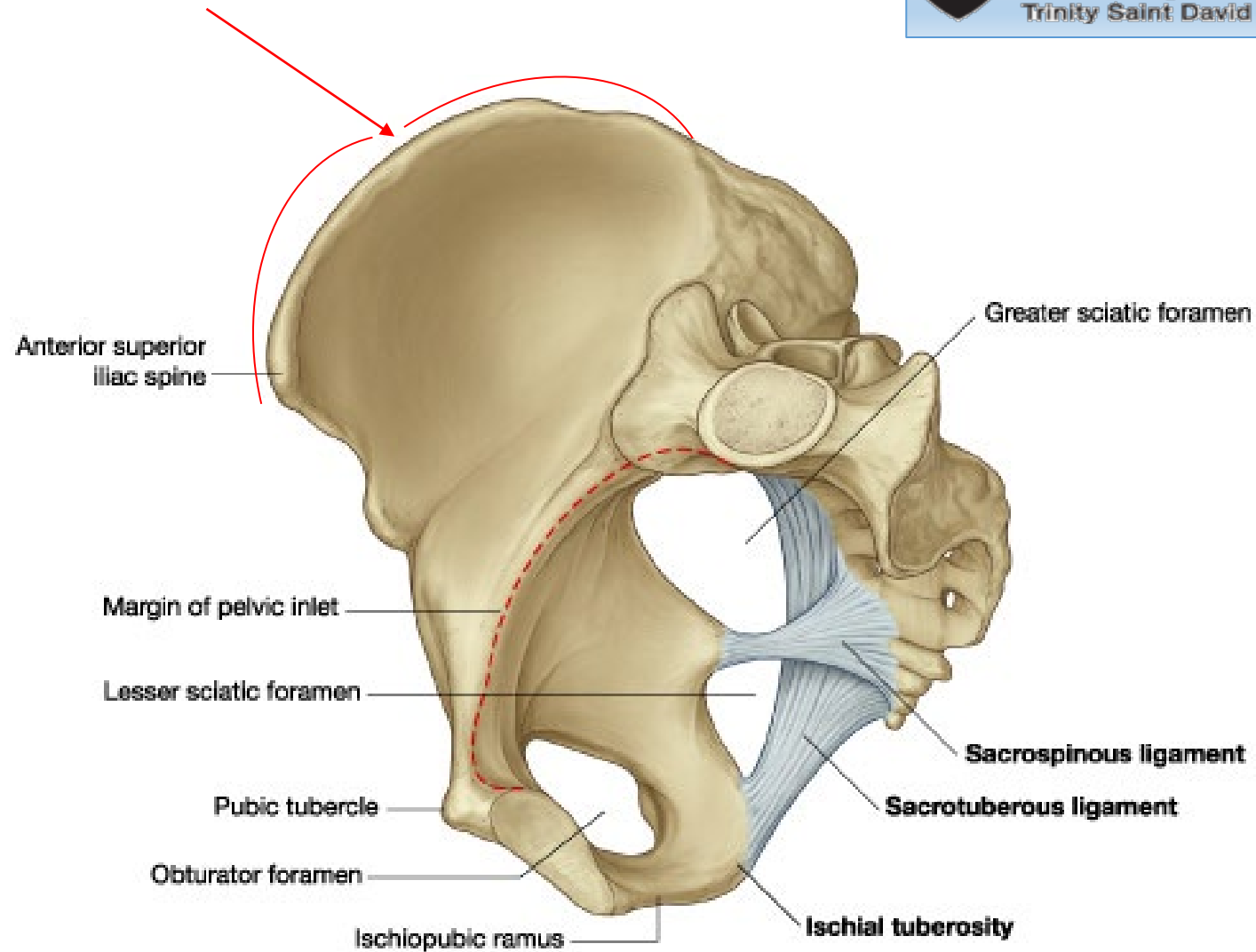
Anterior Inferior Iliac Spine



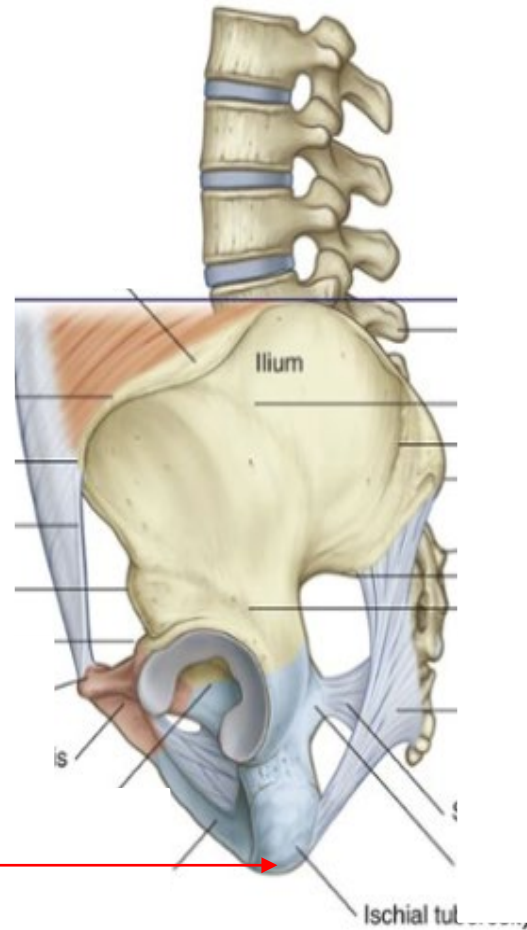
Posterior Superior Iliac Spine



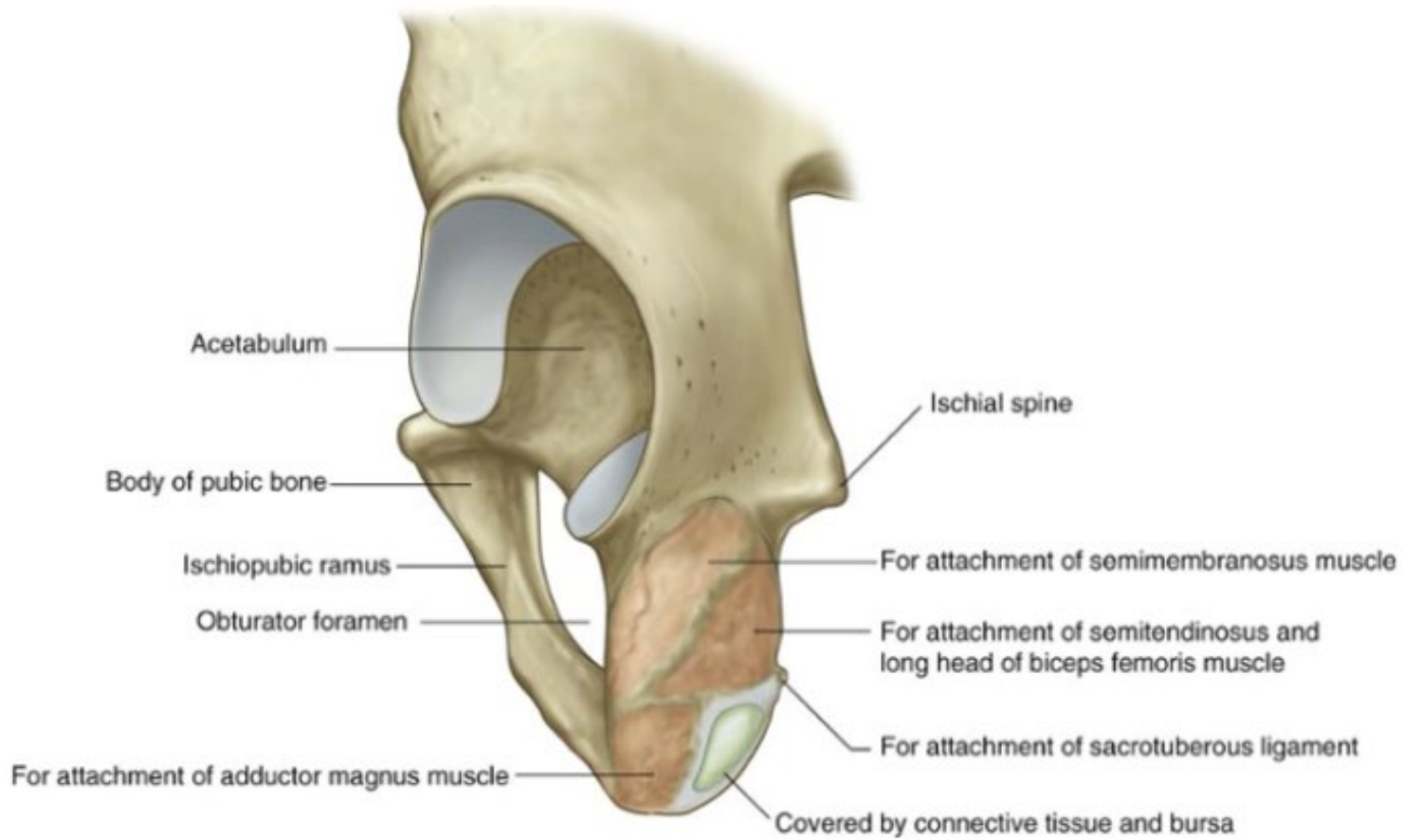
Iliac Crest



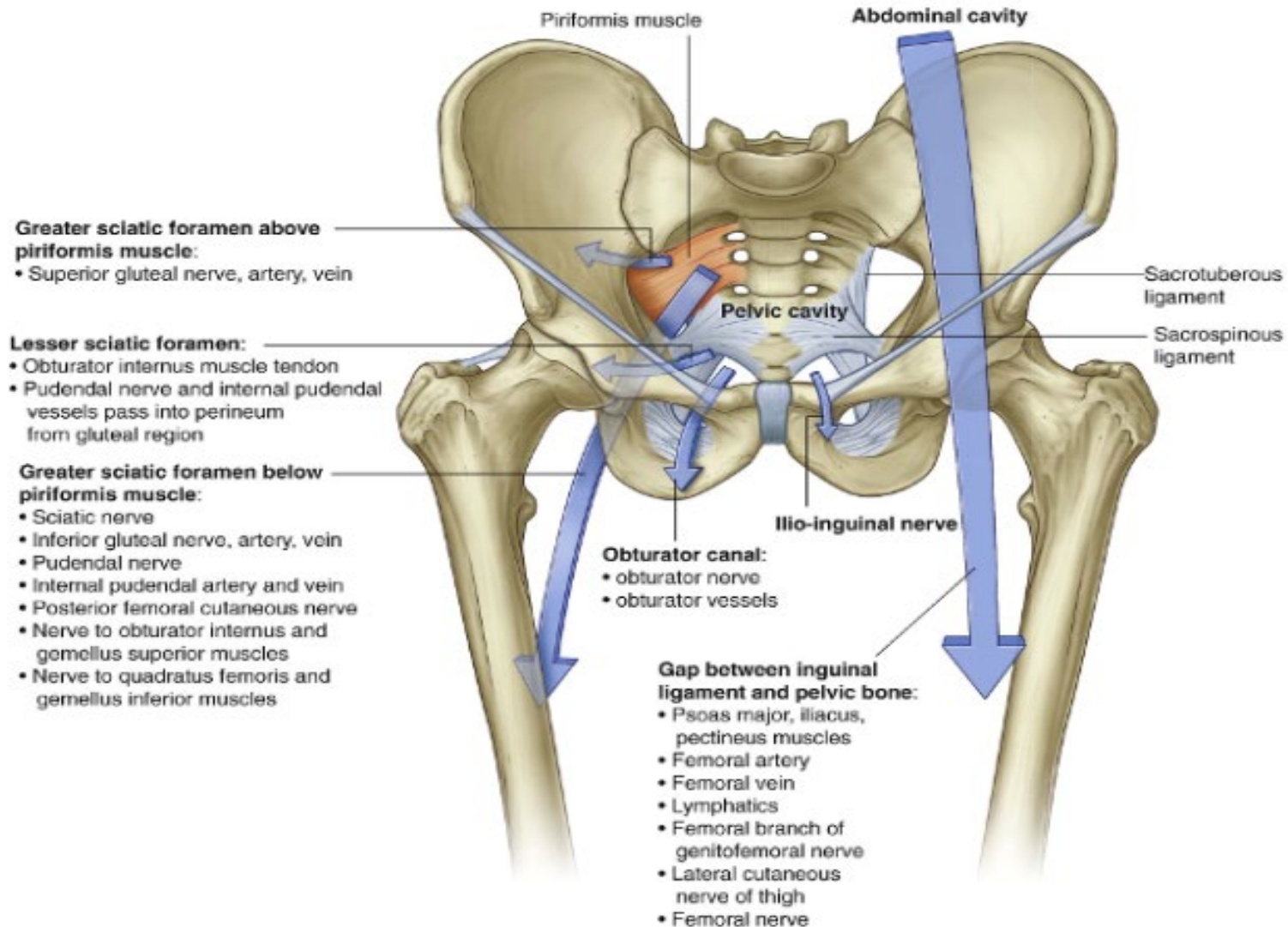
Ischial Tuberosity



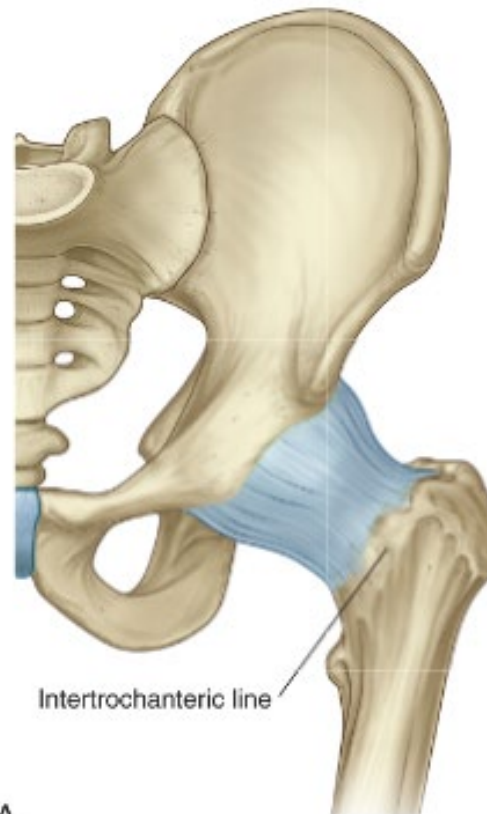
Ilium



Ilium



Hip Joint Capsule



Intertrochanteric line

Extracapsular Ligaments

The hip joint has a fibrous capsule which is very strong, strengthened by fibres that pass around the joint in a circular way.

In places the capsule is thickened to form 3 ligaments, these are referred to, by their attachments, as

- Iliofemoral
- Ischiofemoral
- pubofemoral

NB. These ligaments become taut in hip extension and relax in hip flexion. What might be the significance of this following hip replacement?

Hip Joint Ligaments - Spiral

Iliofemoral Ligament

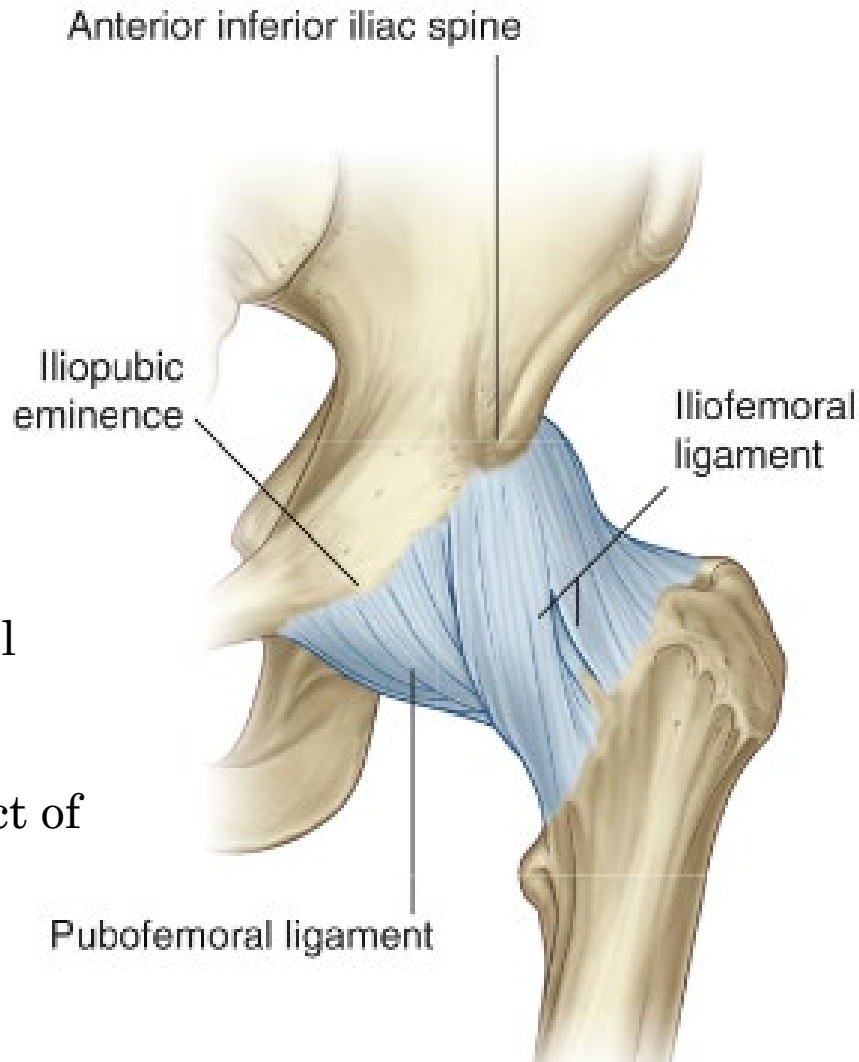
- Anterior Hip
- Triangular
- A. Acetabulum
- B. Intertrochanteric Line

Pubofemoral Ligament

- Anterior Inferior Hip
- Triangular
- A. Iliopubic emnience
- B. Blends with Iliofemoral

Ischiofemoral Ligament

- Reinforces posterior aspect of fibrous membrane
- A. Ischium
- B. Greater Trochanter



Ligaments in Action

- Iliofemoral Ligament



Ligaments in Action

- Ischiofemoral Ligament

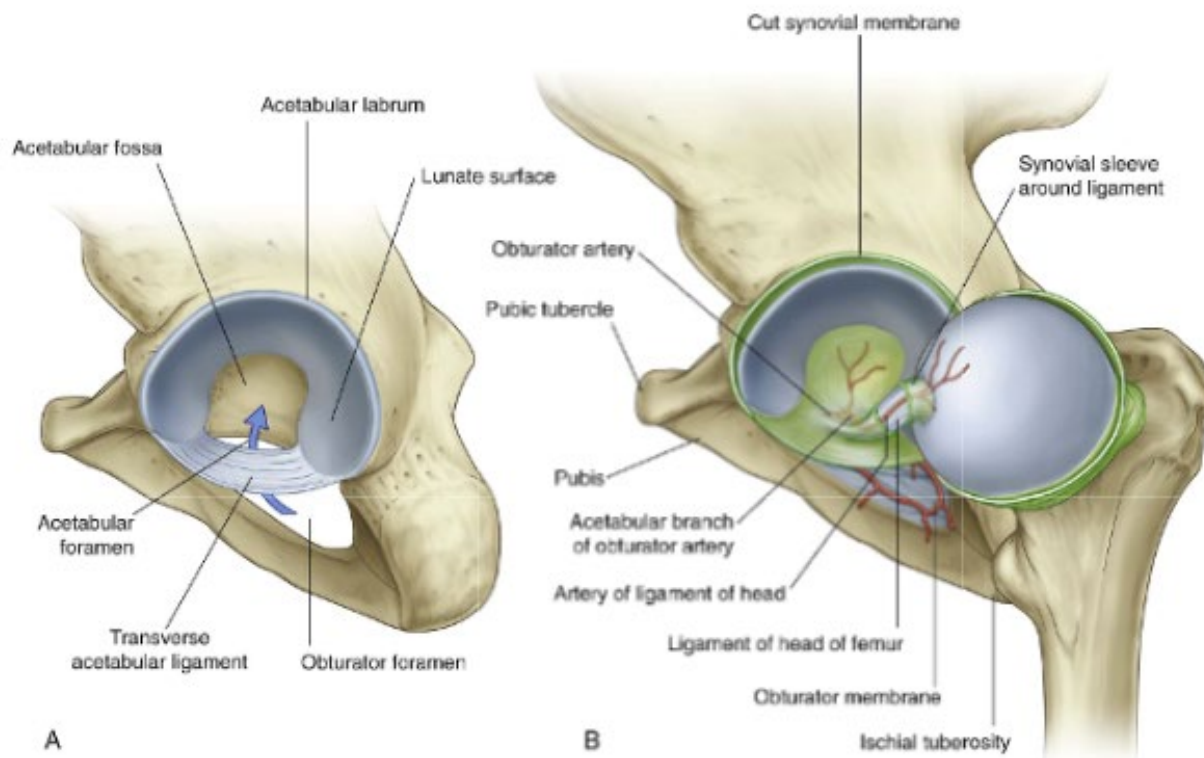


Ligaments in Action

- Pubofemoral Ligament

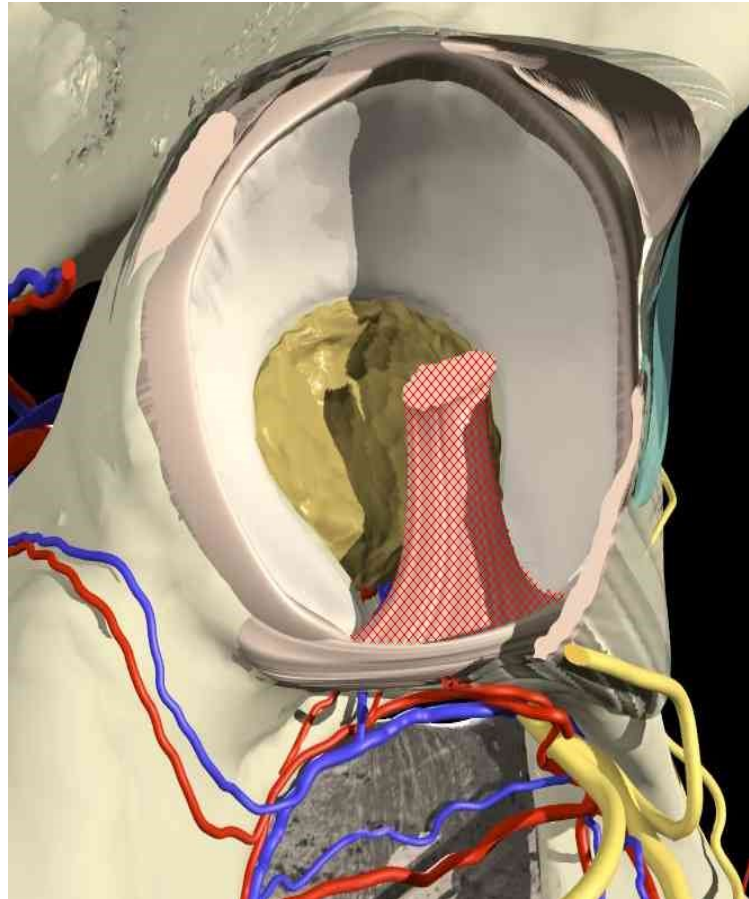


Hip Joint Labrum



Intracapsular Ligaments (acetabulum view)

- What is the Ligamentum Teres and where is it?
- How does it contribute to the blood supply of the femoral head?
- Is this significant ?



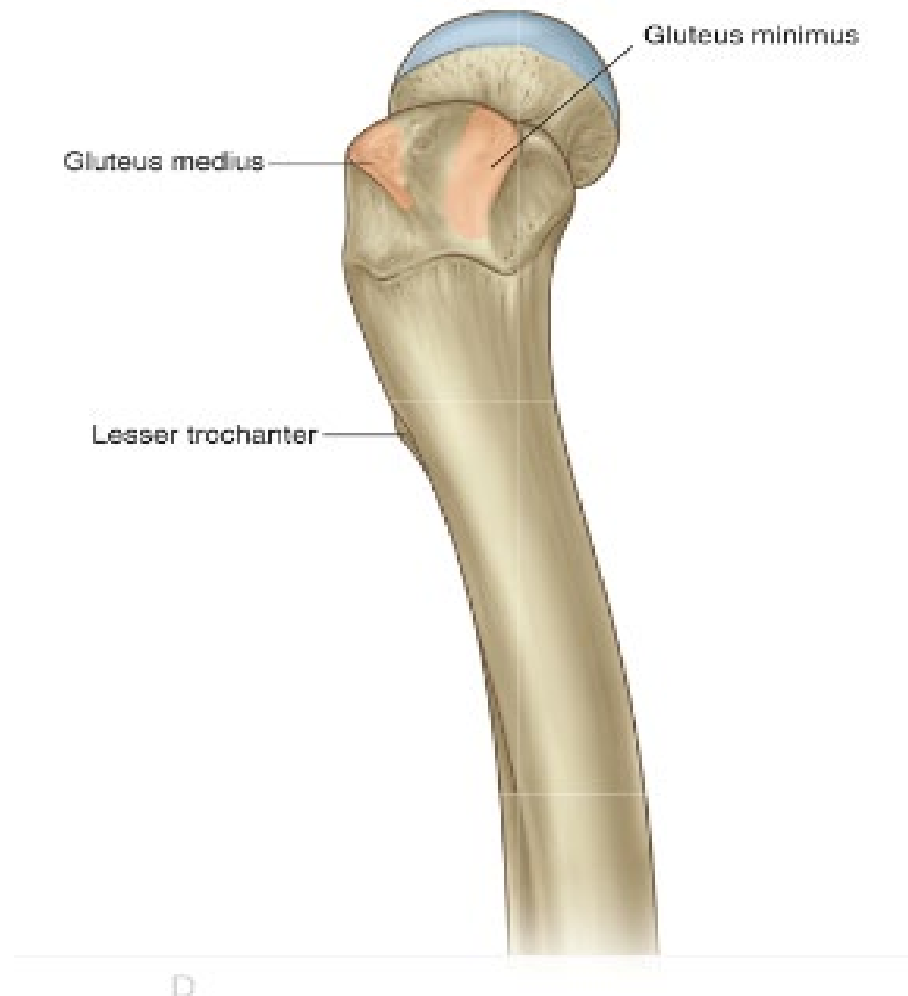
Synovium

- Attaches to the margins of the articular surfaces of the femur and acetabulum
- Tubular covering around the head of the femur
- Margins reflect back at the neck of the femur

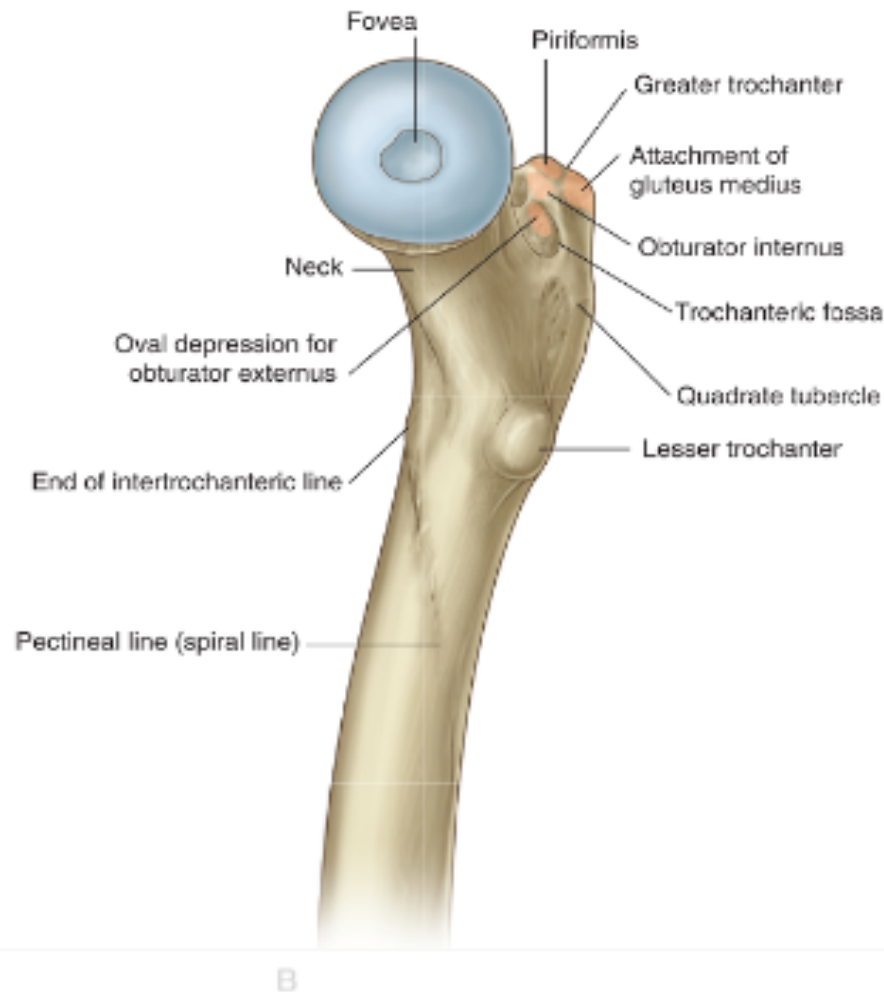
Bursae of the hip joint

- What is a bursa?
- Where are they in the hip joint?

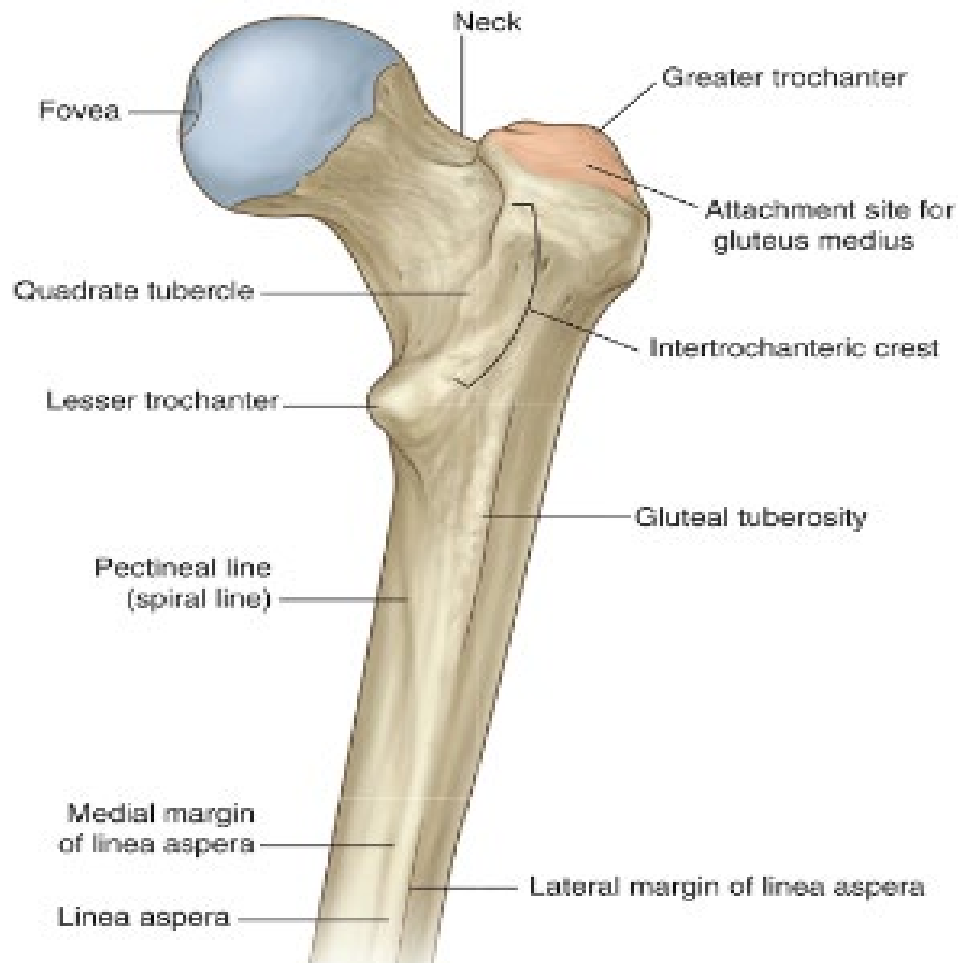
Proximal Femur



Proximal Femur



Proximal Femur



Sacrum and Coccyx

