

Bony Pelvis, Pelvic Diaphragm, And Anal Region



SCRUBS

STUDENT COLLABORATIVE RESOURCES FOR UNDERSTANDING AND BRODY SUCCESS

Mission Statement

SCRUBS is a student-driven initiative that aims to develop supplemental resources for current and future cohorts that will pass through Brody. Members of **SCRUBS** participate in a variety of sub-committees working to create resources for students, by students. These resources aim to offer unique perspectives from students that have walked in the same shoes, developing resources that we wish we had been exposed to during our time in the course.

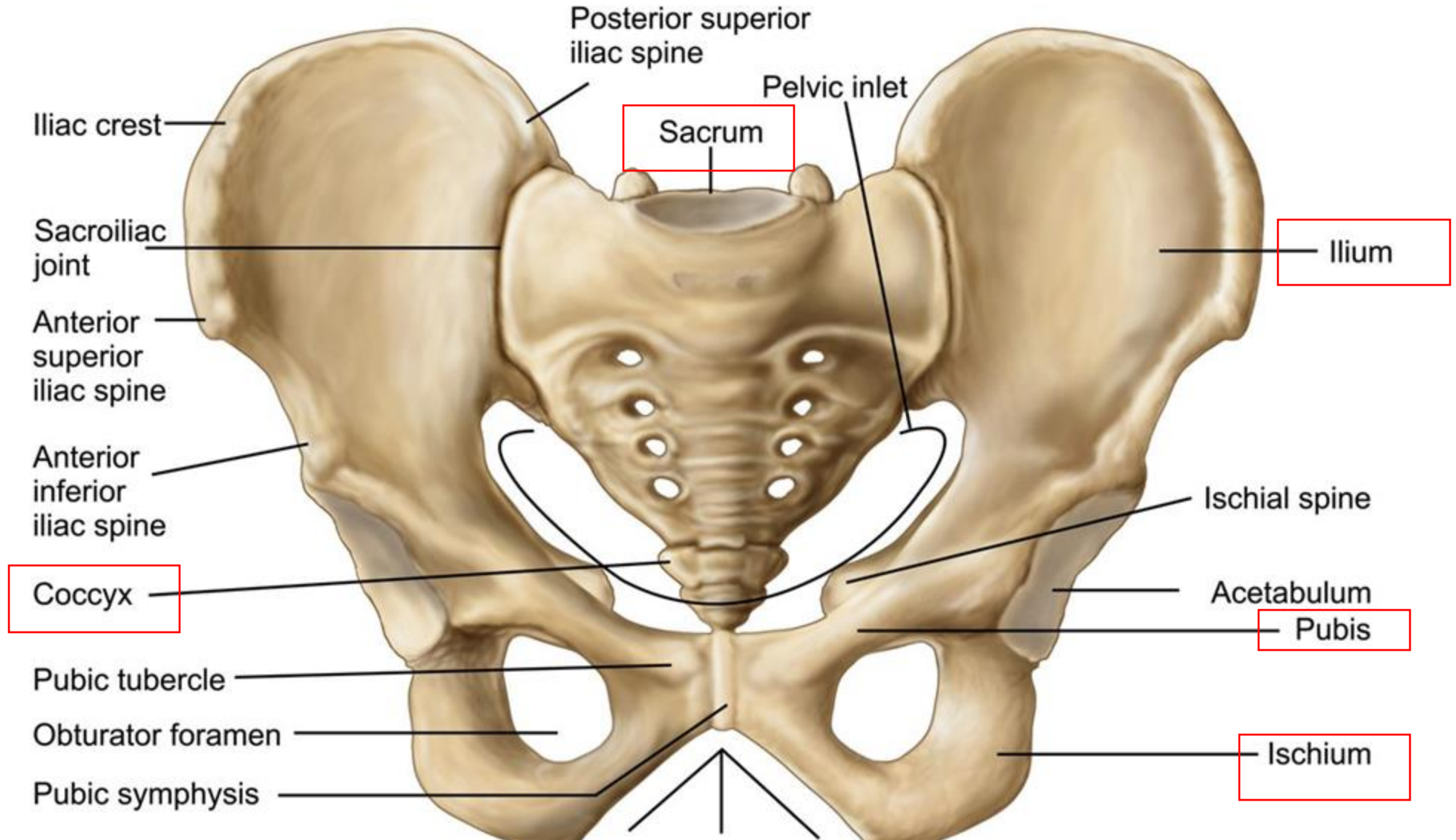
The hope is this organization will become a staple of the Brody student body, exemplifying the unique collaborative community that Brody offers. If this is a mission that aligns with your goals and you have the desire to help those that will come behind you, as well as a goal to leave your mark on Brody as a whole, we invite you to join the team!

Disclaimer

The resources that are included in this document are made by students and not the faculty. As such, there is the possibility for errors in our development, although this is mitigated via a team approach to development with multiple stages of vetting. If there is a contradiction with the coursework presented within your course, please go by the course documents. Additionally, **SCRUBS** aims to supply ***supplemental resources***, however these are in no way replacements to the instruction of the Brody faculty. Use these resources as a supplement, but not as your primary source for course material.

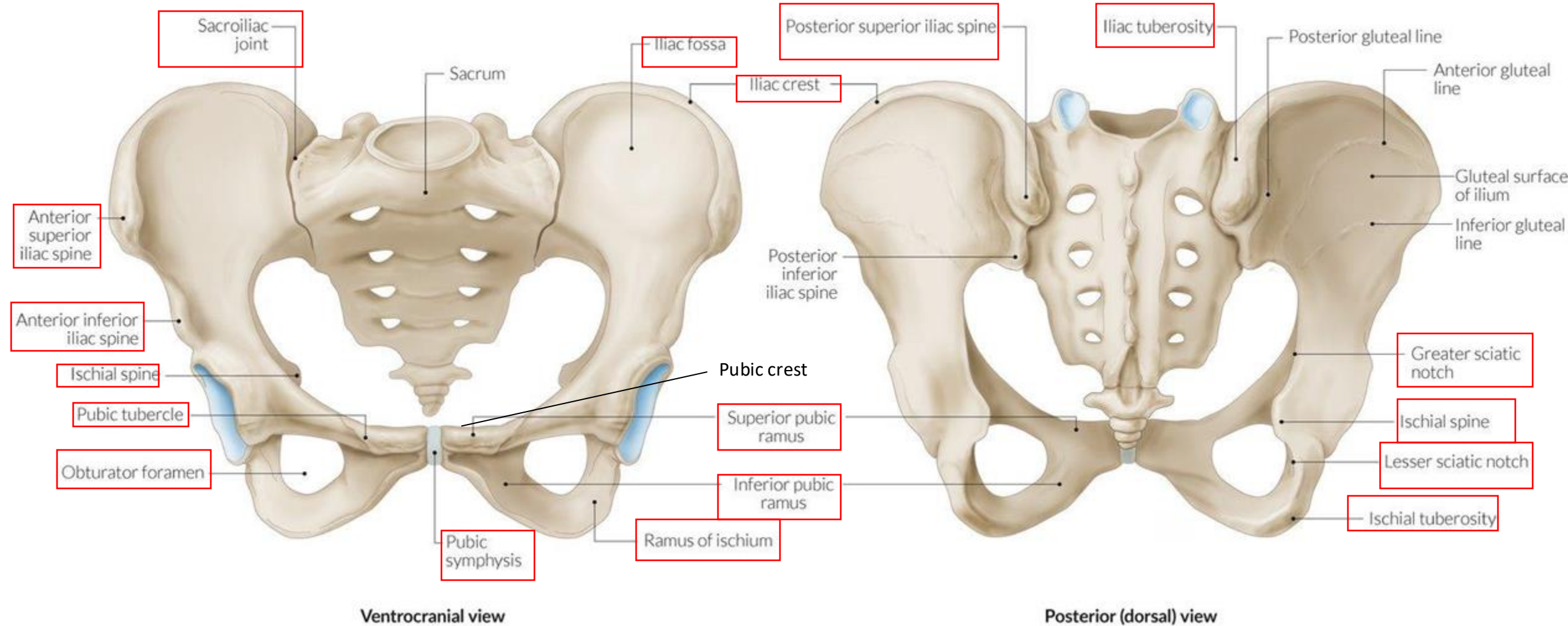
Bones of the Pelvis

- Ilium
- Ischium
- Pubis
- Sacrum
- Coccyx



*Ilium, Ischium, and
Pubis Fuse in adults*

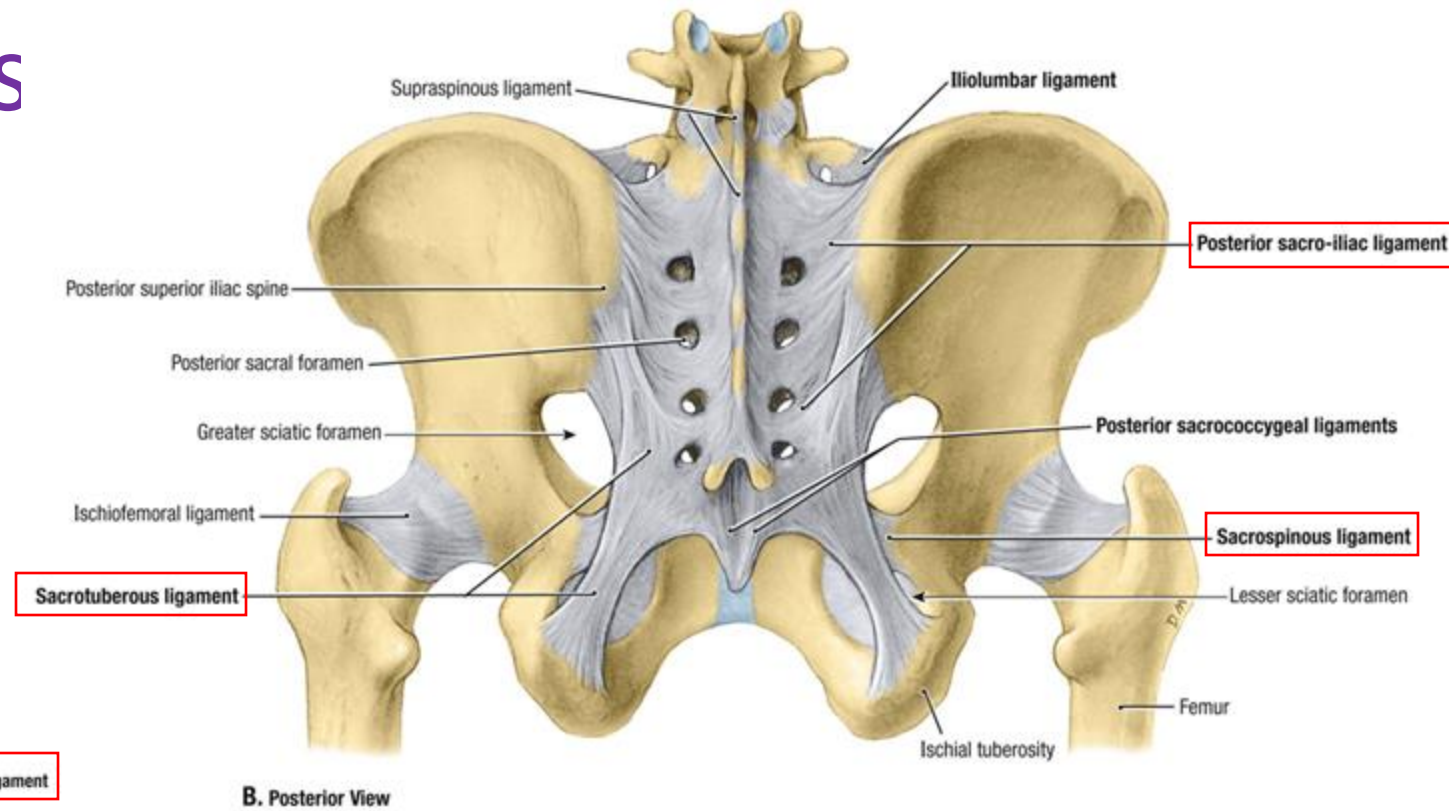
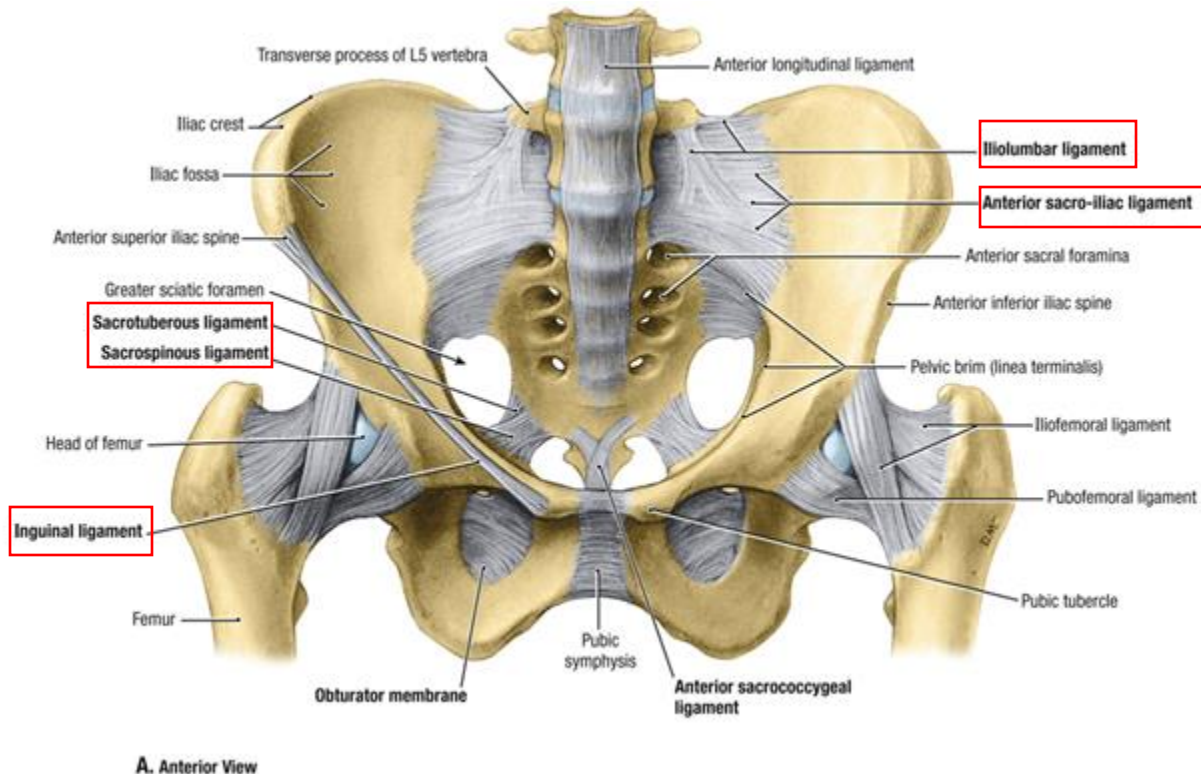
Bony Landmarks



Ligaments of the pelvis

Lumbosacral joint – iliolumbar ligaments unite L5 to iliac crest and sacrum. *Limits axial rotation of L5*

Sacroiliac joint – held together by anterior, interosseous, and posterior sacroiliac ligaments. *Transmit the weight of the body to the hips*

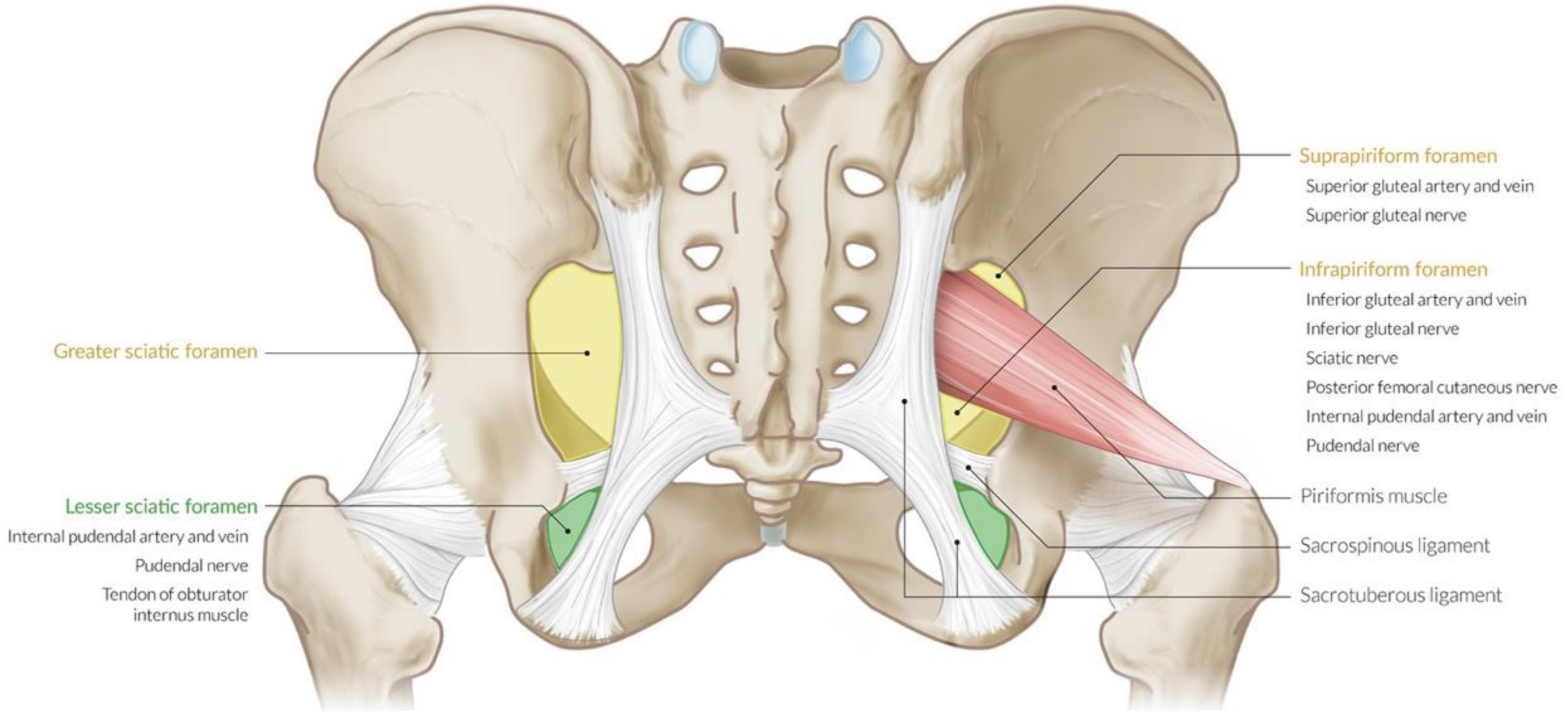


Accessory ligaments - Sacrotuberous and sacrospinous ligaments, anchor the sacrum to the ischial tuberosity and spine. *Form borders of the greater and lesser sciatic foramen*

Pubic symphysis – Interpubic fibrocartilaginous disc, broader in females

Sacrococcygeal – Thin intervertebral disc reinforced by sacrococcygeal ligaments

Greater and Lesser Sciatic Foramen



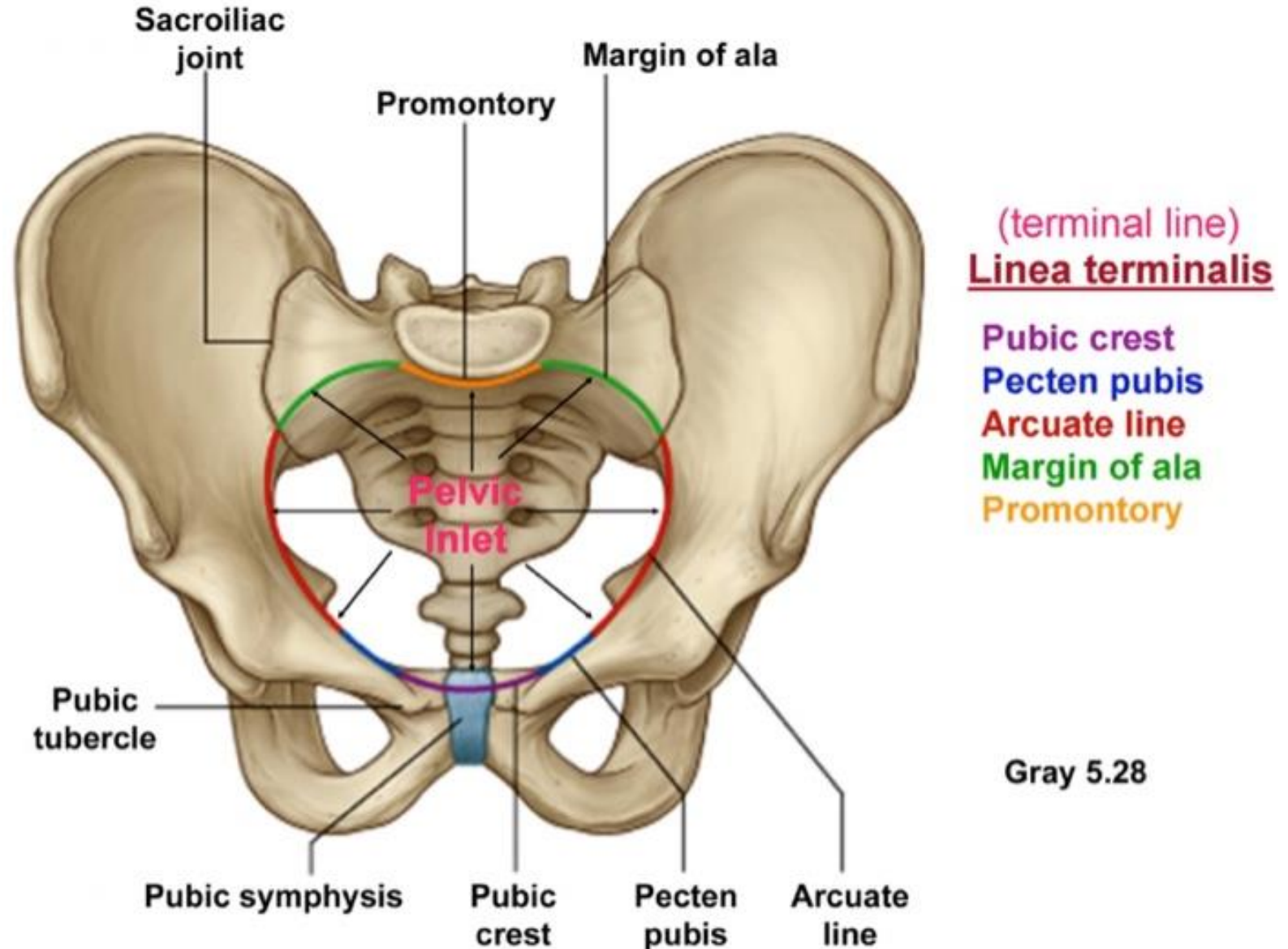
Pelvic Inlet (Superior Pelvic Aperture)

The region of the pelvis **above the pelvic inlet** is the **Greater Pelvis (false pelvis)**

The region of the pelvis **below the pelvic inlet** is the **Lesser Pelvis (true pelvis)**

Borders of the pelvic outlet:

- Pubic symphysis
- Ischiopubic rami
- Ischial tuberosities
- Sacrotuberous ligaments
- Coccyx

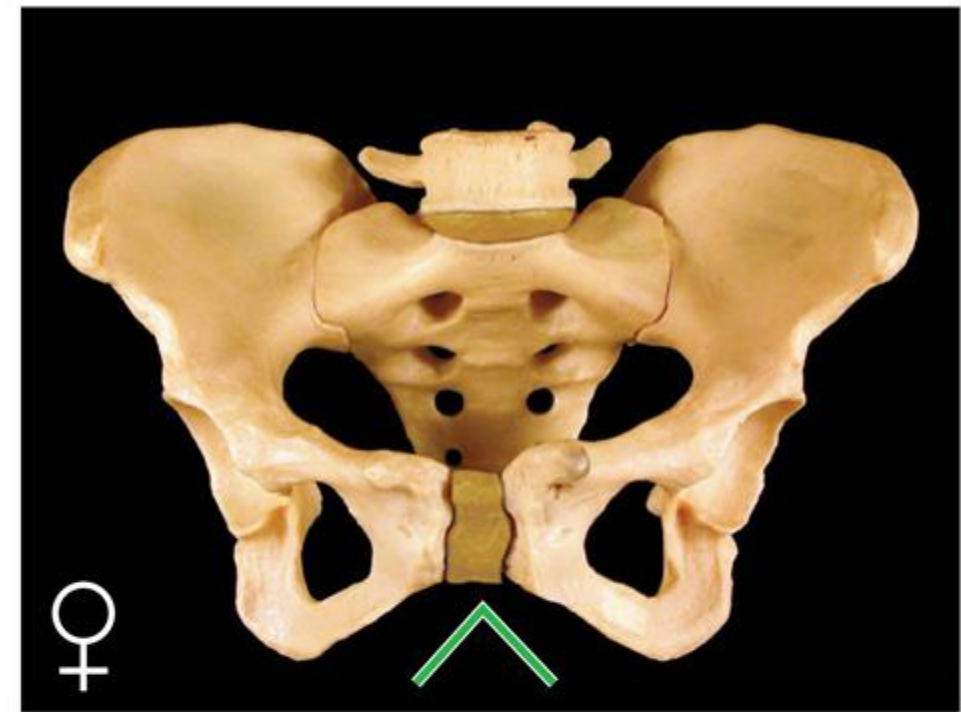
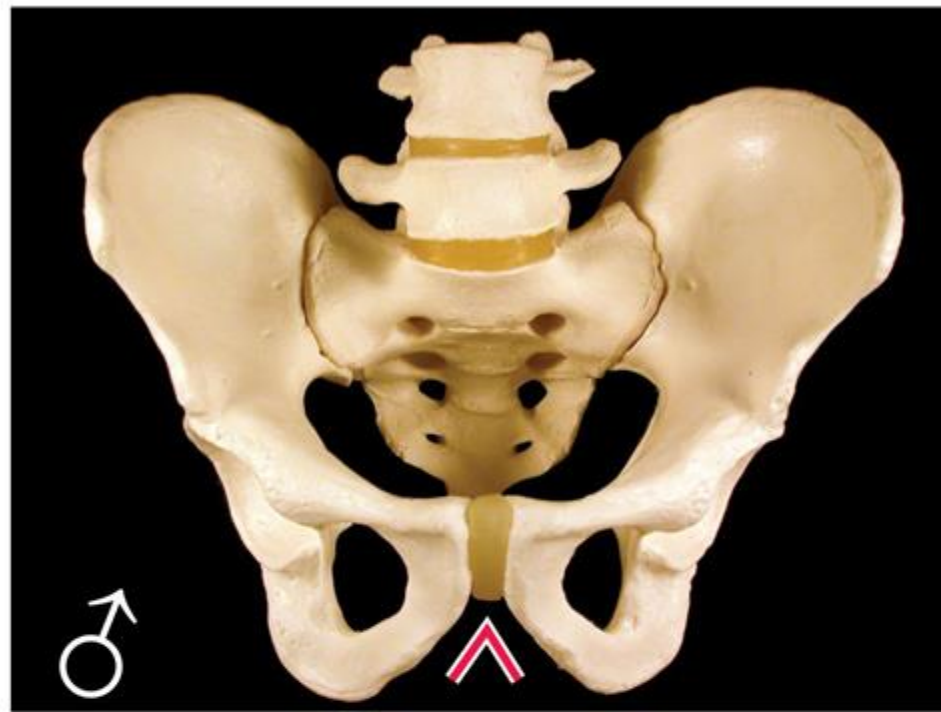


Male Pelvis

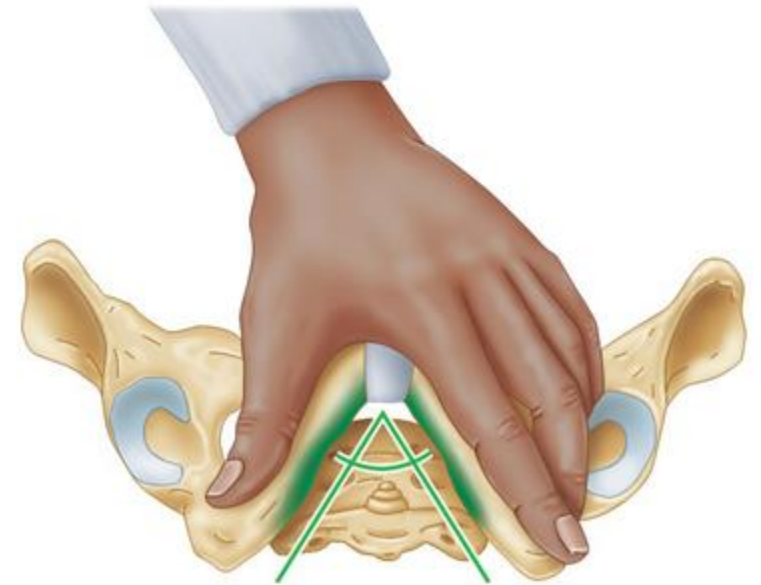
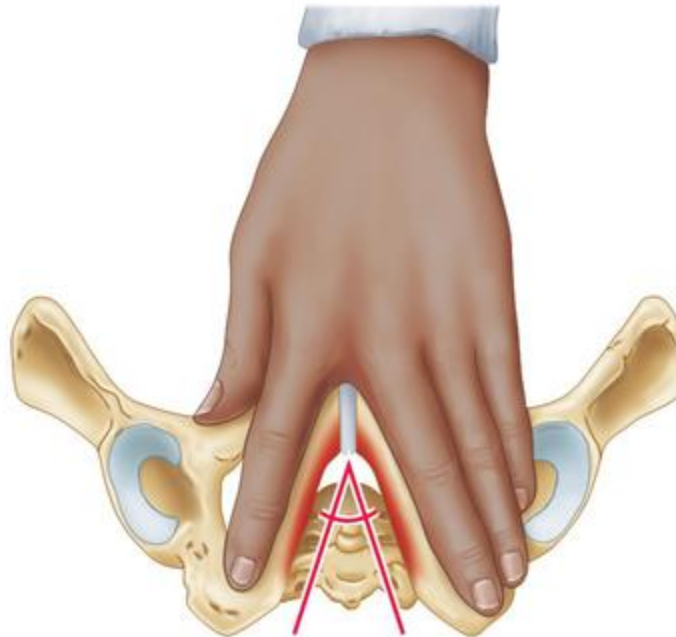
Deep and
narrow

Female pelvis

Wide and
shallow



Antero-inferior Views



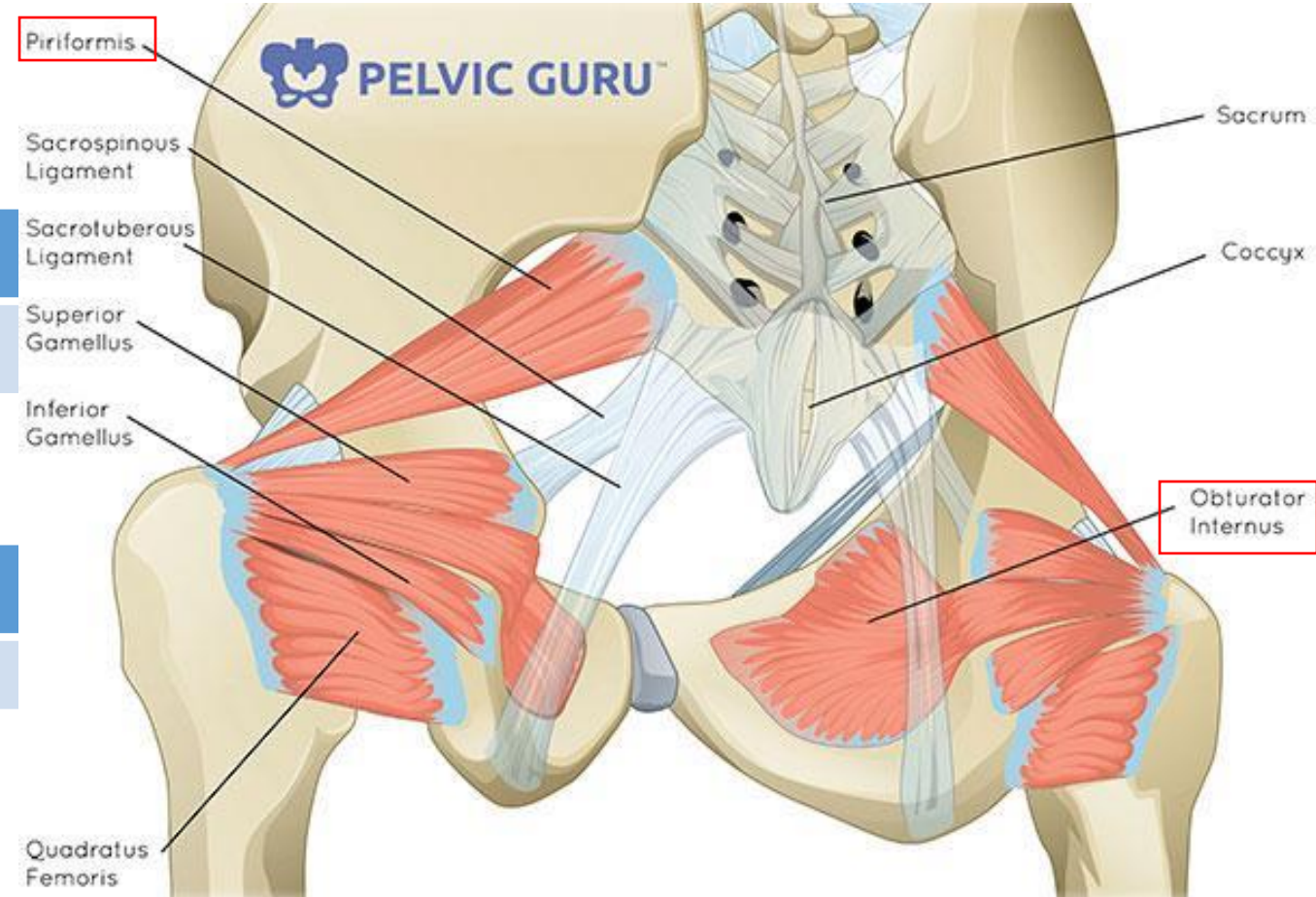
Muscles of the Pelvic Wall

Obturator internus

O: Obturator membrane, margin of obturator foramen	I: Greater trochanter of the femur (tendon passes through the lesser sciatic foramen)
N: Nerve to the obturator internus and superior gemellus (L5-S2)	A: Lateral rotation of thigh

Piriformis

O: Anterior sacrum, forms bed for sacral plexus	I: Greater trochanter via Greater sciatic foramen
N: Nerve to piriformis (S1-S2)	A: Lateral rotation of thigh

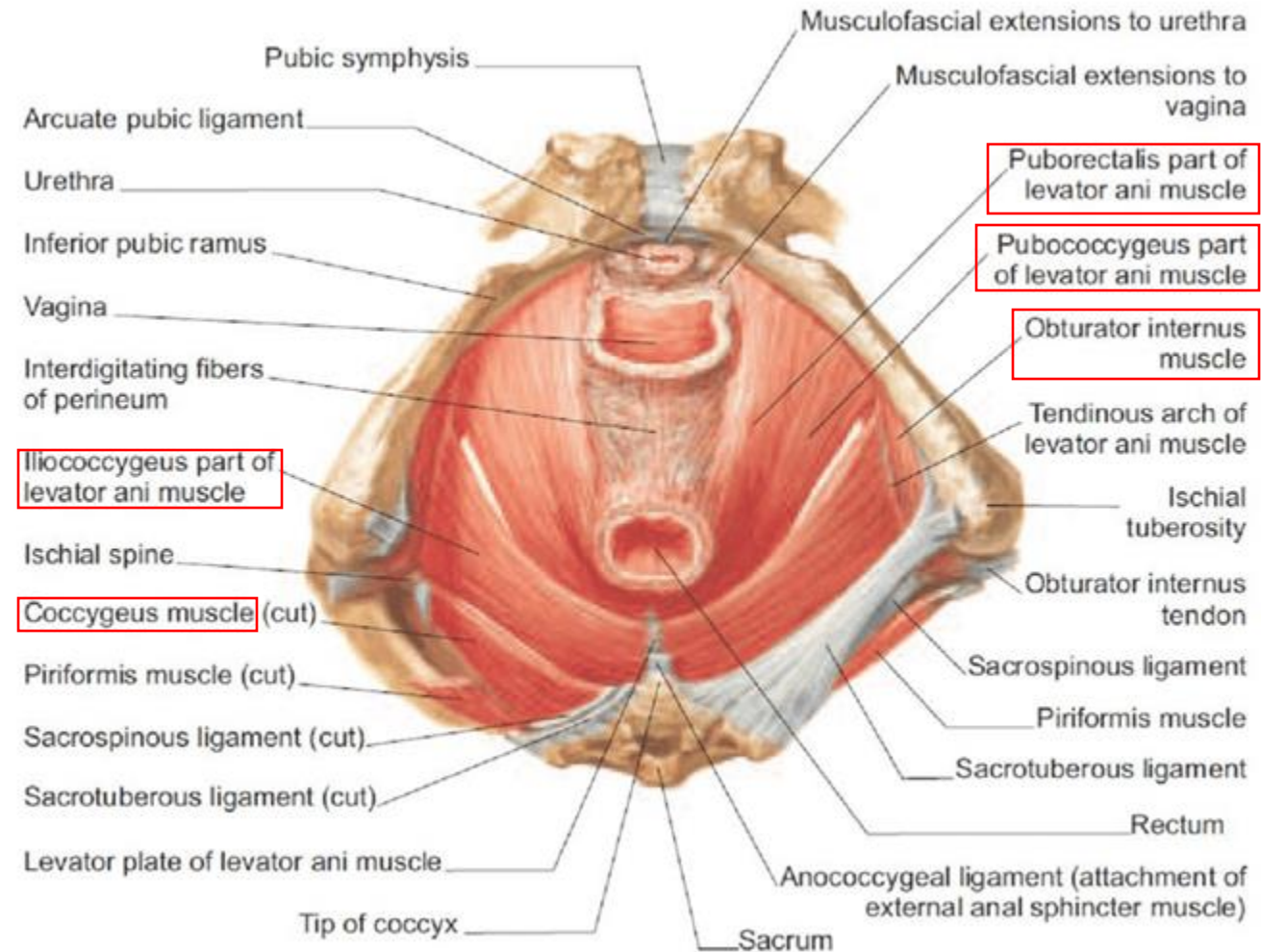
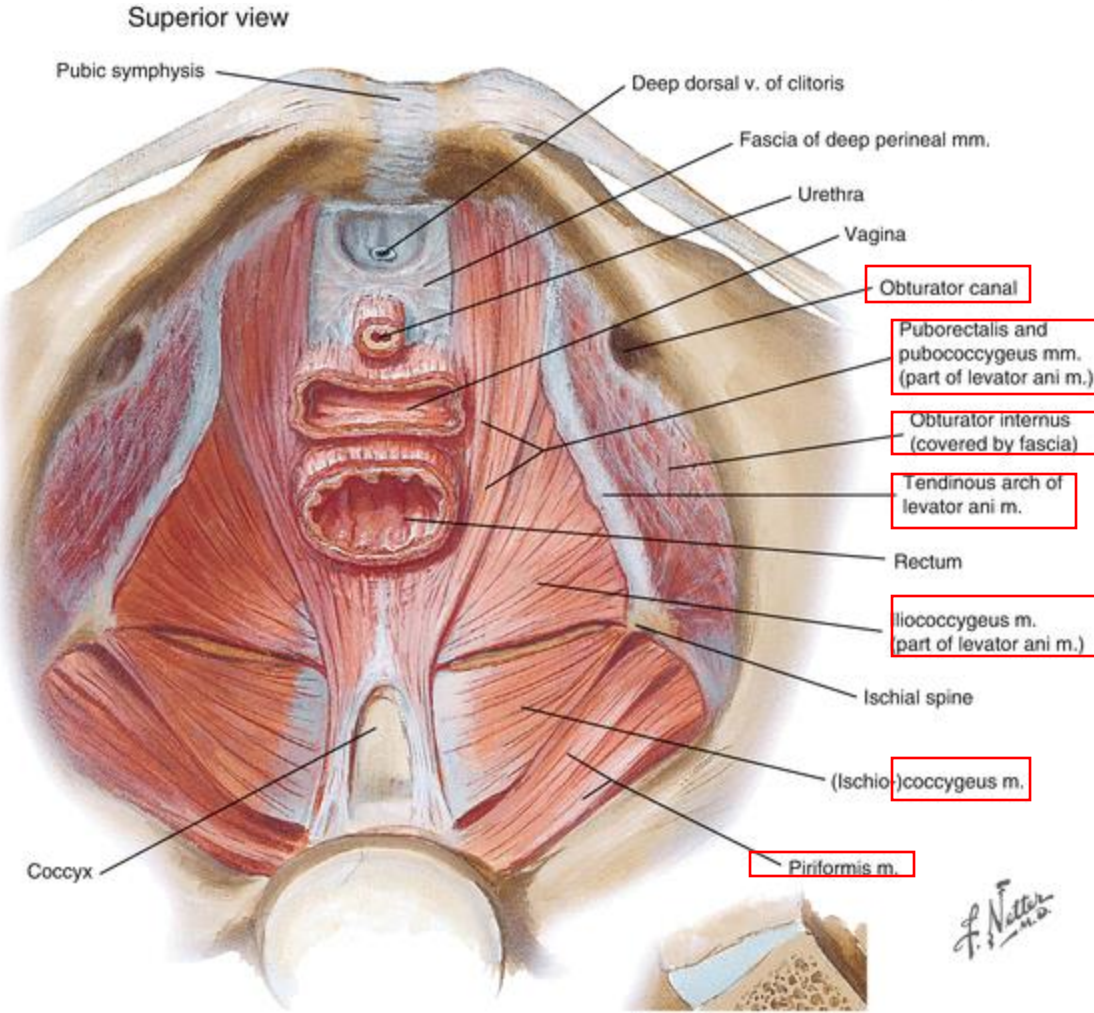


Pelvic Diaphragm

Muscular sheet that closes the pelvic outlet and forms the floor of the pelvic cavity

- In females, the vagina and urethra pass through the urogenital hiatus

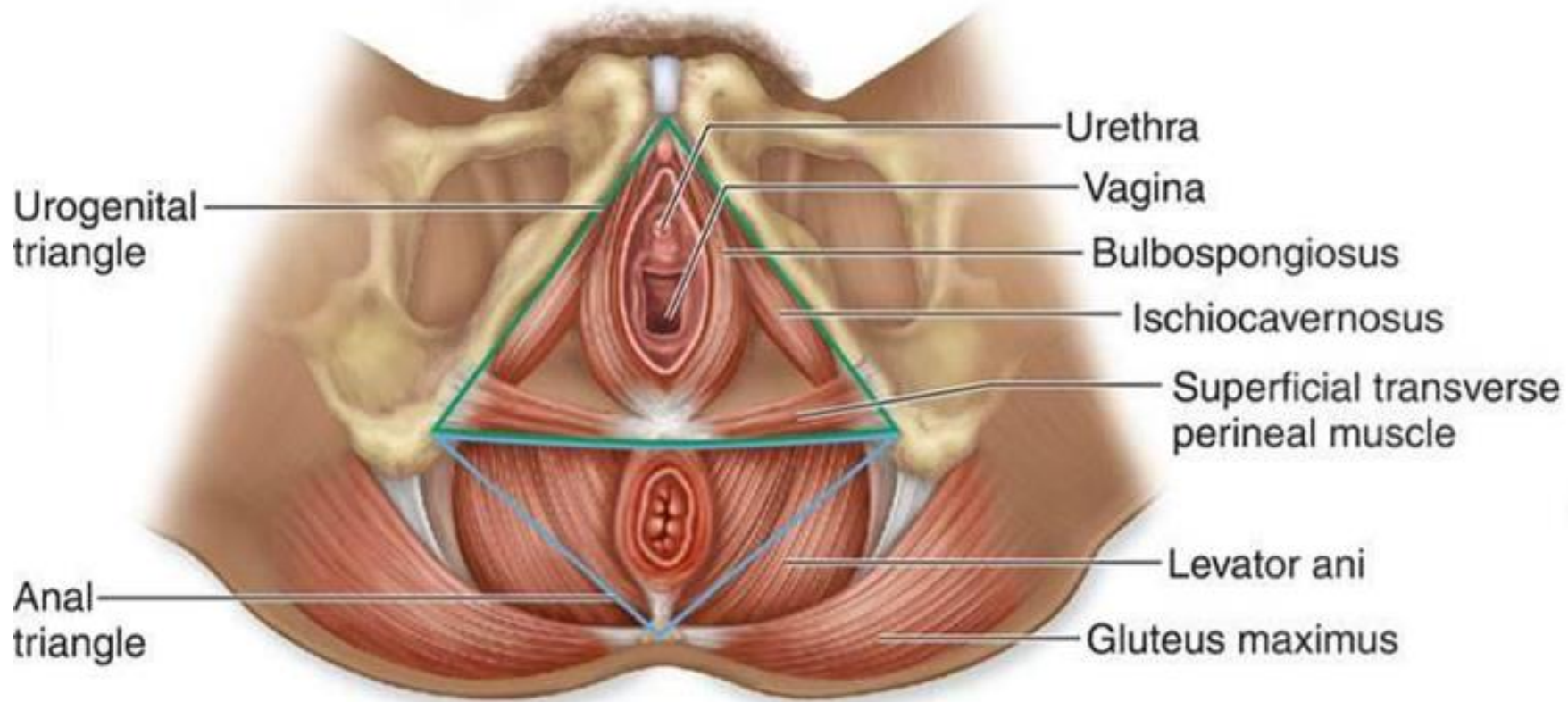
Muscles of P. diaphragm: Levator ani (Puborectalis, Iliococcygeus, Pubococcygeus), Coccygeus
Innervation – Nerve to the Levator Ani and coccygeus (S3-S4)



Perineum: Anal and Urogenital Triangle

Anal Triangle Borders

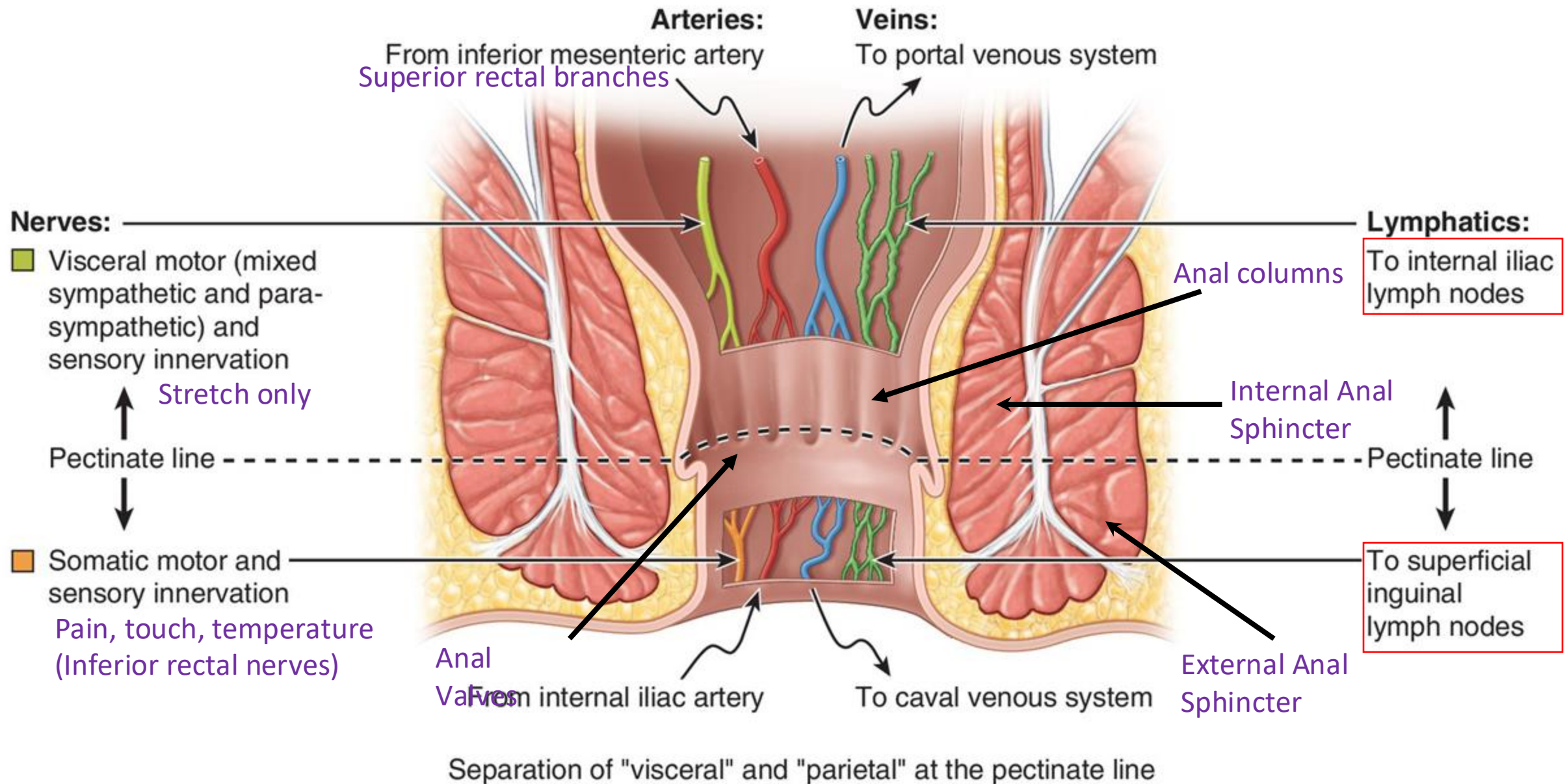
- Coccyx
- Sacrotuberous ligaments
- Line between ischial tuberosities



Urogenital Triangle Borders

- Pubic symphysis
- Iliopubic rami
- Line between ischial tuberosities

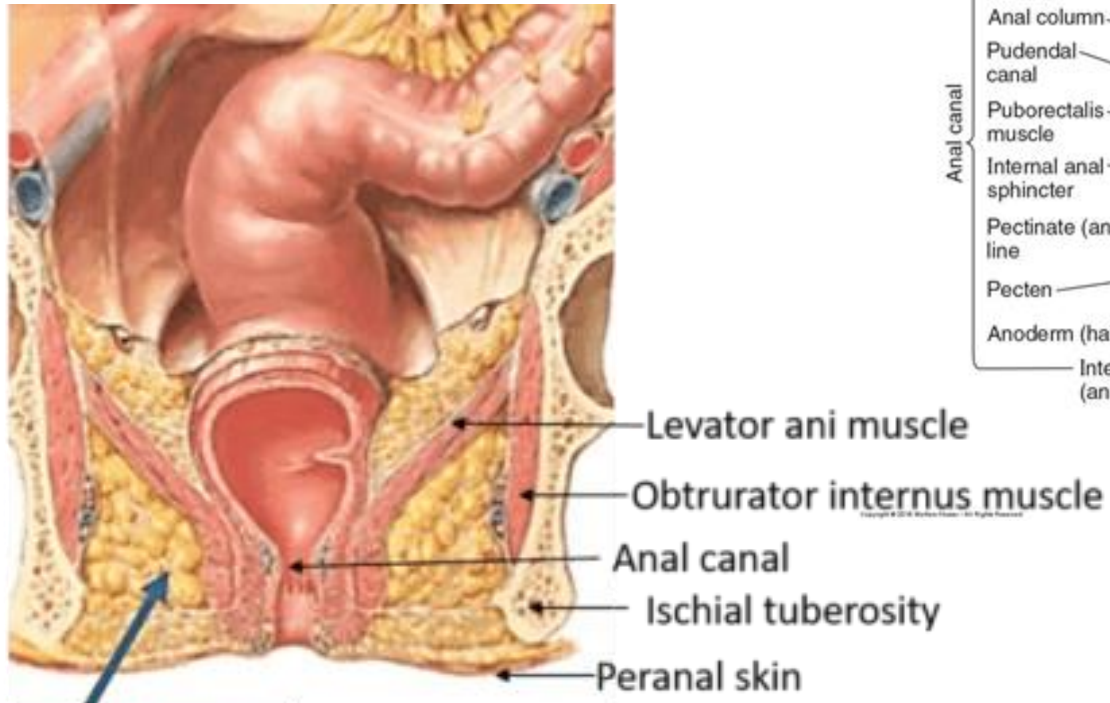
Anal Triangle	Urogenital Triangle
Anal canal	Superficial perineal pouch
External anal sphincter (voluntary)	Deep perineal pouch
Ischioanal fossa	
Inferior rectal branch of pudendal nerve	



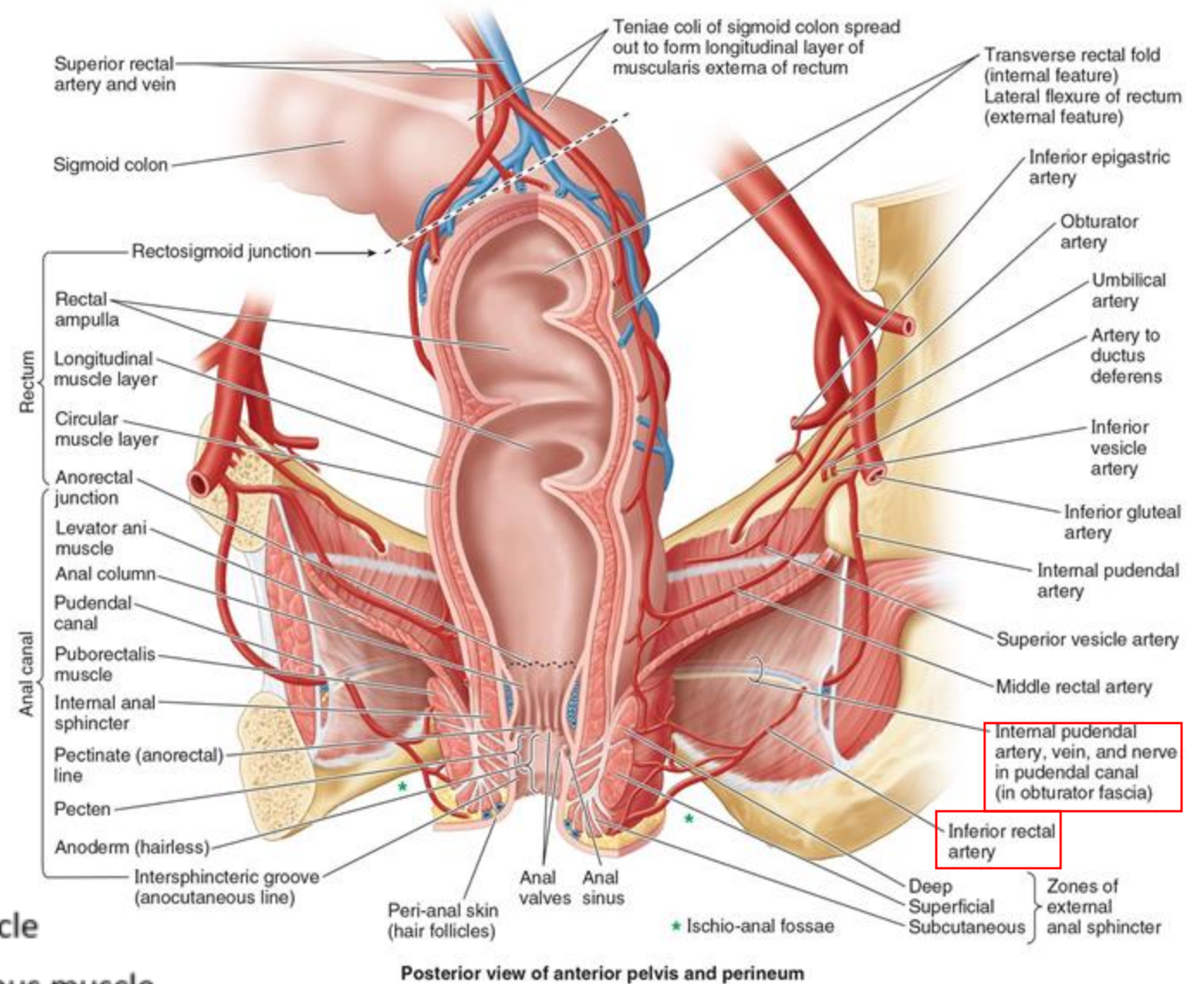
Ischioanal fossa

Borders

- Obturator internus
- Levator ani
- Anal canal



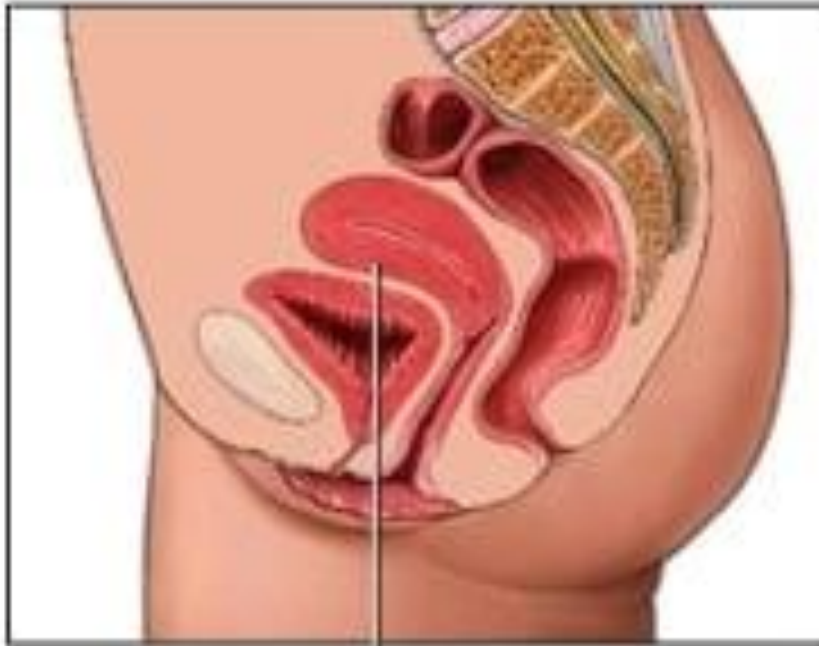
Ischioanal Fossa



Pudendal nerve and internal pudendal artery run through the pudendal canal

CLINICAL ANATOMY

Pelvic Prolapse – Post Childbrith



Uterus



Prolapsed uterus

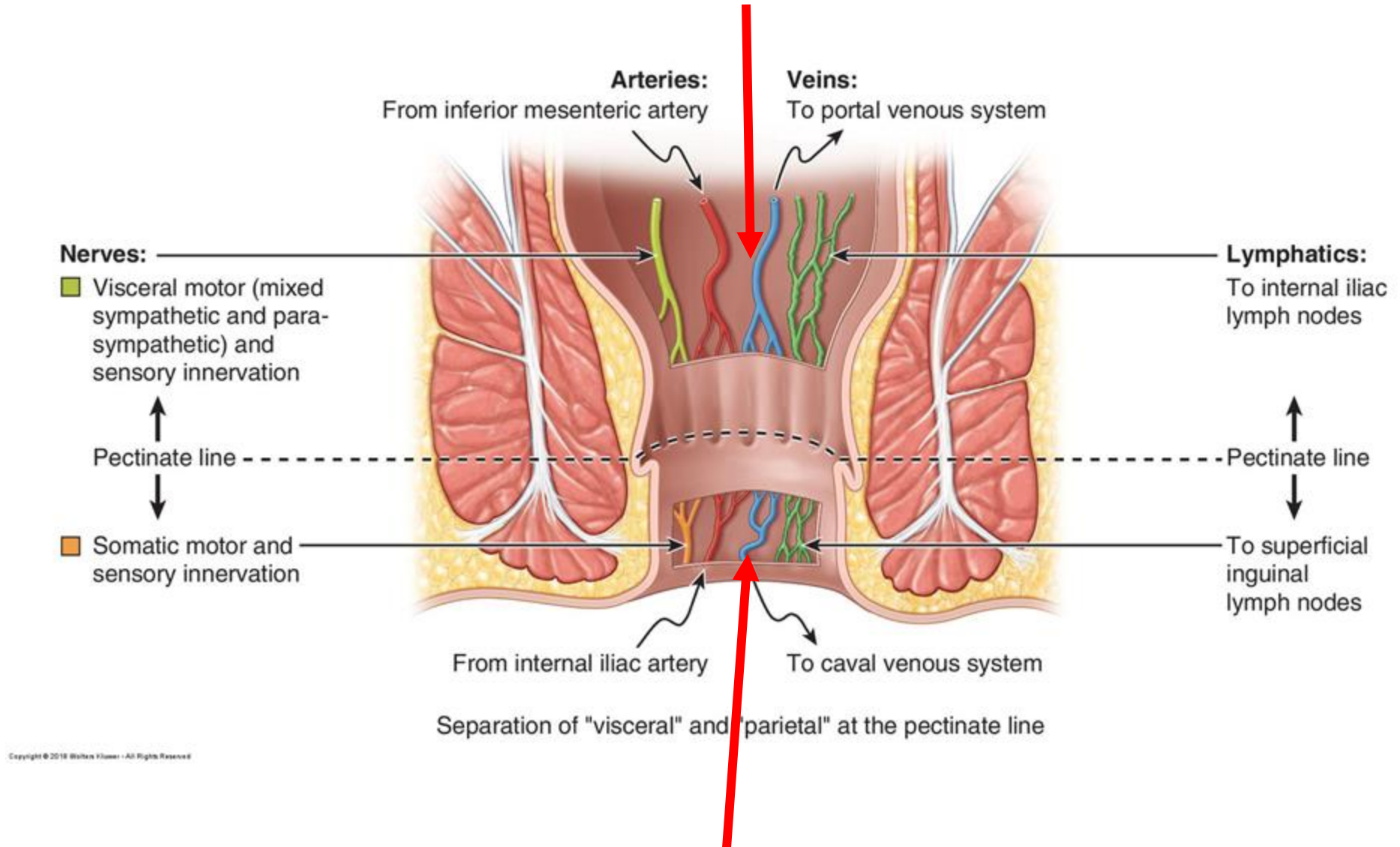
External Hemorrhoids vs Internal Hemorrhoids

External

- Varicosities of the inferior rectal veins
- Painful – somatic innervation via inferior rectal nerves (via pudendal nerve)

Internal

- Varicosities of the superior rectal veins
- Not Painful – Visceral motor and sensory (stretch and temp)



Review Questions

Which of the following **are not** borders of the pelvic brim?

- A) Arcuate line
- B) Iliac Fossa
- C) Promontory of the sacrum
- D) Inguinal ligament
- E) Sacrospinous ligament
- F) Pubic crest
- G) Pectin pubis
- H) Ischial tuberosity

Which of the following **are not** borders of the pelvic brim?

- A) Arcuate line
- B) **Iliac Fossa**
- C) Promontory of the sacrum
- D) **Inguinal ligament**
- E) **Sacrospinous ligament**
- F) Pubic crest
- G) Pecten pubis
- H) **Ischial tuberosity**

Which of the following passes through the lesser sciatic foramen?

- A) Superior gluteal nerve
- B) Lateral sacral artery
- C) Inferior gluteal artery
- D) Obturator internus tendon
- E) Sciatic nerve

Which of the following passes through the lesser sciatic foramen?

- A) Superior gluteal nerve
- B) Lateral sacral artery
- C) Inferior gluteal artery
- D) Obturator internus tendon
- E) Sciatic nerve