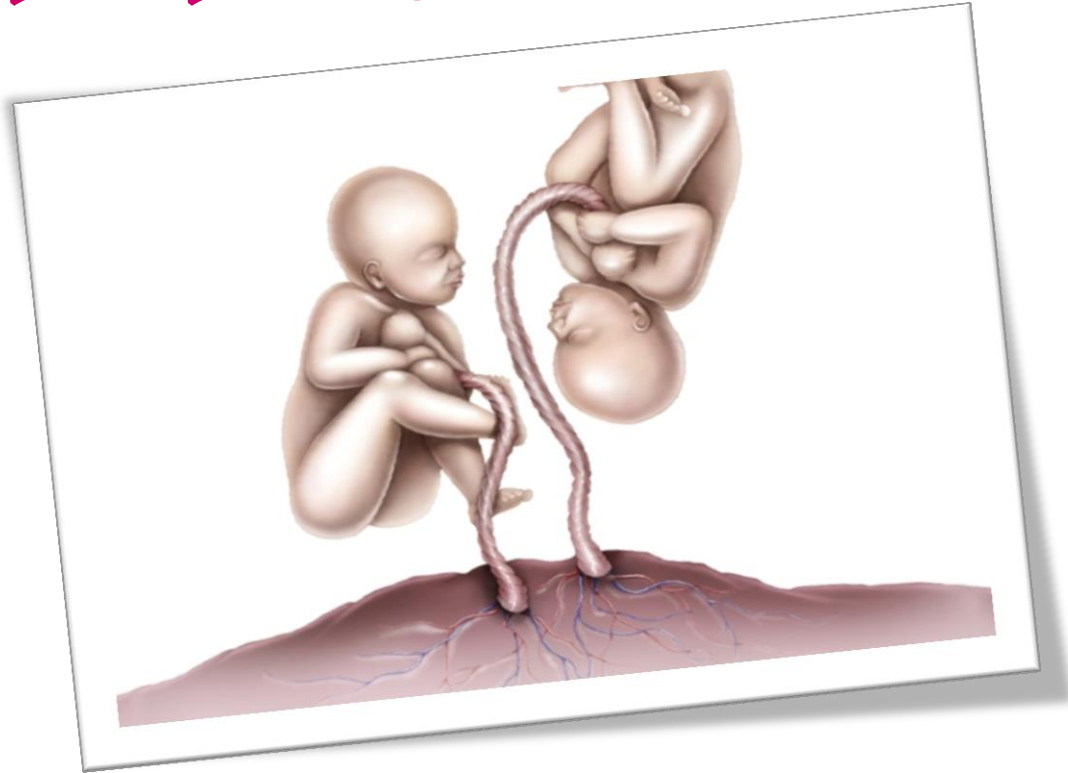




REPRODUCTIVE SYSTEM



LECTURE: MALE REPRODUCTIVE SYSTEM

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REVIEWED BY: ASHWAG ALHARBI

[If there is any mistake or suggestions please feel free to contact us:](#)

Anatomyteam32@gmail.com

Both - Black

Male Notes - BLUE

Female Notes - GREEN

Explanation and additional notes - ORANGE

Very Important note - Red

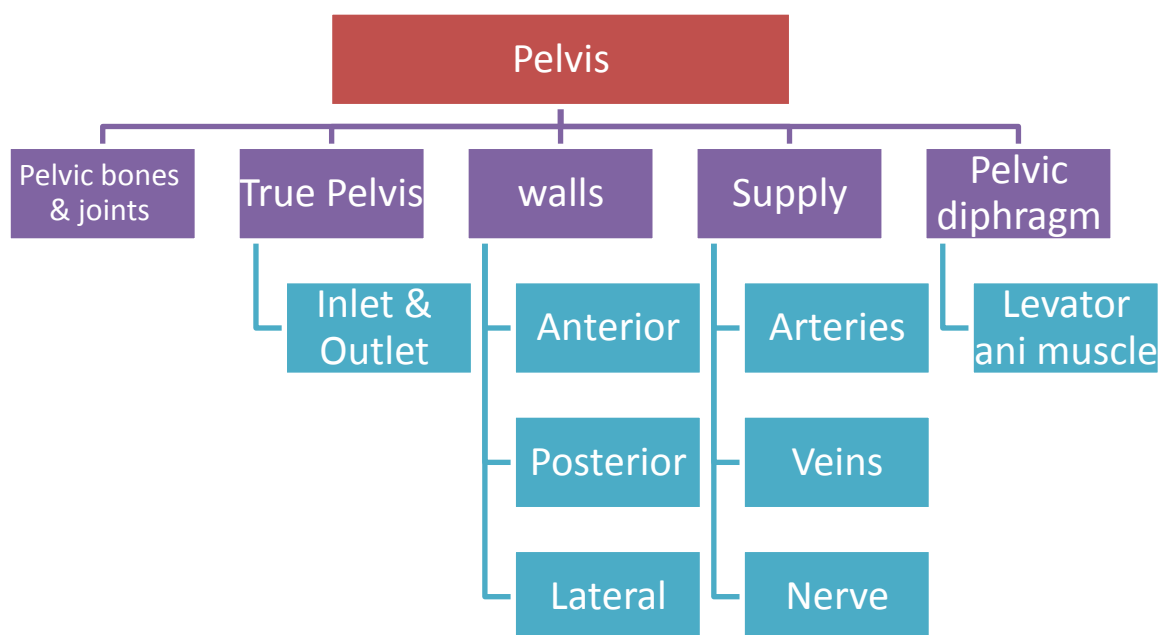


Objectives:

At the end of the lecture, students should be able to:

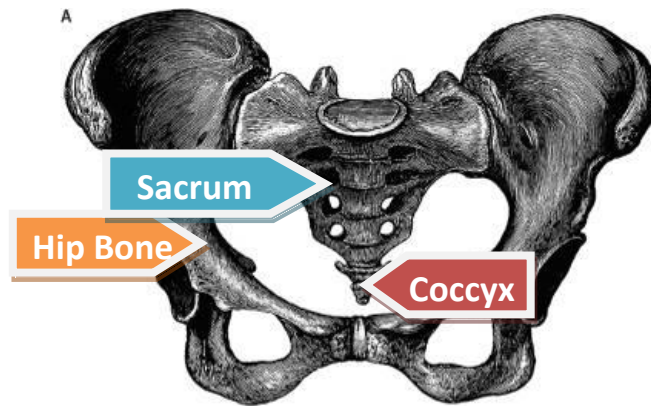
- 1- Describe the **anatomy of the pelvis** regarding (bones, joints & muscles)
- 2- Describe the boundaries and subdivisions of the pelvis.
- 3- Differentiate the different **types of the female pelvis**.
- 4- Describe the pelvic walls & floor.
- 5- Describe the components & function of the pelvic diaphragm.
- 6- List the **arterial & nerve supply**.
- 7- List the **lymph & venous drainage** of the pelvis.

Mind map:





Bone of pelvis



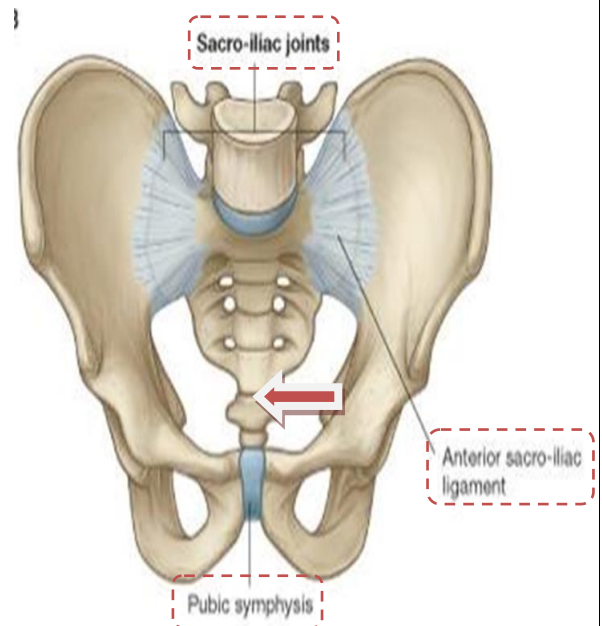
The bony pelvis is composed of four bones:

- Two Hip bones** • which form the anterior and lateral walls.
- Sacrum & Coccyx** • which form the posterior wall



These 4 bones are lined by 4 muscles and connected by **4 joints**. The bony pelvis with its joints and muscles form a strong *basin-shaped* structure (with multiple foramina), that contains and protects the lower parts of the alimentary & urinary tracts and internal organs of reproduction.

- Anterior**
 - Symphysis Pubis
 - (2nd cartilaginous joint)
- Posterior**
 - Sacrococcygeal joint
 - (cartilaginous)
 - between sacrum and coccyx. "arrow"
- Posteriolateral**
 - Two Sacroiliac joints.
 - (Synovial joints)

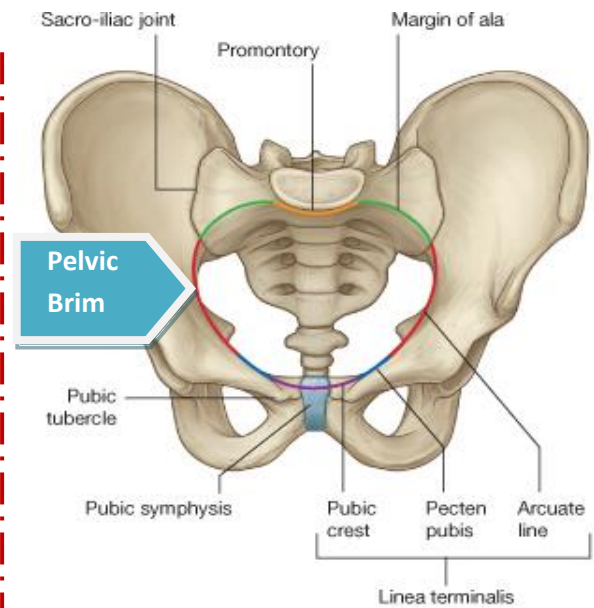




* **Pelvic brim** divided the pelvis into:

- 1-False pelvis "greater pelvis" Above the brim
- 2-True pelvis "Lesser pelvis" Below the brim

Note: pelvic brim is the inlet of Pelvis



* **The False pelvis is bounded by:**

Posteriorly:

Lumbar vertebrae.

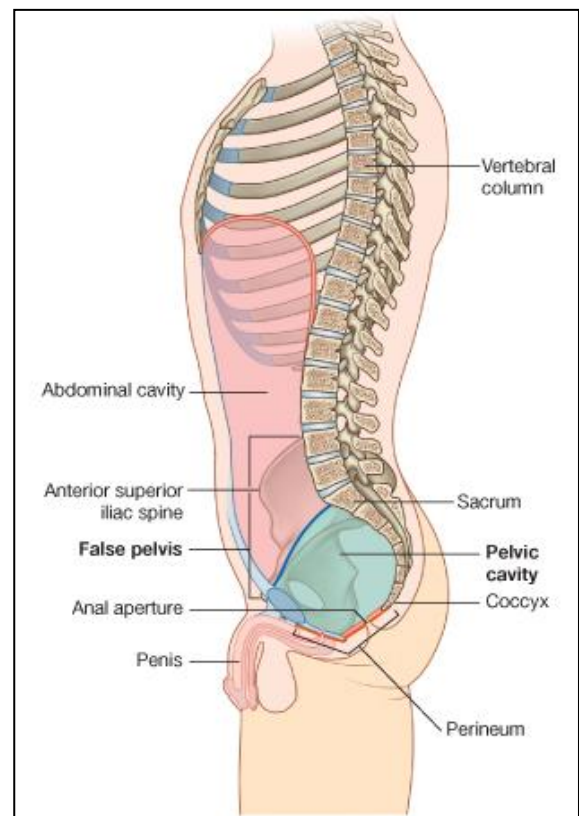
Laterally:

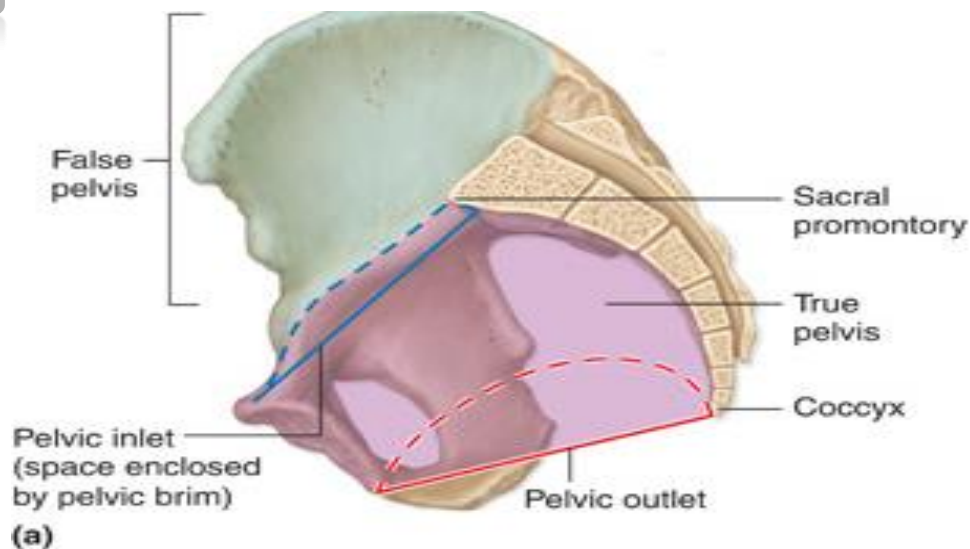
Iliac fossae and the iliacus.

Anteriorly:

Lower part of the anterior abdominal wall.

It supports the abdominal contents.



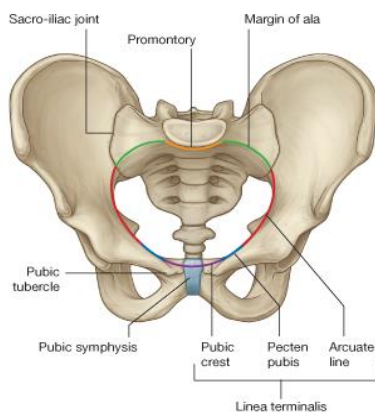


* **The True pelvis has:**

1- Inlet. 2- Outlet. 3- Cavity.

The cavity is a short, curved canal, with a shallow anterior wall and a deeper posterior wall. It lies between the inlet **"Superior"** and the outlet **"Inferior"**

Pelvic inlet



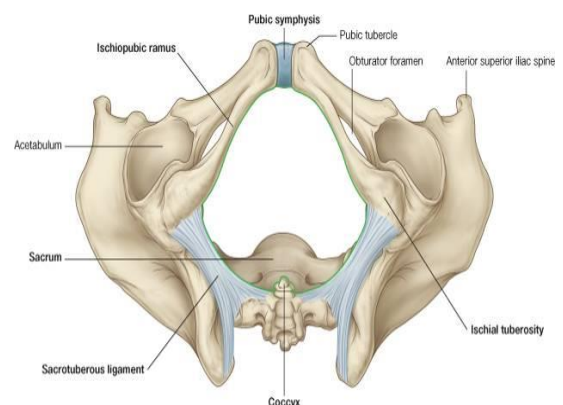
Shape: **Oval or circular.**

Anteriorly: Symphysis pubis.

Posteriorly: Sacral promontory, ala of sacrum.

Laterally: Ileopectineal (arcuate) lines.

Pelvic outlet



Shape: **Diamond**

Anteriorly: Symphysis pubis.

Posteriorly : Coccyx,

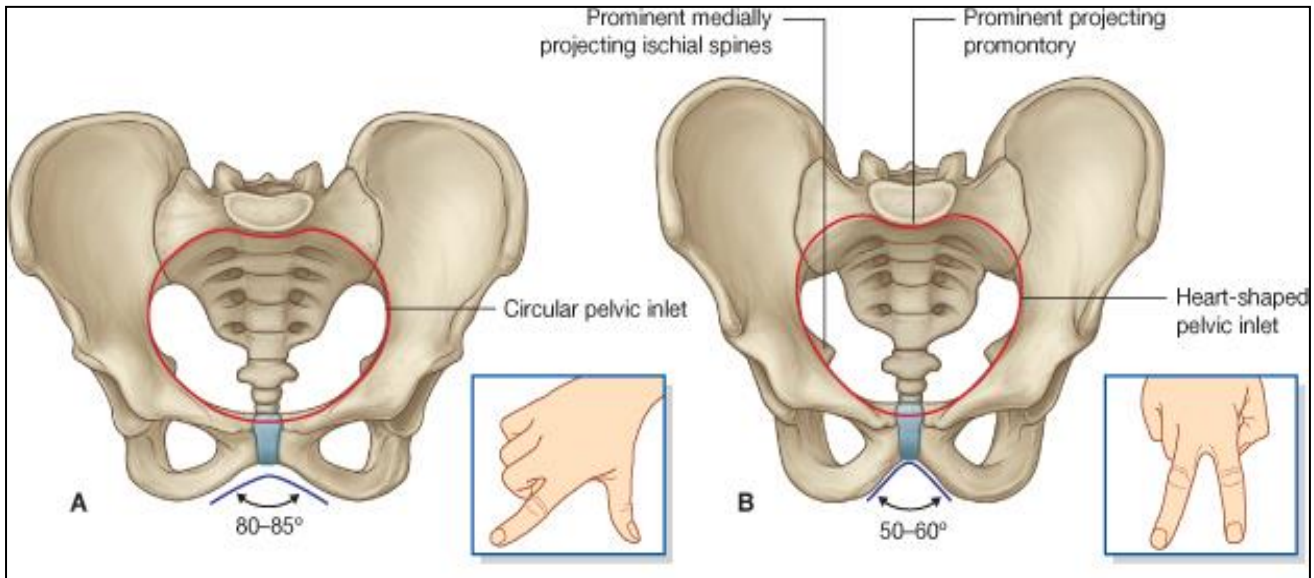
Anterolaterally: ischiopubic ramus

Posterolaterally: Sacrotuberous ligament.



Female

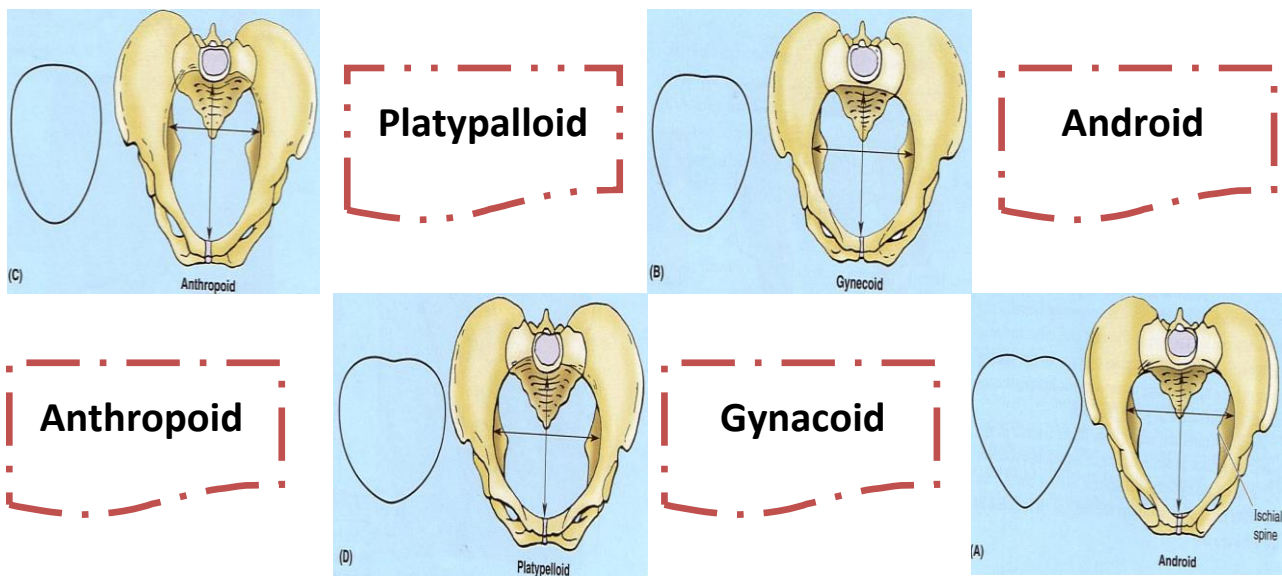
Male



In general the female Sacrum is usually wider and **shorter** In proportion to its length, and it is less curved.

Also, the **Angle of the pubic arch** is wider.

The promontory and the ischial spines are less projecting # Male is the opposite



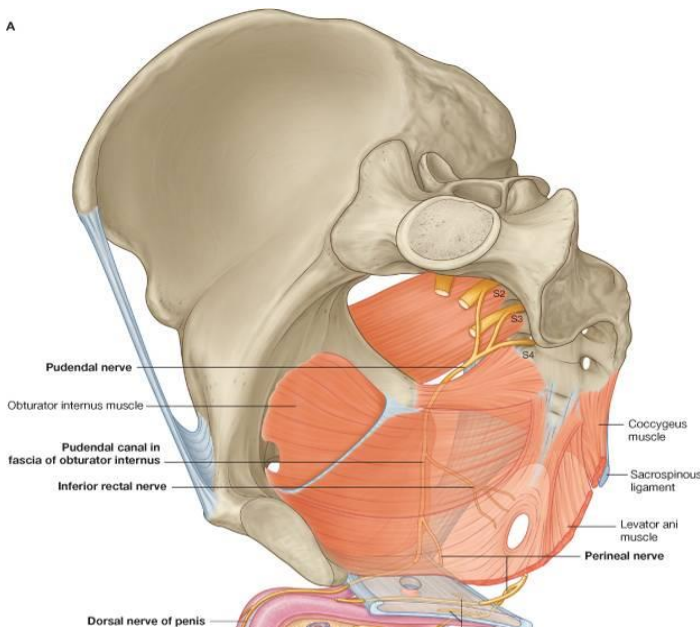
Information of the shape and dimensions of the female pelvis is of **great importance for obstetrics**, because it is the bony canal through which the child passes during birth.

Gynecoid is the perfect one for female which is oval shape.



Pelvic walls:

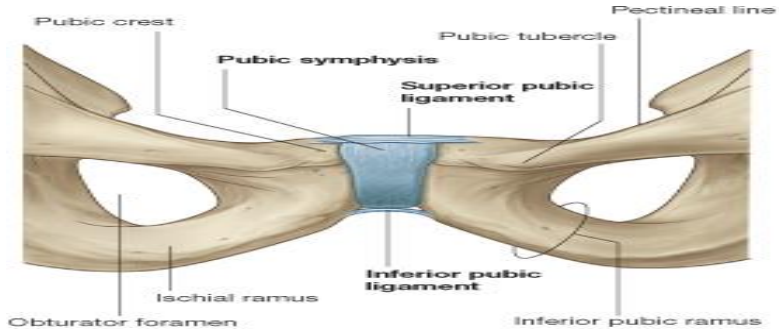
A



The walls are formed by bones and ligaments that are lined with muscles covered with fascia and parietal peritoneum.

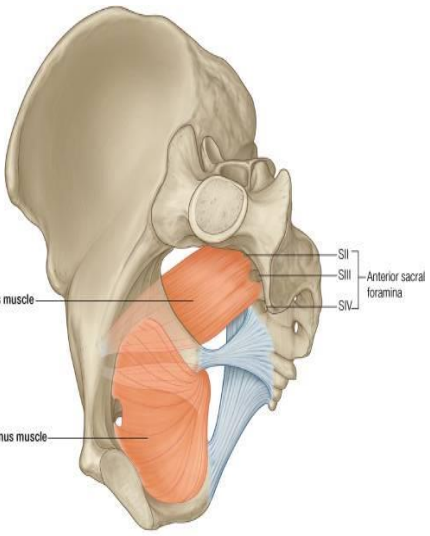
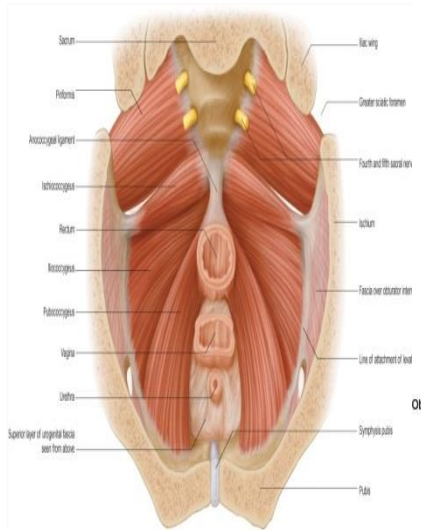
Anterior pelvic Wall

It is the shallowest wall and is formed by the posterior surfaces of the **three bodies of:**
1- pubic bones **2- pubic rami**
3- symphysis pubis



Posterior pelvic Wall

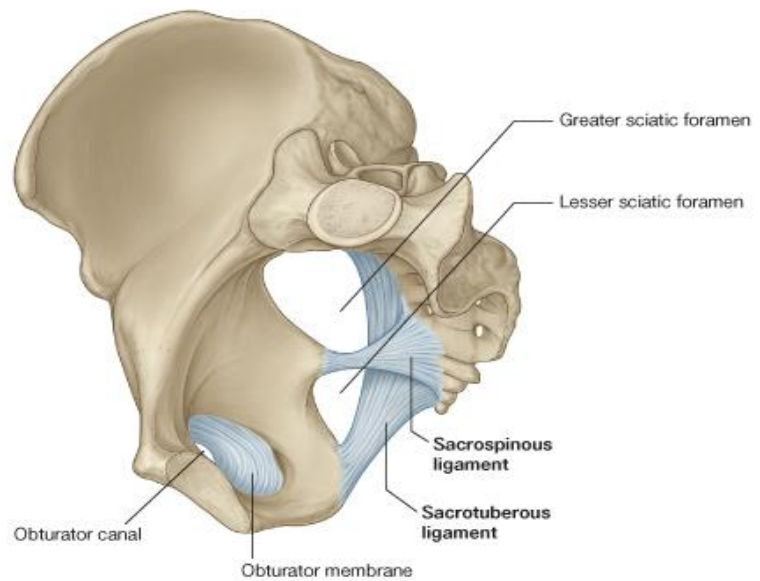
It is large and formed by: sacrum, coccyx, piriformis muscles and their covering of parietal pelvic fascia.



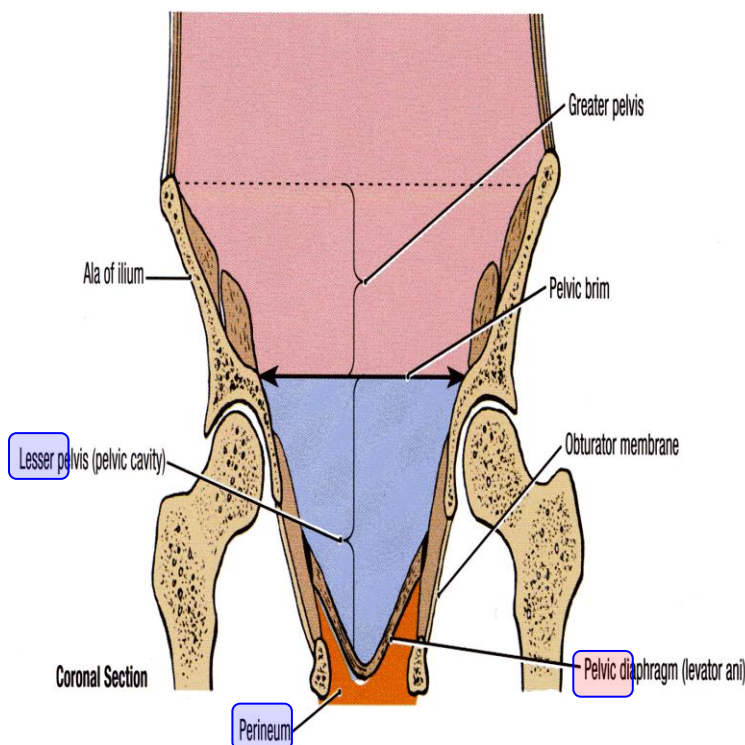


Lateral pelvic wall

- It is formed by:**
- 1- Part of the hip bone below the pelvic inlet "arrow"
 - 2- Obturator internus and its covering fascia & the obturator membrane,
 - 3- Sacrotuberous &
 - 4- Sacrospinous ligaments.



INFERIOR PELVIC WALL OR PELVIC FLOOR



The pelvic floor supports the pelvic viscera and is formed by the pelvic diaphragm.

It stretches across the true pelvis and divides it into:

- Main pelvic cavity above: which contains the pelvic viscera, and Perineum below: which carries the external genital organs.

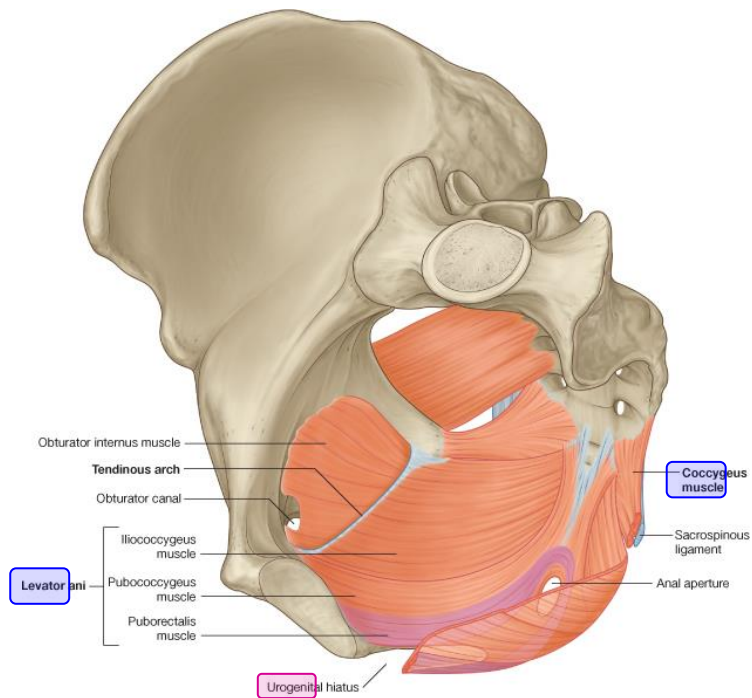


PELVIC DIAPHRAGM

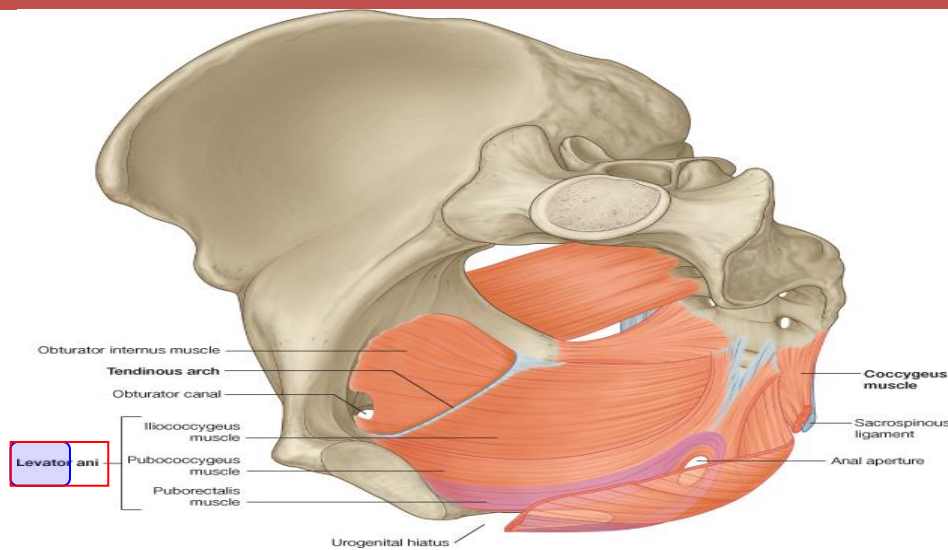
It is formed by the **levator ani** and the **coccygeus** muscles and their covering fasciae.

It is **incomplete anteriorly** ???

to allow passage of the urethra in males and the urethra and the vagina in females.



Levator Ani Muscle



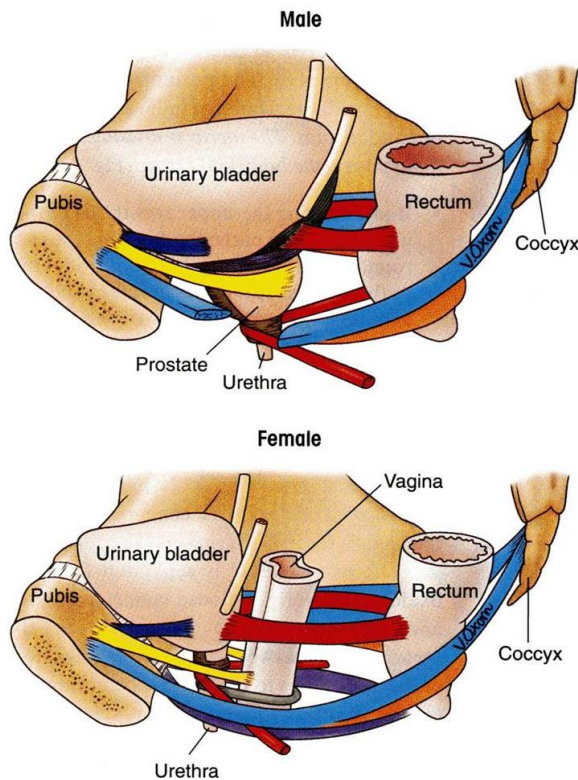
It is a wide thin muscular sheet that has a **linear origin** from:

- **Back of body of pubis**
- **tendinous arch of the obturator fascia**
- **the Spine of the ischium.**



Its fibers are divided into 3 parts:

Pubococcygeus



1. Anterior Fibers:

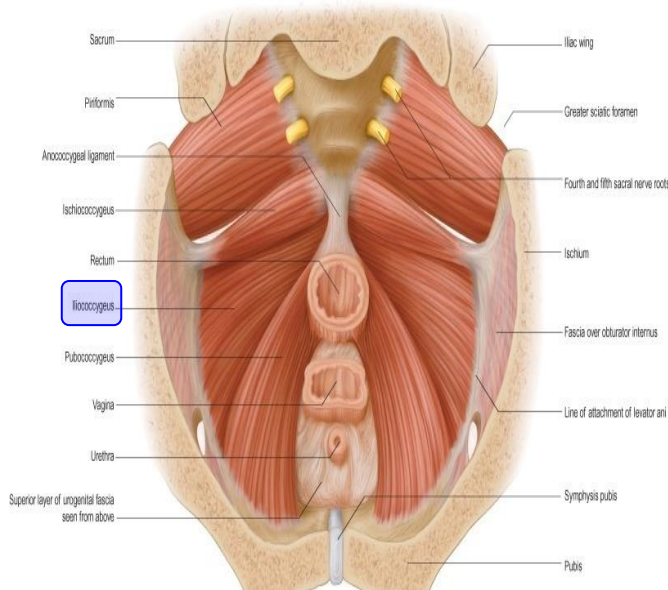
Originates from the posterior surface of the body of the pubis

Inserts into perineal body

The levator prostate supports the prostate and stabilizes the perineal body.

The sphincter vaginae constricts the vagina and stabilizes the perineal body.

Iliococcygeus

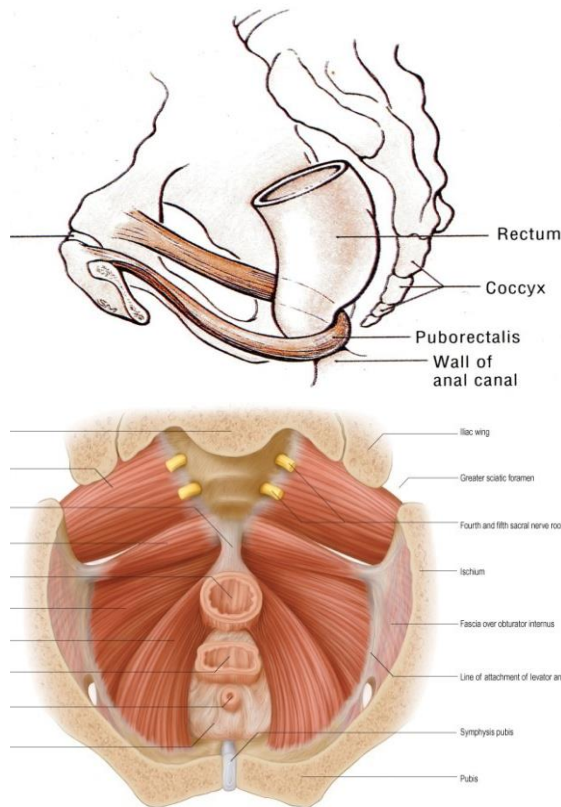


2. Posterior fibers:

(The iliococcygeus) is inserted into the anococcygeal body and the coccyx.



puborectalis



3. Intermediate fibers:

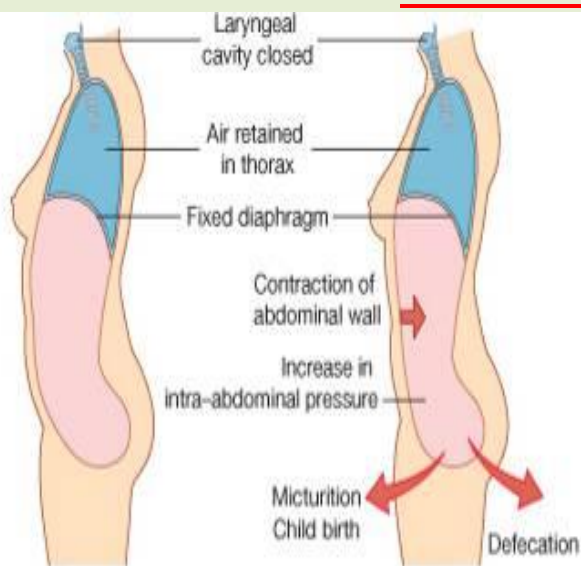
The **puborectalis** forms a sling around the junction of the rectum and anal canal, (rectoanal angle).

It has a very important role in maintaining fecal continence.

Nerve supply to levatorani:

- ❖ Perineal branch of the fourth sacral nerve.
- ❖ Perineal branch of the pudendal nerve.

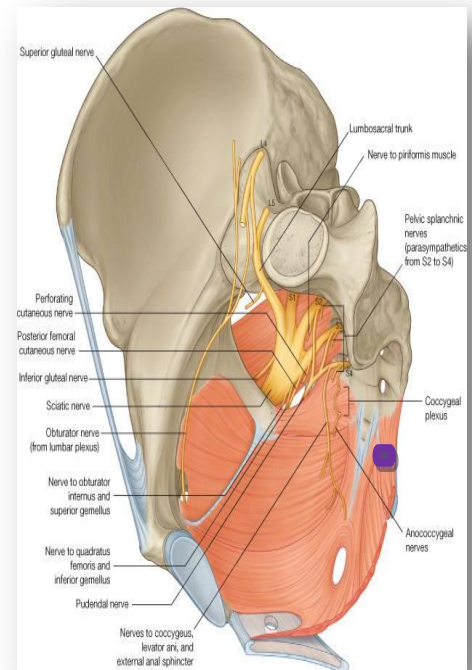
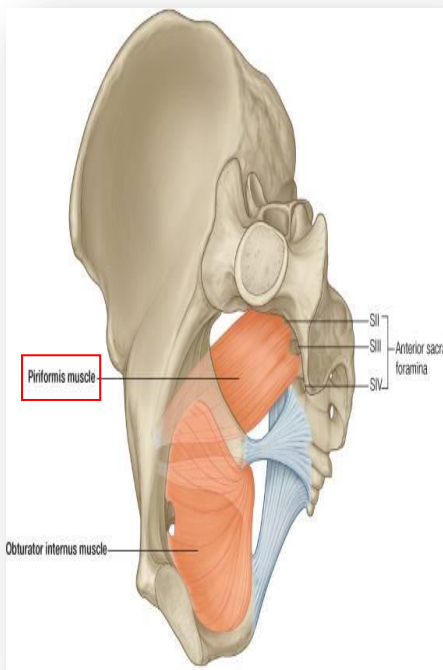
Actions of levatorani



1. The muscles of the two sides form an efficient muscular sling that supports and maintains the pelvic viscera in position.
2. They resist the rise in intra pelvic pressure during the straining and expulsive efforts of the abdominal muscles (as in coughing).
3. They also have an important sphincter action on the anorectal junction.
4. They serve as a vaginal sphincter in the female.



Muscles	Piriformis	Obturator Internus	Coccygeus
Wall Side	Posterior	Lateral	Inferior
Origin	Front of the middle 3 sacral vertebrae	Inner surface of the obturator membrane and the hip bone	Ischial spine
Insertion	Greater trochanter of the femur	inserted into the greater trochanter of the femur	Lower end of sacrum and coccyx
Action	Lateral rotator of the femur at the hip joint.	Lateral rotator of the femur at the hip joint	It assists the levatorani in supporting the pelvic viscera
Nerve Supply	Sacral plexus	Nerve to obturatorinternus	Fourth and fifth sacral nerves
Notes	It leaves the pelvis through the greater sciatic foramen	It leaves the pelvis through the lesser sciatic foramen	





Arteries of the Pelvis

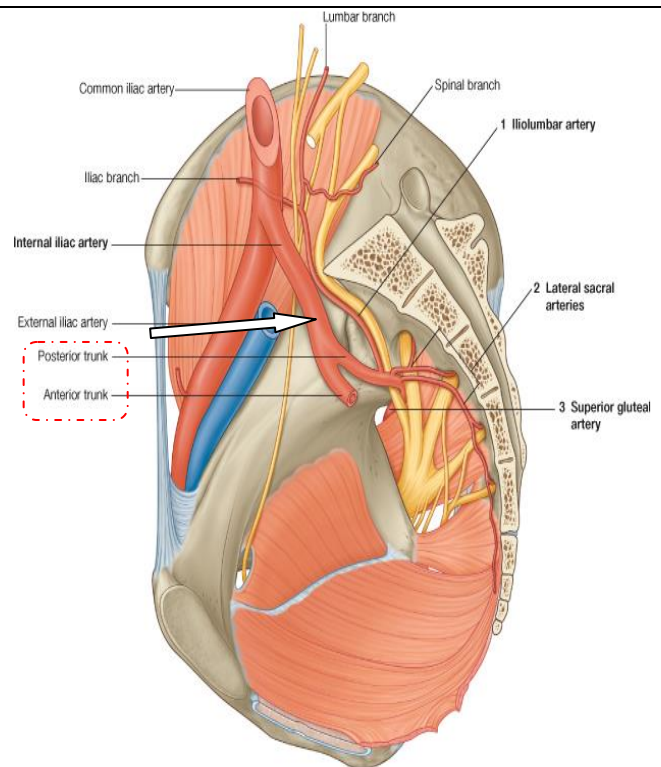
- **(a) Internal iliac artery:**
- It is one of the 2 terminal branches of the Common iliac artery.
- Arises in front of the sacroiliac joint
- It descends inferiorly over the pelvic inlet.
- It divides at the upper border of the greater sciatic foramen into
- Anterior & Posterior divisions.

Posterior division Supplies:

1. Posterior abdominal wall.
2. Posterior pelvic wall.
3. Gluteal region.

Anterior division supplies:

1. Gluteal region
2. Pelvic viscera.
3. Perineum.
4. Adductor (medial) region of the thigh.
5. The fetus (through the umbilical arteries)



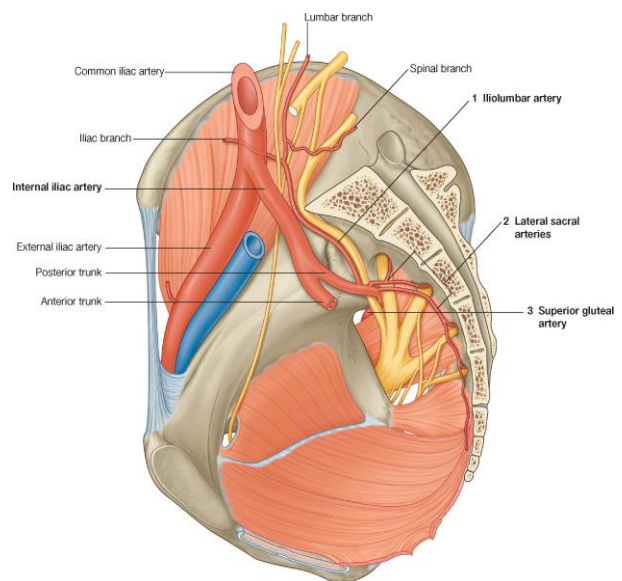
Parietal Branches

From posterior division:

- Iliolumbar artery
- (2) Lateral sacral arteries
- Superior Gluteal artery

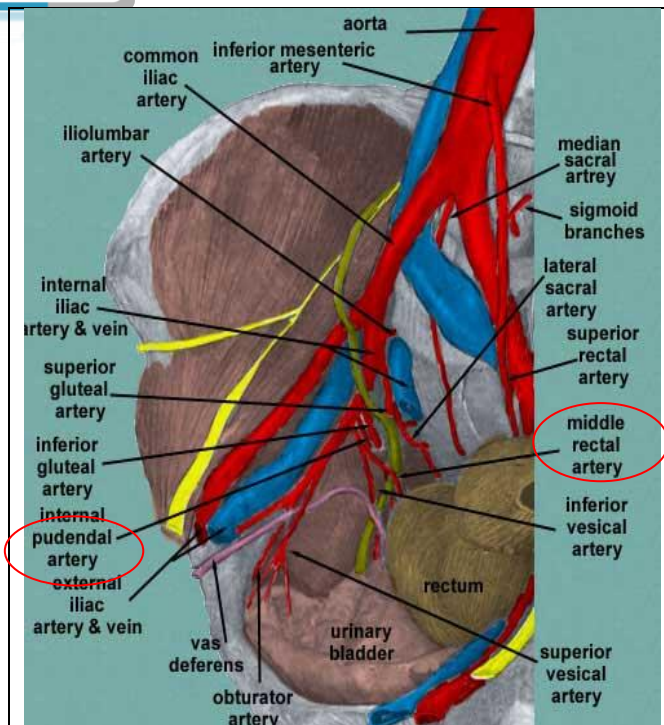
From anterior division:

- Obturator artery
- Inferior Gluteal Artery





Visceral Branches (All from anterior division)



- **Umbilical artery:** The distal part of this artery becomes fibrous and forms the Medial Umbilical Ligament.

Inferior Vesical artery:

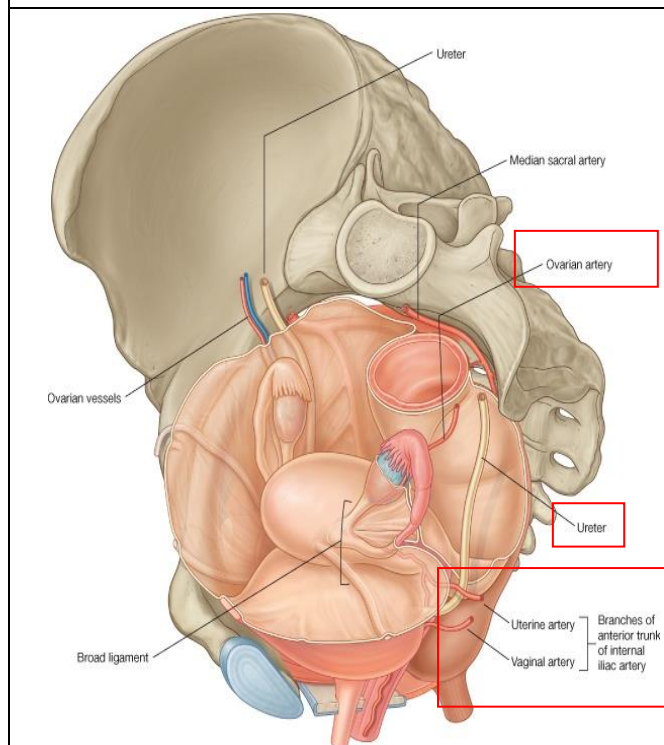
- In the male it supplies, the Prostate and the Seminal Vesicles.
- It gives the artery to the Vas Deferens.

Middle rectal artery.

Internal pudendal artery

- It is the main arterial supply to the perineum.

Visceral Branches (in Female)



Vaginal artery:

Replaces the inferior Vesical artery.

Uterine artery:

Crosses the Ureter superiorly and supplies the uterus & uterine tubes.

NB. (b) Ovarian artery:

Arises from the abdominal aorta.



Venous drainage

- (a) *Internal iliac vein*
- It Joins the external iliac vein to form the Common Iliac vein.
- (b) *Ovarian vein*
- **Right vein drains into IVC**
- **Left vein drains into Left renal Vein**

Lymph Drainage

- Lymph from the pelvis passes through Internal iliac, External iliac & Common iliac nodes.
- lymph from **Common iliac nodes** & the (Ovaries, uterine tubes & fundus of uterus) passes to **Lateral aortic (paraortic) nodes.**

Nerve Supply

- **Somatic: Sacral plexus**
From Ventral (anterior) rami of **L4 & L5 (lumbosacral trunk) + S1,2,3 and S4.**
- It gives **Pudendal nerve to perineum.**

Autonomic

- **1. Pelvic splanchnic nerves**
(From S 2 , 3 & 4)
- They are the **Preganglionic parasympathetic nerves** to pelvic viscera & hindgut.

- **(2) Sympathetic Nerve supply**

(a) Pelvic part of sympathetic trunk:
It is the continuation of the abdominal trunk.

It Descends in front of the ala sacrum, They terminate inferiorly in front of the coccyx and form a single ganglion (Ganglion Impar).

(b) Superior & Inferior Hypogastric plexuses



QUESTIONS :



1-which one of the following joints lies in the posterior of pelvic bone :

- a) Symphysis Pubis
- b) Sacrococcygeal joint
- C) Two Sacroiliac joints

2- the posterior boundary of false pelvis is :

- a) iliac fossae and iliacus muscle
- b) lumbar vertebrae
- C) coccyx

3- regarding the female pelvis which one is false :

- a) wider and shorter sacrum
- b) angle of the pubic arch is wider
- C) promontory and the ischial spines are more projecting

4- the most female bony pelvis is:

- a) android
- b) anthropoid
- C) gynecoid

5- what are the action and the nerve supply of piriformis muscle :

- A) lateral rotator of the femur + sacral plexus
- b) medial rotator of the femur + sacral plexus
- C) lateral rotator of the femur +4th ,5th sacral nerves



6-which one of the following NOT formed the lateral pelvic wall :

- a) sacrospinous ligament
- b) obturator internus and its covering fascia
- C) pubic rami

7- which one of these is false origin of levatores ani muscles :

- a) tendinous arch of the obturator fascia
- b) ischial spine
- C) middle 3 sacral vertebrae

8- which fiber from levatores ani muscles has important role in maintaining fecal continence:

- a) pubococcygeus
- b) puborectalis
- C) iliococcygeus

9- the drainage of right ovarian vein is :

- a) common iliac vein
- b) inferior vena cave(IVC)
- C) left renal vein

10- the parasympathetic nerve fiber is :

- a) pelvic splanchnic nerves (S2,S3,S4)
- b) pelvic splanchnic nerves (S1,S2,S3)
- C) Sacral plexus



Q	Answer
1	B
2	B
3	C
4	C
5	A
6	C
7	C
8	B
9	B
10	A

GOOD LUCK

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