The practical of the 5th week
Sun 05/04 – Mon 07/04

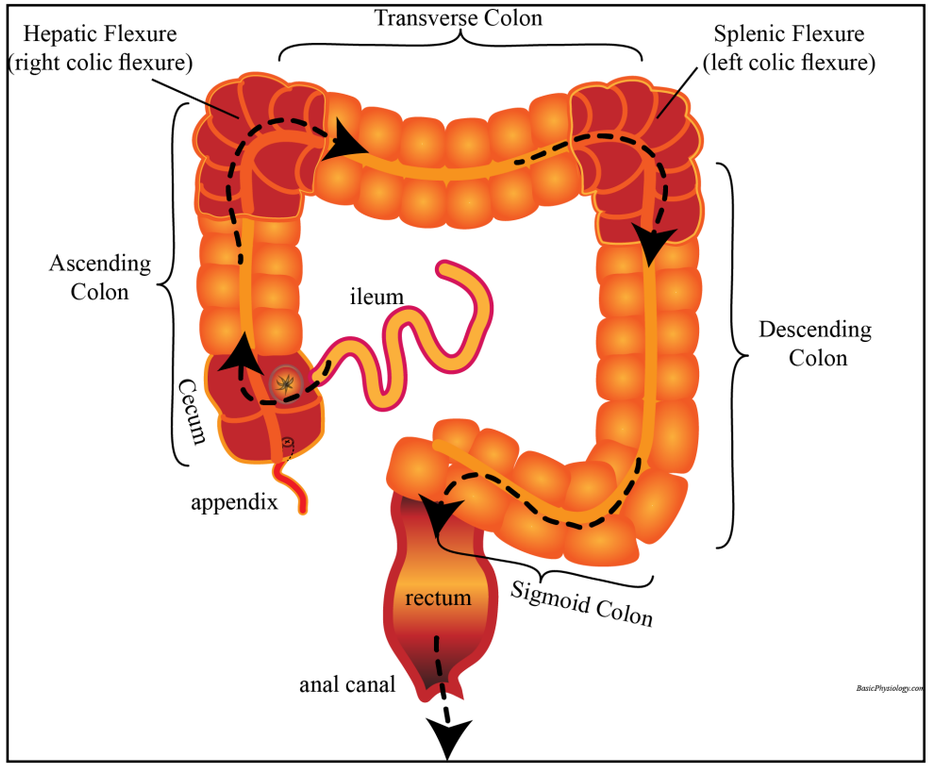
1. **Rectum**
2. **Anal canal**
3. **Posterior Abdominal wall**
4. **Liver**
5. **Gallbladder**
6. **Pancreas**
7. **Spleen**

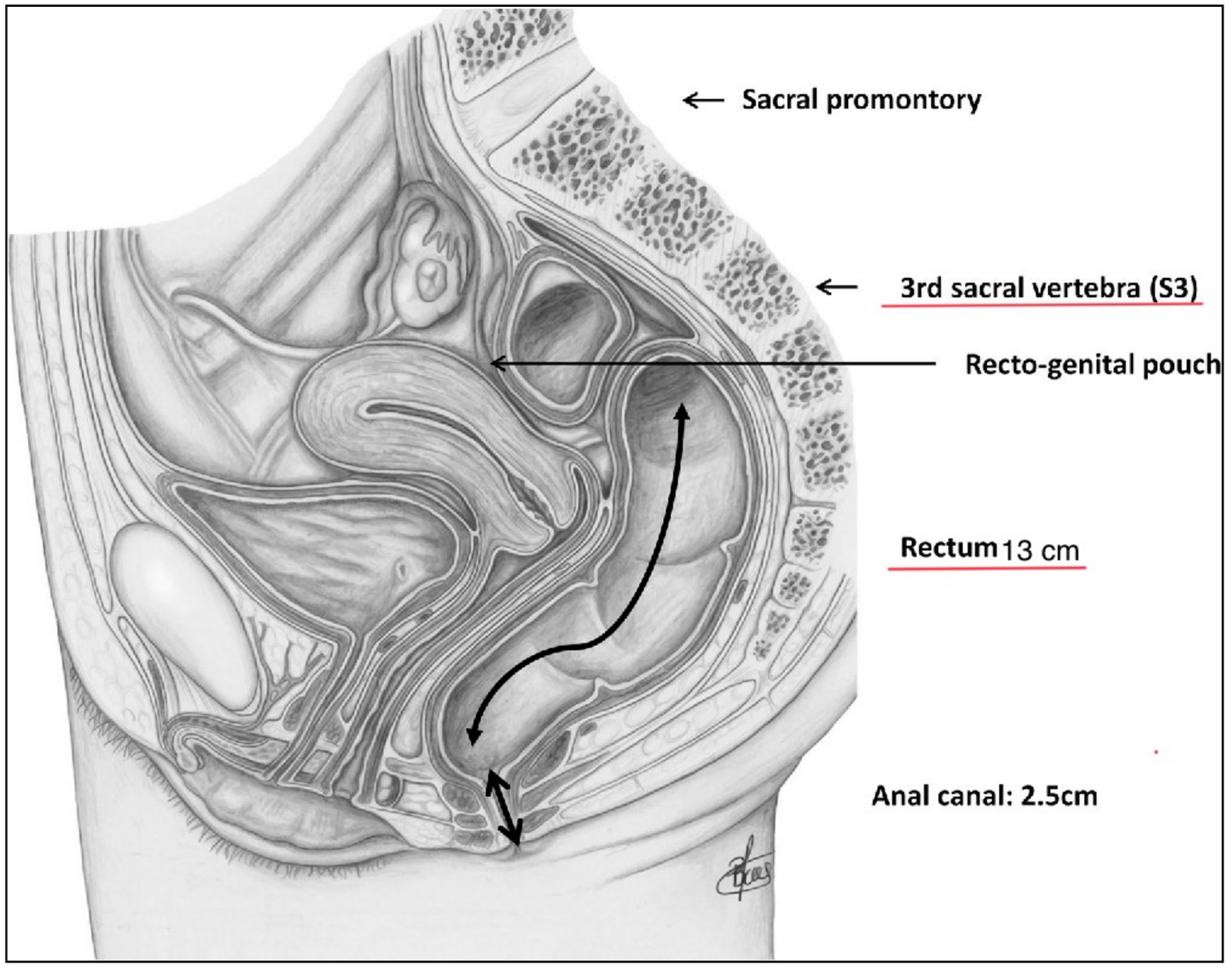
Rectum

- The students should know and identify the :

1. Site and length
2. Peritoneal Relations
3. Relations
4. Blood supply

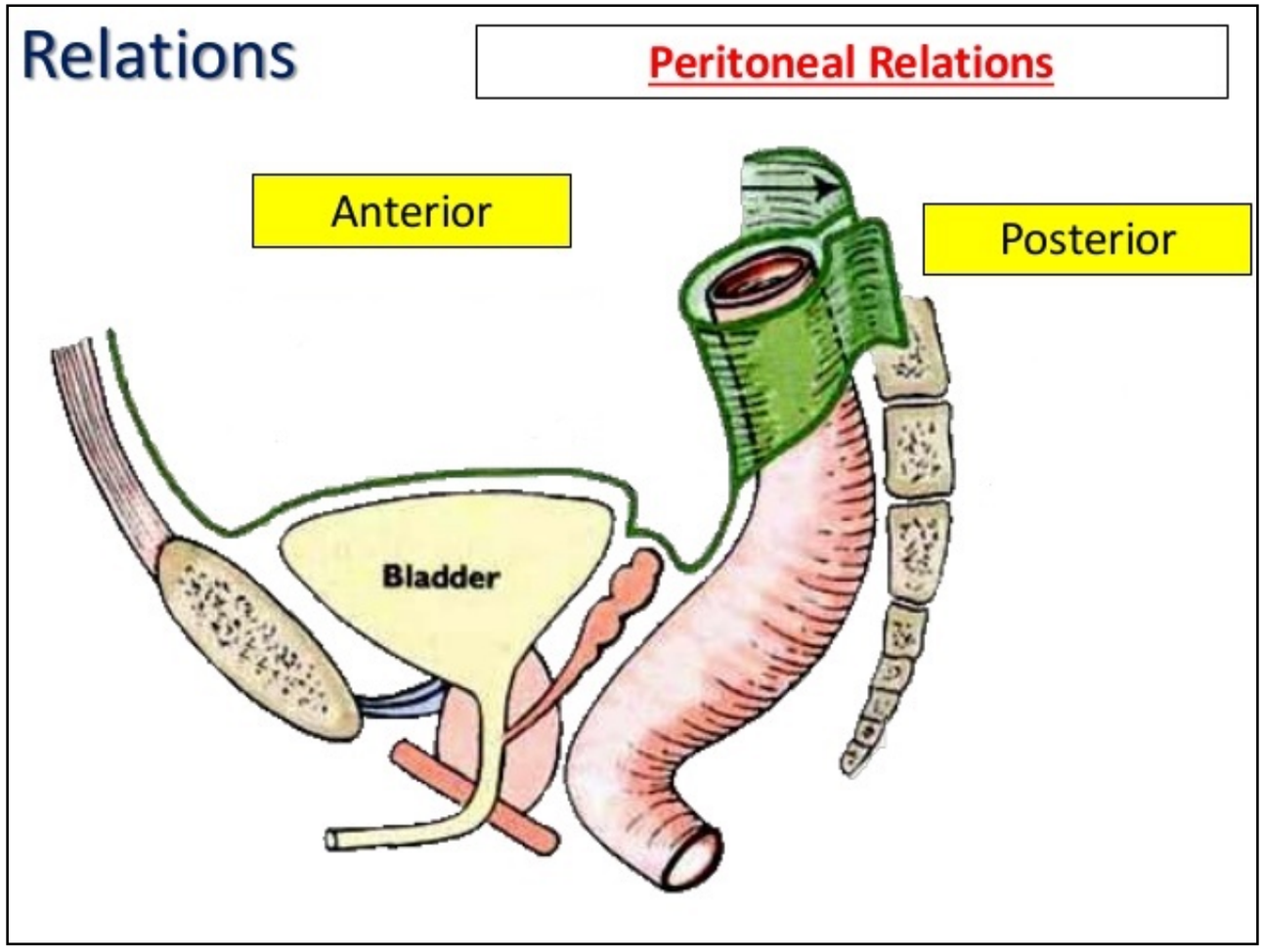
- Site and length of the rectum

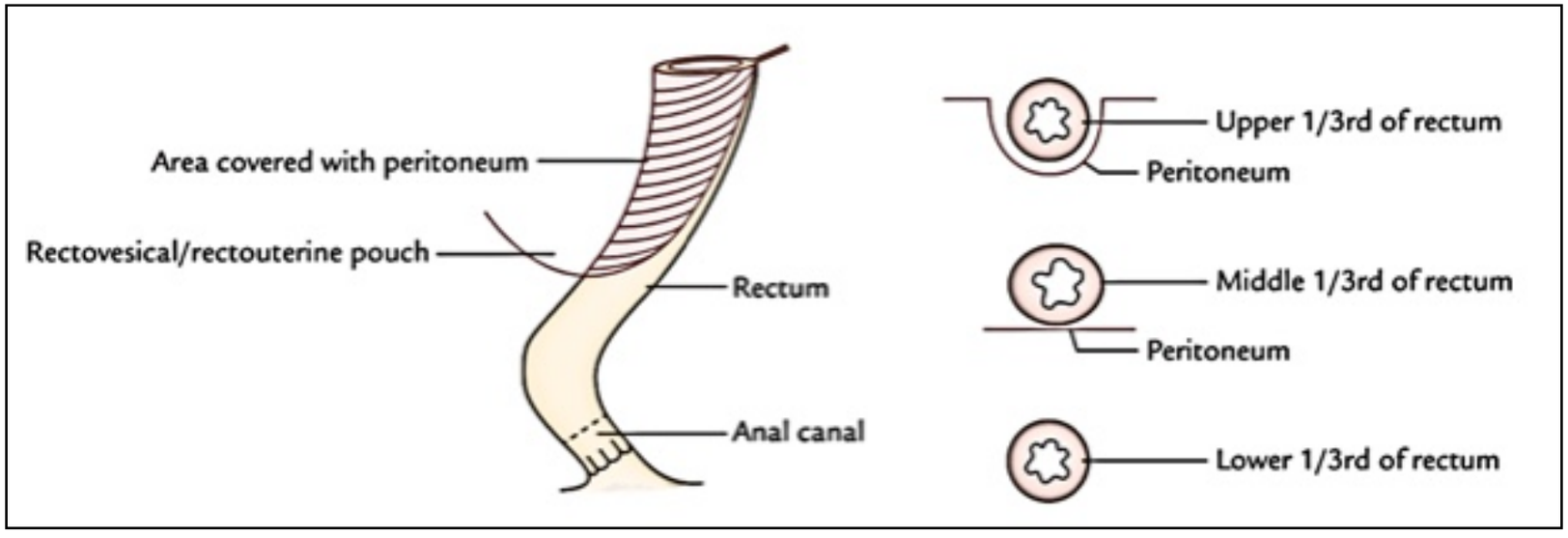




- length Of the rectum 13 cm

- Peritoneal Relations of the rectum





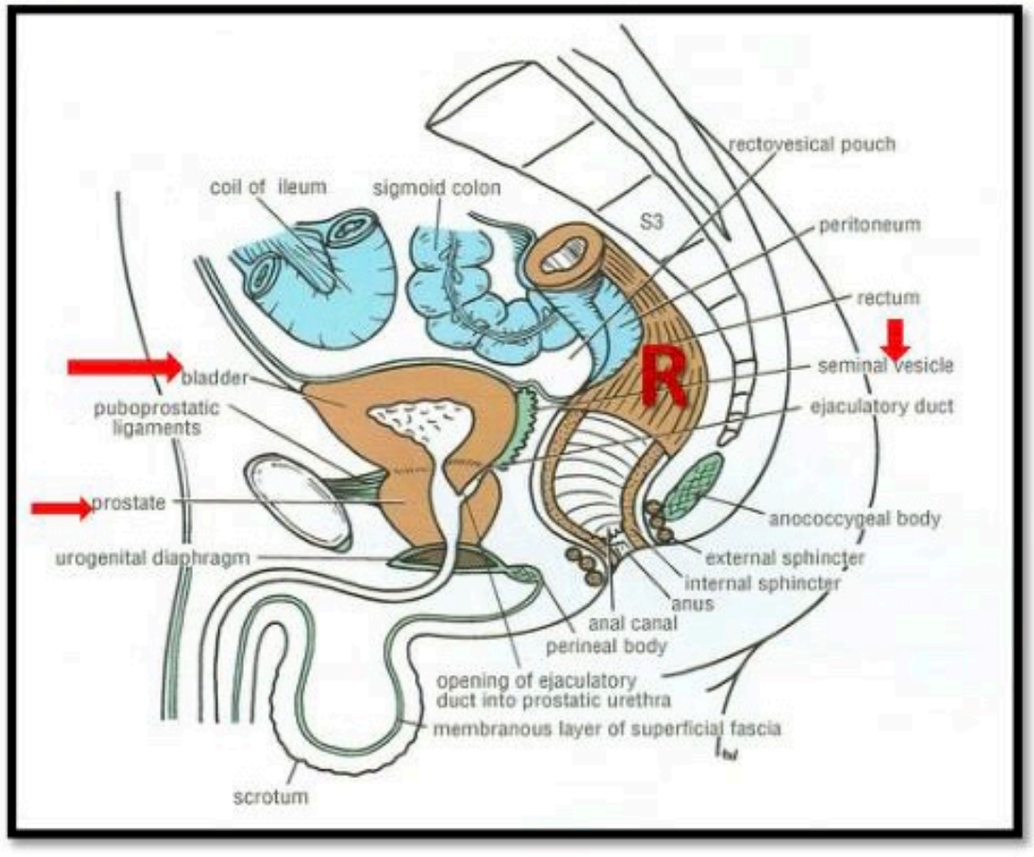
- Relations of the rectum

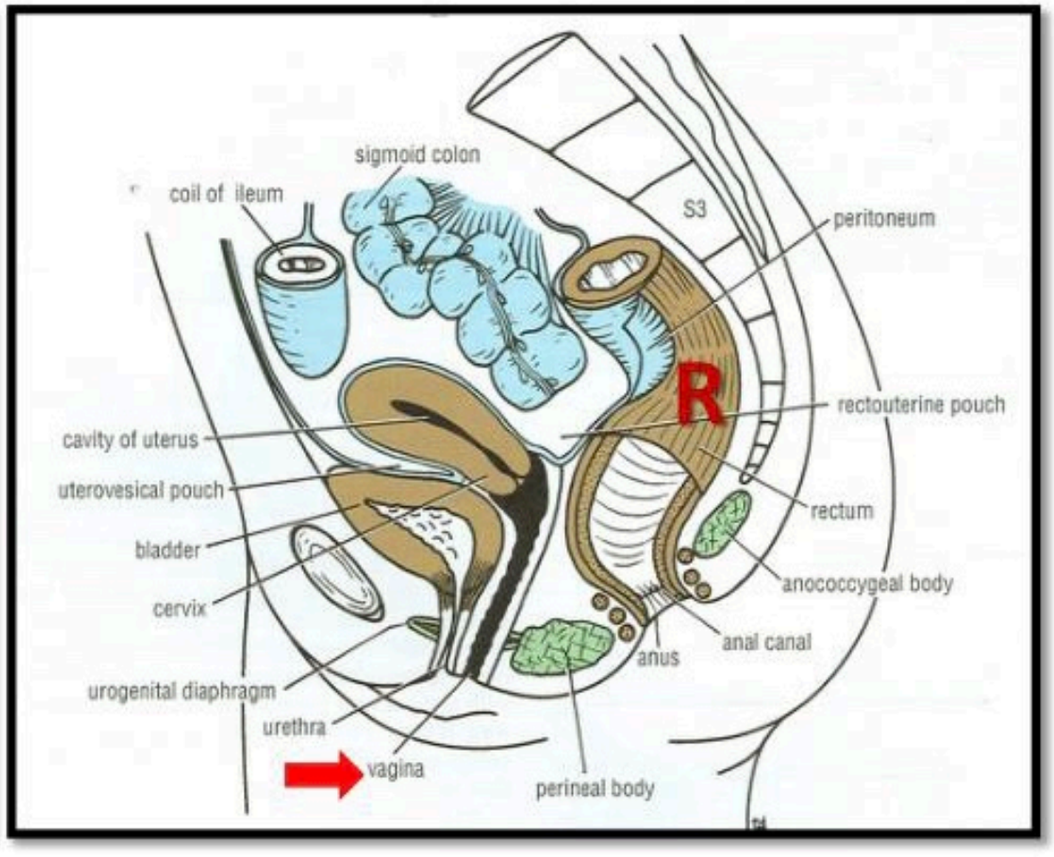
MALE PELVIS

- **Anterior:** seminal vesicles, posterior surfaces of urinary bladder & prostate gland
- **Posterior:** sacrum & coccyx

FEMALE PELVIS

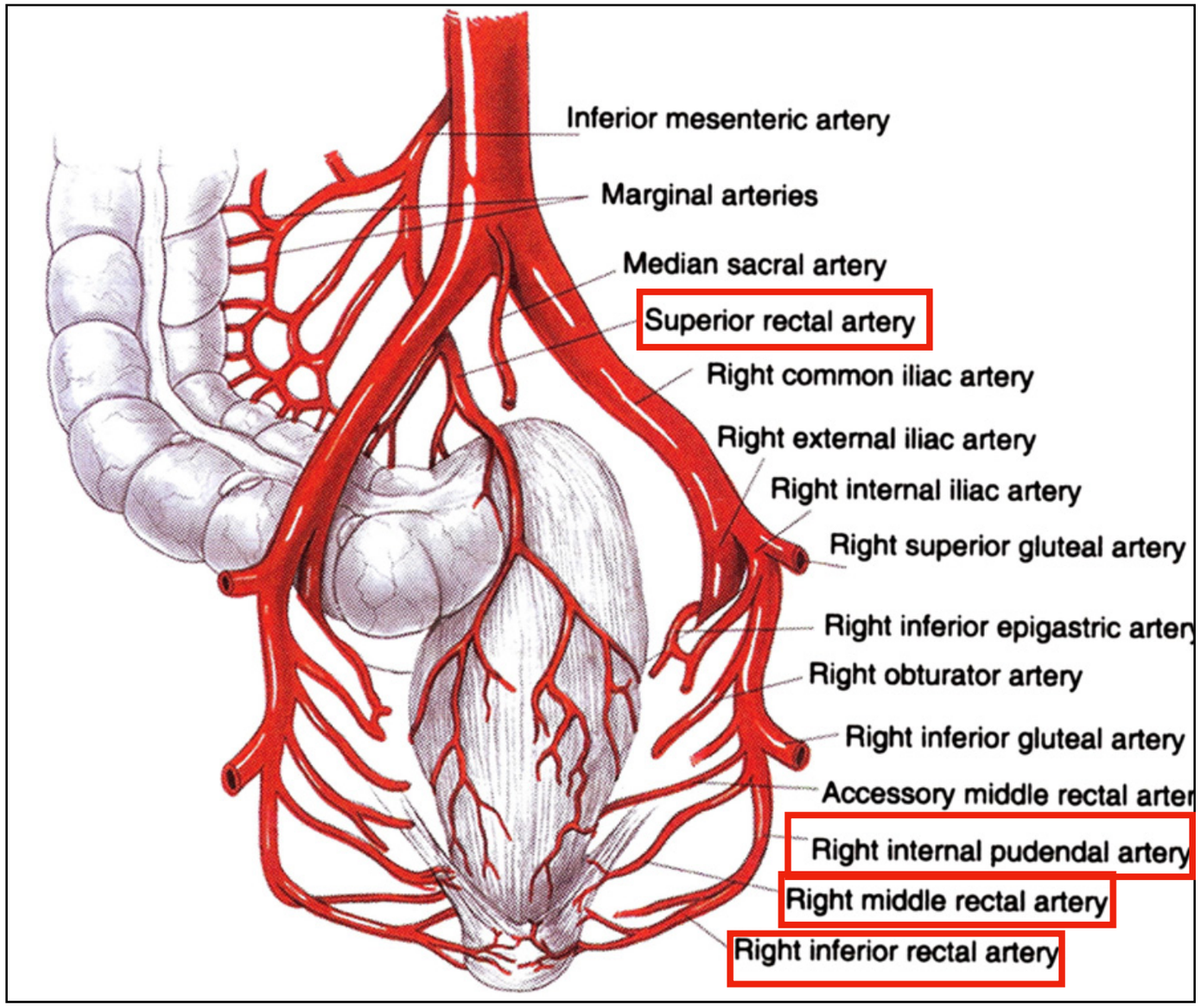
- **Anterior:** posterior wall of vagina
- **Posterior:** sacrum & coccyx

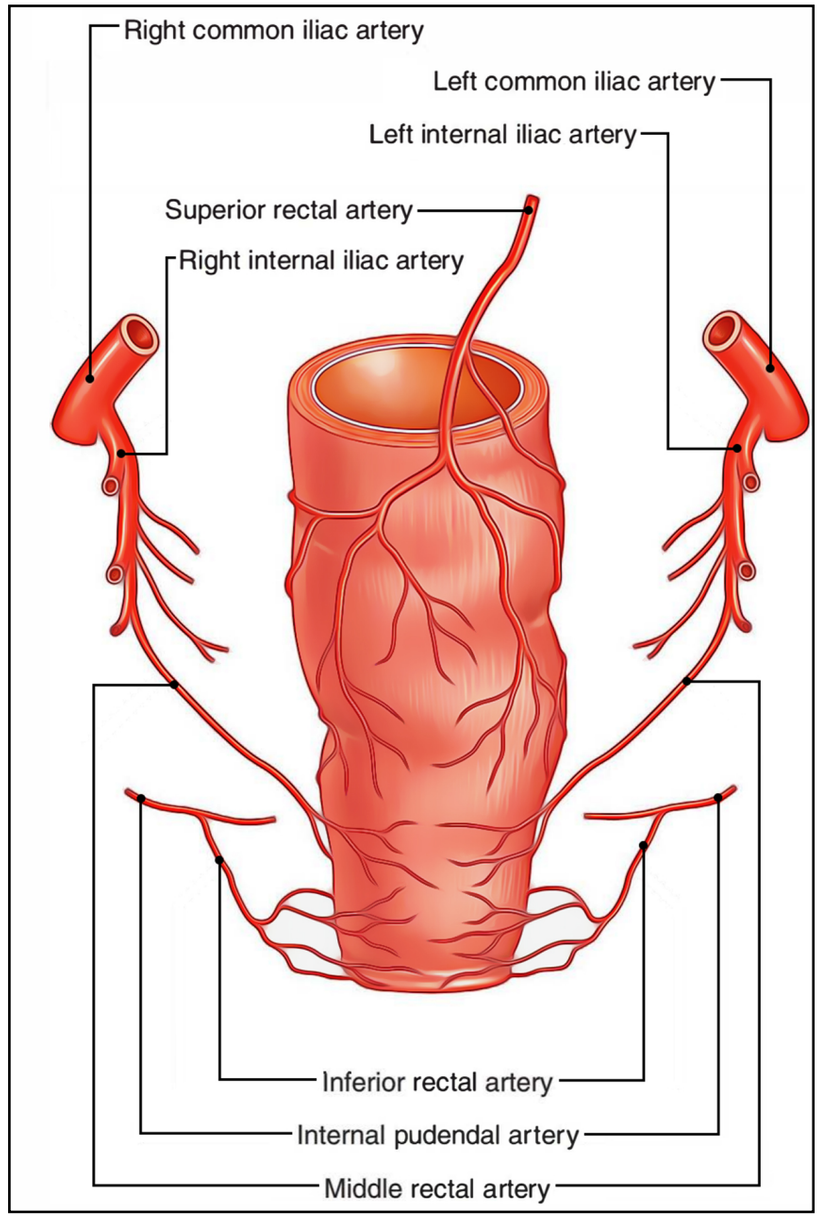




• Blood supply of the rectum

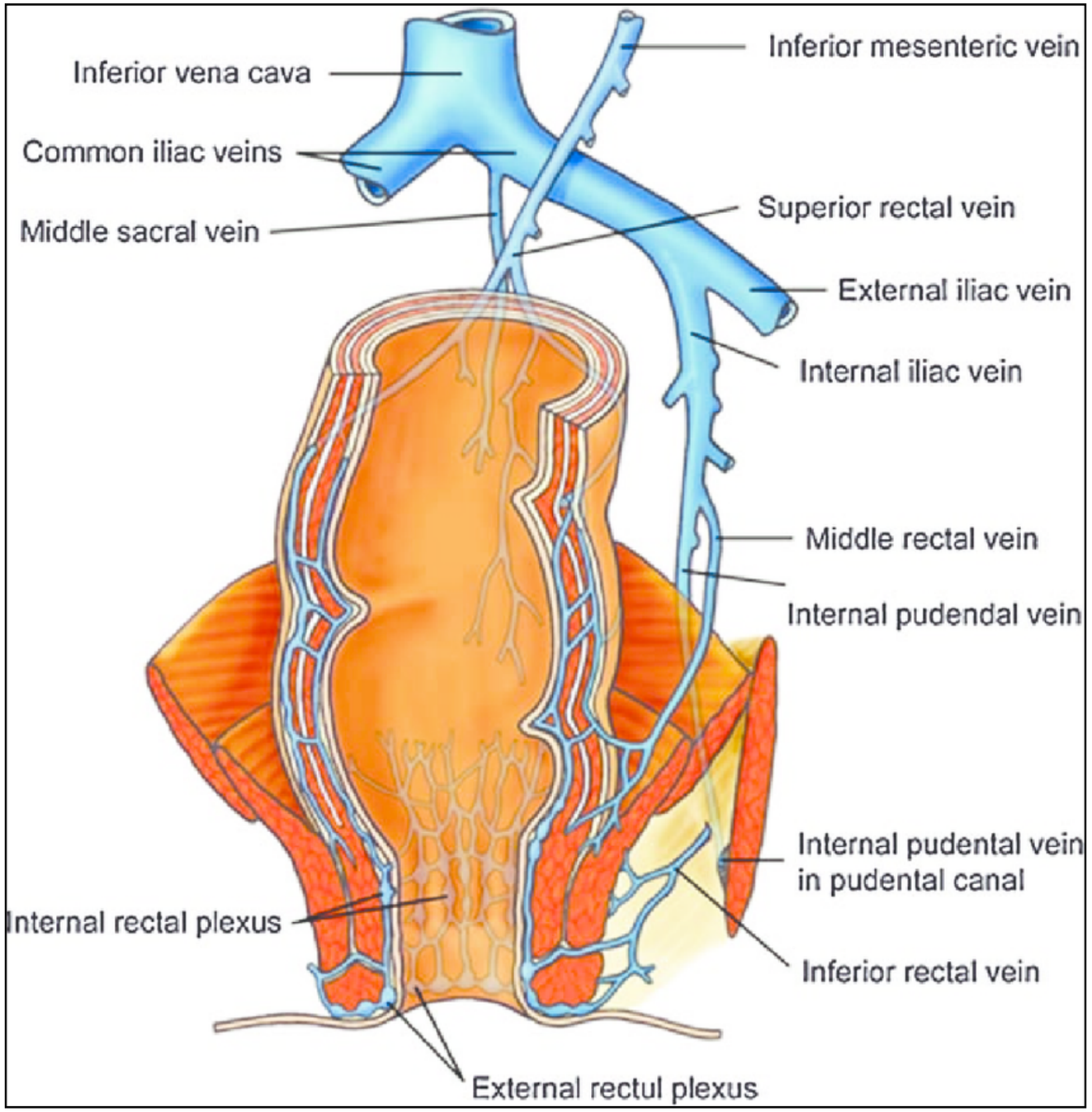
- Arterial supply





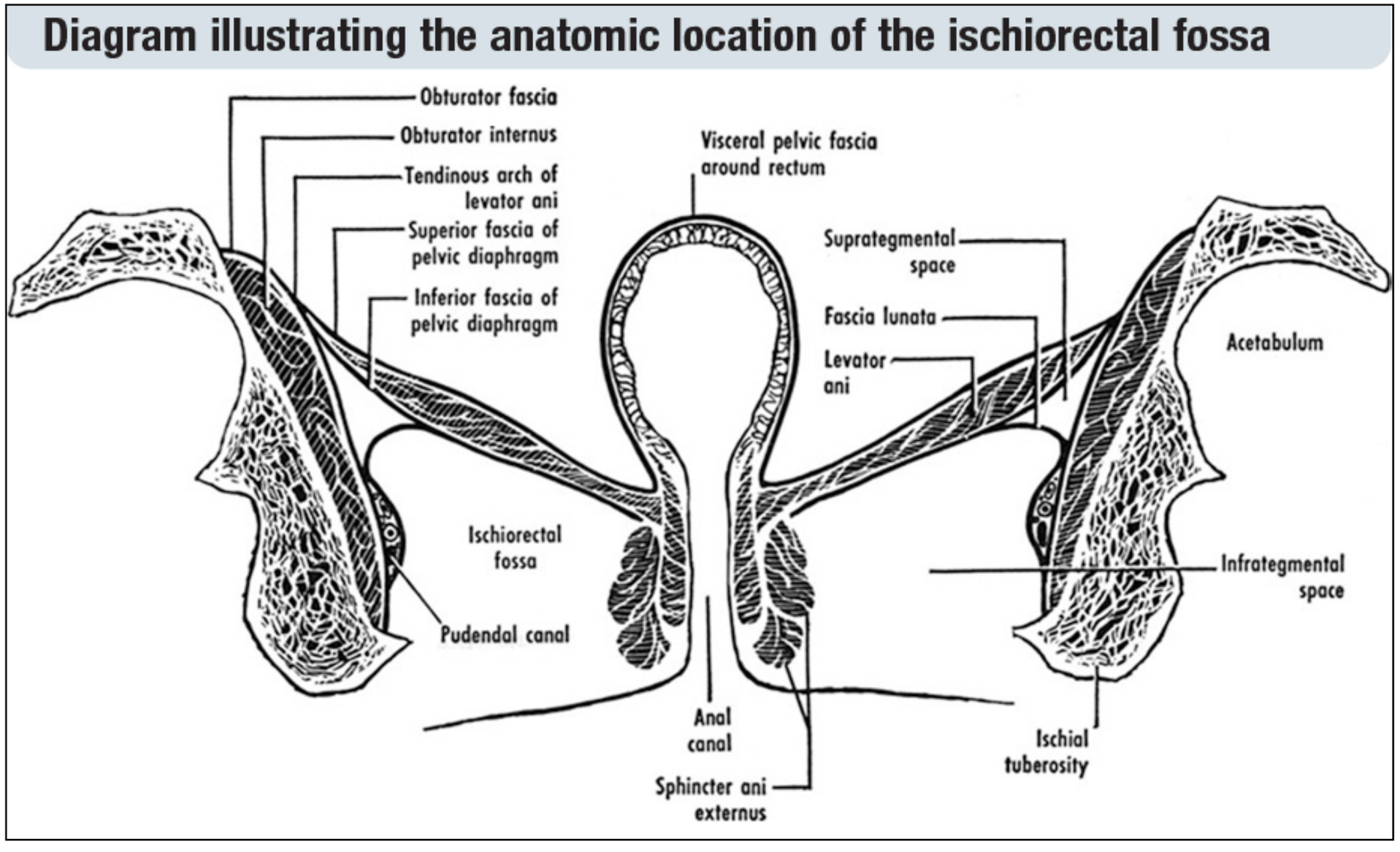
• Blood supply of the rectum

- Venous drainage



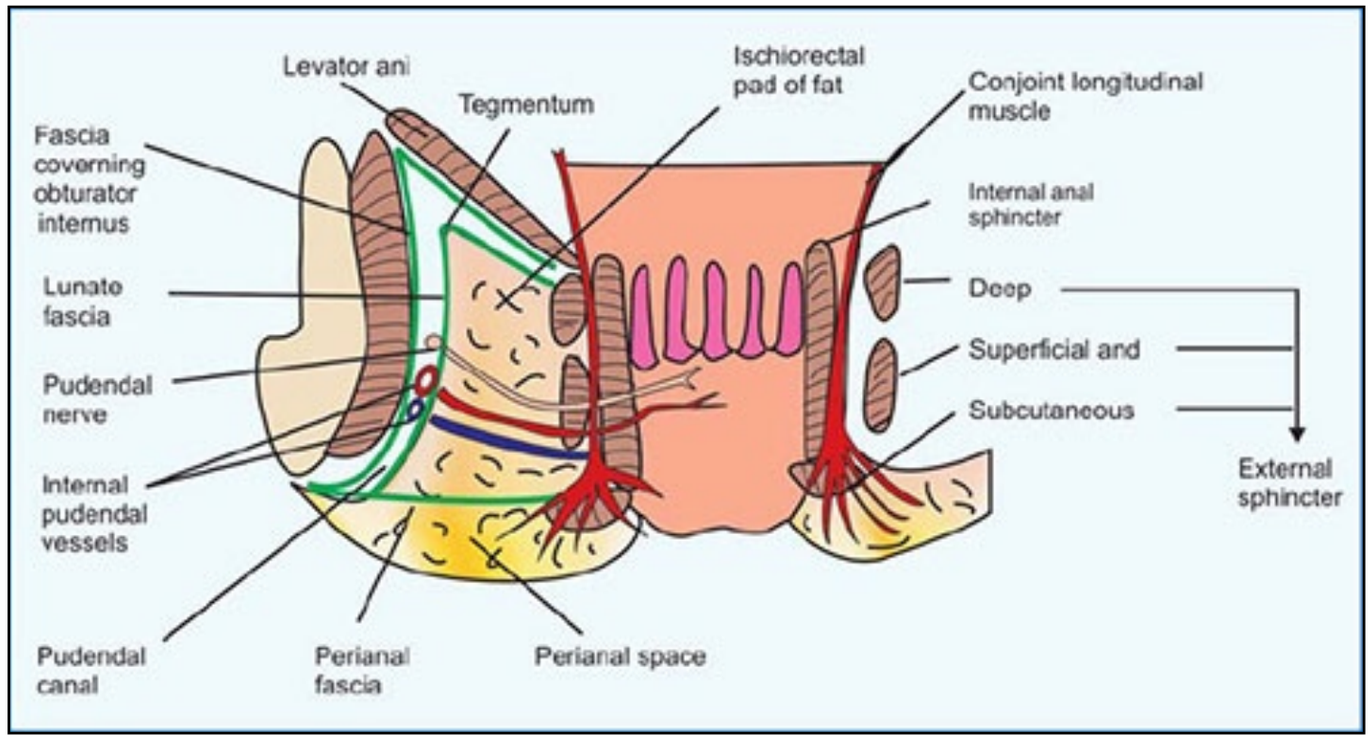
• Ischiorectal Fossa

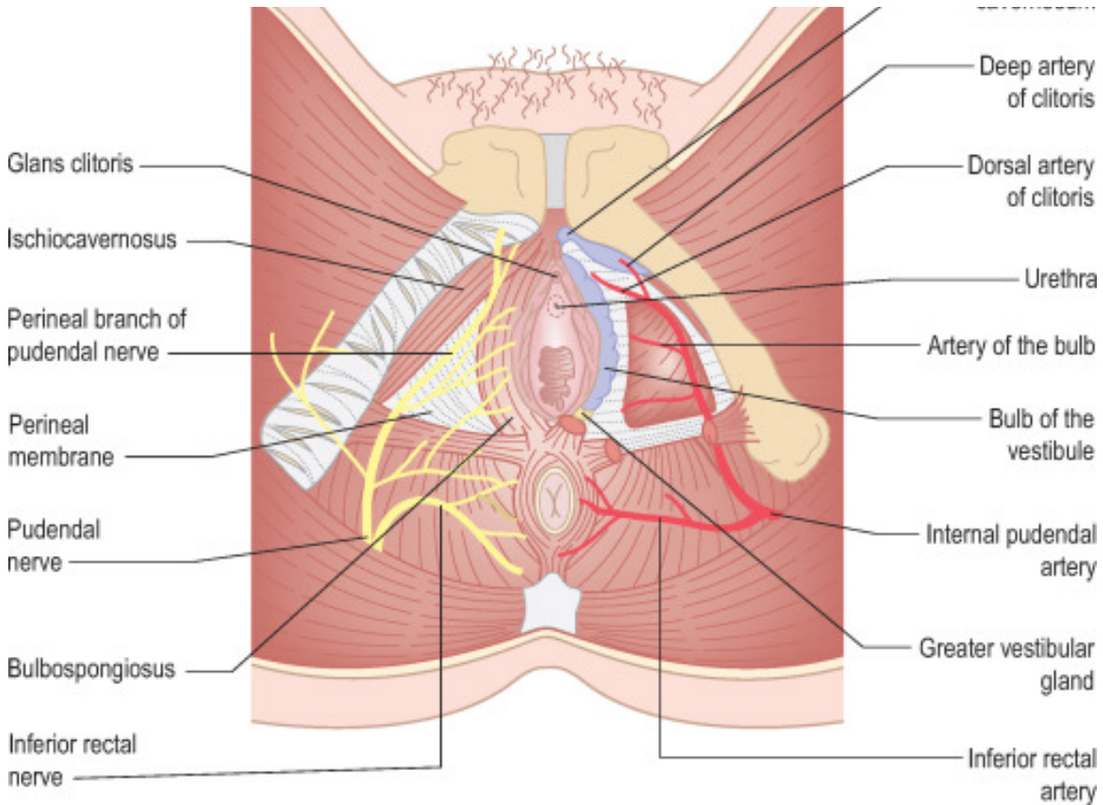
- Boundaries



• Ischiorectal Fossa

- Contents of fossa
  - filled with dense fat
  - The pudendal nerve
  - internal pudendal vessels
  - the pudendal canal
  - inferior rectal vessels and nerve cross the fossa to reach the anal canal.



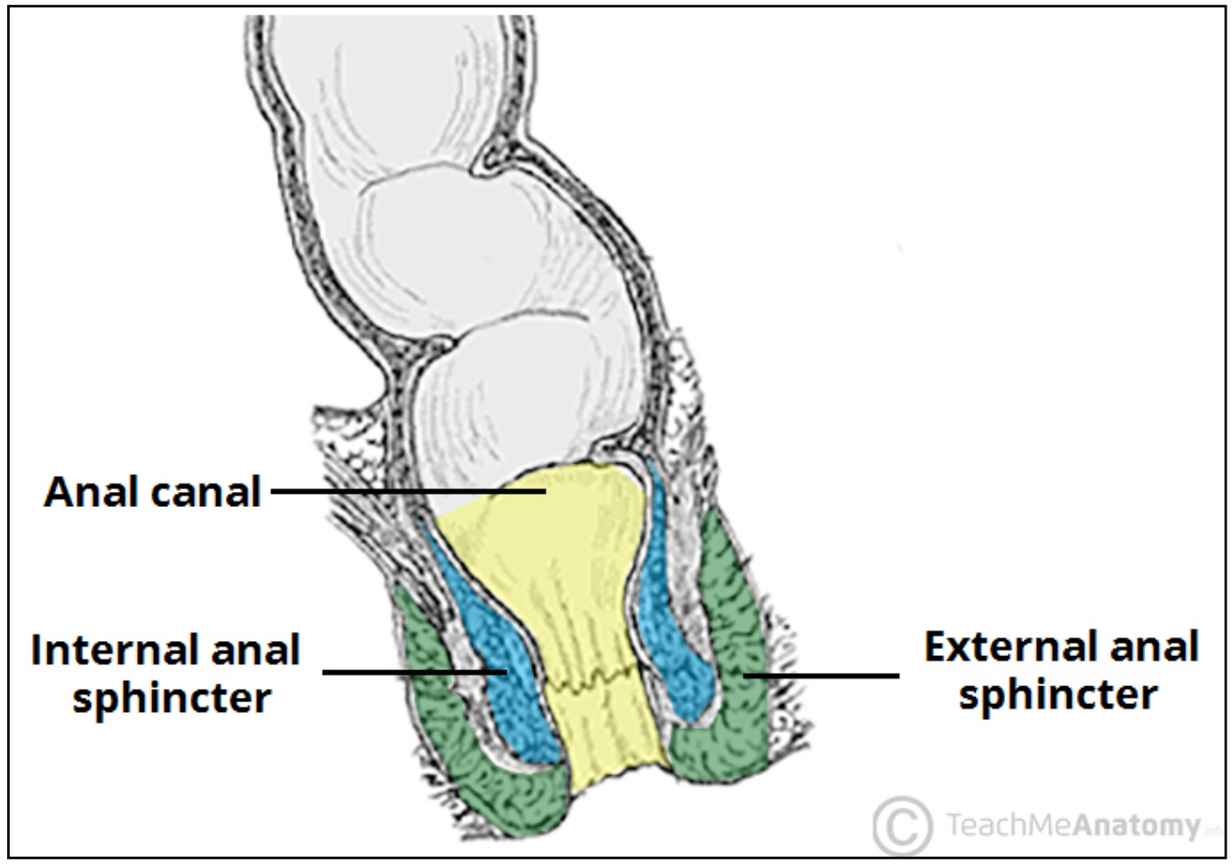


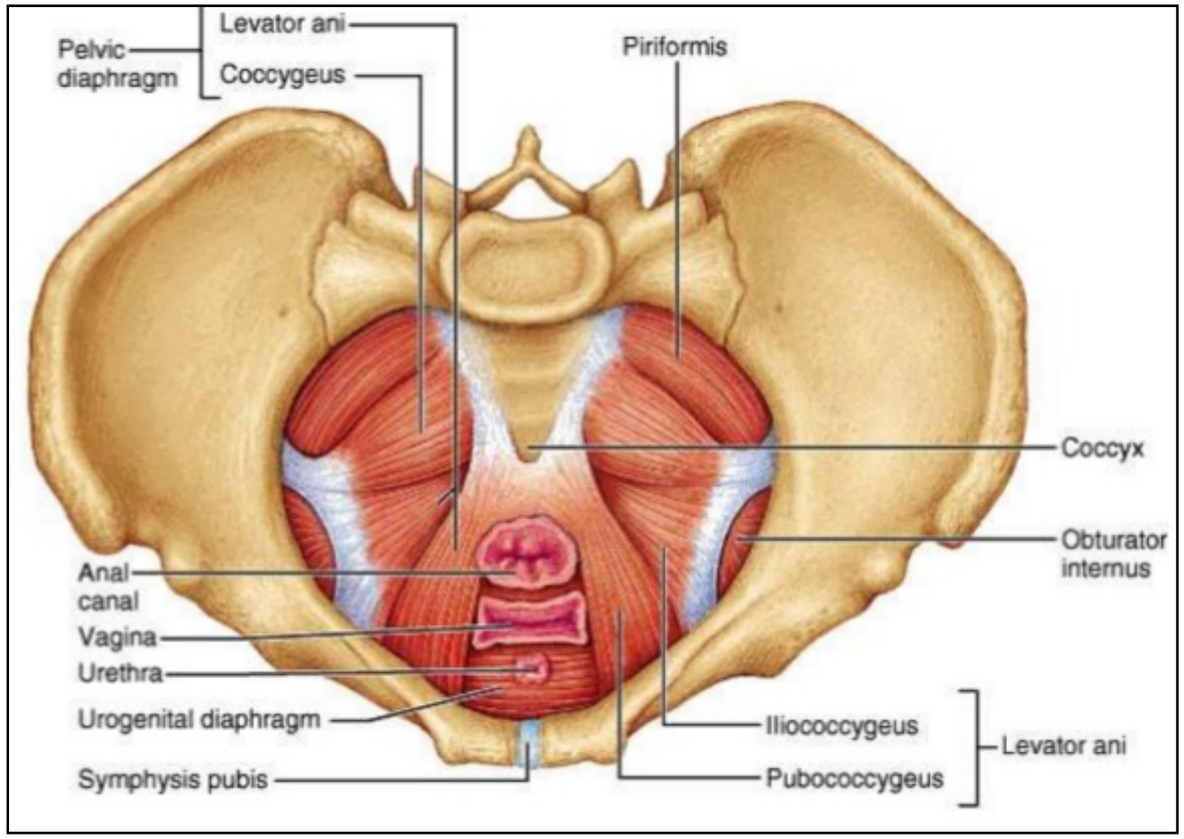
Anal canal

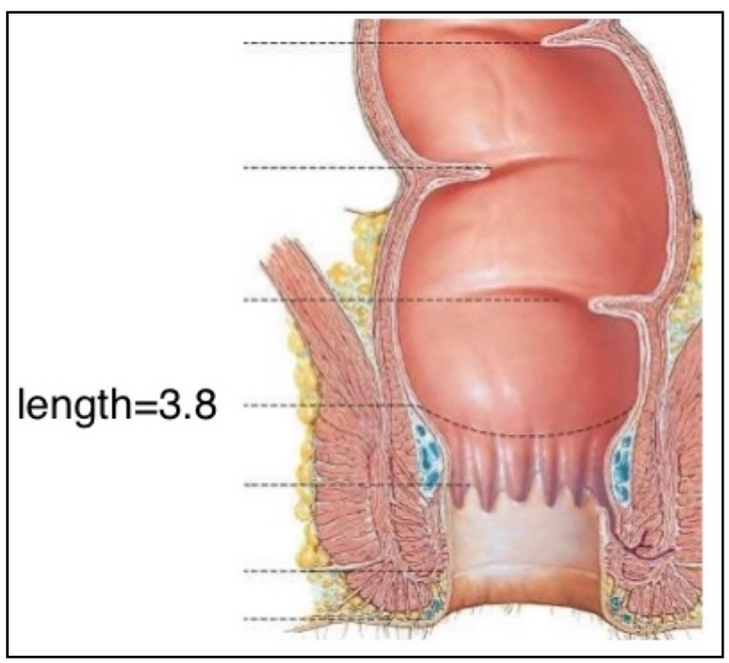
- The students should know and identify the :

1. Site and length
2. Peritoneal Relations
3. Relations
4. Blood supply

- Site and length of the Anal canal

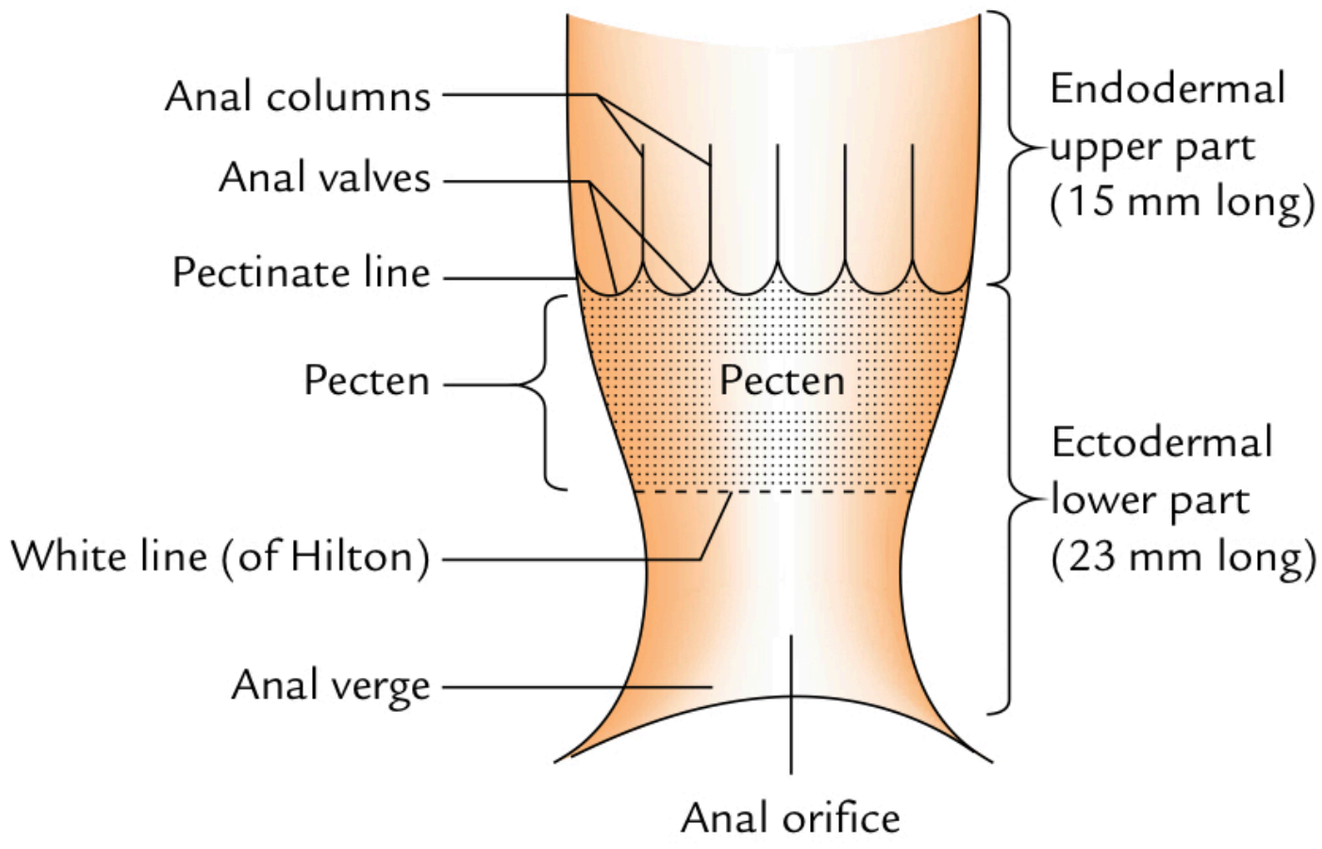






- Differences between the upper and lower anal canals

Features	Upper anal canal	Lower anal canal
Development	From endoderm of the hind gut	From ectoderm of proctodeum
Innervation	Autonomic nerves, hence insensitive to pain and temperature	Somatic nerves, hence sensitive to pain and temperature
Epithelial lining	Simple columnar	Stratified squamous
Arterial supply	Superior rectal artery	Inferior rectal artery
Venous drainage	Superior rectal vein draining into portal system	Inferior rectal vein draining into caval system
Lymphatic drainage	Internal iliac lymph nodes	Superficial inguinal lymph nodes (horizontal set)
Hemorrhoids	Internal hemorrhoids	External hemorrhoids



• Peritoneal Relations of the Anal canal

Relations of anal canal

Anteriorly

In male

- perineal body
- membranous urethra
- bulb of penis

In female

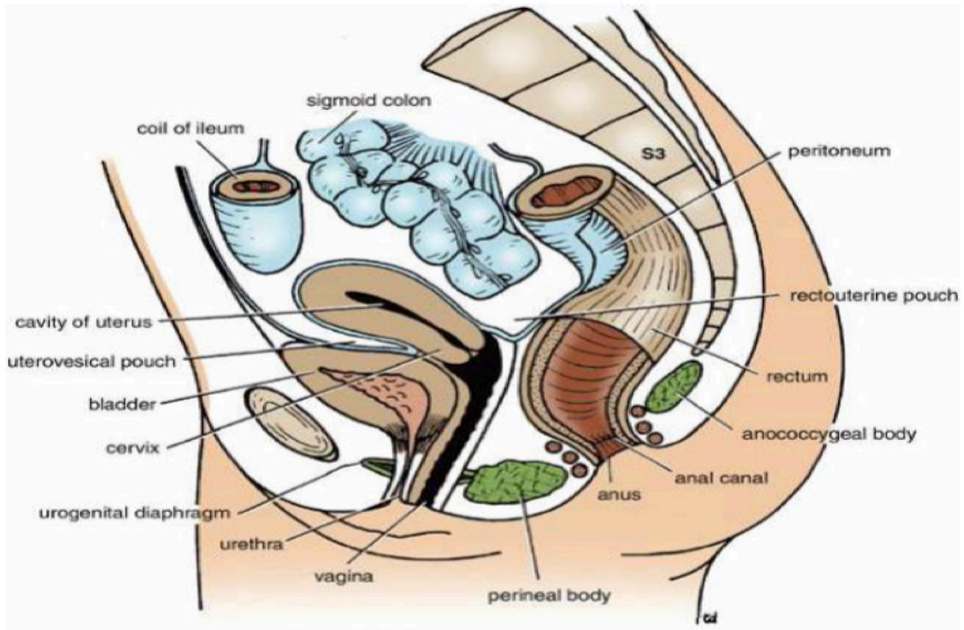
- lower end of the vagina

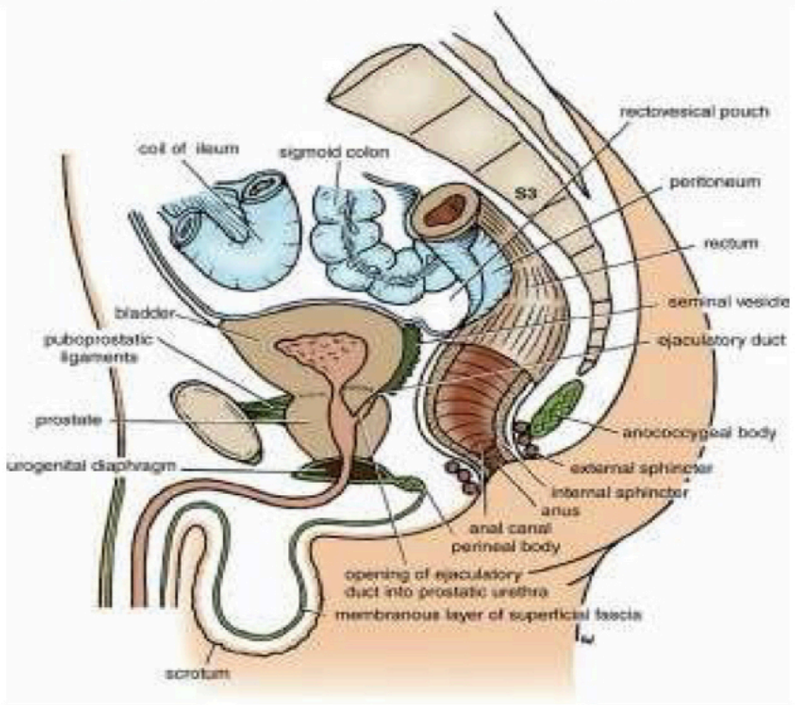
Posteriorly

- anococcygeal ligaent
- tip of the coccyx

laterally

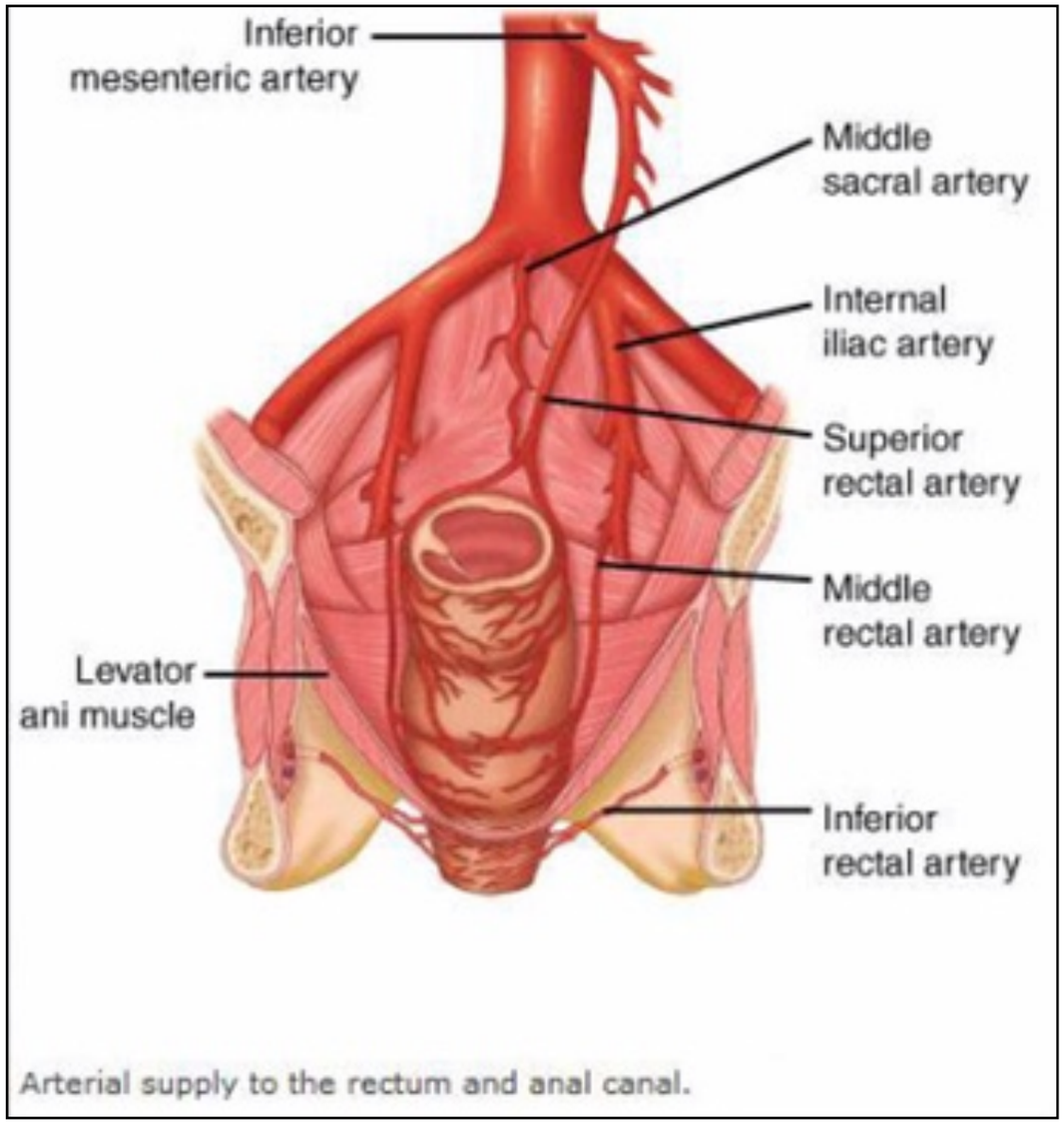
- ischiorectal fossae.



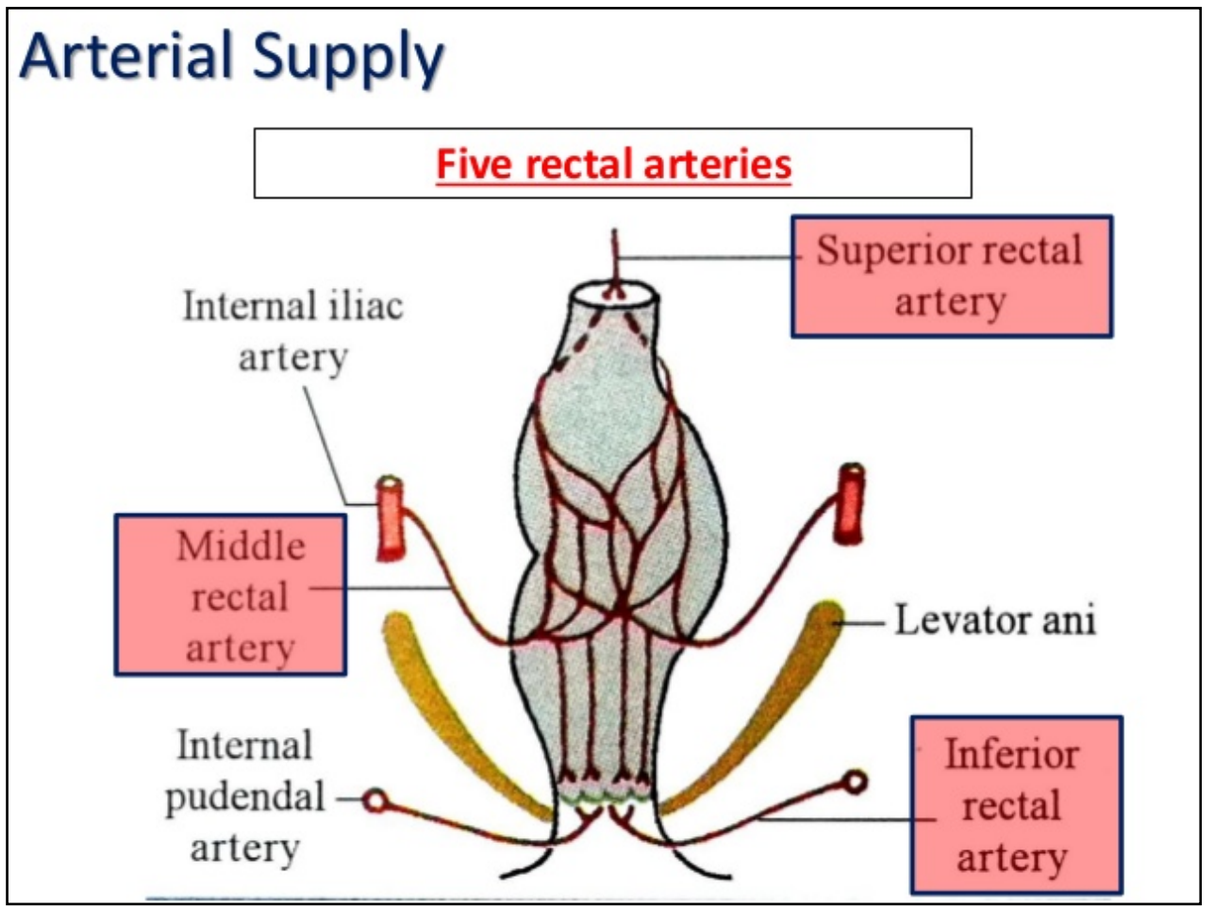


• Blood supply of the Anal canal

- Arterial supply

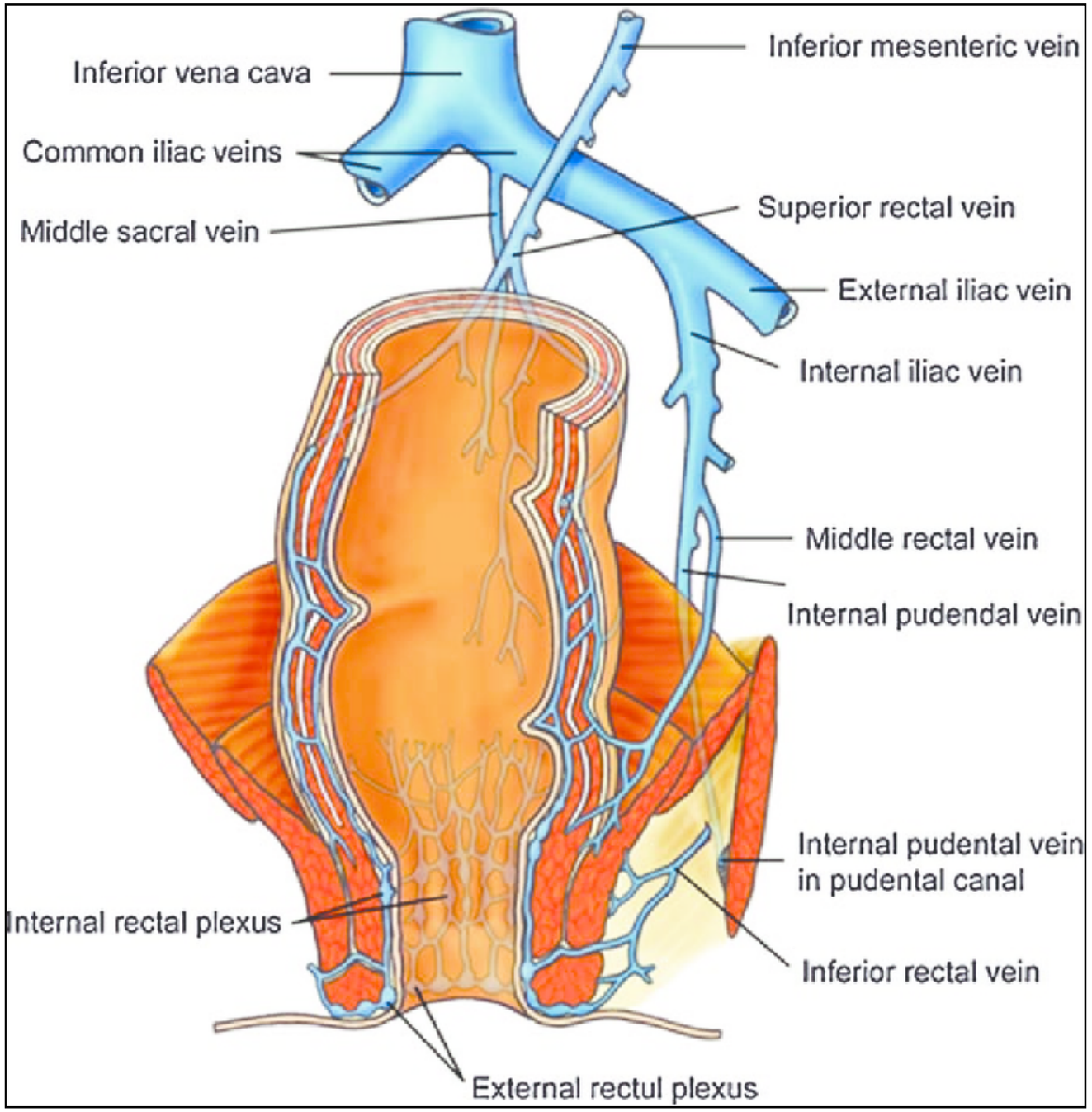


Arterial supply to the rectum and anal canal.



• Blood supply of the Anal canal

- Venous drainage



• Hemorrhoids (or piles)

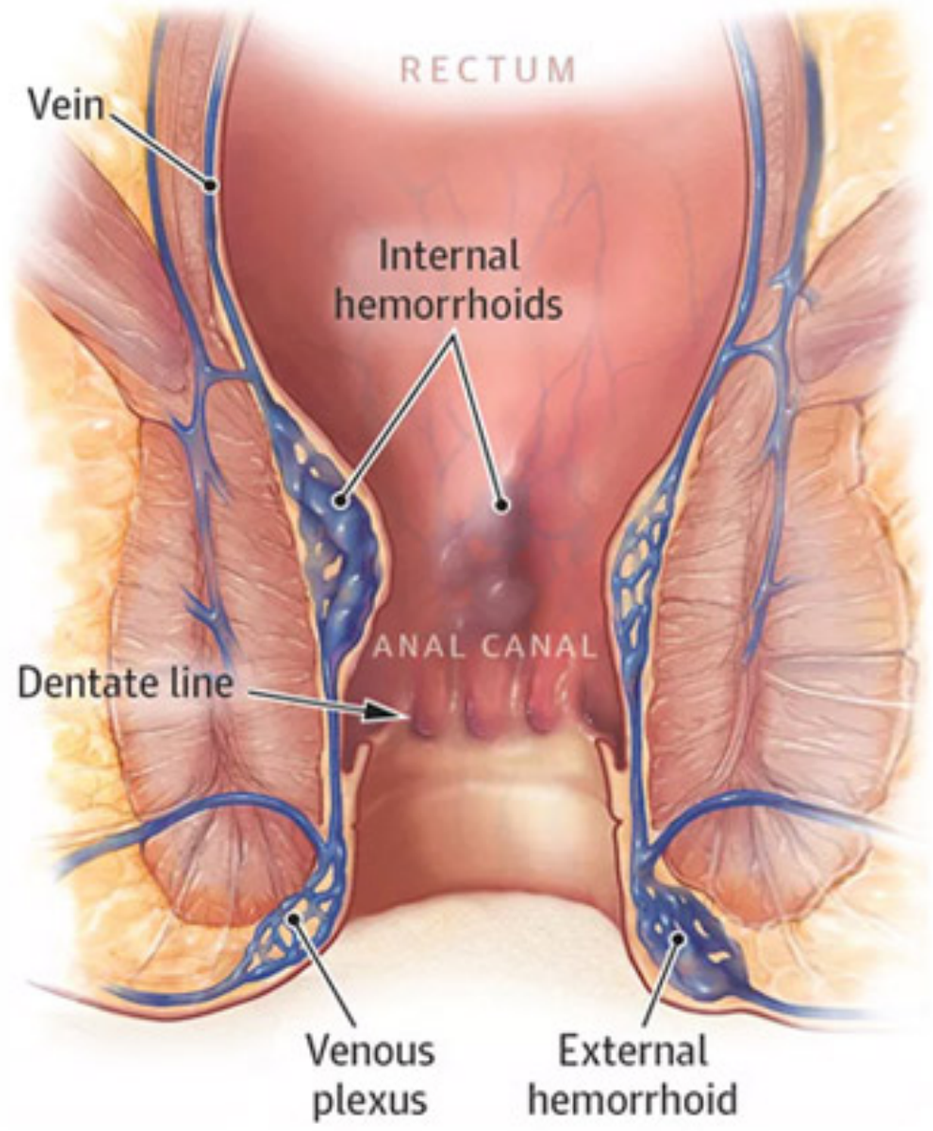
- The students should know the differences between the internal and external Hemorrhoids

Internal Hemorrhoids

Hemorrhoids occurring below the pectinate line. Since there are no sensory nerves in this area, pain is not felt. During bowel movement, bleeding or prolapse may occur and hemostasis may accompany prolapse, causing pain.

External Hemorrhoids

Hemorrhoids occurring below the pectinate line. Prolapse can easily occur during bowel movement. Since there are sensory nerves, patients frequently complain of pain.



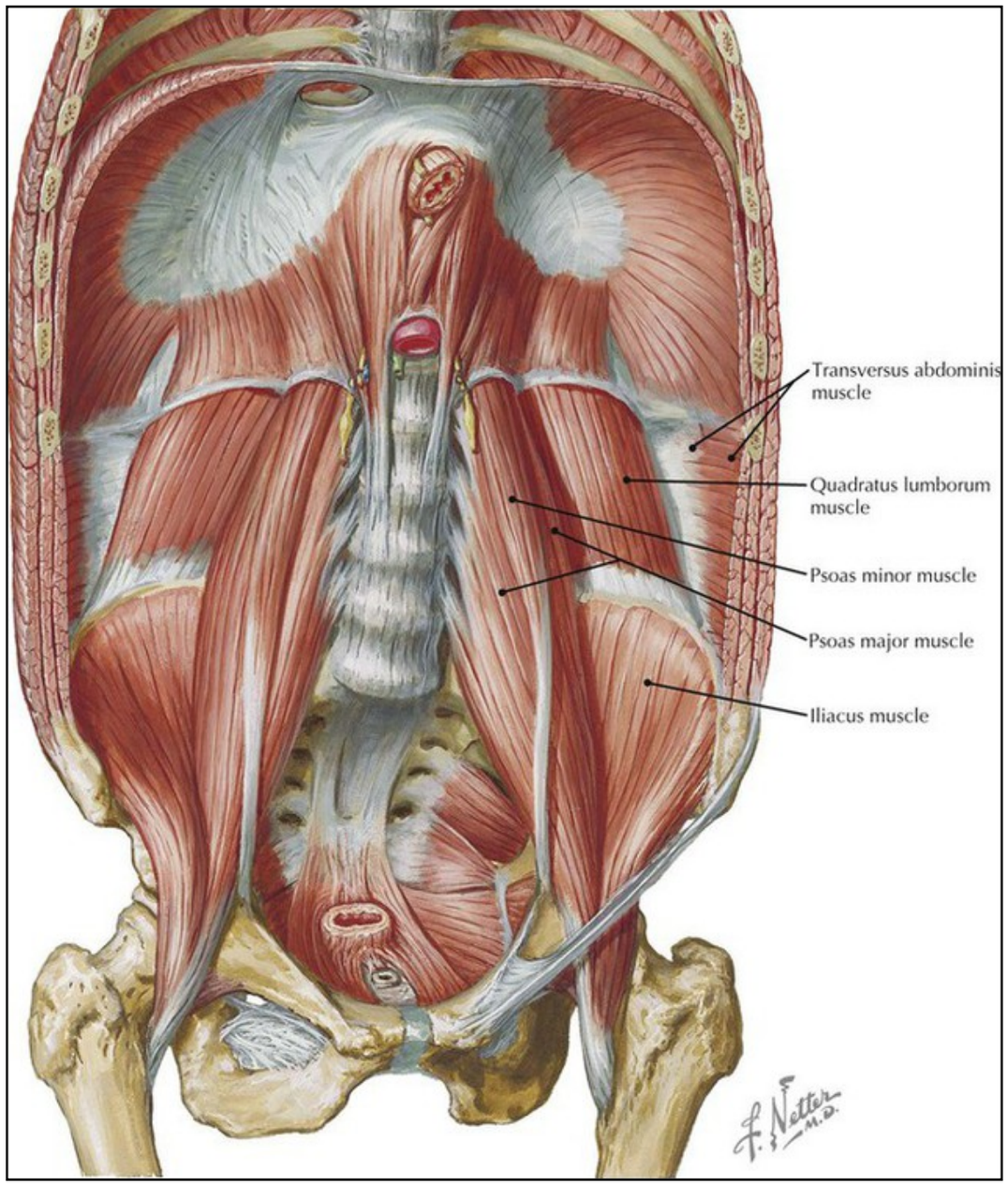
✖ Posterior Abdominal wall

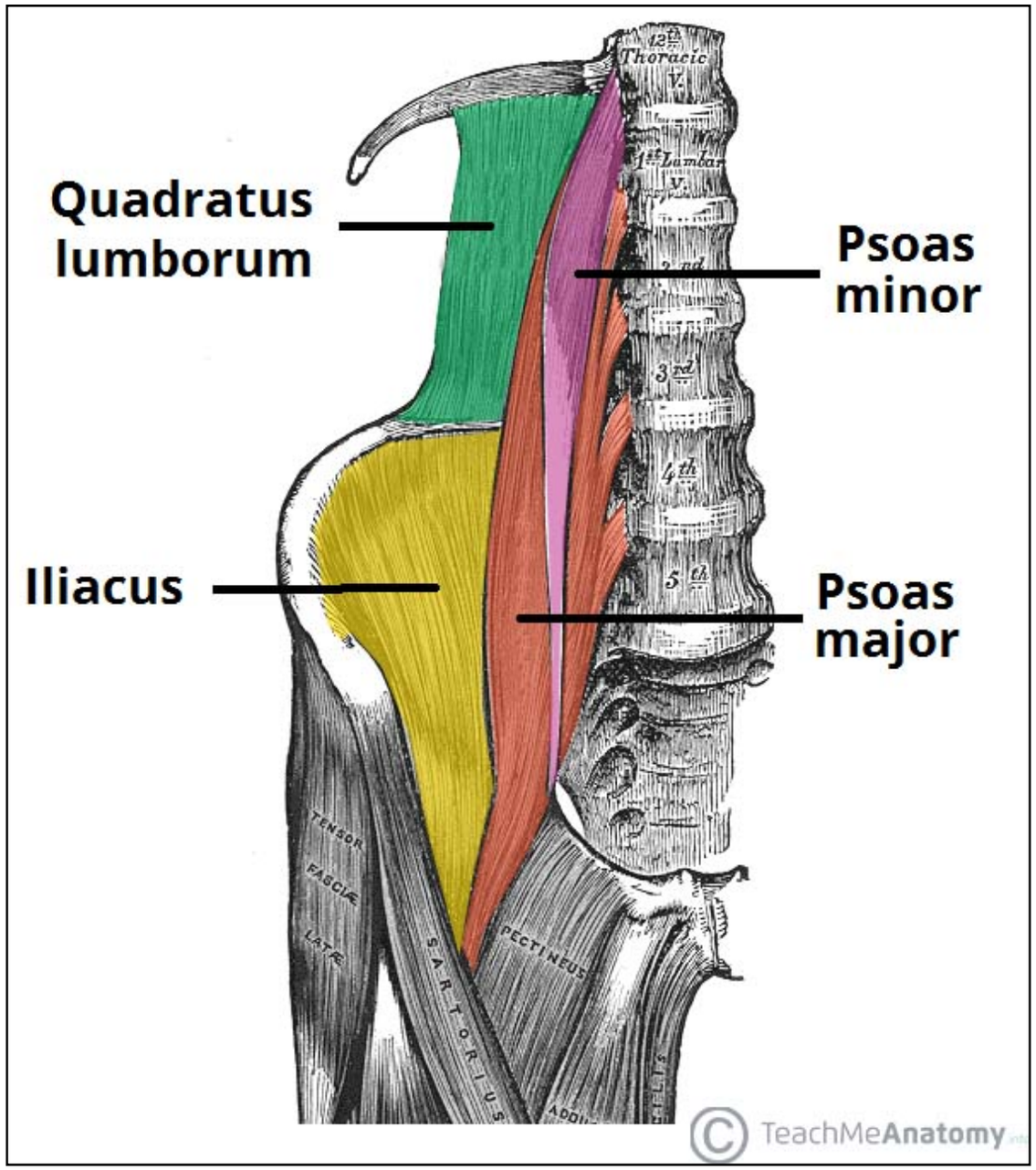
- The students should know and identify the :

1. Muscles
2. Blood supply
3. Lymphatic drainage
4. Nerves

• Muscles of post.abdominal wall

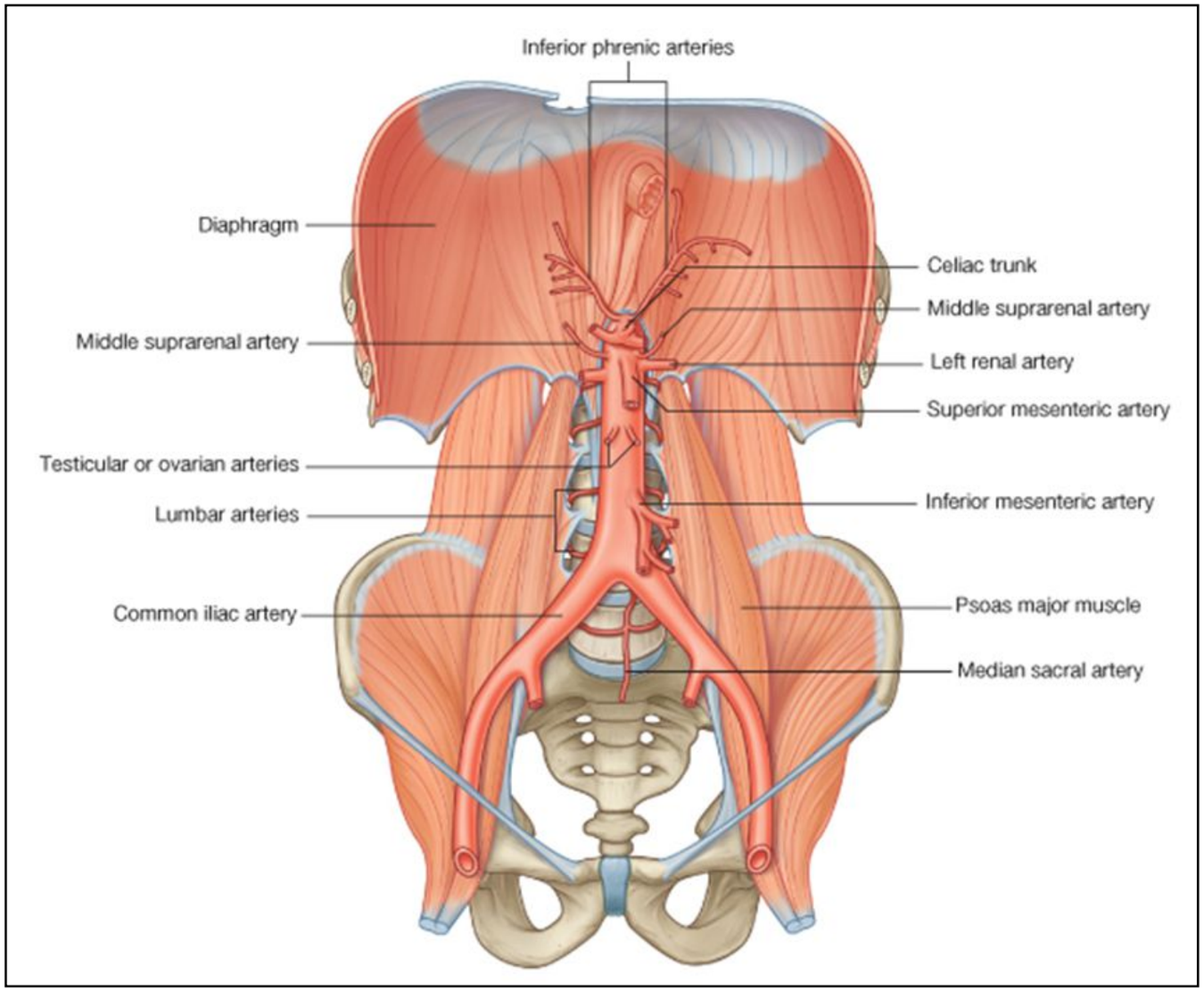
- The students should know the origin, insertion, action and nerve supply

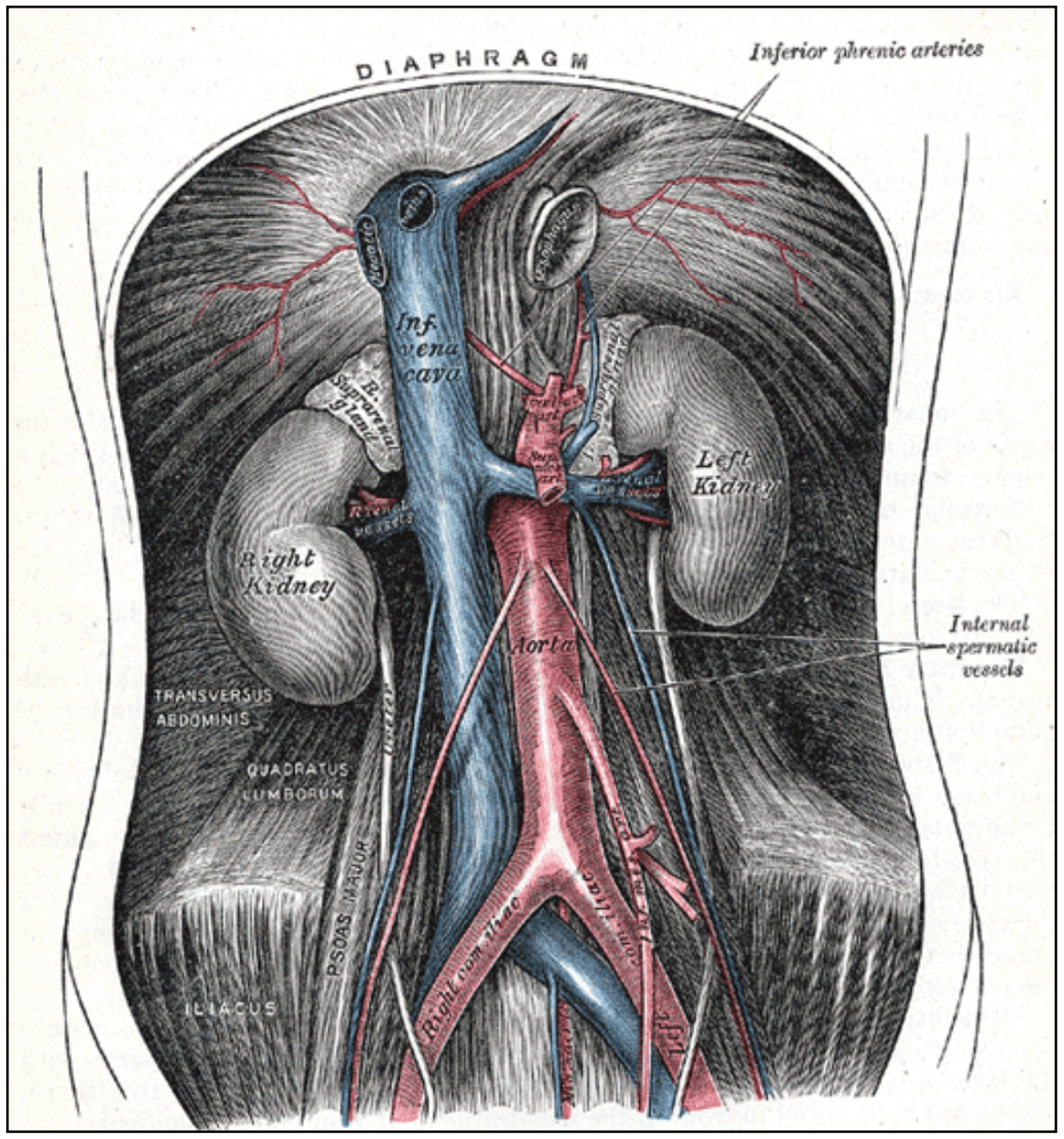




• Arteries on the Posterior Abdominal Wall

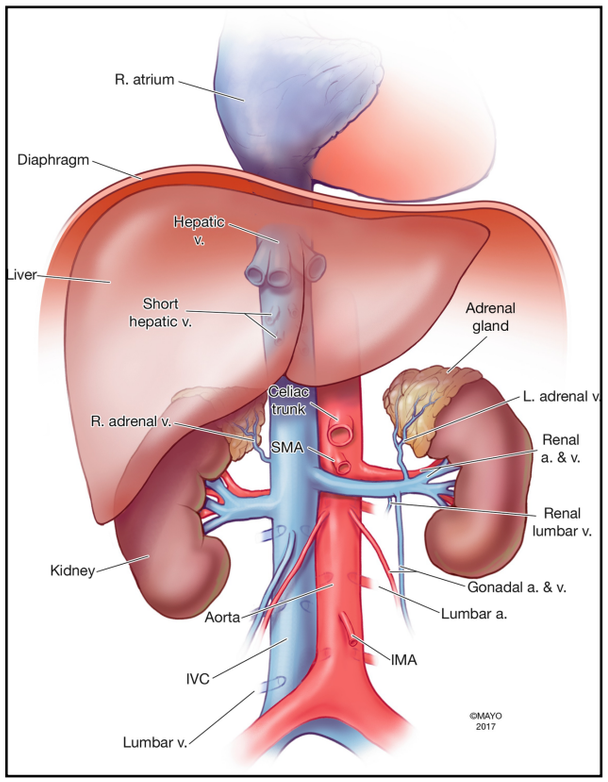
- The students should observe:
  - The beginning and end of abdominal aorta
  - Single and paired branches of abdominal aorta
  - Relation of abdominal aorta

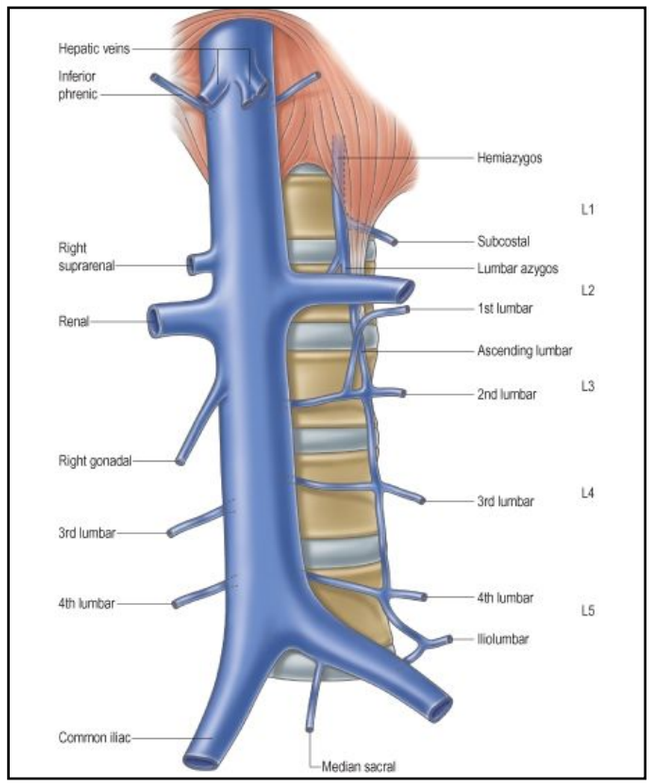


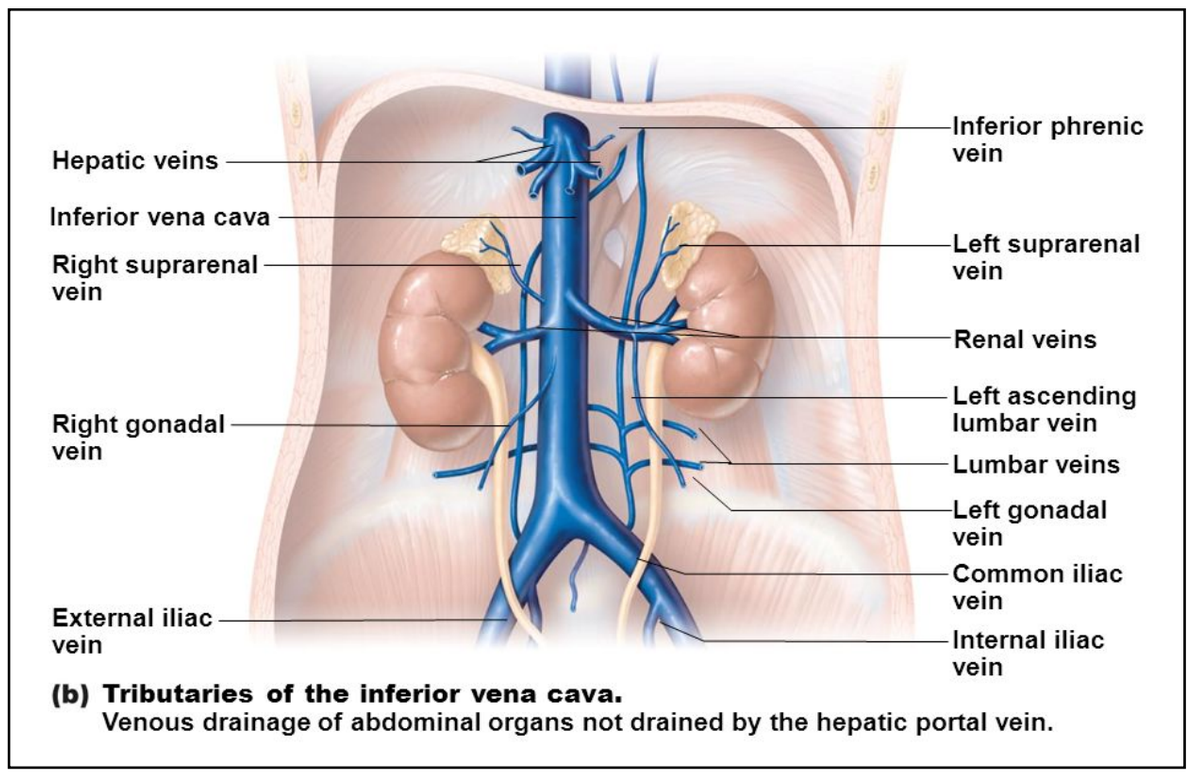


• Veins on the Posterior Abdominal Wall

- The students should observe:
  - The beginning and end of inferior vena cava
  - Tributaries of inferior vena cava





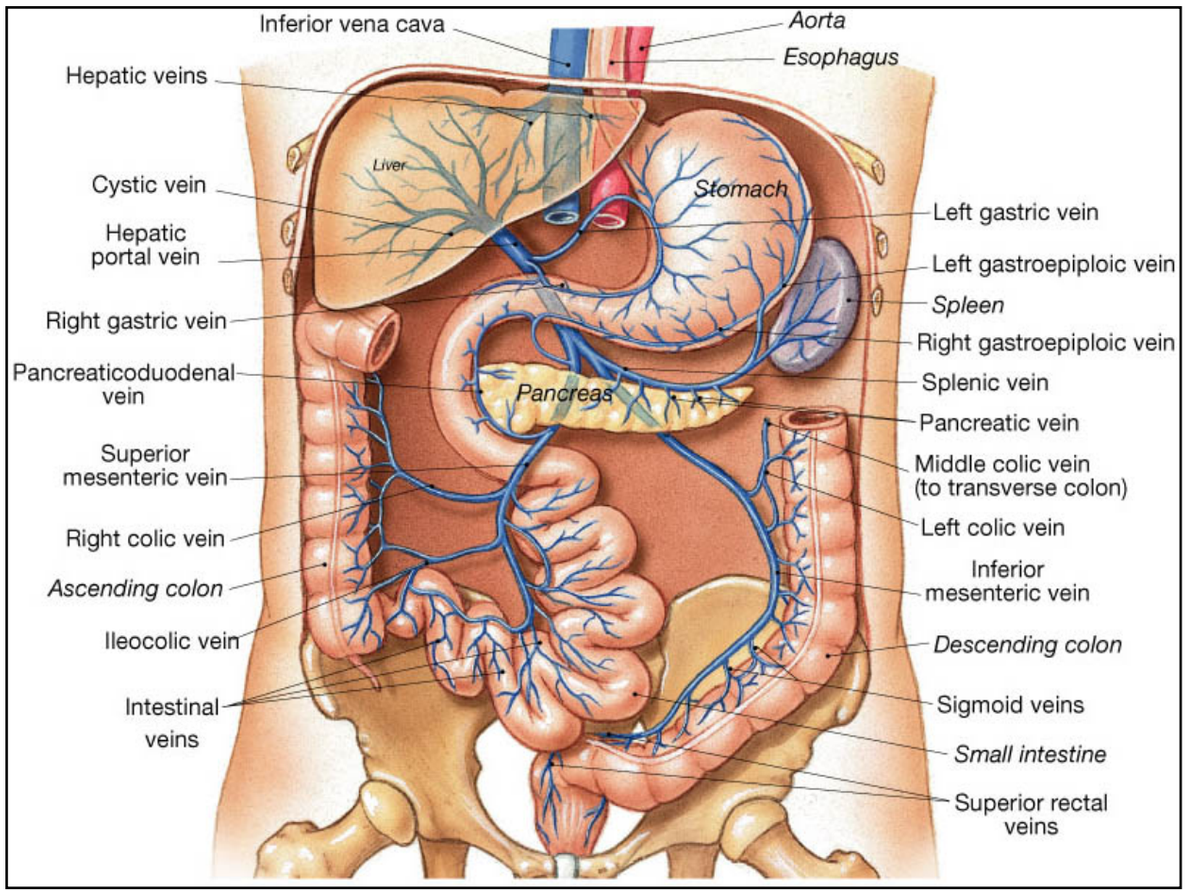


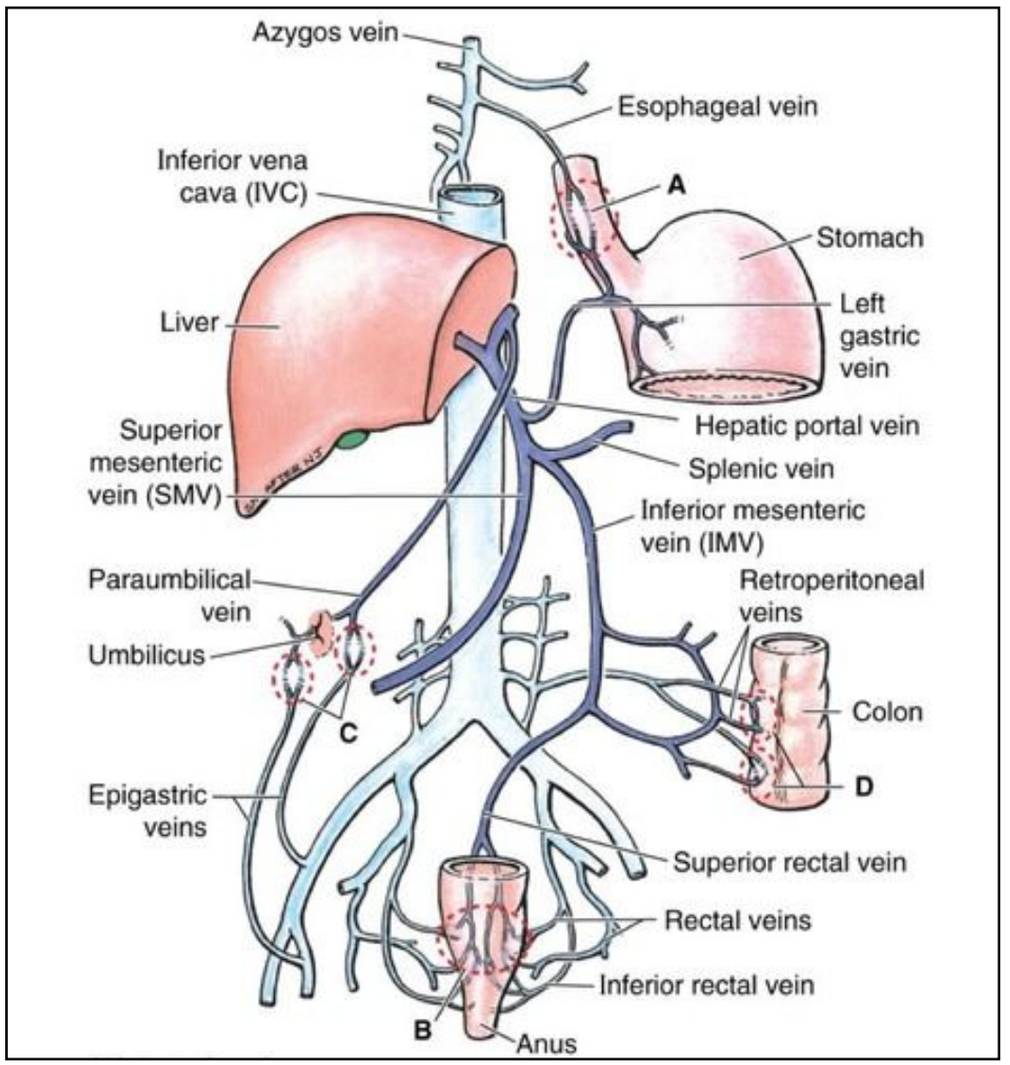
(b) Tributaries of the inferior vena cava.
Venous drainage of abdominal organs not drained by the hepatic portal vein.

• Veins on the Posterior Abdominal Wall

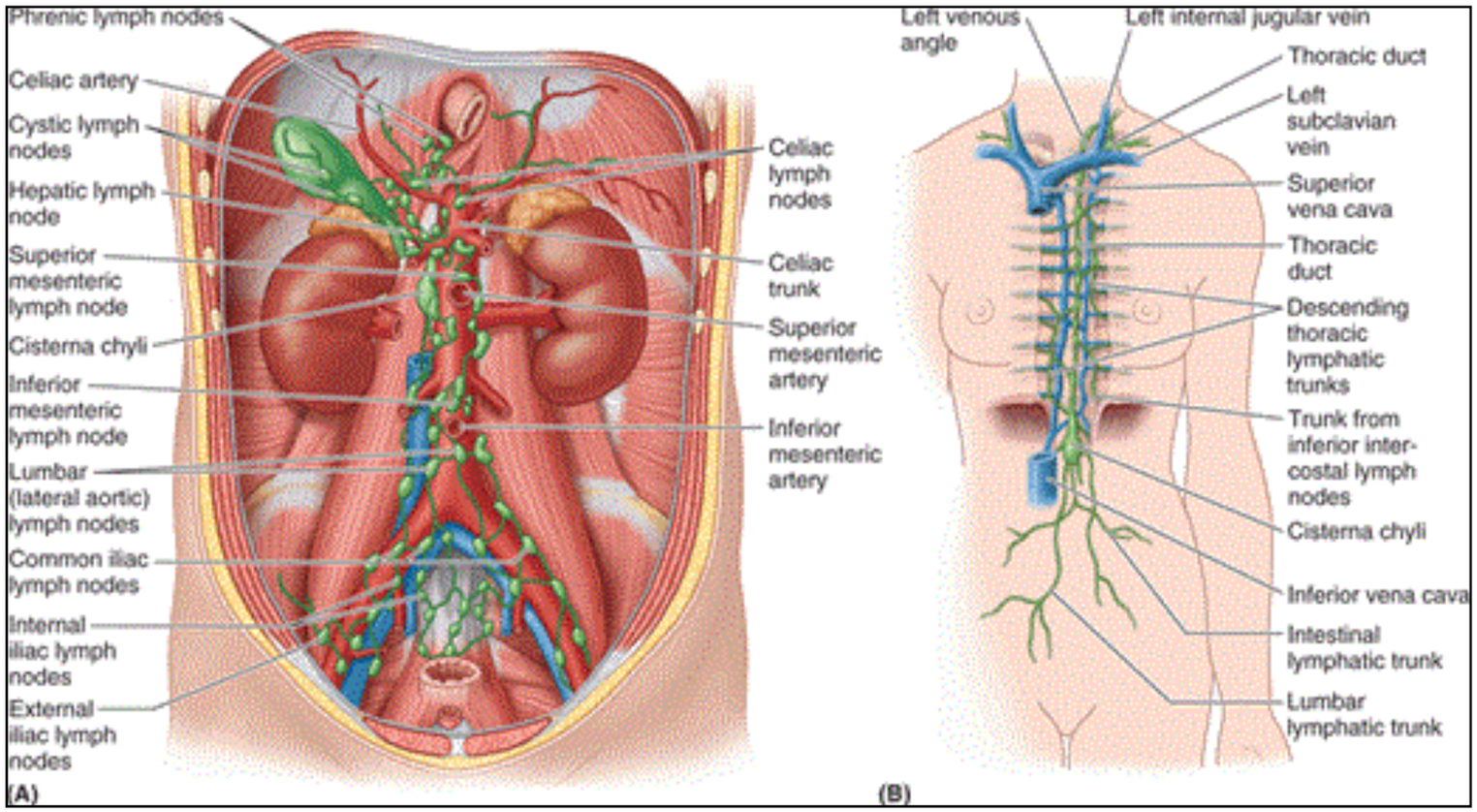
- The students should observe:
  - Portal circulation

- The students should observe:
  - Portal systemic anastomosis
    A. Esophagus
    B. Anal canal
    C. Paraumbilical region
    D. Retroperitonial





• Lymphatics on the Posterior Abdominal Wall



Vasculature: Lymphatics overview

Cisterna chyli, thoracic duct

↑

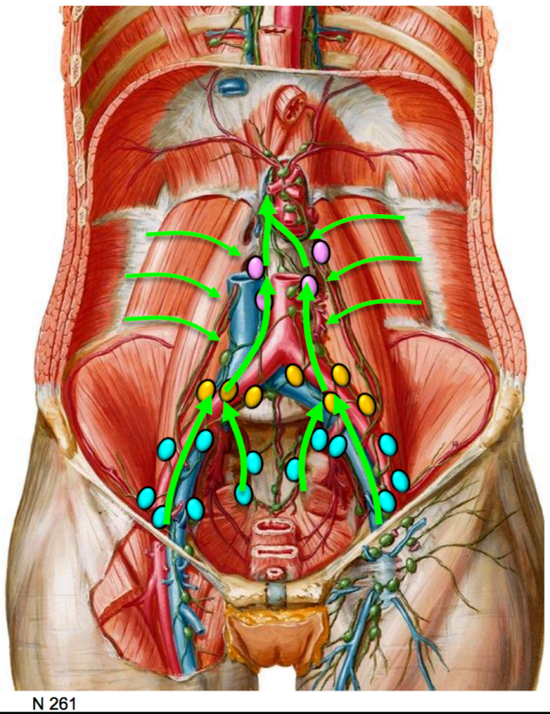
R L lumbar nodes
Also collect much of posterior abdominal wall

↑

Common iliac nodes

↑

External & internal iliac nodes
Collect pelvis, LE



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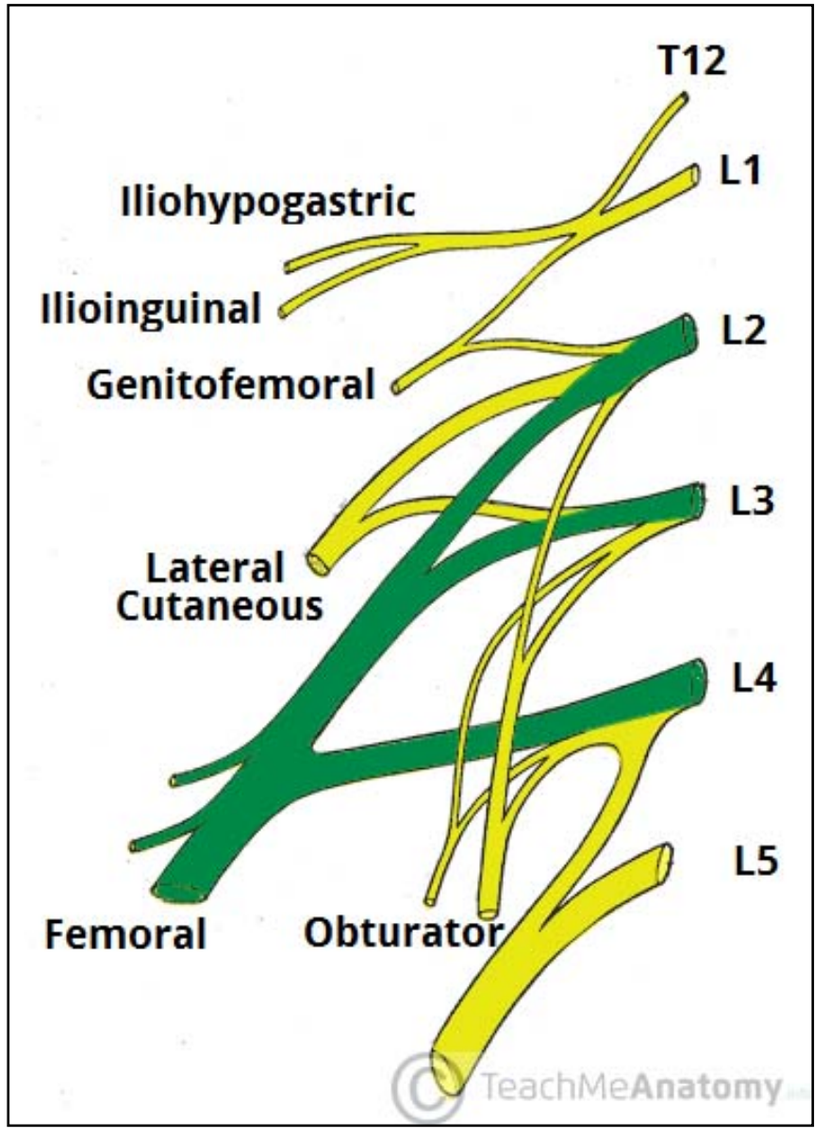
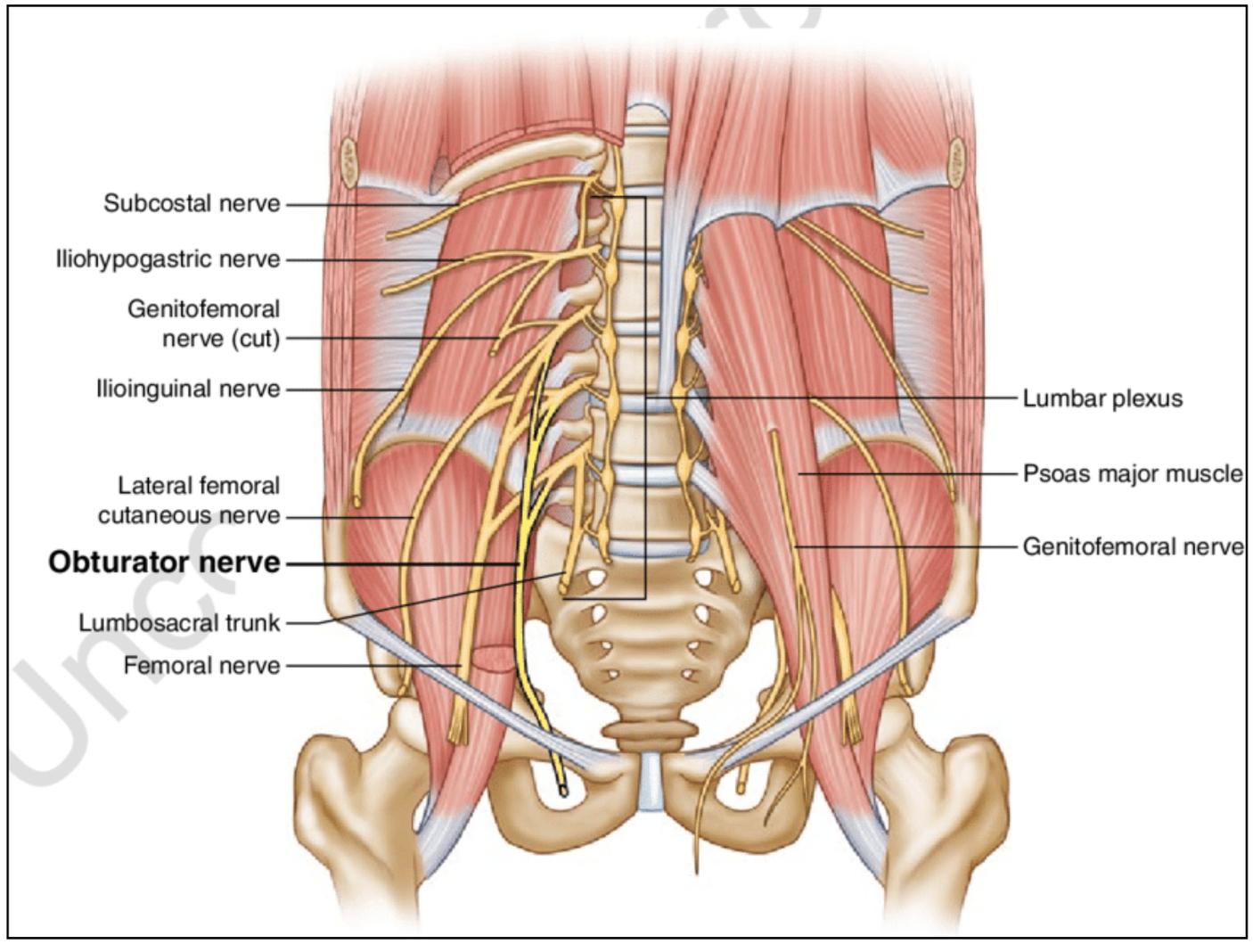
• Nerves on the Posterior Abdominal Wall

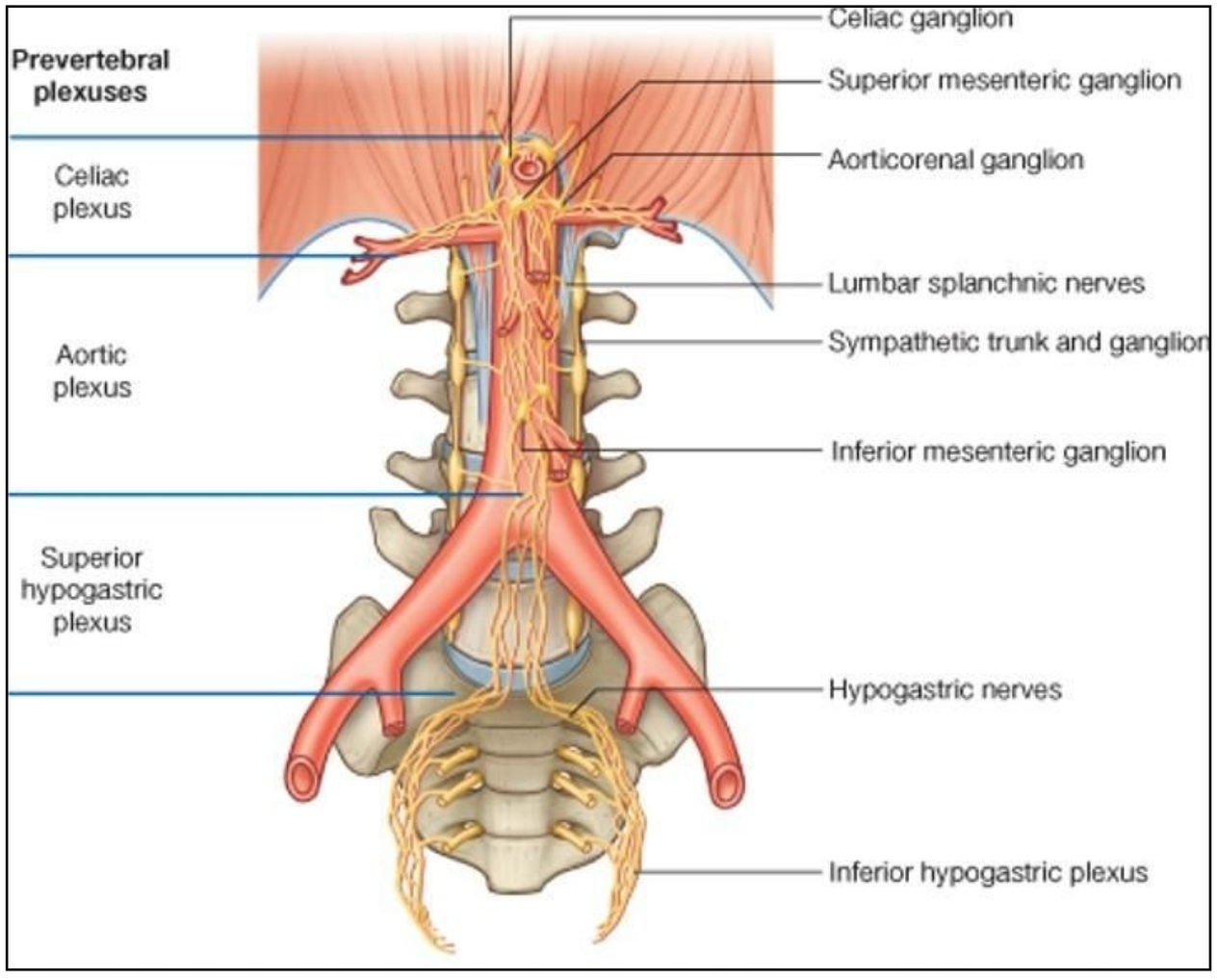
- Lumbar Plexus
- The students should know the relation to psoas muscle

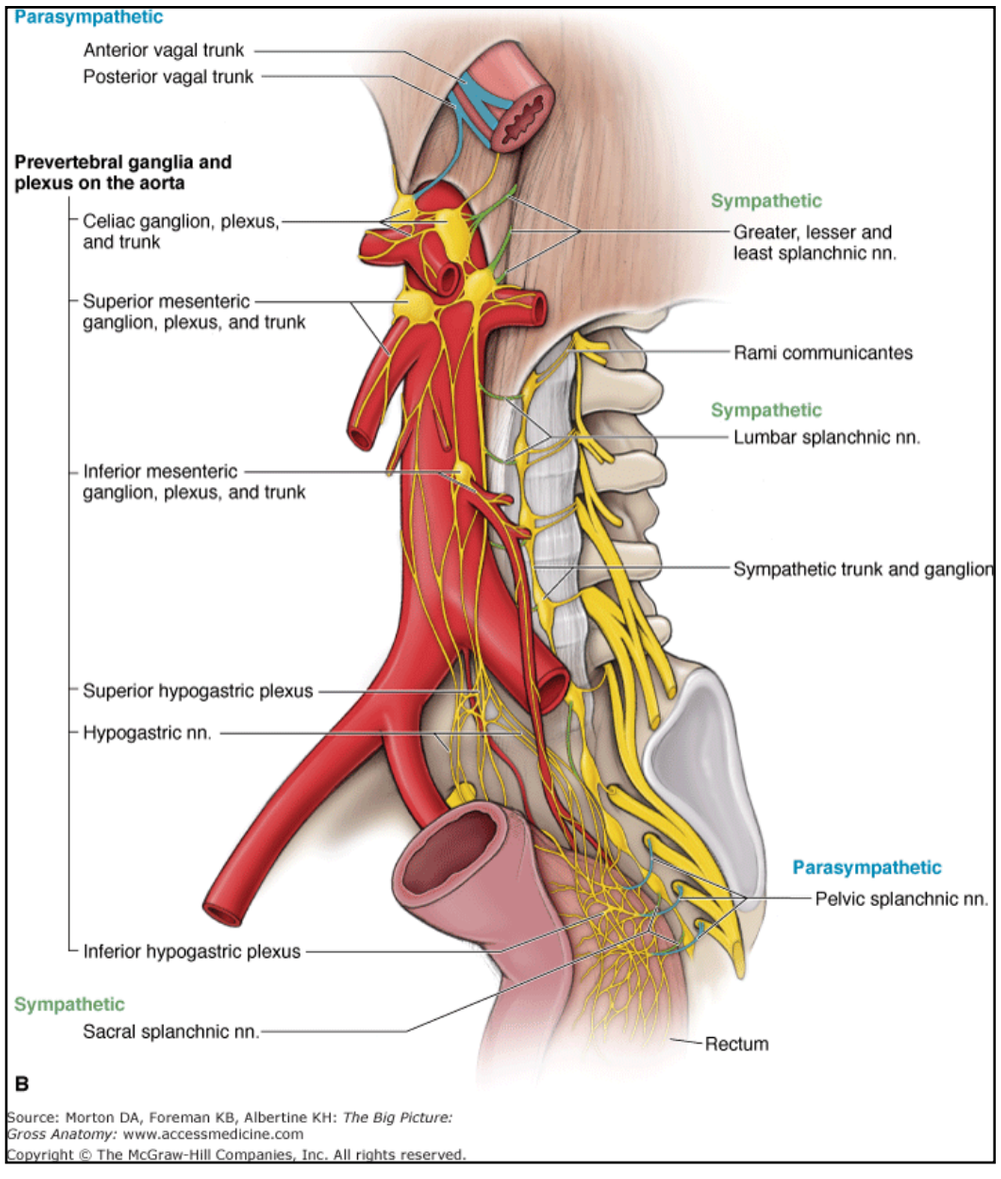




• Nerves on the Posterior Abdominal Wall

- Sympathetic Trunk (Abdominal Part)
- The student should observe the ganglions



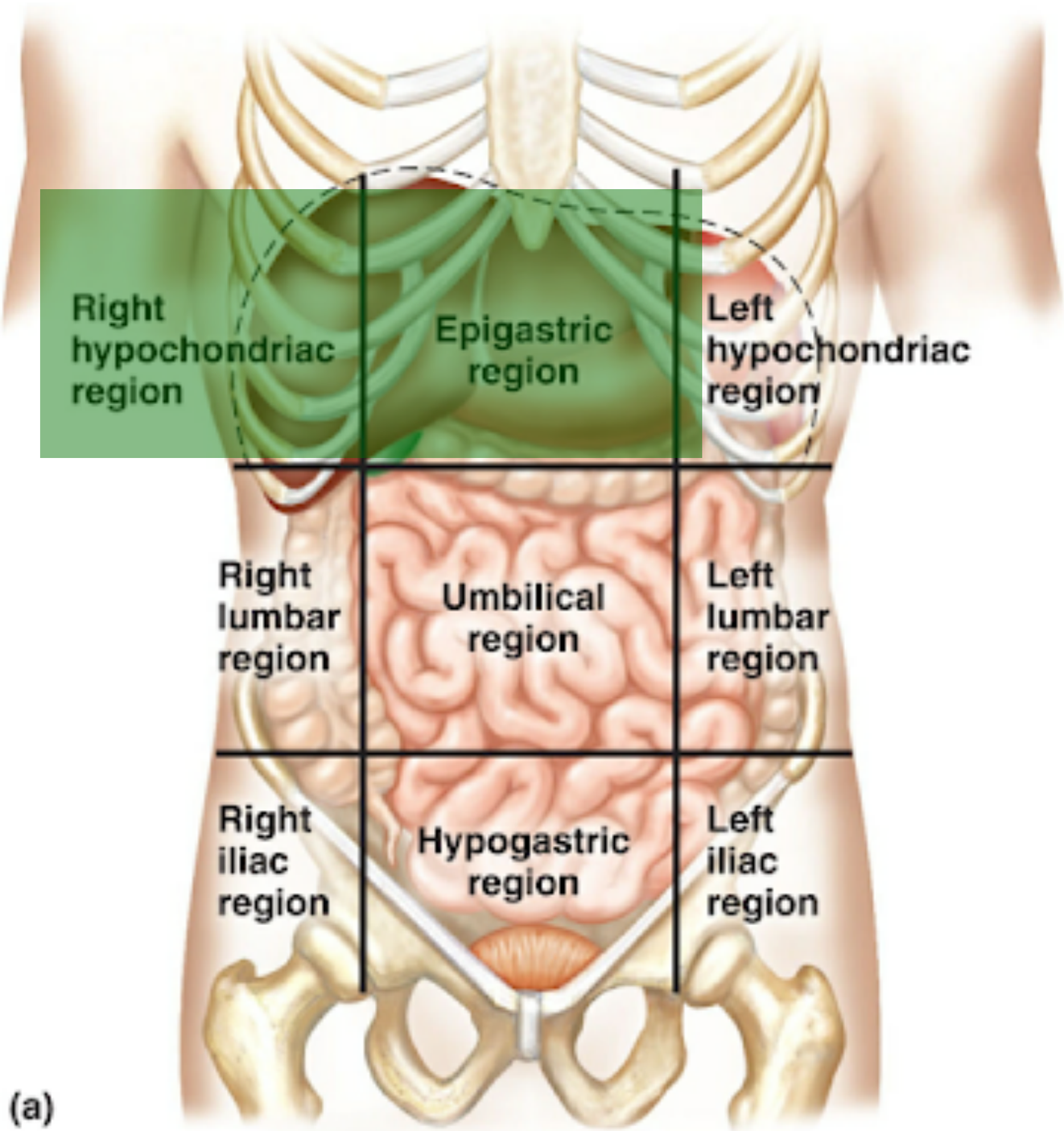


Liver

- The students should know and identify the :

1. Site
2. Surfaces
3. Relation and impression of liver surfaces
4. Ligaments
5. Porta hepatis
6. Blood supply

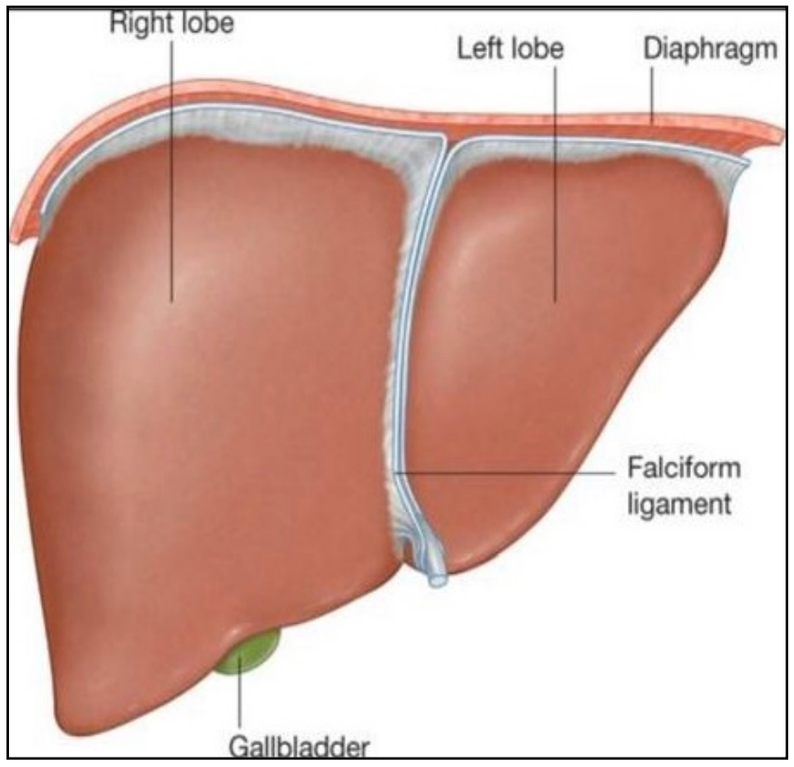
- Site of the liver

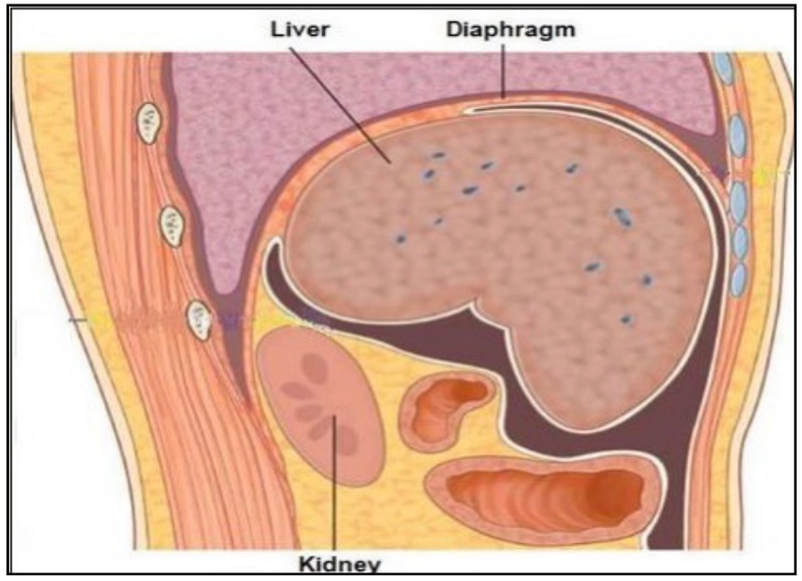


• Surfaces of the liver

- <u>Diaphragmatic surface:</u>

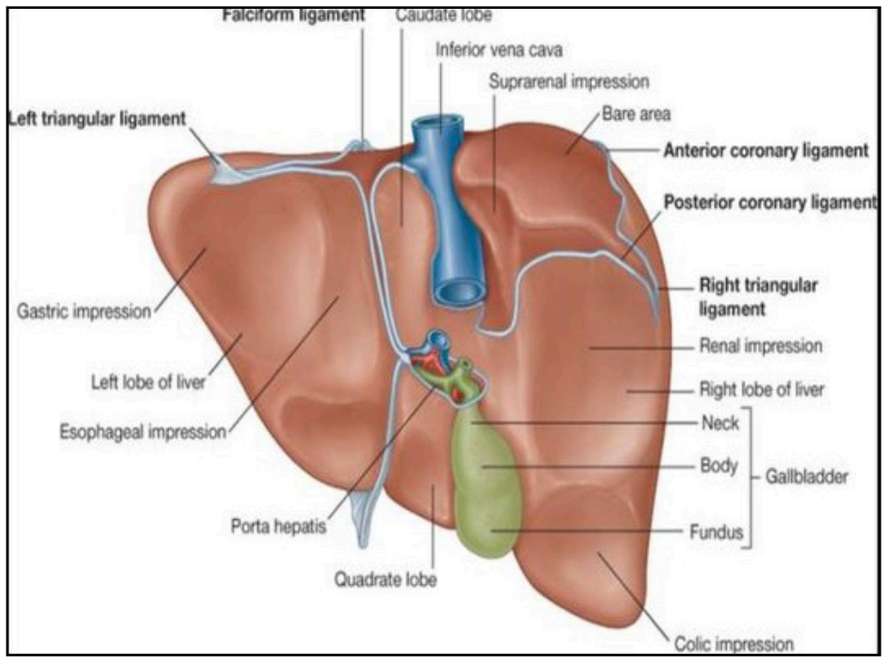
(superior, anterior and right lateral surface)

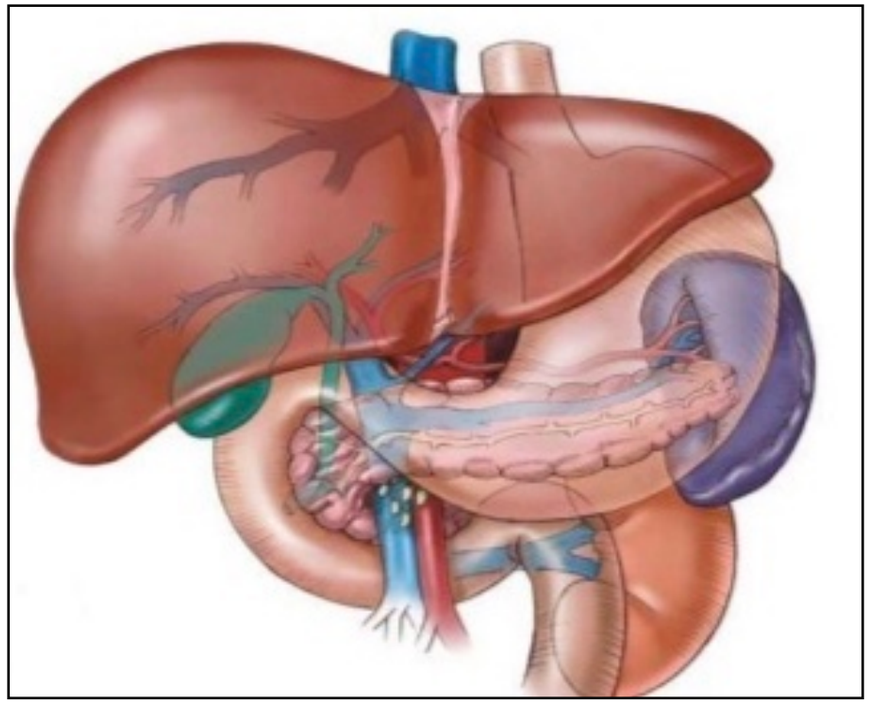




- <u>Visceral surface:</u>

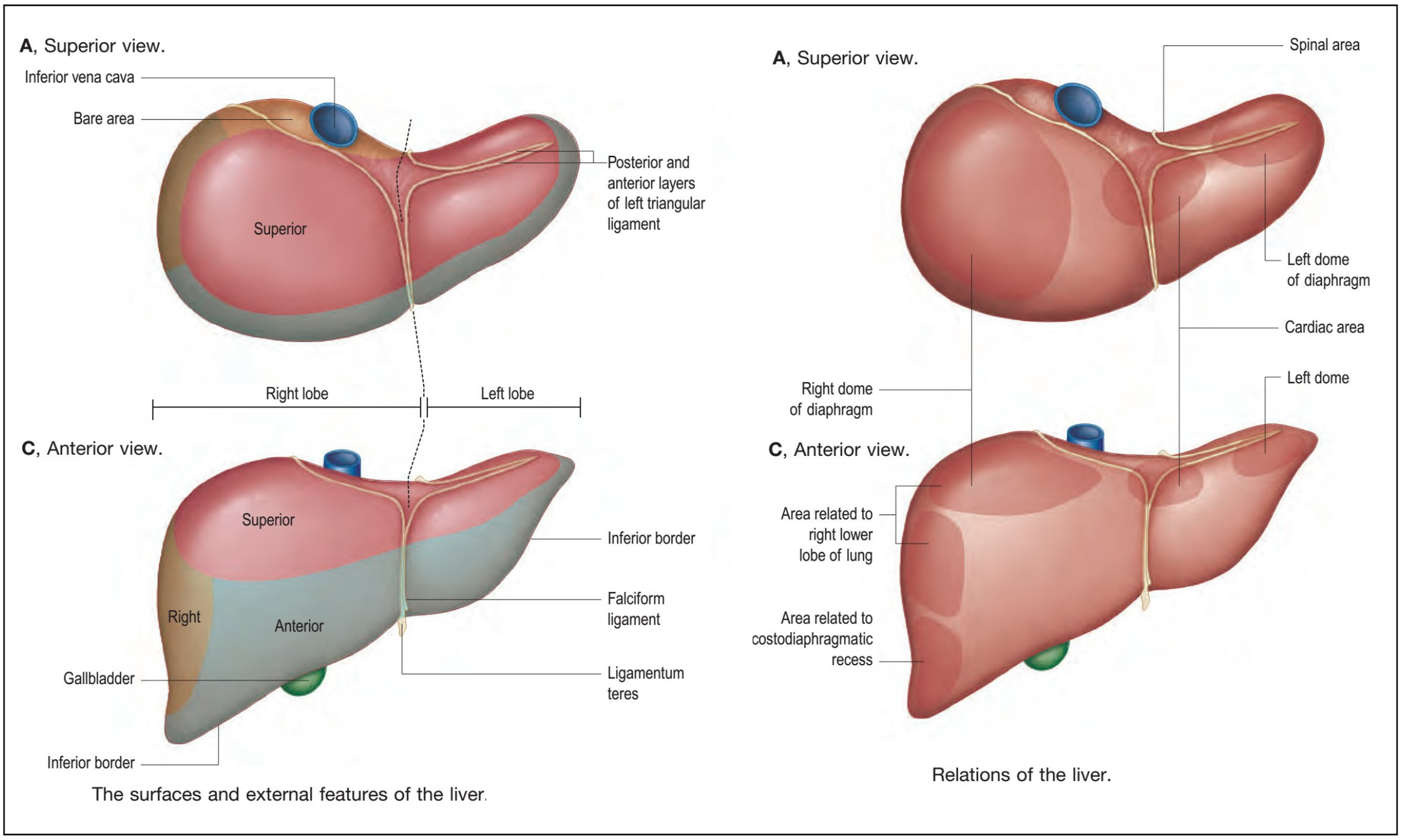
(posteroinferior surface)





• Relation and impression of liver surfaces

- superior and anterior surface:

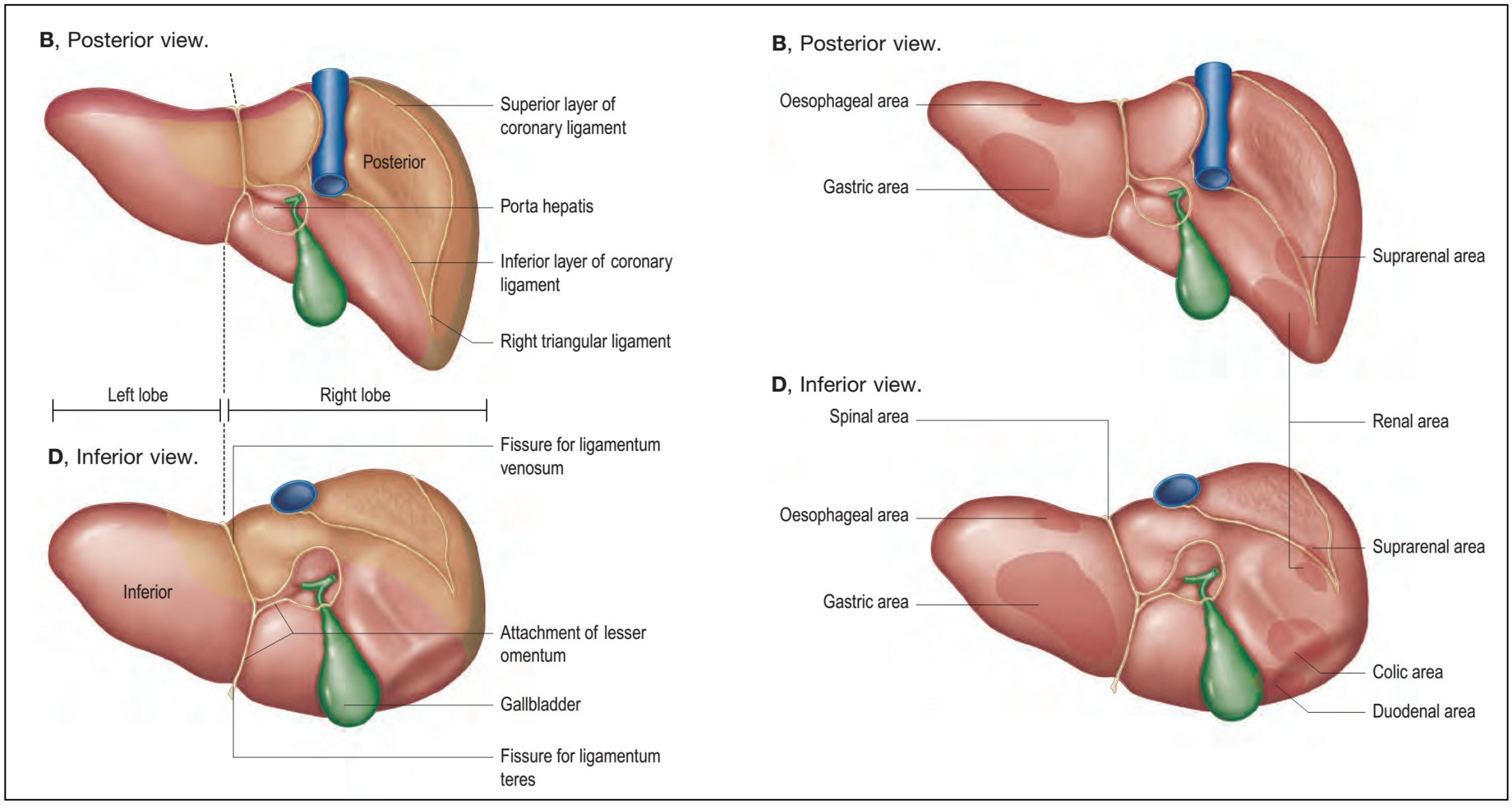


The surfaces and external features of the liver.

Relations of the liver.

• Relation and impression of liver surfaces

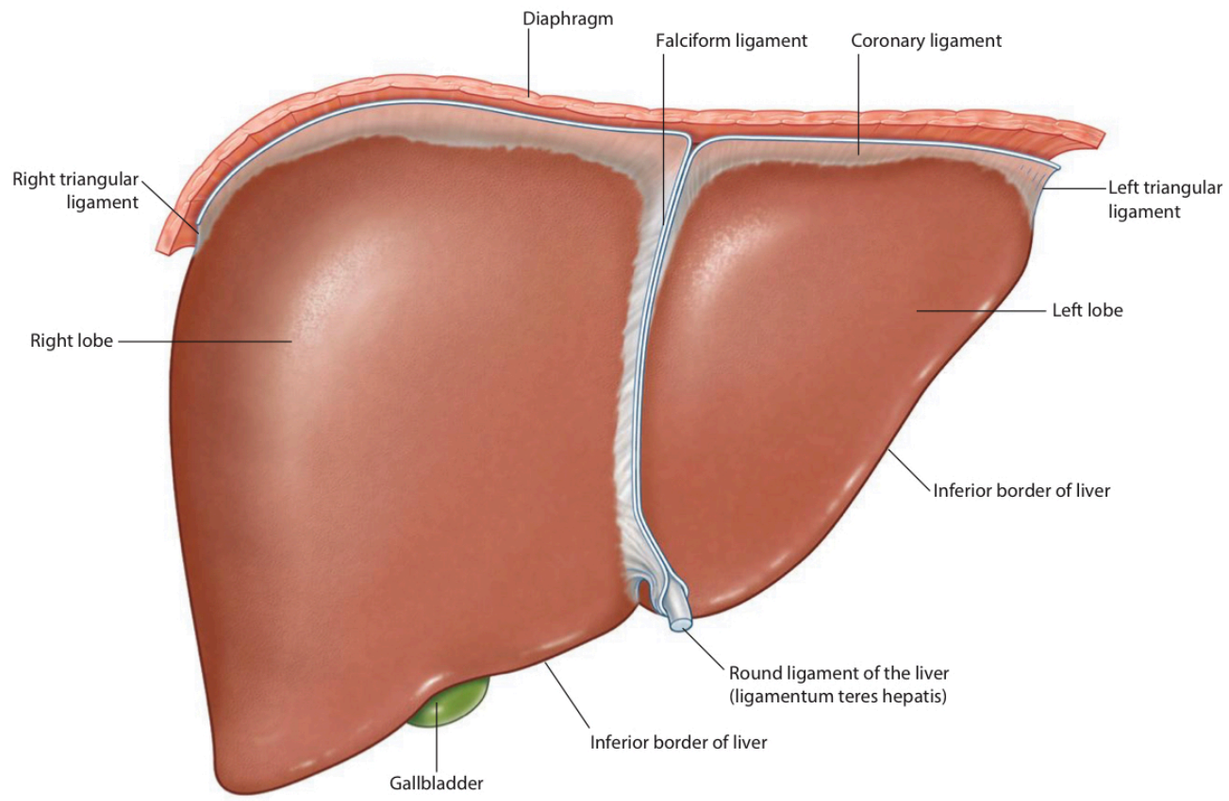
- <u>Posterior and inferior surface:</u>



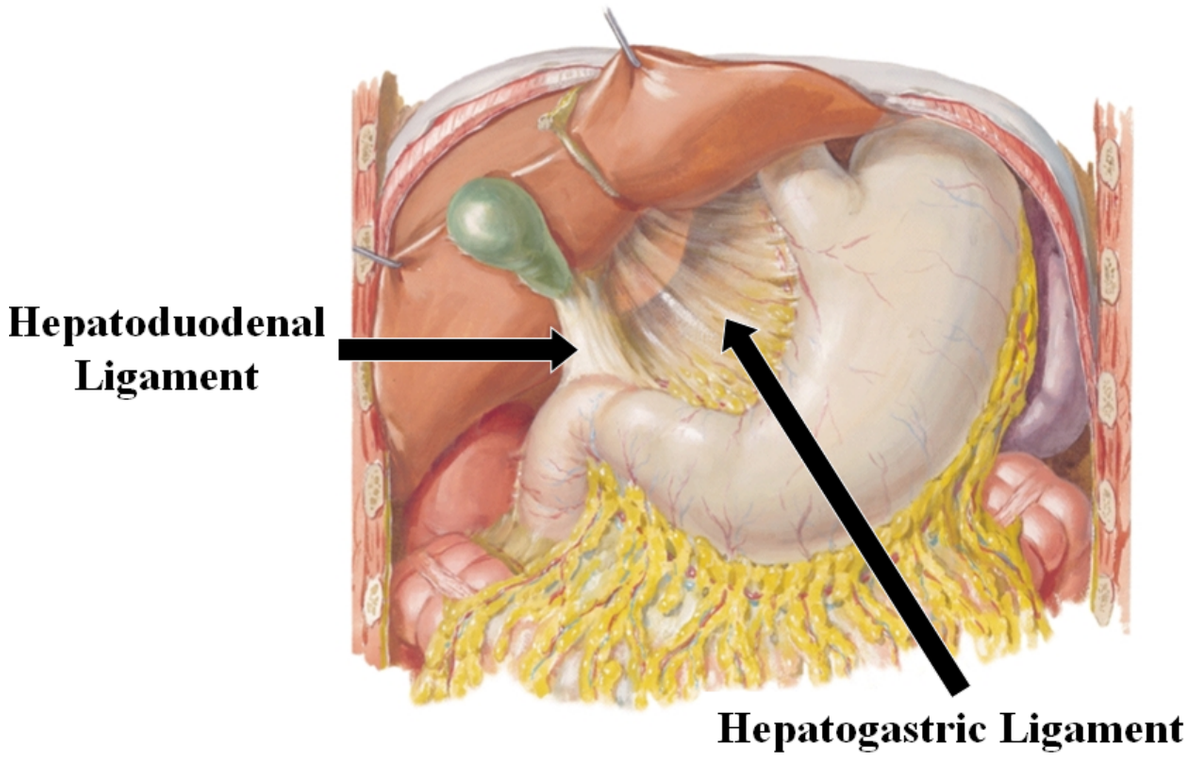
• Ligaments of the liver

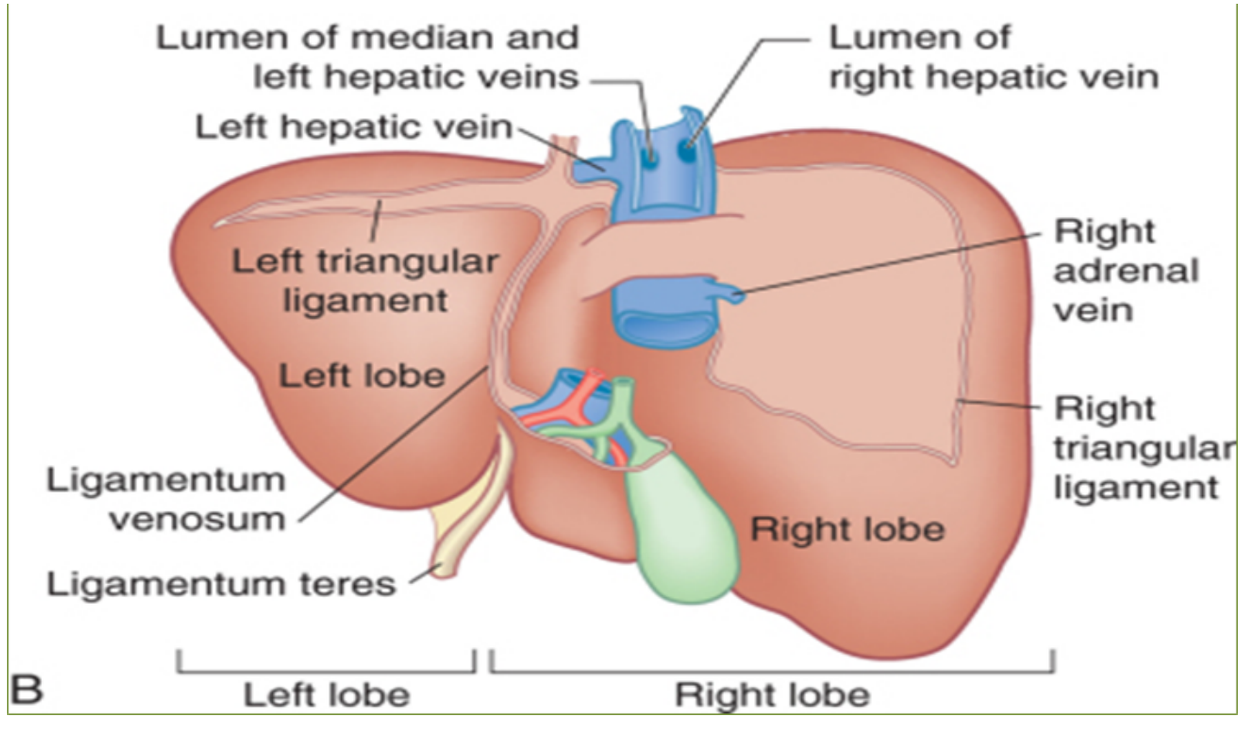
- <u>The students should observe the following :</u>

1. The falciform ligament of liver
2. The ligamentum teres hepatis
3. The coronary ligament
4. The right triangular ligament
5. The left triangular ligament
6. The hepatogastric ligament
7. The hepatoduonedenal ligament
8. The Ligamentum Venoosum

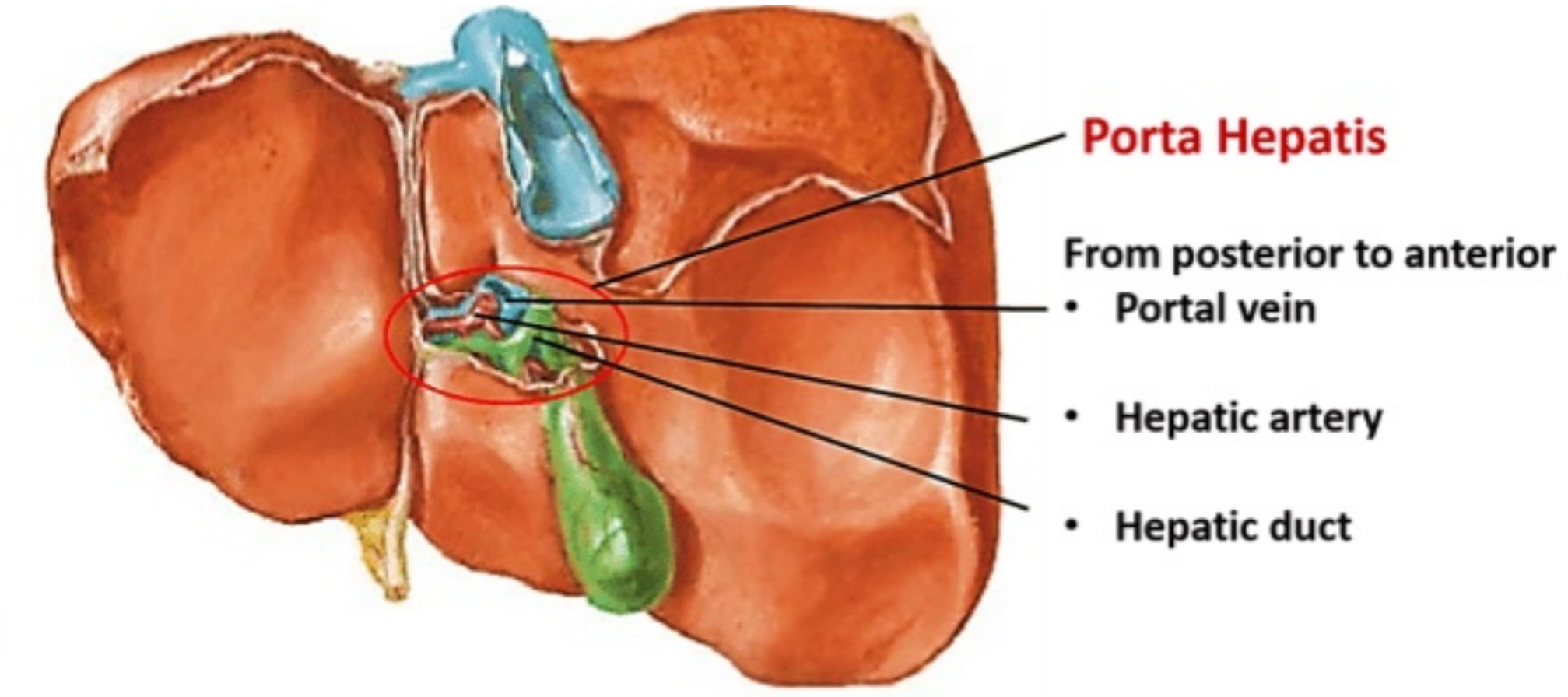


Anterior surface of liver

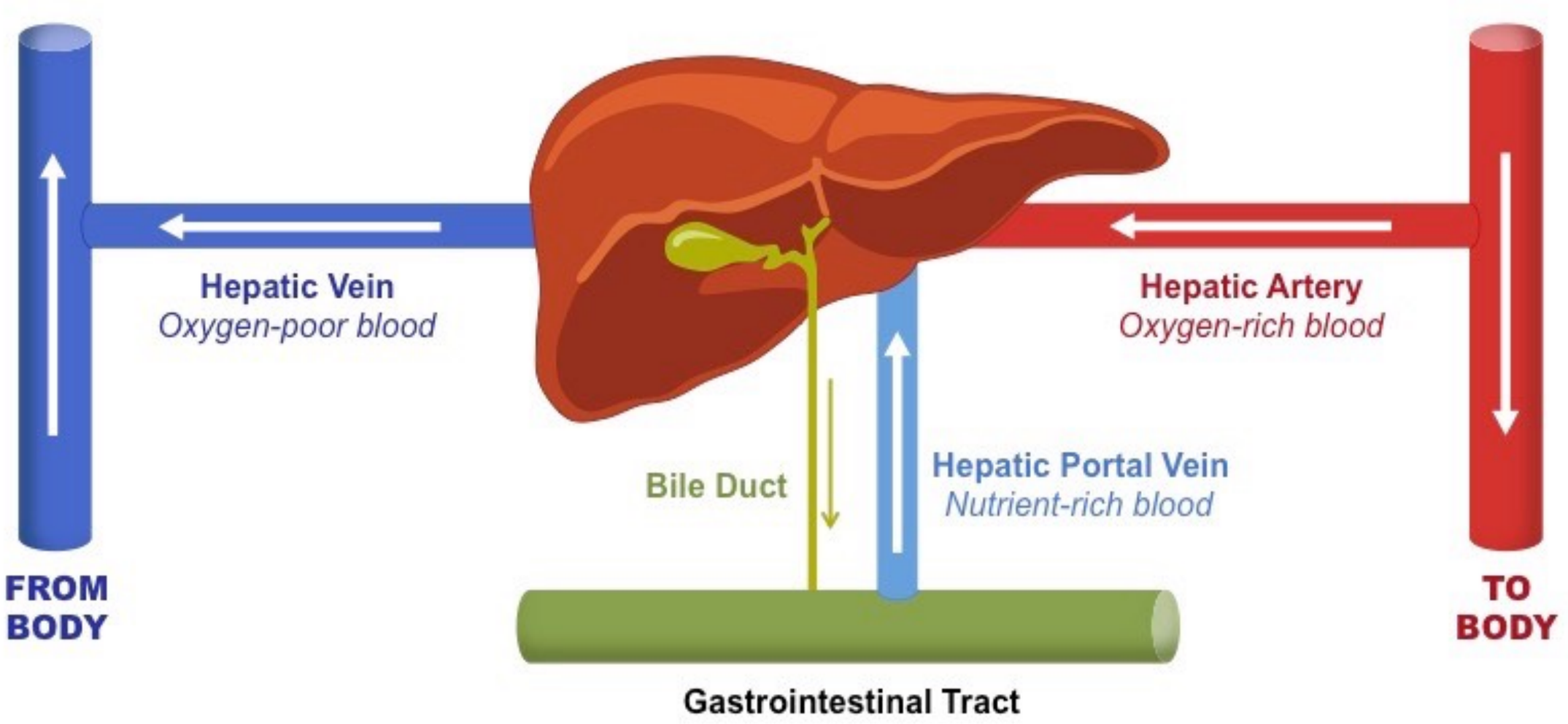




- Porta hepatis of the liver

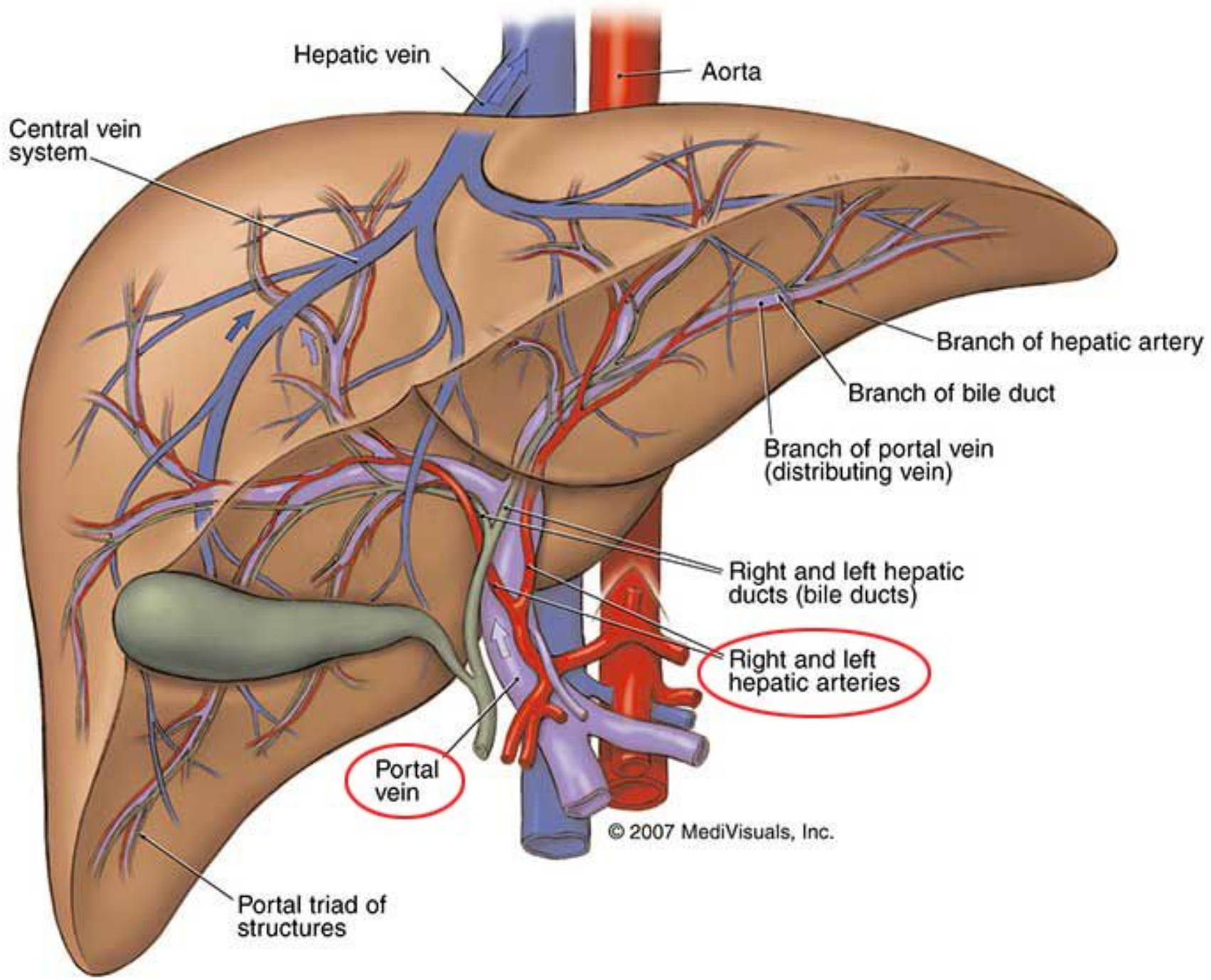


- Blood supply of the liver



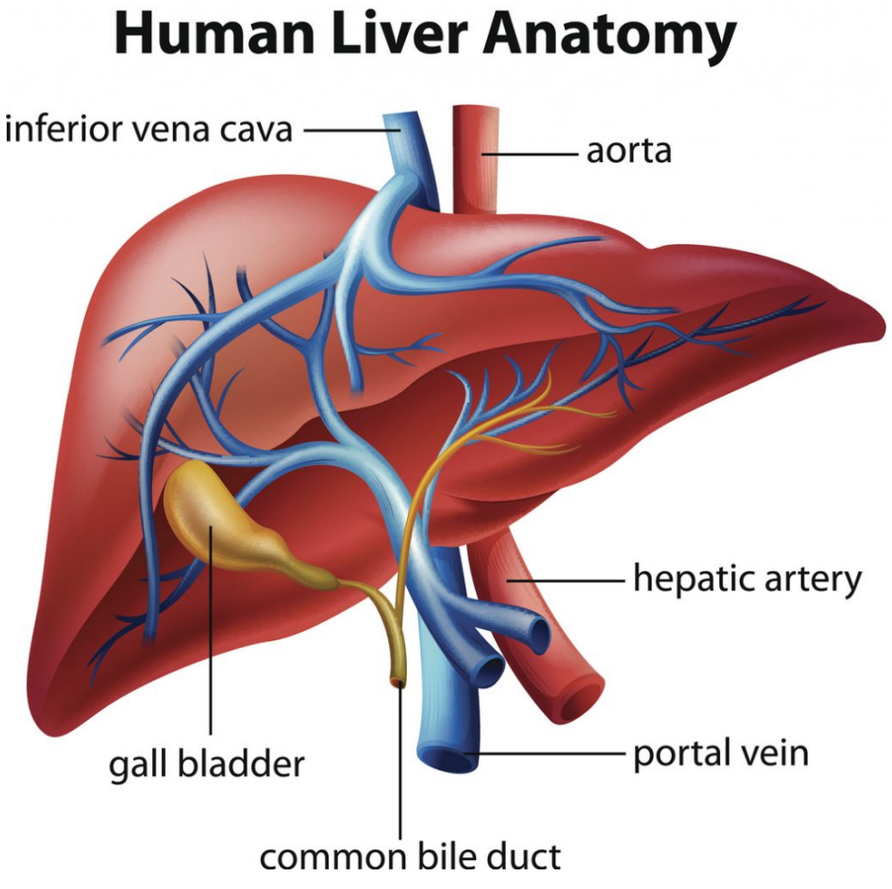
• Blood supply of the liver

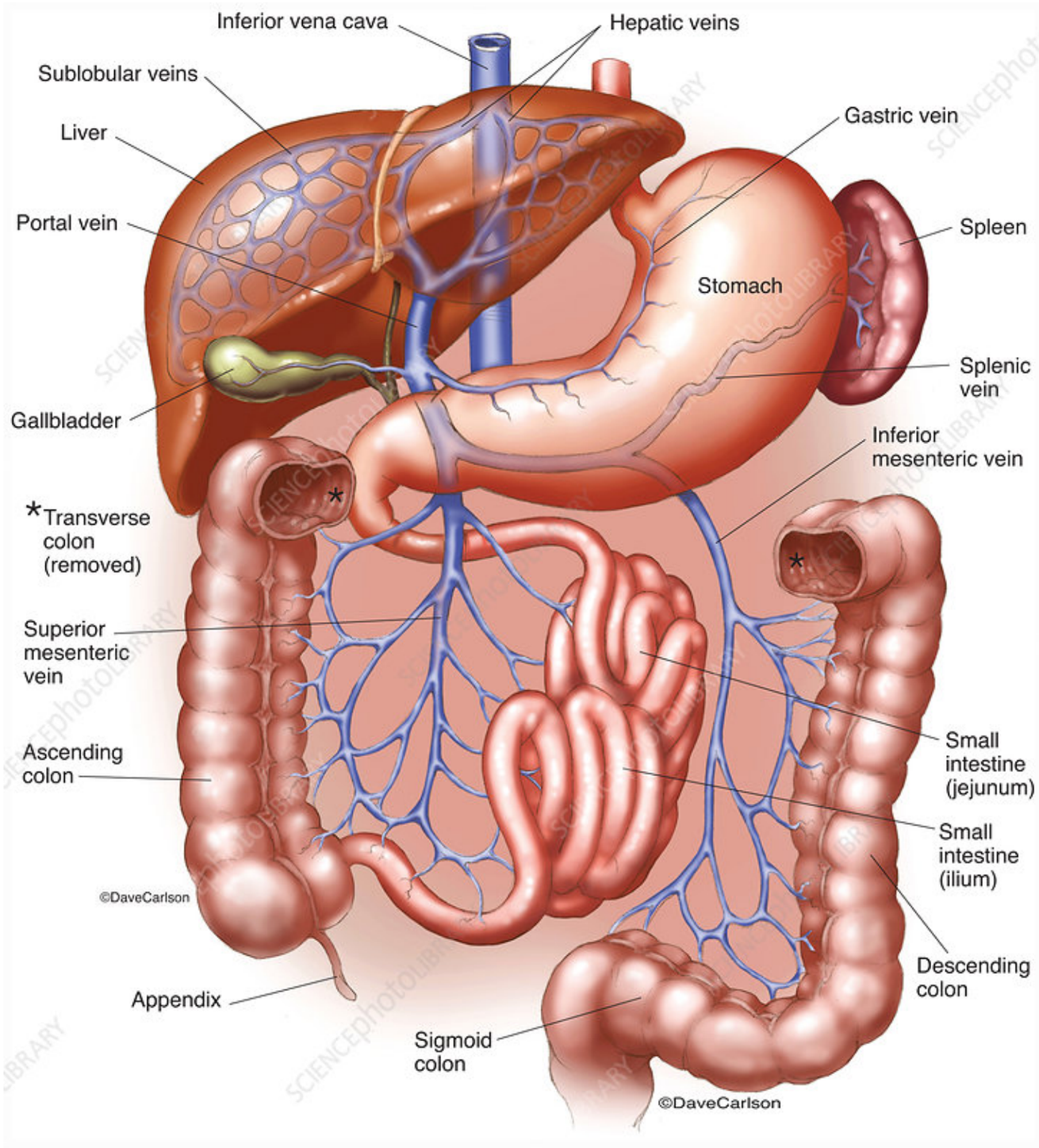
- Arterial supply



• Blood supply of the liver

- Venous and portal drainage



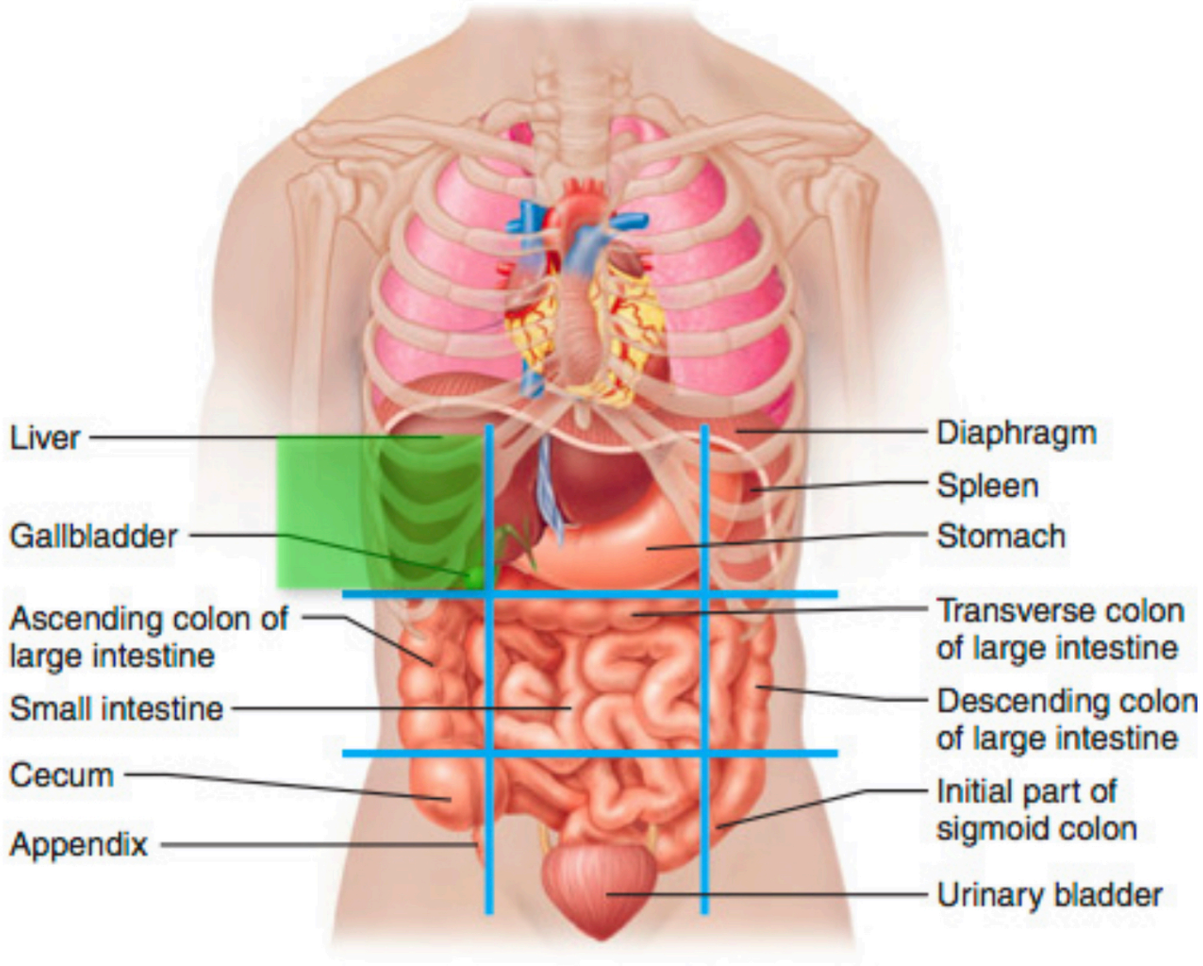


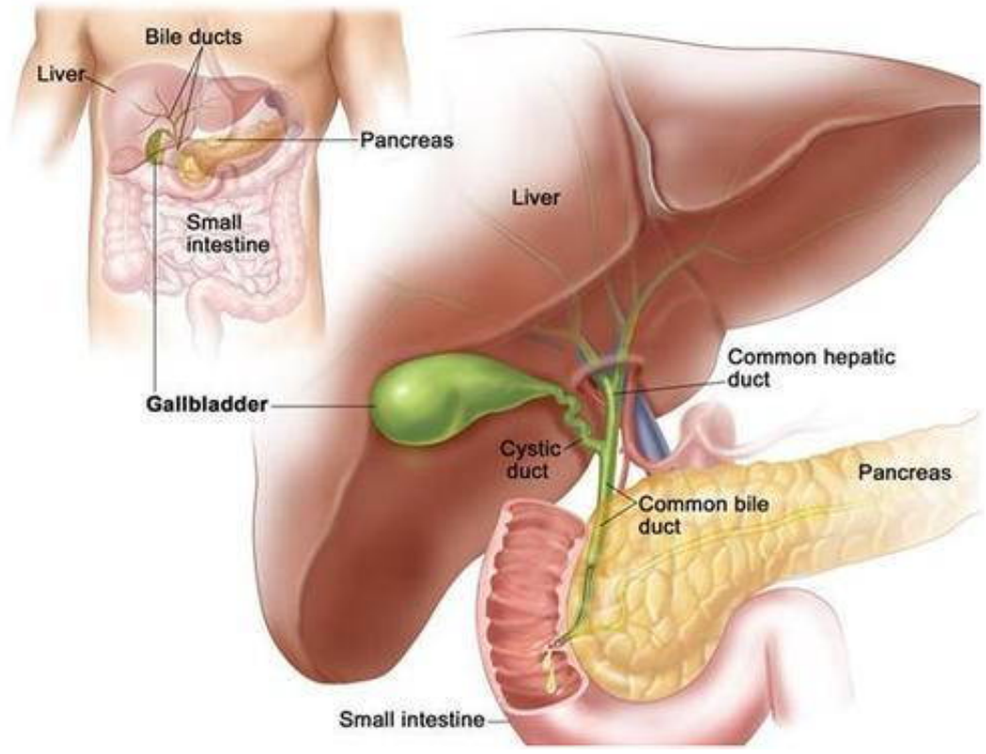
Gallbladder

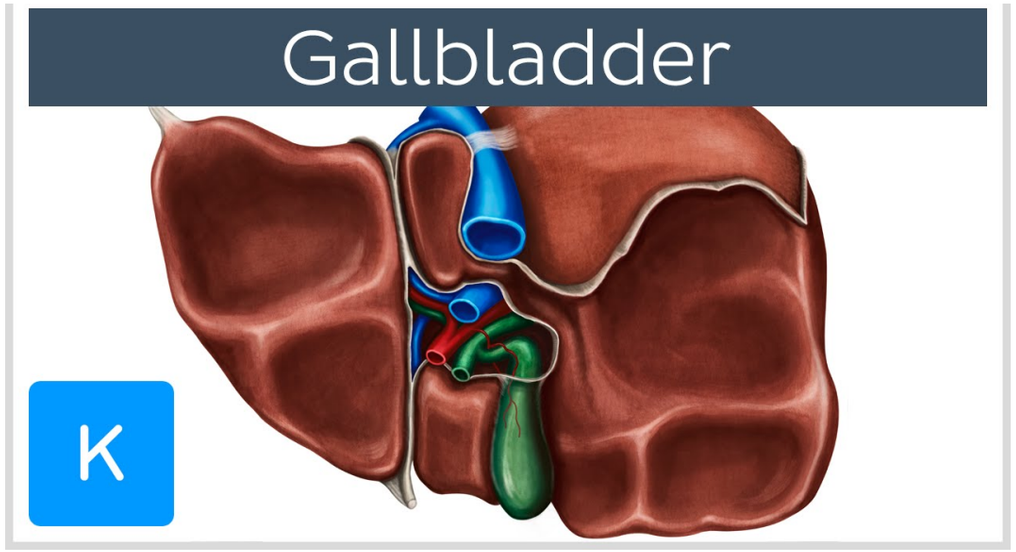
- The students should know and identify the :

1. Site
2. Structure Of Gallbladder
3. Blood supply
4. Common bile duct

- Site of the Gallbladder

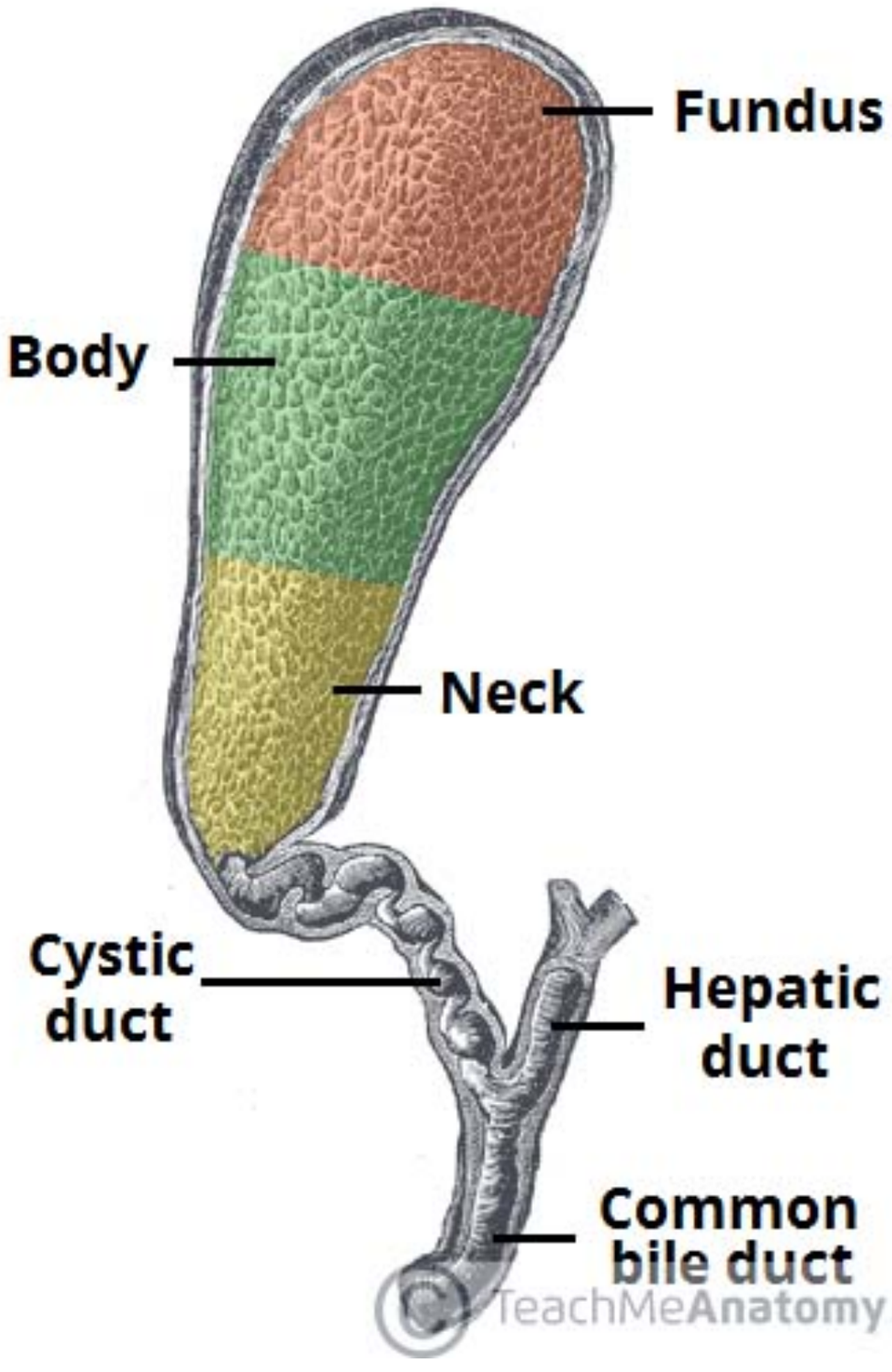






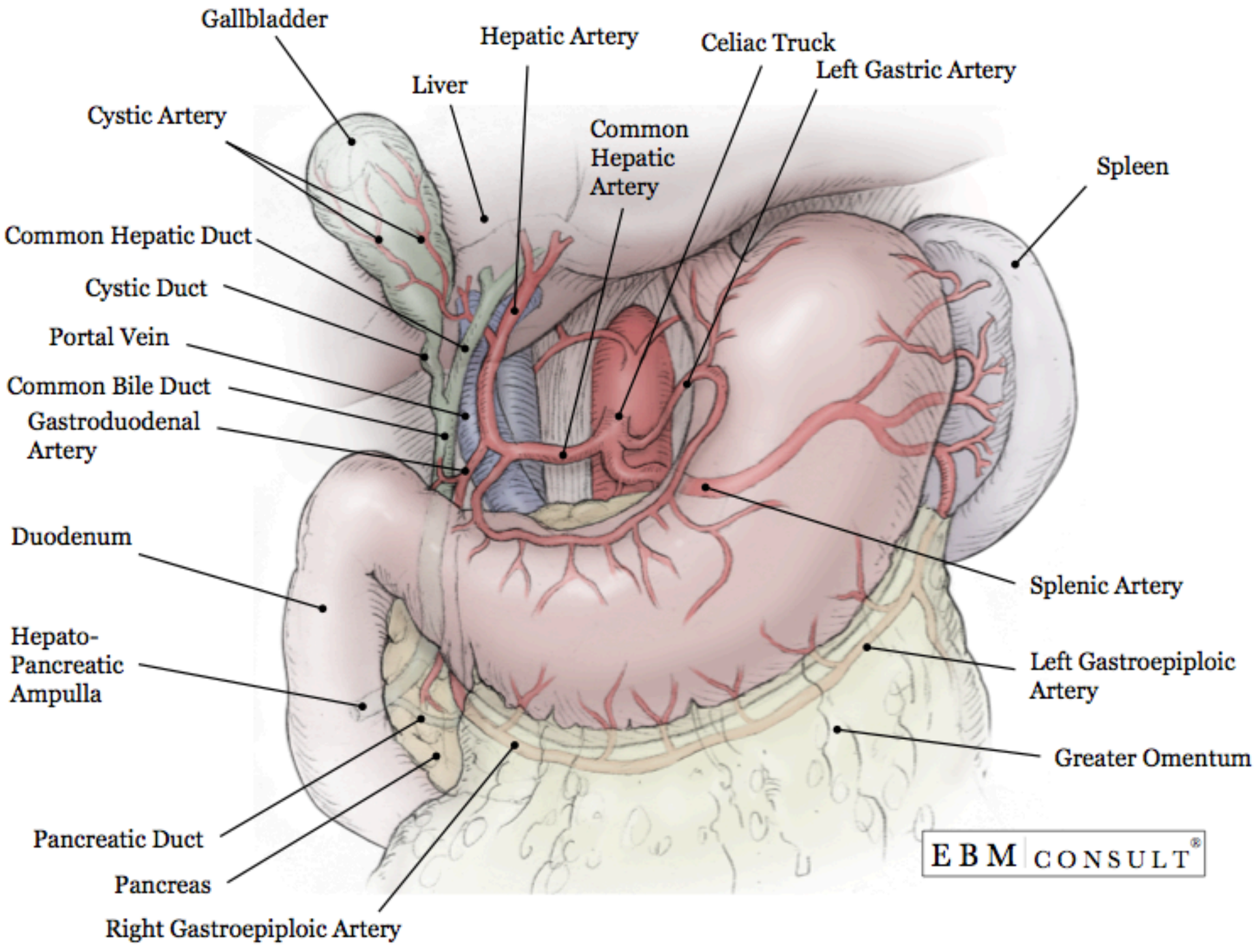
- <u>Between quadrate and right lobes</u>

- Structure Of Gallbladder



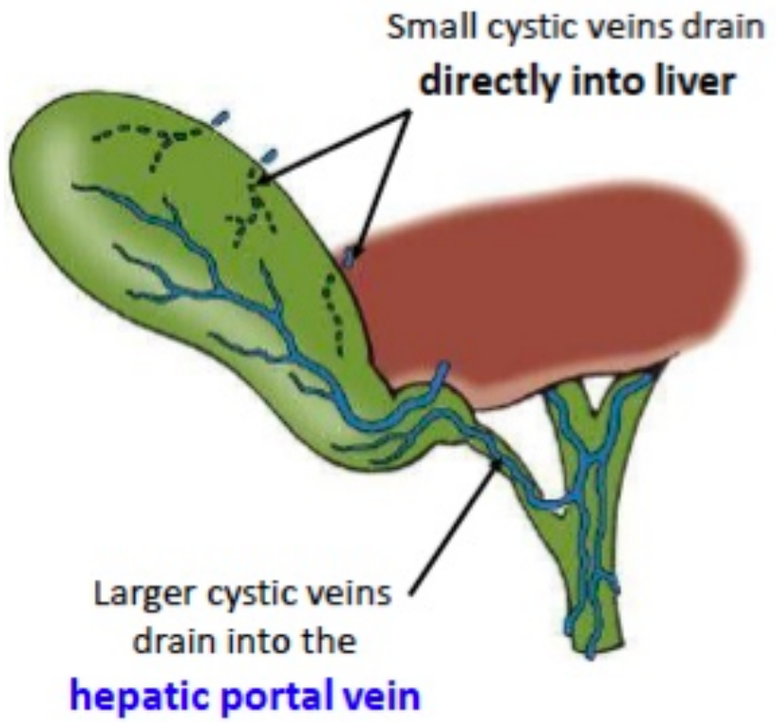
• Blood supply of the Gallbladder

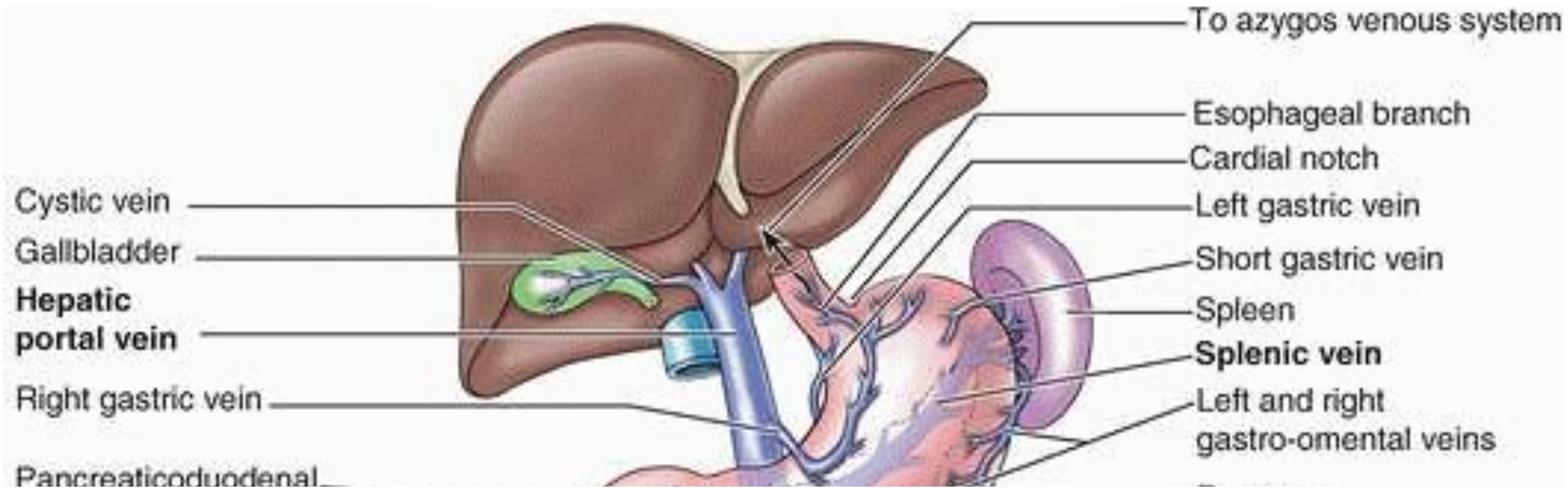
- Arterial supply



• Blood supply of the Gallbladder

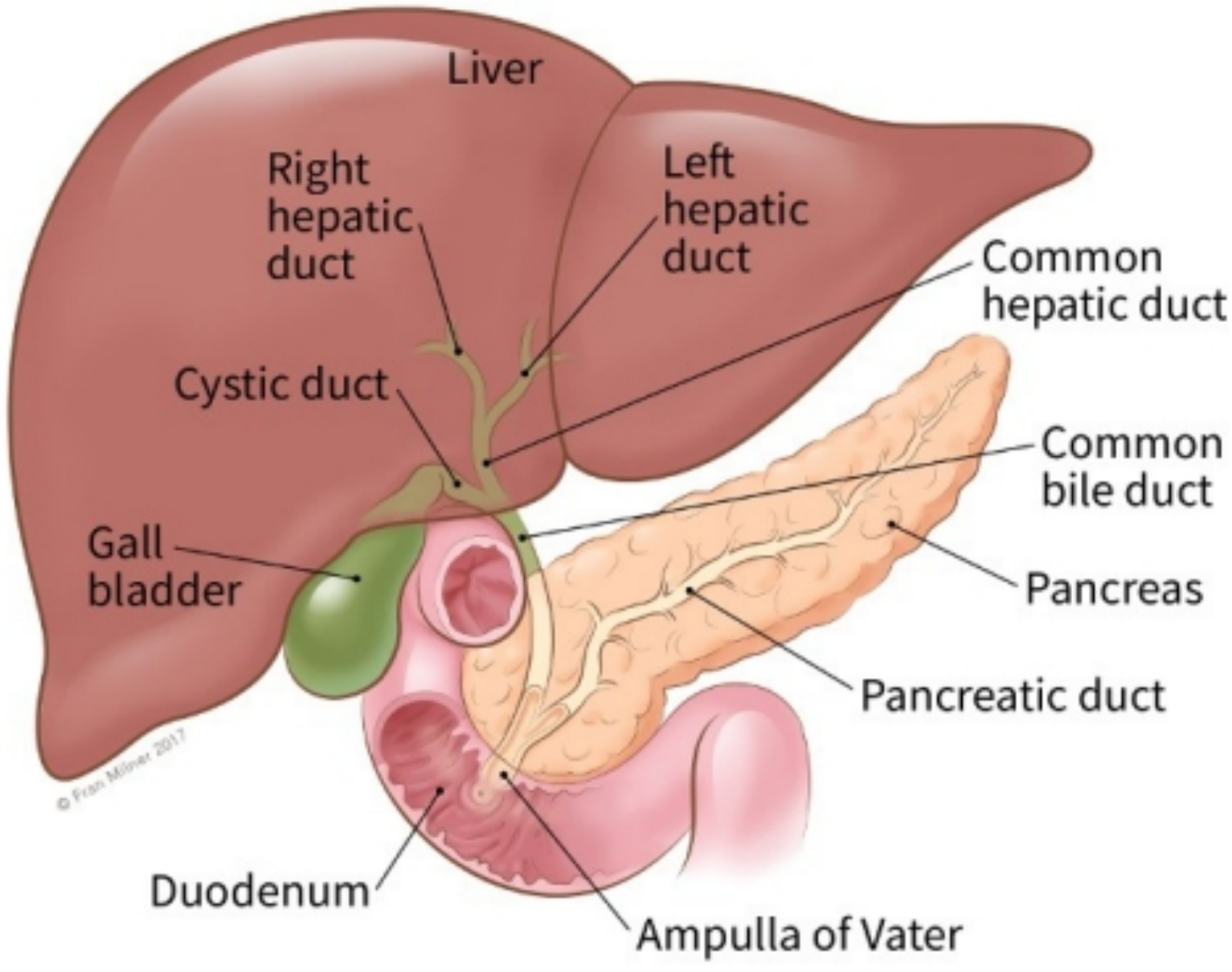
- Venous drainage





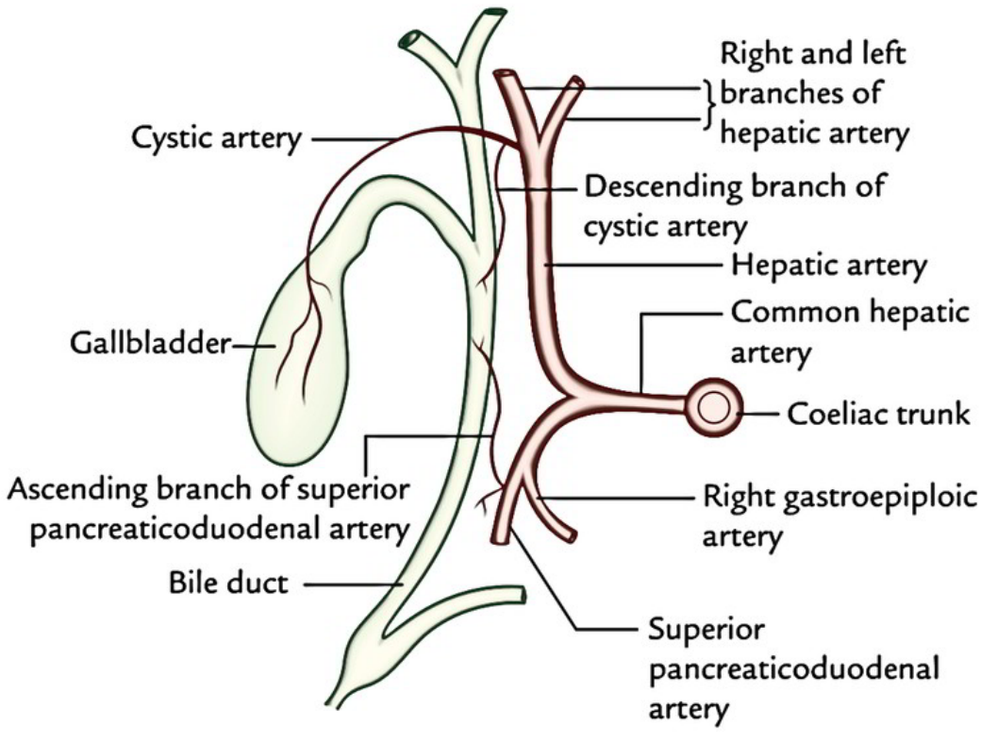
• Common bile duct

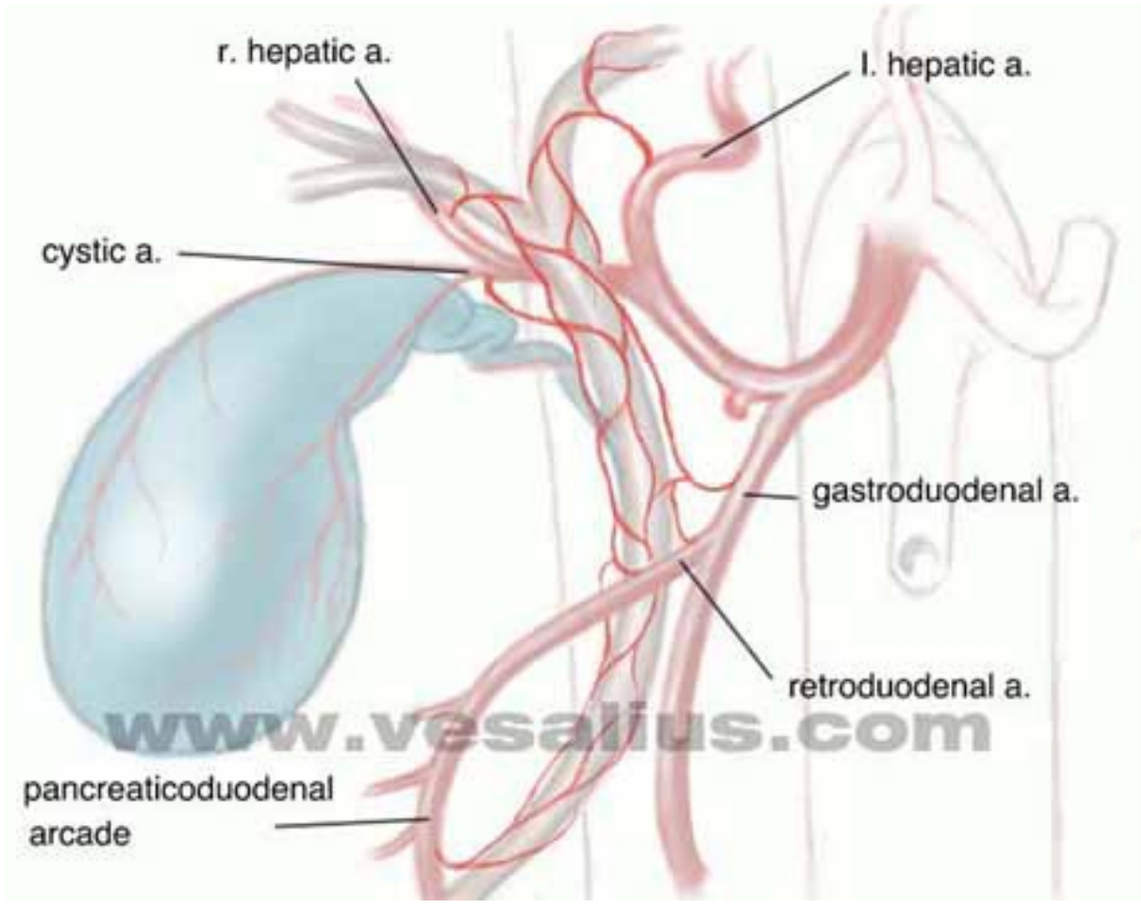
- Relation of common bile duct
- End in the half second part of duodenum at ampulla of Vater



- # Common bile duct

- Arterial supply



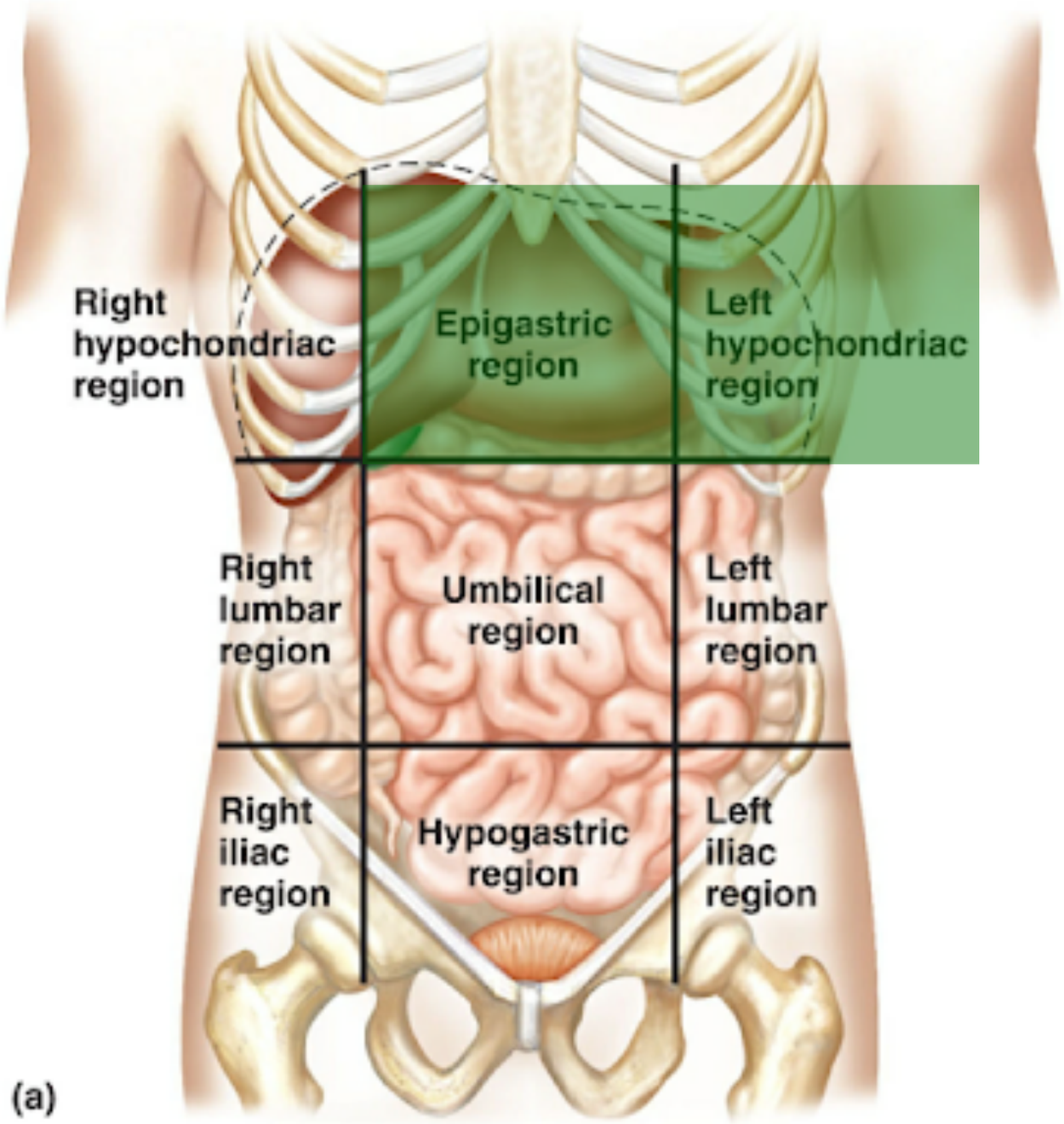


Pancreas

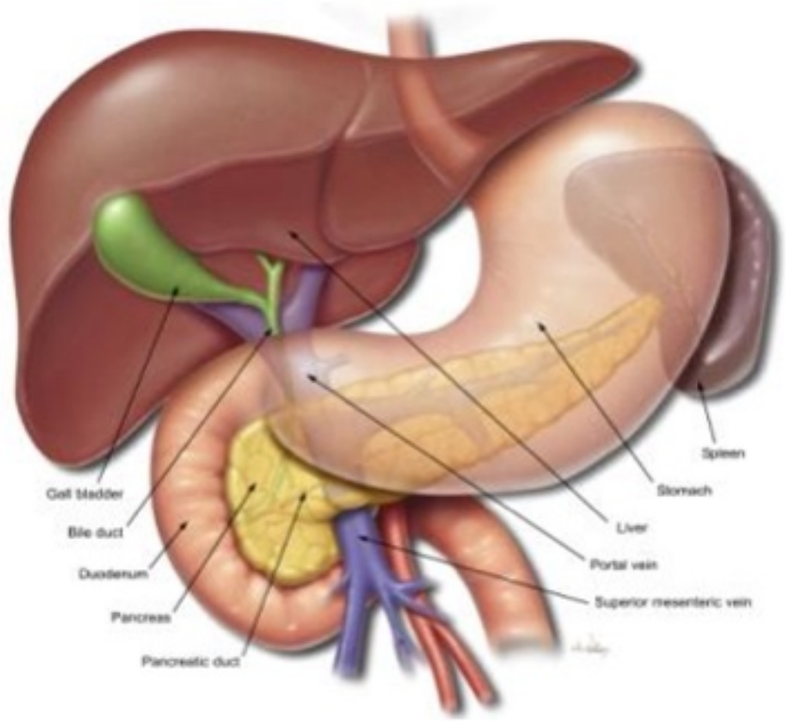
- The students should know and identify the :

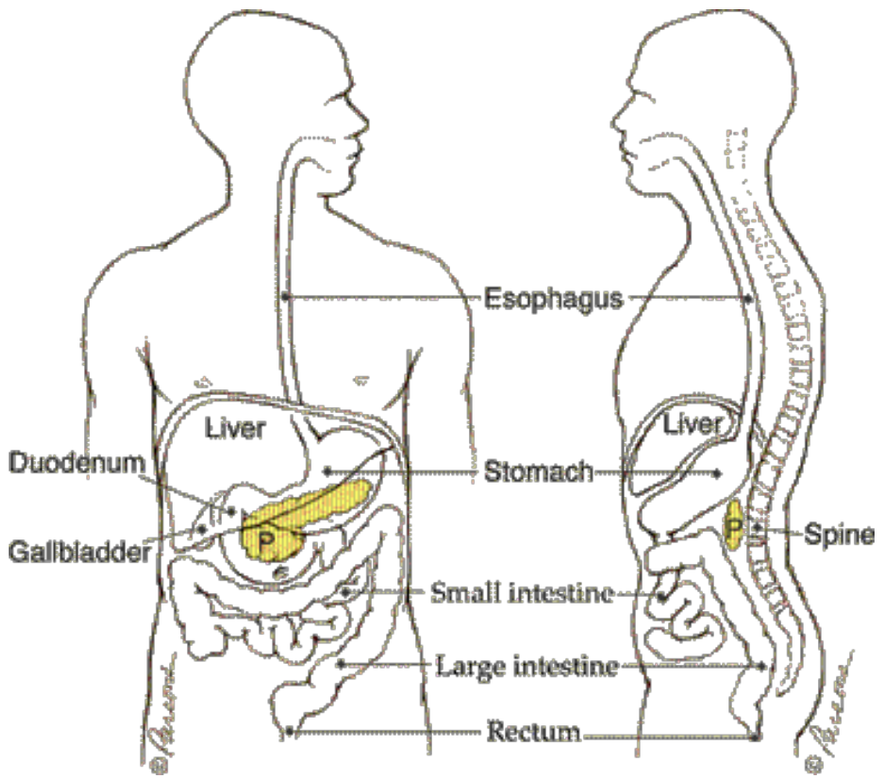
1. Site
2. Relations
3. parts of the Pancreas
4. Pancreatic ducts
5. Blood supply

- Site of the Pancreas



(a)

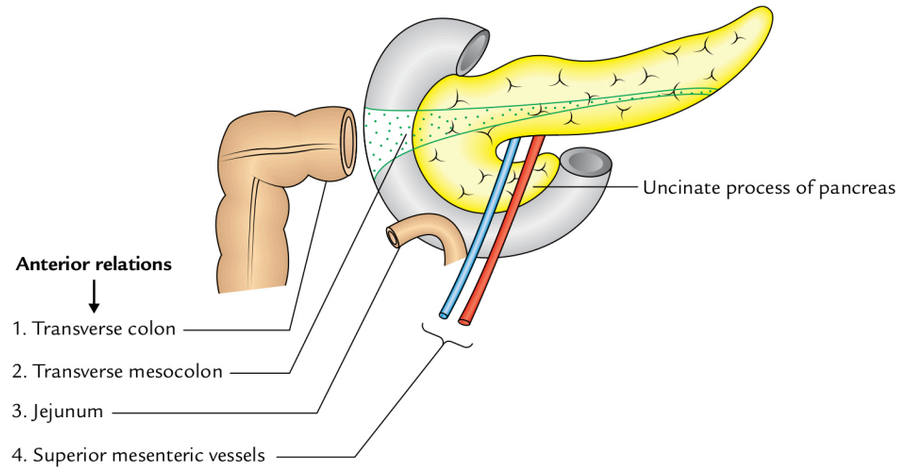


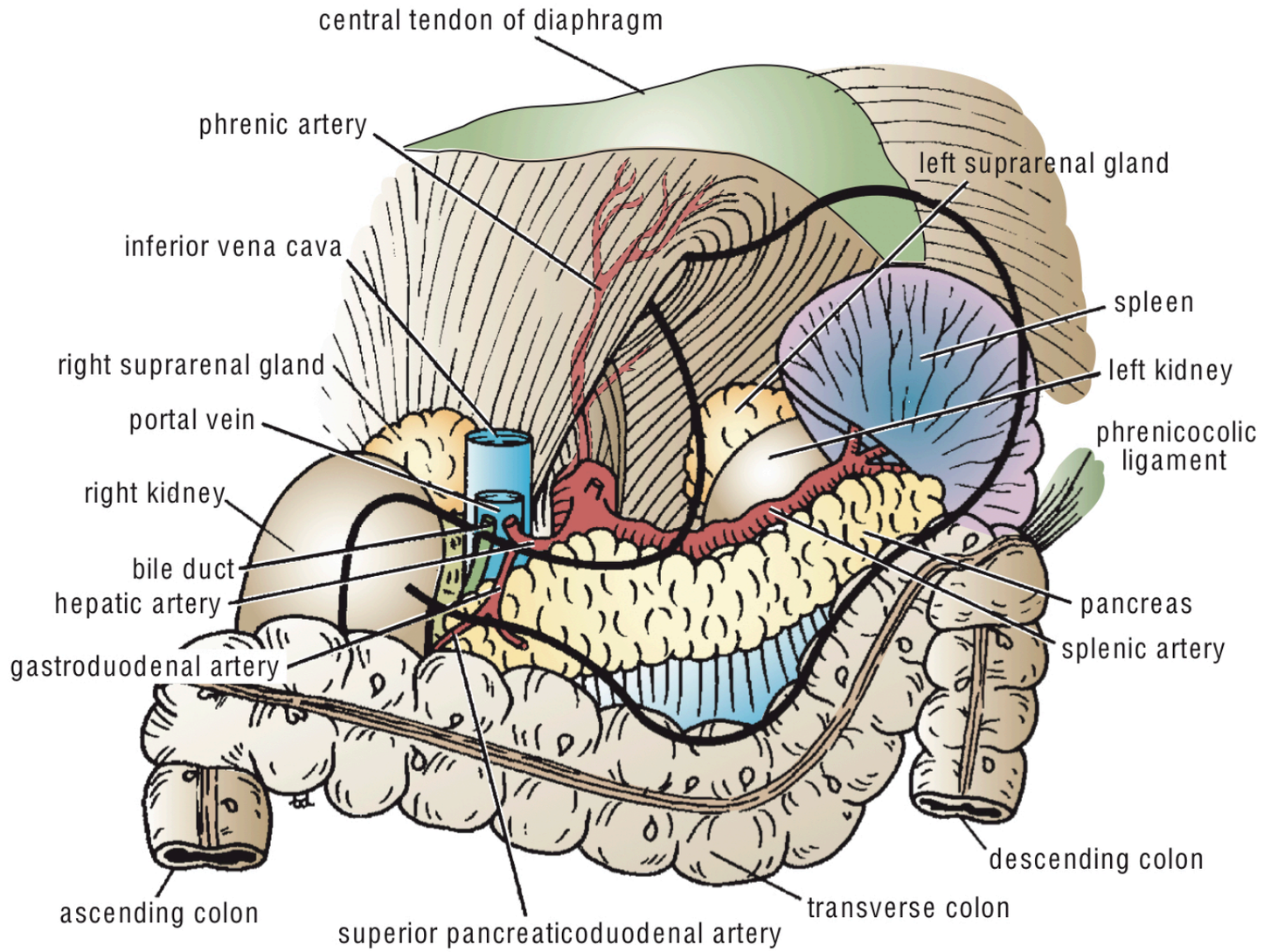


• Relations of the Pancreas

- Anterior relation:

1. Transverse colon
2. Transvers mesocolon
3. Lesser sac
4. Stomach

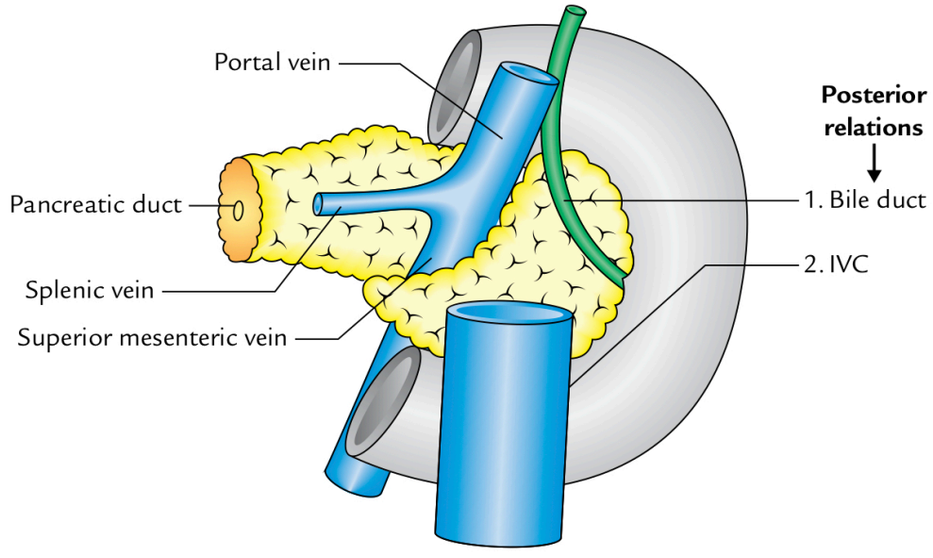


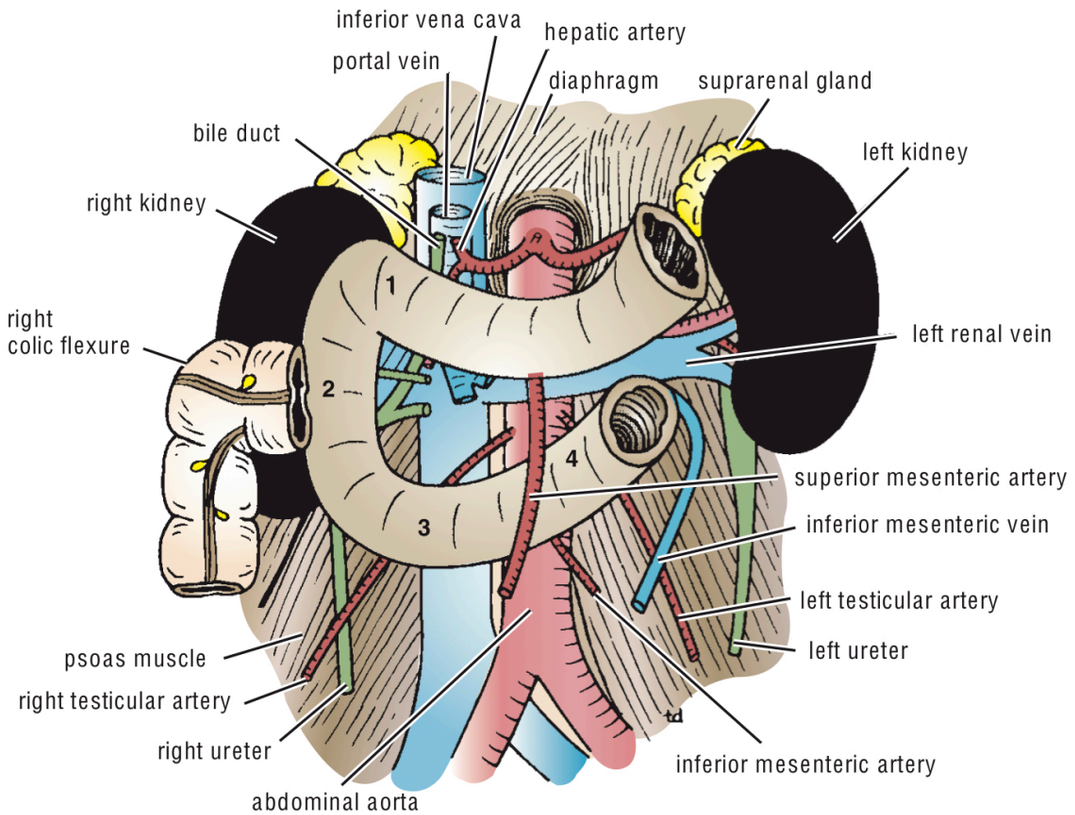


• Relations of the Pancreas

- Posterior relation

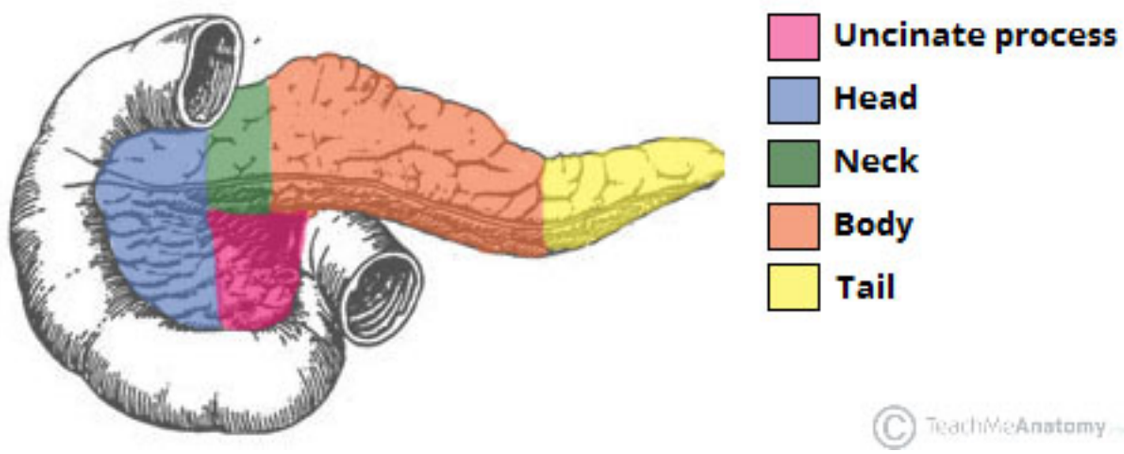
1. Bile duct
2. Portal vein
3. Splenic vein
4. IVC
5. Aorta
6. origin of Sup.mesentric.a
7. Lt.Psoas muscle
8. Lt.Suuprarenal gland
9. Left kidney
10. Hilum of the spleen

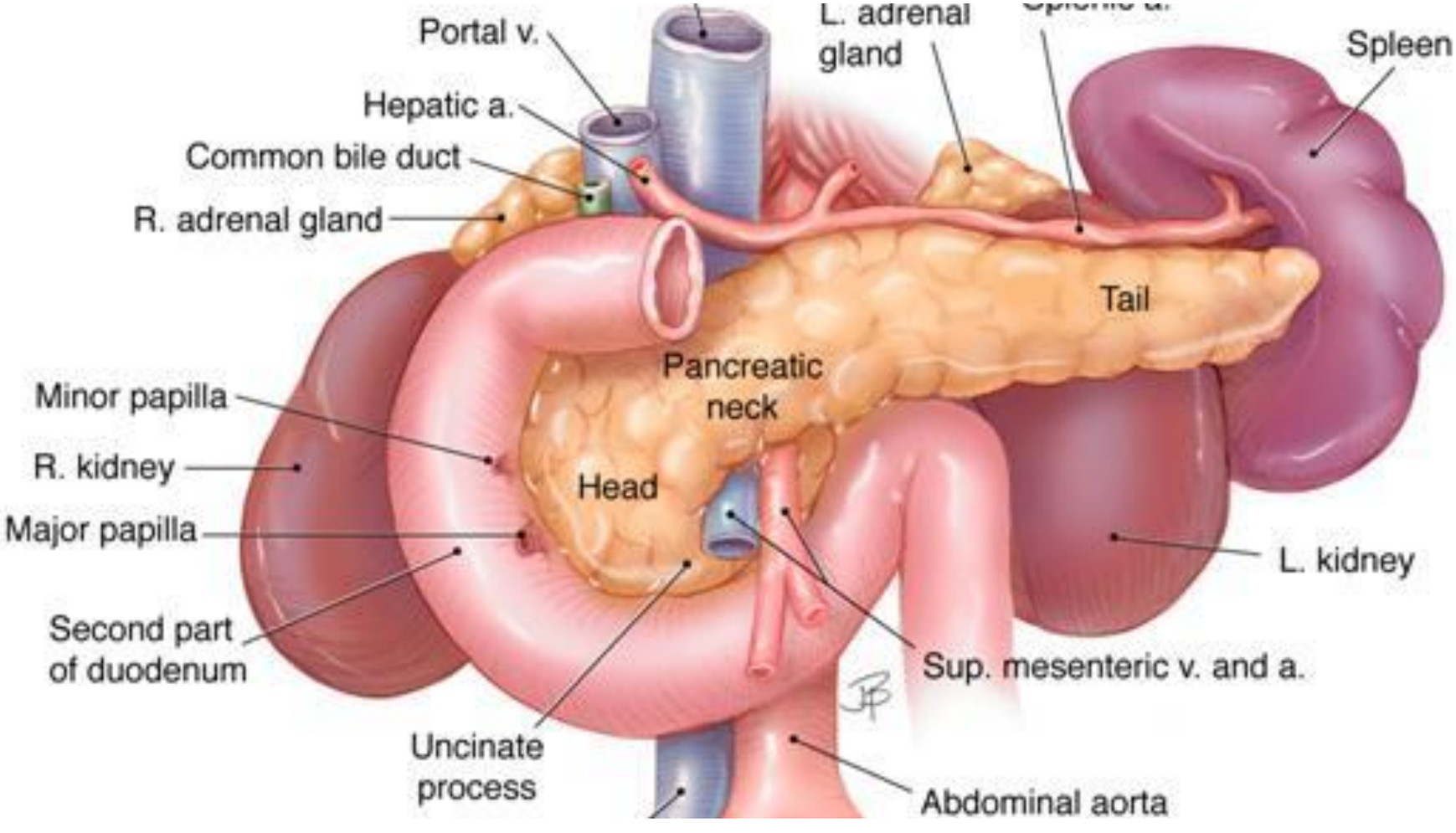




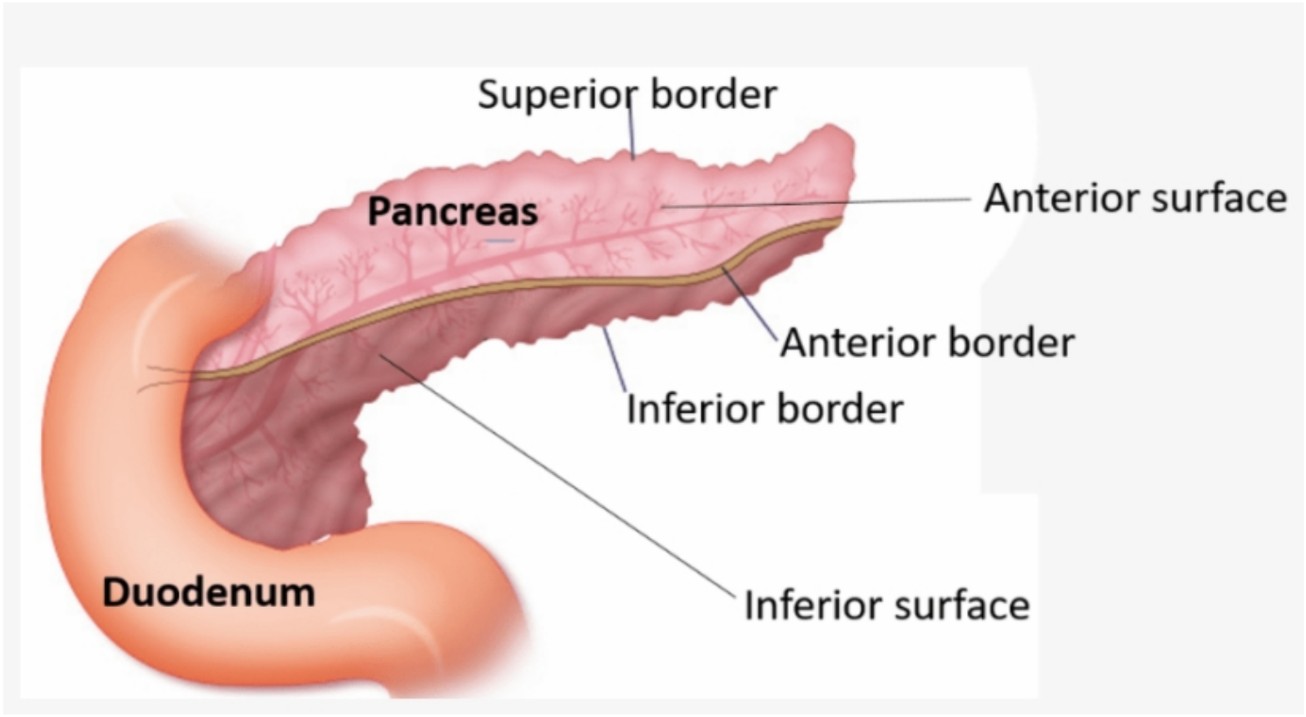
Posterior relations of the duodenum and the pancreas

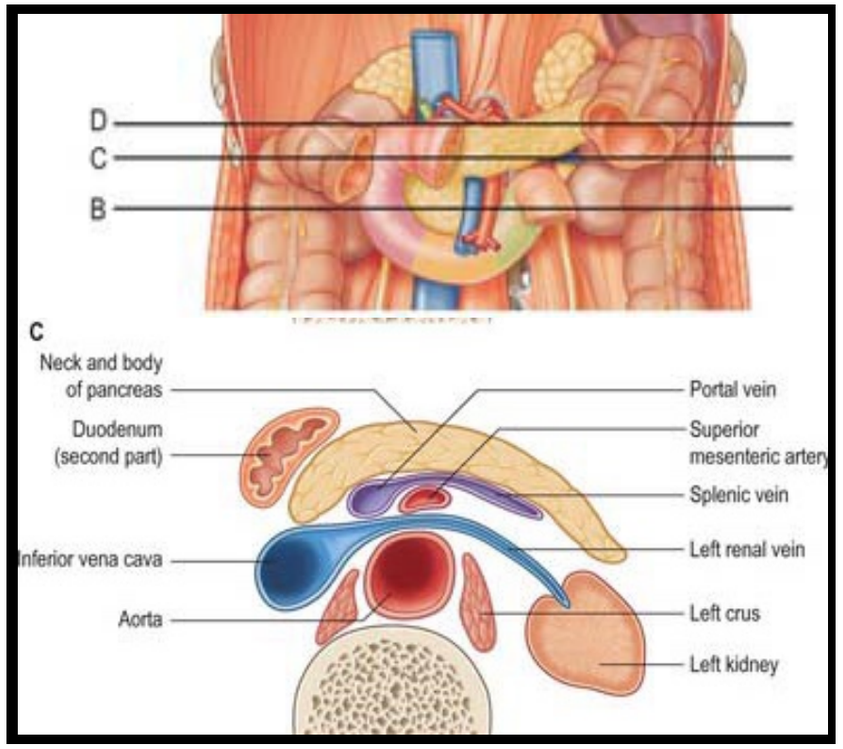
- Parts of the Pancreas





• Borders and surfaces the body of Pancreas





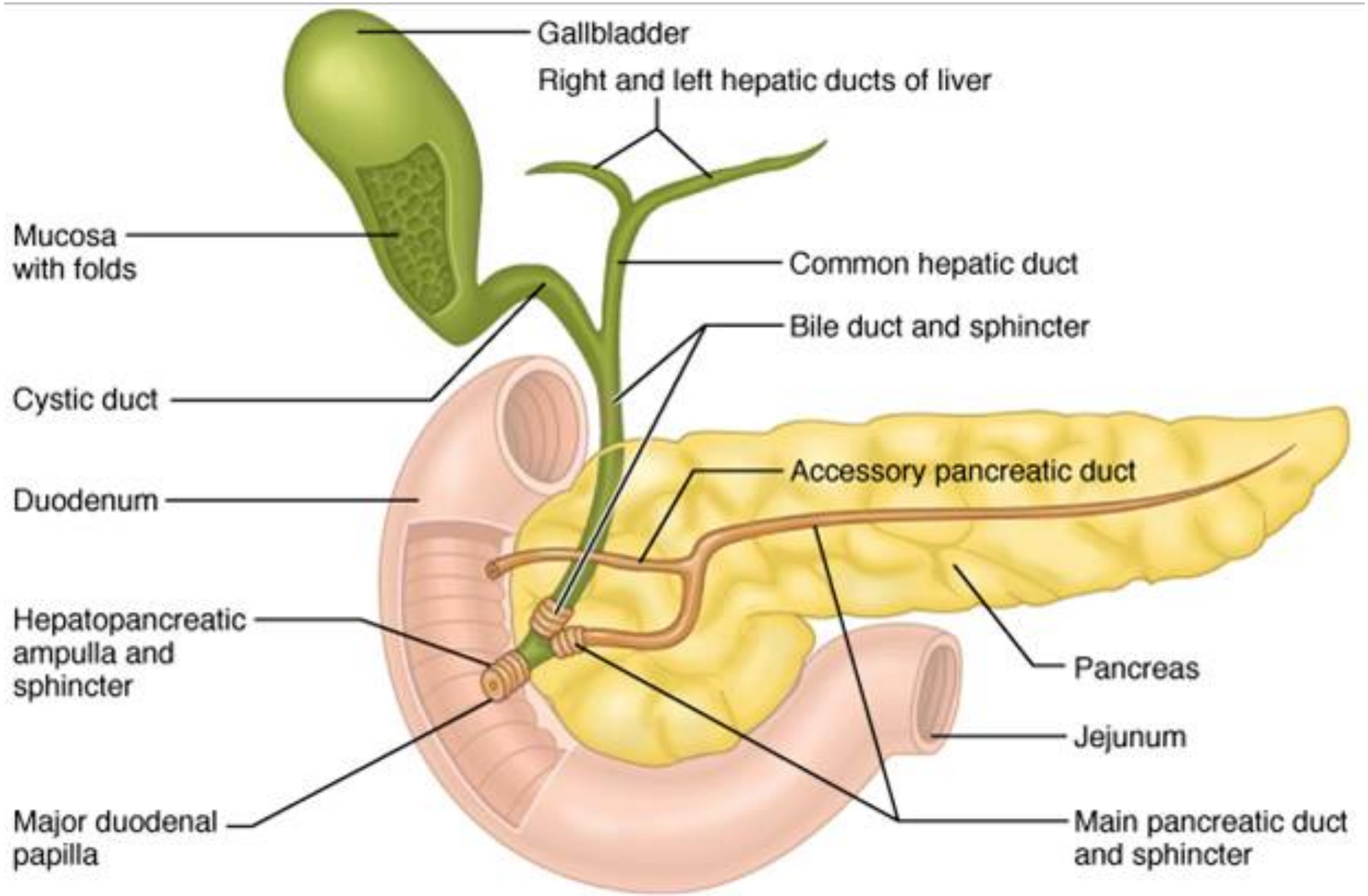
3 surfaces

- Anterior surface: covered by peritoneum of posterior abdominal wall. Separated from stomach by lesser sac.
- Inferior surface: related to 2 flexures (duodeno-jejunal flexure and coils of jejunum + left colic flexure).
- Posterior surface: related to aorta + left (crus of diaphragm, psoas major muscle, kidney, suprarenal gland).

3 borders

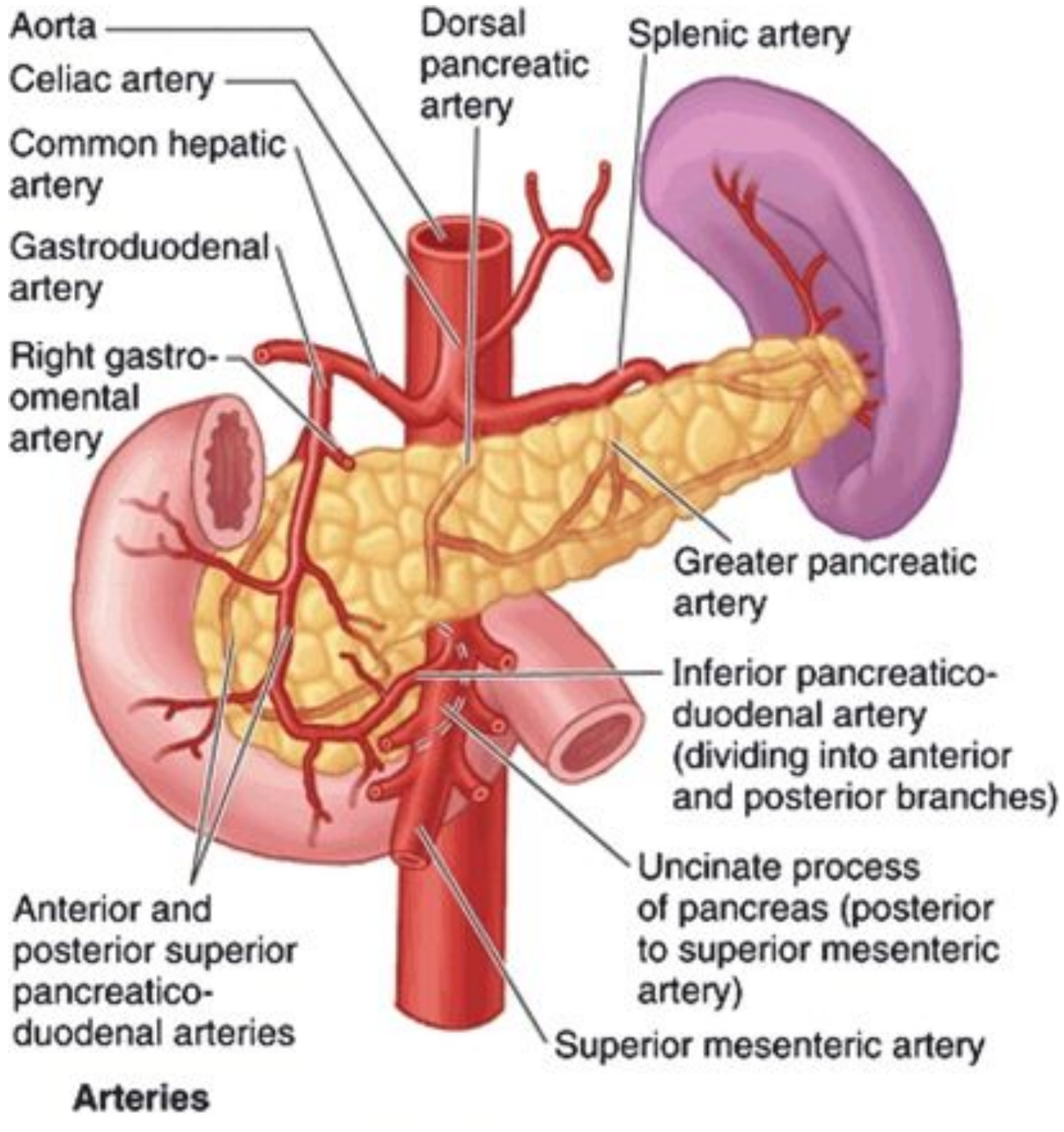
- Superior border: related to celiac trunk + 2 branches (hepatic artery to the right + splenic artery to the left). It may show tuber omentale at its right end.
- Anterior border: the posterior 2 layers of the greater omentum diverge here (one layer ascend to cover superior surface and the other descend to cover the inferior surface).
- Inferior border: separates the inferior surface from posterior surface.

- Pancreatic ducts



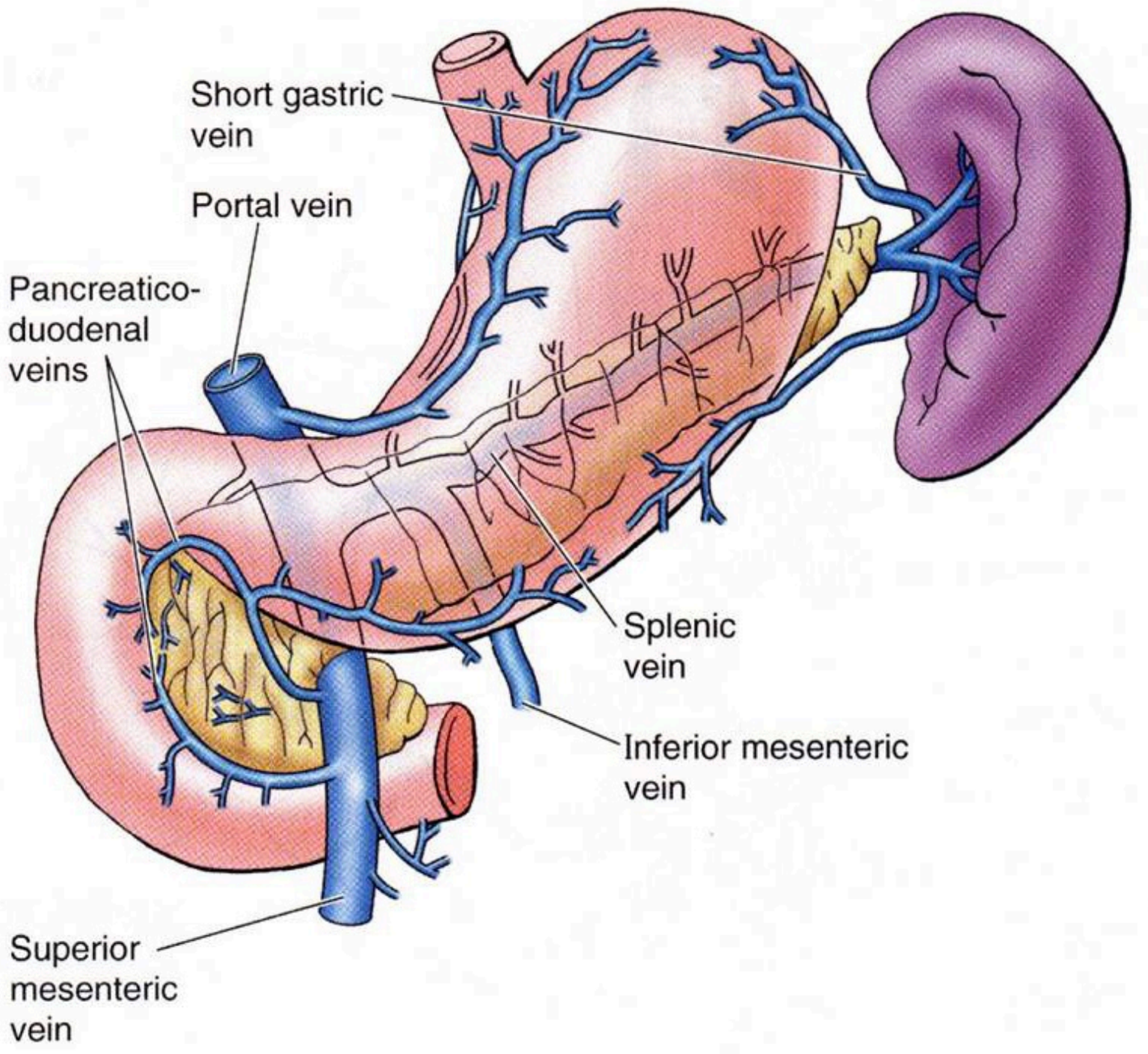
• Blood supply of the Pancreas

- Arterial supply



• Blood supply of the Pancreas

- Venous drainage

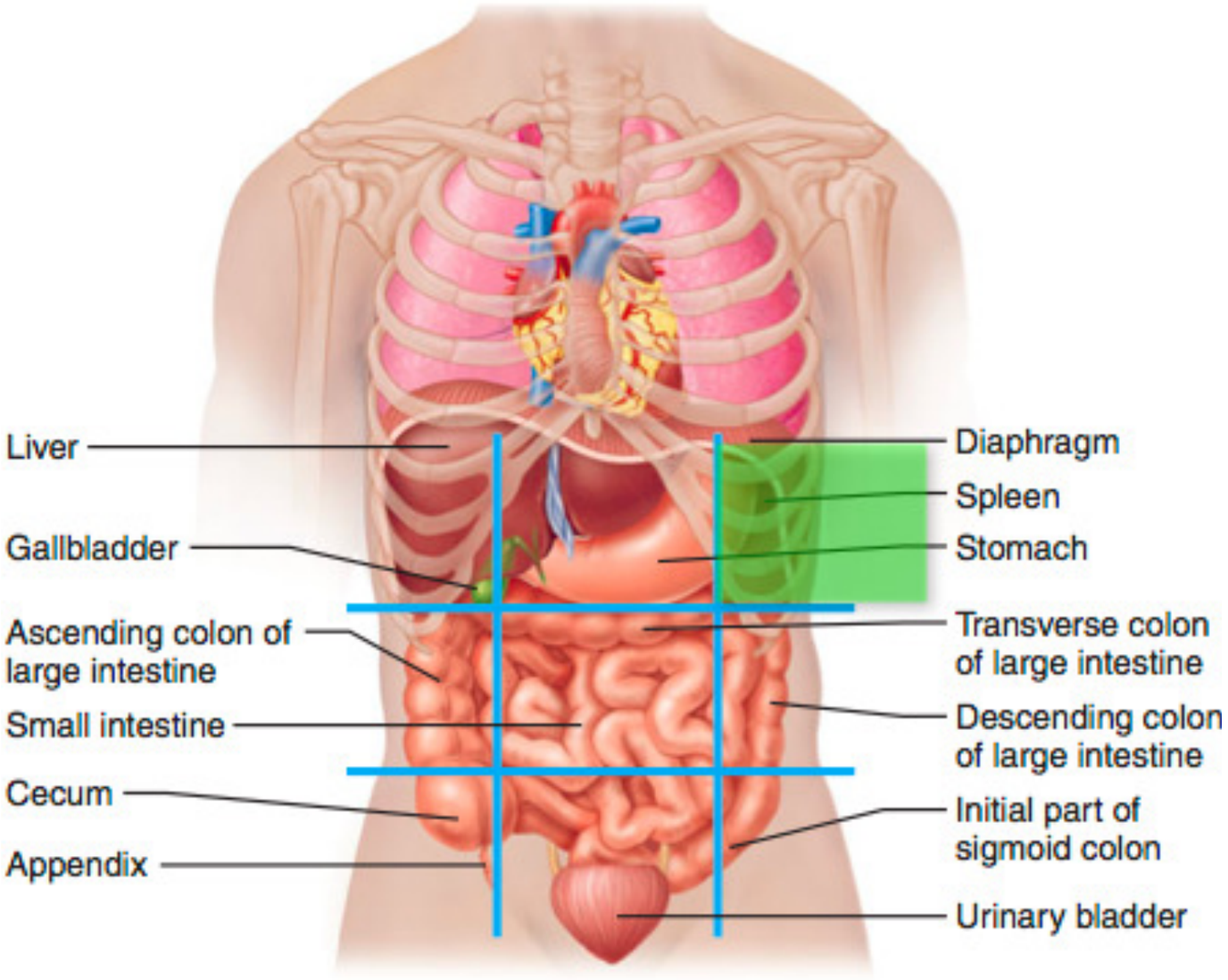


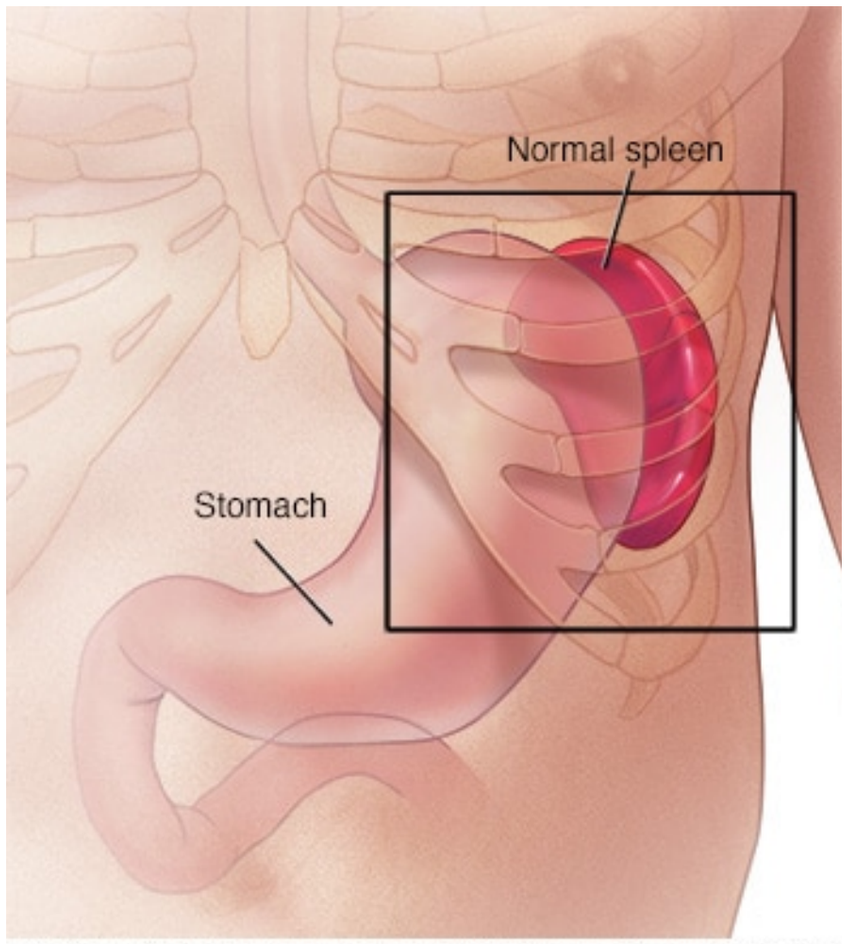
Spleen

- The students should know and identify the :

1. Site
2. Peritoneal Relations
3. Surfaces of the Spleen
4. Borders of spleen
5. Blood supply

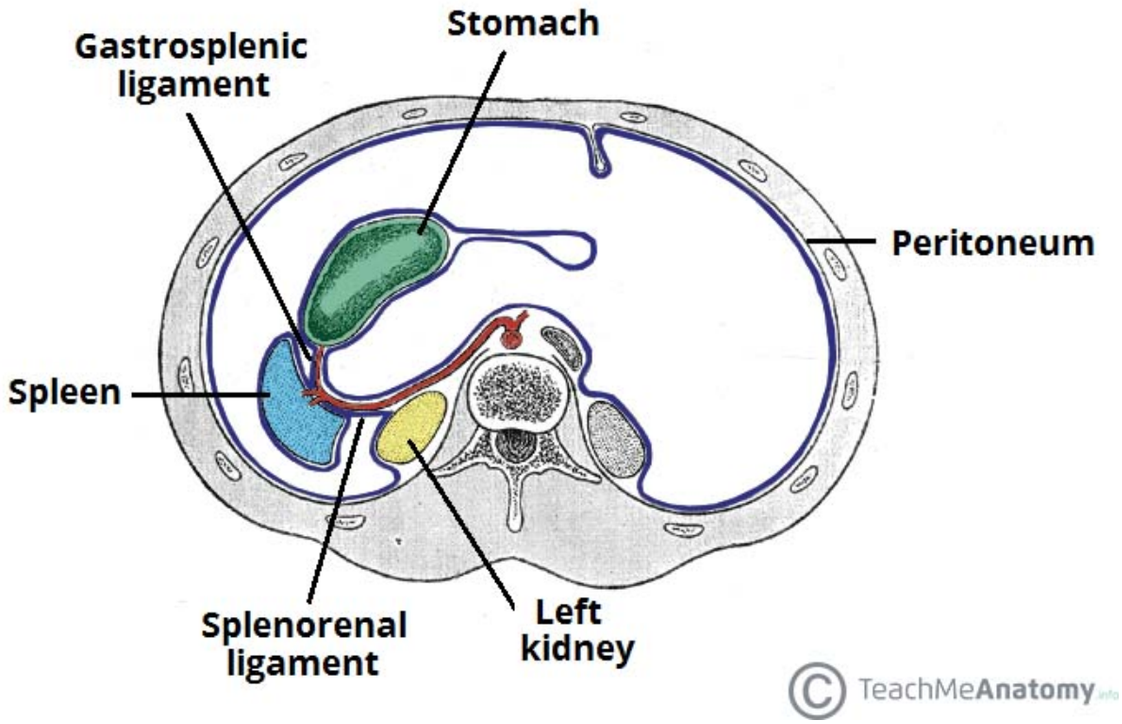
- Site of the Spleen

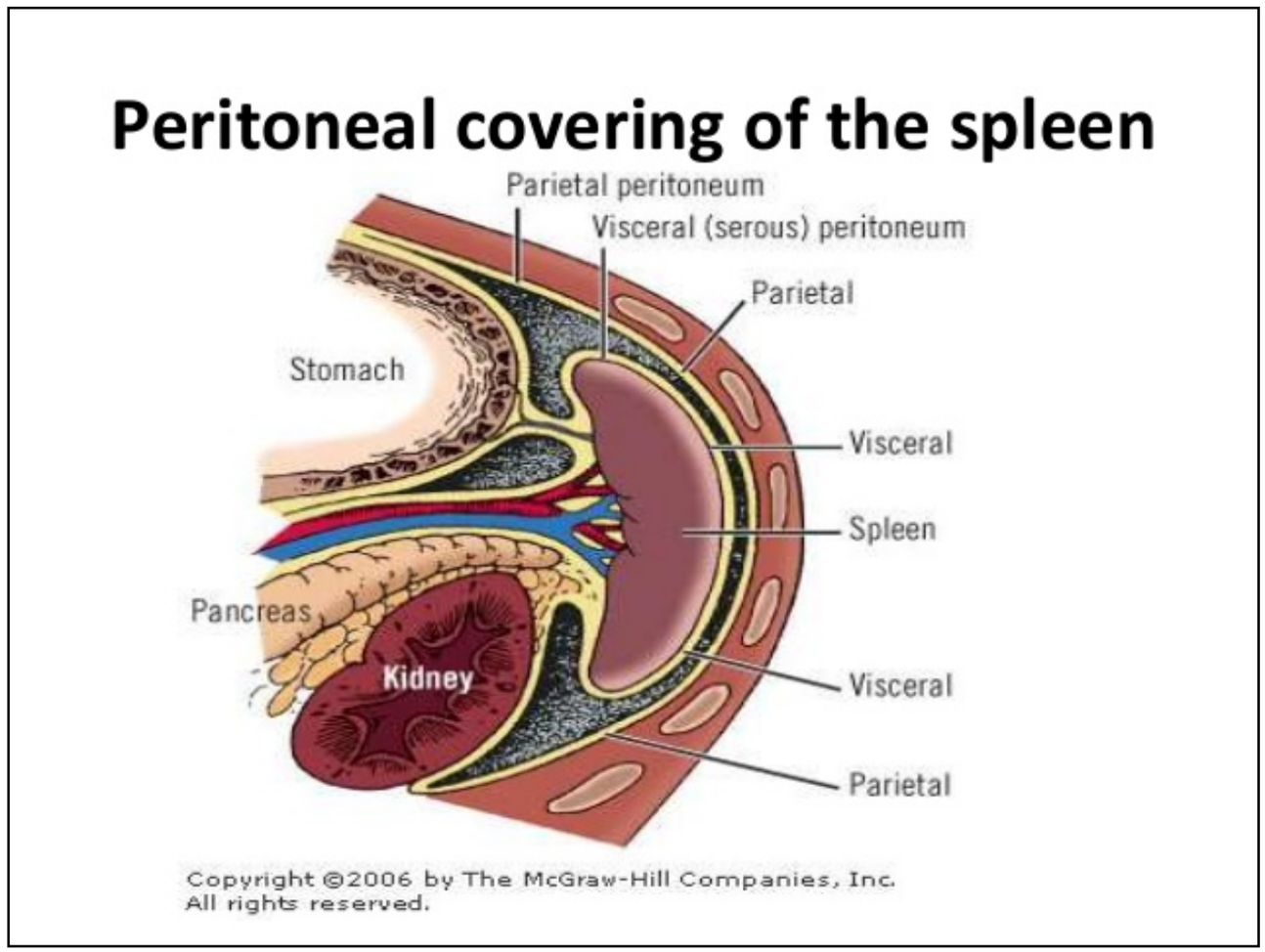




• Peritoneal Relations of the Spleen

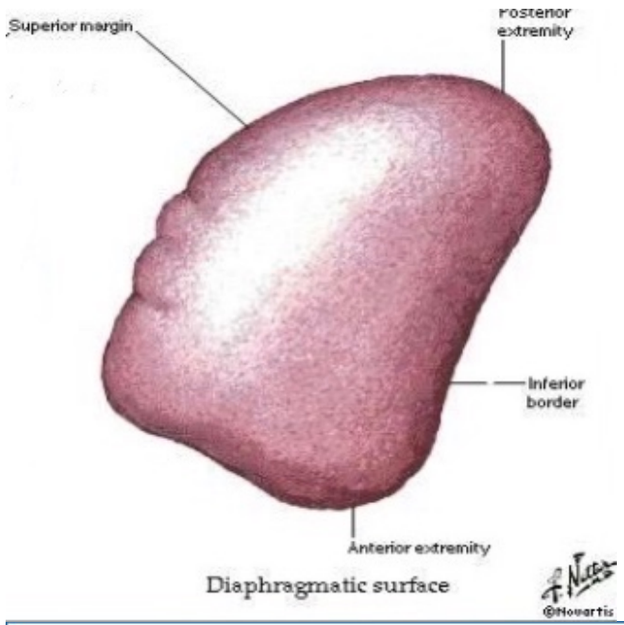
- intraperitoneal

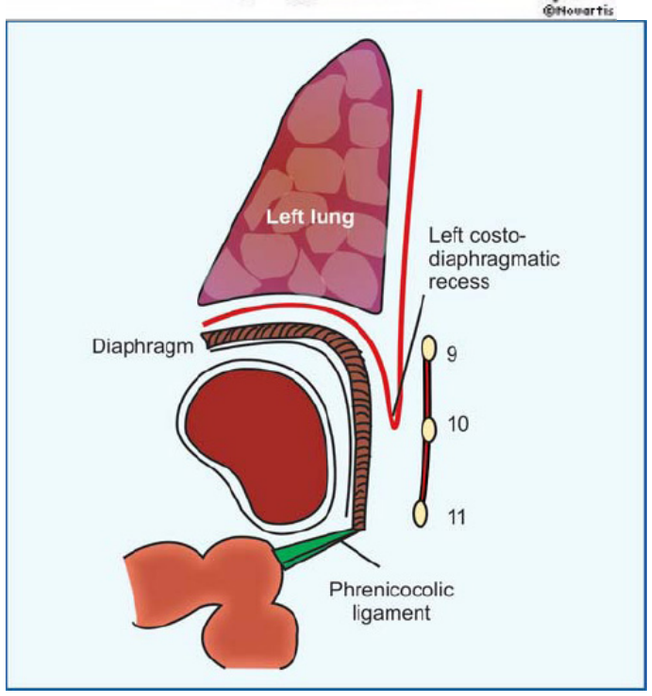




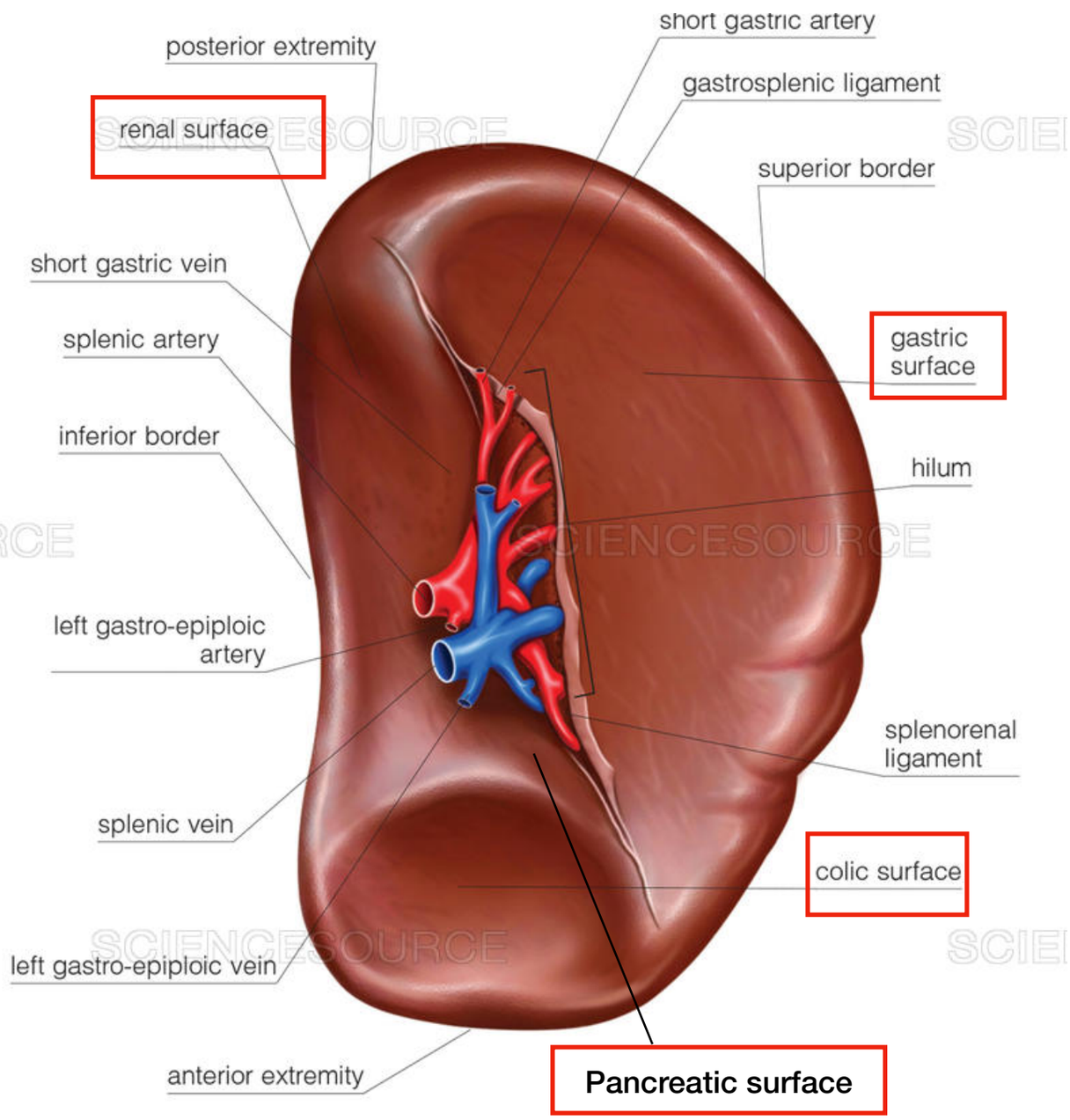
• Surfaces of the Spleen

- Diaphragmatic surface:
  - has convex, smooth surface
  - Diaphragm separates it from (Pleura & lung - Ribs 9,10 ,11)

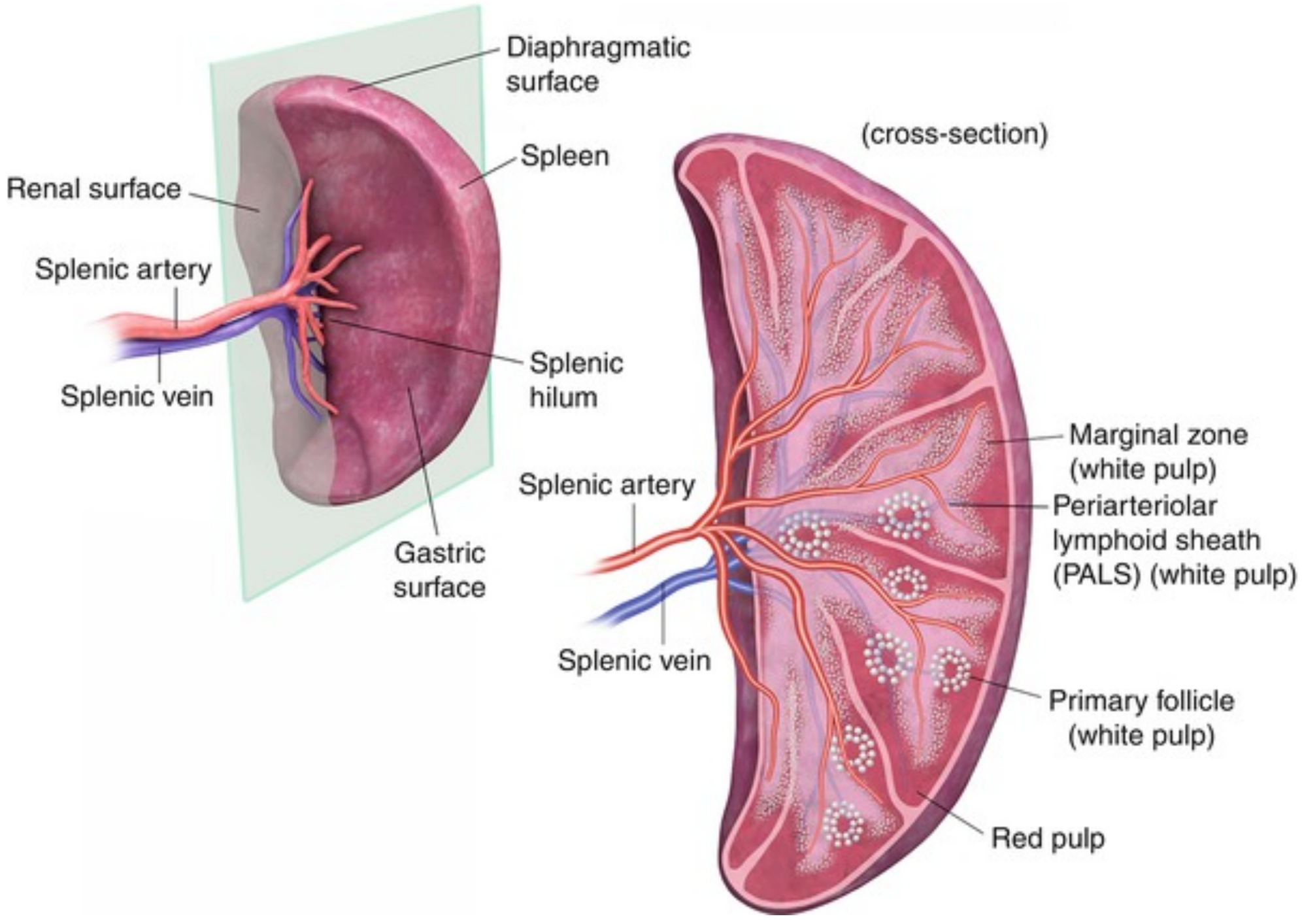




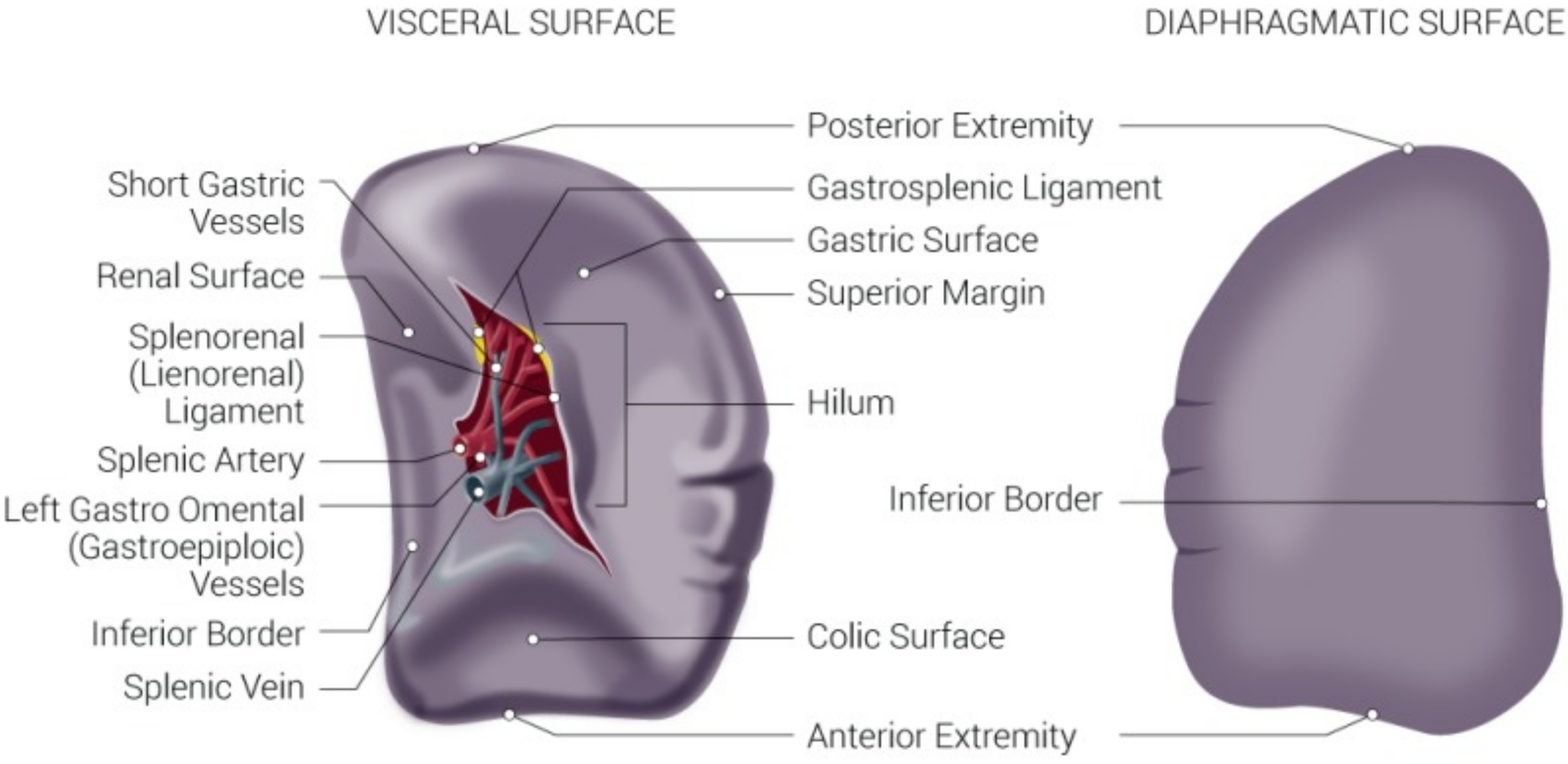
- Visceral surface:
  - the student should identify the
    - gastric surface
    - renal surface
    - Colic surface
    - Pancreatic surface



- Hilum of spleen

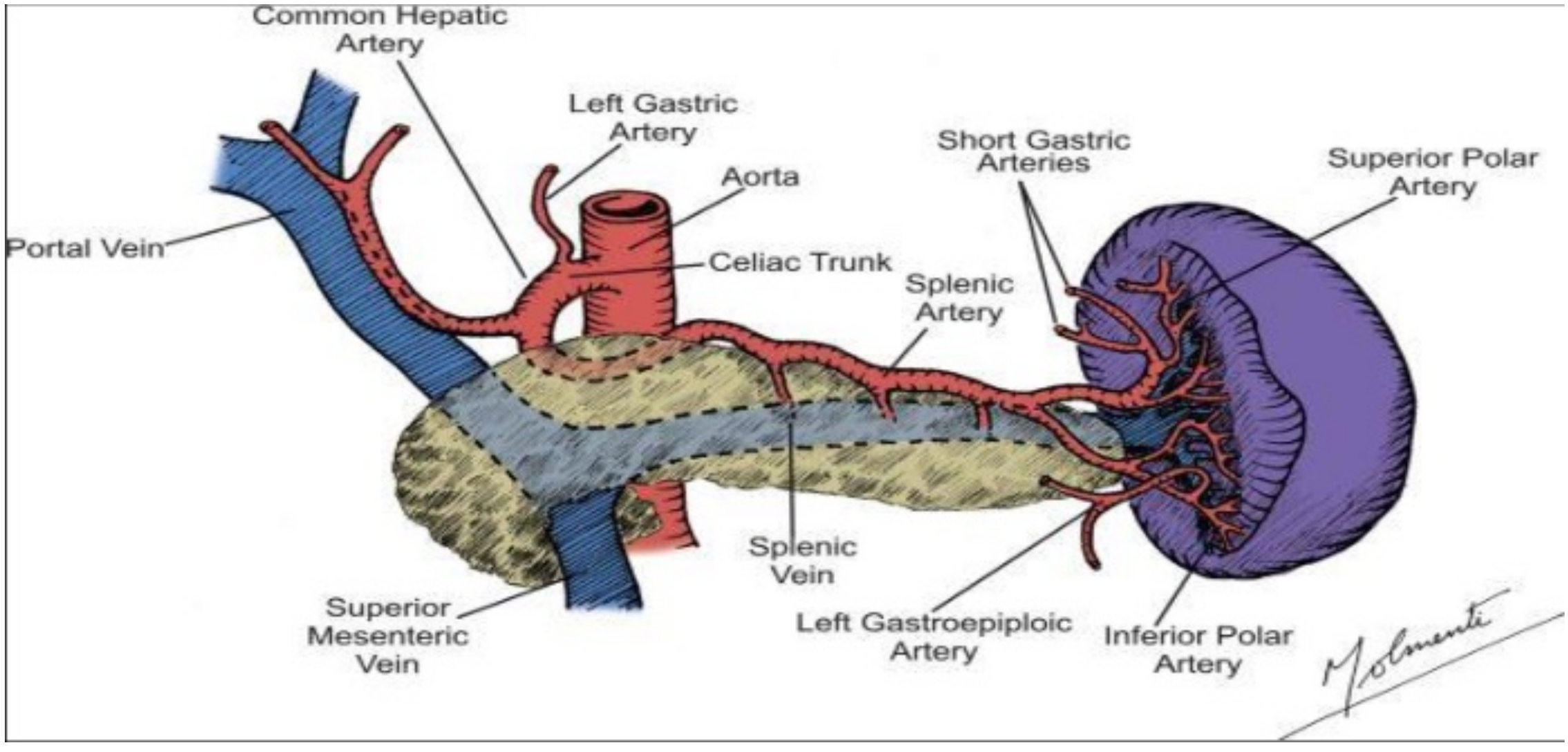


- Borders of the spleen



• Blood supply of the spleen

- Arterial supply



• Blood supply of the spleen

- Venous drainage