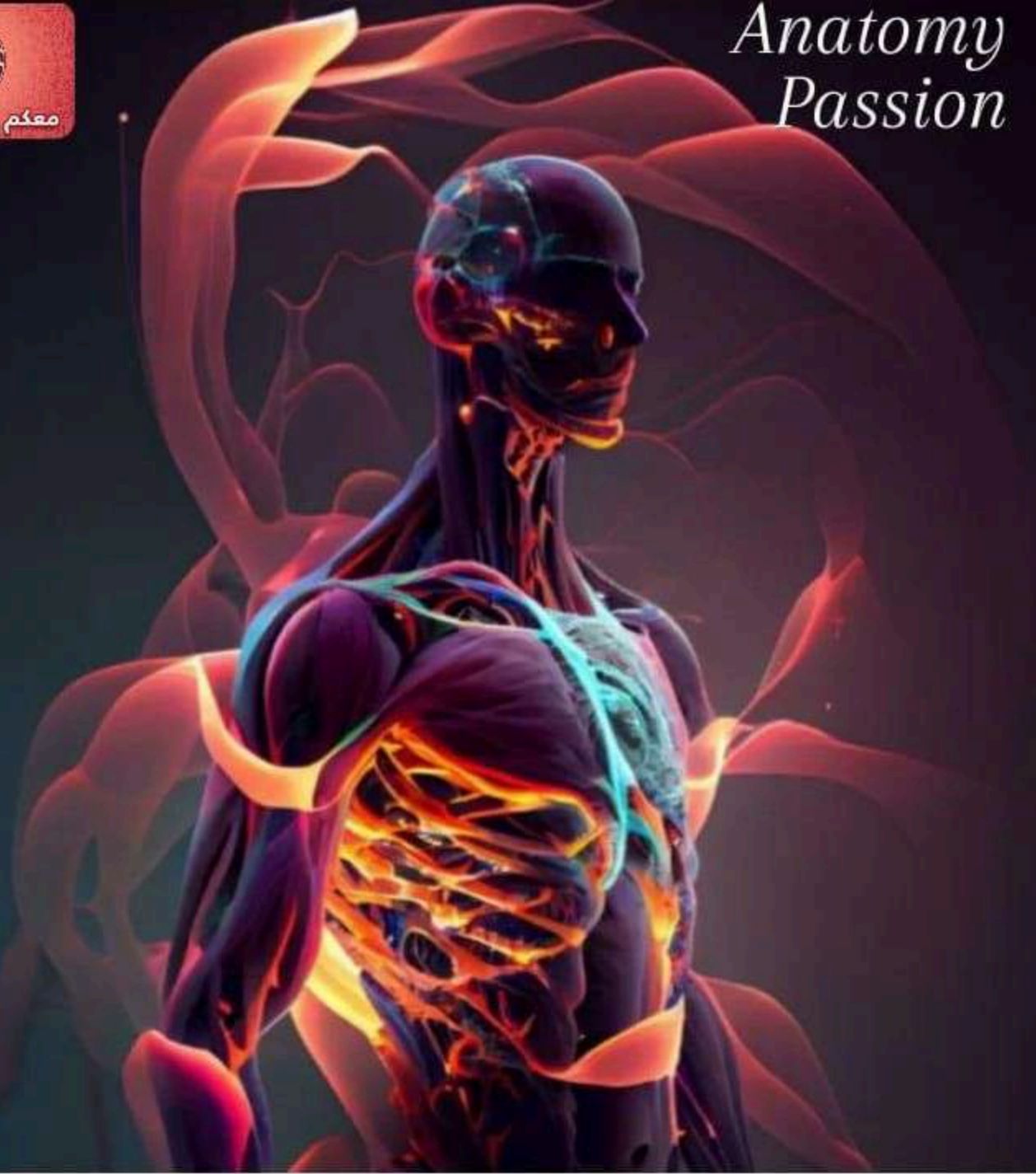




*Anatomy
Passion*



Lecture: Lower Limb

Done By: Leen Alashram



General Anatomy

Lecture 5: Appendicular Skeleton (2): Bones of Lower Limb

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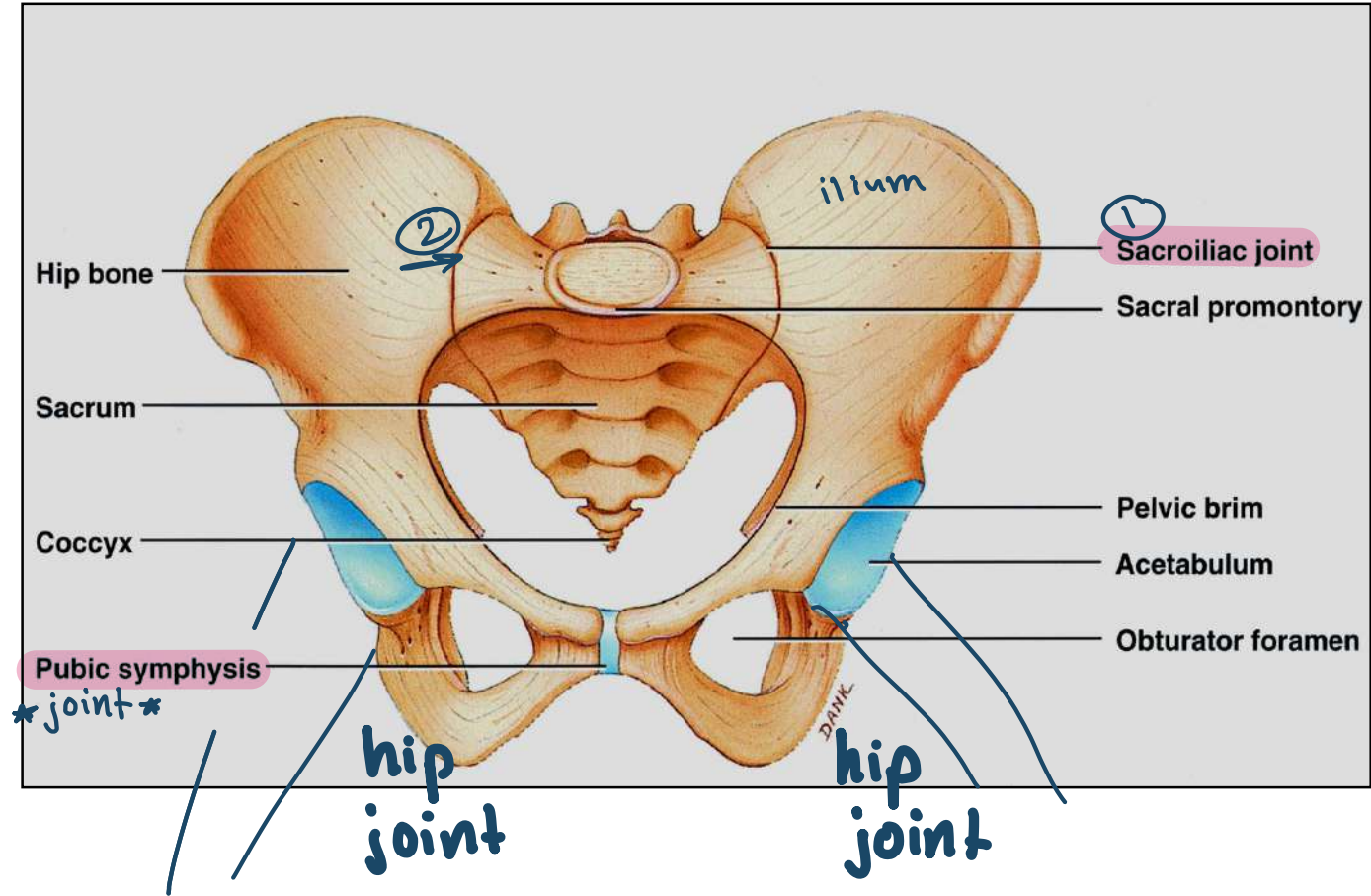
Bones of Lower Limb

The Pelvic Girdle

دائري ، مشا مفصل

→ has 5 joints

- * The pelvic girdle connects bones of **lower limb to axial skeleton**.
- * The pelvic girdle consists of the two hip bones.
- * The hip bones articulate posteriorly with the **sacrum** to form **sacroiliac joints**, (two) and anteriorly with each other to form **symphysis pubis**.



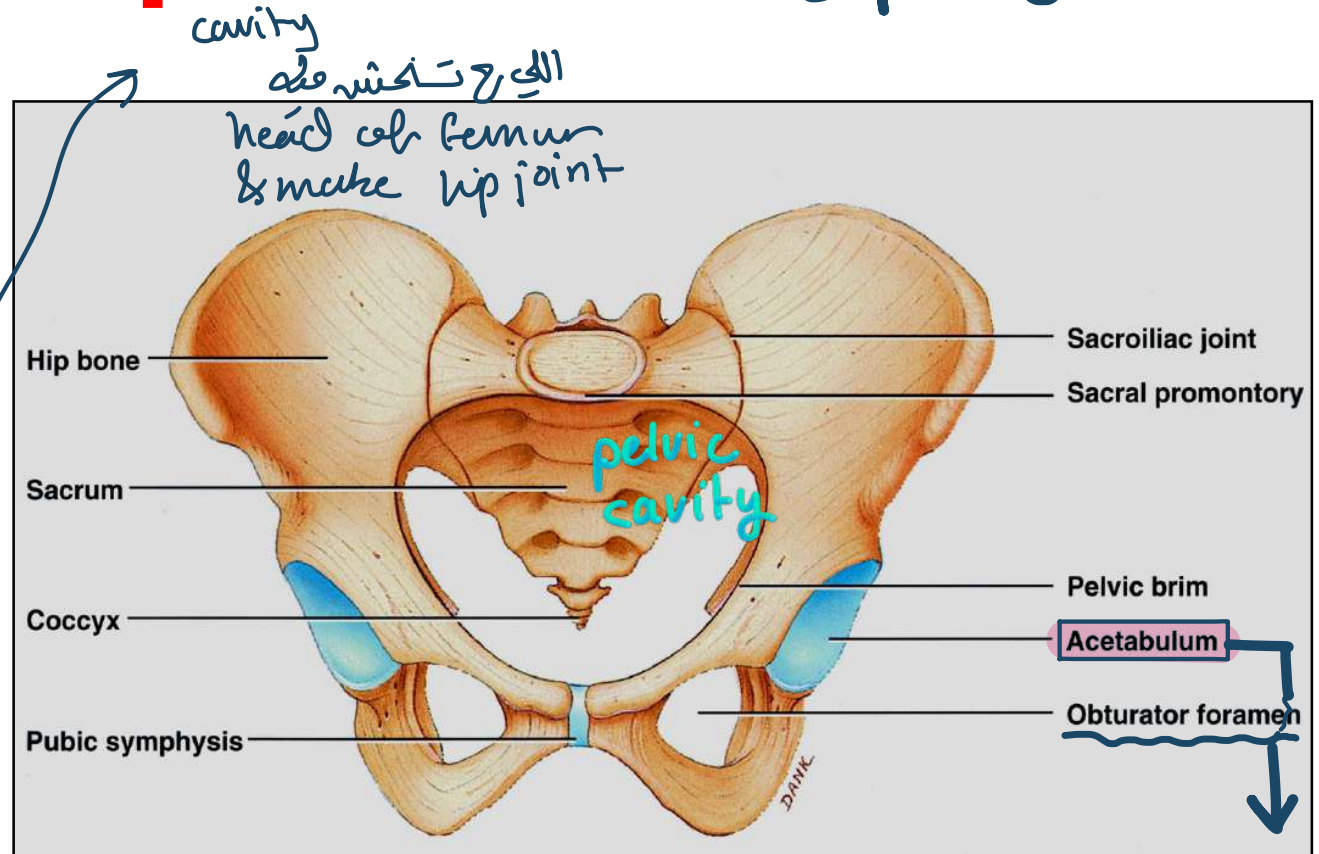
1. The Hip Bone → consists of 3 parts

* Each hip bone is large & irregularly-shaped.

* Its lateral surface bears near its center a deep cup-shaped cavity termed the **acetabulum**, which articulates with head of femur to form **hip joint**.

* [Below the acetabulum the bone presents a large oval or triangular gap] **the obturator foramen**.

* The hip bone has three parts: ilium, pubis, and ischium.
 ↘ anterior
 ↙ posterior



كؤن
 Hip joint
 ← cup shaped structure (تدخل فيه head of the femur)
 Acetabulum: laterally, in the outer surface of hip bone

* flat bone
* Has 4 borders
* upper part of hip Bone *

A. The Ilium

outer surface of Hip Bone, because you can see the acetabulum.

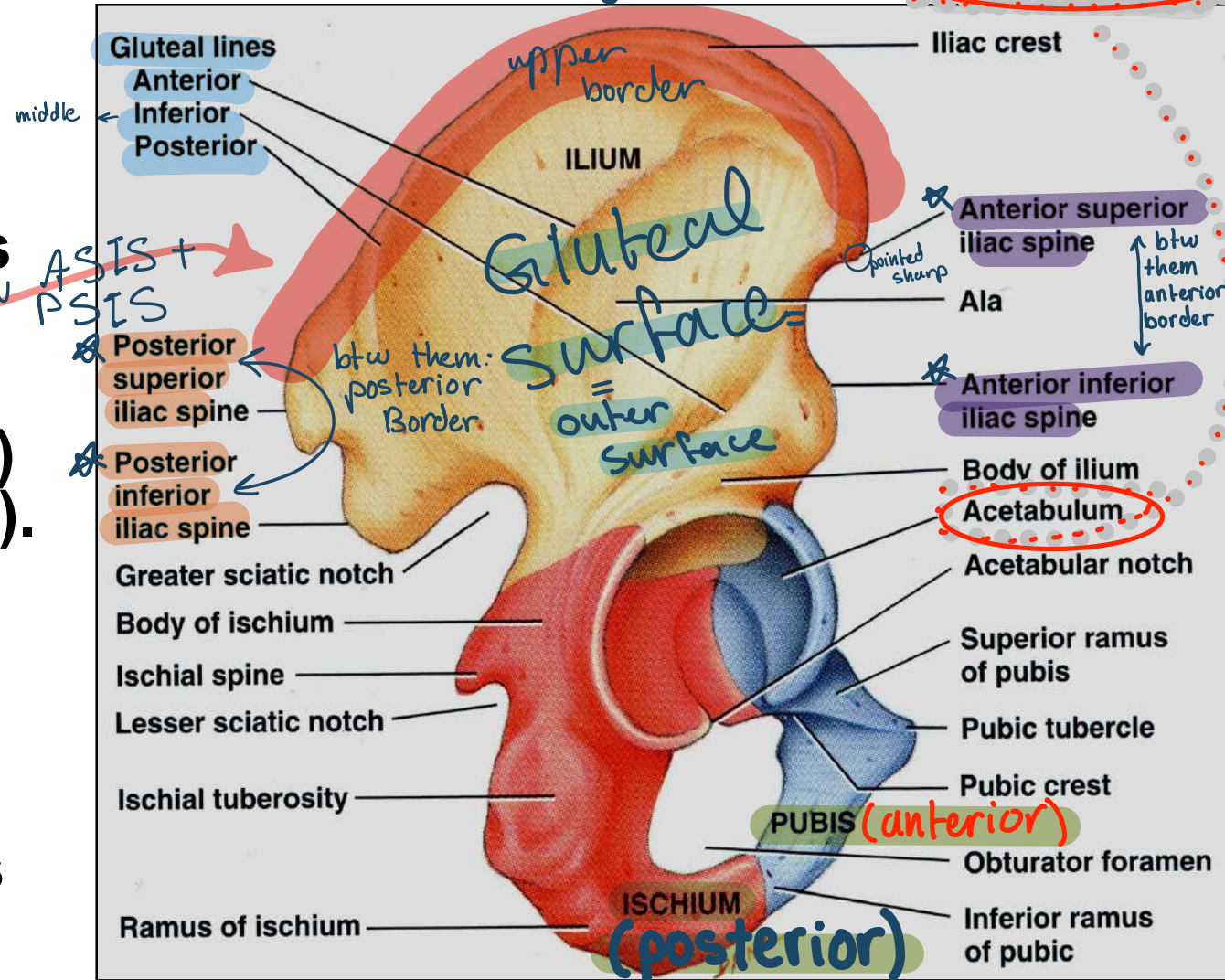
* Includes the upper part of acetabulum & the expanded, flattened area of bone above it.

* Its upper margin is curved and is termed **iliac crest**. (upper border) pointed/sharp border

* Its anterior border presents anterior superior iliac spine (ASIS) & anterior inferior iliac spine (AIIS).

* Its posterior border presents posterior superior iliac spine (PSIS) & posterior inferior iliac spine (PIIS).

* The lateral surface of the ilium is called the **gluteal surface**.

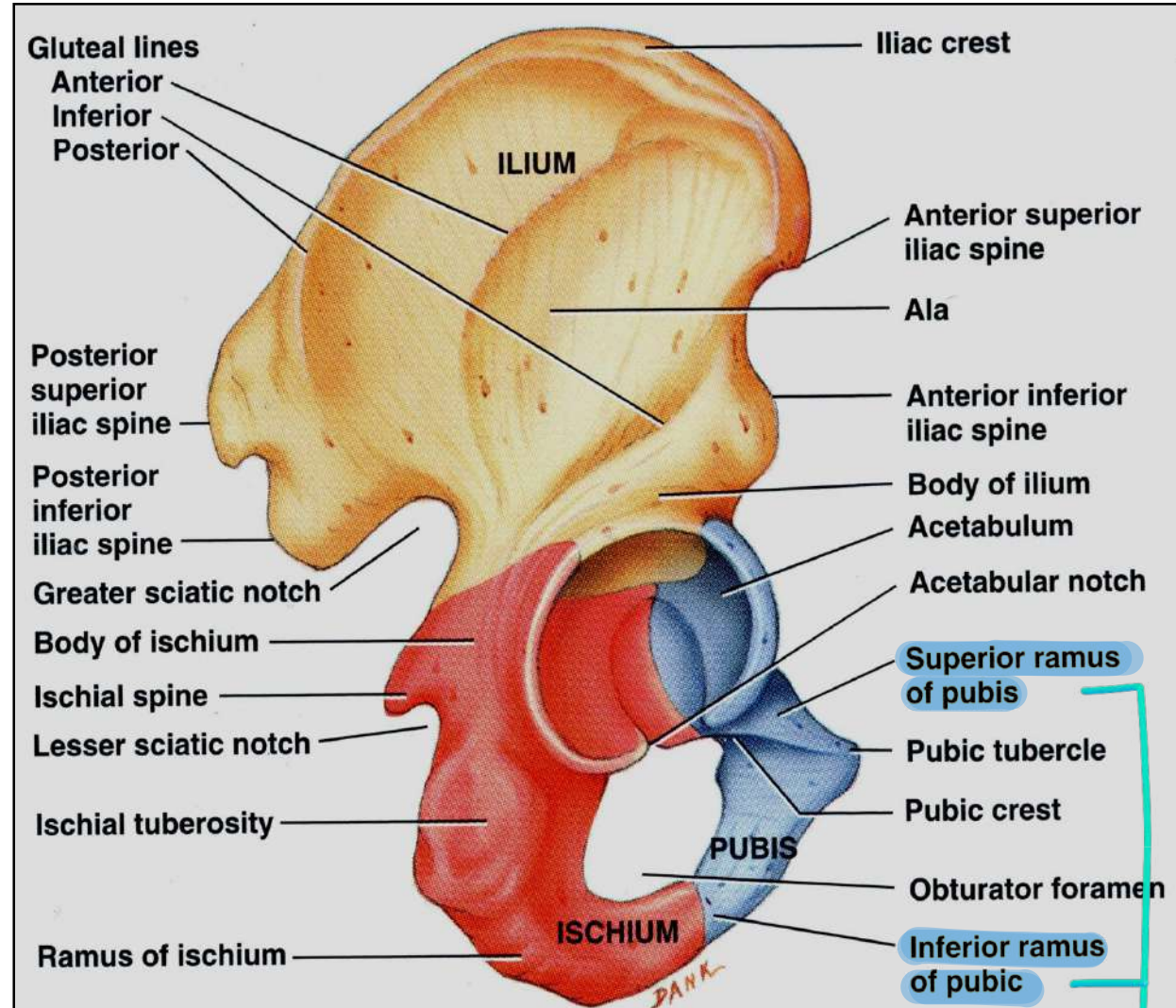


B. The Pubis

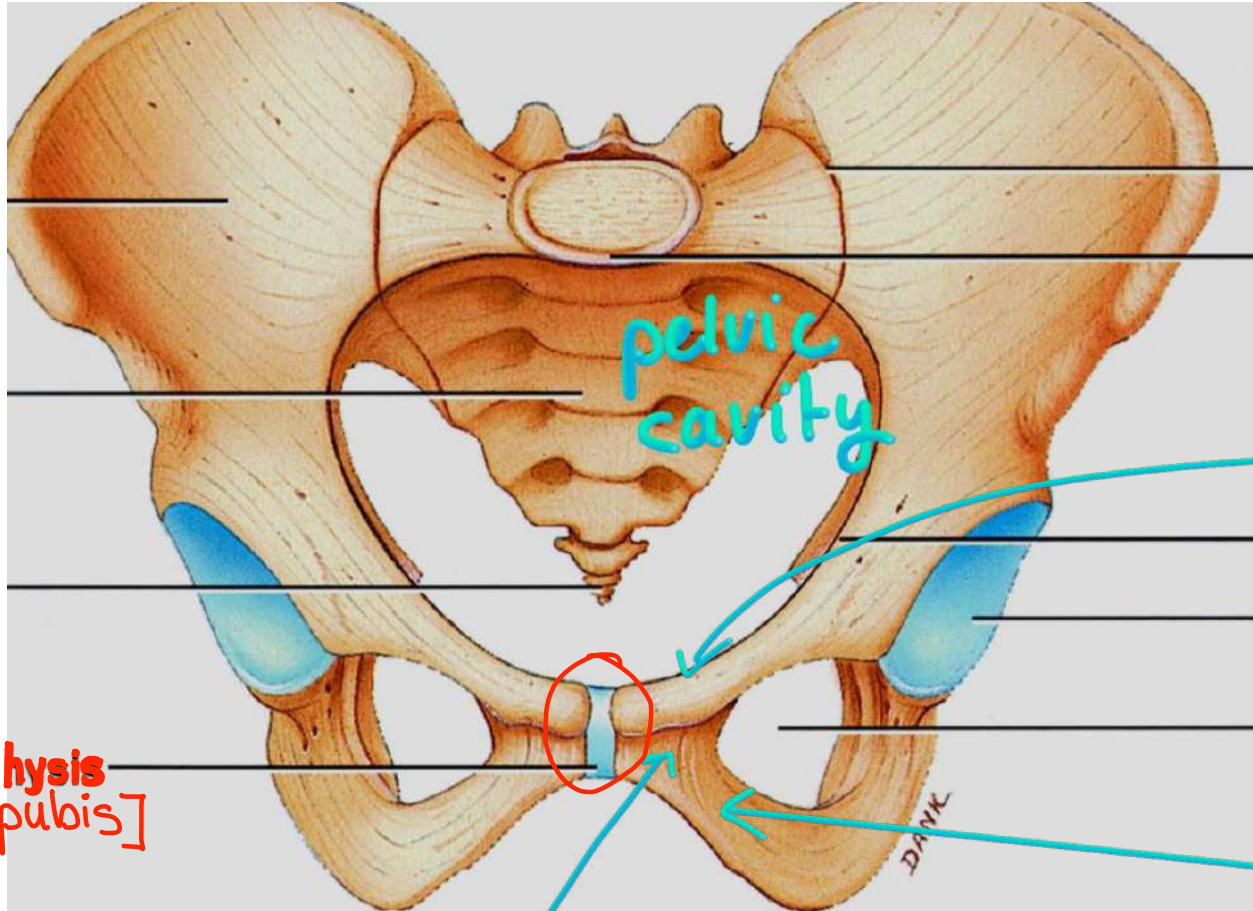
* Forms the anterior portion of the lower expanded part of the hip, and the lower anterior part of the acetabulum.

* It consists: a body, a superior ramus, and an inferior ramus.

* The body articulates with the body of the opposite pubis forming the symphysis pubis.



another view



pelvic cavity

superior pubic ramus

[symphysis pubis]

inferior pubic ramus

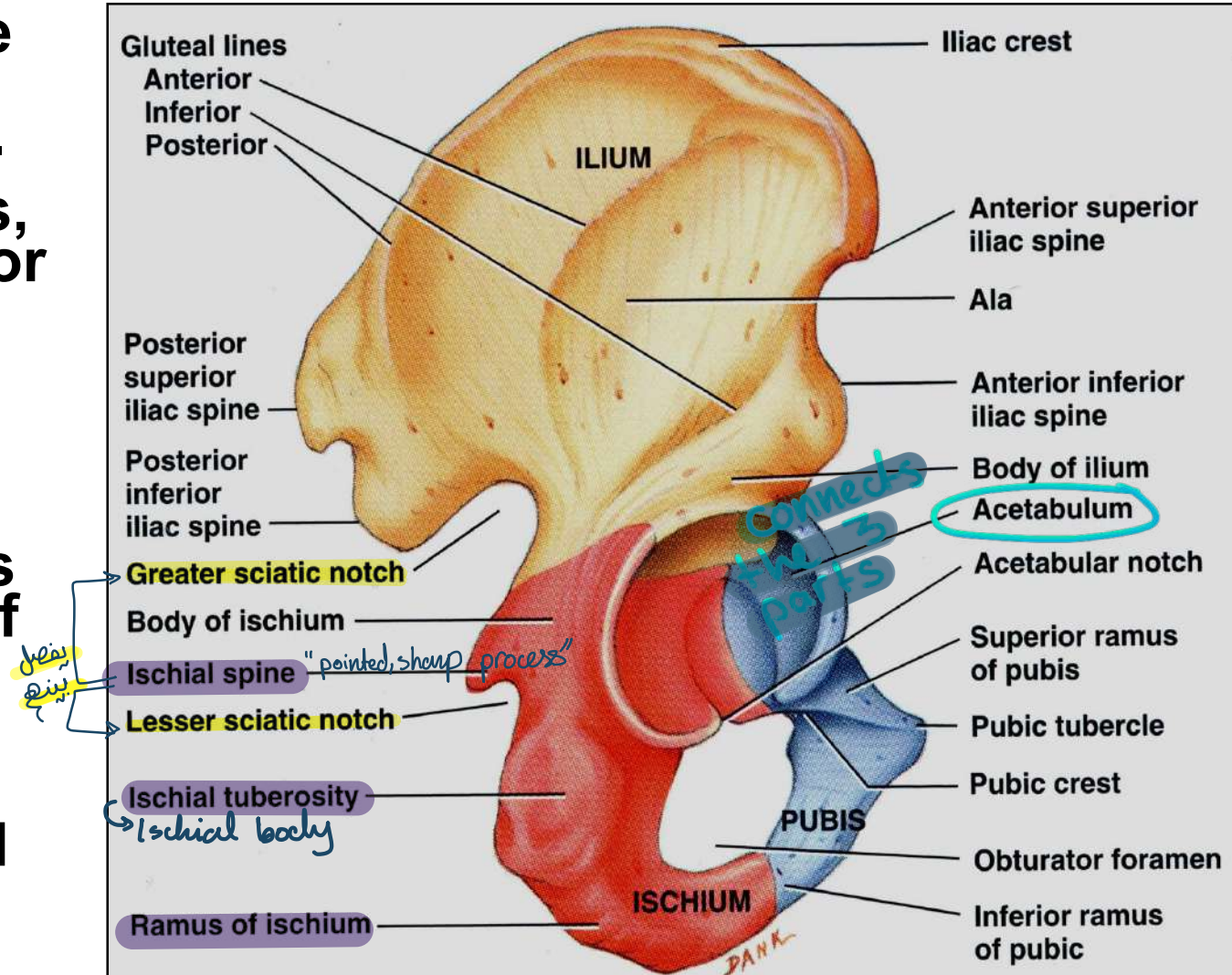
Body of the Pubis

[posterior part]

C. The Ischium

3 joint

- * Forms the posterior portion of the lower expanded part of hip and the lower posterior part of acetabulum.
- * It consists of: a body and a ramus, which is continuous with the inferior ramus of the pubis.
- * The ischial tuberosity is a large rough area situated on the lower part of the body.
- * The posterior border of ischium is continuous with posterior border of ilium.
- * It presents a sharp projection called ischial spine, which intervenes between the greater and lesser sciatic notches.



Bone of the thigh,

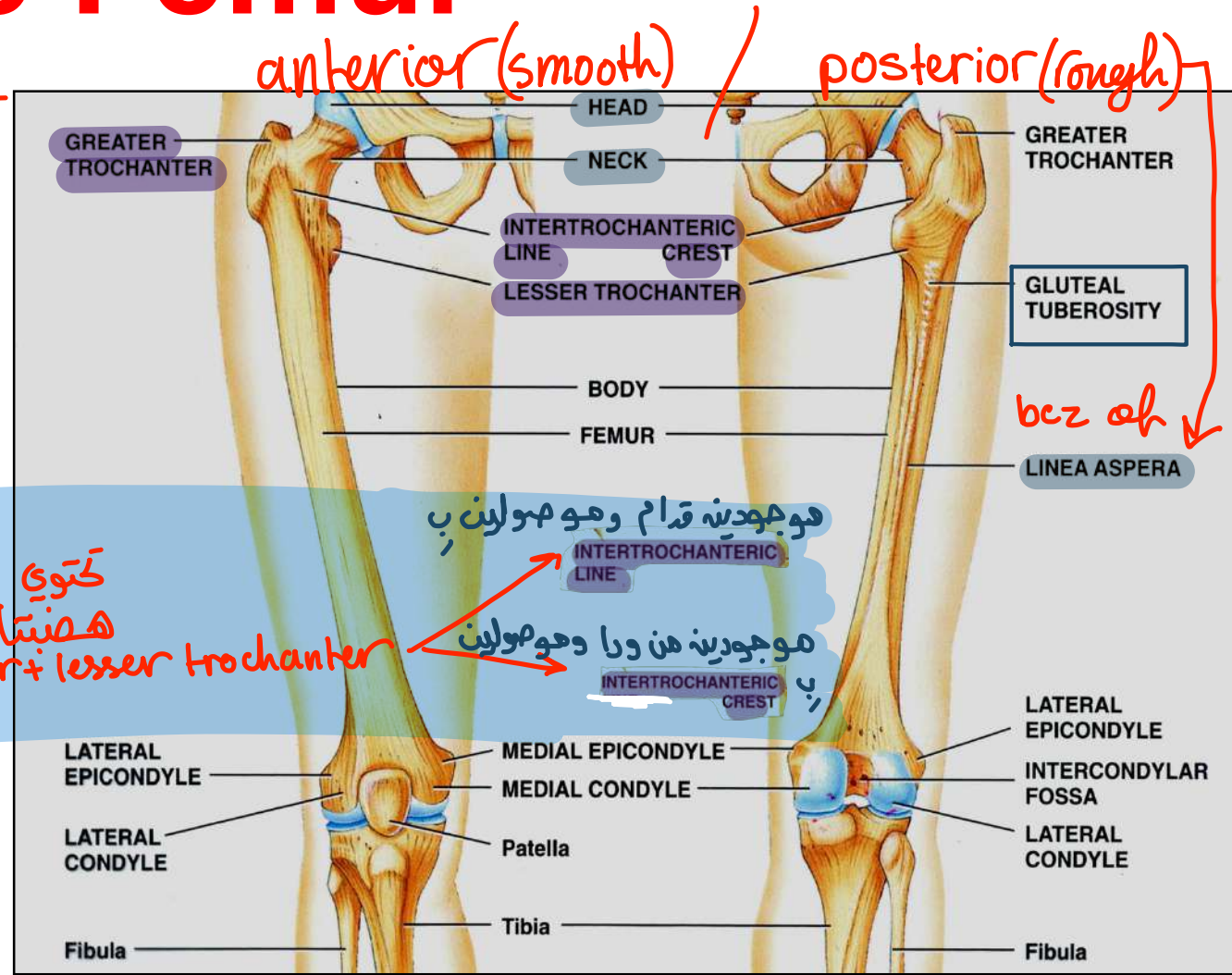
longest bone in the body

2. The Femur

length in adult $\approx 45\text{cm}$
A. Upper end:

full circle, well

- * Shows a head, neck, and greater and lesser trochanters.
- * The head, which is more than half of a sphere, articulates with acetabulum of the hip, to form the hip joint.
- * The neck is about 5 cm long & connects the head to shaft.
- * The intertrochanteric line is a rough ridge, which runs downwards and medially on anterior aspect of the bone from greater trochanter to lesser trochanter.

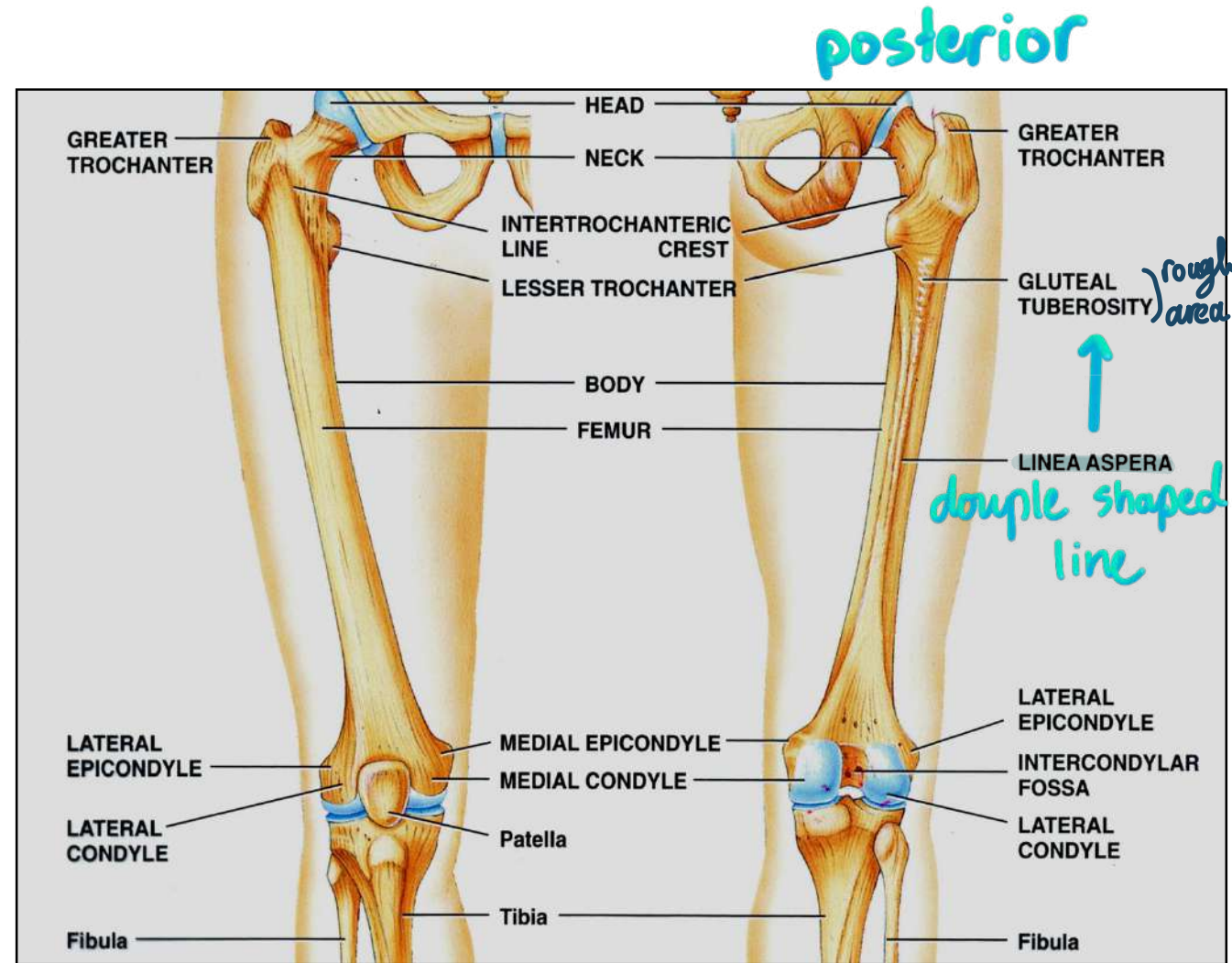


* The intertrochanteric crest is a smooth elevation on posterior aspect of the bone between greater and lesser trochanters.

B. Shaft:

* The middle third of the posterior aspect of femur presents a broad, rough vertical ridge termed **linea aspera**.

* Superiorly, the linea aspera is continuous with another vertical ridge, called **gluteal tuberosity**.

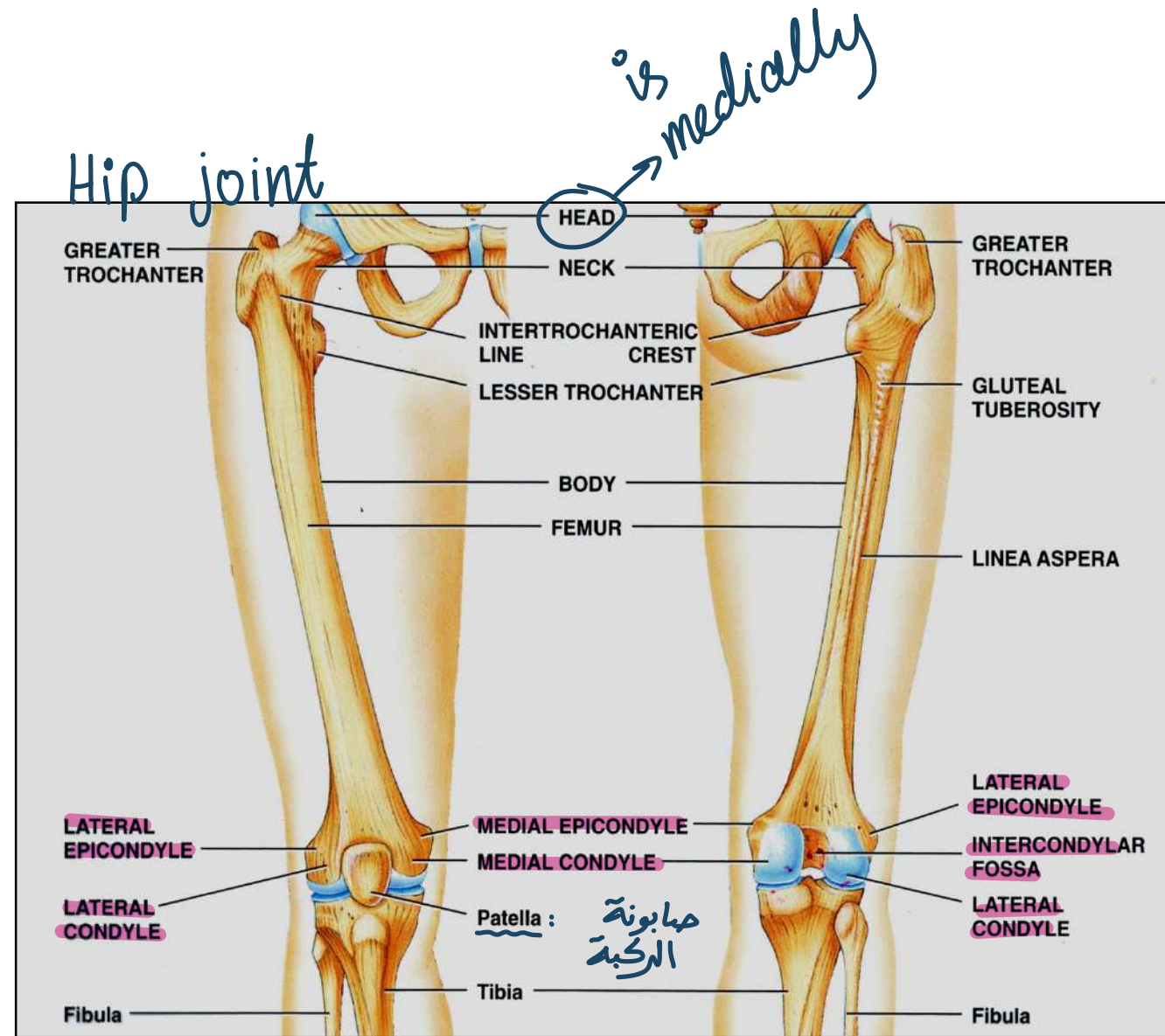


C. Lower end:

* The expanded lower end consists of two large masses, the **medial and lateral condyles**, which unite anteriorly, but separated posteriorly by the deep **intercondylar fossa or notch**.

* Anteriorly, the condyles exhibit a broad n-shaped articular surface for articulation with the patella anteriorly and the tibia below.

* Superior to the medial and lateral condyles, are the **medial, and lateral epicondyles**, respectively.



[knee joint : between
Femur + Patella + tibia]

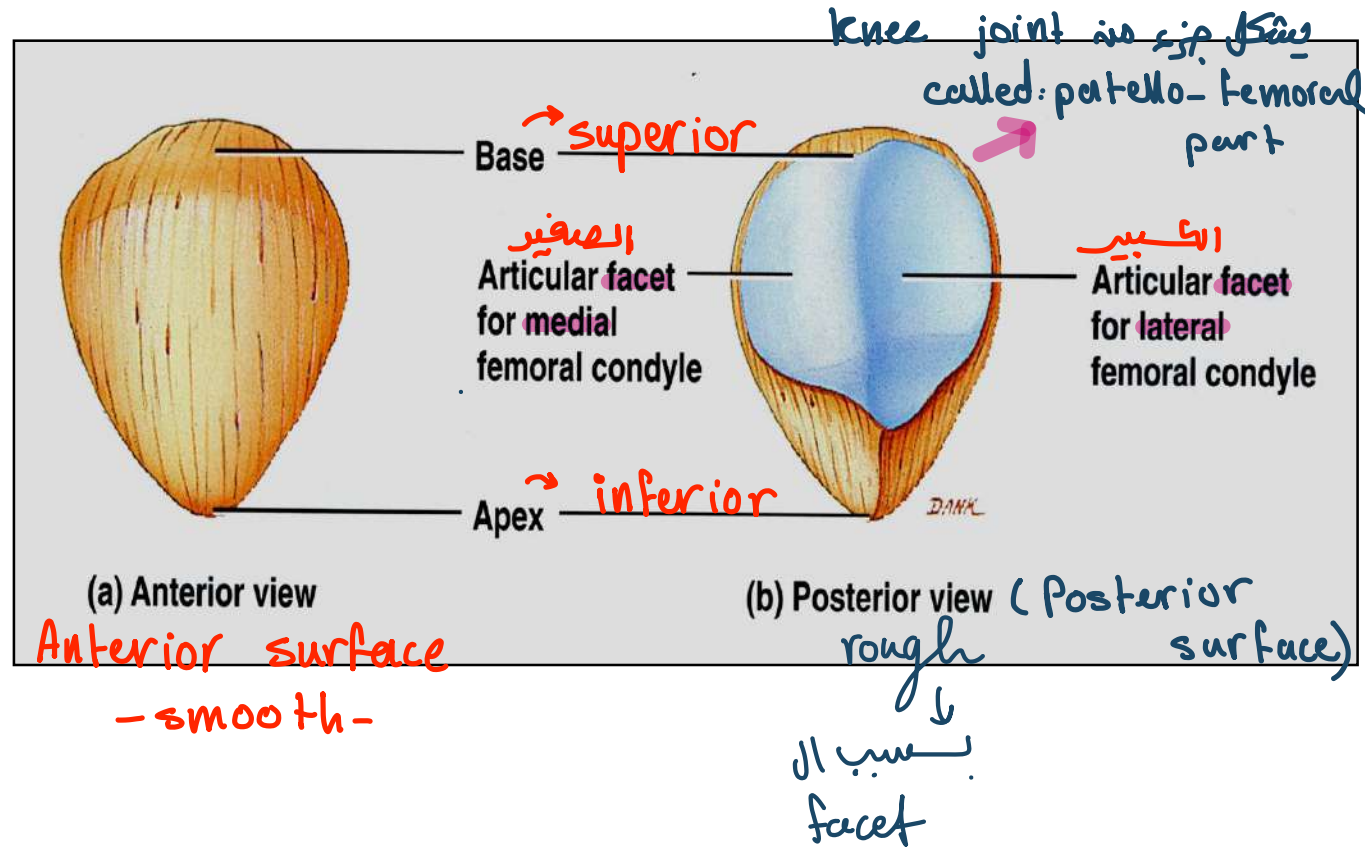
3. The Patella

anterior [smooth]
posterior [rough]

* The patella is a triangular sesamoid bone (bone inside tendon), located in front of the knee joint.

* The base of the patella forms the upper border, whereas the apex is pointed inferiorly.

* The posterior surface contains two articular facets, for articulation with the medial and lateral condyles of the femur (in knee joint).



4. The Tibia → 5 joints

* The tibia is the medial, larger, and much stronger + bigger one of the two bones of the leg.

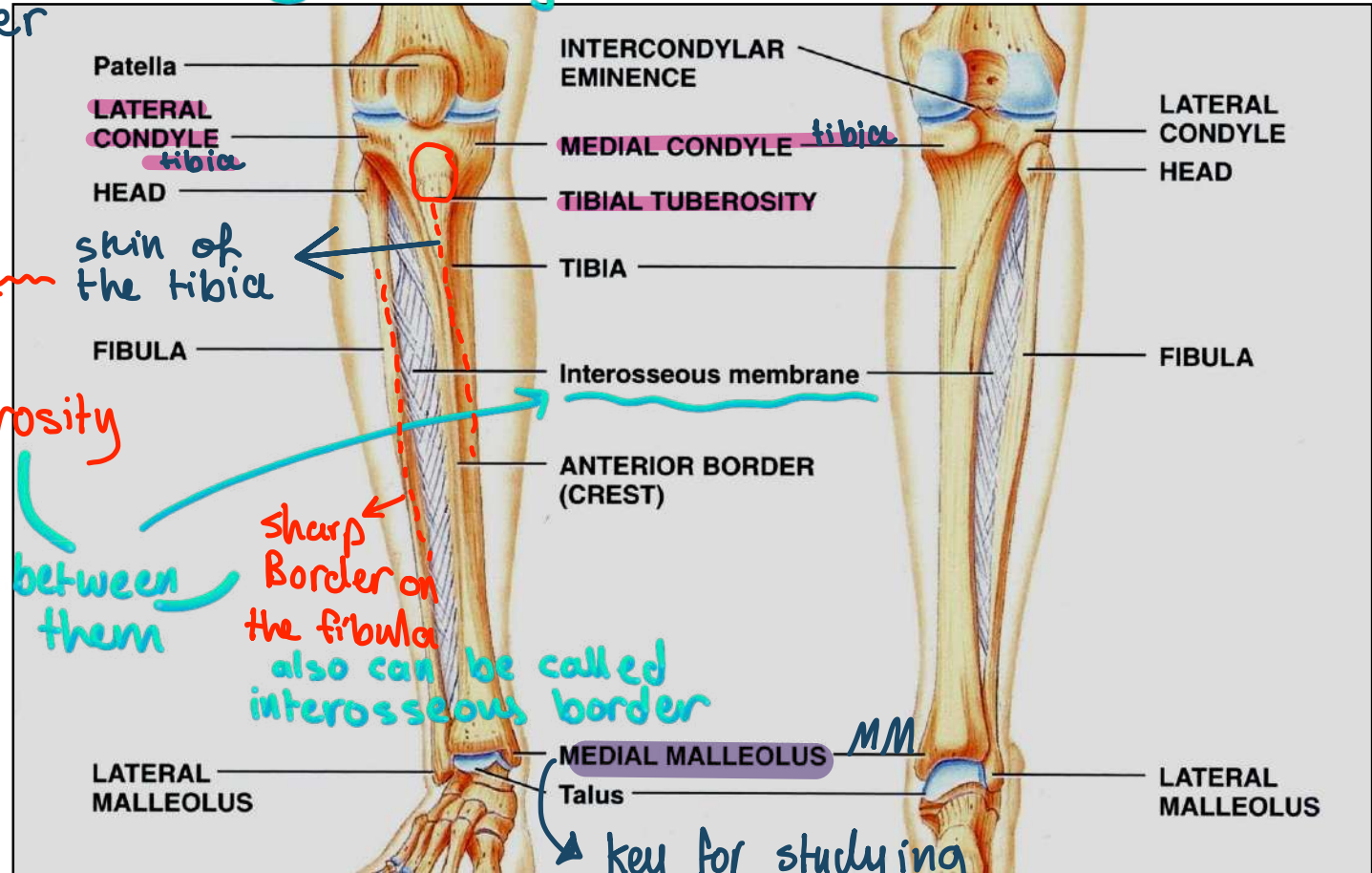
A. Upper end:

* Shows the medial and lateral condyles.

* The medial condyle is relatively larger than the lateral one.

* The upper surface of each condyle is smooth and articulates with the corresponding condyle of femur (in the knee joint).

① knee joint



also can be called interosseous Border

sharp border
بنيءة الاءاء
tibial tuberosity

skin of the tibia

between them

sharp border on the fibula also can be called interosseous border

key for studying tibia Bone

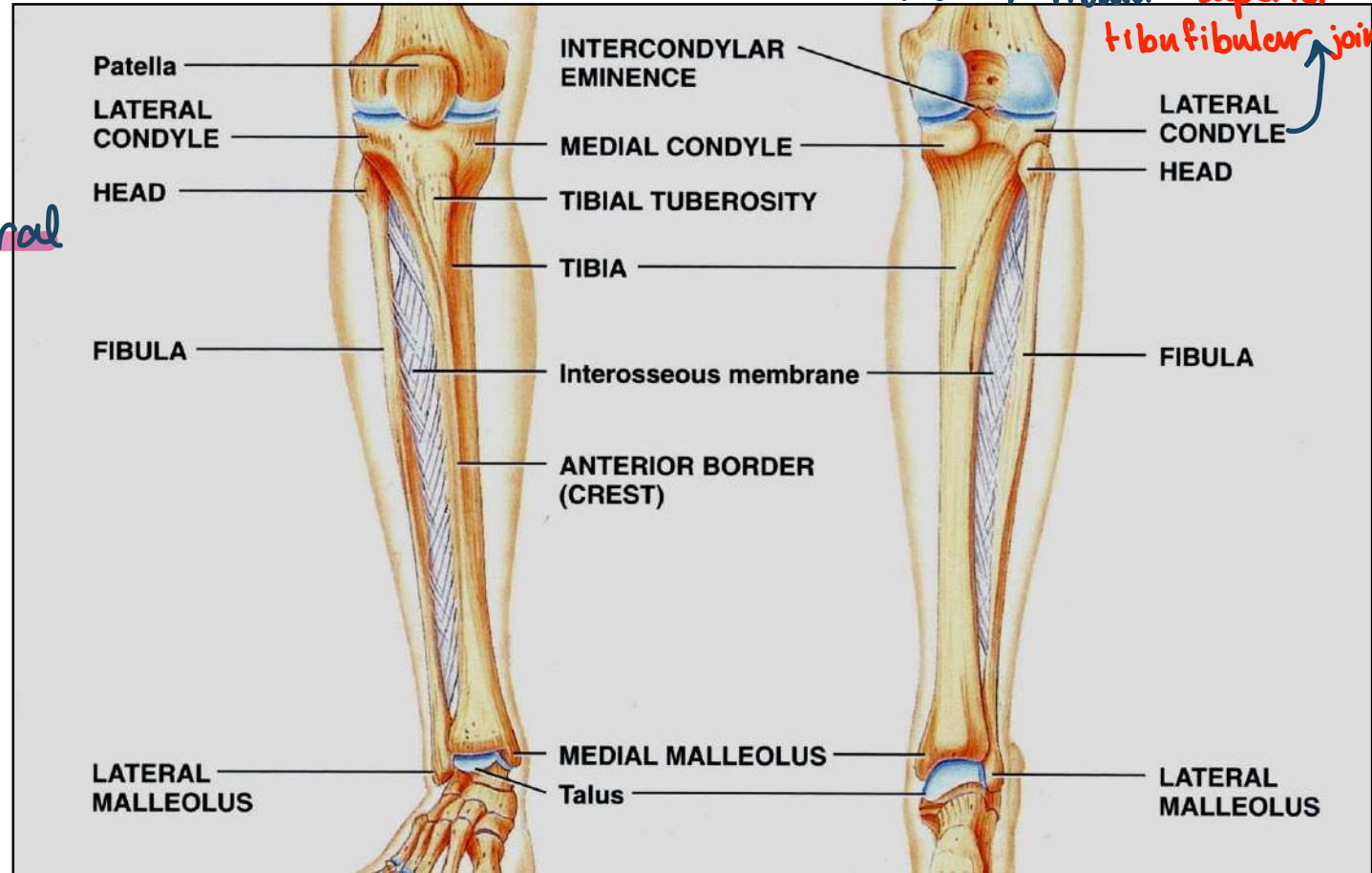
* On the posterior aspect of the lateral condyle there is a facet for articulation with the head of fibula forming the **superior tibio-fibular joint**.

B. Shaft:

between medial + lateral condyles

* The **tibial tuberosity** lies at the upper end of anterior border of the shaft.

* The lateral border is sharp and is called the **interosseous border** to which the interosseous membrane is attached.

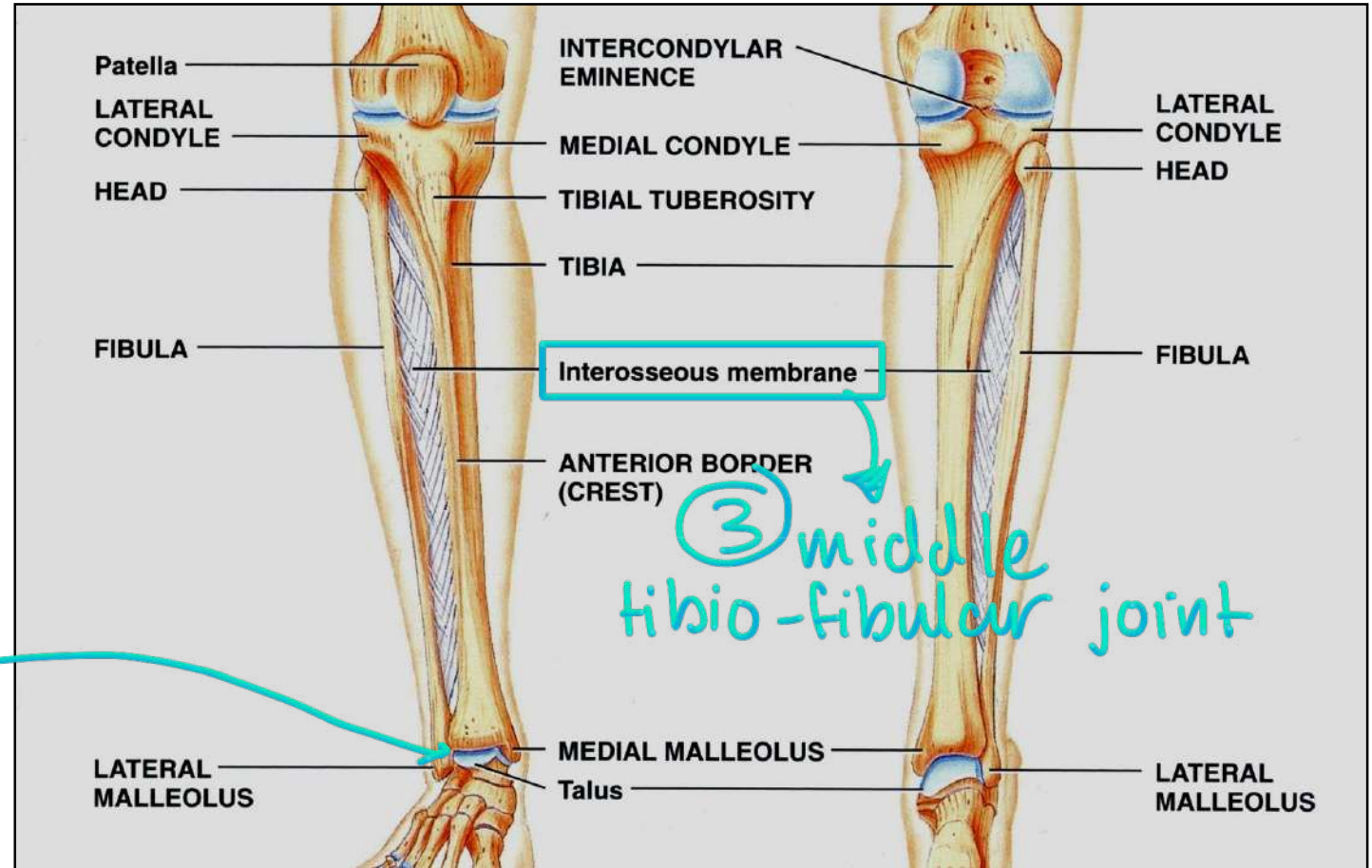


C. Lower end:

* The medial aspect of the lower end presents inferiorly the **medial malleolus**. This forms the prominence on medial aspect of ankle.

* The inferior surface of this end articulates with talus bone (in ankle joint).

* On the lateral aspect of lower end, there is a rough depression, the **fibular notch**, to which the lower end of fibula articulates forming the inferior tibio-fibular joint.



③ middle tibio-fibular joint

⑤ lower end of tibia + talus of the foot → ankle joint