

RU RMT 02 Skeletal
Lecture 15
Lower Limb - Intro

Pelvis

Pelvic Girdle

- Basin shaped ring of bones that connect the vertebral column to the two femurs

Primary Function:

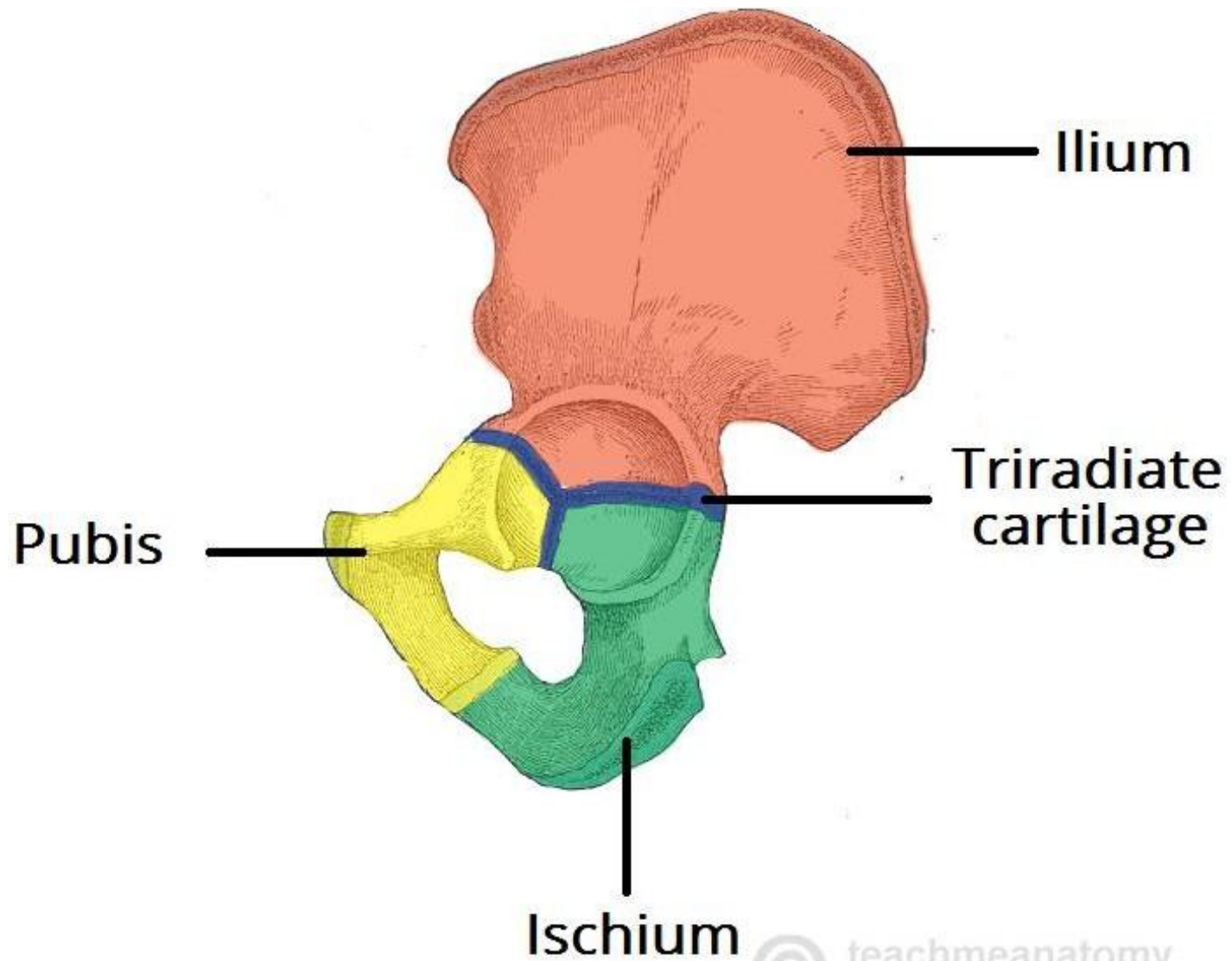
- Weight bearing of upper body
- Transfer weight from axial skeleton to lower extremities
- Provide attachment of muscles of locomotion
- Contain and protect pelvic viscera (organs)
- Provide support for the uterus/external genitalia
- Provide attachment for muscles of the pelvic floor



PELVIC

GIRDLE

- **Formed by three bones:** Two coxal bones and one sacrum (coxal bones , innominate bones, hip bones)
 - **COXAL BONES:** ILIUM, ISCHIUM AND PUBIS
 - Bones are joined posteriorly by the sacrum and anteriorly by a fibrocartilaginous disc (the pubic symphysis)
- In young children, the coxal bones are three separate bones united by a cartilage at the center of the acetabulum (hip socket). This is known as the **tri-radiate cartilage** (synchondrosis).

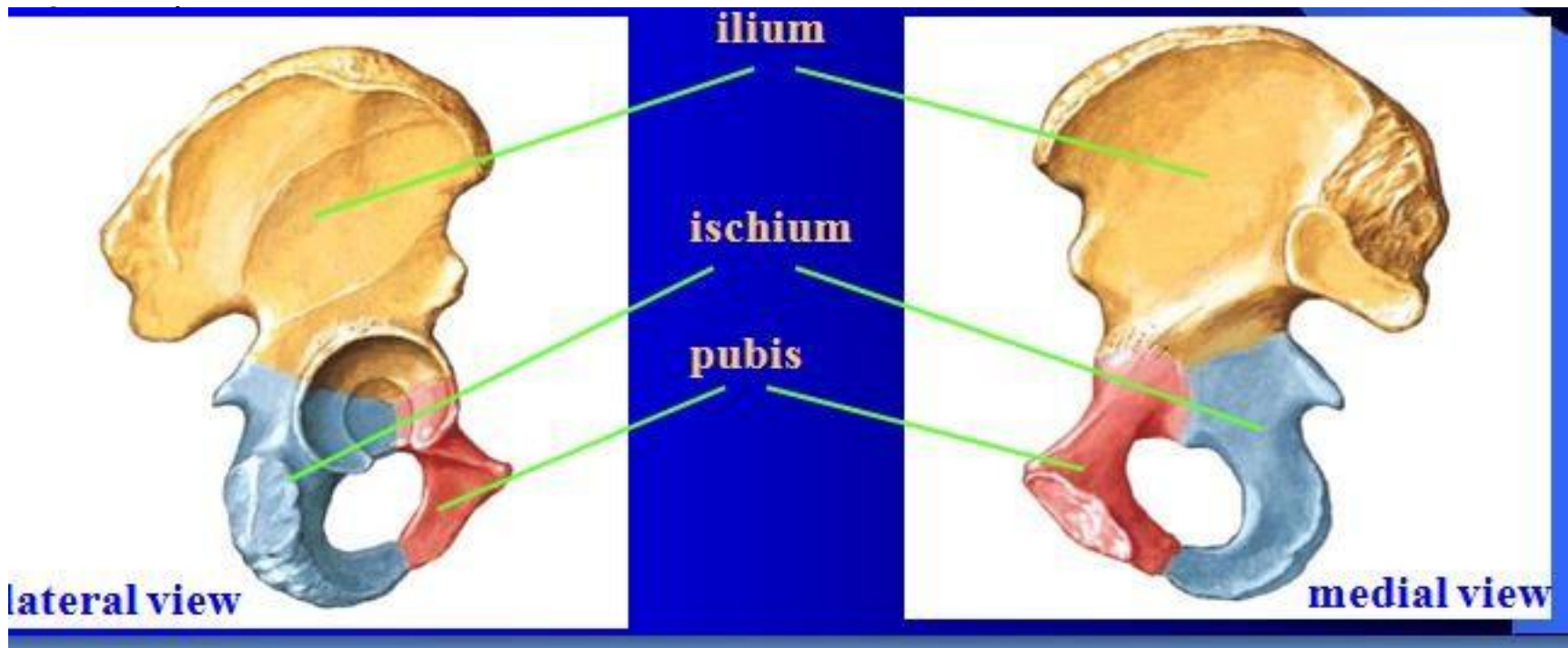


teachmeanatomy

The #1 Approved Human Anatomy Site on the Web

Ilium

- Largest part of the hip bone.
- Contributes to the **superior part** of the acetabulum.
- The large flat wing like structure is known as the **ala**.
- The body of the ilium joins the pubis and ischium to form the acetabulum (cup shaped structure that receives the head of the



Ilium

- The Iliac Crest is along the superior margin of the ilium extending from the PSIS to the ASIS (posterior superior and anterior superior iliac spine).
- The ilium also has the auricular surface for the articulation with the sacrum. This allows us to move during locomotion at the SI Joint (Sacroiliac).

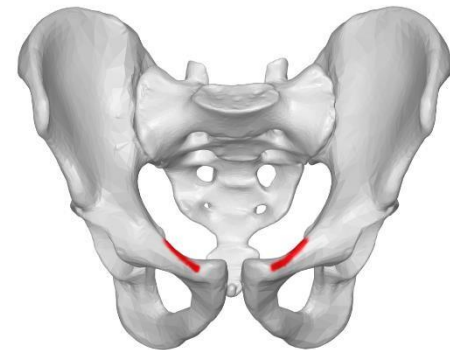
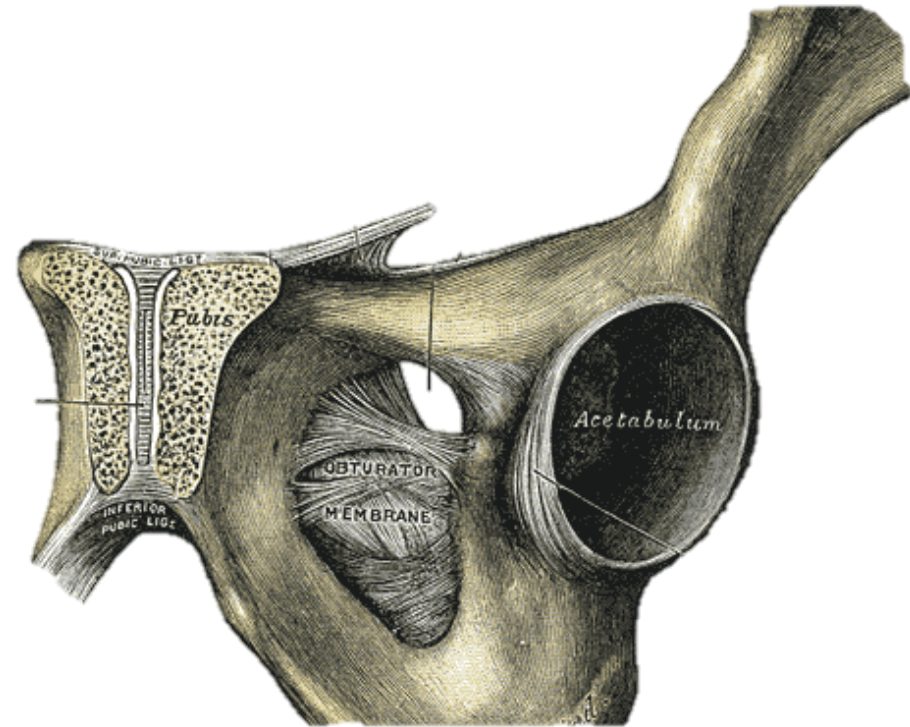
- Ala / Wing
- Iliac crest
- Anterior Superior Iliac Spine (ASIS)
- Anterior Inferior Iliac Spine (AIIS)
- Posterior Superior Iliac Spine (PSIS)
- Posterior Inferior Iliac Spine (PIIS)
- Greater sciatic notch
- **Gluteal Lines:** Posterior, Anterior, Inferior
- Body of ilium
- Acetabulum
- Iliac fossa
- Iliac tuberosity
- Auricular surface (For Sacrum)
- Arcuate line
- Iliopubic eminence

Ischium

- Forms the posteroinferior part of the hip bone.
- Body of the ischium fuses with the pubis and ilium forming the posteroinferior portion of the acetabulum.
- Greater sciatic notch
- Ischial spine
- Lesser sciatic notch
- Ischial Tuberosity
- Ramus of the ischium joins the inferior ramus of the pubis to form the ischiopubic ramus.
- The obturator foramen is bordered by this structure

Pubis

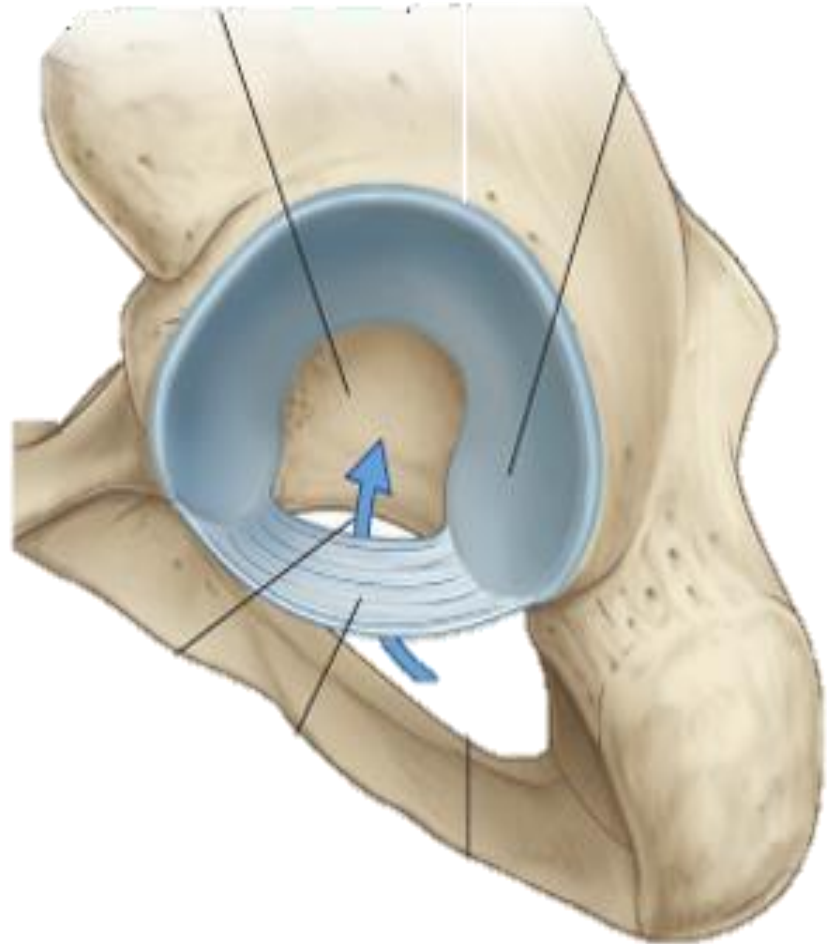
- Forms the anteromedial part of the hip bone
- Contributes to the anterior-inferior part of the acetabulum
- Superior and Inferior ramus
- Pectineal Line
- Body – Most medial
- Symphyseal surface – Pubic symphysis
- Pubic tubercles

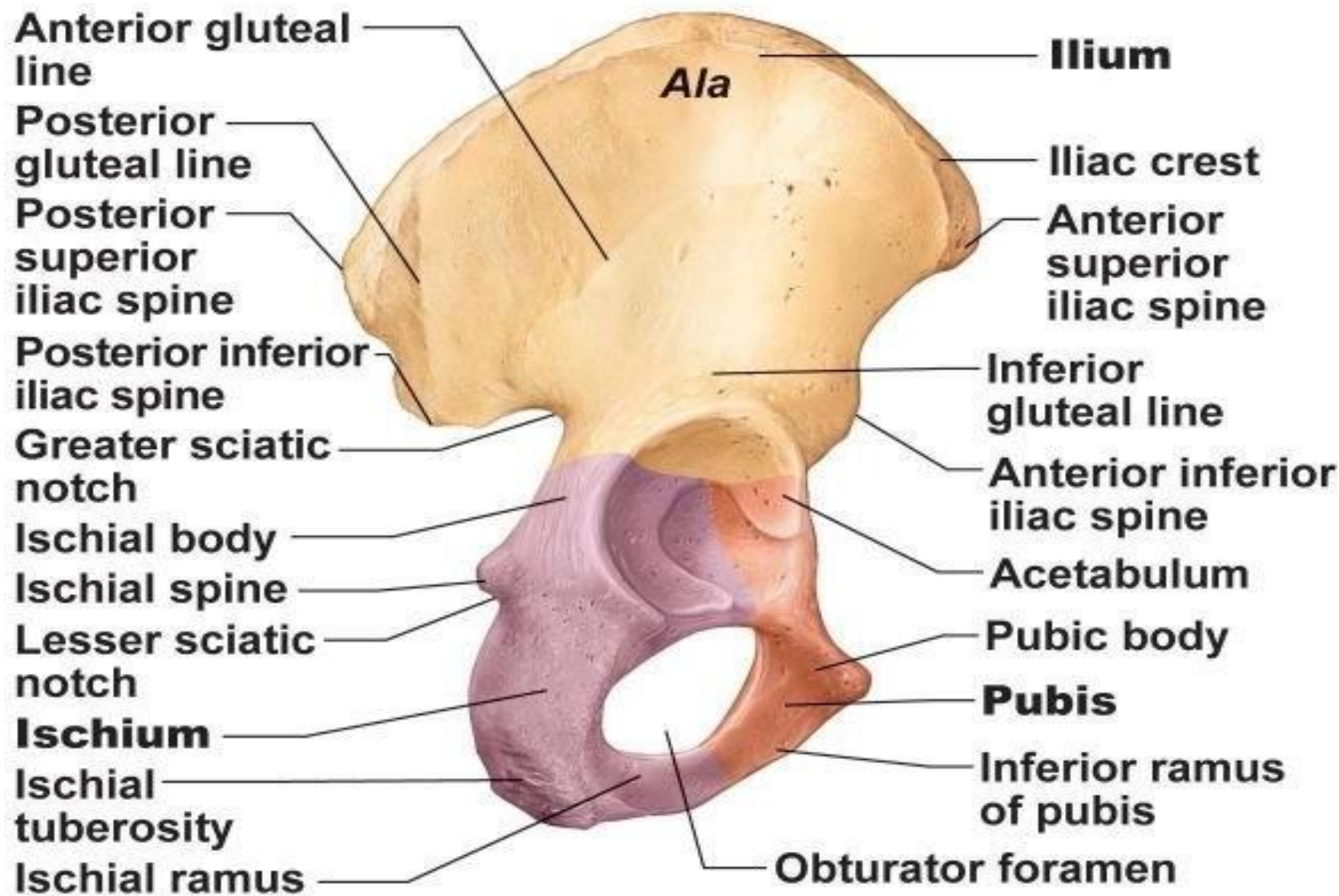


Acetabulu

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- Margin (Lip)
- Lunate surface
- Acetabular fossa
- Acetabular notch

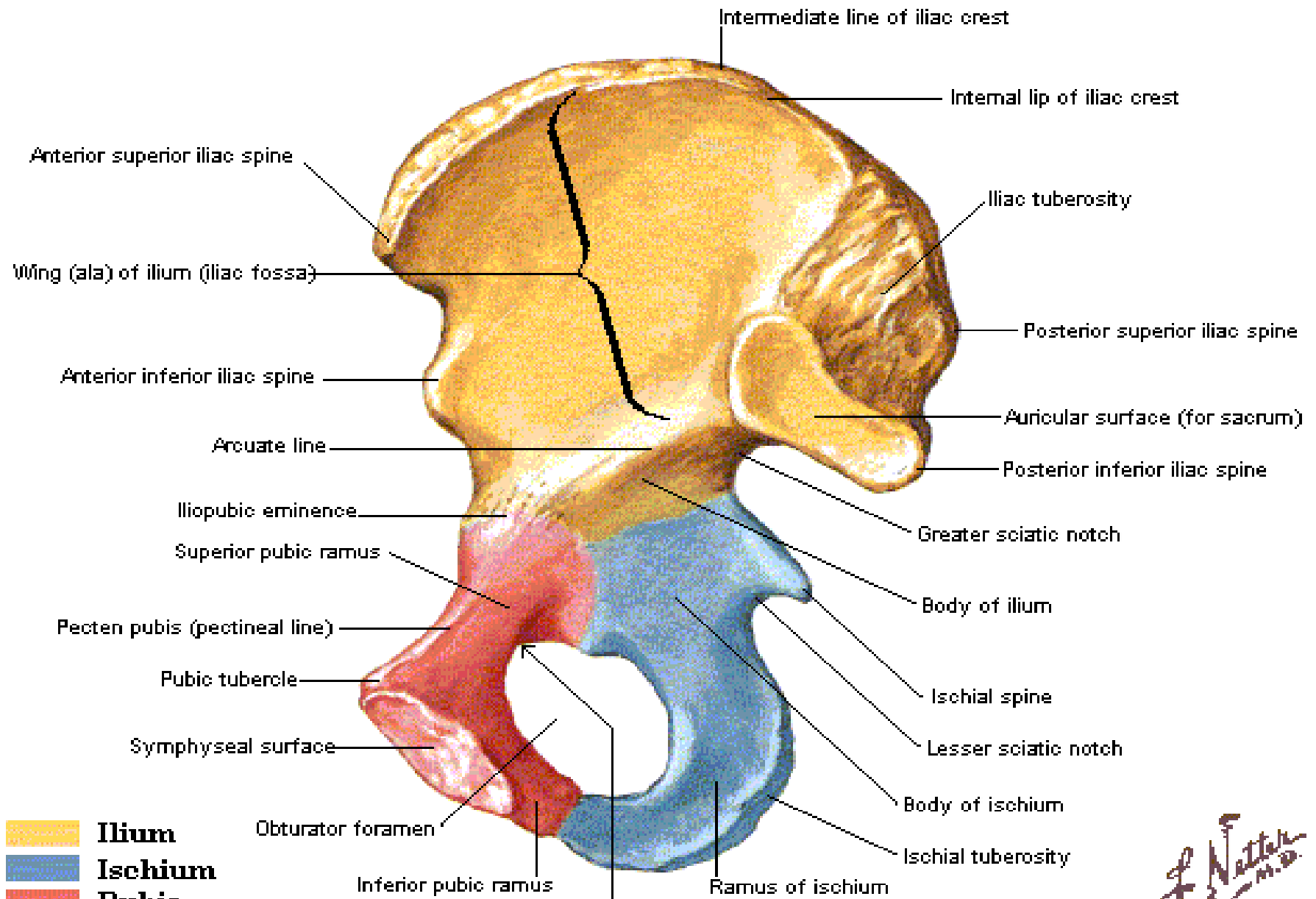




(a) Lateral view, right hip bone

Coxal Bone

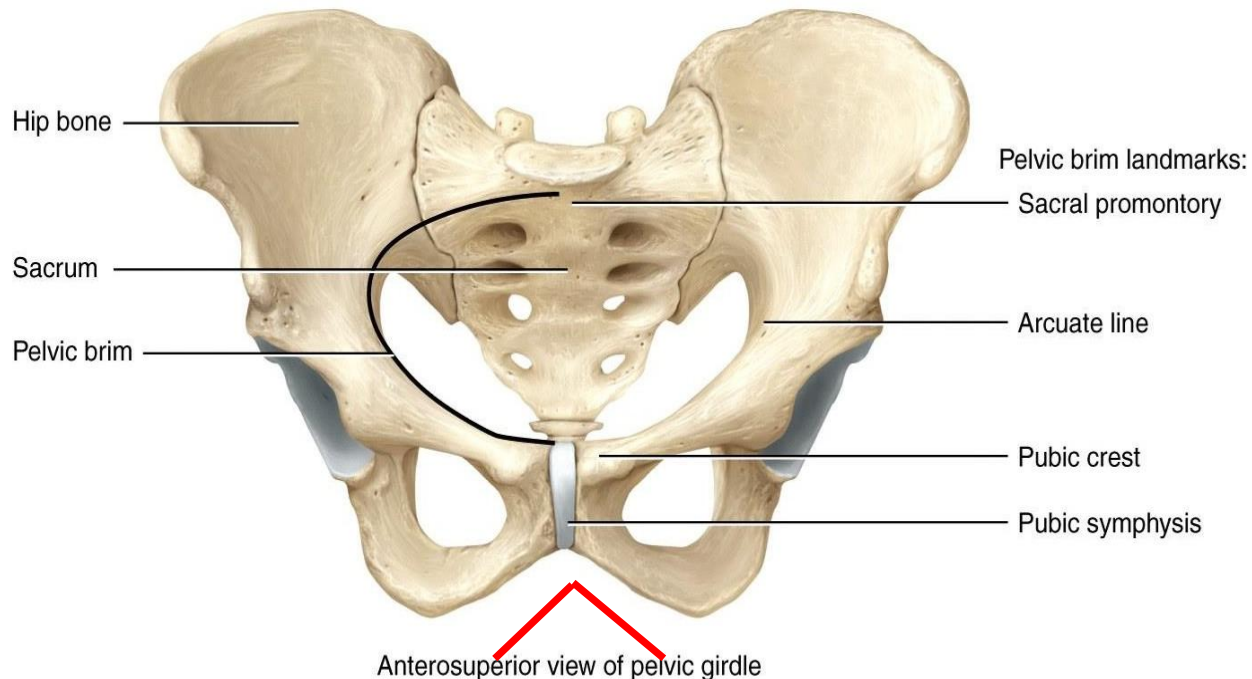
Medial View



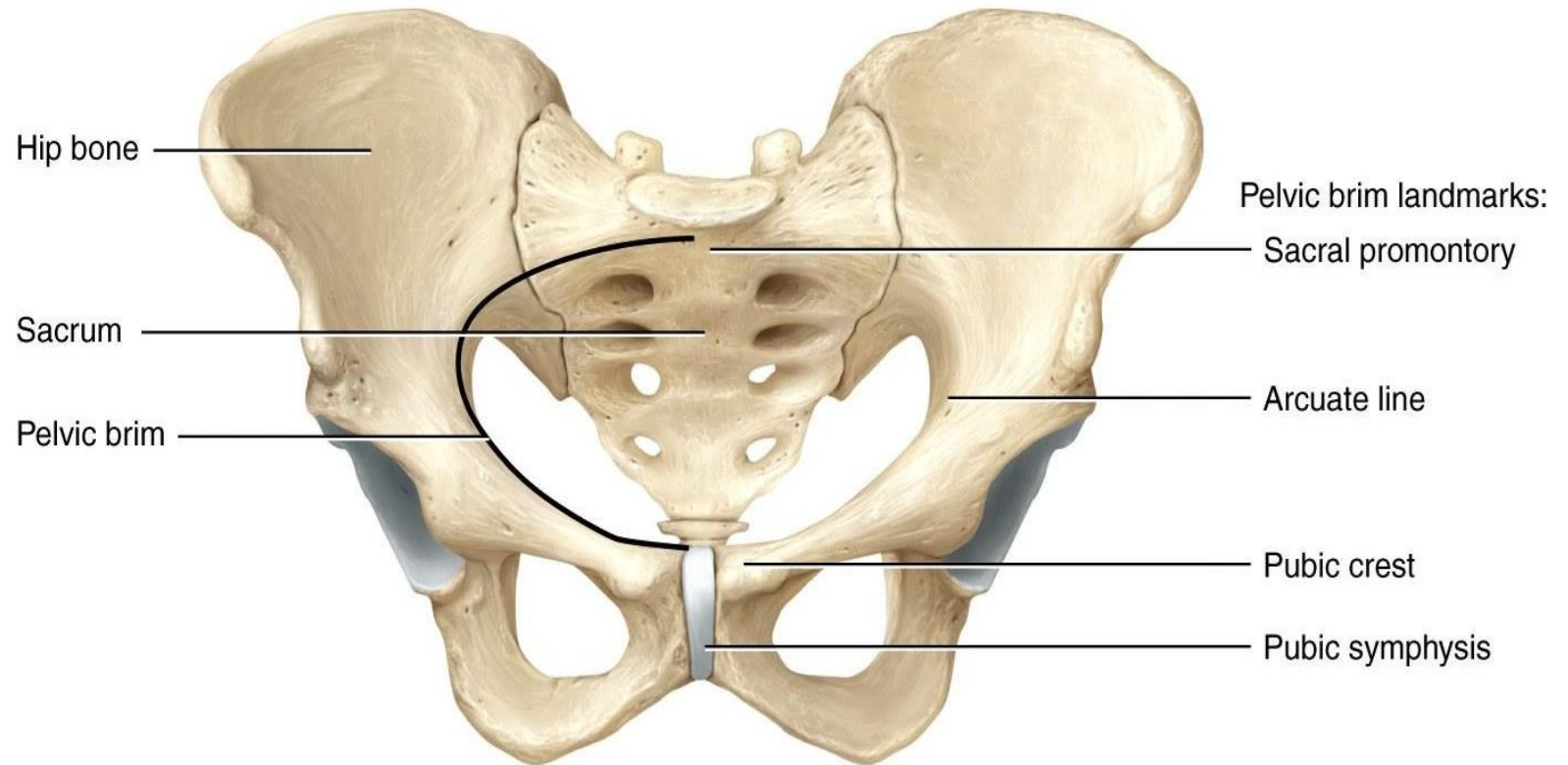
Pelvic

Girdle

- The pelvis is divided into **greater (false)** and **lesser (true)** pelvis by a sharp line running from sacrum to pubis (**PELVIC BRIM**)
- The **pubic arch** is formed by the ischiopubic rami of the two sides.
- The two rami of the pubis meet at the pubic symphysis and their inferior border is defined as the **subpubic angle**.



The Pelvic Brim



Anterosuperior view of pelvic girdle

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**SACRAL
PROMONTORY**

**ARCUATE
LINE**

PECTINEAL LINE

SYMPHYSIS

Pelvic Girdle

The Greater Pelvis (False Pelvis)

- Superior to the pelvic inlet
- Bounded by the iliac ala posterolaterally and the anterosuperior aspect of the S1 vertebrae posteriorly
- Occupied by abdominal organs

The Lesser Pelvis (True Pelvis)

- Between the pelvic inlet and outlet
- Bounded by the pelvic surfaces of hip bones, sacrum, and coccyx
- This is of major gynecological and obstetrical significance

Pubic Arch and Subpubic Angle

- Male: narrow ($<70^\circ$)
- Female: wide ($>80^\circ$)

Pelvic INLET and OUTLET

The Pelvic Inlet is bounded by:

- Sacral Promontory - Posteriorly
- The Arcuate and Pectineal lines - Laterally
- Upper margin of the Pubic Symphysis – Anteriorly

Male: Heart-shaped, narrow

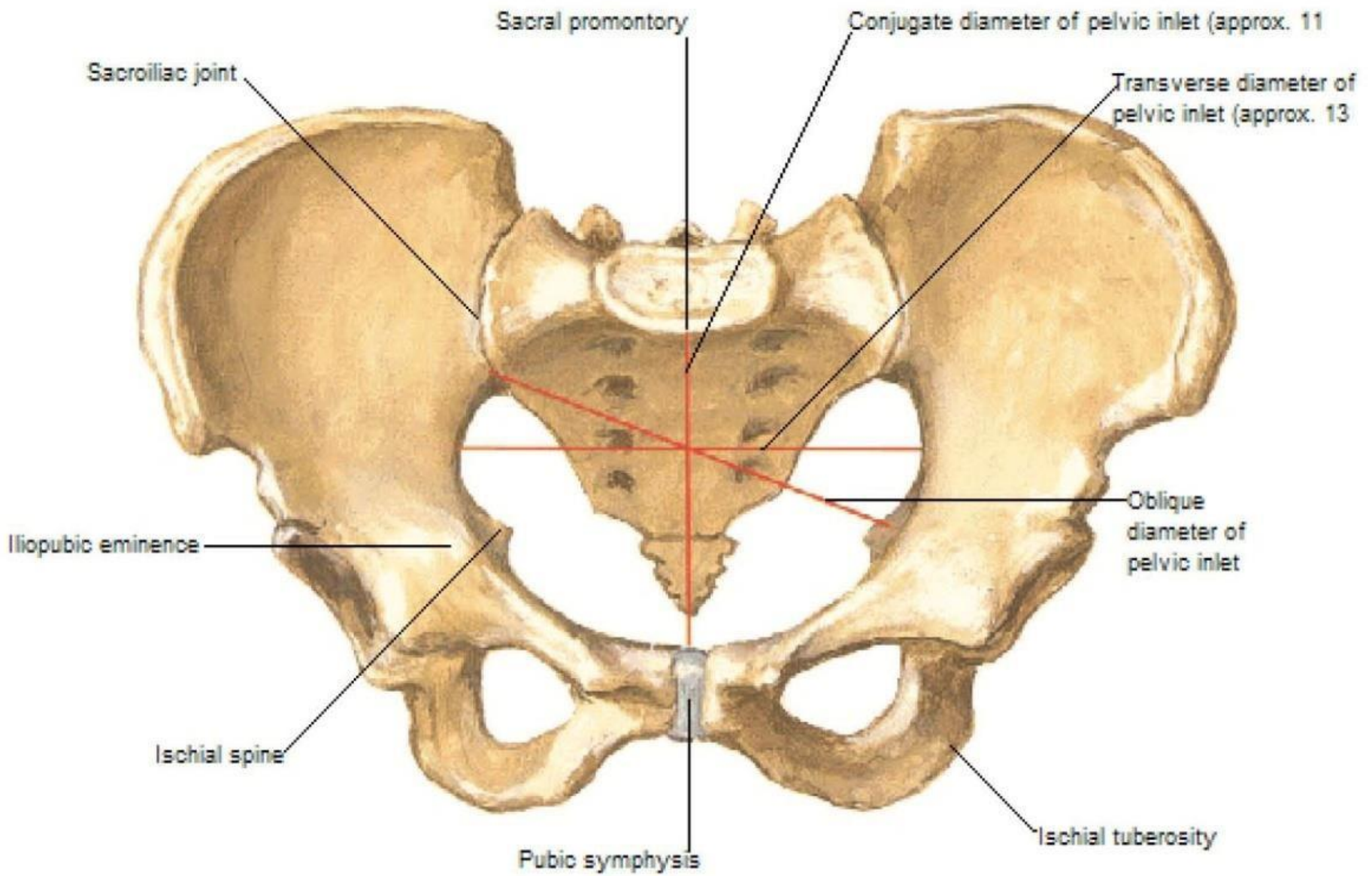
Female: Oval and rounded, wide

The Pelvic Outlet is bounded by:

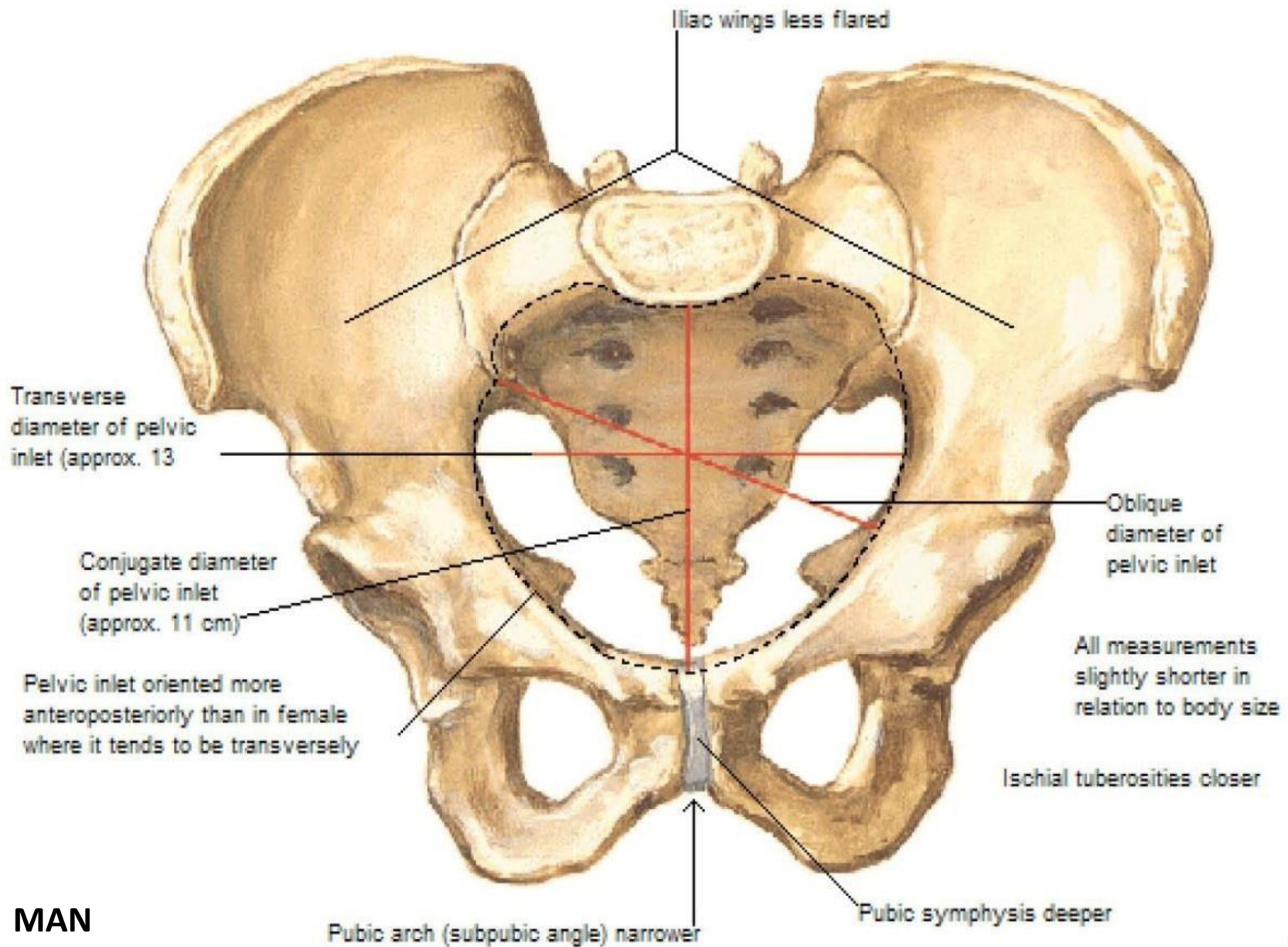
- Pubic arch - Anteriorly
- Ischial tuberosities - Laterally
- Inferior margin of the sacrotuberous ligament - Posterolaterally
- Tip of the coccyx – Posteriorly

Male: Comparatively small

Female: Comparatively large



WOMAN



Pubic symphysis

Ischiopubic ramus

