

THE BLOOD SUPPLY OF GIT
Superior & Inferior Mesenteric Arteries

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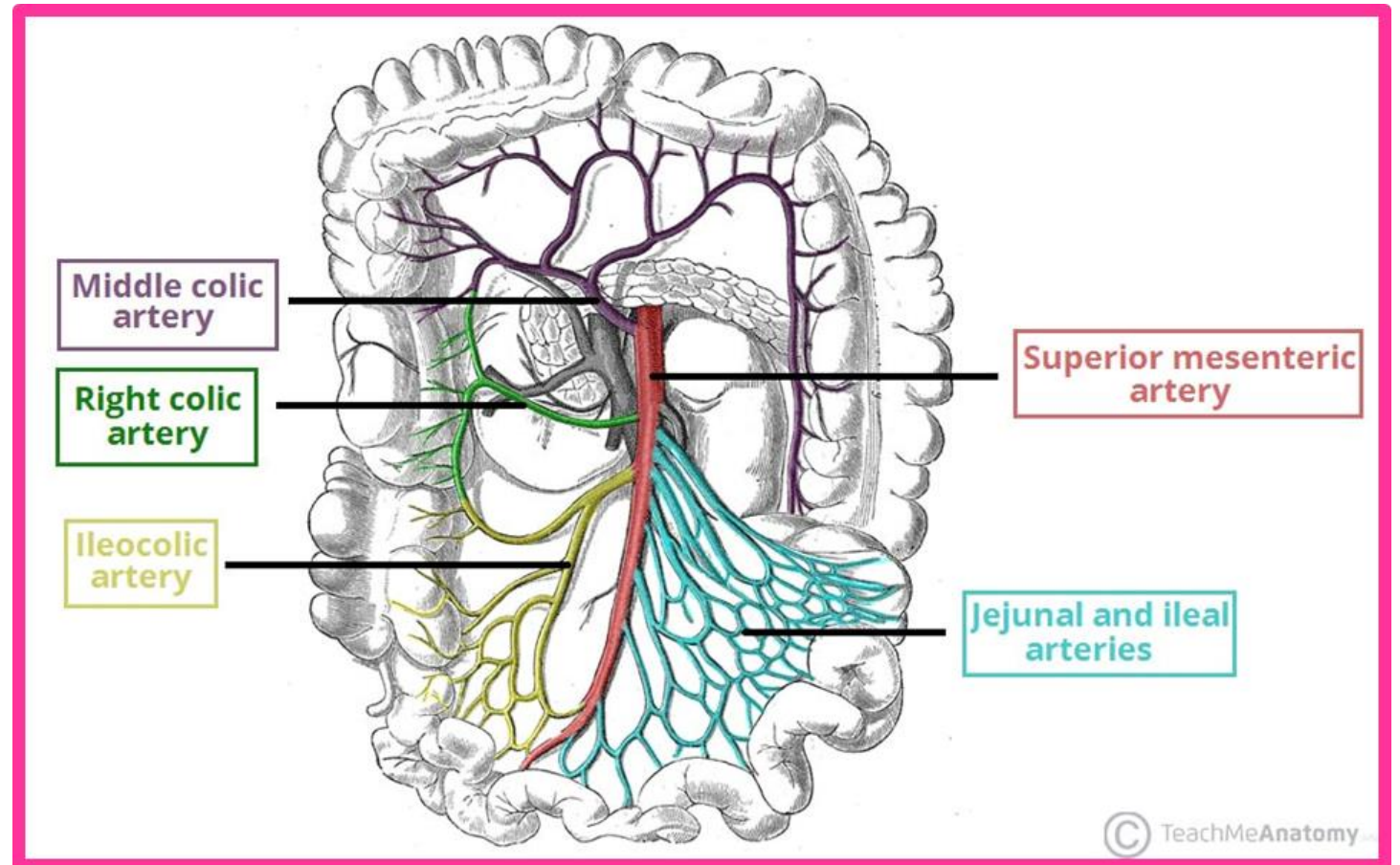
College of Medicine / University of Mutah

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Wednesday 17. April 2024

Superior Mesenteric Artery

The superior mesenteric artery supplies the distal part of the duodenum, the jejunum, the ileum, the cecum, the appendix, the ascending colon, and most of the transverse colon.

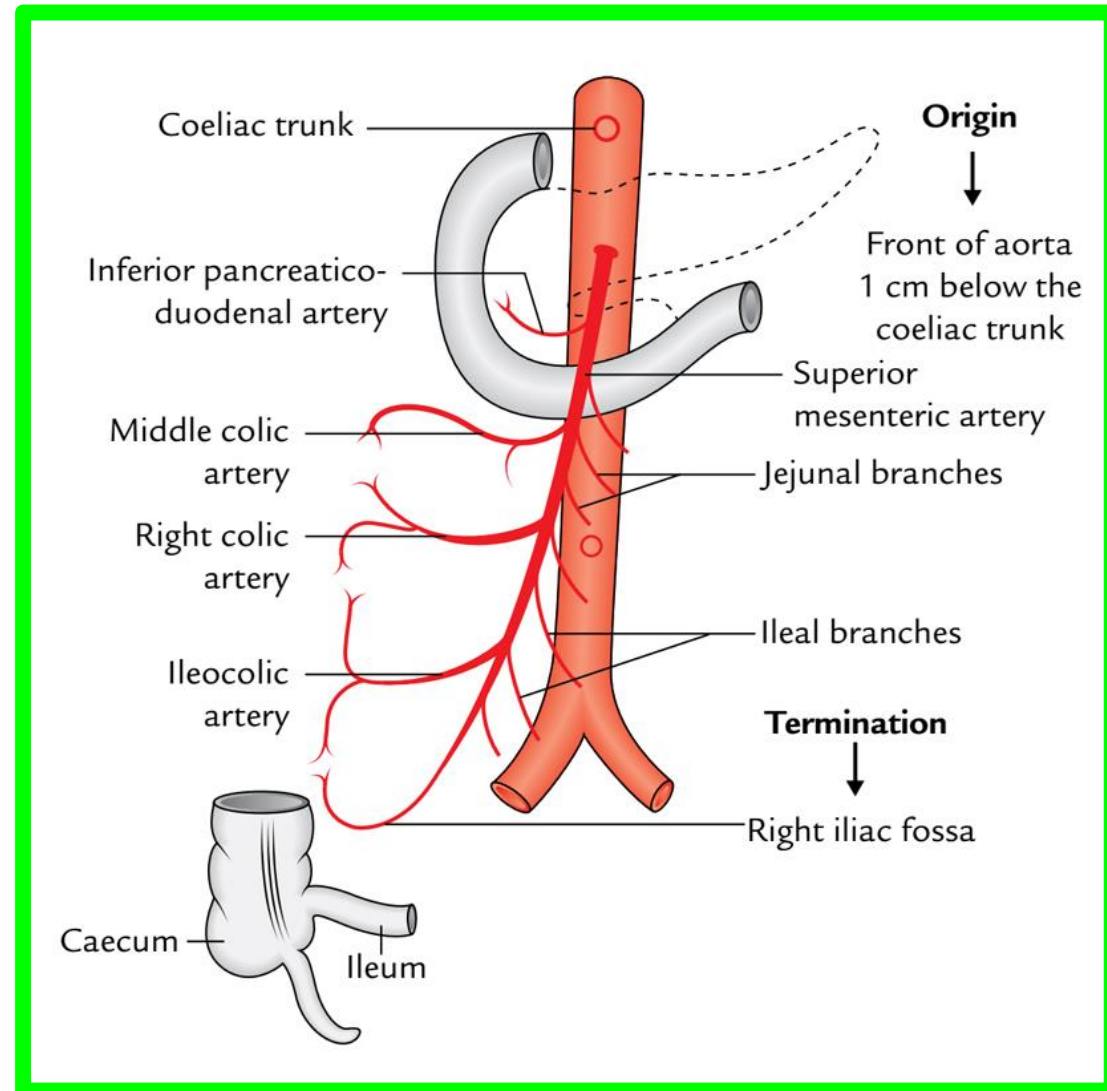


Superior Mesenteric Artery

**** Origin:** from the front of the abdominal aorta at the level of **L1**.

**** Course and relations:**

- ✓ Its origin behind by the body of the pancreas.
- ✓ It runs through the root of the mesentery with a concavity to the right.

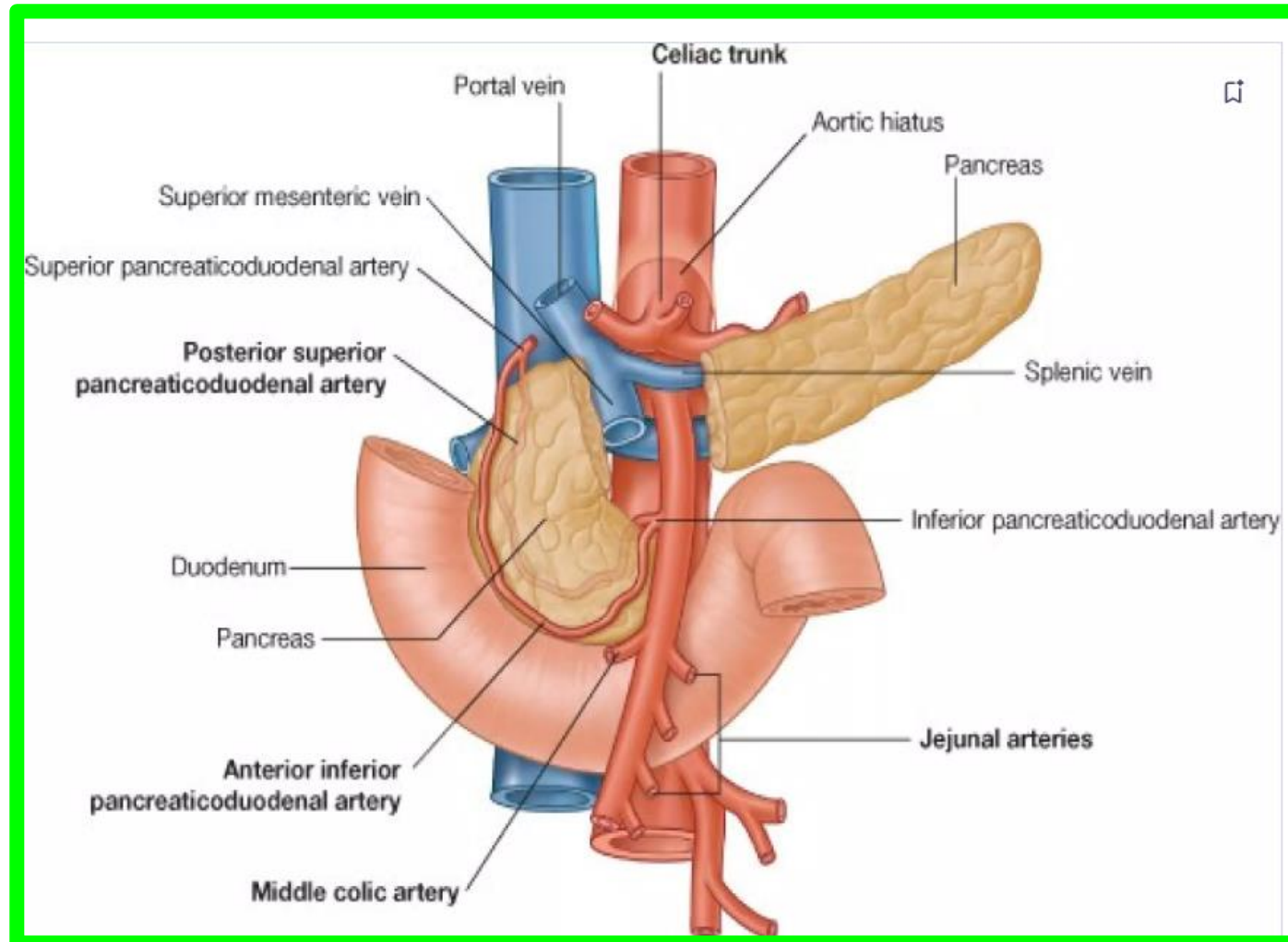


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Superior Mesenteric Artery

❖ It crosses in front of the following structures:

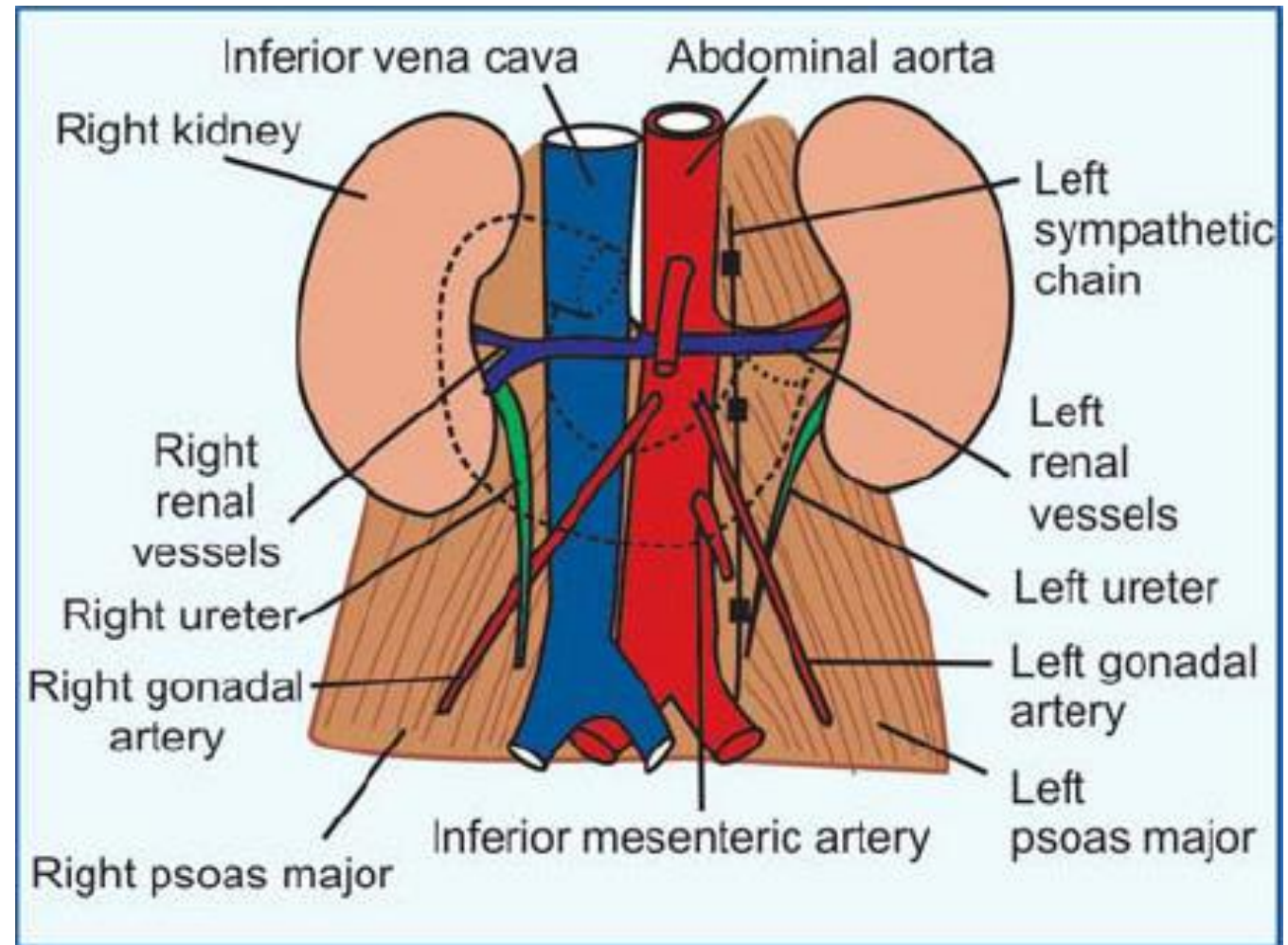
1. Uncinate process of pancreas.
2. Third part of duodenum.
3. Abdominal aorta.
4. Inferior vena cava



Superior Mesenteric Artery

5. Right psoas major and structures in front of it;

a) Right ureter. b) Right gonadal vessels. c) Right genitofemoral nerve.



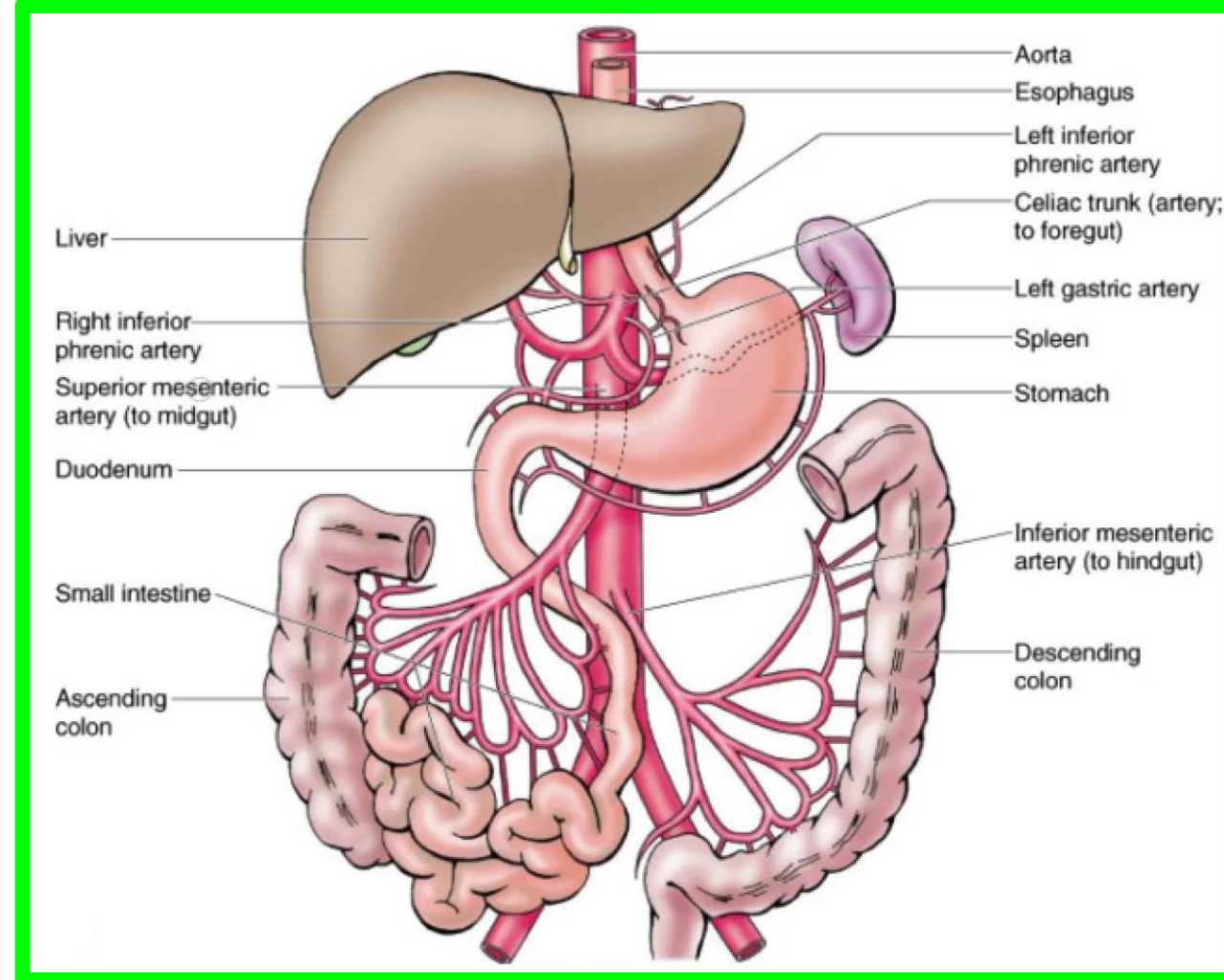
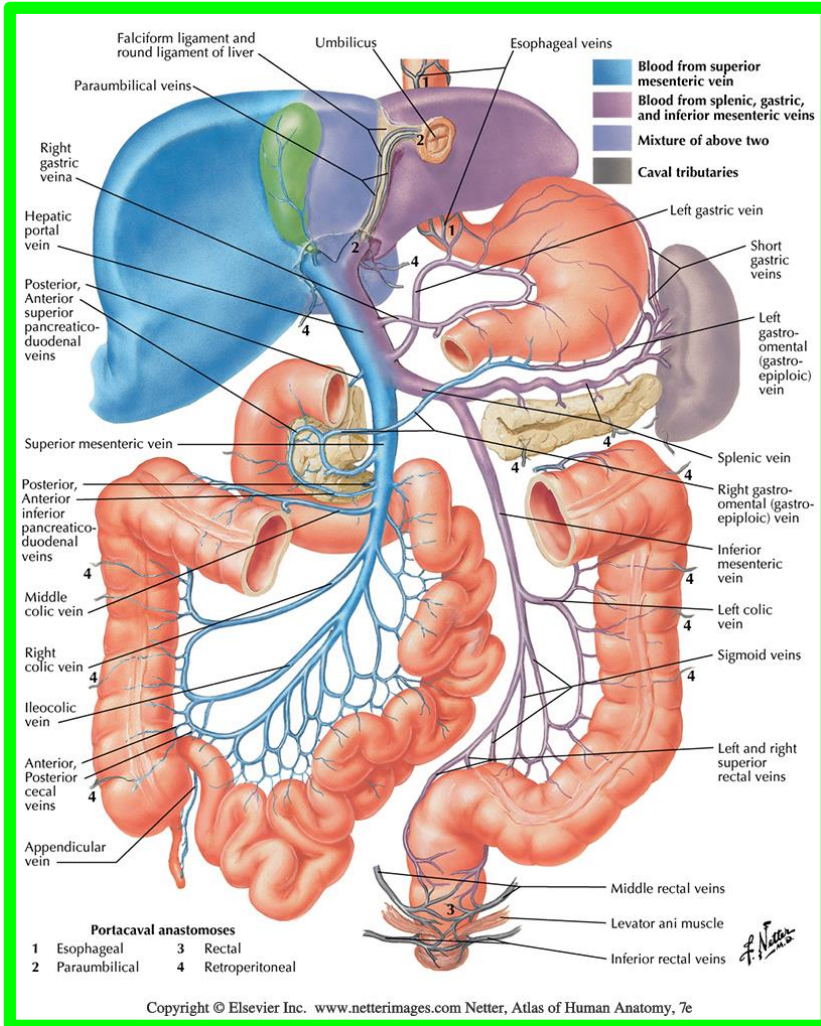
Superior Mesenteric Artery

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□ The superior mesenteric vein runs close to the concave right side of the art.

** Termination: in the right iliac fossa.

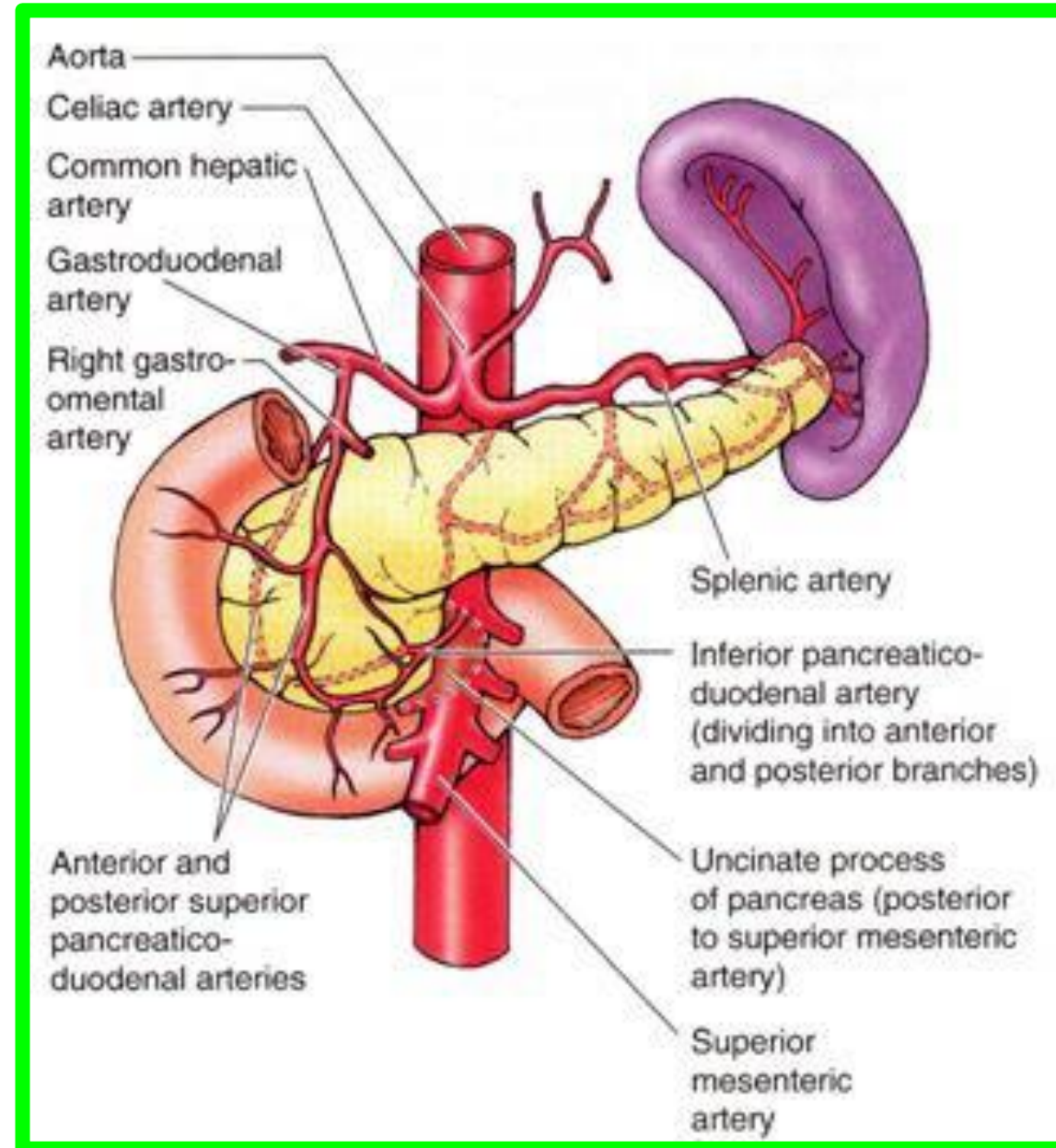


Superior Mesenteric Artery

** Branches

1- Inferior pancreatico-duodenal artery:

- ✓ runs in the concavity of the duodenum.
- ✓ It supplies the duodenum and head of pancreas.
- ✓ It ends by anastomosing with the **superior pancreatico-duodenal artery.**



Superior Mesenteric Artery

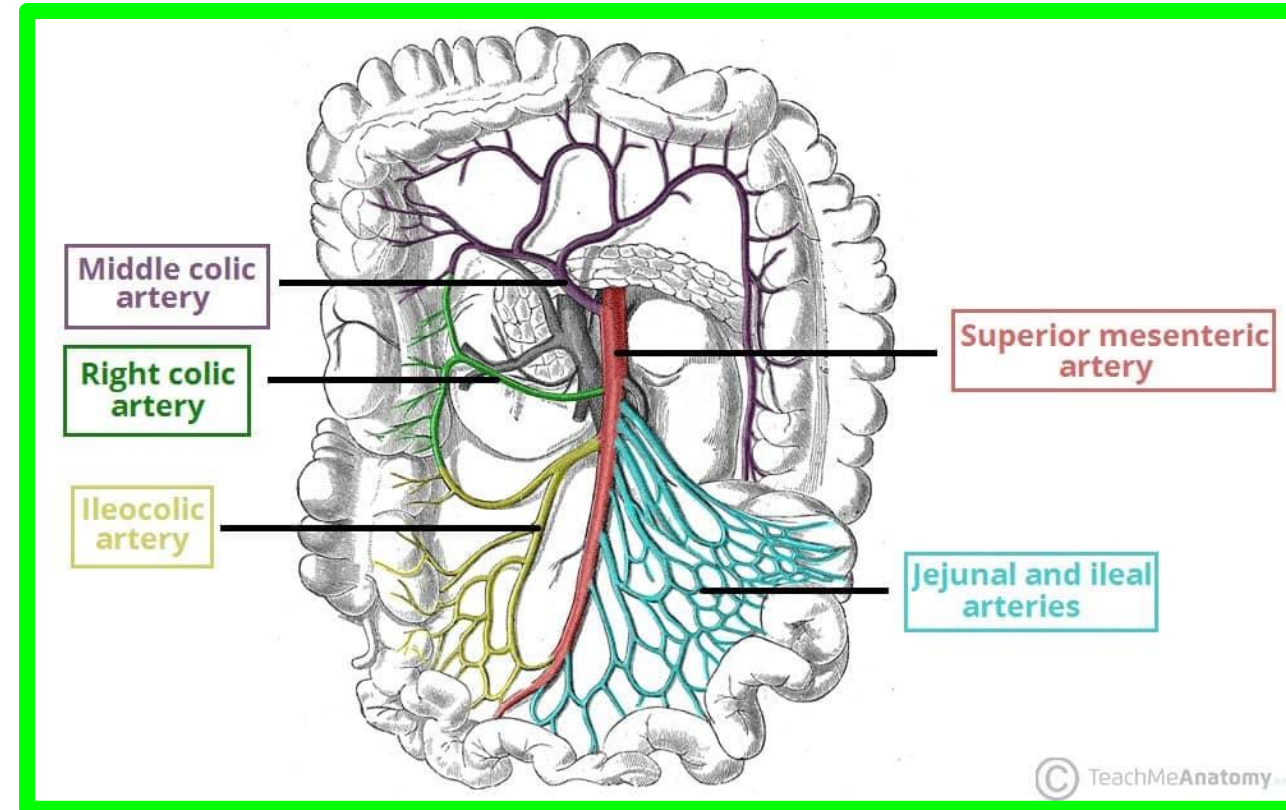
** Branches

2. **Jejunal branches** to the jejunum.

They divide into branches which anastomose together to form **arterial arcades**.

3. **Ileal branches** to the ileum.

They divide into branches which anastomose together to form **arterial arcades**.



Superior Mesenteric Artery

** Branches

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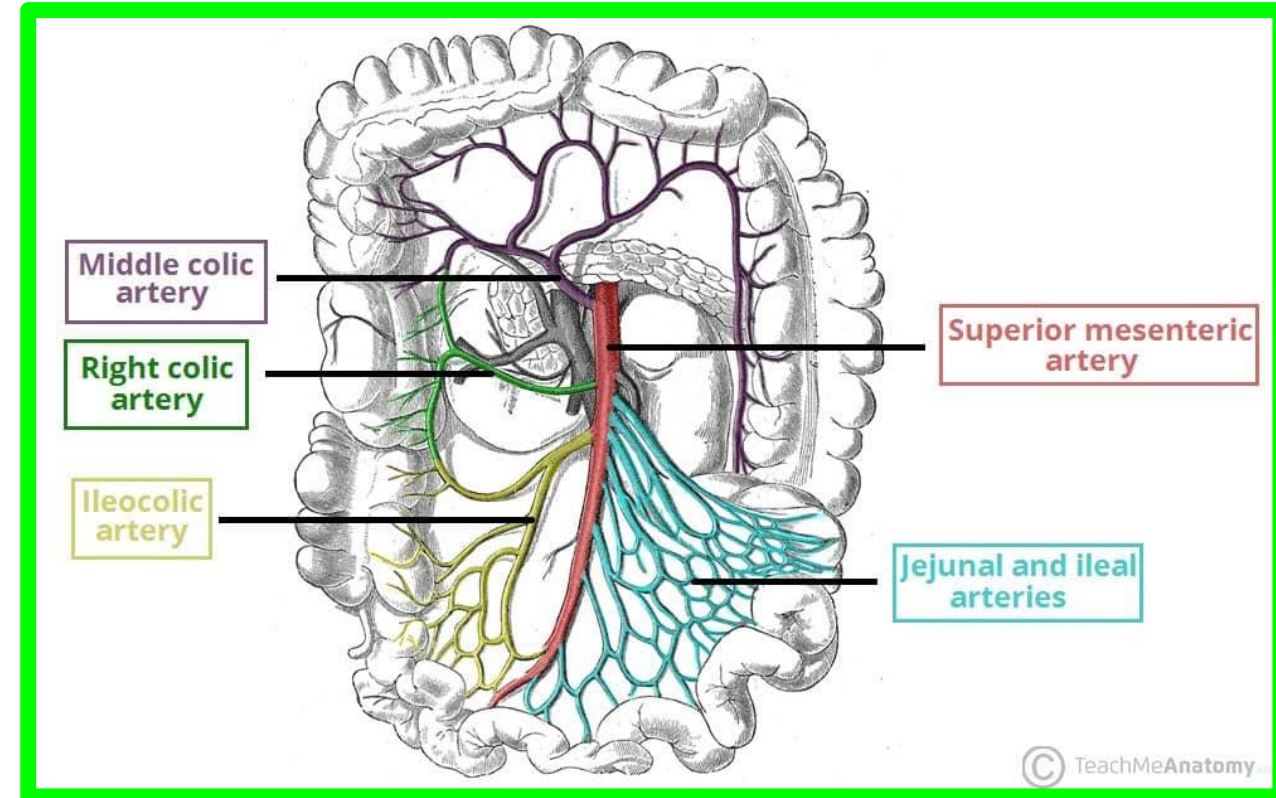
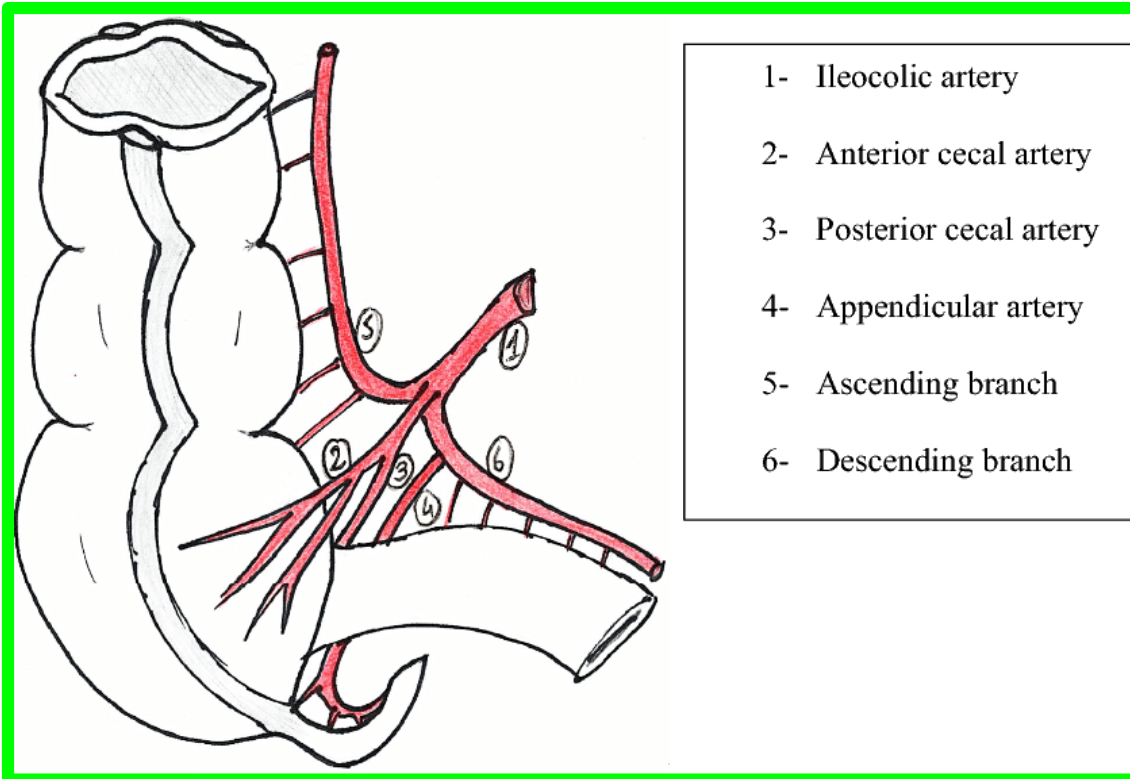
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4. Ileocolic artery gives the following branches

A. Ileal branches to the terminal part of the ileum.

B. Anterior caecal artery to the front of the caecum.

C. Posterior caecal artery to the back of the caecum.



Superior Mesenteric Artery

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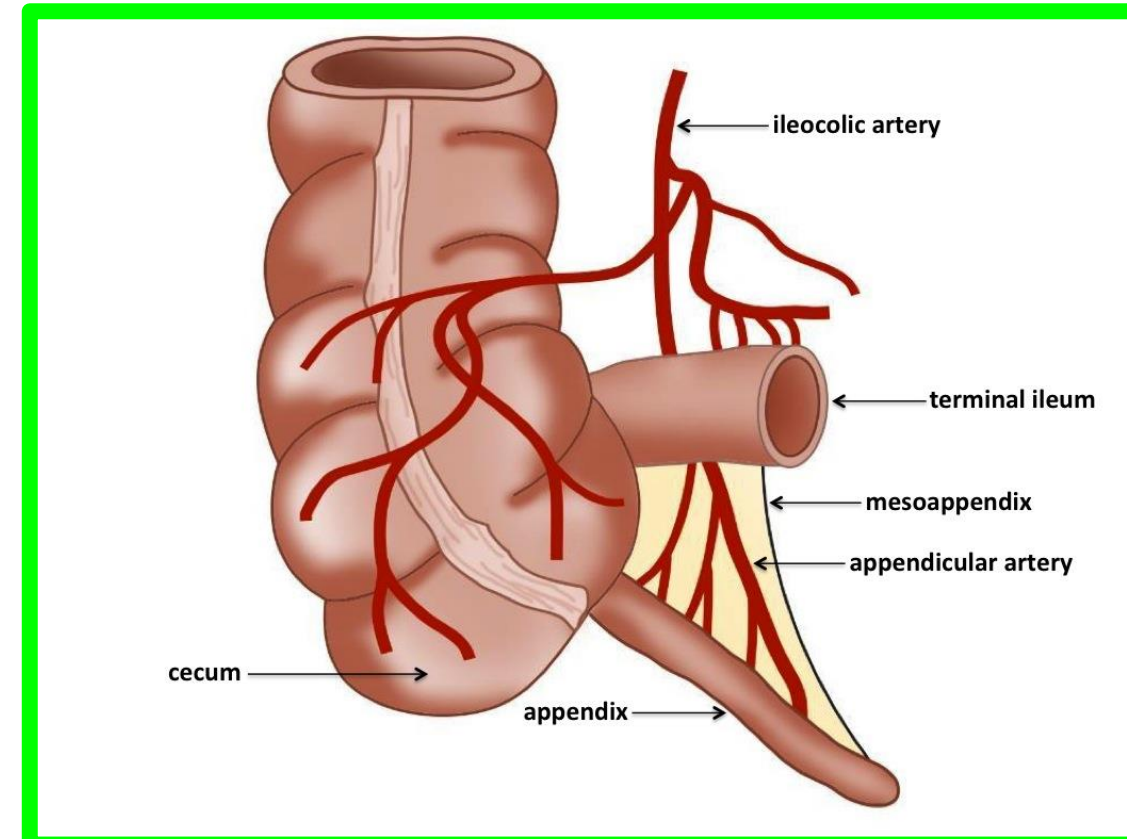
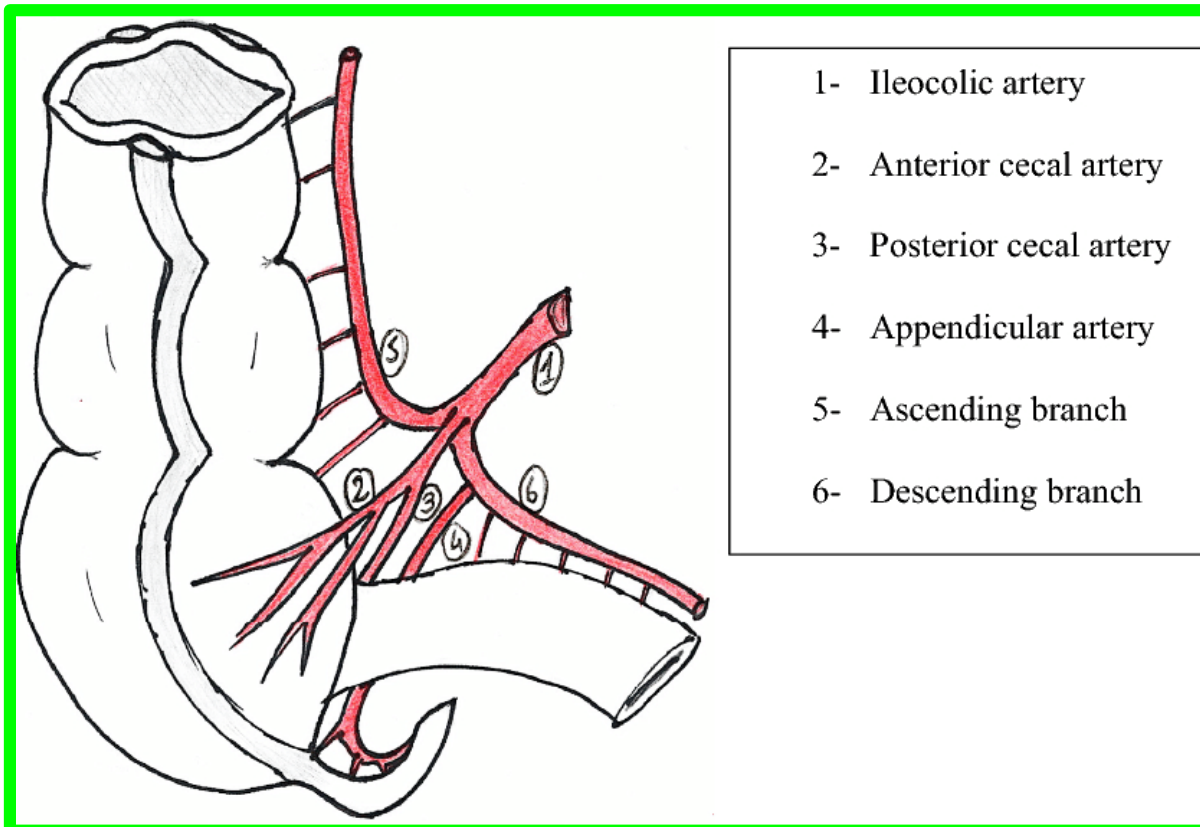
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** Branches

4. Ileocolic artery

D. Appendicular artery to the appendix.

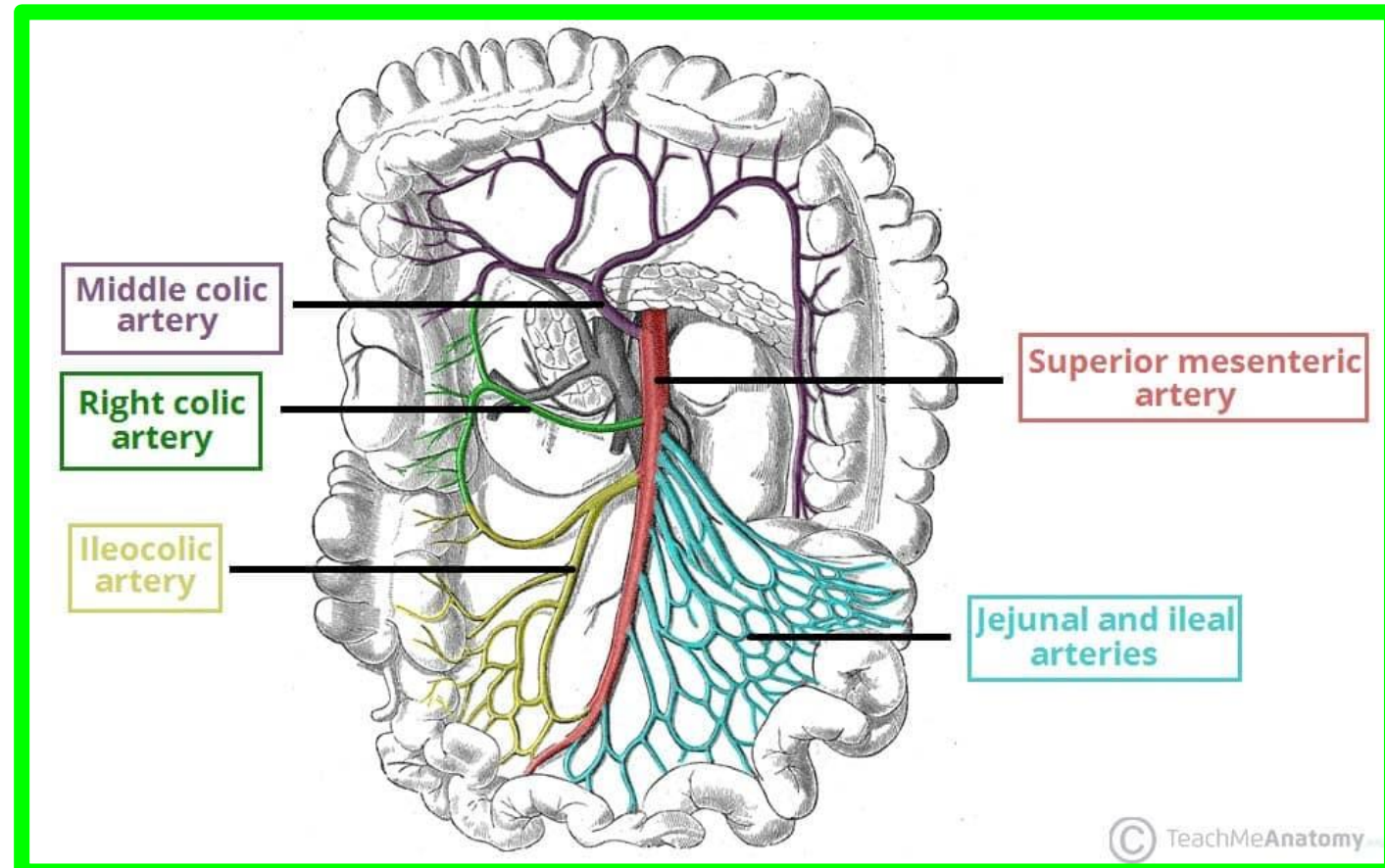
E. Ascending branch to the lower part of the ascending colon.



Superior Mesenteric Artery

** Branches

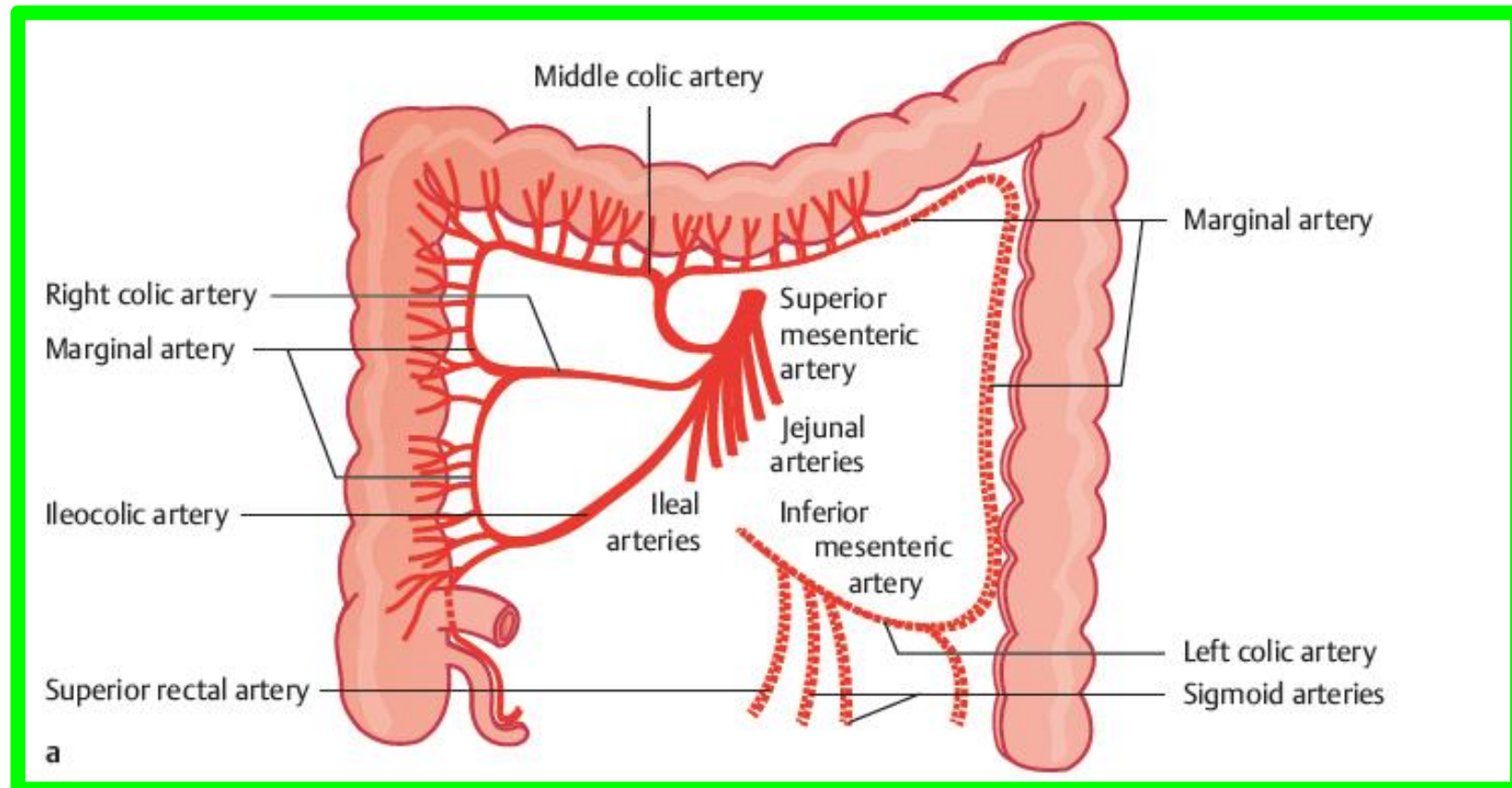
5. **Right colic artery** to the ascending colon and right colic flexure, divides into
- A. **Ascending branch** anastomoses with the right branch of the **middle colic A.**
 - B. **Descending branch** anastomoses with the **ascending branch of ileocolic A.**



Superior Mesenteric Artery

** Branches

- 6. Middle colic artery:** to the right 2/3 of the transverse colon. It divides into
- A. Right branch** anastomoses with the ascending branch of **right colic artery**.
 - B. Left branch** anastomoses with the ascending branch of the **left colic artery**.

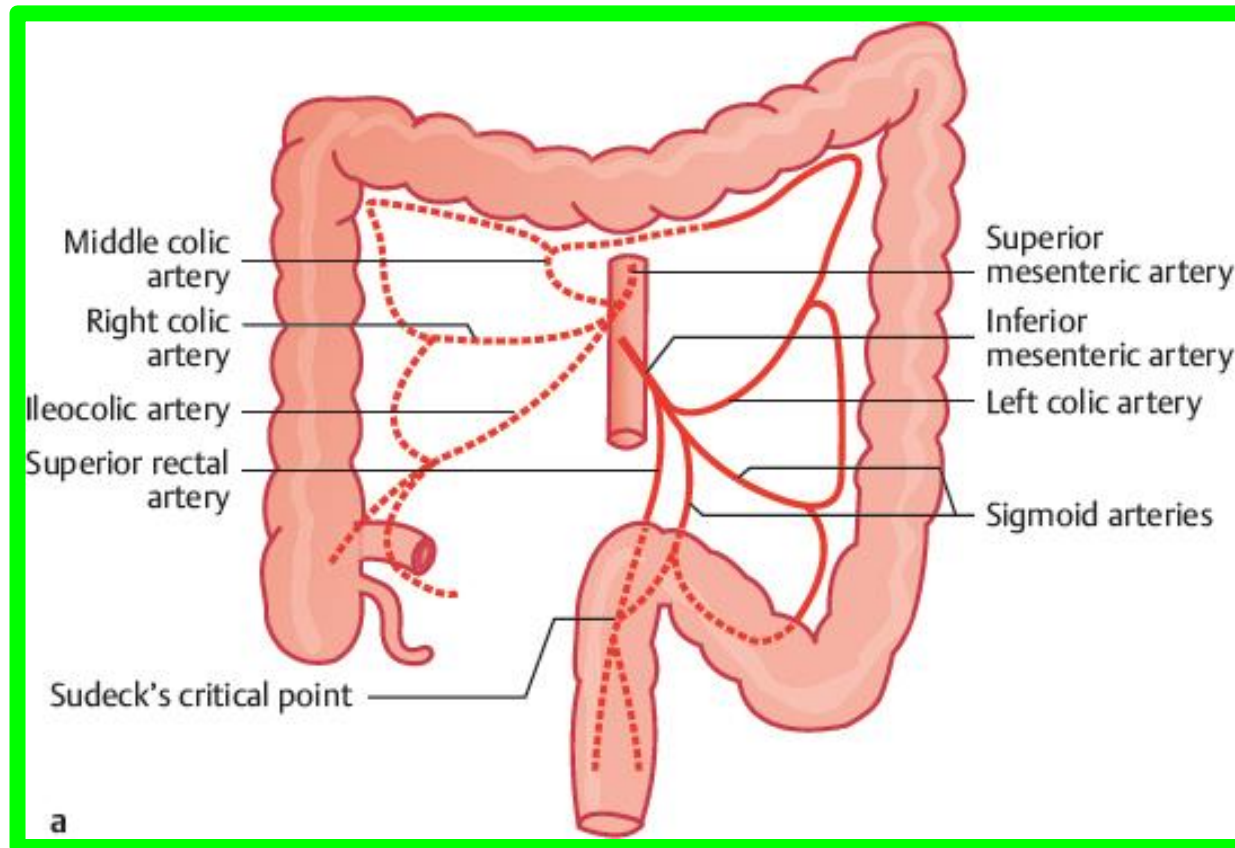


Inferior Mesenteric Artery

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Supplies the **distal third of the transverse colon**, the **left colic flexure**, the **descending colon**, the **sigmoid colon**, the **rectum**, and the **upper half of the anal canal**.

It arises from the **abdominal aorta** about 1.5 in. (**3.8 cm**) above its bifurcation



Inferior Mesenteric Artery

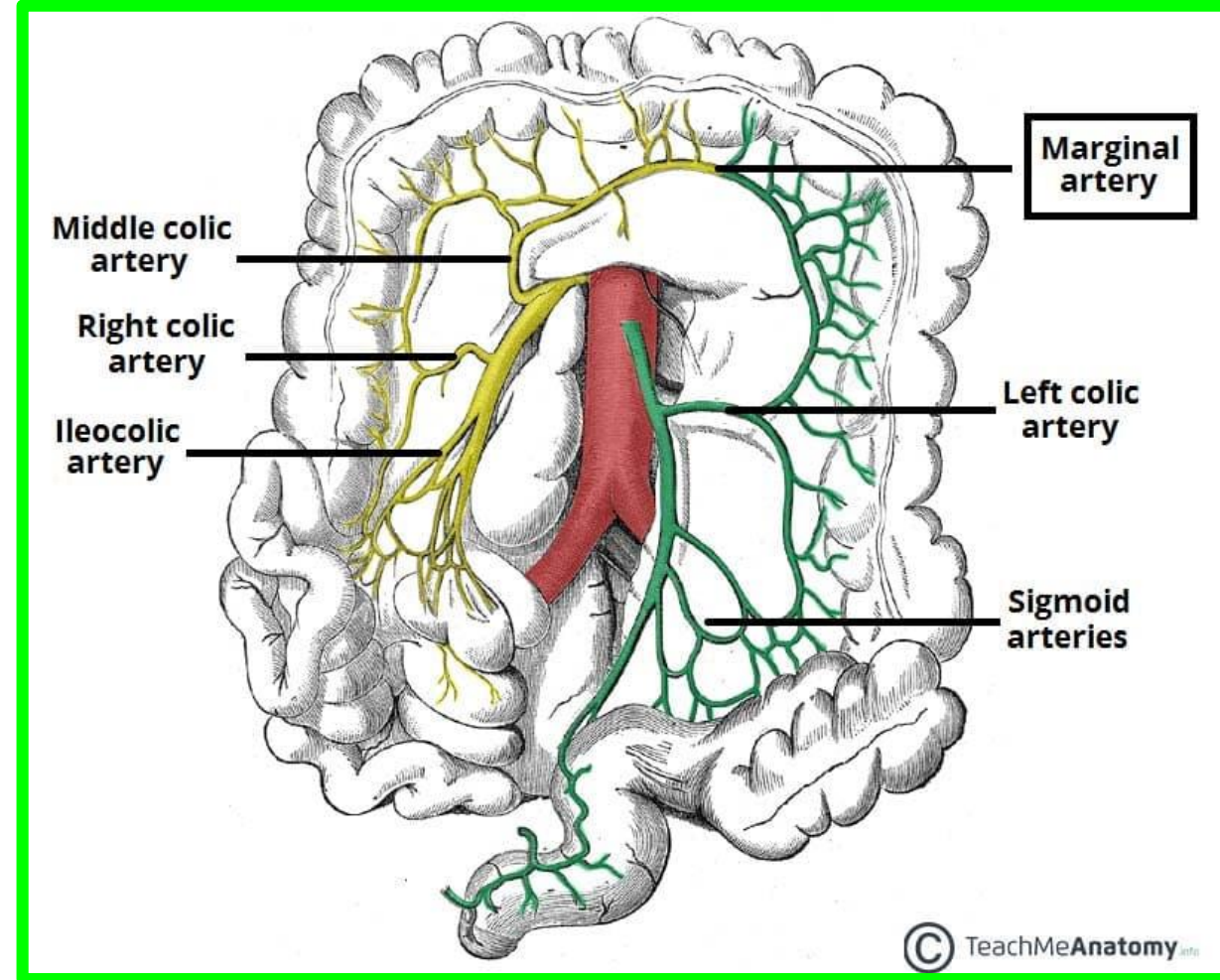
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**** Origin:** from the abdominal aorta at the level of **the 3rd lumbar vertebra**

**** Course and relation:**

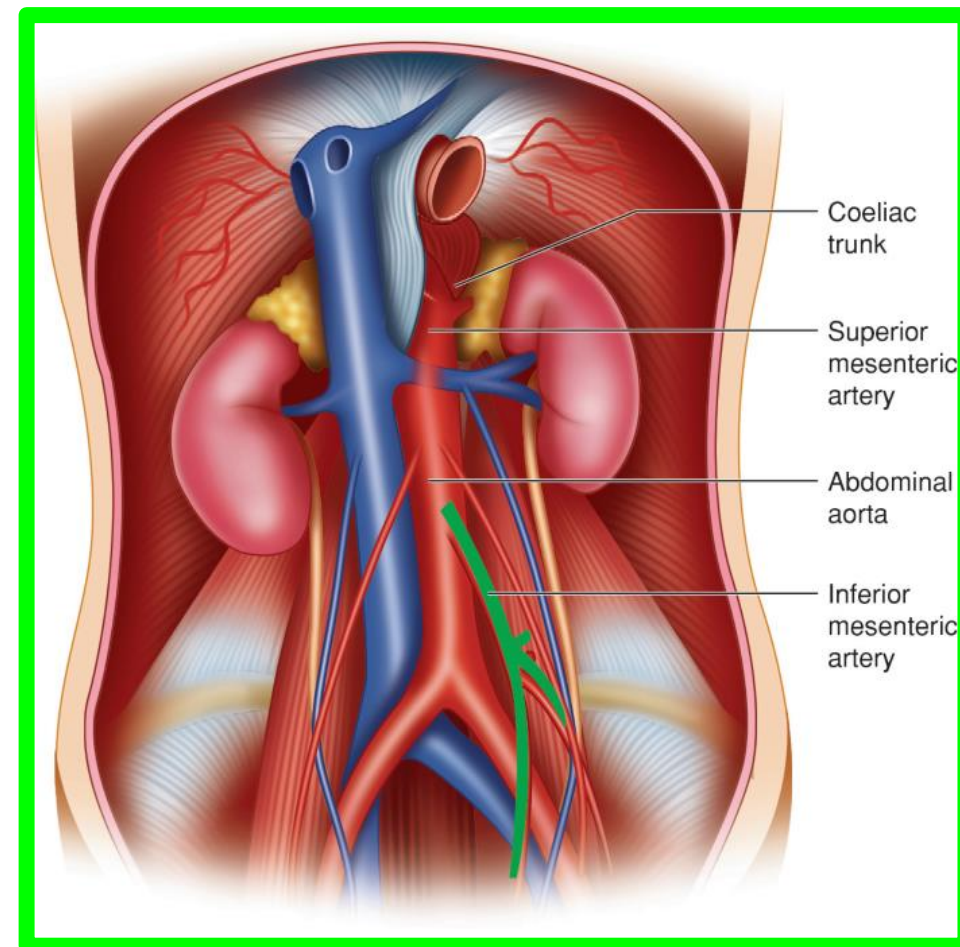
- ✓ It descends to the left behind the peritoneum of the posterior abdominal wall.
- ✓ Enters the pelvis by crossing the **left common iliac artery**.
- ✓ It continues as **the superior rectal artery**.



Inferior Mesenteric Artery

** Relations:

- ❖ **Anteriorly:** the third part of the duodenum at its beginning.
- ❖ **Posteriorly:** it crosses the following structures.
 - 1- Abdominal aorta,
 - 2- Left sympathetic chain.
 - 3- Left psoas major.
- ❖ **Left side:**
 1. inferior mesenteric vein.
 2. Left ureter.



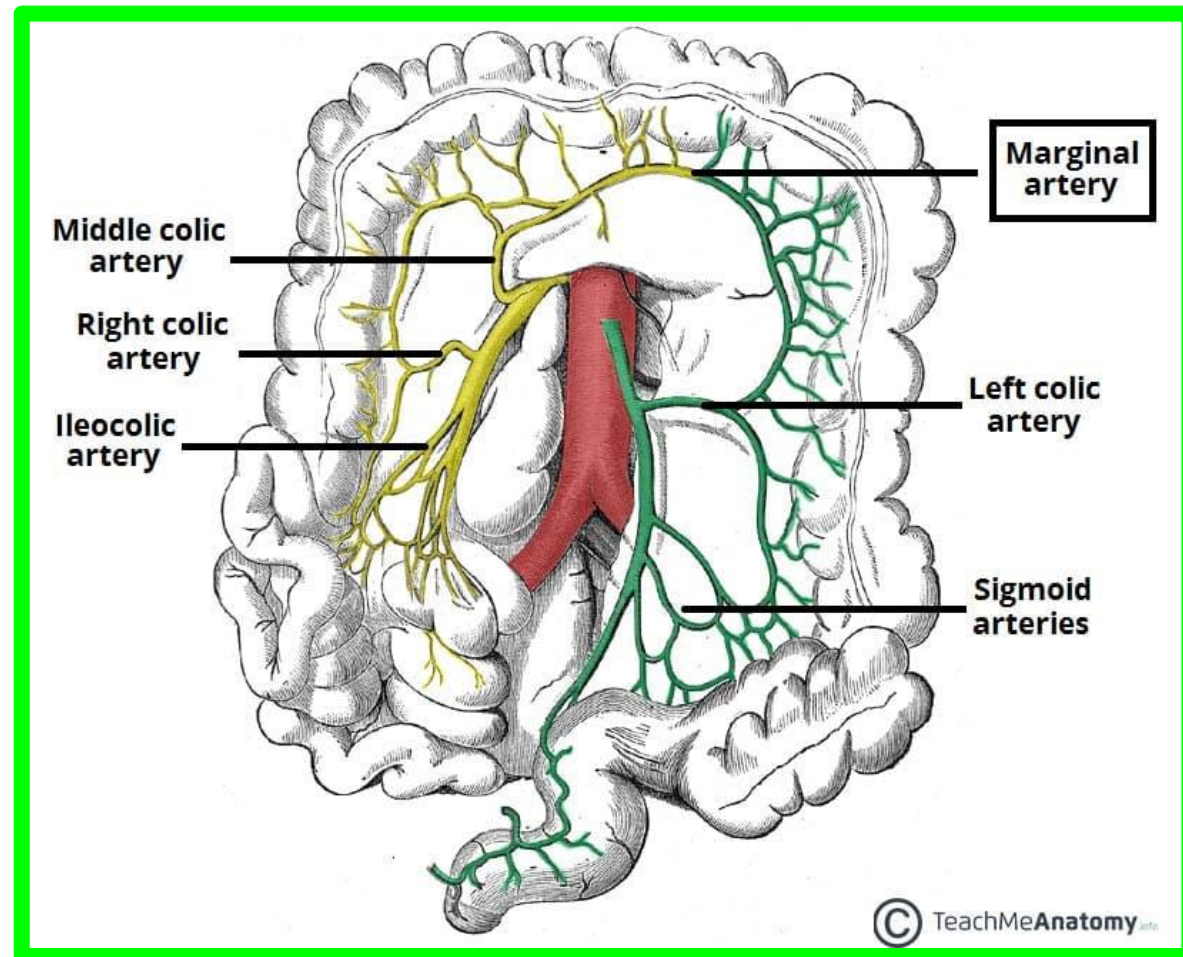
Inferior Mesenteric Artery

** Branches

1. **Left colic artery:** to the left 1/3 of the transverse colon, left colic flexure and upper part of the descending colon. It divides into,

A. Ascending branch anastomoses with the left branch of the middle colic artery.

B. Descending branch anastomoses with the highest sigmoid artery

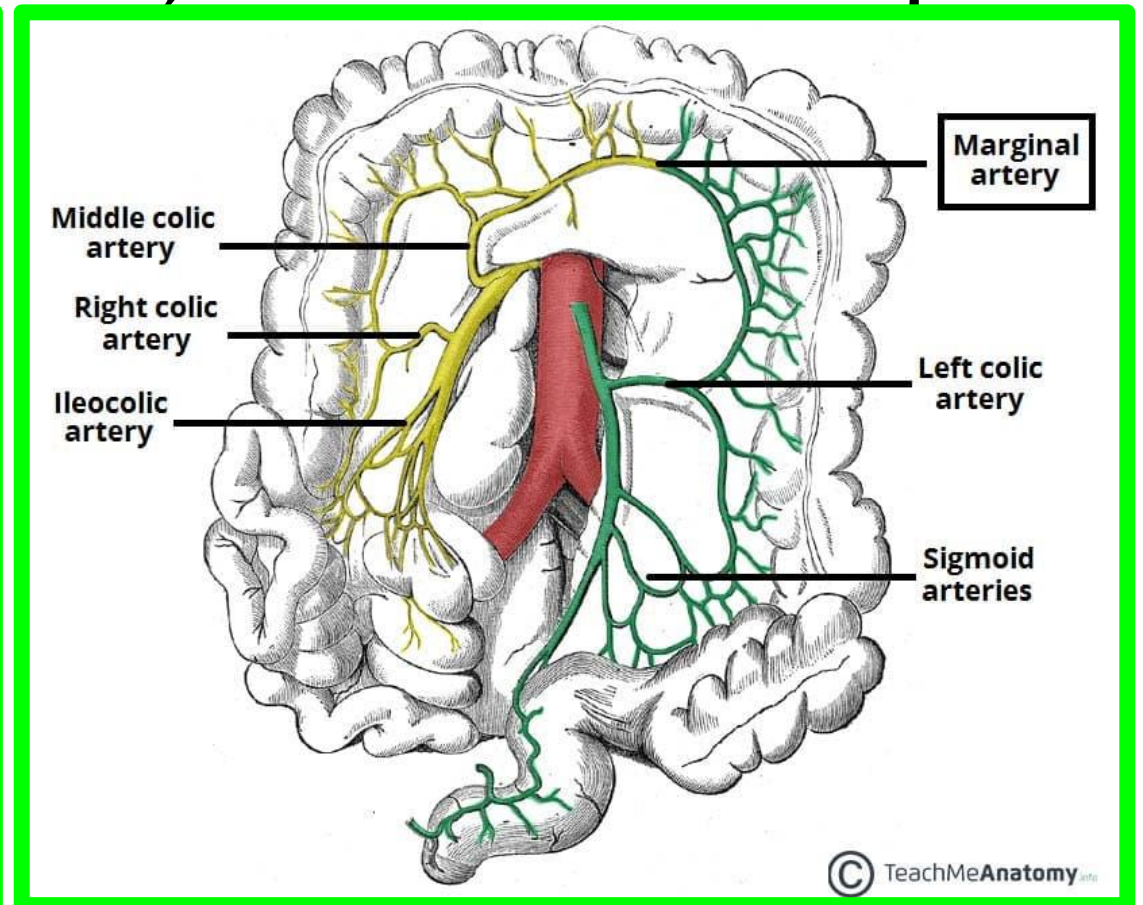
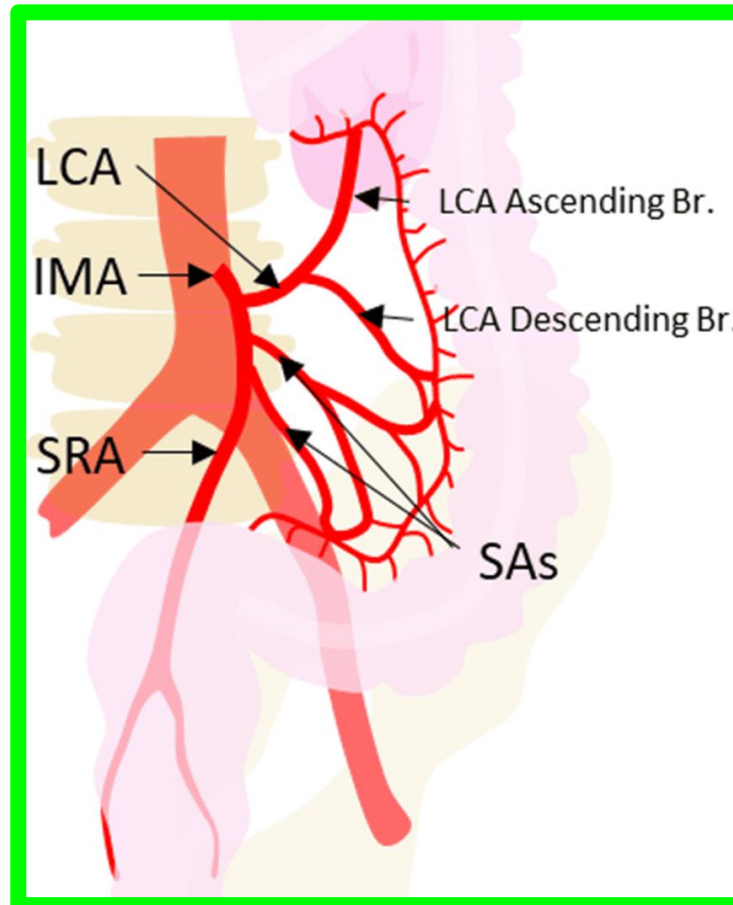


Inferior Mesenteric Artery

** Branches

2. **Sigmoid (inferior colic) arteries (2-3):** to supply the lower part of the descending colon and sigmoid colon.

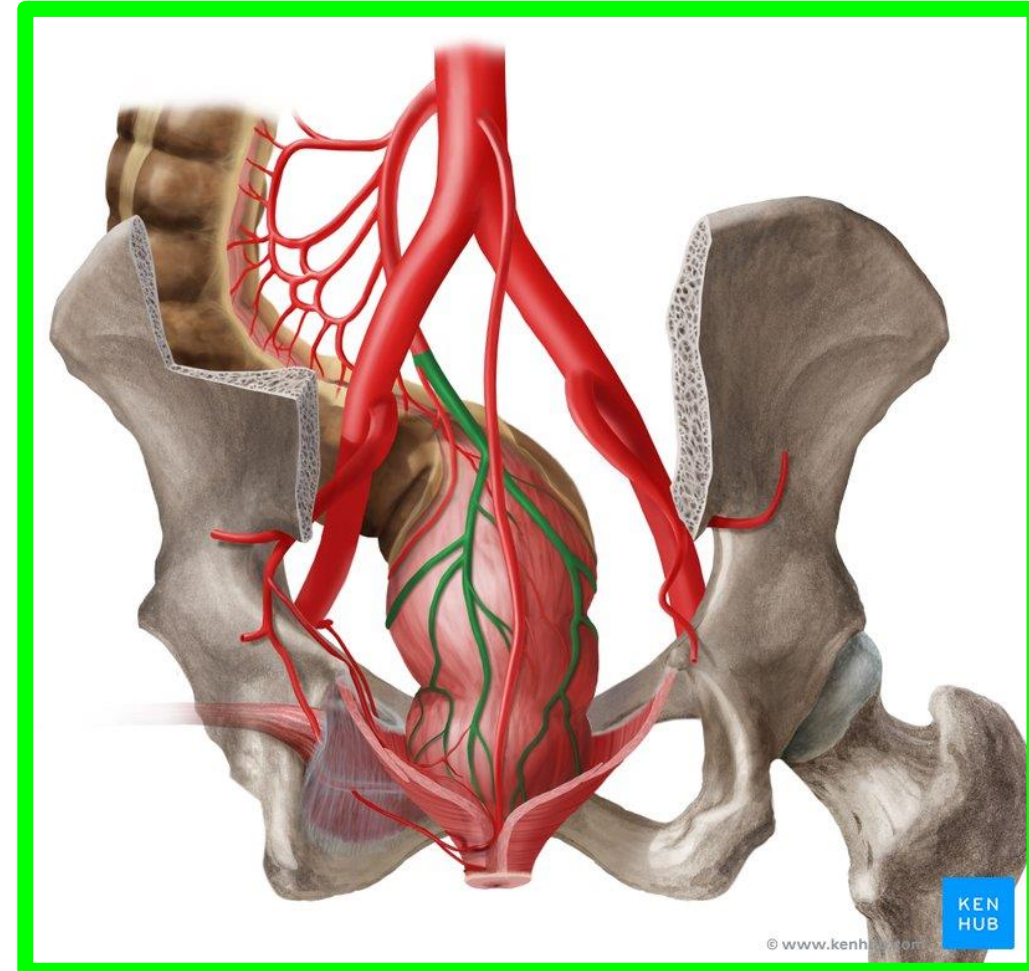
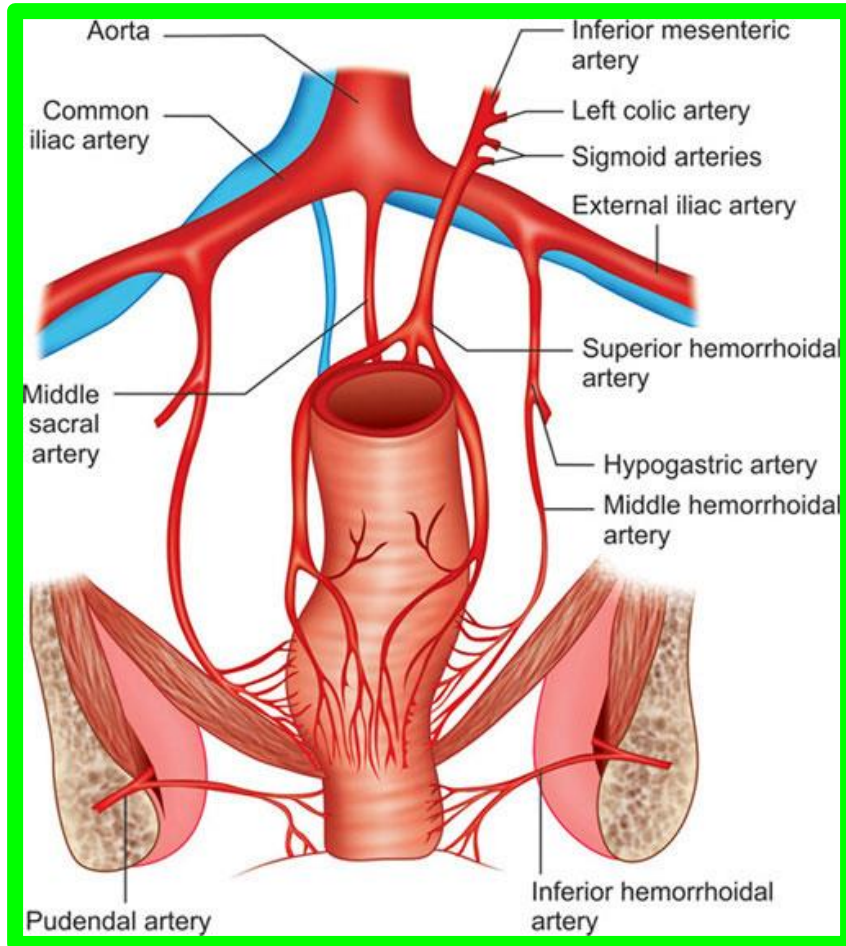
❖ They anastomoses above with the left colic, and below with the superior rectal artery.



Inferior Mesenteric Artery

** Branches

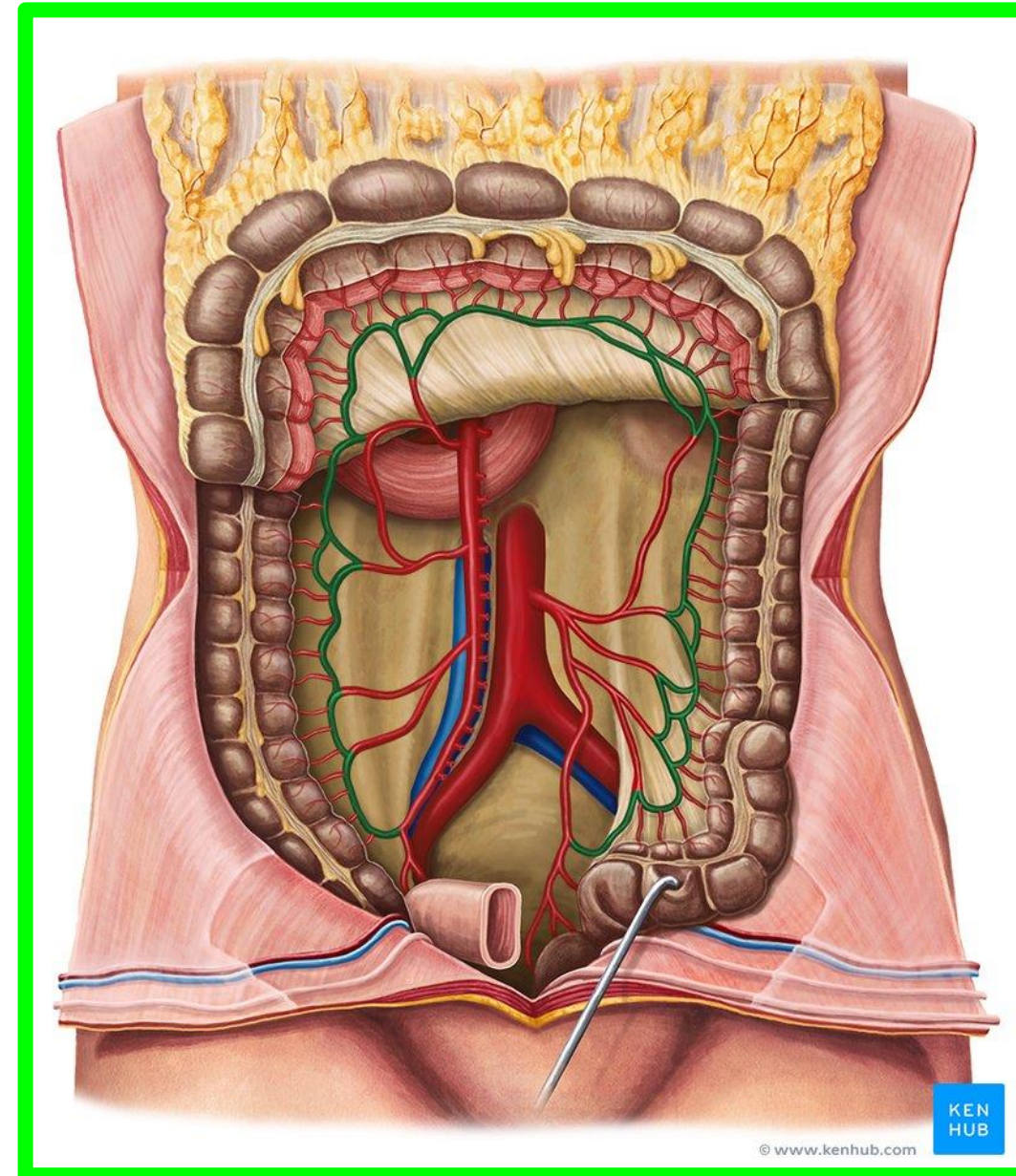
3. **Superior rectal (Hemorrhoidal) artery** supplies the rectum and anal canal. It anastomoses with **the middle** and **inferior rectal** arteries.



Inferior Mesenteric Artery

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- N.B. Marginal artery:** is the serial anastomoses close to the wall of the colon.
- ❖ It is formed by the branches of the superior and inferior mesenteric arteries
- Iliocolic artery.
 - Right, middle and left colic arteries.
 - Sigmoid arteries.
 - Superior, middle and inferior rectal arteries.



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