

First practical session

2017

BONES OF THE GLUTEAL REGION

THE HIP BONE

The hip bone is made of:

- 1 The ilium: superior in position →
- 2 The ischium: postero-inferior in position →
- 3 The pubis: antero-inferior in position →

Anatomical position of the hip bone

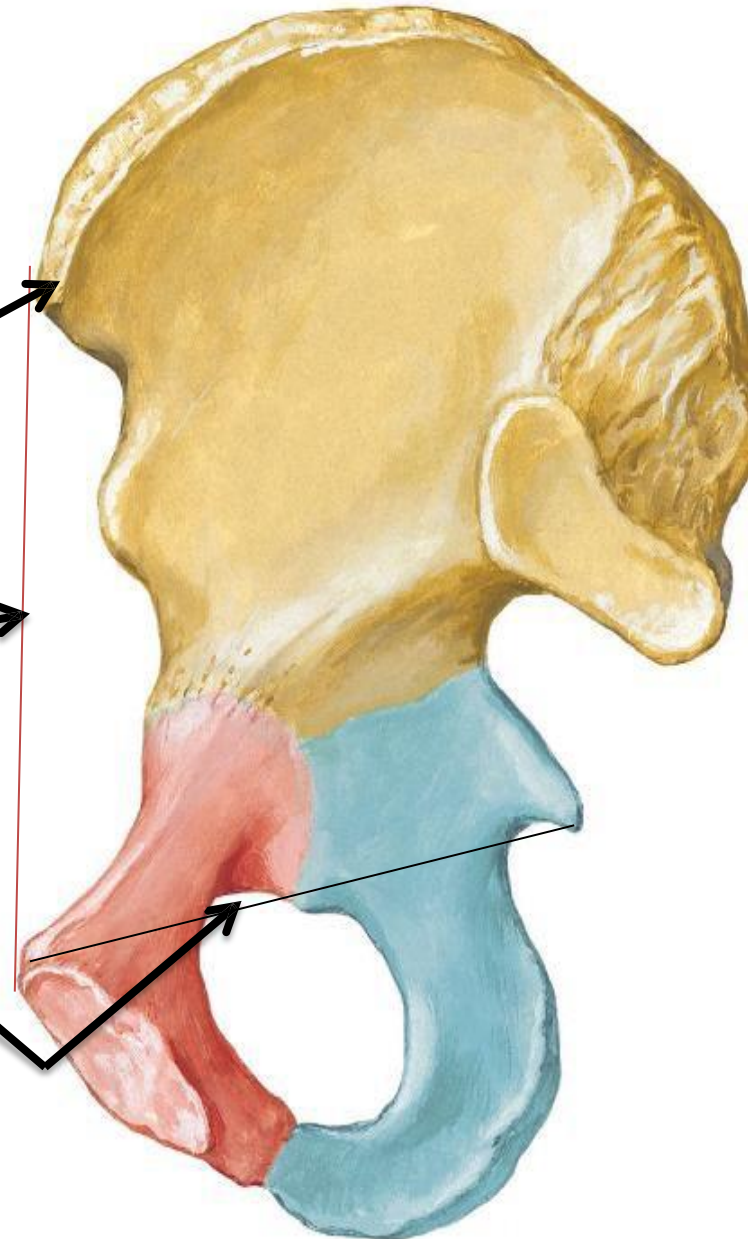
It is very important to understand the anatomical position of the hip bone:

in anatomical position:

- 1-The Anterior superior iliac spine and the pubic tubercle **lie in the same vertical plane**.
- 2-The ischial spine and the upper border of the symphysis pubis **lie in the same horizontal plane**.

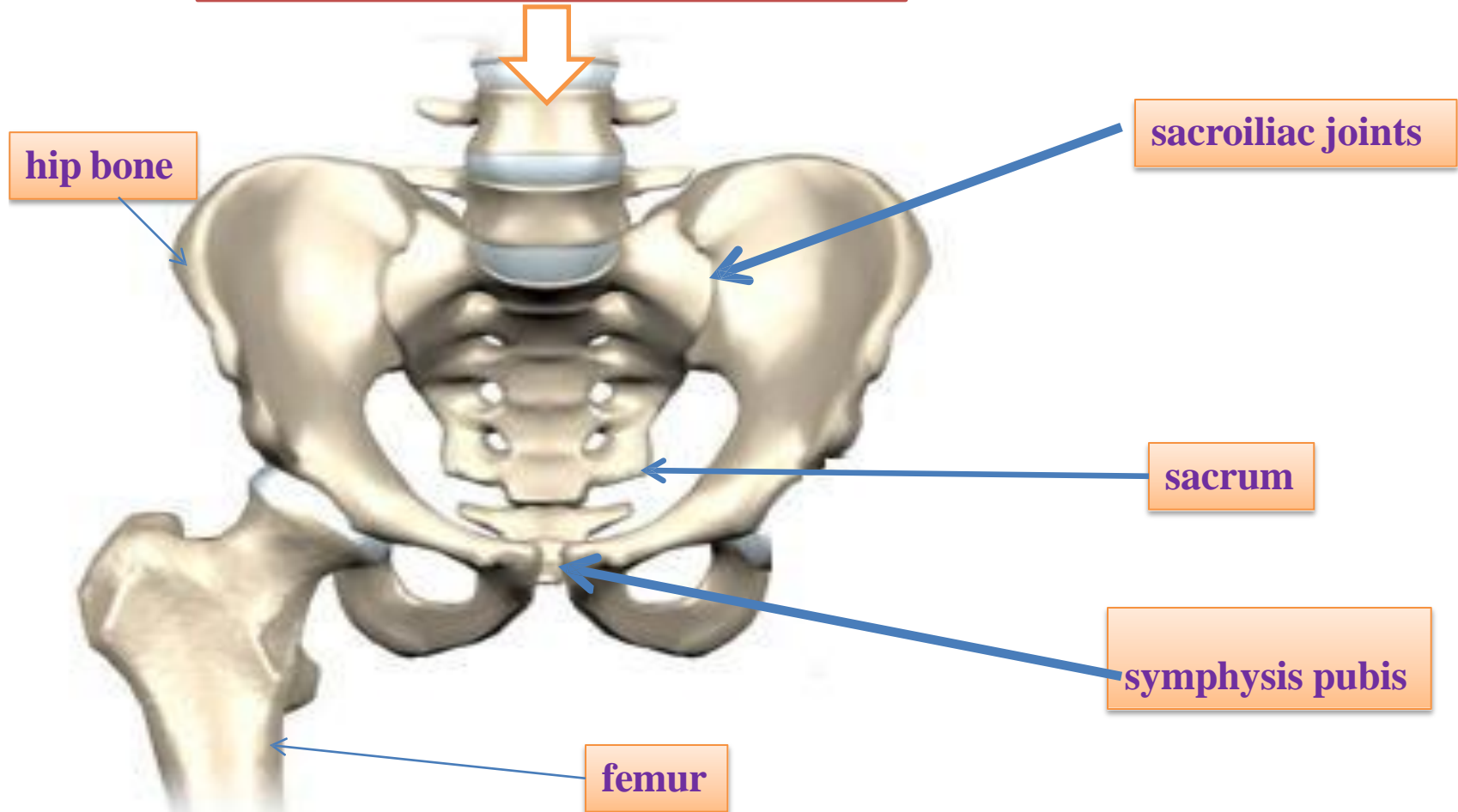
What does this mean?

It means that the pelvis is looking forward in the anatomical position



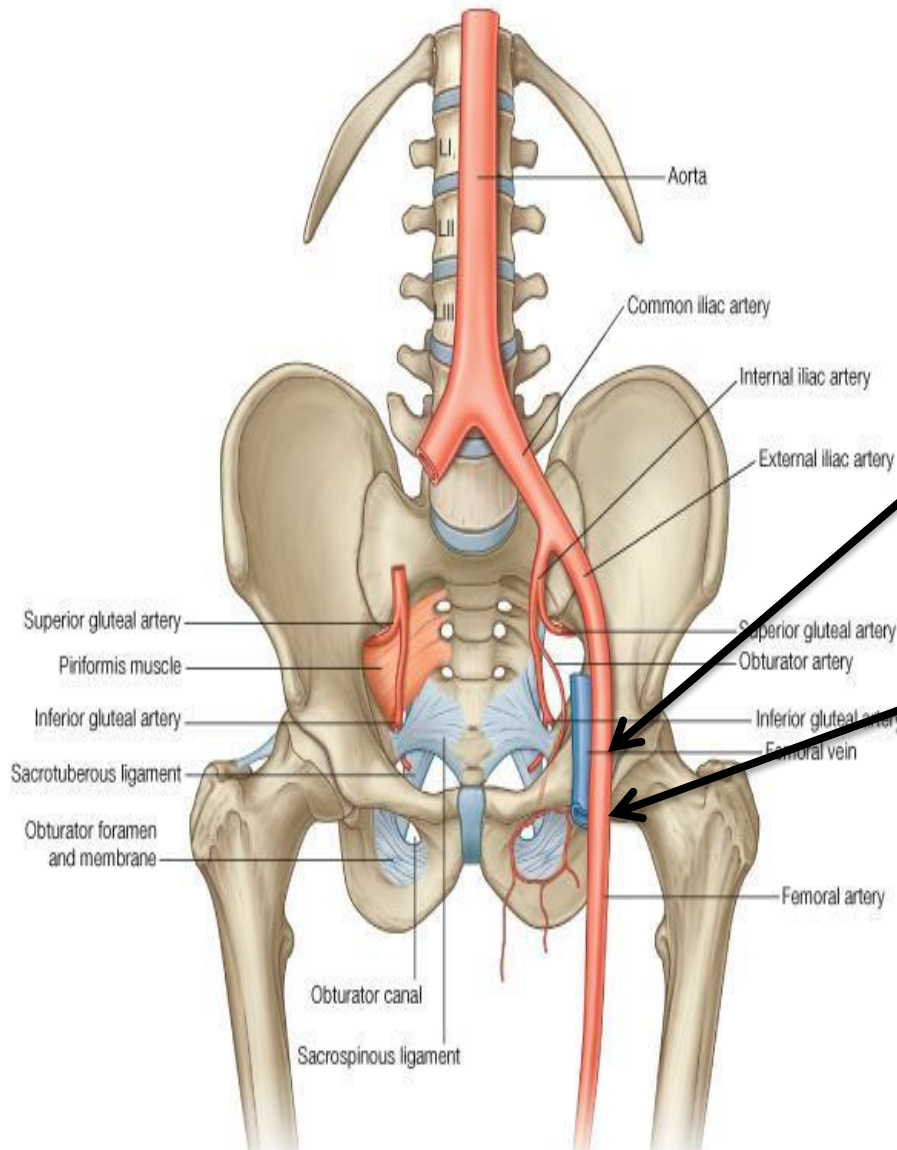
The 2 hip bones with the sacrum form the pelvis

Now look! where does the pelvis look?
It is looking right at you! Never upwards



During your first practical session, make sure to have a look at the anatomical position of the pelvis

The fact that the pelvis is facing (looking) forward is important to understand how structures passing from the pelvis smoothly join the thigh



Notice, *the external iliac artery* as it passes from the pelvis into thigh to become the *femoral artery*

What do you think about
The femoral nerve and vein?

Remember that

at puberty the
triradiate cartilage
starts to ossify and
near the age of 17
the triradiate
cartilage will be
replaced by bony
union

X-ray?

What is the idea here?

The ilium, ischium and pubis

meet one another by means of

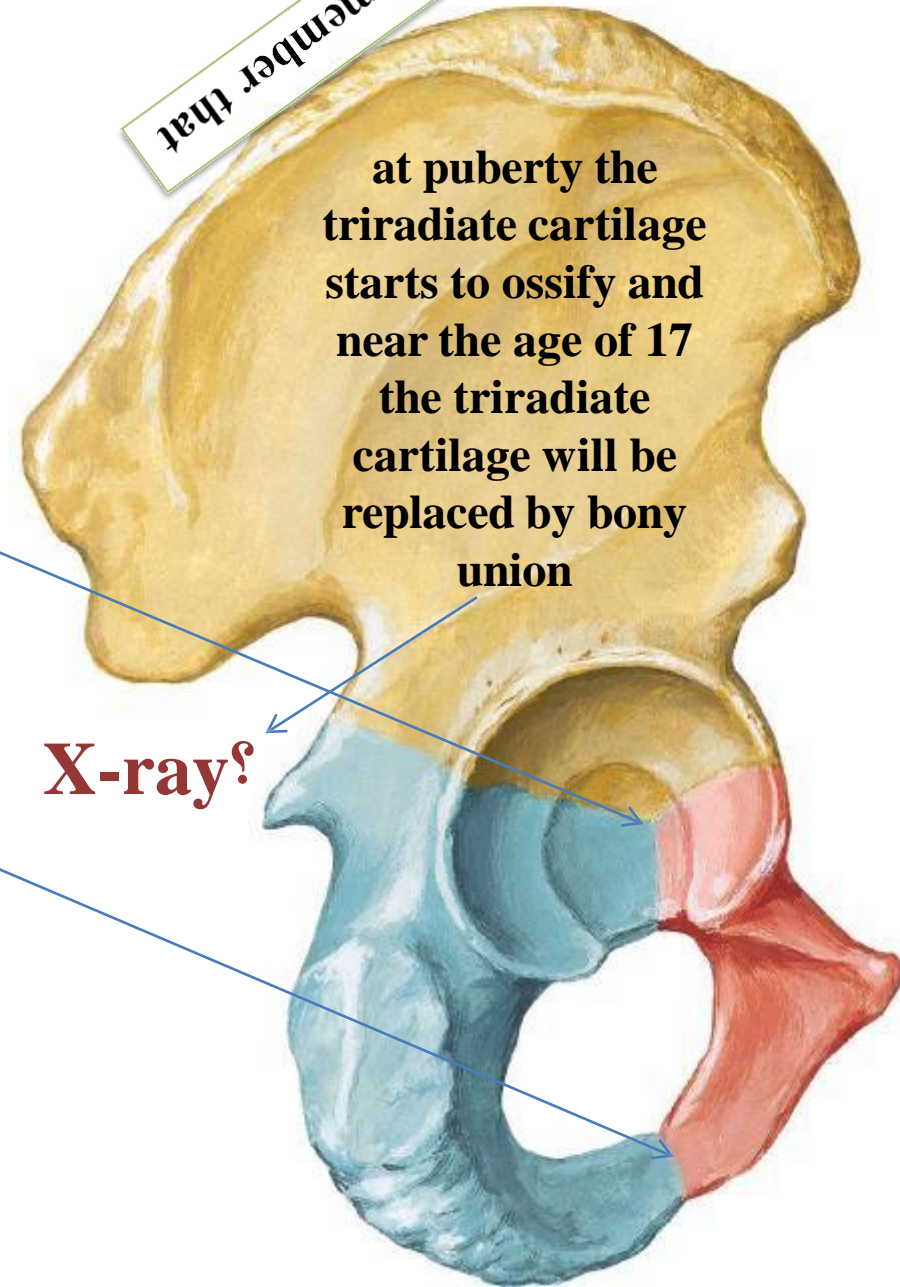
triradiate (Y-shaped)
cartilage at the Acetabulum.

While *the inferior ramus of the
pubis meets with the ramus*

of the ischium by

cartilaginous union

Ossifies near the age of 7 years





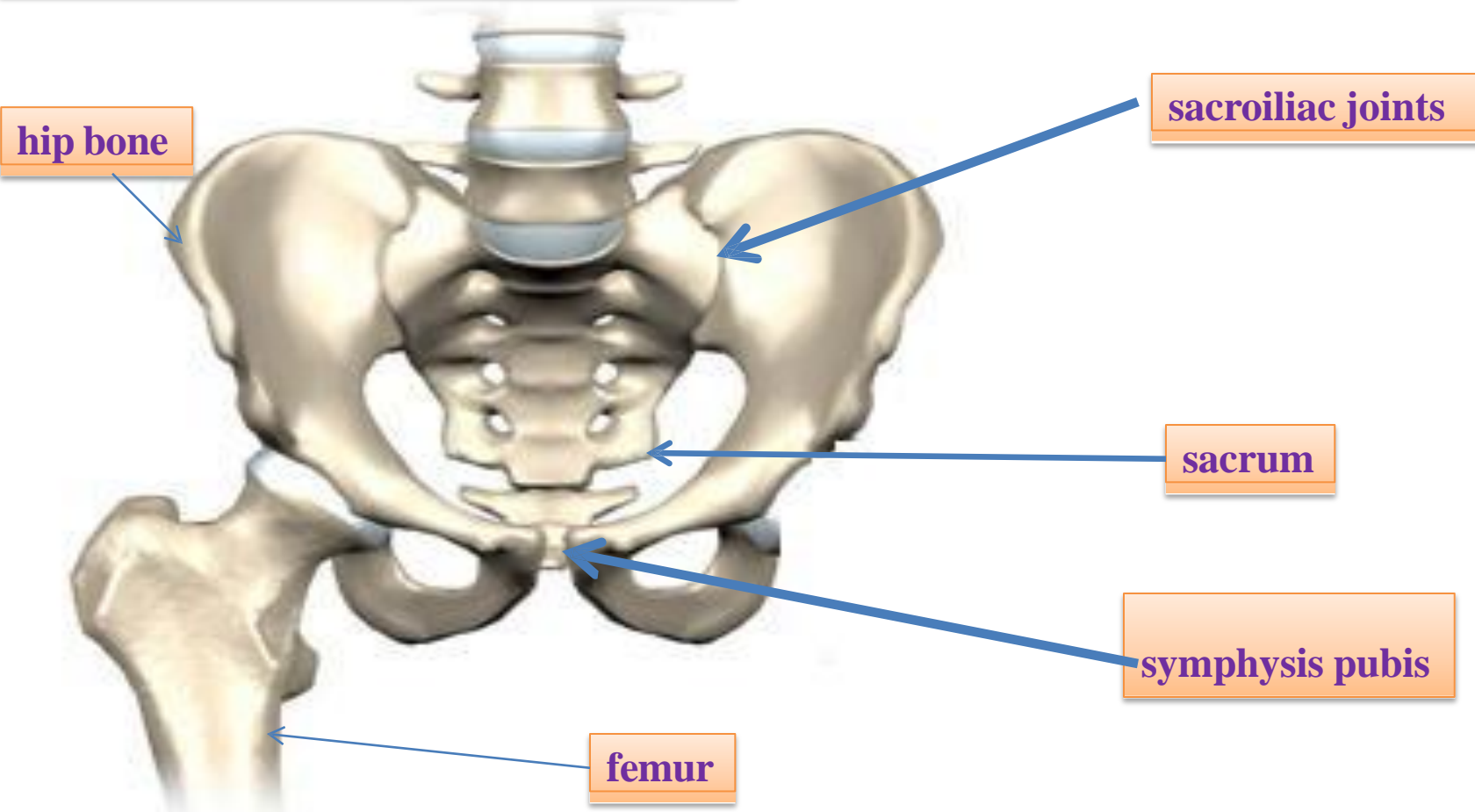
Anteroposterior radiograph of the pelvis of a boy aged 7.

1. Ilium. 2. Part of triradiate growth cartilage. 3. Superior femoral epiphysis. 4. Cartilaginous growth plates. 5. Ossifying greater trochanter. 6. Ischium. 7. Pubis. 8. Cartilage between pubic and ischial rami.

The hip bones articulate with the **sacrum** at the **sacroiliac joints posteriorly** while **anteriorly** they articulate with one another at the **symphysis pubis**.



Thus the two hip bones form the **pelvic girdle** where the ilium corresponds to the scapula in the upper limb, the pubis corresponds to the clavicle while the ischium corresponds to the coracoid process



Hip (Coxal) Bone
Lateral View

1-The Ilium

Two parts:
1- Ala
2- Body

Superior border
Is made by the iliac crest

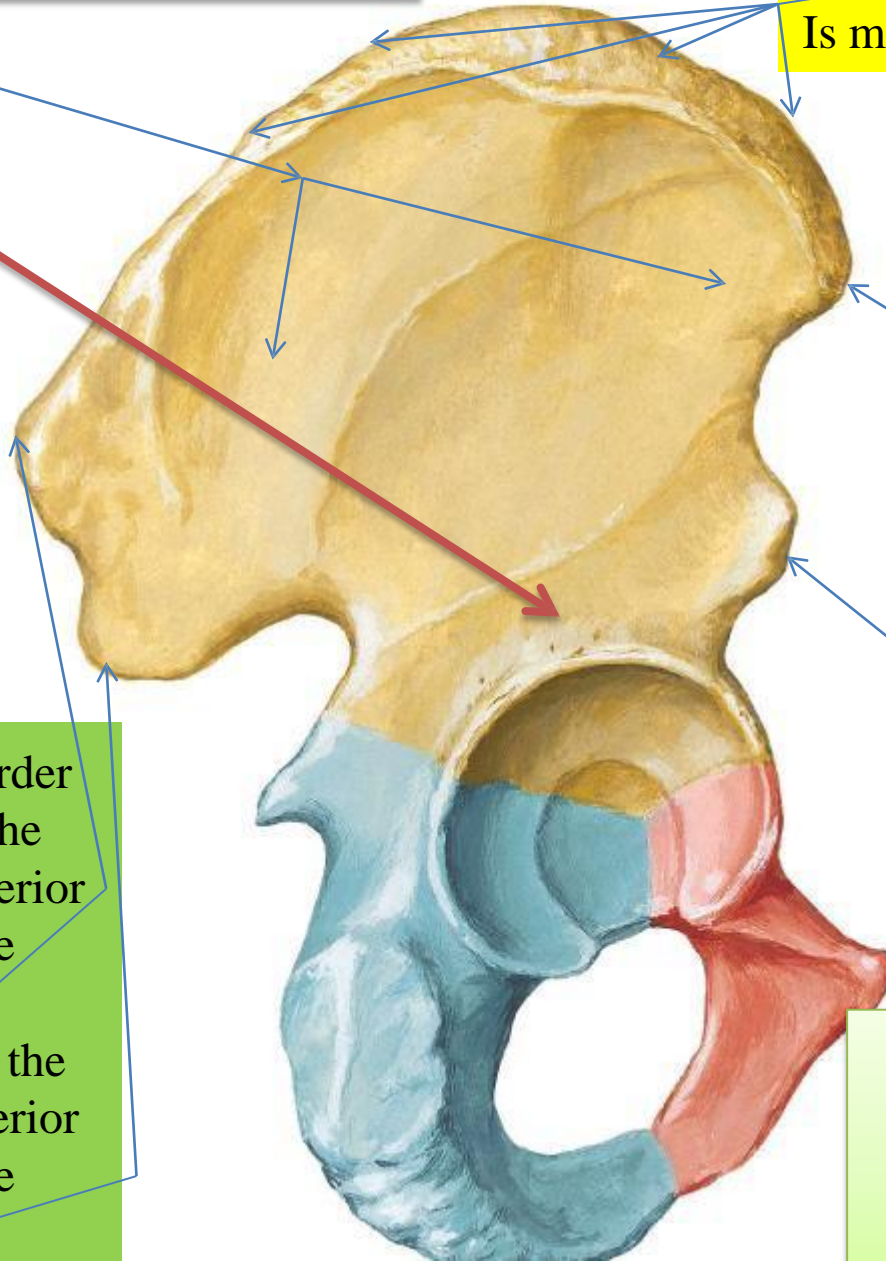
Right hip bone

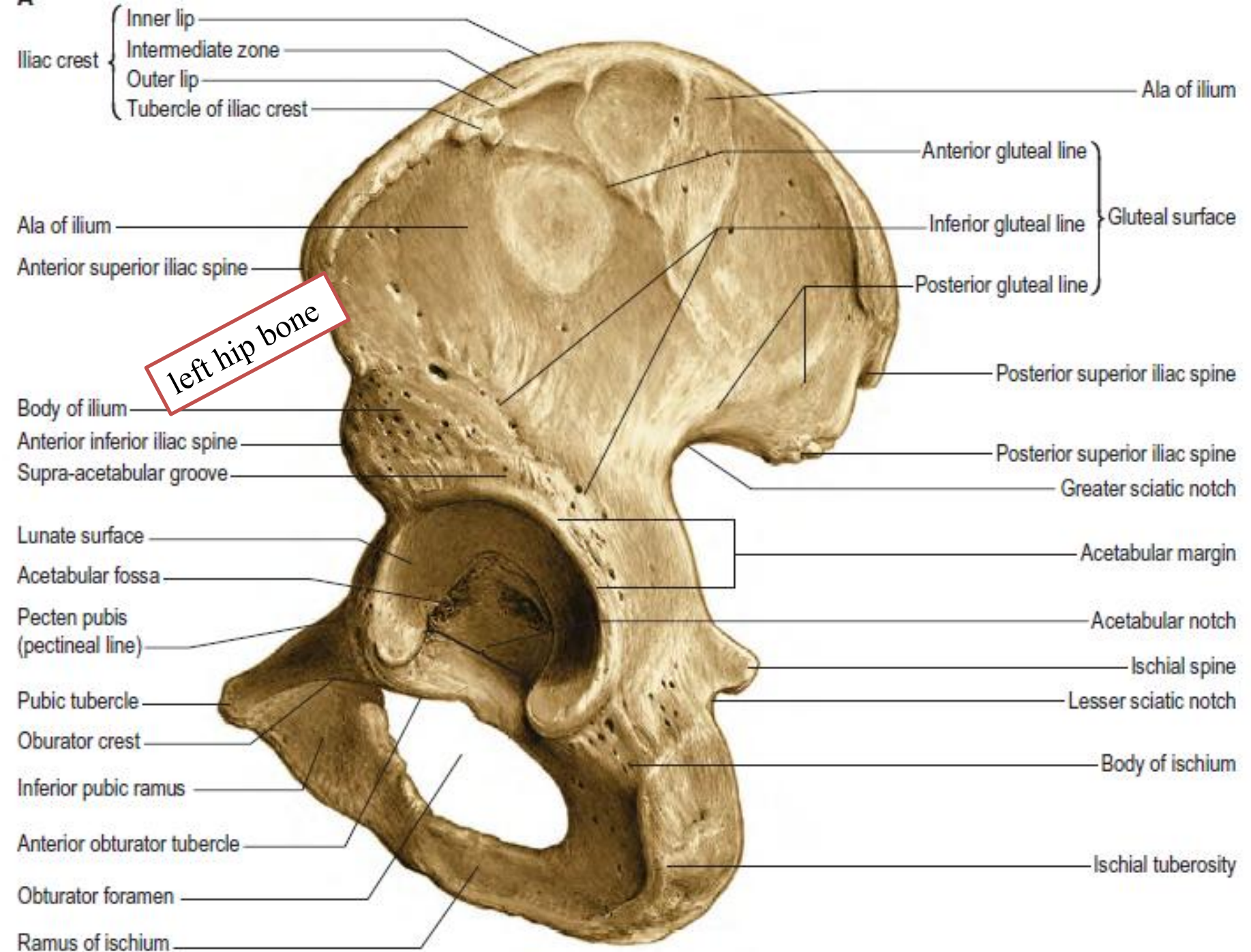
Three surfaces
1 gluteal surface
2 iliac fossa
3 sacropelvic surface

Anterior border
Begins at the
anterior
superior iliac
spine
(A.S.I.S)
and
ends at the
anterior
inferior iliac
spine
(A.I.I.S)

Posterior border
Begins at the
posterior superior
iliac spine
(P.S.I.S)
And ends at the
posterior inferior
iliac spine
(P.I.I.S)

*the anterior superior spine
of the ilium is easily felt
and may be visible in the
thin subject*



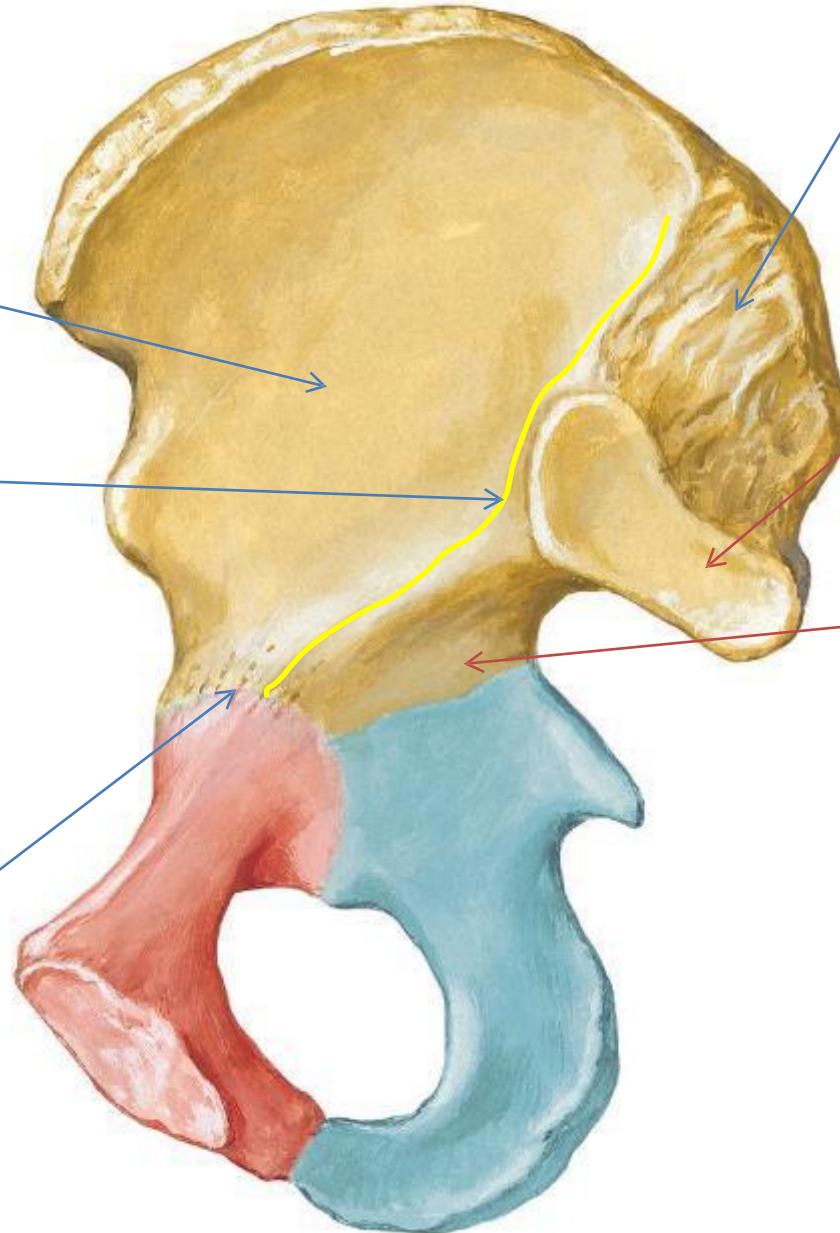


Hip (Coxal) Bone Medial View

Right hip bone

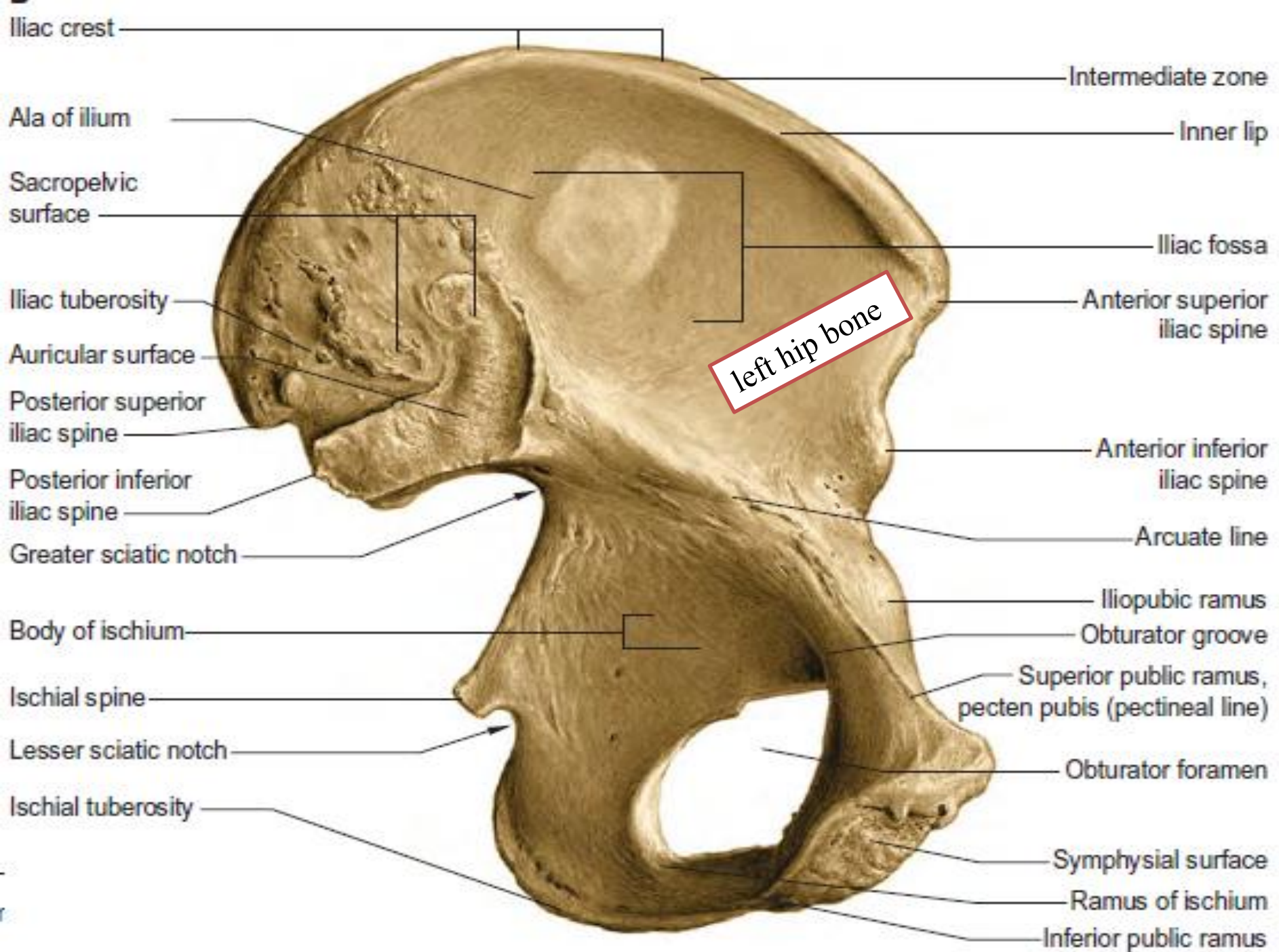
Iliac fossa

Medial border
Forms the arcuate line
Which extends to the ilio-pubic eminence



The sacropelvic surface presents:

- 1- Iliac tuberosity: rough area that gives attachment to the interosseous and dorsal sacroiliac ligaments
- 2- auricular surface: Smooth area articulates with the sacrum to form the sacroiliac joint
- 3- pelvic surface: Smooth area



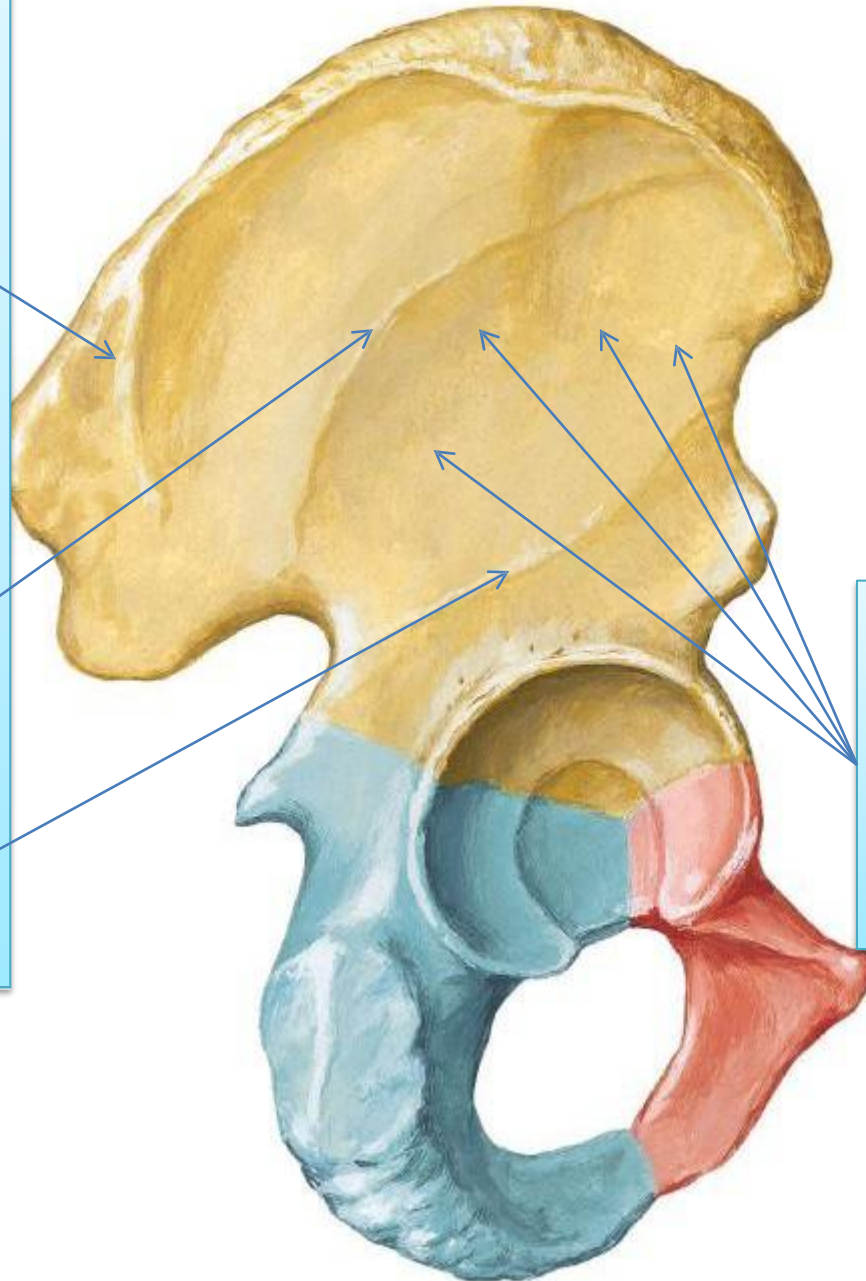
Hip (Coxal) Bone Lateral View

The gluteal surface is divided into 4 parts by three lines:

1- Posterior gluteal line

2- Middle gluteal line
Or anterior

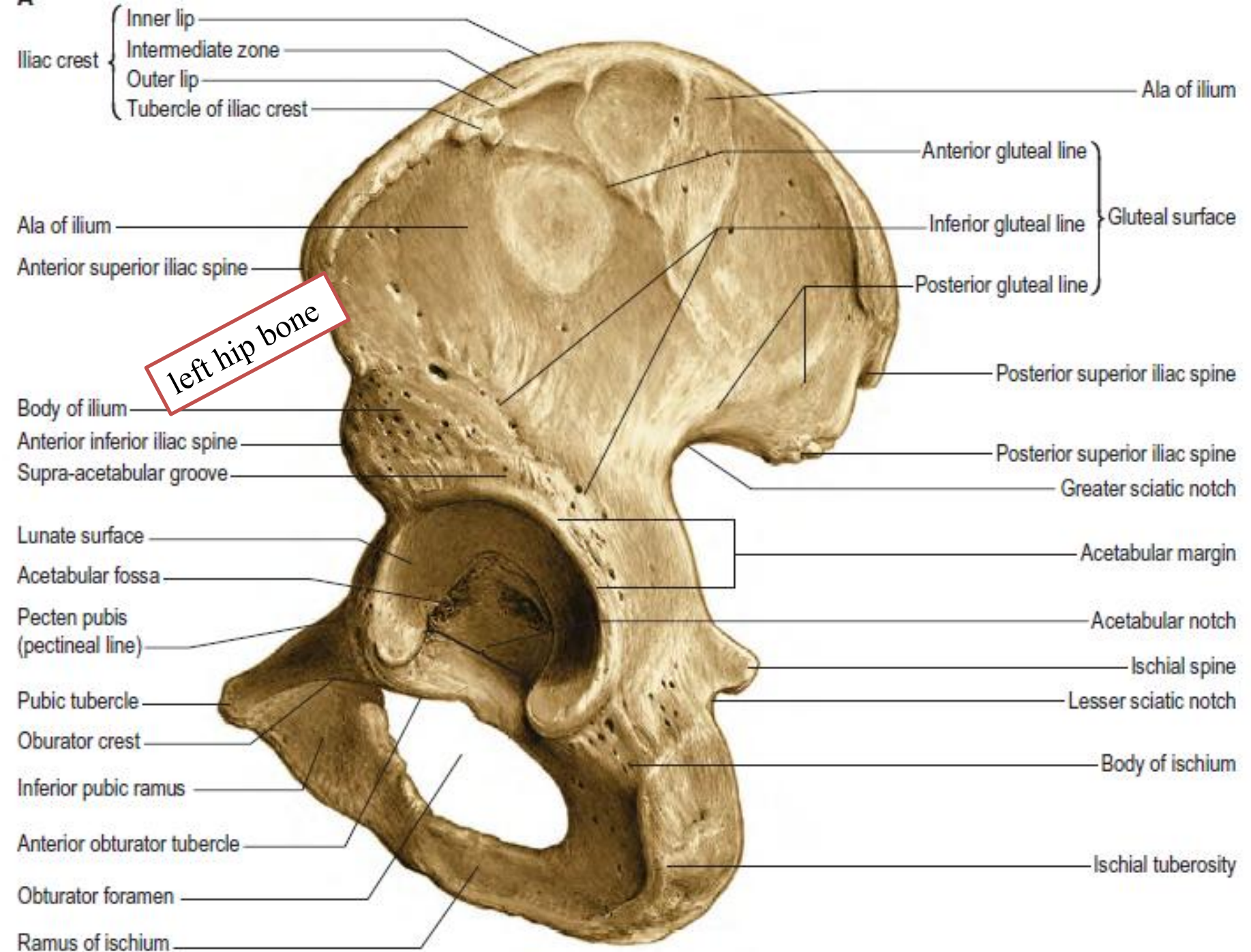
3- Inferior gluteal line



MAKE SURE
you know the
names of the
muscles
that are attached
to the areas
between these
lines



Which muscle is
attached to the
area between
The inferior and
middle gluteal
lines?



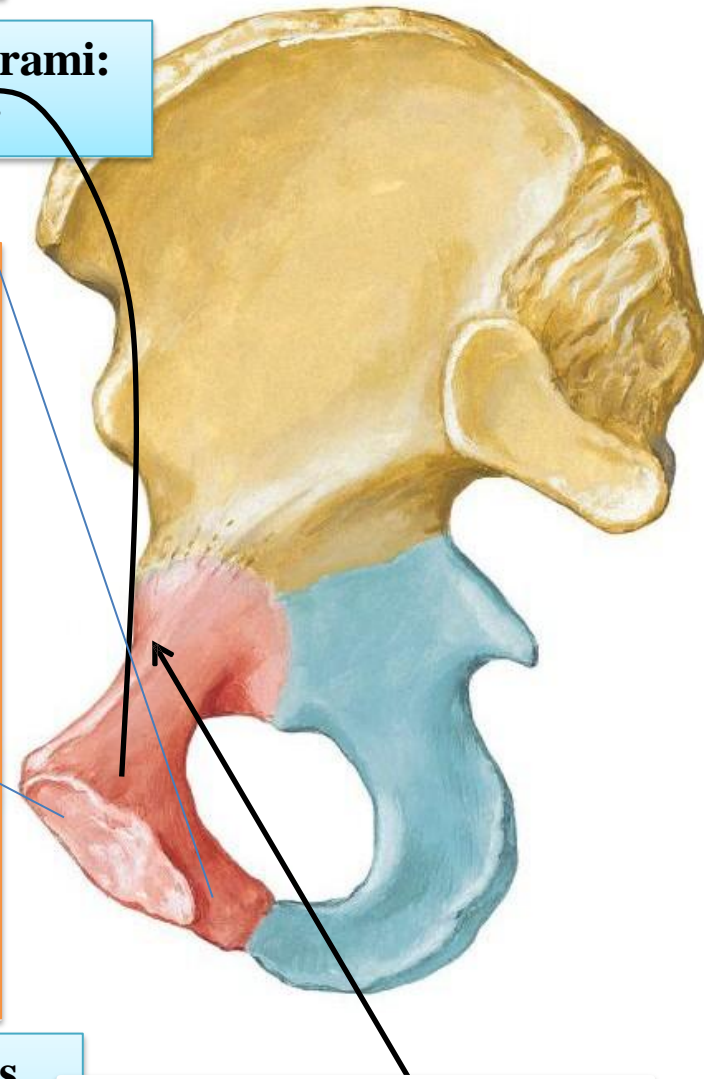
Hip Joint
Anterior View

Pubic bone

Hip (Coxal) Bone
Medial View

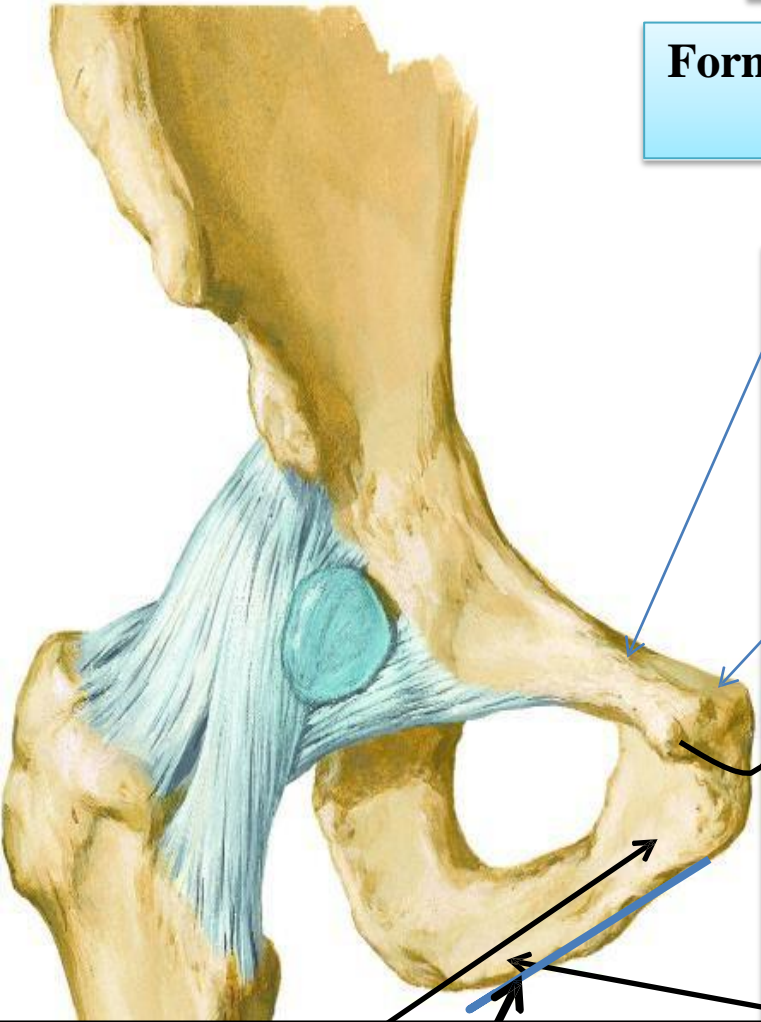
Formed of a body and two rami:
superior and inferior

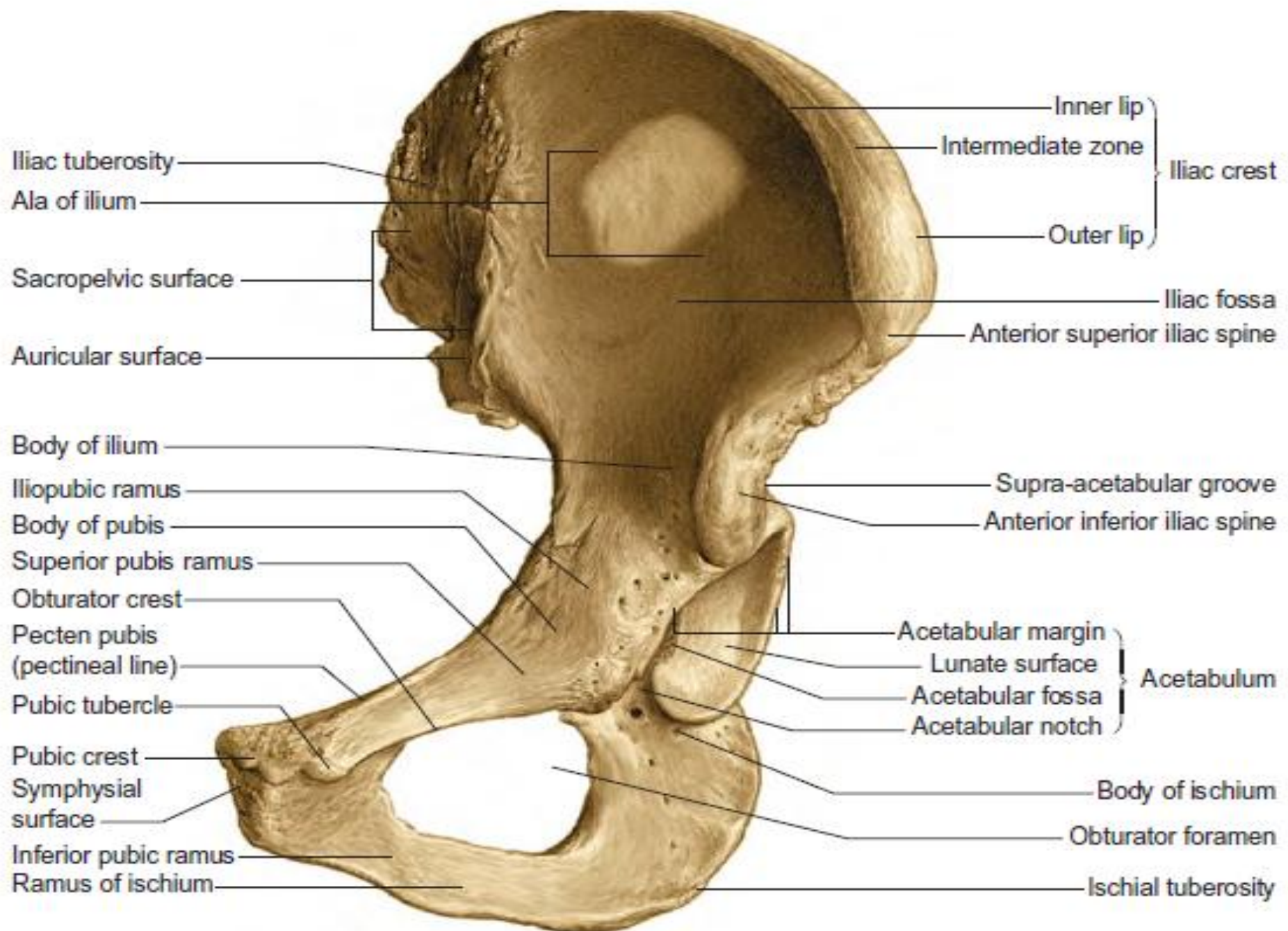
The body is flattened and has:
1- an upper border called pubic crest that ends laterally by the pubic tubercle
2- symphyseal surface which articulates with the opposite pubis to form the pubic symphysis



Pectineal line

The inferior ramus of the pubic bone joins the ischial ramus to form the conjoint tendon.
The superior pubic ramus has a pectineal line on its medial surface





Hip (Coxal) Bone
Lateral View

The ischium

Body

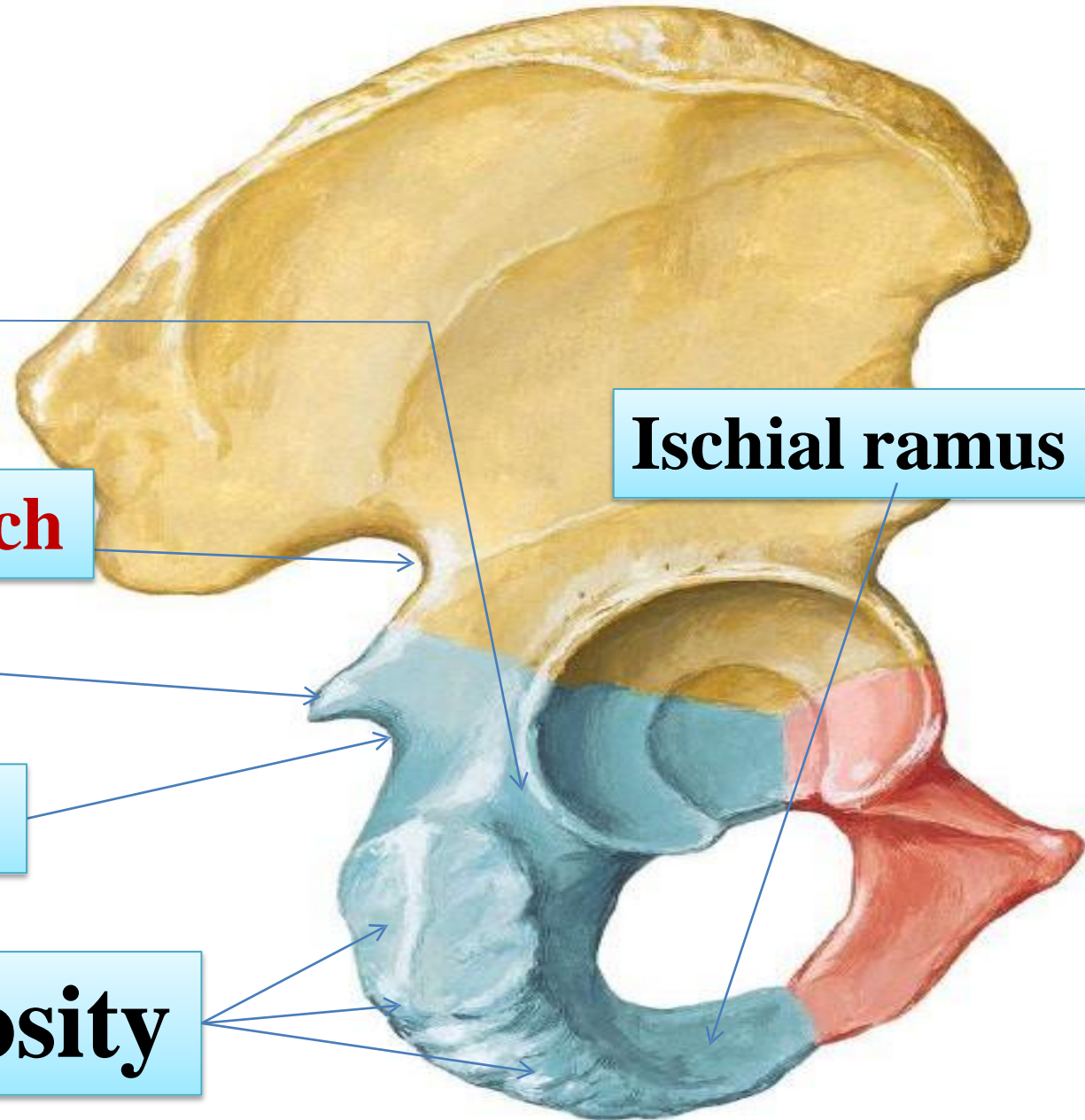
Greater sciatic notch

Ischial spine

lesser sciatic notch

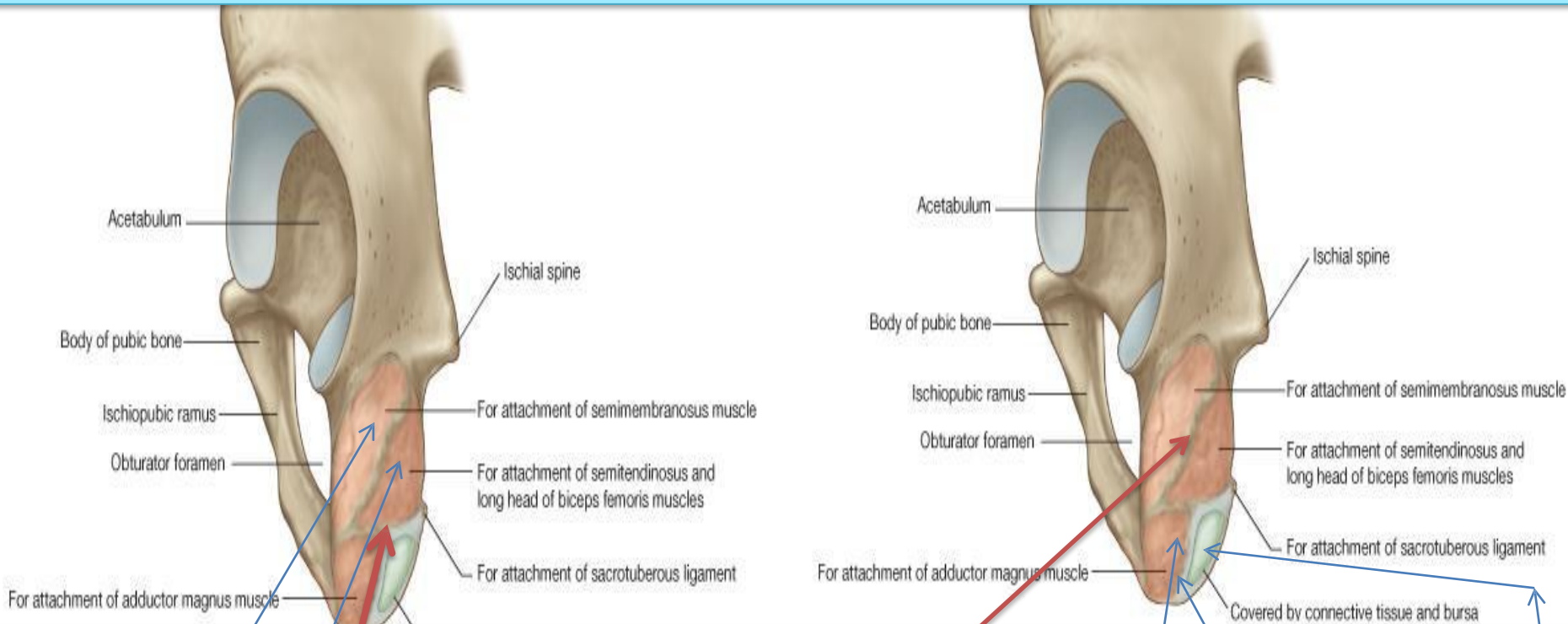
Ischial tuberosity

Ischial ramus



The *ischial tuberosity* is covered by *gluteus maximus* **when one stands**.

In the sitting position the muscle slips away laterally. To palpate this bony point, therefore, feel for it uncovered by gluteus maximus in ***the flexed position*** of the hip.



Ischial tuberosity

Divided by a transverse ridge into:

An upper quadrangular and a lower triangular parts

The upper quadrangular part is divided by an oblique ridge into:

- 1 Upper lateral part for the attachment of semimembranosus
- 2 lower Medial for the attachment of semitendinosus and long head of biceps

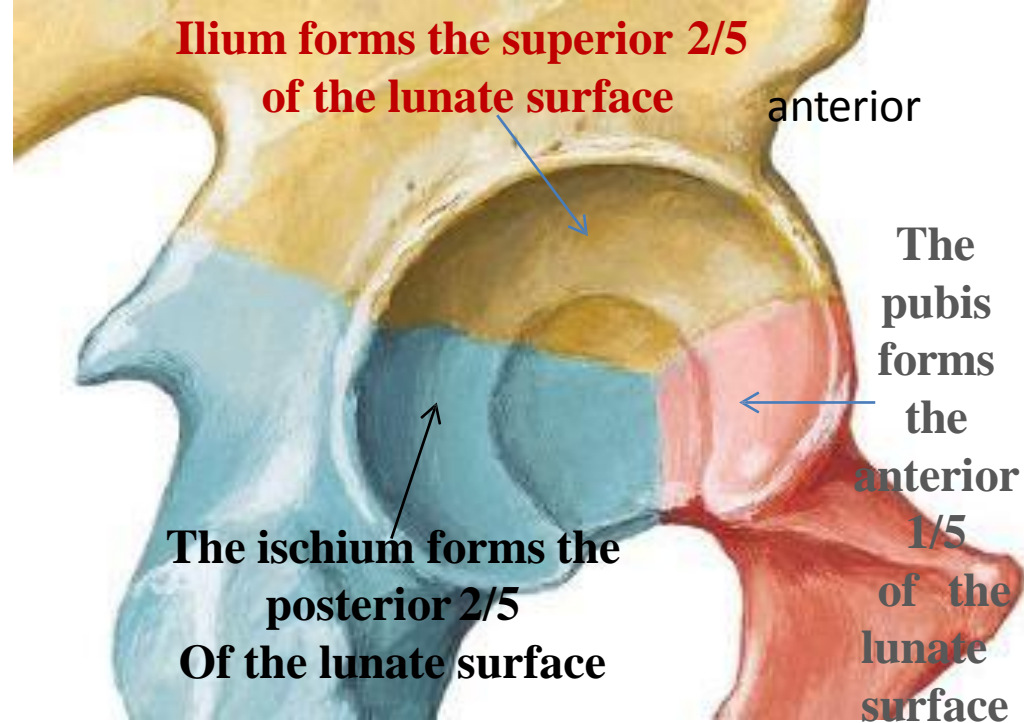
The lower triangular part is divided by a longitudinal ridge into:

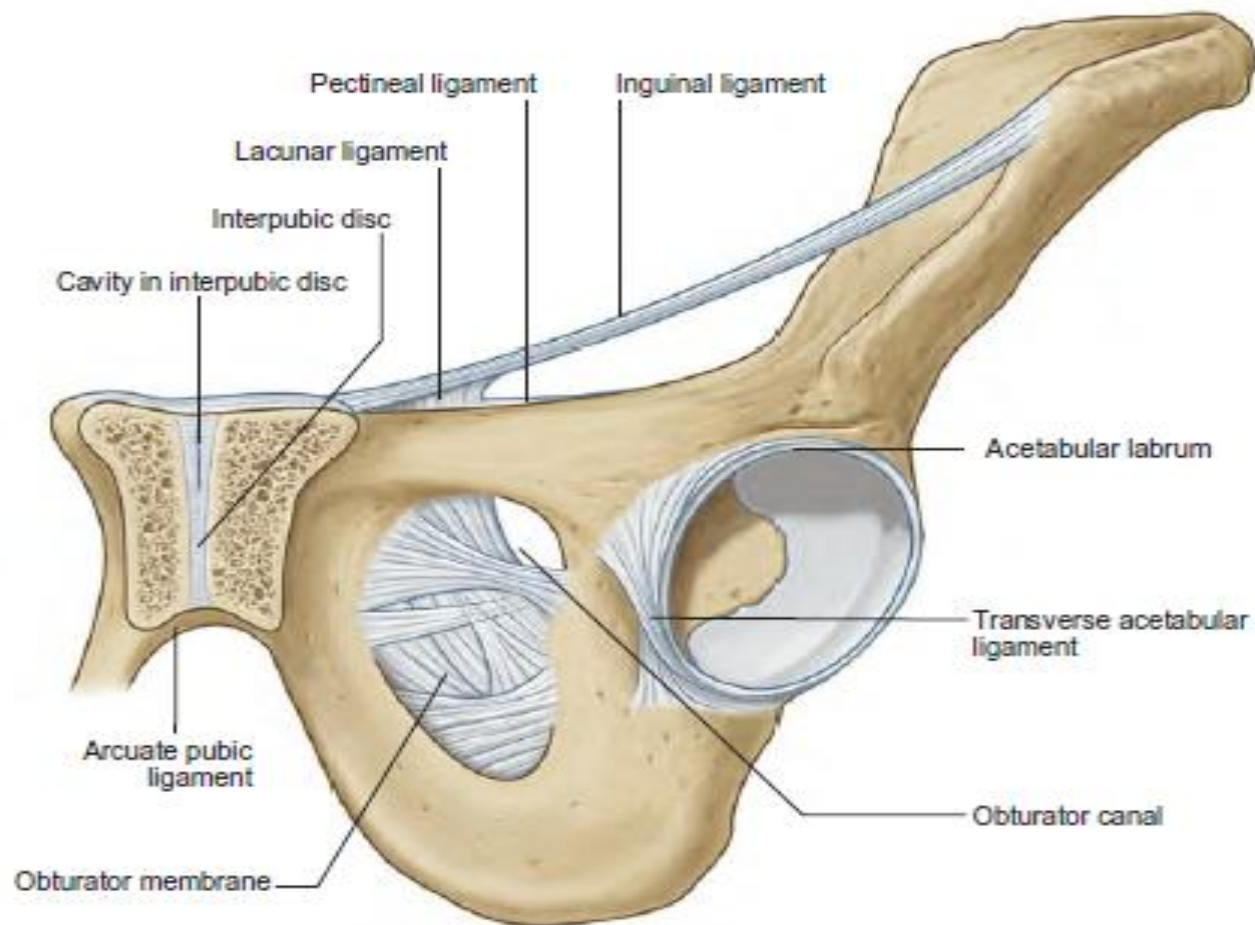
- 1-lateral part that gives attachment to the adductor part of the adductor magnus muscle
- 2-medial part (subcutaneous part)

The Acetabulum

- It is a C-shaped cavity located on the lateral aspect of the hip bone
- directed ***laterally, downwards and forwards***
- It is notched inferiorly by the acetabular notch which is bridged by the ***transverse acetabular ligament*** (part of the acetabular labrum)

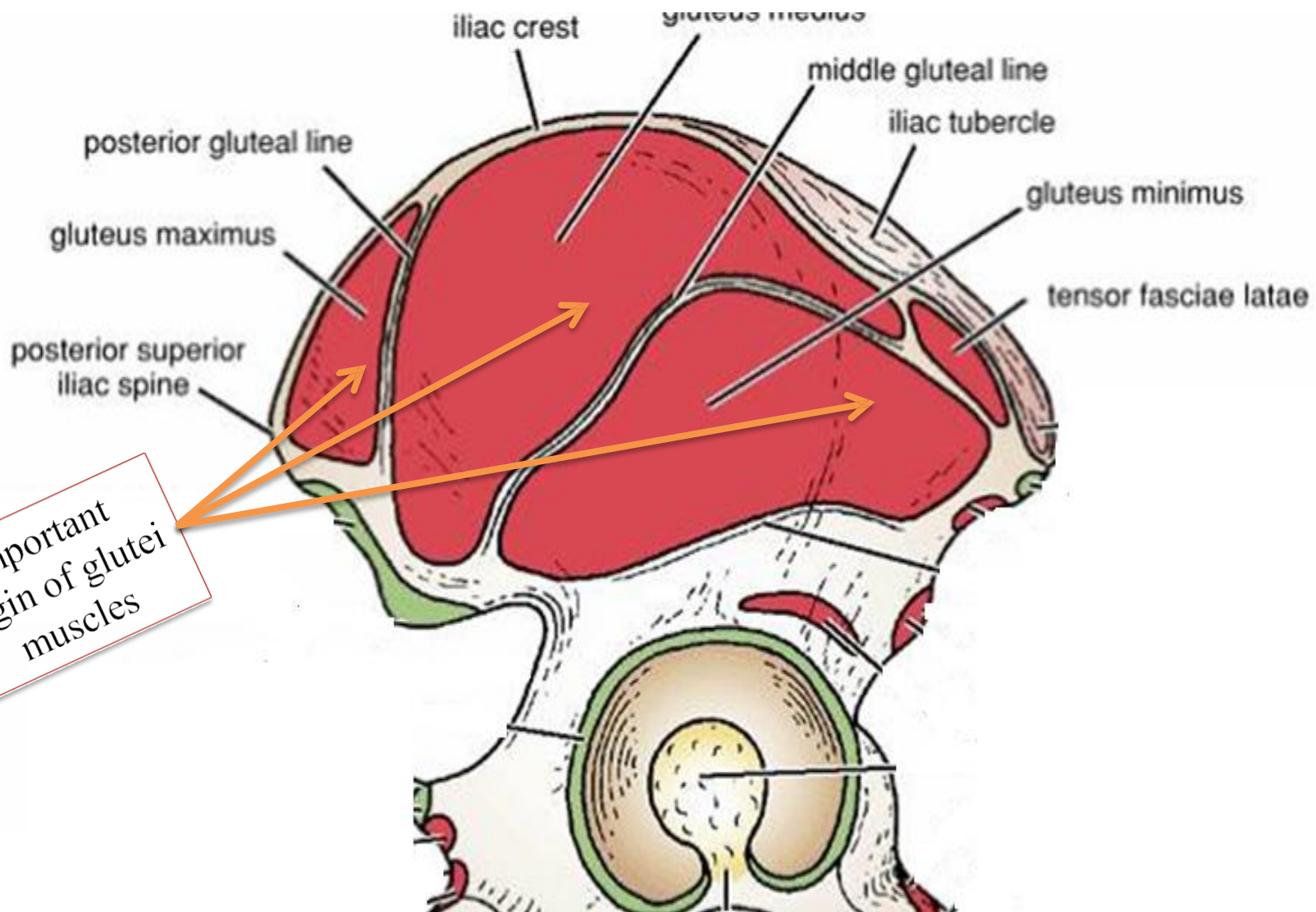
- The ***acetabular ligament converts the acetabular notch into foramen***
- Its cavity presents a horse-shoe shaped articular surface called **Lunate surface**
- The Lunate surface surrounds a non articular depression called **acetabular fossa** which is occupied by fat tissue in living





OBTURATOR
foramen Covered by a
membrane in living subjects

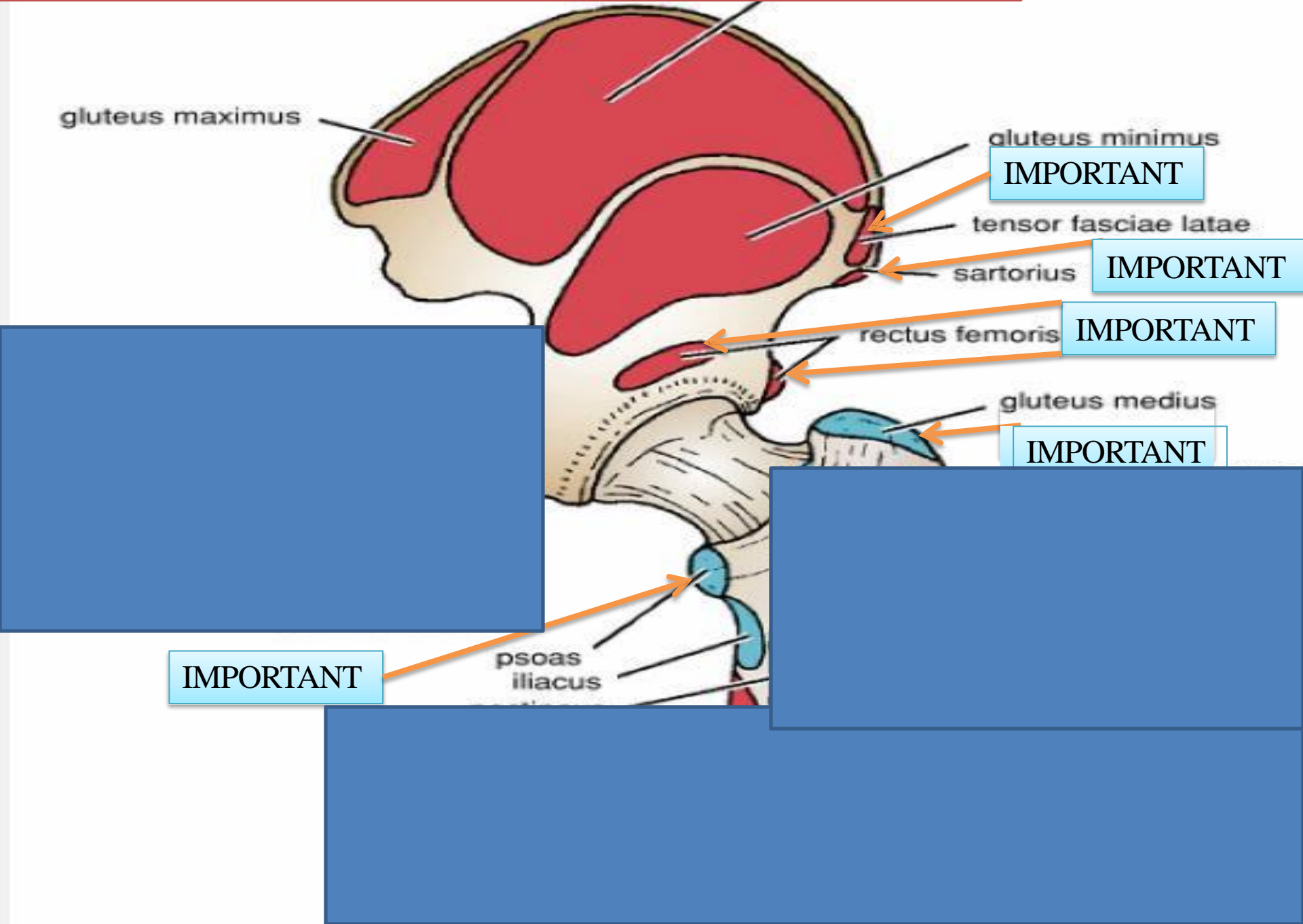
Muscle attachment to the hip bone



Important
origin of glutei
muscles

Muscles and ligaments attached to the external surface of the right hip bone

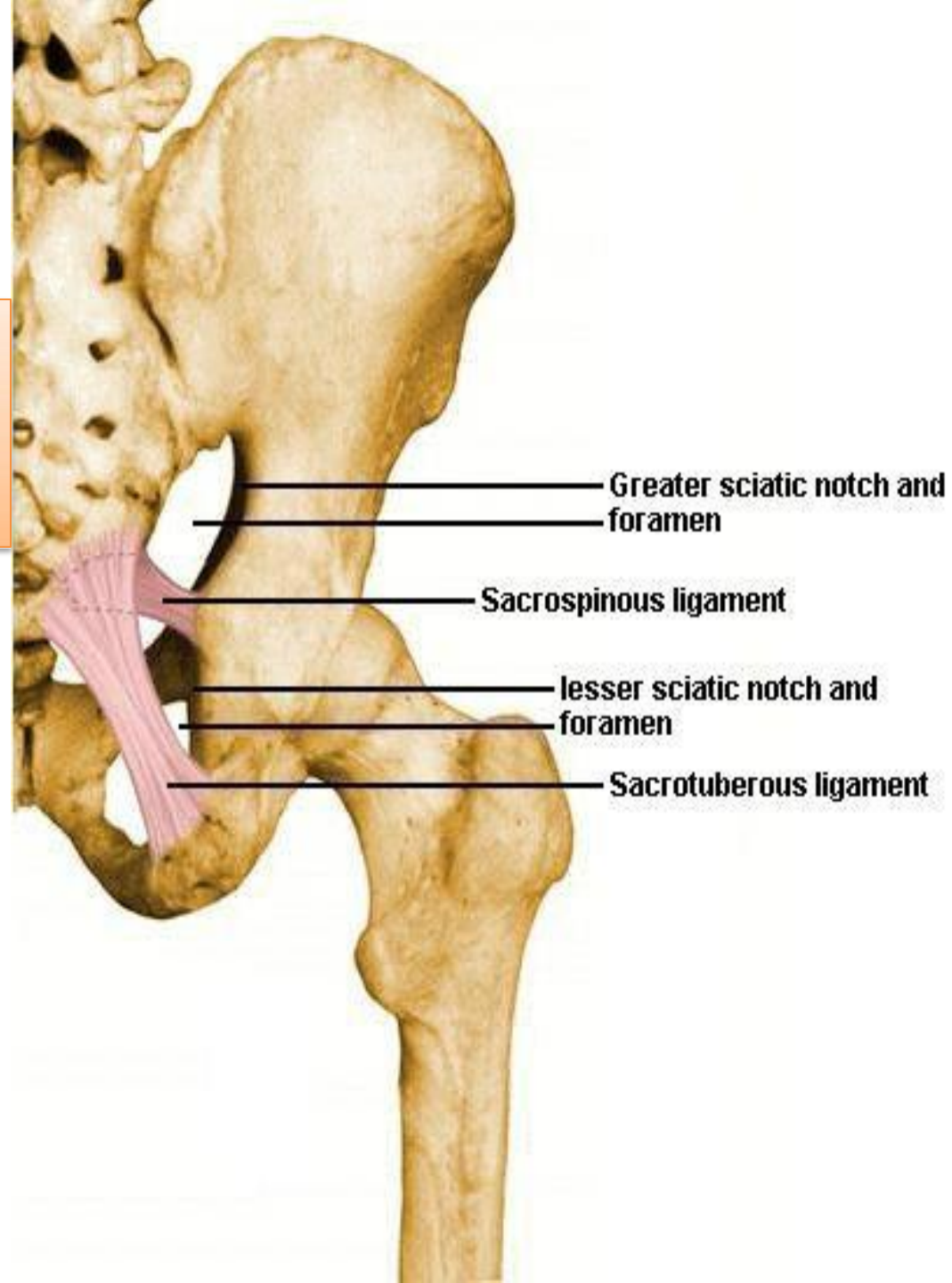
Muscle attachment to the hip and upper end of the femur bones



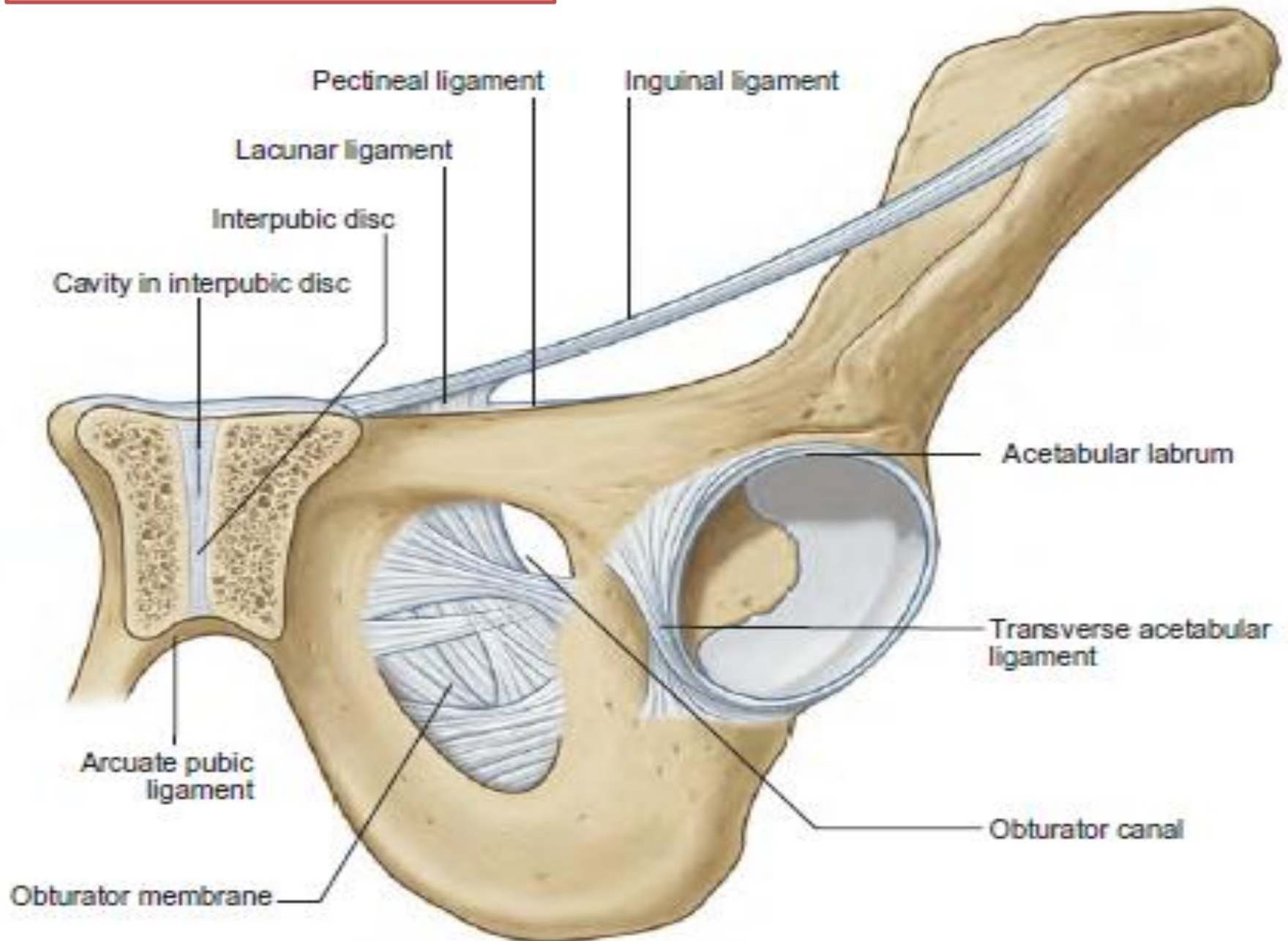
ligaments in the gluteal region

1- SACROTUBEROUS LIGAMENT

2- SACROSPINOUS LIGAMENT



Attachment of the inguinal ligament



BONES THE THIGH

A

Fovea for ligament of head

Head

Neck

Intertrochanteric line

Lesser trochanter

Shaft

Adductor tubercle

Medial epicondyle

Patellar surface

Neck

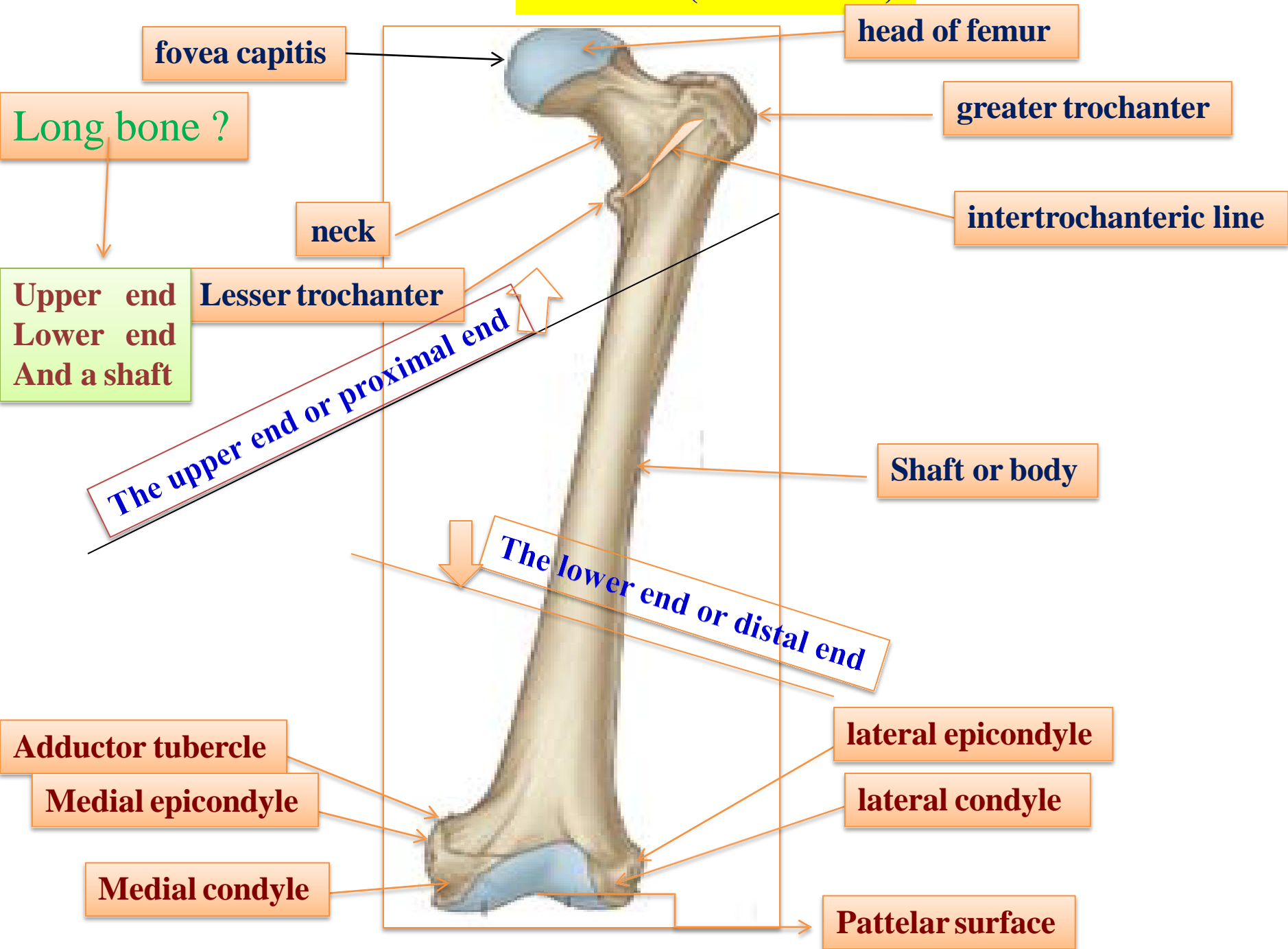
Trochanteric fossa

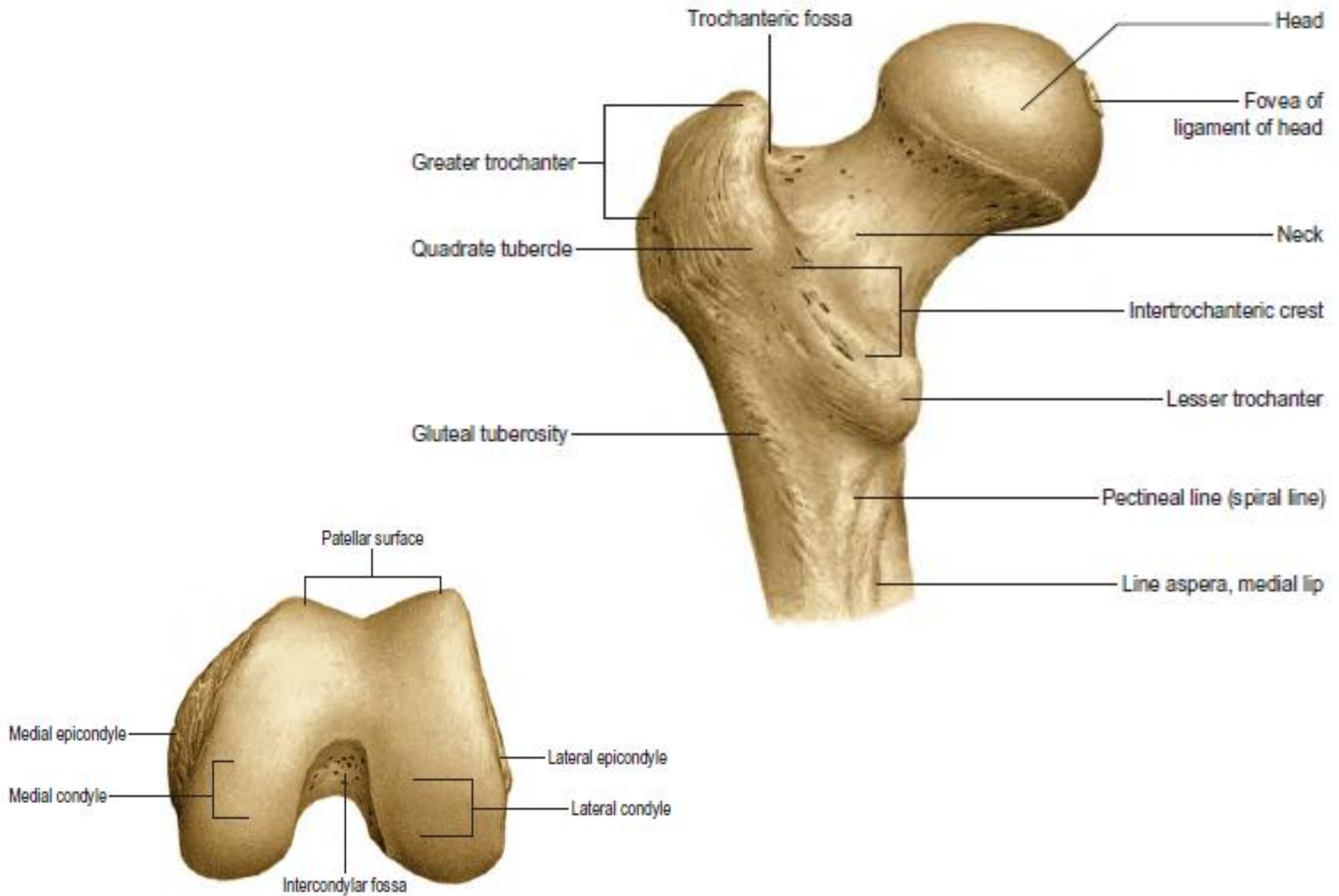
Greater trochanter

Lateral epicondyle



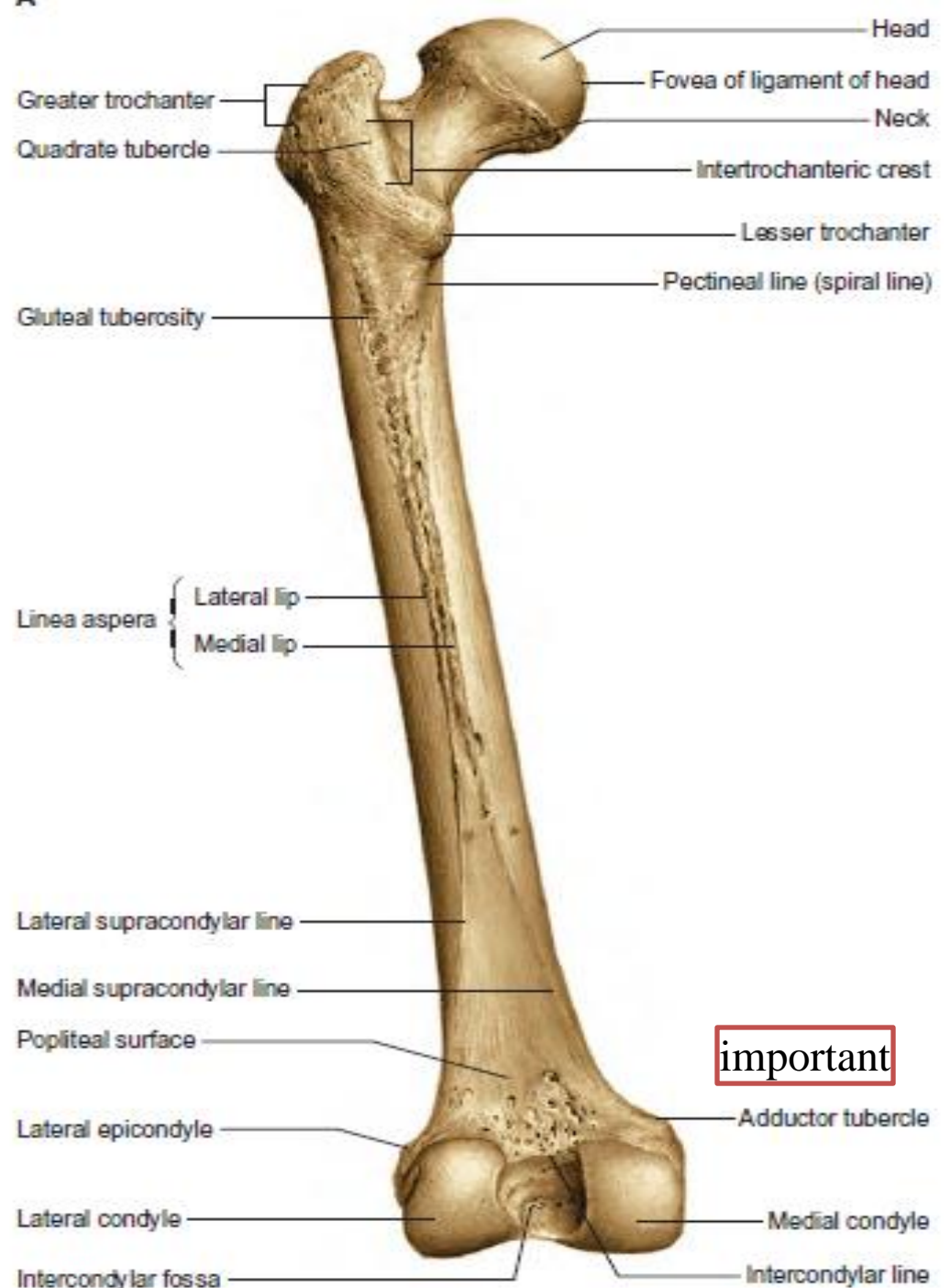
Left femur (anterior view)





Distal end of femur: articular surface.

The *greater trochanter of the femur lies a hand's breadth* below the iliac crest; it is best palpated with the hip abducted so that the overlying hip abductors (tensor fasciae latae and gluteus medius and minimus) are relaxed.



Left femur (posterior view)

