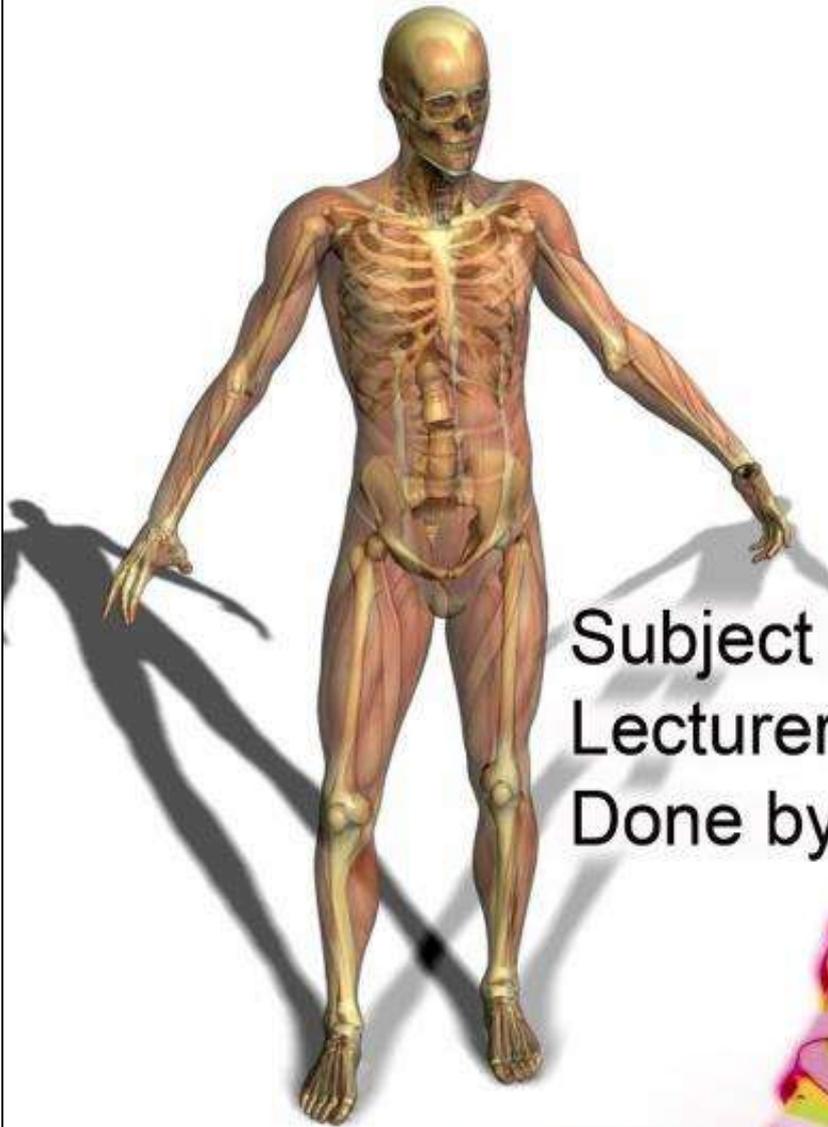




ANATOMY

Sheet



Subject : *Introduction to Anatomy*

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lecture # : 15

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Lower limb

◆ The skeleton of the lower limb is the lower appendicular skeleton which consists of 2 parts:

1- Pelvic girdle.

2- Bones of the lower limb.

- This sheet will talk about the bones and joints that form the Pelvic Girdle.
- The pelvic girdle consists of 4 bones united by 4 joints.
- **The (4) bones are :**

1- (2) **Hip bones** (one on right & the other on left).

2- **Sacrum.**

3- **Coccyx.**

- **Each of the two hip bones formed by the union of 3 parts:**

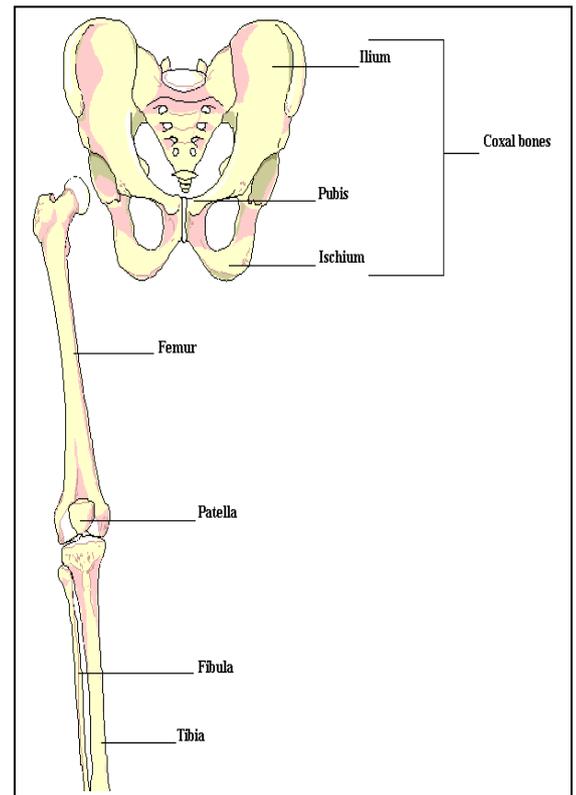
1- Ilium (superior).

2- Ischium (posterior).

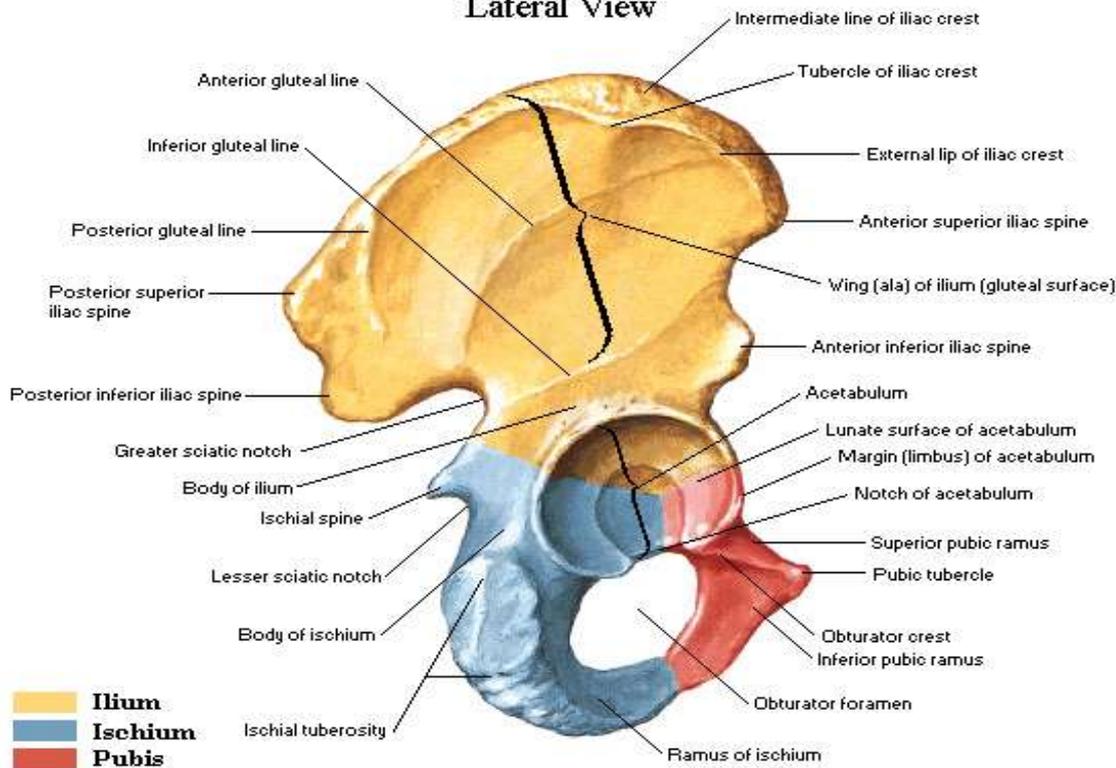
3- Pubic (anterior).

◆ These three parts united at a cup shaped cavity at the outer aspect of the pelvis called **Acetabulum** which occurs at age of 17.

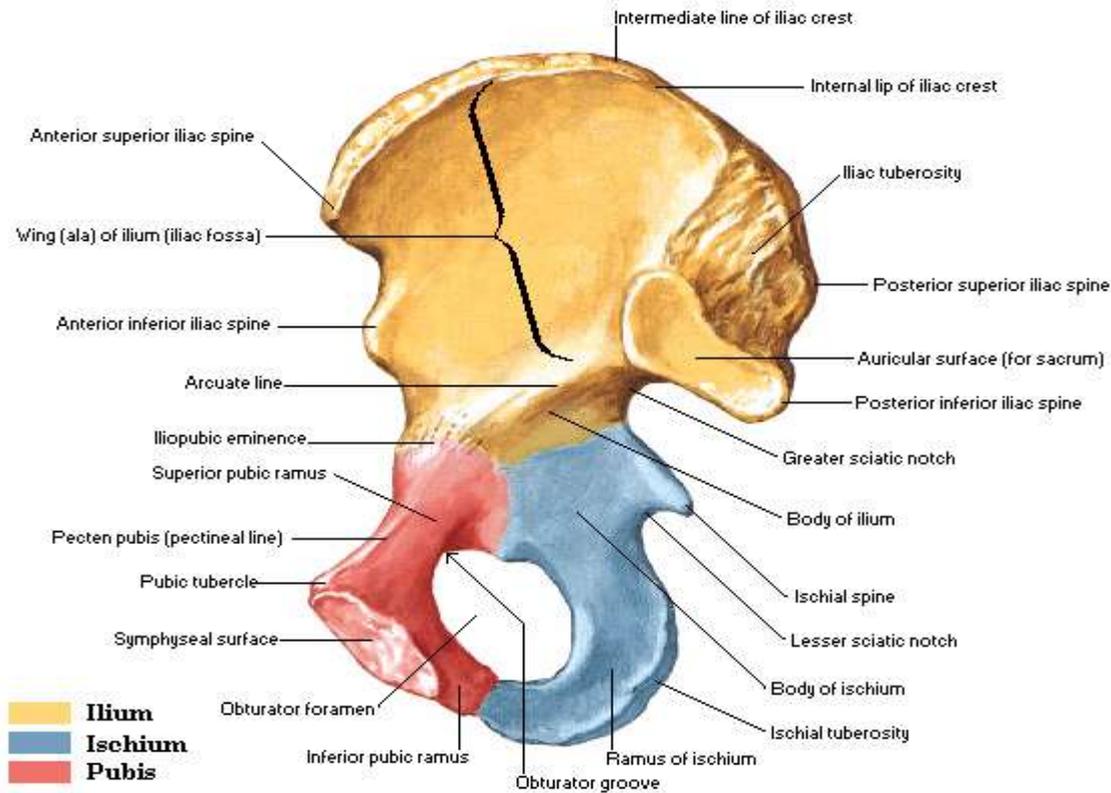
The region in **Acetabulum** where the 3 parts of hip bone union together is made of **cartilage** to bear the increment in weight and movement. (it is 'Y' shaped union site)



Lateral View



Medial View



◆ Also, the Acetabulum is the place where the head of the femur attached to form the **Hip joint**.

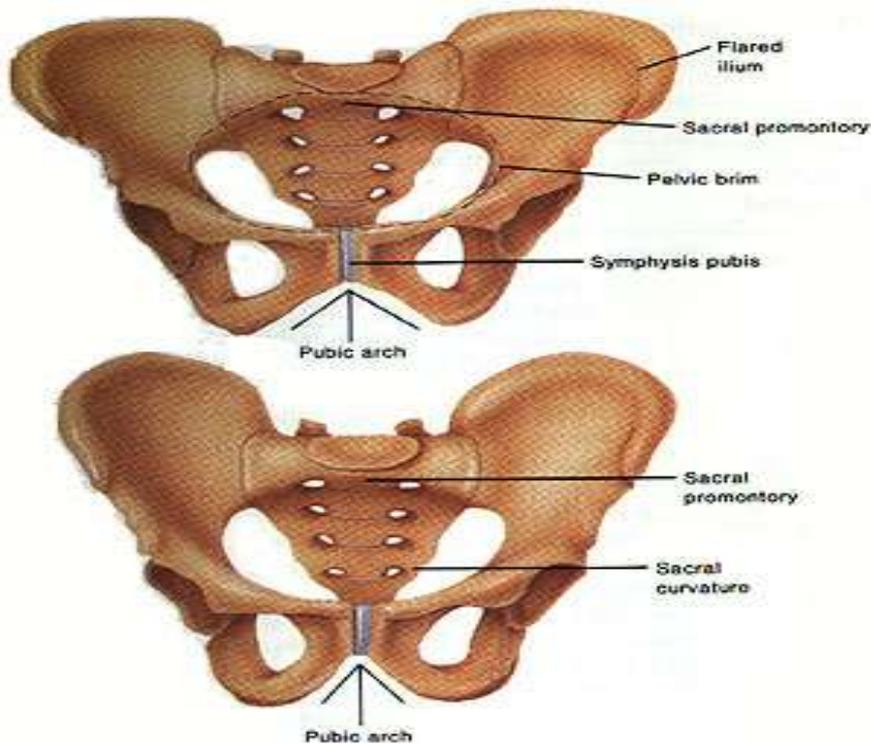
Now let's talk about each part of hip bone in detail :

⊕ Ilium

The ilium divides to 3 parts (like oriental fan):

3- Inferior pubic ramus.

Note: there is a difference in the magnitude of pubic angle between males and females; in males it is acute (~80) BUT in female it is obtuse (~120).



Note : sacroiliac joint → movable when we pray , bend or go downstairs)
if it is injured → low back pain .

Note : sacrococcygeal joint is immobile except at giving birth .

⊕ Ischium

- Ischium has comma (J) shape and it consists of 4 parts:

1- **Body.**

2- **Ischial spine:** the distance between the two ischial spines is the narrowest diameter in pelvis and this distance very important in determining the way of delivery (natural or cesarean).

3- **Ischial tuberosity:** it is the part that holds the weight while sitting on a chair and it is also used for muscle attachment.(it is the part that is responsible for causing pain while sitting especially for thin people and also for people who works for a long time "**Weaver syndrome**").

4- **Ischial ramus:** it is the region that attaches with the inferior pubic ramus.

There is a foramen which is bordered by Pubic and Ischium called **Obturator foramen**. Most of this foramen covered by Oburator membrane, the uncovered part of the foramen form a

canal (Obturator canal). This canal is an important passage for arteries, veins and nerves toward the lower limb.

◆ Joints of Pelvic Girdle

As we mentioned they are (4) in number.

- Pubic Symphysis

This joint formed between the bodies of the (2) adjacent pubic bones. It does not move in males. In females this joint moves during labor as a result of the effect of oxytocin hormone.

- (2) Sacroiliac

This joint joins ilium with sacrum. It moves while walking, bending and going down stairs. Moreover, it is the common site for "low back pain" that mostly occurs after holding heavy things in a wrong way.

- Sacrococcygeal

This joint joins sacrum with coccyx and moves just at delivery.

Bones of the lower limb

⊕ Femur

The femur is a long bone and it is the longest bone in the body. It presents (1/4) of the body height.

This bone is convex (anterior) and concave (posterior), this shape helps in distributing weight through muscles while landing.

• Femur consists of 3 parts:

1- **Proximal end:** which contains:

a- **Head:** it is (2/3) of a sphere and it is covered by hyaline cartilage. Also, there is a small hole on it called Fovea.

b- **Neck:** this part is commonly fractured in old ladies because of osteoporosis and this fracture at this age needs a surgical solving.

c- **Greater trochanter:** it is subcutaneous and works for fixing (balancing) pelvis while raising one leg (walking). Also, it is used for muscle attachment.(it is palpable).

d- **Lesser trochanter:** used for muscle attachment.

2- **Body.**

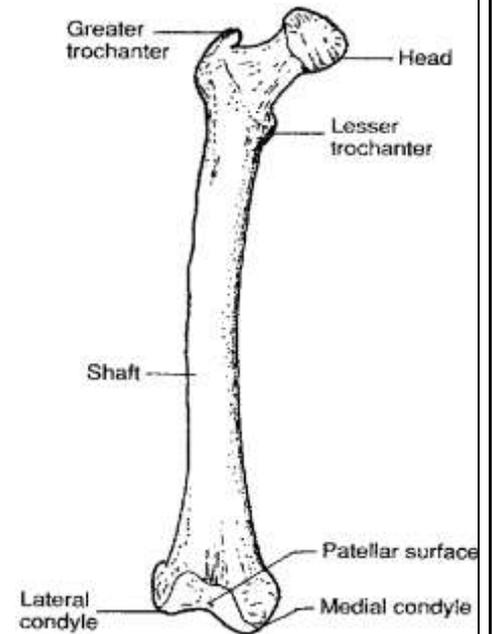
3- **Distal end.**

Note : in the slide 6 the gluteal lines of ilium are posterior , anterior and middle but according to Gray's Anatomy 2nd edition page 527 they are inferior , anterior and posterior .

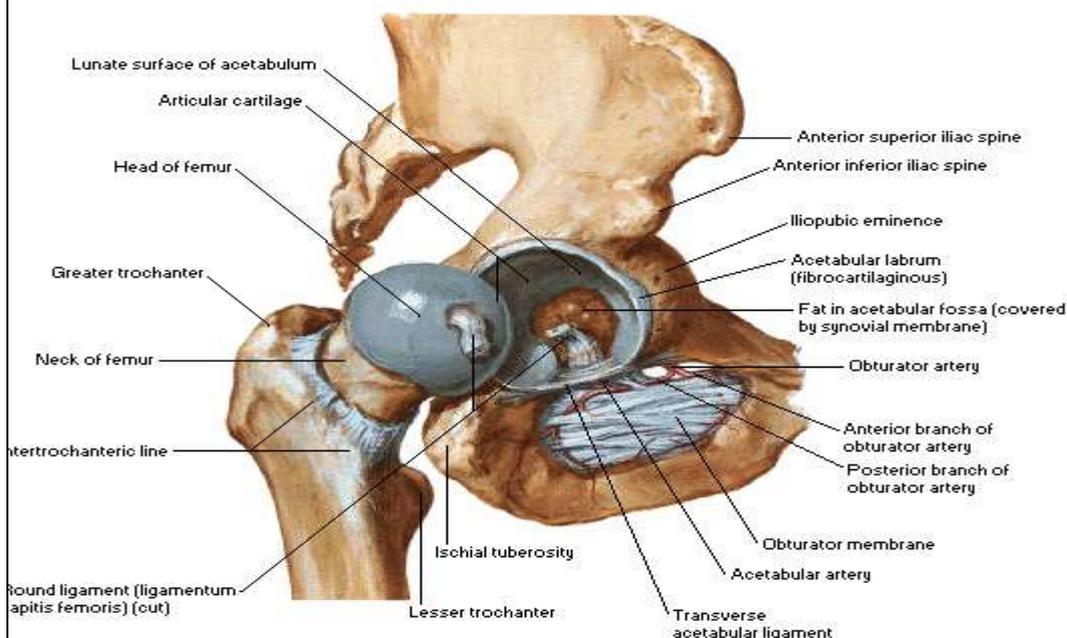
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Correction team

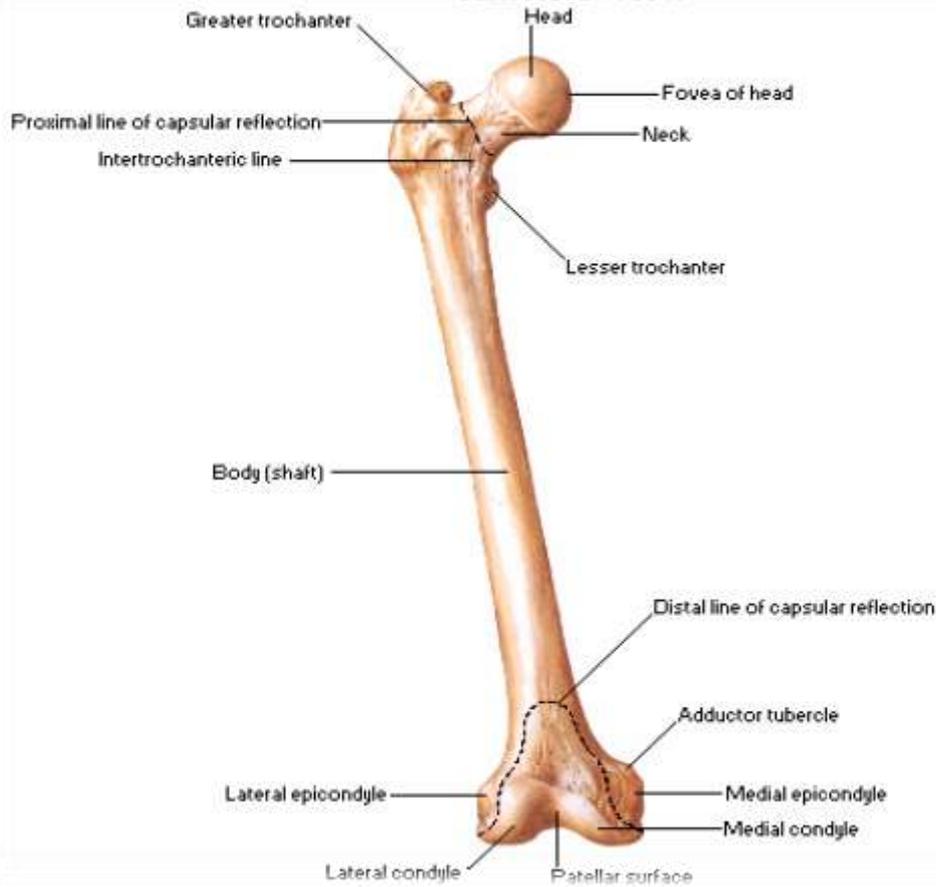
O M & T R



Lateral View



Anterior View



Posterior View

