



## Anatomy

● Sheet

○ Slide

number

6

Done by

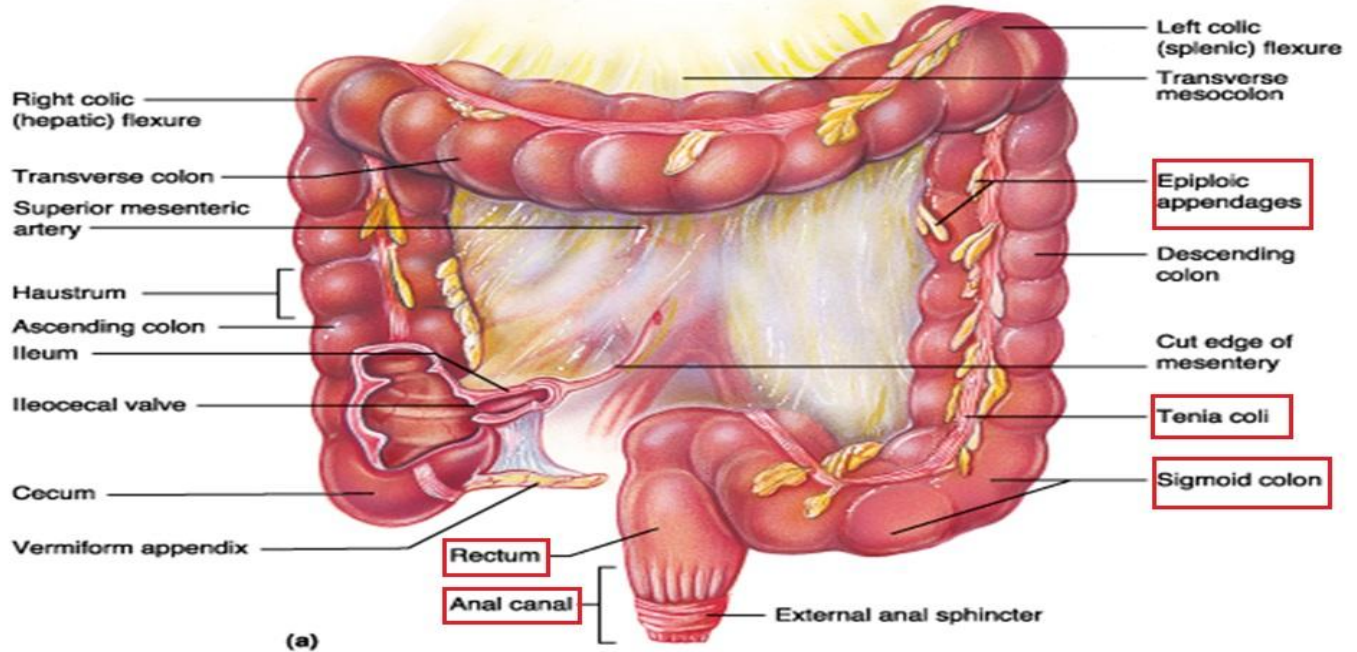
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Doctor

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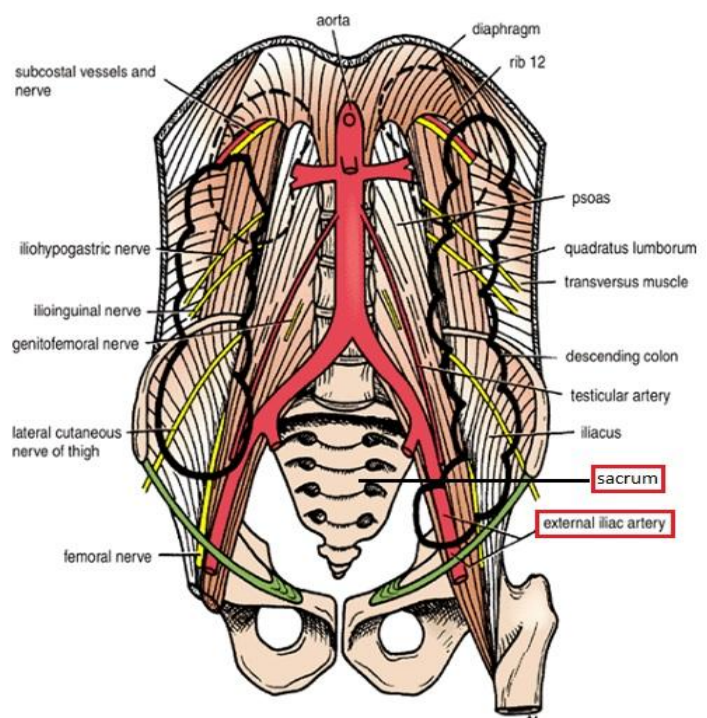
## Sigmoid colon

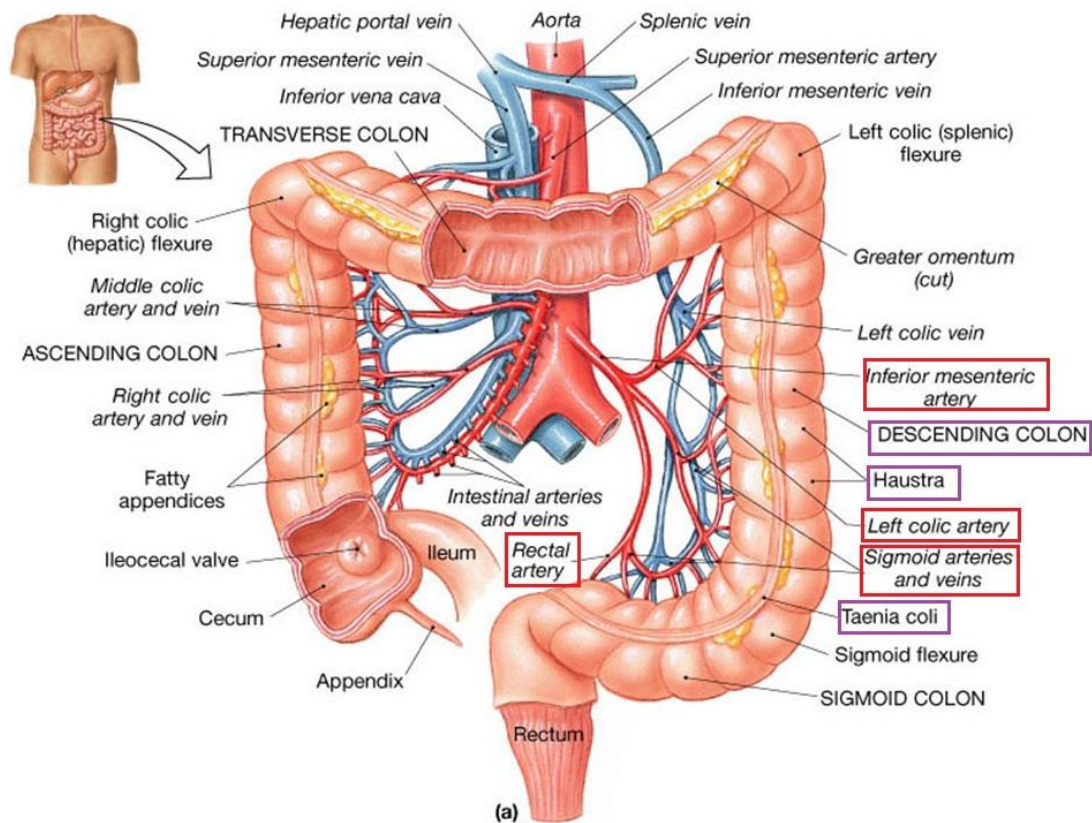
Length: 10-15 inches

Special features: has mesentery and it is inverted V shape.

The first part of the sigmoidal mesentery (aka mesocolon) is attached to (blended with) the **external iliac artery (and fascia)** and the other part is attached to the **sacrum** (mesentery anterior to the sacrum).

Haustra (sacculations), epiploic appendages, and tenia coli are also present in the sigmoid.





Mesocolon contents:

1. Inferior mesenteric artery (supply the hindgut) which is branch from the abdominal aorta at the level of L3.

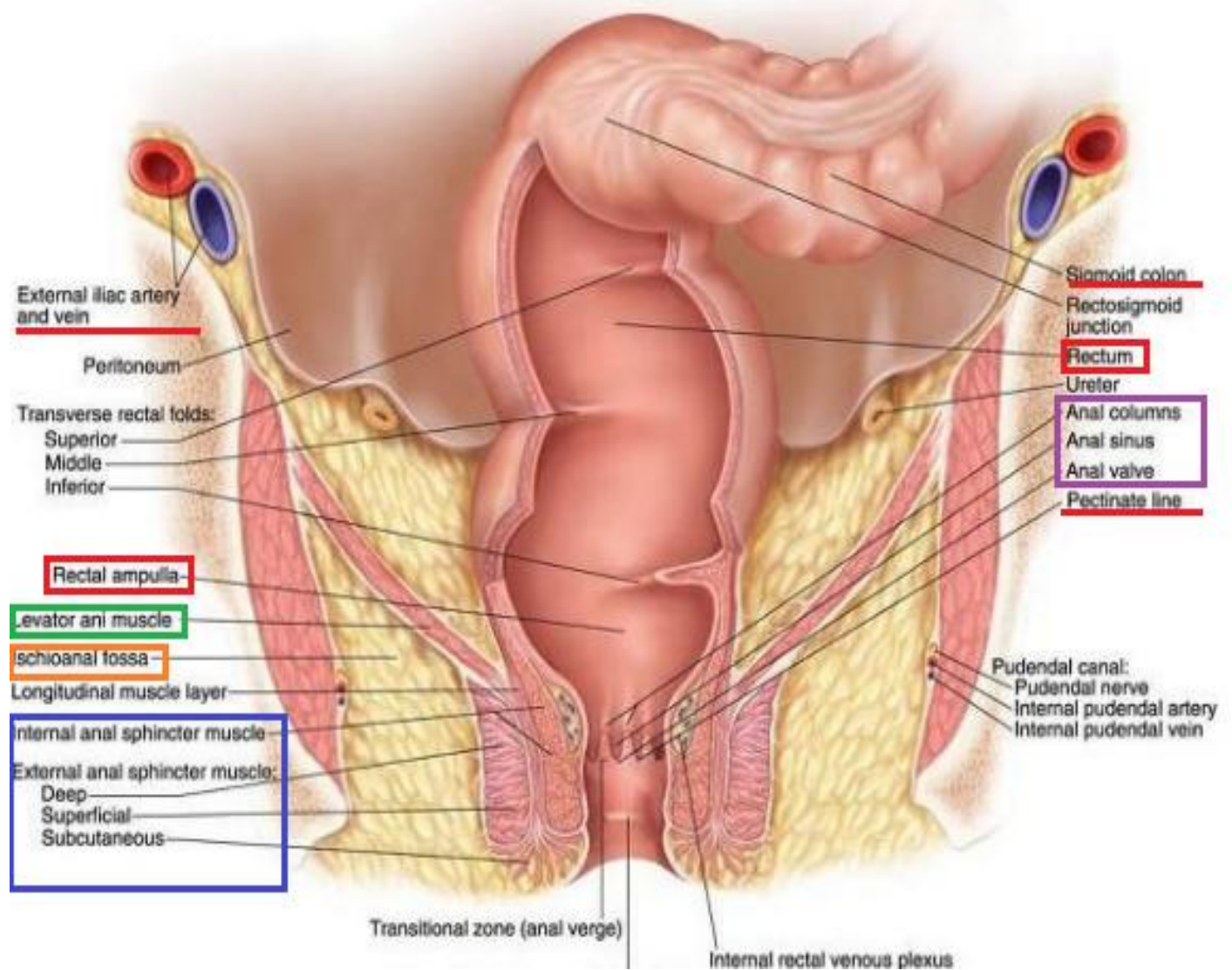
Inferior mesenteric artery branches (**LeSS**):

- a. **Left colic artery** → supplies the lateral 1/3 from the transverse colon and the descending colon.
- b. **Sigmoidal arteries** → supply the sigmoid mainly.
- c. **Superior rectal artery** → continuation of the inferior mesenteric artery.

Marginal artery surrounds the entire intestine and runs at the medial side to the left colic artery.

Sigmoid continue as rectum.





## Rectum

Length: 5 inches

The **rectum** runs with the concavity of sacrum.

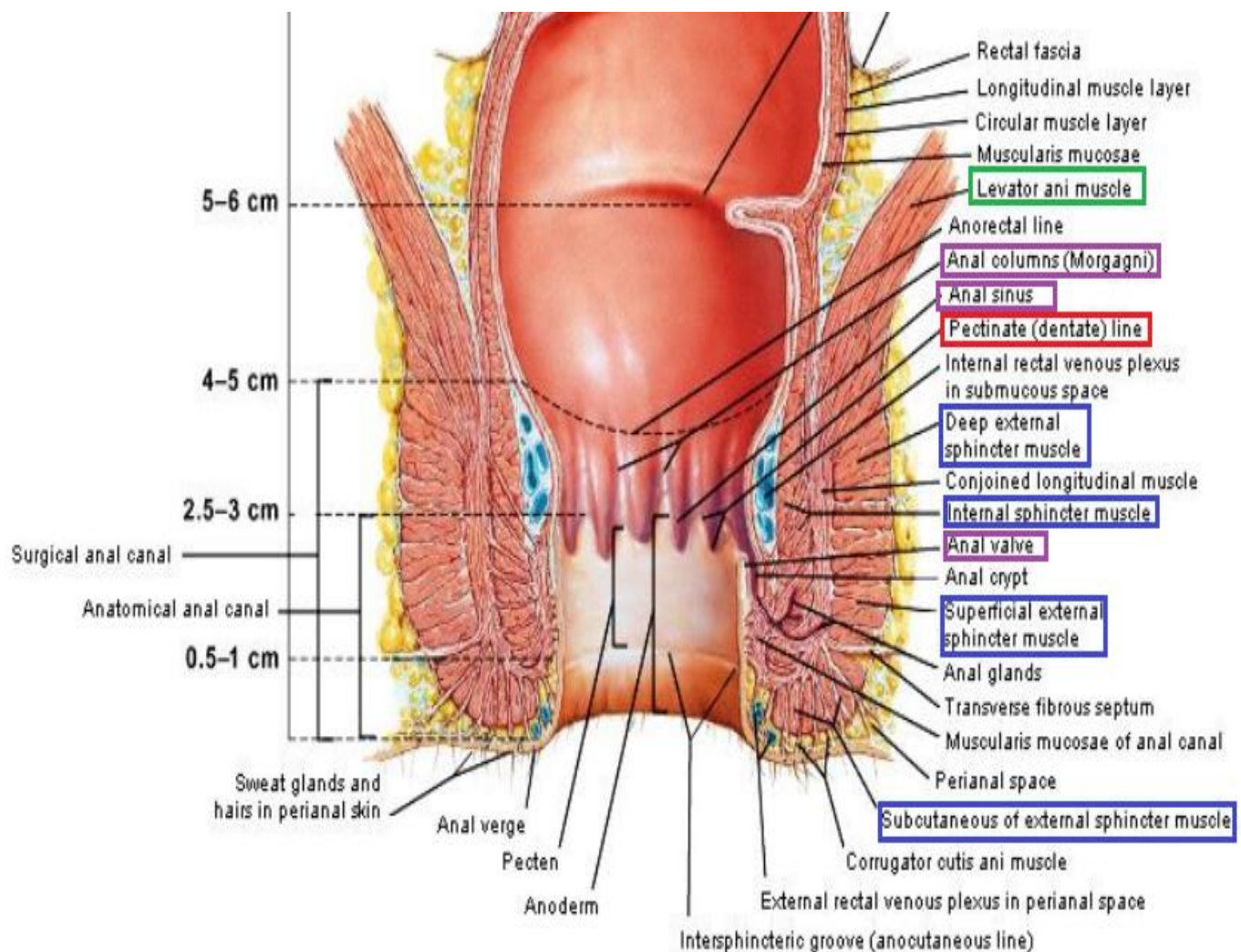
The end of the rectum is called **ampulla** (ampulla means dilatation).

Action: reservoir of stool.

Mucosa: simple columnar epithelium.

Longitudinal fold is present in rectum until the anal canal and it's called anal column longitudinal fold.

## Anal Canal



Inside the anus is the anal canal. Anal canal has 3 structures of the mucosa: anal column: is longitudinal folding of the mucosa. Its lower ends are joined together by folds of mucous membrane called anal valve and the space is called anal sinus.

Anal canal is divided into upper half and lower half by the pectinate line (under the sinus).

The importance of the pectinate line is to differentiate between the upper half and lower half of the anal canal.

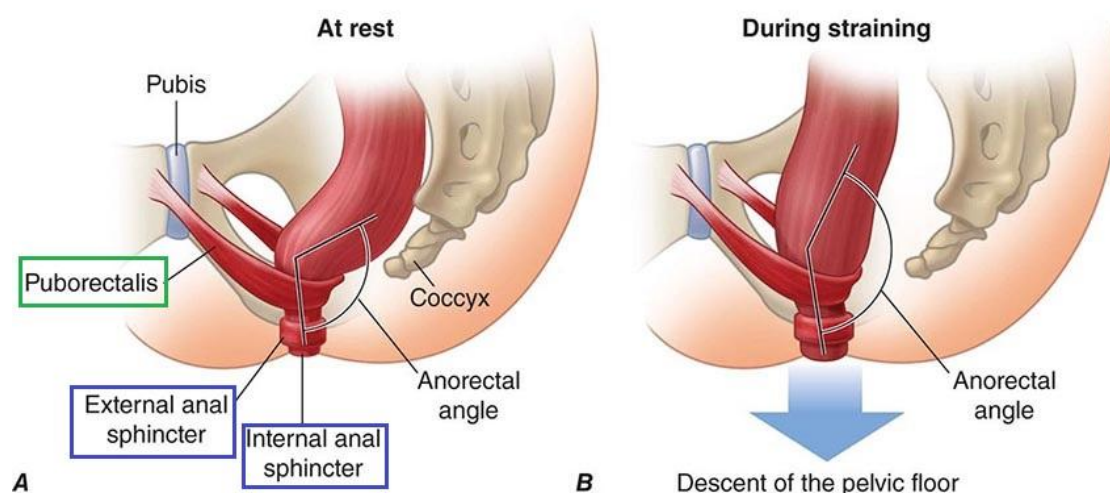
	Upper half	Lower half
Mucosa	Columnar epithelium	Stratified non-keratinized squamous epithelium and when it reaches the oral orifice, it becomes keratinized
Innervation	Autonomic (Stretch)	Somatic (pain, touch, temperature)
Lymphatic drainage	Internal iliac and inferior mesenteric (From Slides)	Superficial inguinal lymph nodes
Relation with hemorrhoid	Internal hemorrhoid	External hemorrhoid
Blood supply	Superior rectal artery and vein	Middle and inferior rectal artery and vein
Origin	Endoderm	Ectoderm (skin)

The doctor said that the Lymphatic drainage in the upper part is para aortic, but in the slides it is as I mentioned in the table.

The sphincter is divided into **internal** and **external** sphincters:

The internal sphincter is supplied by autonomic nerves while the external sphincter is divided into 3 parts: **1. Deep, 2. Superficial, and 3. Subcutaneous** which are supplied by somatic nerves from S4 and they are voluntary.

To differentiate between the internal and the external the internal runs with the mucosa while the external is bigger in size.





Puborectalis is one of the muscles that forms the levator anai. It participates in the rectoanal junction and it slings and helps in defecation.

Ischiorectal fossa → is the fat-filled space located lateral to the anal canal. From its name, it is between ischial tuberosity and rectal space. It has both advantages and disadvantages:

Advantages: dilatation during defecation.

Disadvantages: it is exposed to infections which mean it is exposed to abscess too.

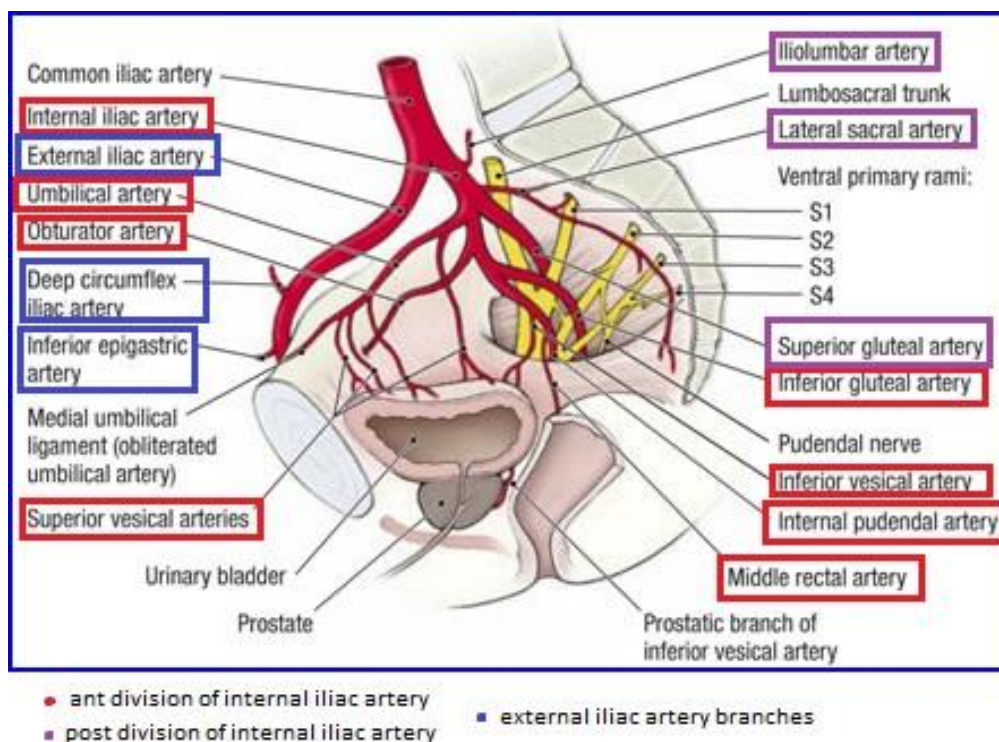
The doctor mentioned these structures too:

Abdominal aorta

Inferior vena cava

Para aortic lymph nodes which are found around the common, external, and internal iliac arteries and the abdominal aorta, while the Pre-aortic are found in front of the aorta. The connection between them are through lymphatic vessels.

The ureter crosses the common iliac in front the site of the bifurcation.



## **Pelvis**

The arteries are superficial and the veins are deep which is against the general rule that states the opposite.

On the right side you'll find common iliac artery, internal and external iliac arteries, and inferior vena cava (IVC).

The Common iliac artery is anterior to the ala of sacrum and gives two branches: external iliac artery and internal iliac artery.

External iliac artery is branched into **inferior epigastric**, and **deep circumflex iliac artery**.

Inferior epigastric differentiates between the direct and the indirect hernia.

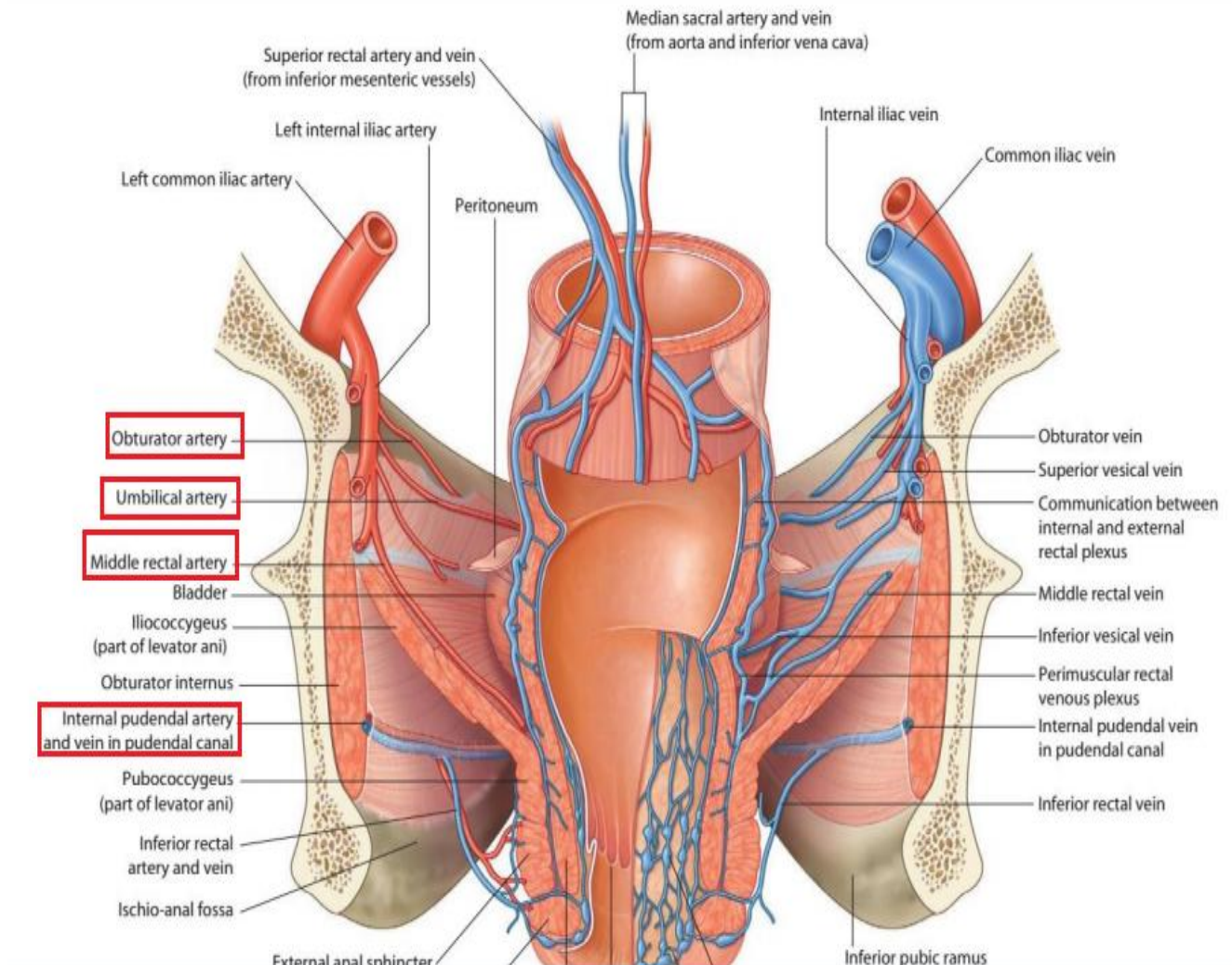
The deep circumflex iliac artery is located on the anterior superior iliac spine.

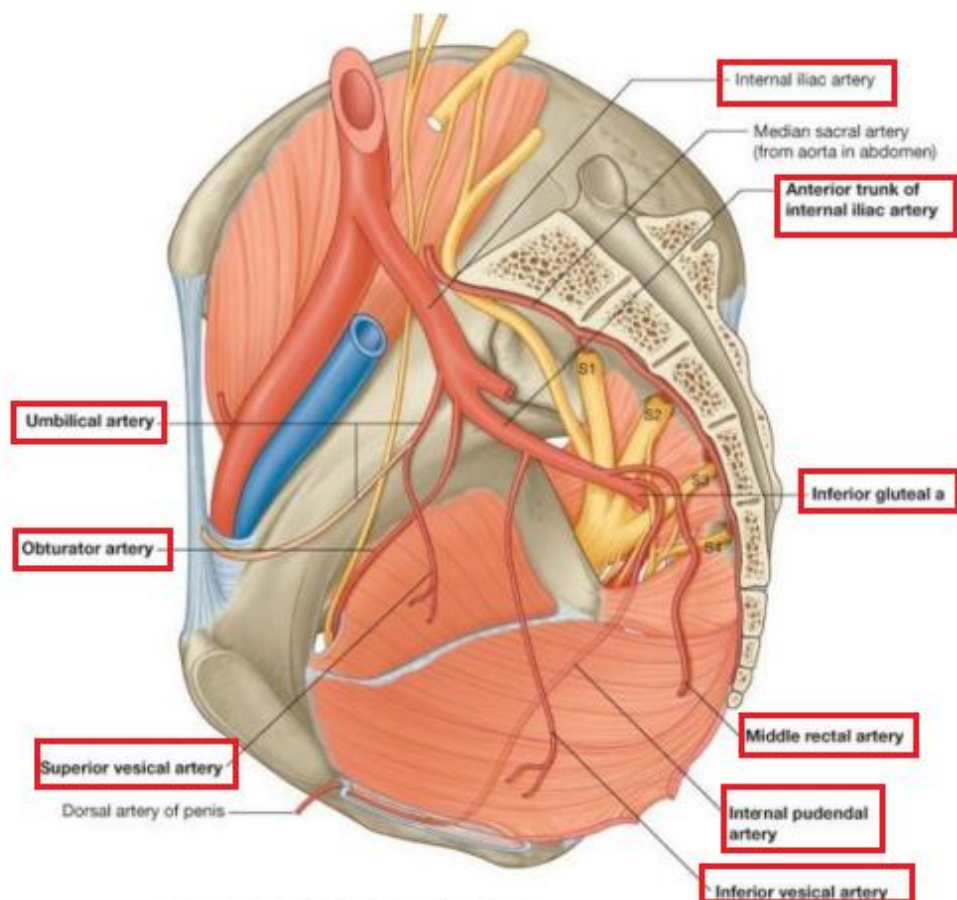
Both branches are above the inguinal ligament.



Internal iliac artery has anterior and posterior divisions:

**Anterior division** branches go to the viscera and they are (**Orange Under Some Ice Might Peel Instantly**):





Obturator artery and it runs with the obturator nerve.

Umbilical artery which continue as a ligament. The Superior vesical artery is derived from the terminal part of the umbilical artery.

Inferior vesical artery is under the superior vesical artery.

Middle rectal artery

Internal Pudendal artery

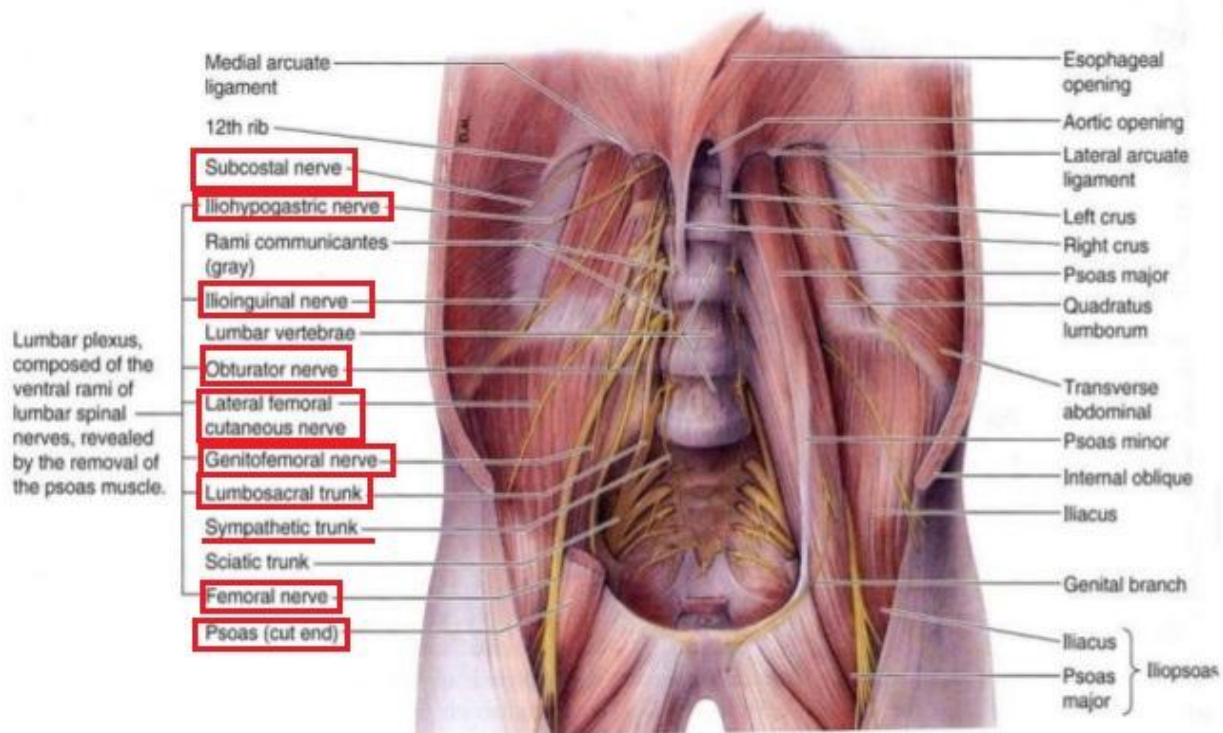
Inferior gluteal artery

Posterior division has 3 branches and the most important artery is the superior gluteal artery which is a continuation of the internal iliac artery. And the branch on the lateral side is the iliolumbar artery which is located in front of the ala of sacrum. And on the medial side is the sacral artery which enters the foramina.

## Posterior Abdominal Wall



## Posterior Abdominal Wall



Subcostal nerve → is the last thoracic nerve.

Iliohypogastric and ilioinguinal nerve → L1

Genitofemoral nerve → anterior border of psoas.

Lateral cutaneous nerve → on the anterior superior iliac spine.

Femoral nerve → on the lateral side of psoas.

Obturator nerve → on the medial side of psoas.

Lumbosacral trunk → medial side of psoas.

I marked everything the doctor mentioned in the lecture, and each part with different color to make it easier to refer to the illustrations above. GOOD LUCK!