

THORACIC DUCT & THE SPLEEN

Dr. Aiman Q. Afar
Surgical Anatomist

College of Medicine / University of Mutah
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Thoracic Duct

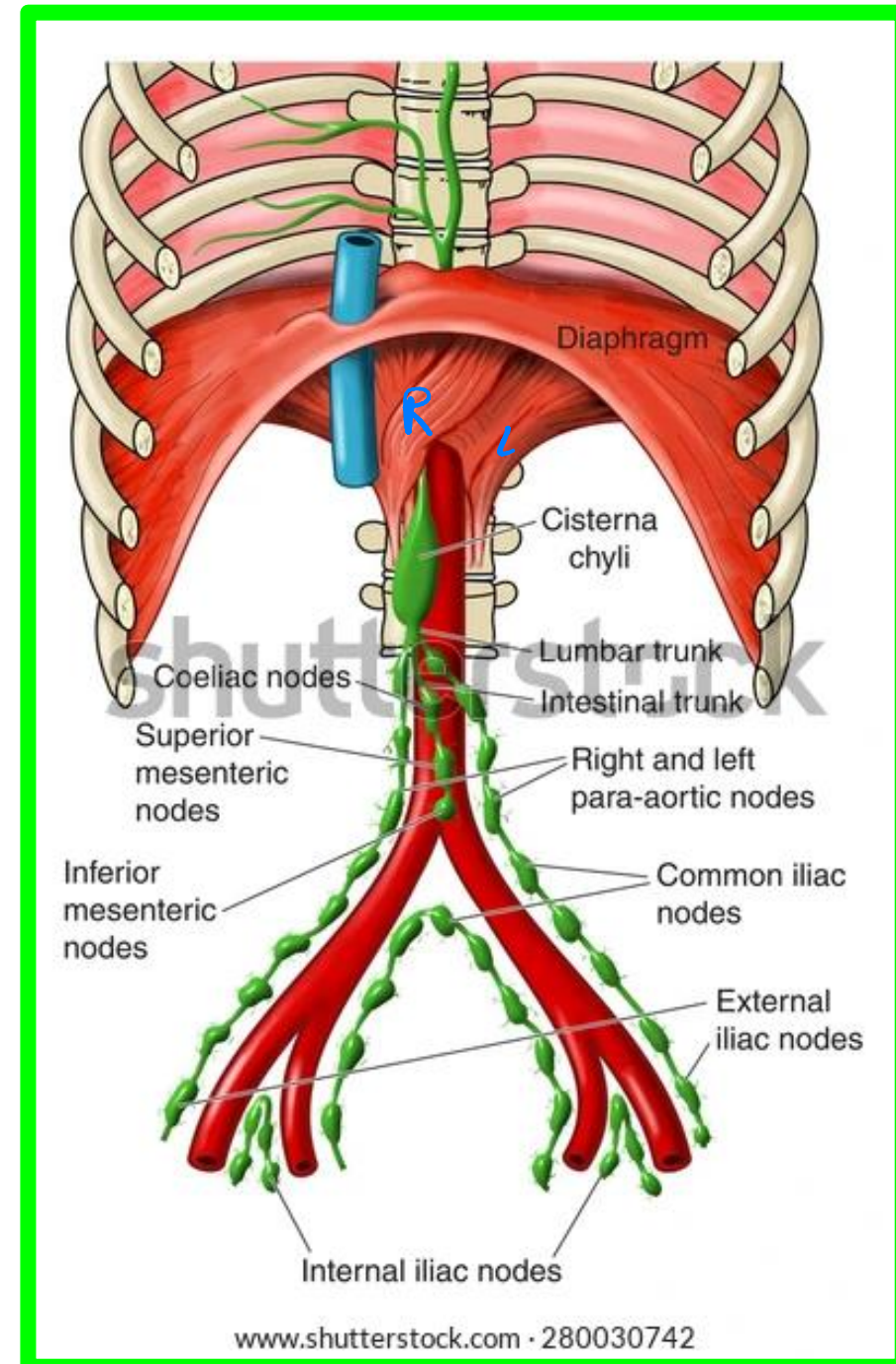
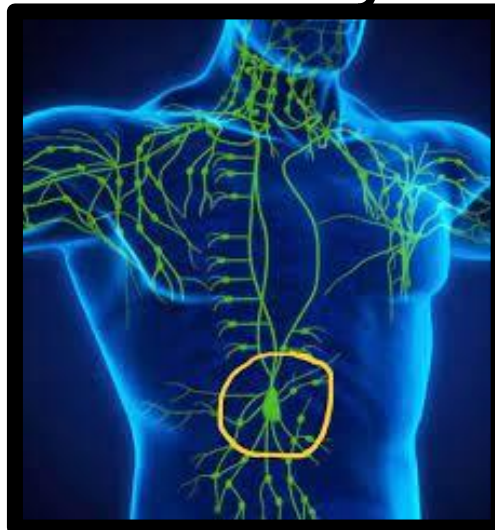
- It is the largest lymphatic vessels in the body.

**** Beginning:** from the upper end of the cisterna chyli. (Lies anterior to bodies of L1,L2 vertebrae between the right crus of the diaphragm and the aorta)

**** Shape:** It is a thin-walled vessel which has a beaded appearance ^{why?} due to presence of many valves.

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Dr. Aiman Al Maathidy
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Thoracic Duct

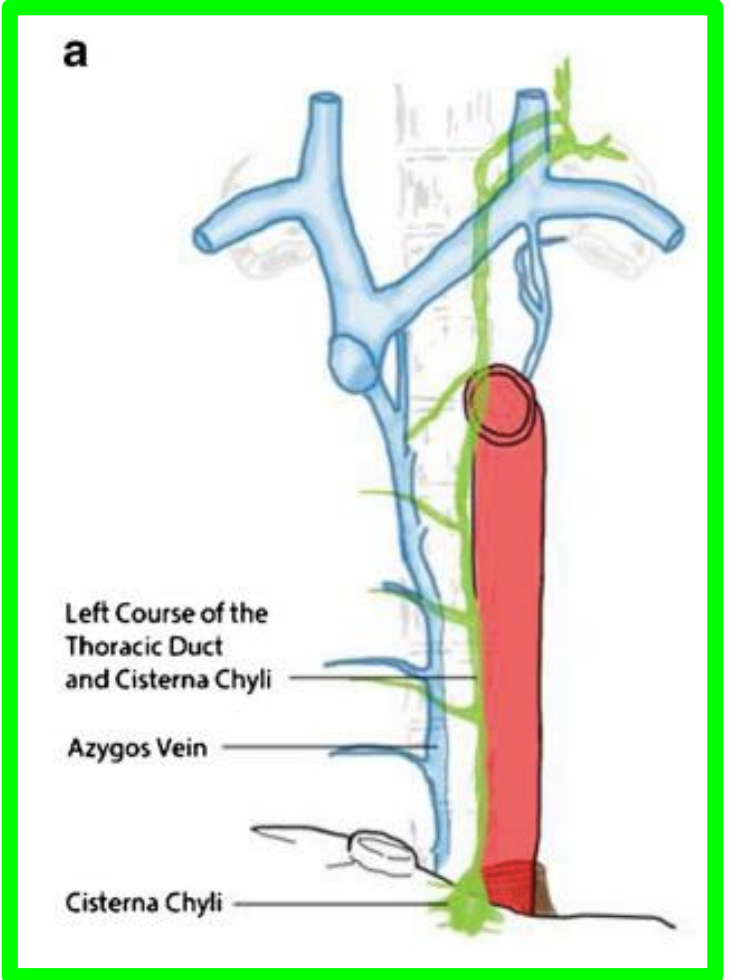
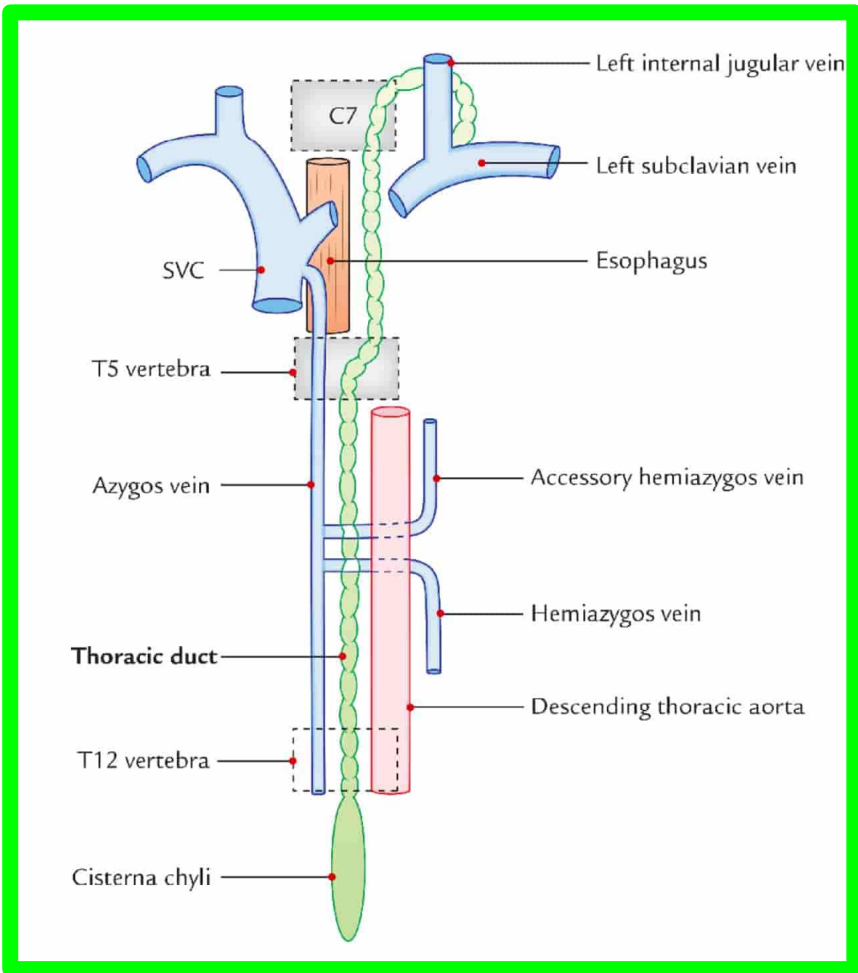
** Course and relations:

1- It enters the thorax through the aortic opening of the diaphragm ^{T12} between the aorta (on the left) and azygos vein (on the right).

in post
mediastinum

Posterior Mediastinum Contents

mnemonic: "DATES"



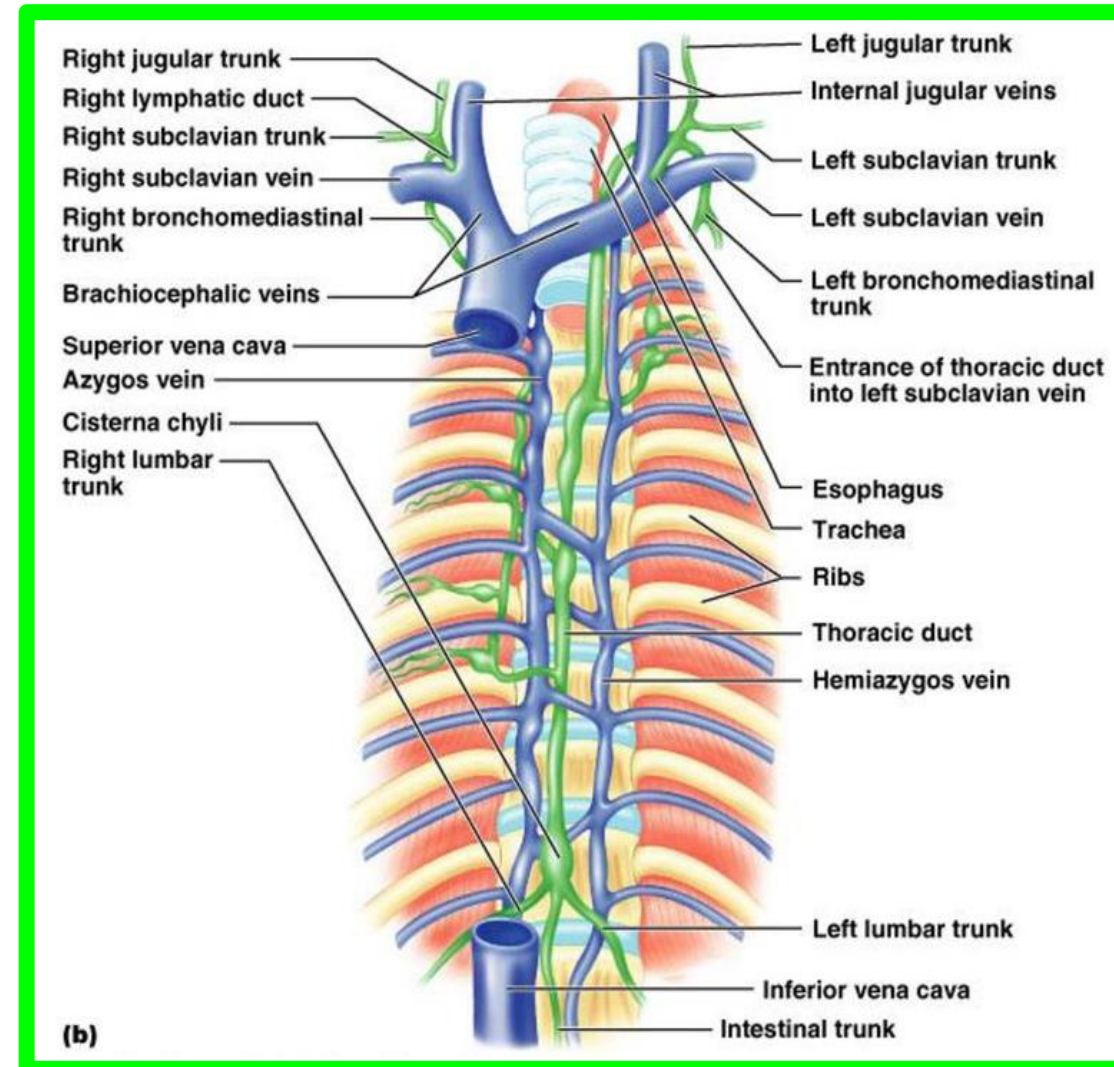
Thoracic Duct

**** Course and relations:**

2- In the ^①posterior mediastinum, it ascends between **the aorta** (on the left) and **azygos vein** (on the right).

❖ Behind right border of esophagus.

❖ In front of: ¹the vertebral column, ²posterior intercostal arteries, and ³hemiazygos veins.



Thoracic Duct

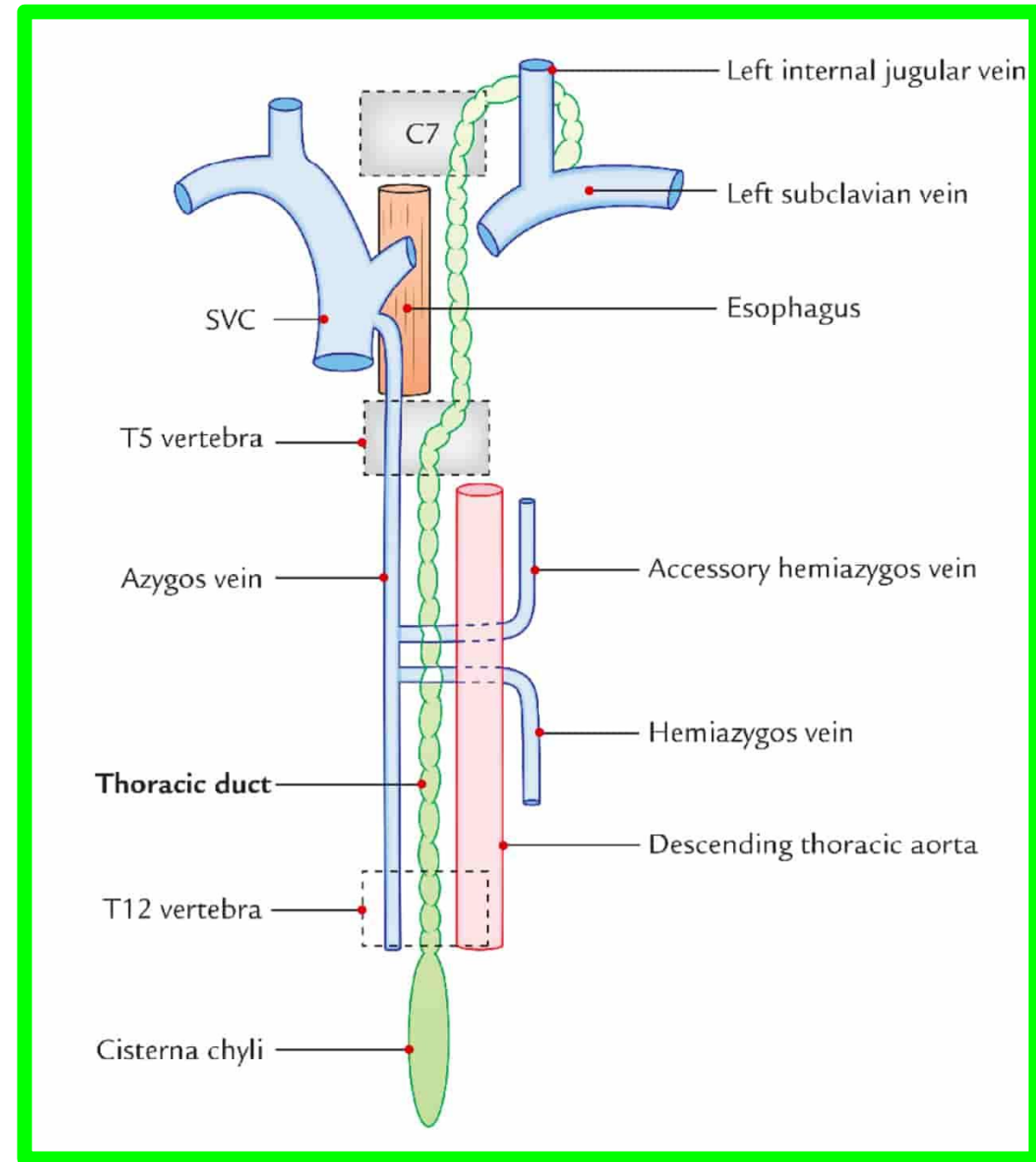
**** Course and relations:**

3- At the level of T5:

- It crosses the median plane from right to left behind the esophagus. *was at R boarder*

4- In the ²superior mediastinum:

- It ascends behind left border of esophagus.



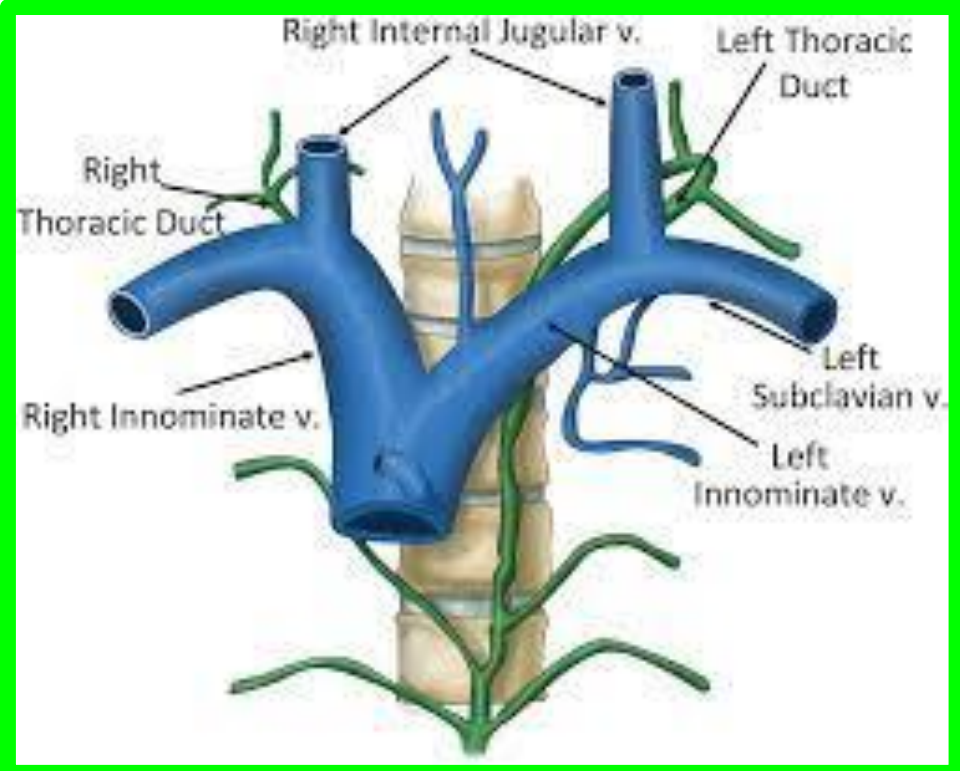
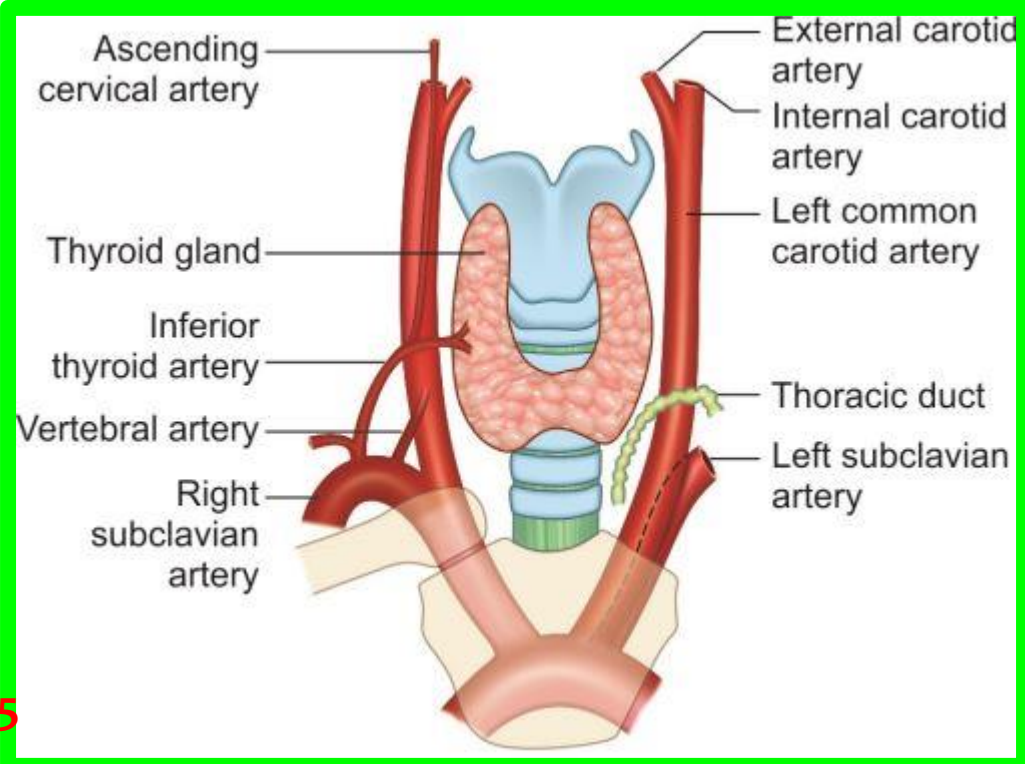
Thoracic Duct

** Course and relations:

5- In the neck, at the level of the C6, It curved behind the carotid sheath.

6- Finally, it descends to end into the junction of the left subclavian and left internal jugular veins. ← *left venous angle*

N.B; At the end of the duct there are **2 valves** to prevent regurgitation of the blood.



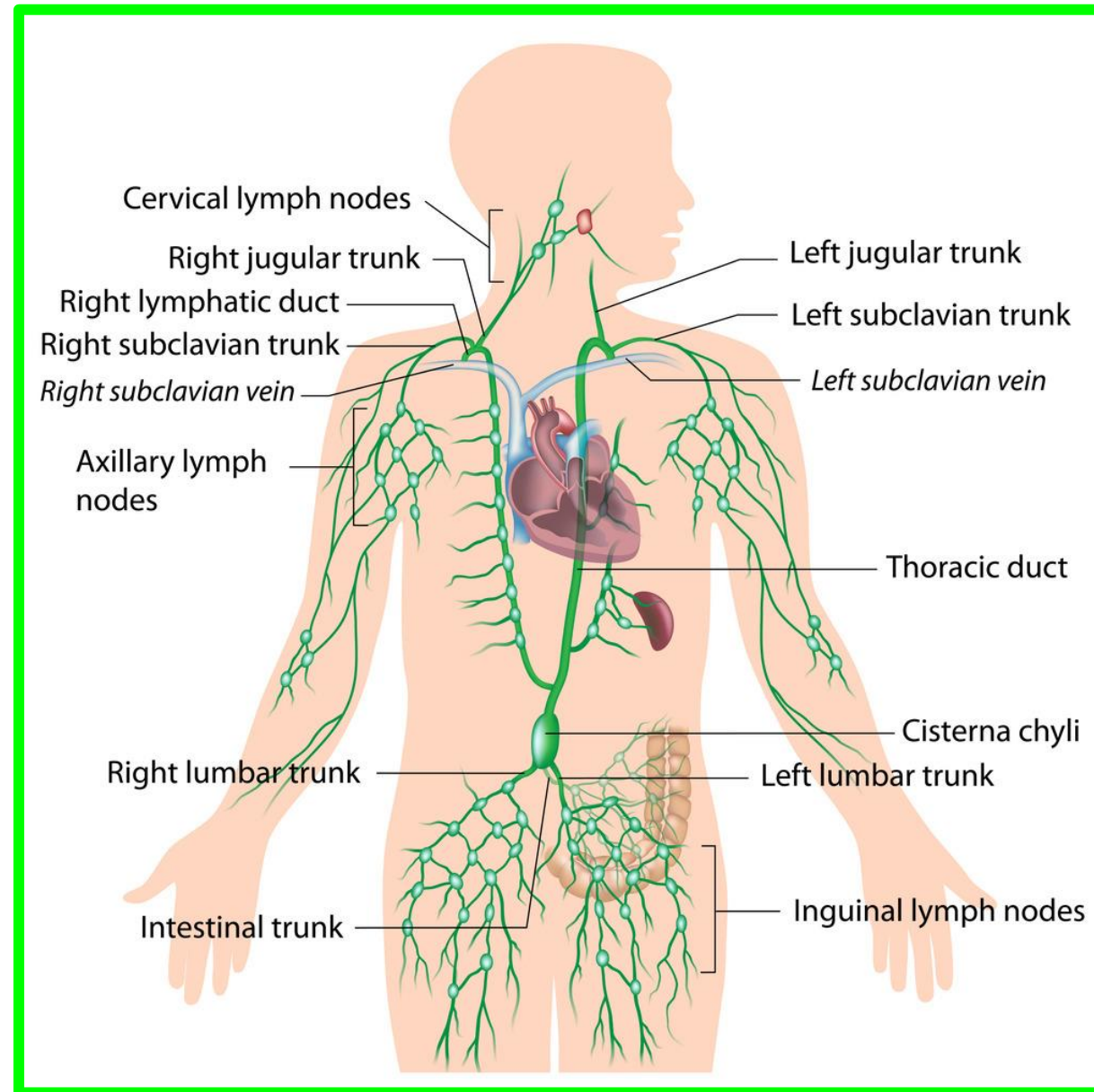
Thoracic Duct

** Tributaries:

1) **Cisterna chyl**, receives lymphatic from the lower part of the body through;

A- **Intestinal lymph trunk** (from abdomen and pelvis).

B- **Right and left lumbar lymph trunks** (from 2 lower limbs).



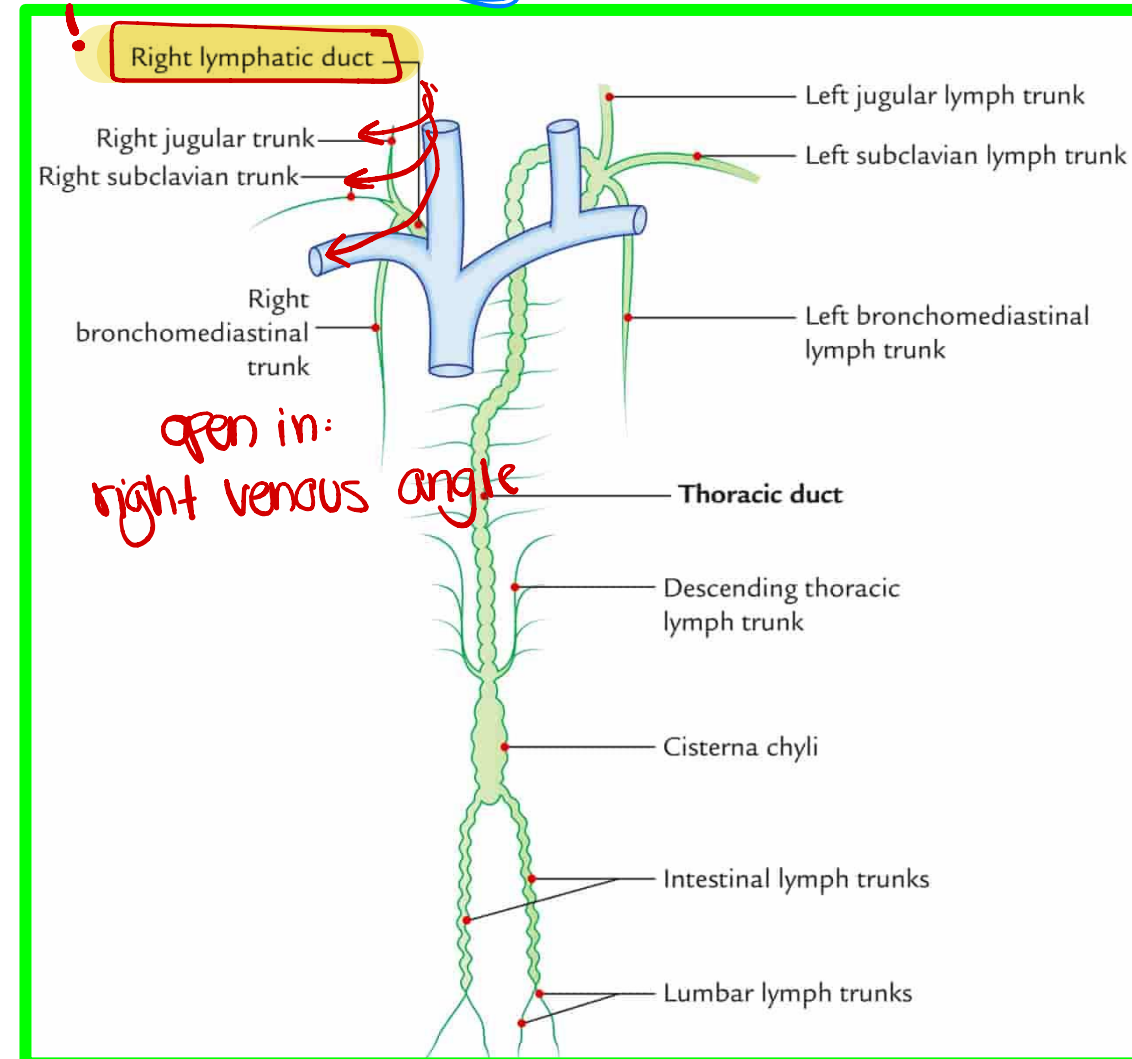
Thoracic Duct

** Tributaries:

2) ^{→ same "right"} Left broncho-mediastinal lymph trunk: drains the left 1/2 of the thoracic cavity.

3) Left subclavian trunk: drains the left upper limb.

4) Left jugular lymph trunk: drains the left 1/2 of the head and neck.



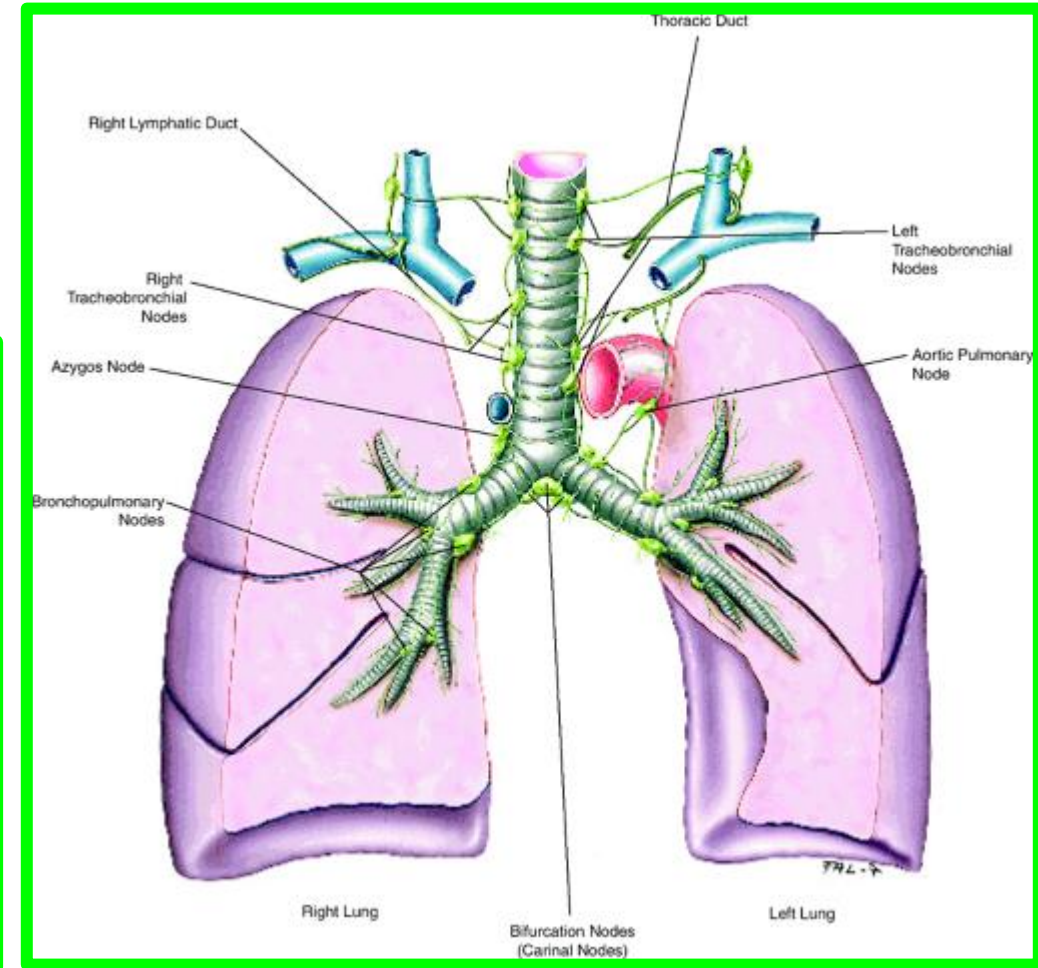
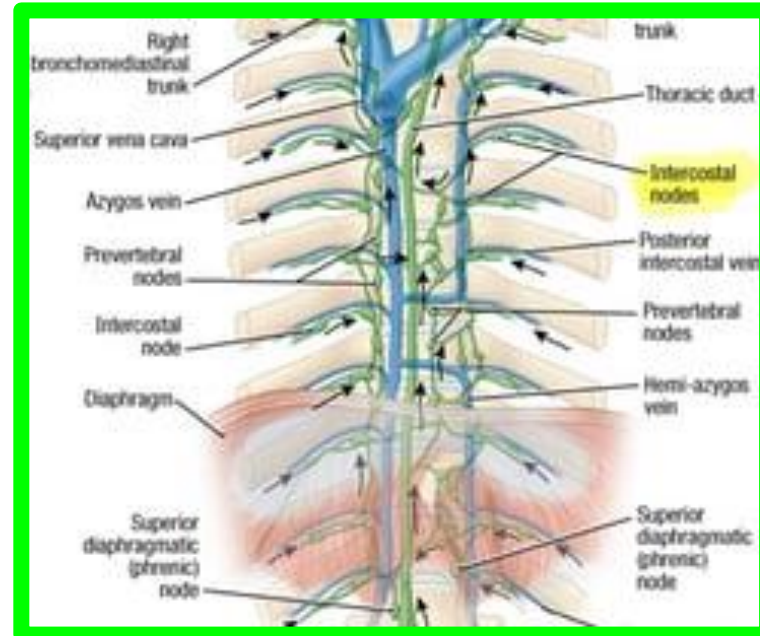
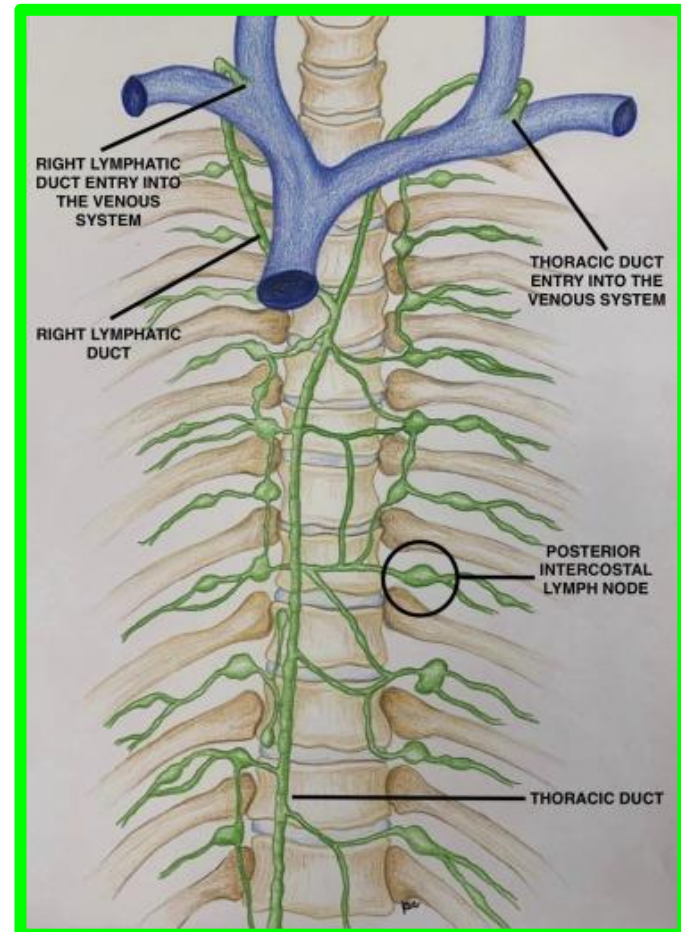
Join thoracic duct
@ level of left
venous angle
[could open seperately] *

Thoracic Duct

** Tributaries:

5) Efferent from the posterior mediastinal lymph nodes.

6) Efferent from the posterior intercostal lymph nodes.



Spleen

- It is a lymphatic organ connected to the vascular system.

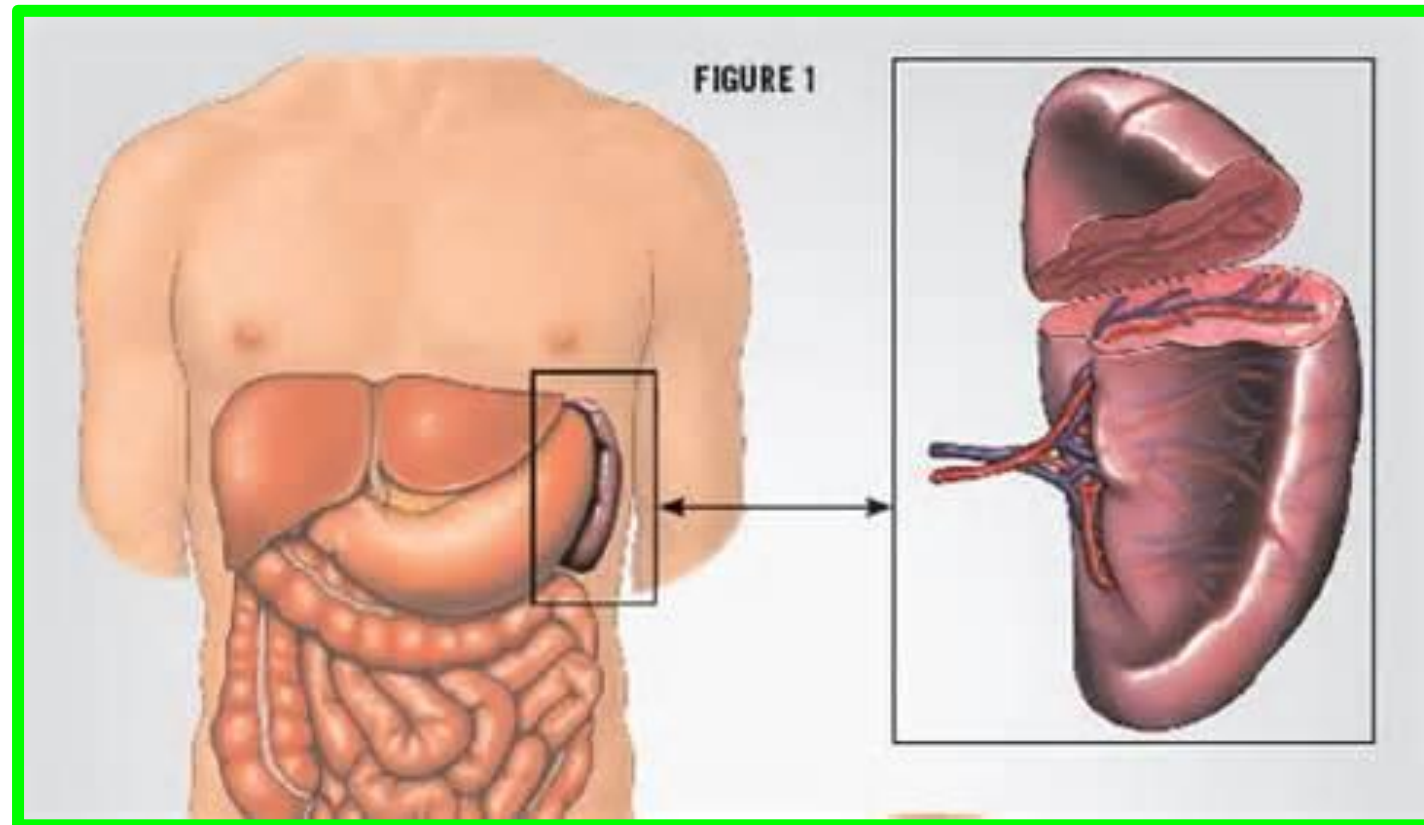
**** Position:** It lies in the **left hypochondrium** !

N.B.; - always remember the odd numbers **1, 3, 5, 7, 9, and 11.** Q.

1 inch thick, 3 inch broad, 5 inch long, 7 ounces (200 gm) weight & lies between 9 & 11 ribs.

**** Functions:**

- 1- Storage of blood.
- 2- Destruction of old RBCs.

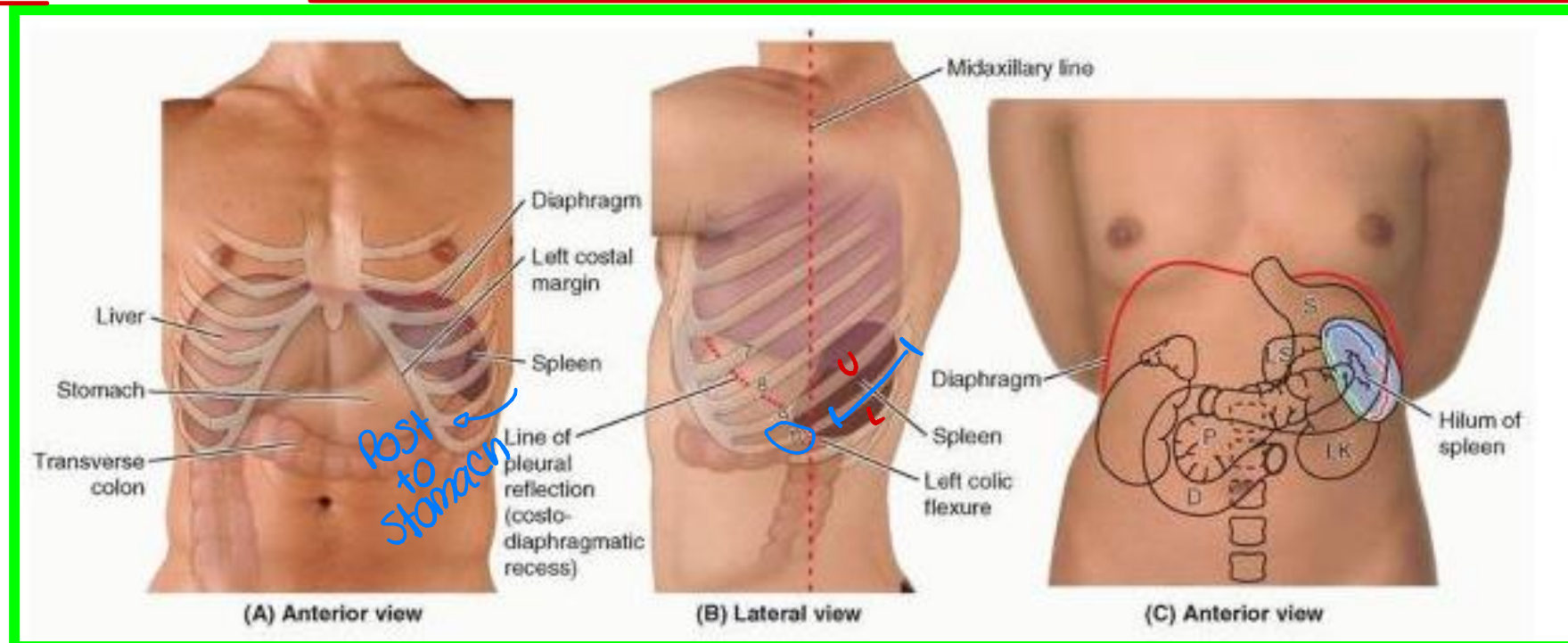


Spleen

9-10-11

** Surface anatomy:

- ❖ The long axis of the spleen lies along the long axis of the 10th rib.
- ❖ Its upper border is parallel to the superior border of the 9th rib.
- ❖ Its lower border is parallel to the inferior border of the 11th rib.
- ❖ The anterior end normally lies just behind the left midaxillary line.
- ❖ The posterior end lies one and half inches lateral to the 10th thoracic spine.



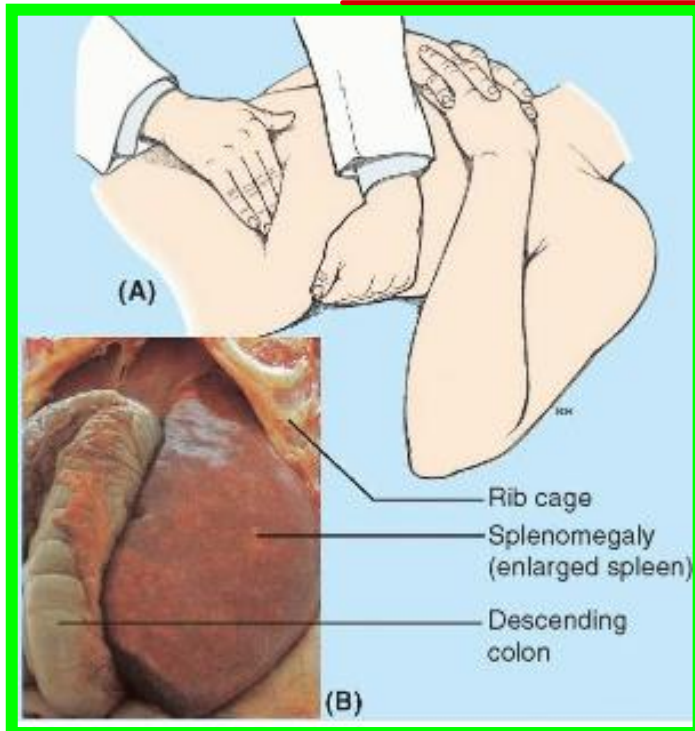
N.B; the normal spleen is not palpable.

- If the spleen is **felt below the costal margin**, it is **enlarged at least 3 times** of its normal size.

**** How to place the spleen in the correct anatomical position**

1- Hold the spleen in your left hand with **its convex surface** applied to **the palm**, the **round posterior end** towards **the wrist**, the **broad anterior end** towards the **tips of fingers** and the **notched upper border** applied **to the thumb**.

2- Put your hand behind the **left midaxillary line** with an **angle 45 degrees** with the horizontal.



Spleen

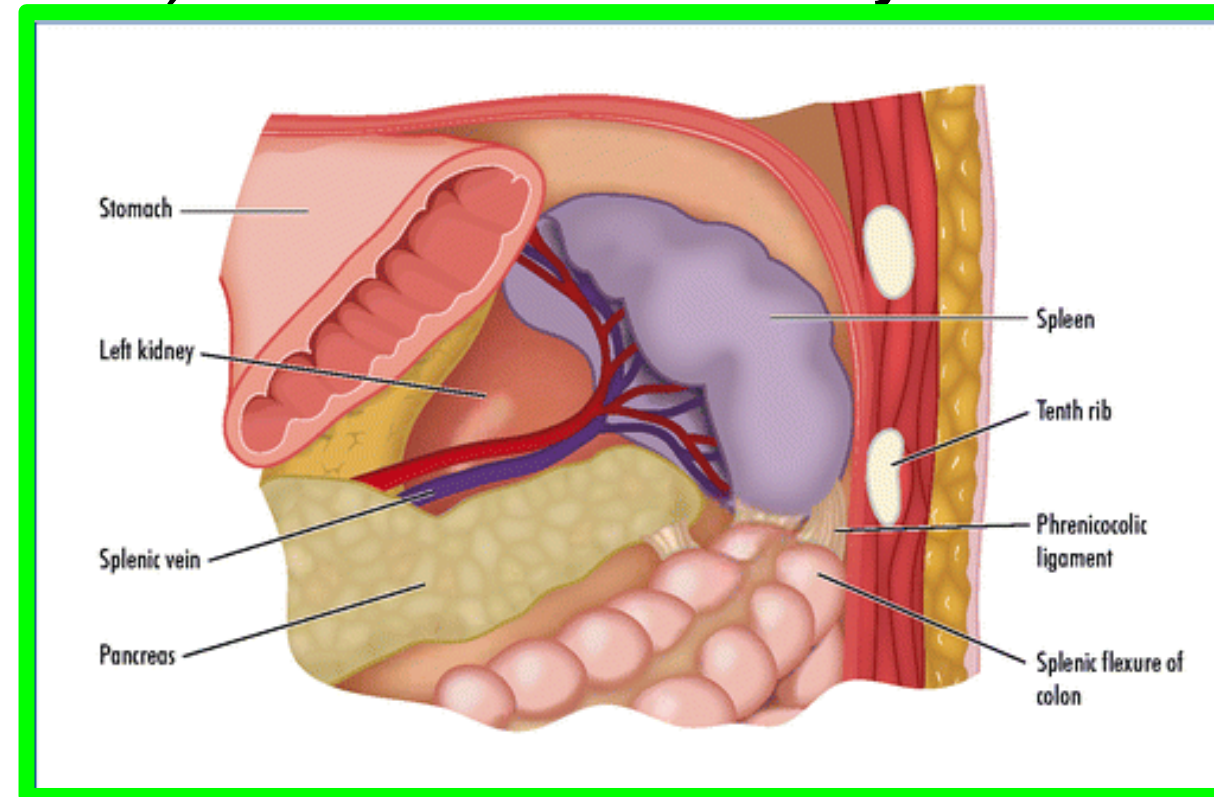
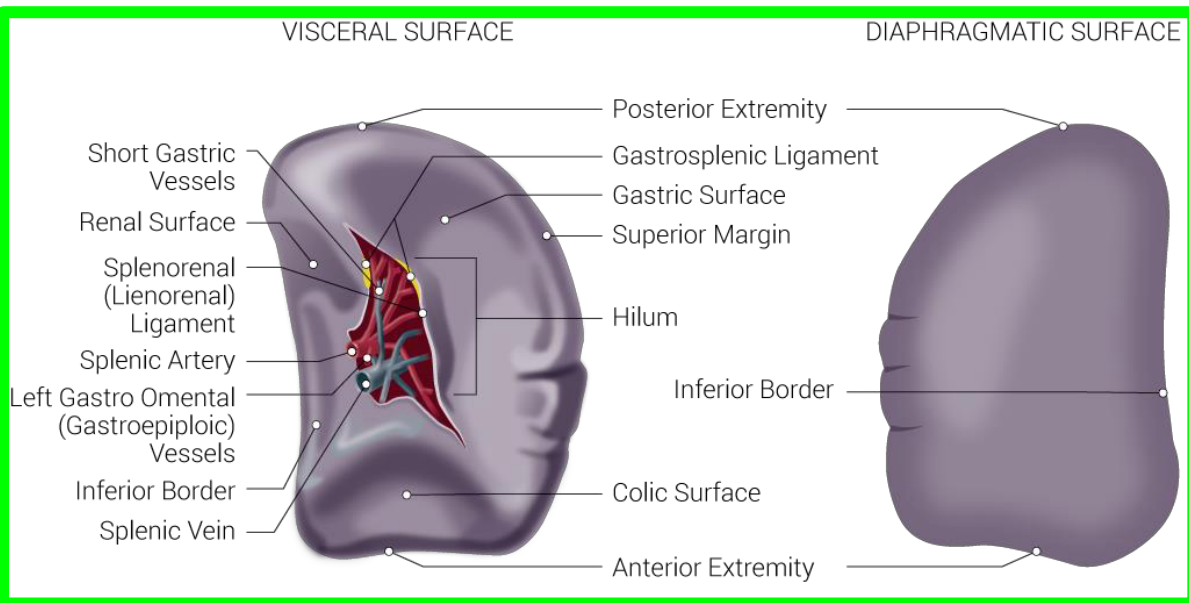
** Features of the spleen

The spleen has;

A- 2 Ends

- 1- Posterior end (tapering) directed upwards, backwards and medially.
- 2- Anterior end (broad) directed downwards, forwards and laterally.

towards spine of T10



B- 2 Borders

1- Upper border: sharp.

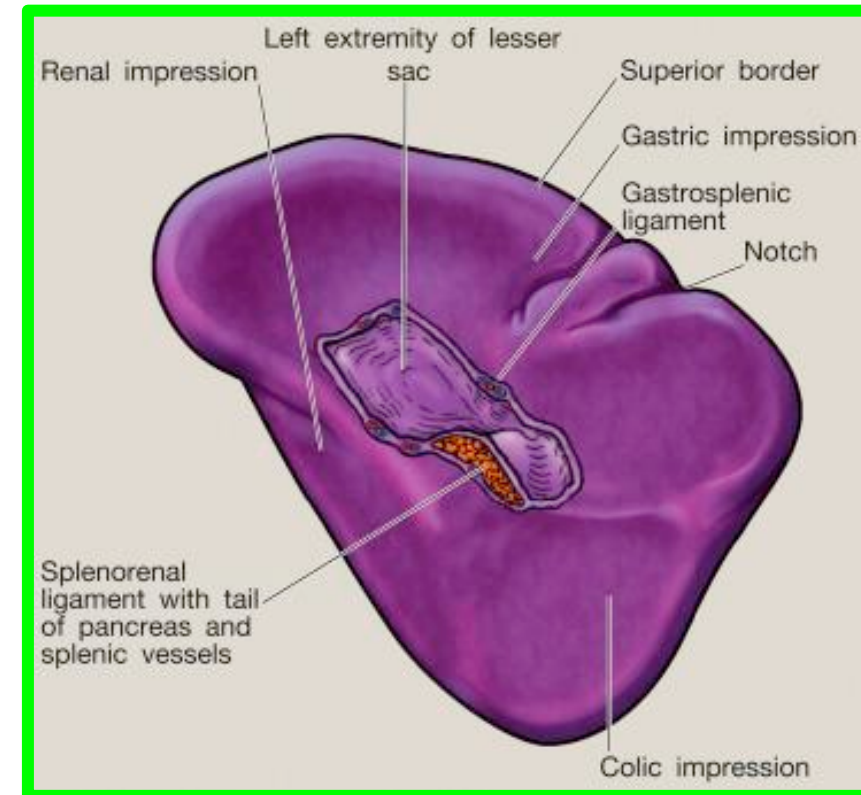
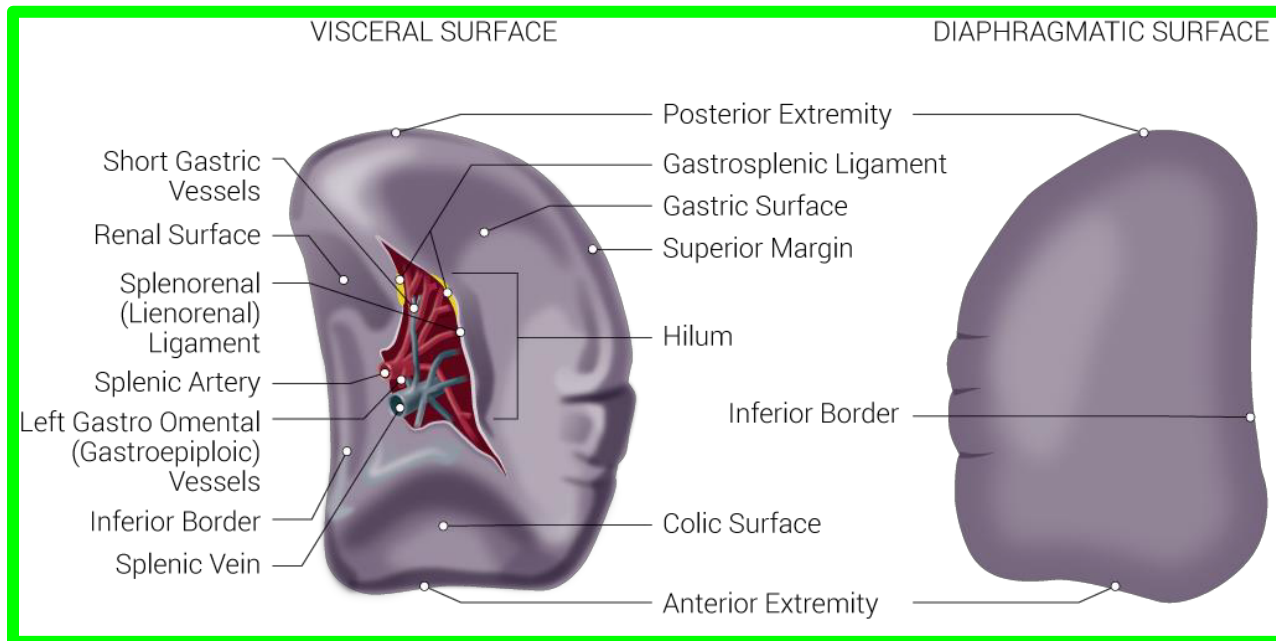
- ✓ It shows **one or more notches** near its anterior (lateral) end.
- ✓ It meets the anterior end in the angle of the spleen.

ant. angle of spleen

N.B; Notching of the upper border is an indication of foetal lobulation.

2- Lower border: thick and round.

C- 2 Surfaces: ¹diaphragmatic and ²visceral



Spleen

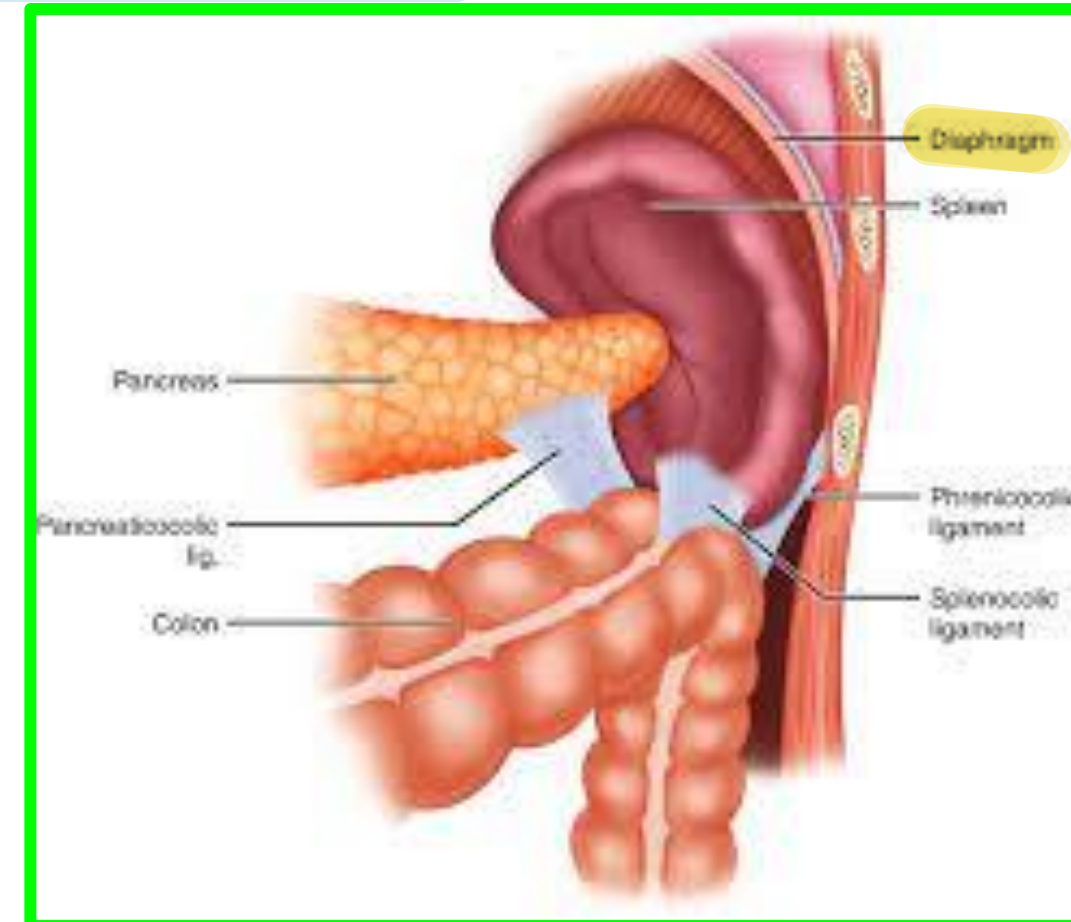
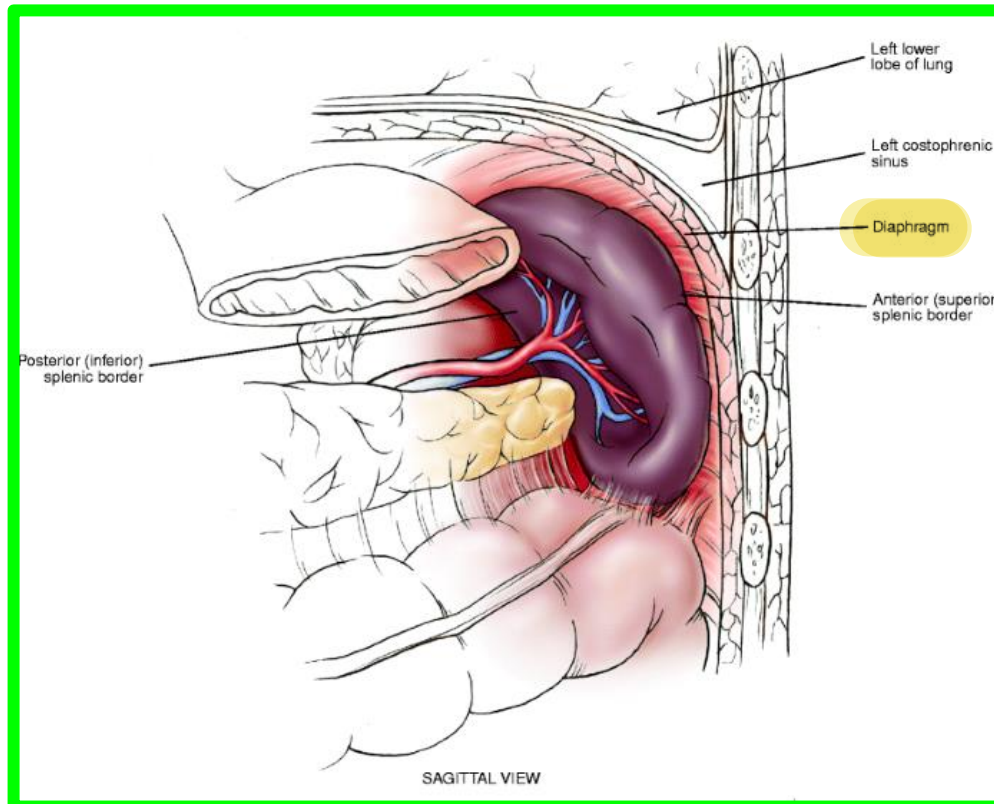
• Relations of the spleen

1- Diaphragmatic surface: the outer smooth and convex surface.

❖ It is related to the **diaphragm** which separates it from:

✓ The **9th, 10th and 11th ribs** and the intercostal structures.

✓ **Left pleura** and the **left lung**.



Spleen

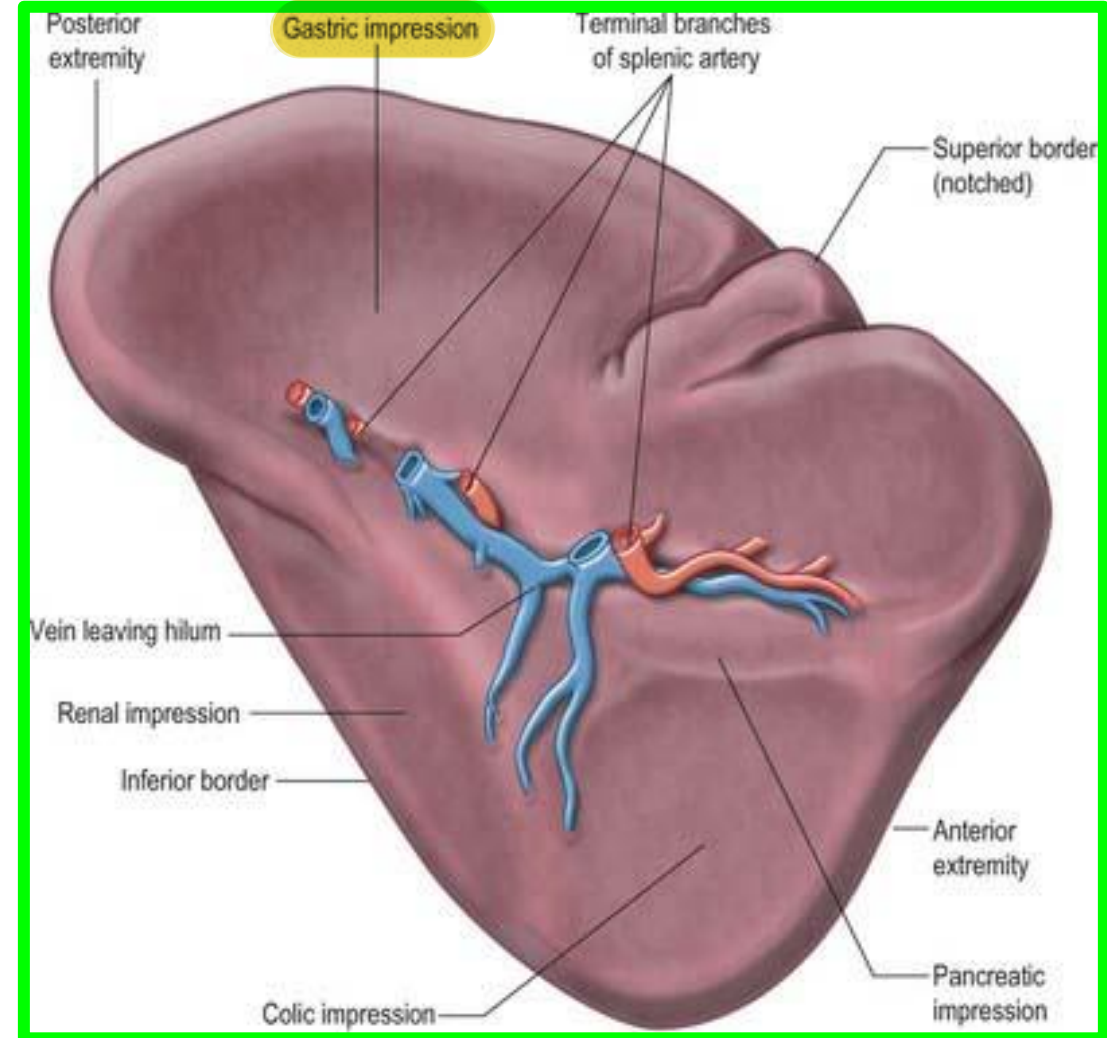
2- **Visceral surface:** the inner surface of the spleen.

- ✓ It contains the hilum of the spleen.
- ✓ It is irregular as it carries 4 impressions

↳ unlike smooth diaph.

1
A. Gastric impression: between the upper border and the hilum.

- ✓ It is related to the posterior surface of the stomach. → part of stomach bed



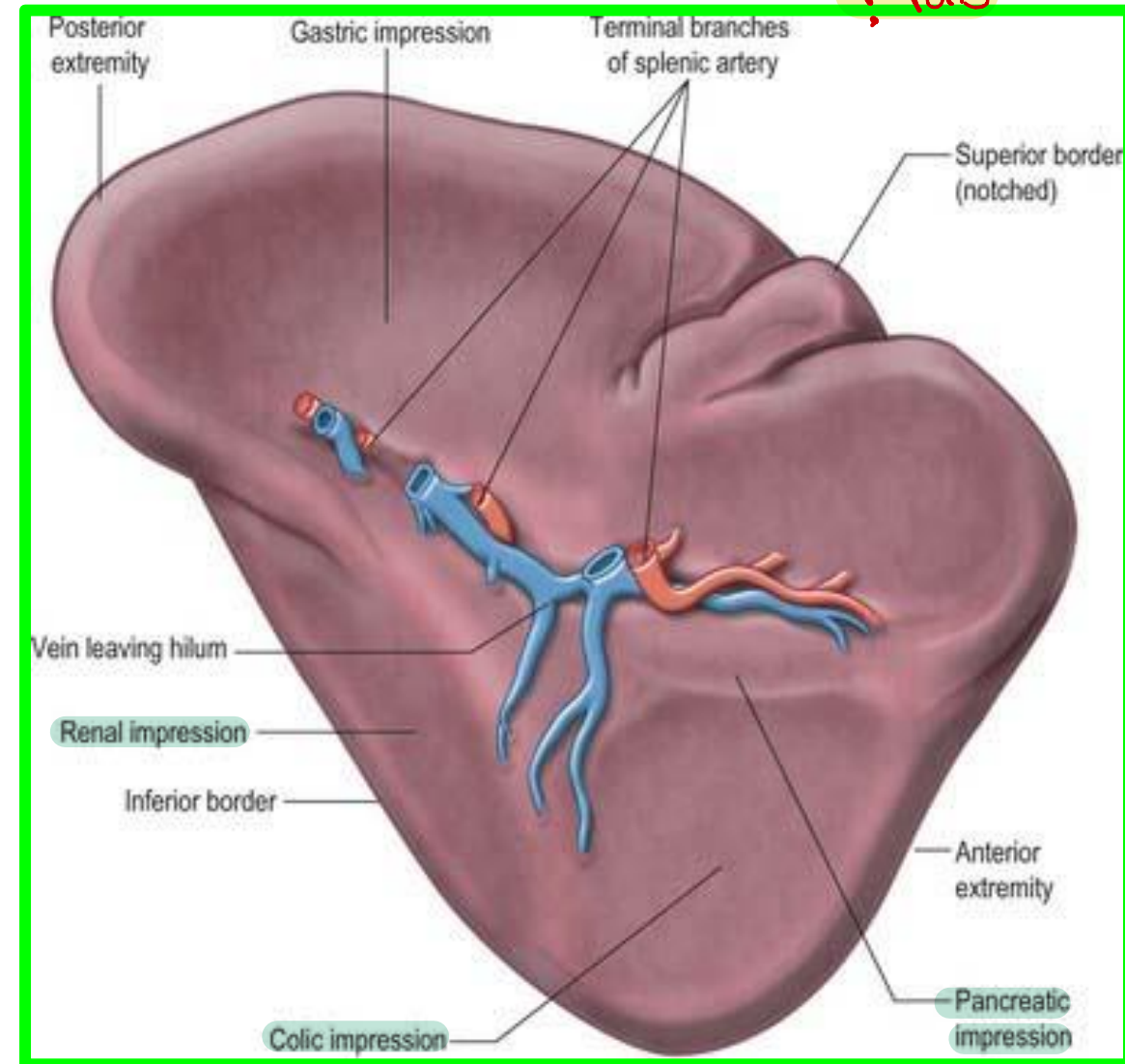
Spleen

² **B. Renal Impression:** between the hilum and lower borders. It is related to **the anterior surface of the left kidney**.

¹⁺² **N.B; intermediate margin** is the ridge between gastric and renal impressions.

³ **C. Colic impression:** lies close to the anterior (lateral) end of the spleen. It is related to **the left colic flexure**.

⁴ **D. Pancreatic impression:** below the lateral end of the hilum. It is related to **the tail of pancreas**.



Spleen

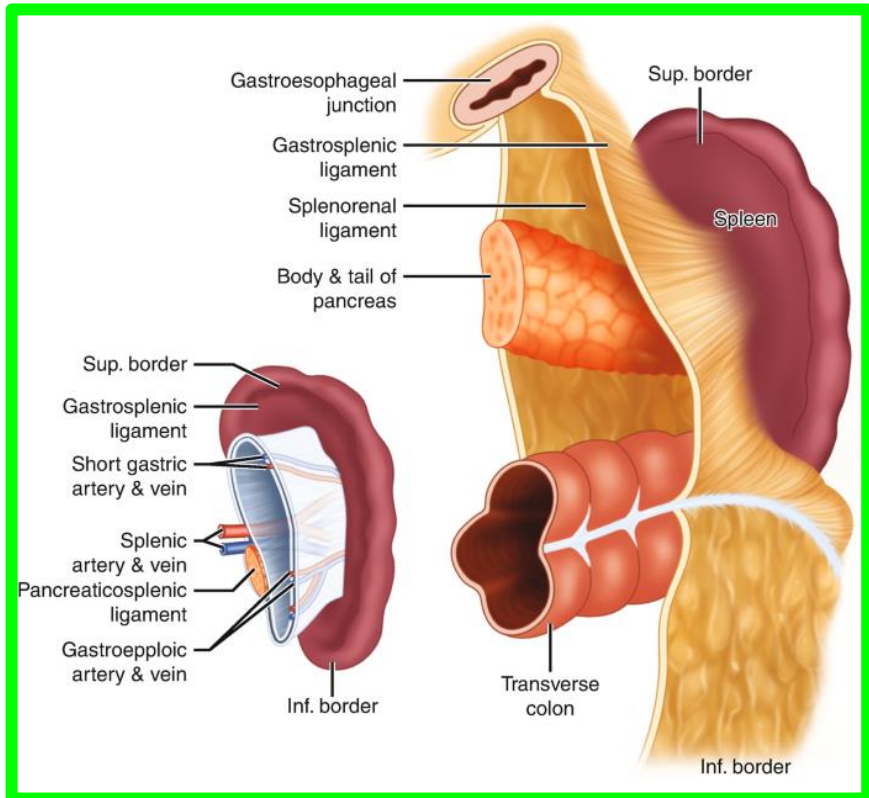


VAN

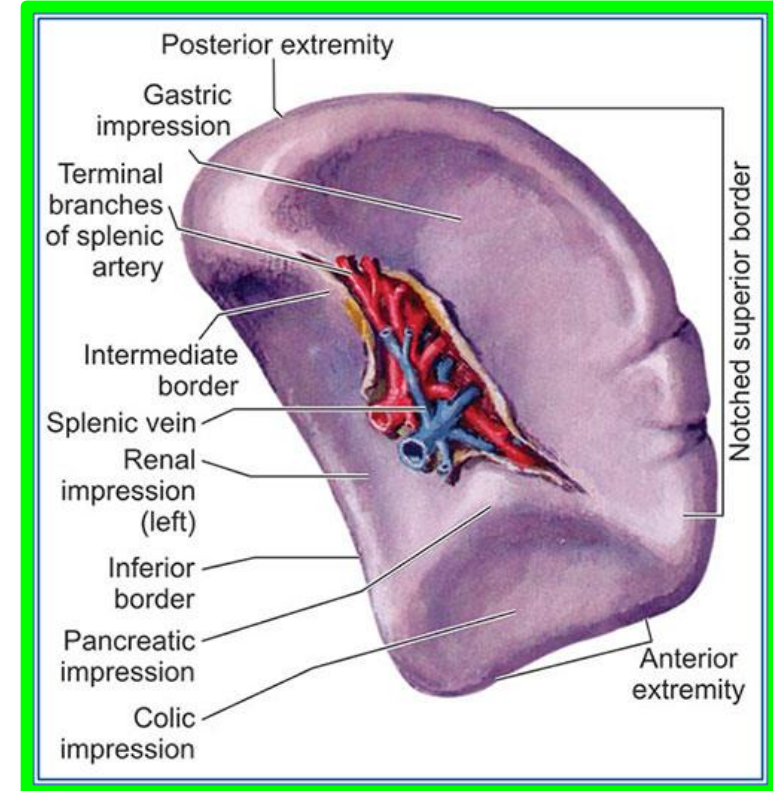
E. Hilum of the spleen: between the gastric and renal impression.

- ❖ It transmits 1- Terminal branches of the **splenic artery (5-6 branches)**.
- 2- Tributaries of **the splenic vein**.
- 3- Autonomic **nerves and lymphatic**.

!  It gives attachment to 2 ligaments; **lienorenal** and **gastro-splenic**.



↑
of
Peritonium



Spleen

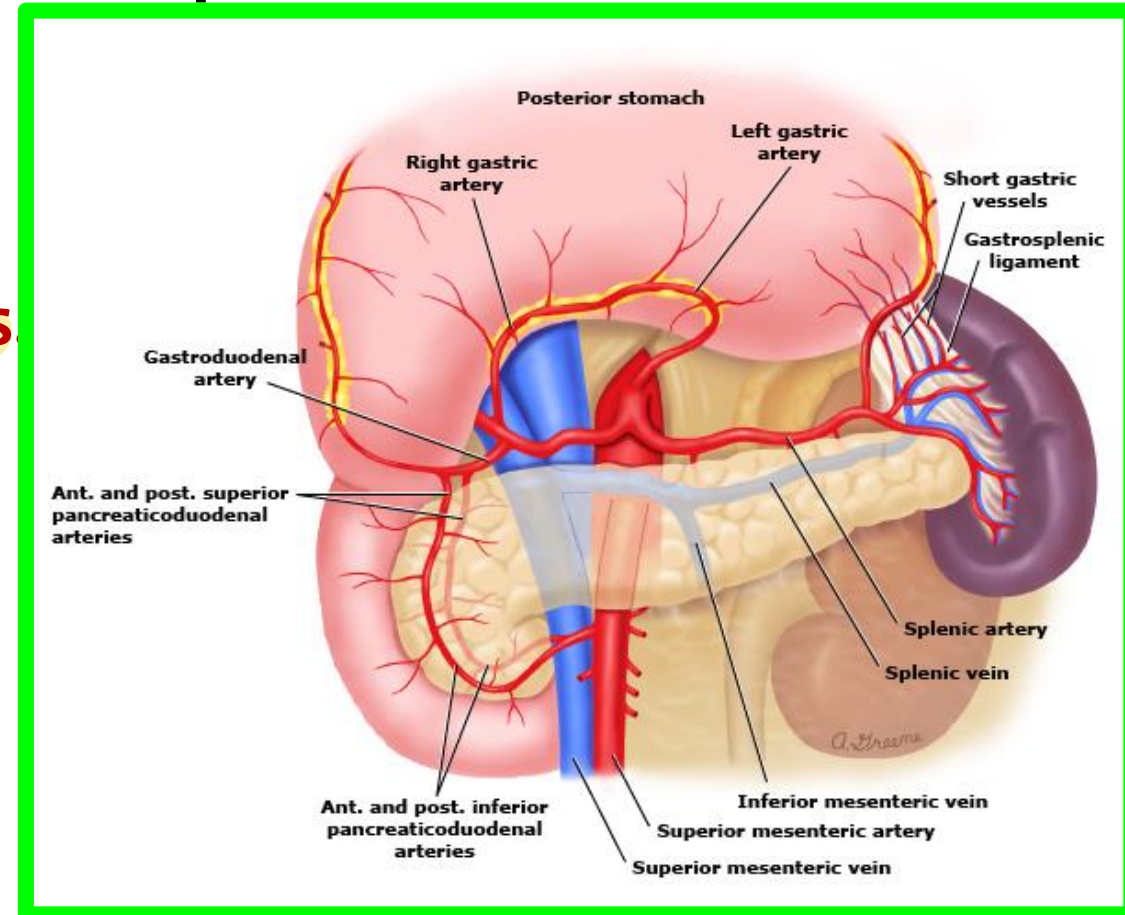
- ** Ligaments (Peritoneal folds) of the spleen:** *intra-Peritoneal*
- ❖ The spleen is almost completely surrounded by peritoneum **except at the hilum.**

1- Gastrosplenic ligament: between hilum of the spleen and the stomach.

*** Contents:**

- 1- Short gastric vessels.
- 2- Left gastro-epiploic vessels.
- 3- Sympathetic plexus around the arteries.
- 4- Pancreatico-splenic lymph nodes.
- 5- Extraperitoneal fatty tissue.

*all of the following
except: Q.*

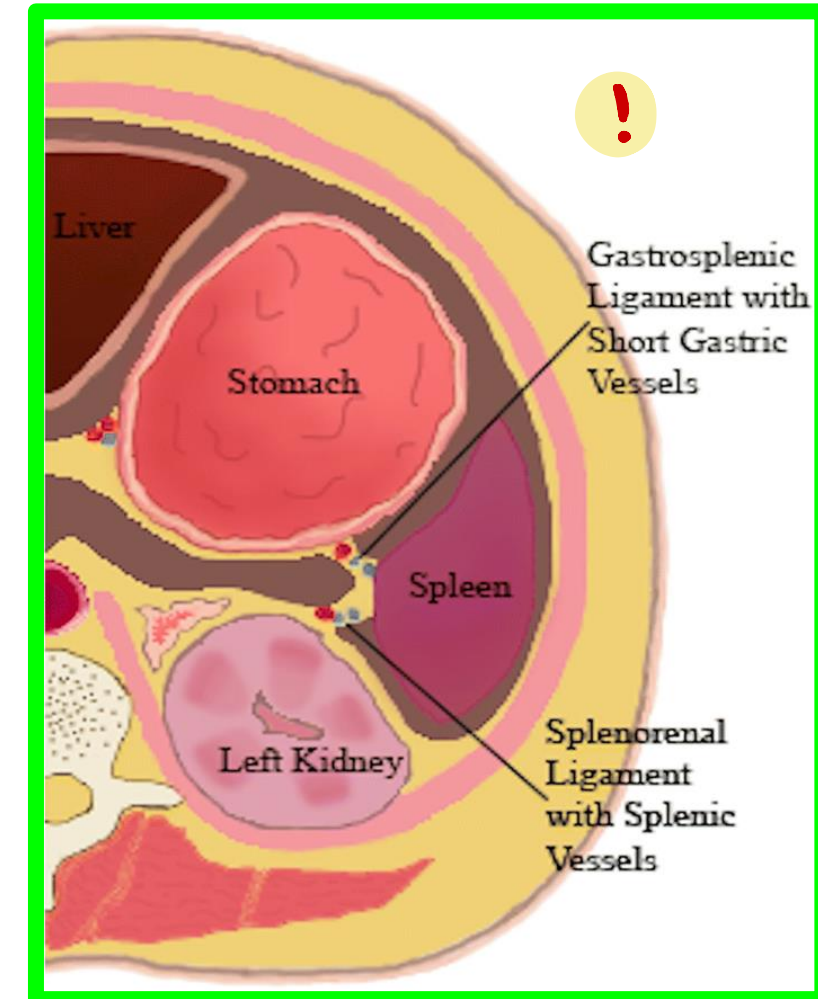
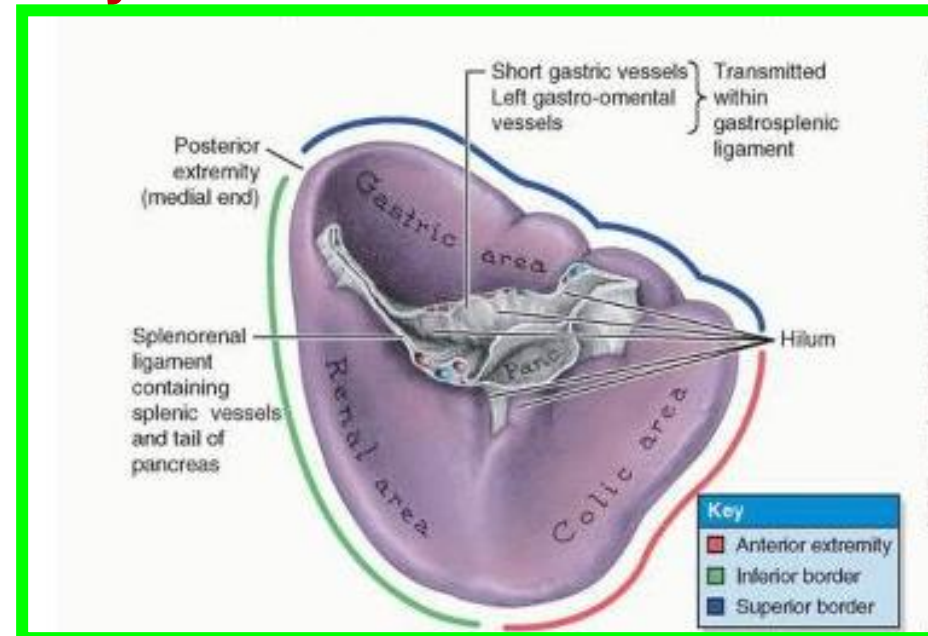


2- **Lienorenal ligament**, between the hilum of the spleen and left kidney.

* Contents

- 1- Tail of pancreas.
- 2- Splenic vessels.
- 3- Sympathetic plexus around the splenic artery.
- 4- Pancreatico-splenic lymph nodes.
- 5- Extraperitoneal fatty tissue.

all of the following
except: Q.



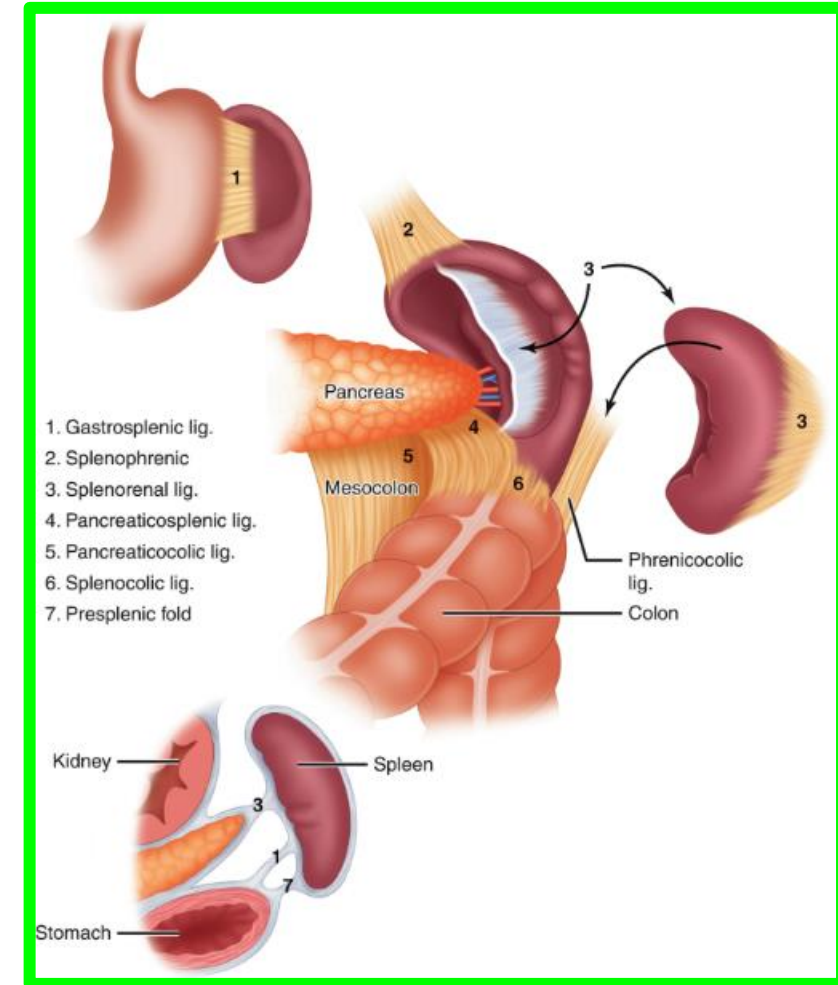
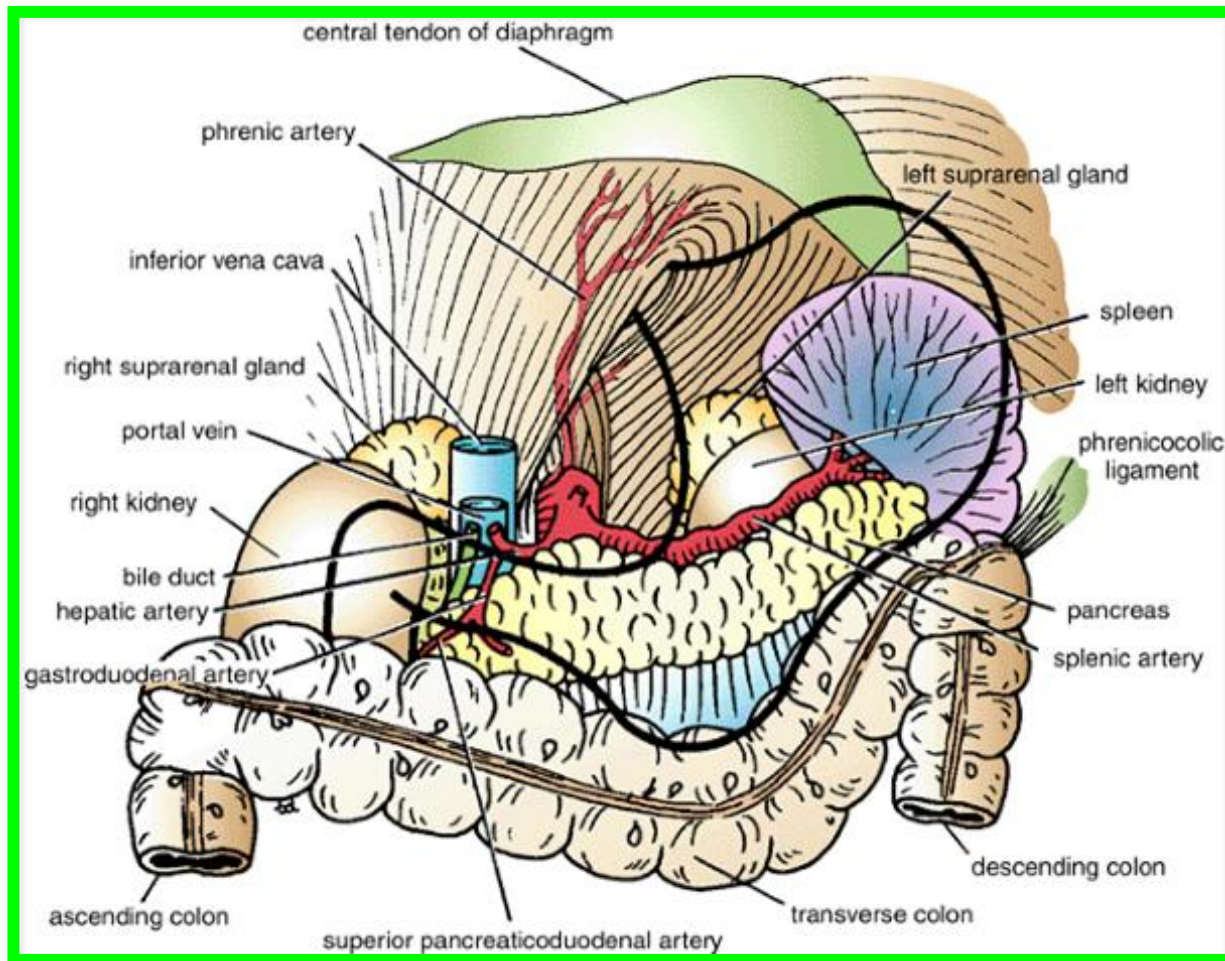
Spleen

external



stops downward
↑ extension

3- Phrenico-colic ligament: It extends from the left colic flexure to the diaphragm. It supports the lateral end of the spleen. As a result of splenomegaly (enlarged spleen) extends towards the umbilicus. → **diagnostic**



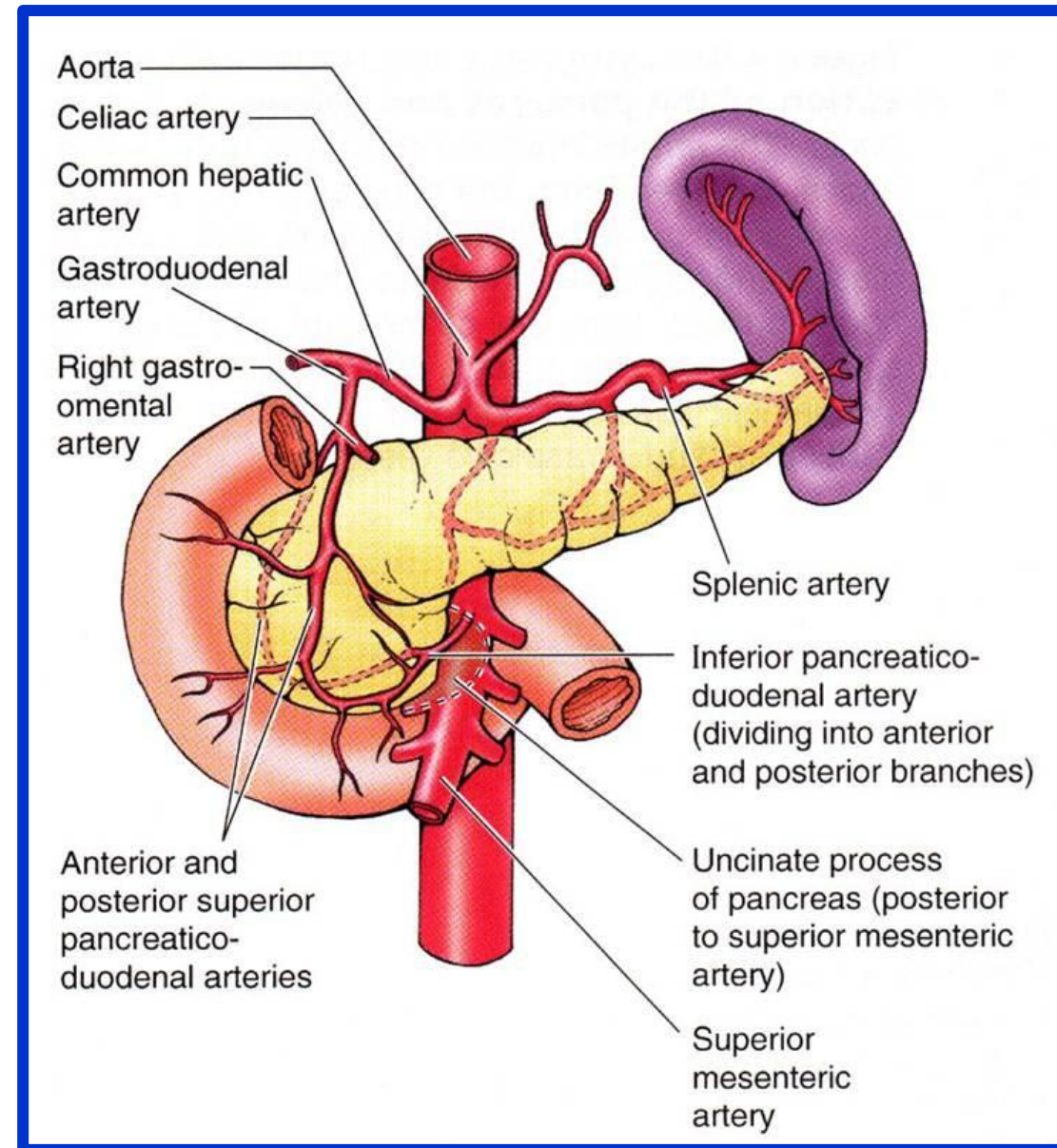
Spleen

- Blood supply

- ** Arterial supply:**

- **Splenic artery** is the **largest** branches of the **coeliac trunk**. It runs as a tortuous course along the upper border of pancreas.

- It enters **the lienorenal ligament** to reach the hilum and end by dividing into 5-6 branches. They are end-arteries.



Spleen

** Venous drainage:

□ **Splenic vein** runs a straight course behind the pancreas.

- It ends by joining the **superior mesenteric vein** to form **the portal vein**.

* Lymphatic drainage:

- To the **pancreatico-splenic lymph nodes**.

- **Red bulb of the spleen has no lymphatic.**

notice:
NOT above
↑

in gastro-splenic
lig.
↓

