

# ***THORACIC DUCT & THE SPLEEN***

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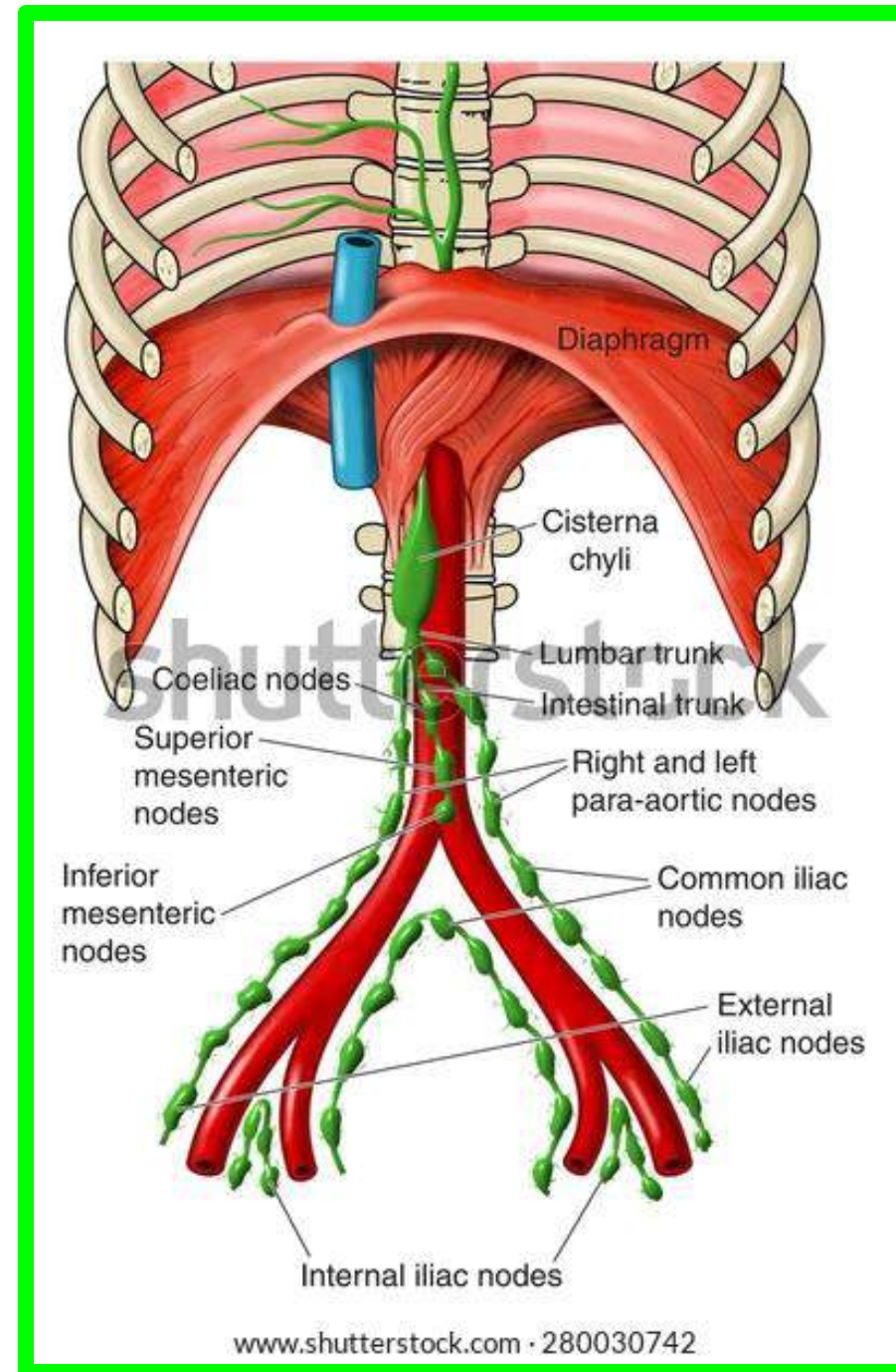
# Thoracic Duct

✓ It is the largest lymphatic vessels in the body.

**\*\* Beginning:** from the upper end of **the cisterna chyli** (a sac-like, retroperitoneal chamber)

➤ Lies anterior to bodies of L1,L2 vertebrae between the right crus of the diaphragm and the aorta

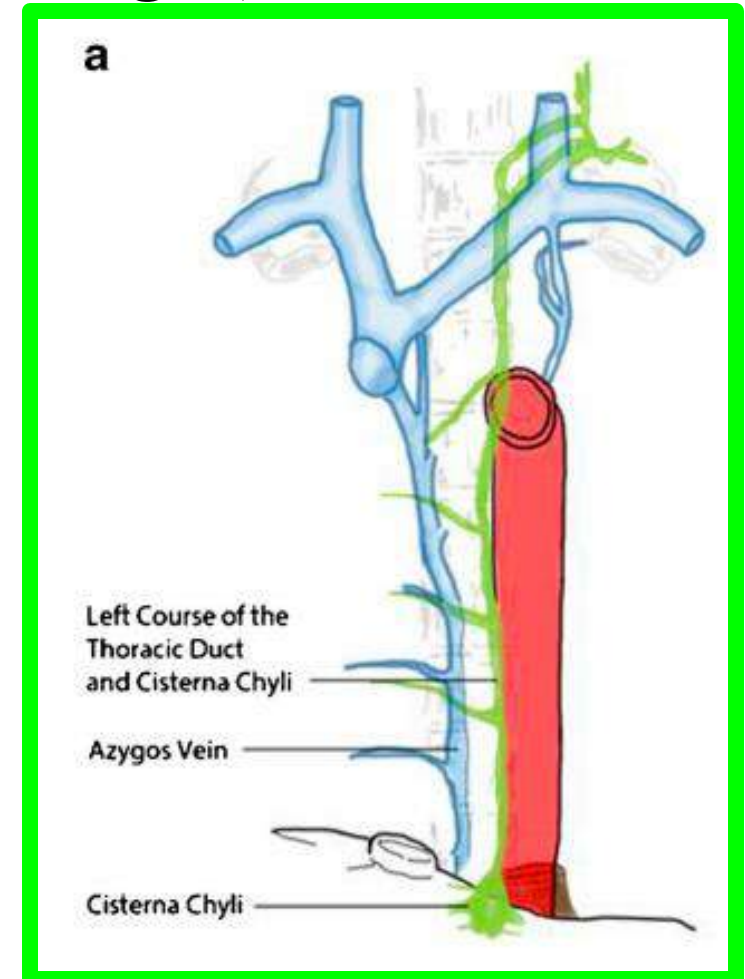
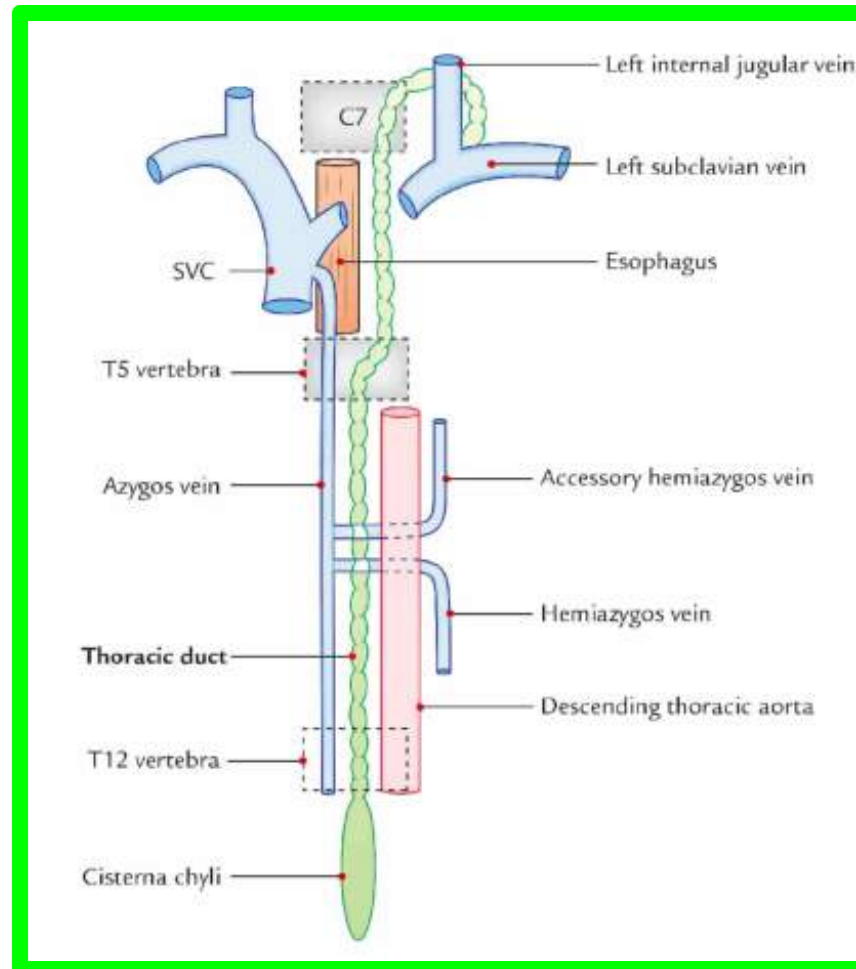
**\*\* Shape:** It is a thin-walled vessel which **has a beaded appearance** due to presence of many valves.



# Thoracic Duct

## \*\* Course and relations:

1. It enters the thorax through **the aortic opening** of the diaphragm between **the aorta** (on the left) and **azygos vein** (on the right).



# Thoracic Duct

**\*\* Course and relations:**

**2. In the posterior mediastinum, it ascends**  
Between **the aorta** (on the left) and **azygos vein** (on the right).

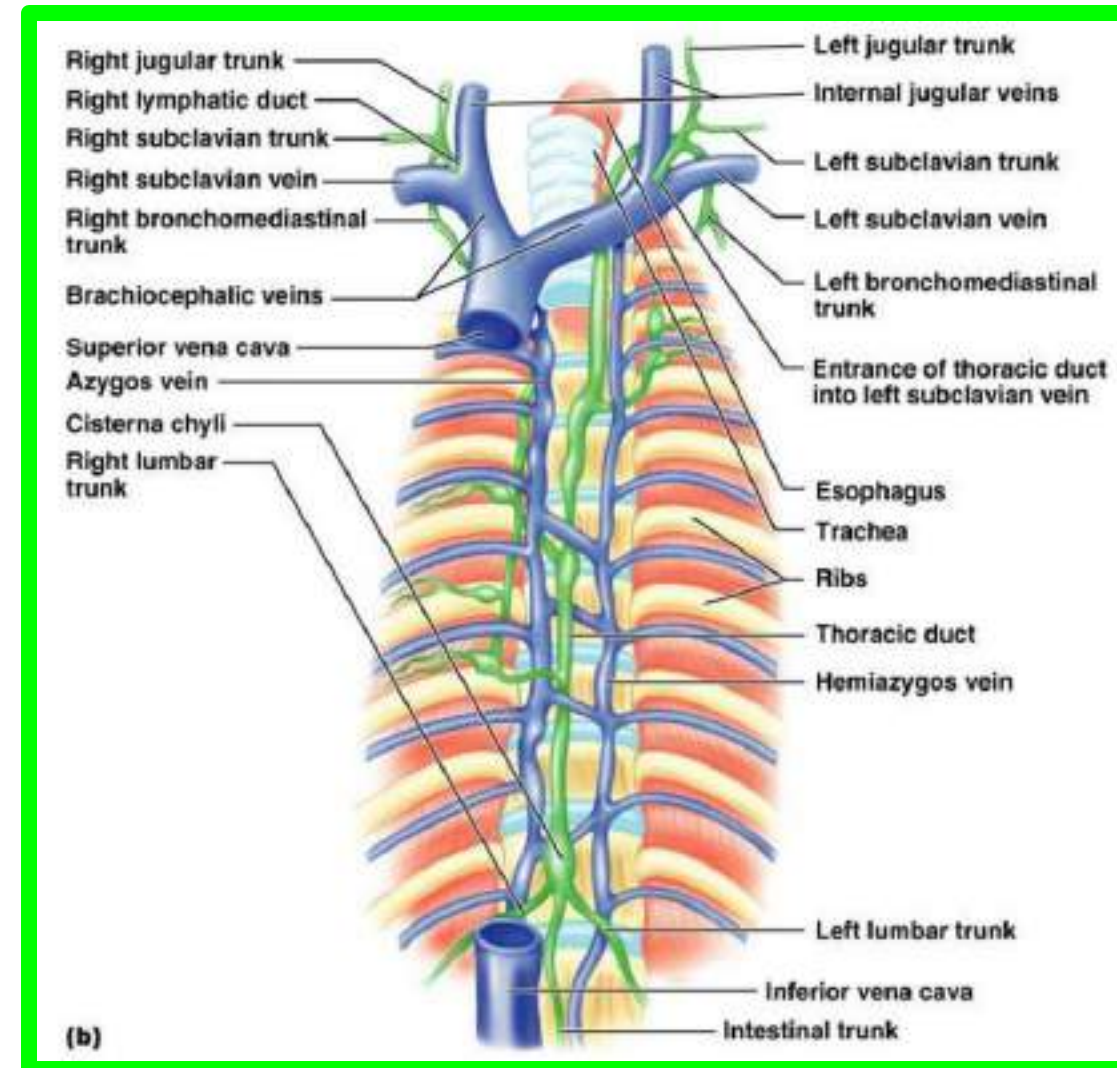
❖ Behind **right border of esophagus.**

❖ In front the:

➤ **vertebral column,**

➤ **posterior intercostal arteries, and**

➤ **hemiazygos veins.**



# Thoracic Duct

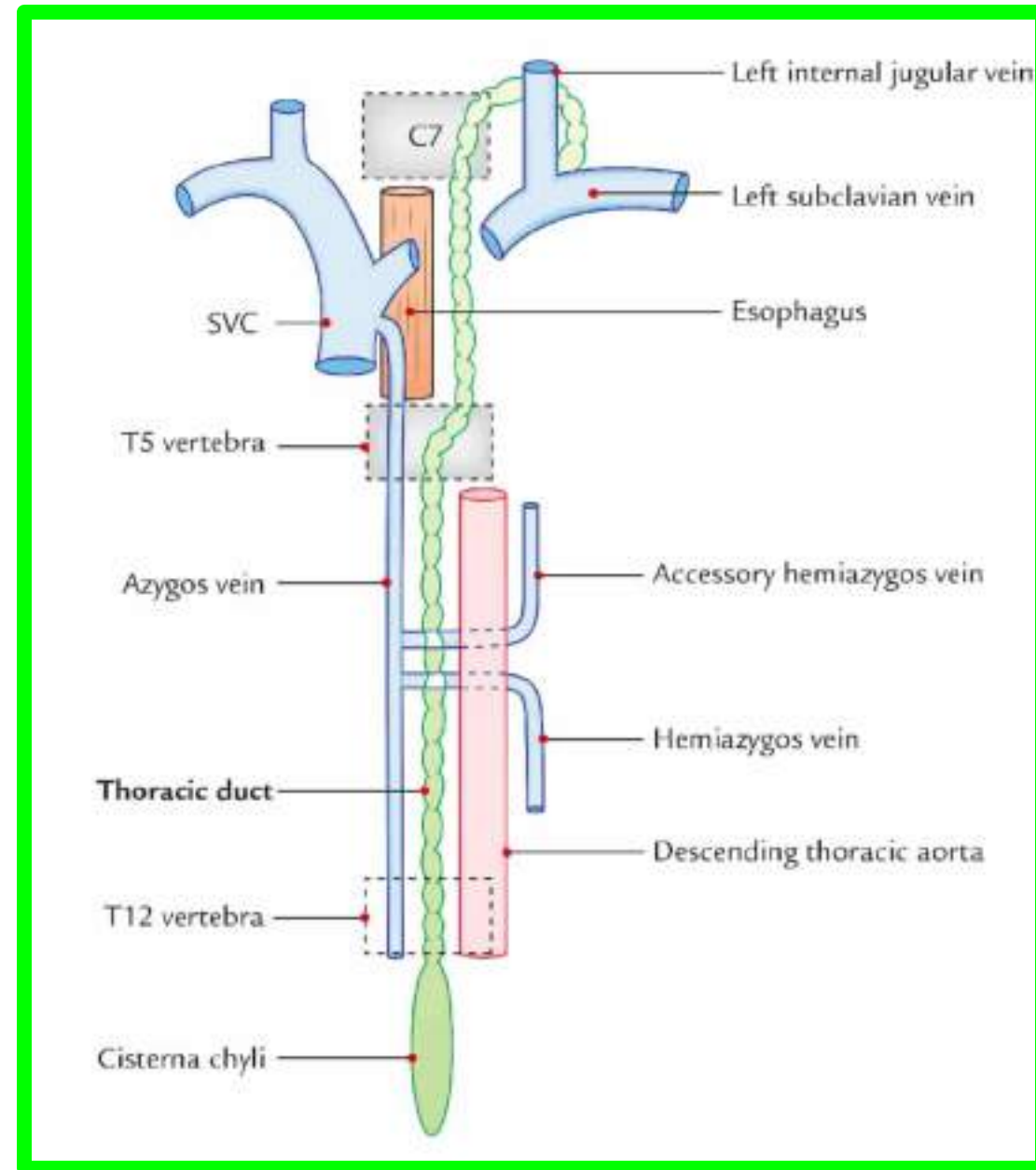
**\*\* Course and relations:**

**3. At the level of T5:**

✓ It crosses the median plane from right to left behind the esophagus.

**4. In the superior mediastinum:**

✓ It ascends behind left border of esophagus.

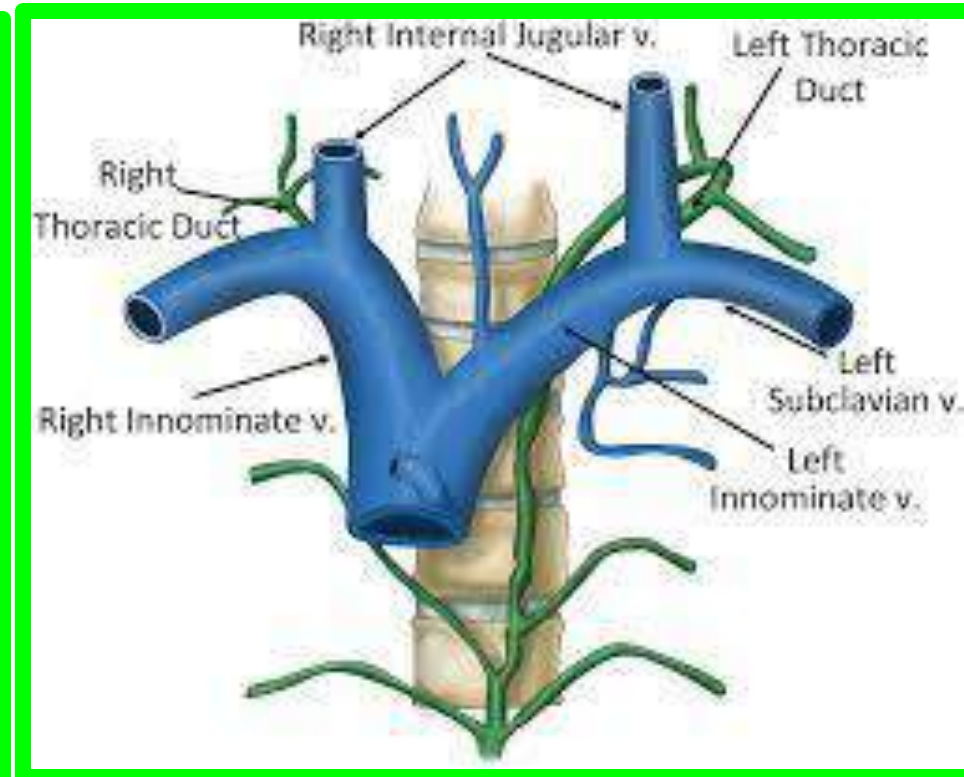
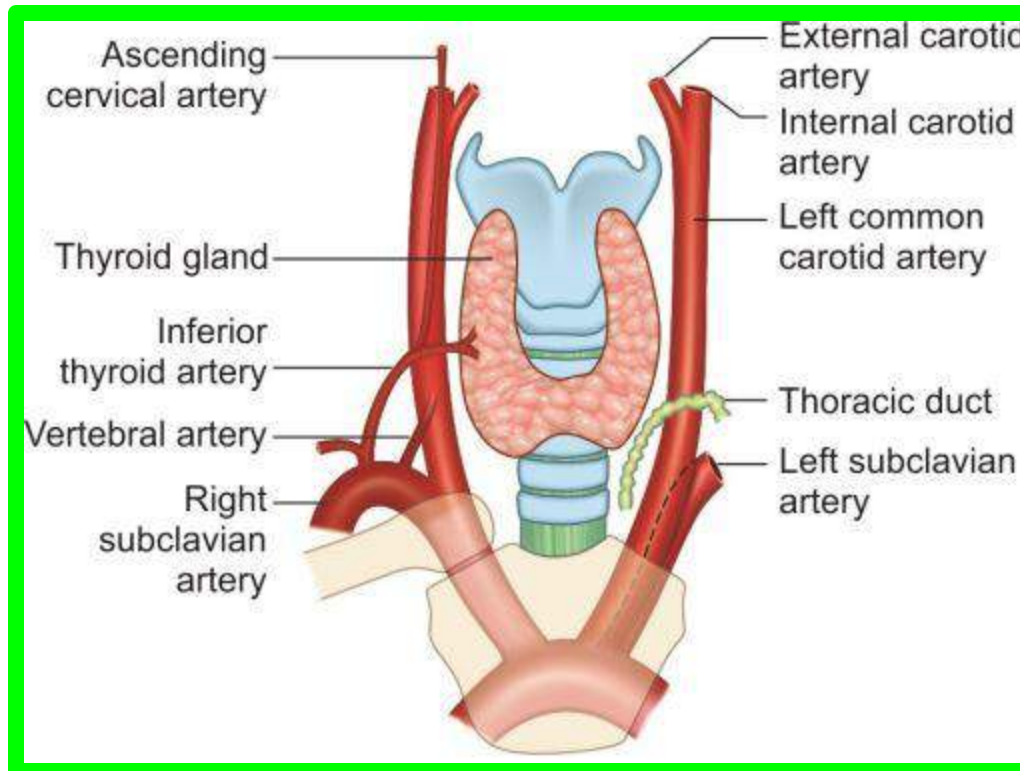


# Thoracic Duct

## \*\* 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.

☐ At the end of the duct there are 2 valves to prevent regurgitation of the blood.



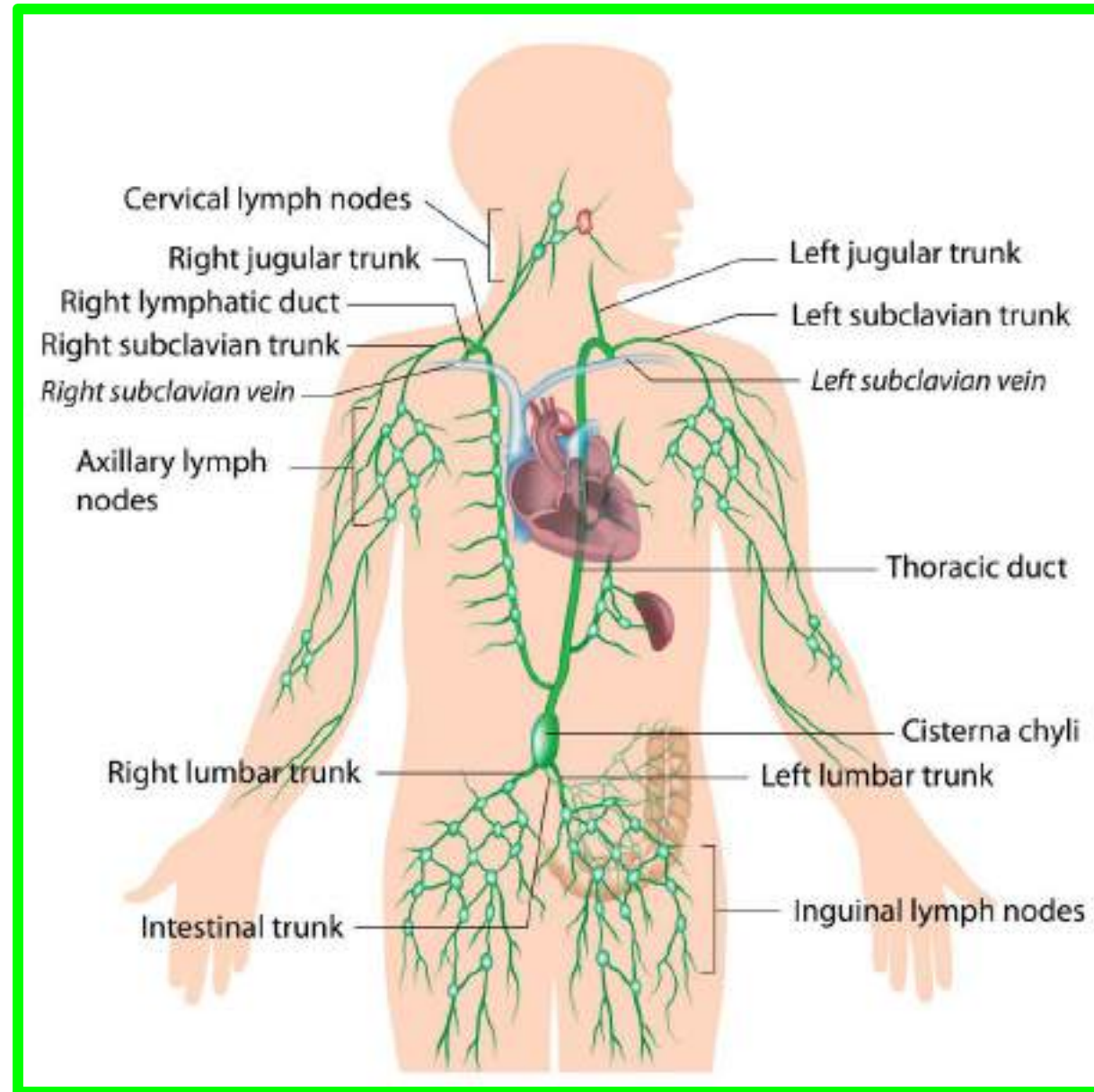
# Thoracic Duct

## \*\* Tributaries:

1) **Cisterna chili**, 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).



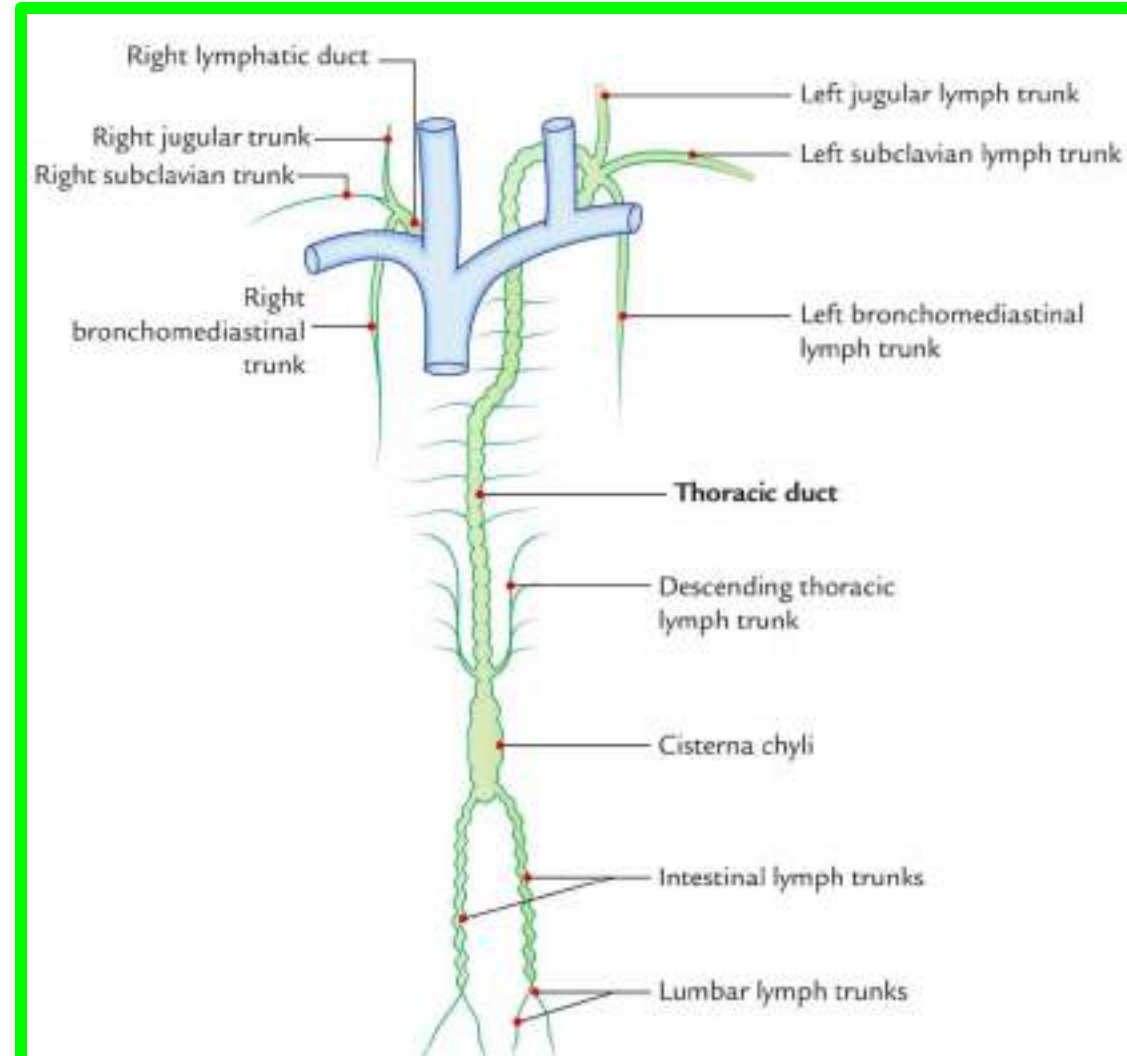
# Thoracic Duct

## \*\* Tributaries:

2) Left broncho-mediastinal lymph trunk: drains the **left 1/2 of the thoracic cavity**.

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

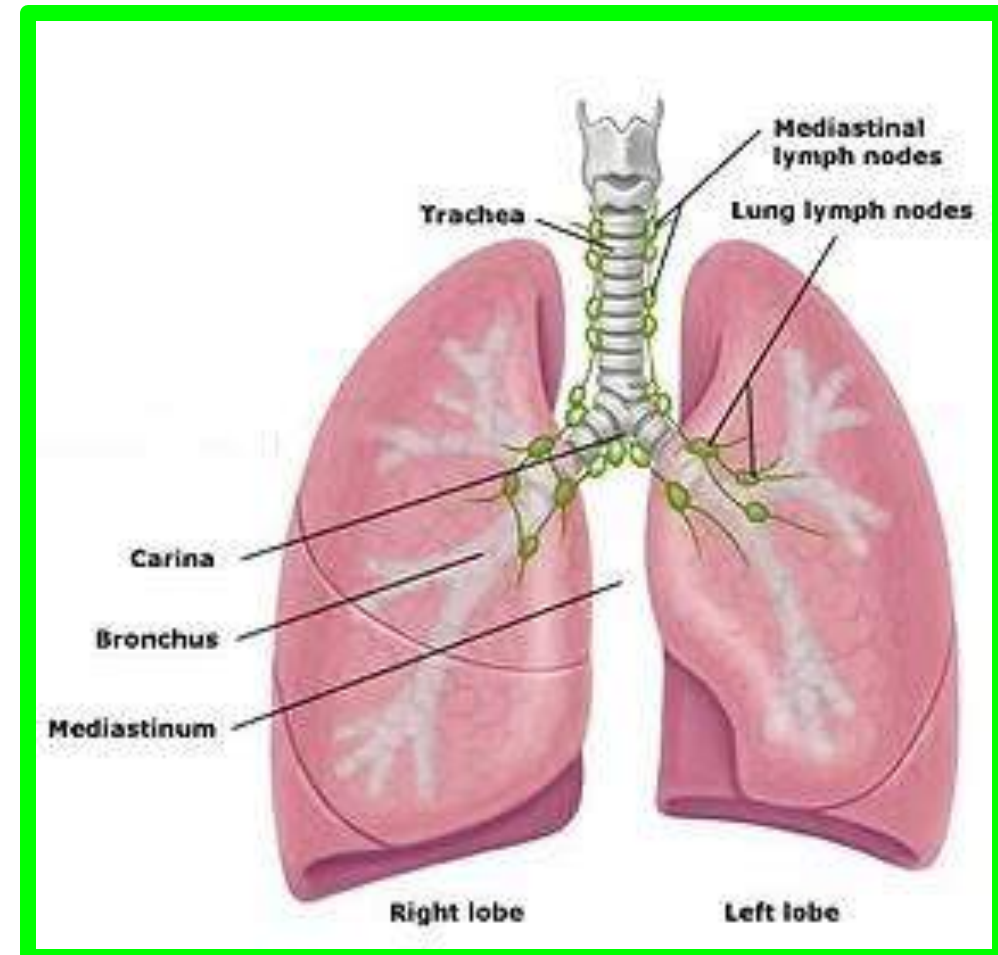
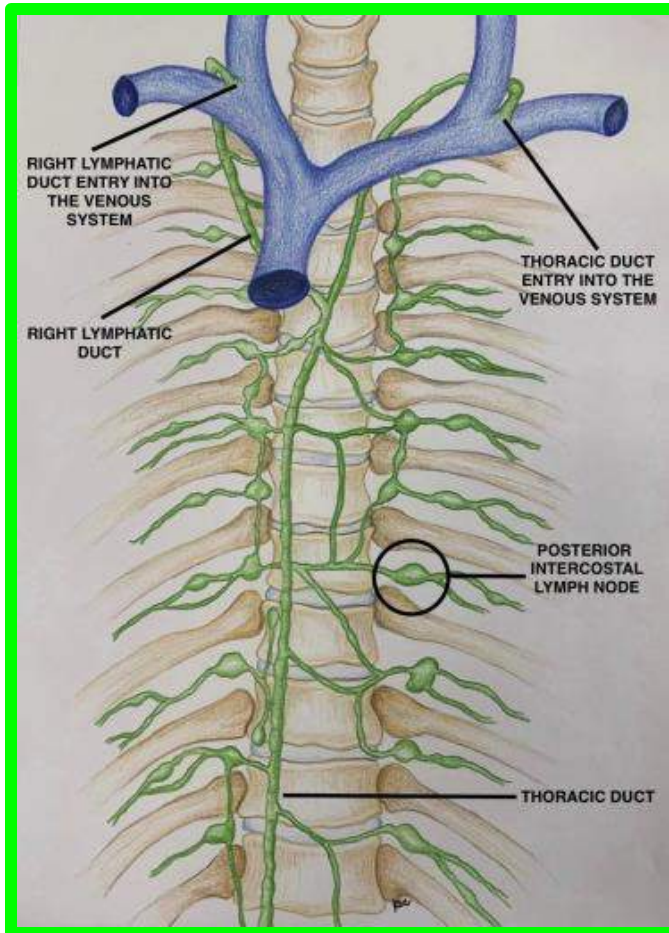
4) Left jugular lymph trunk: drains **the left 1/2 of the head and neck**.



# Thoracic Duct

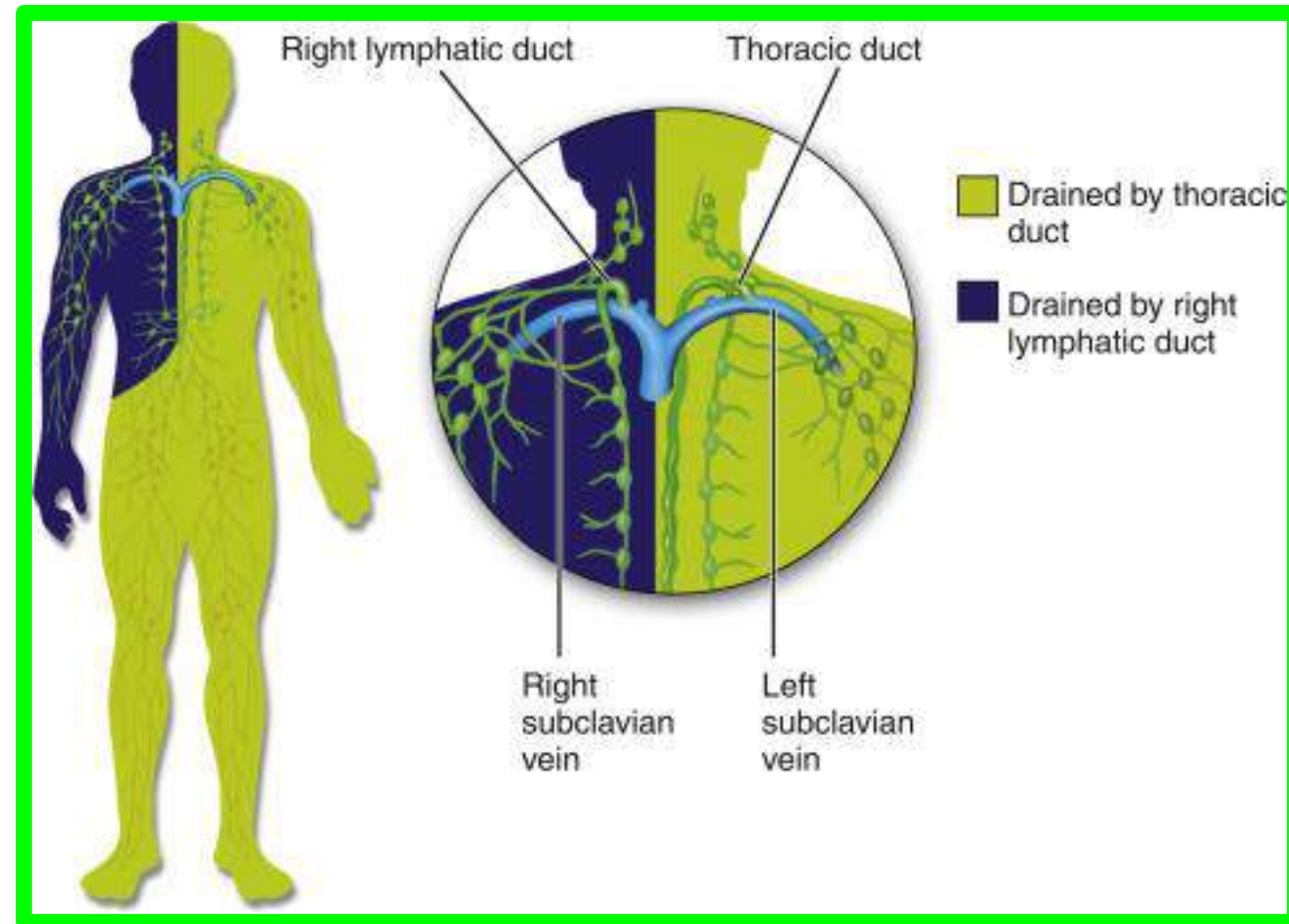
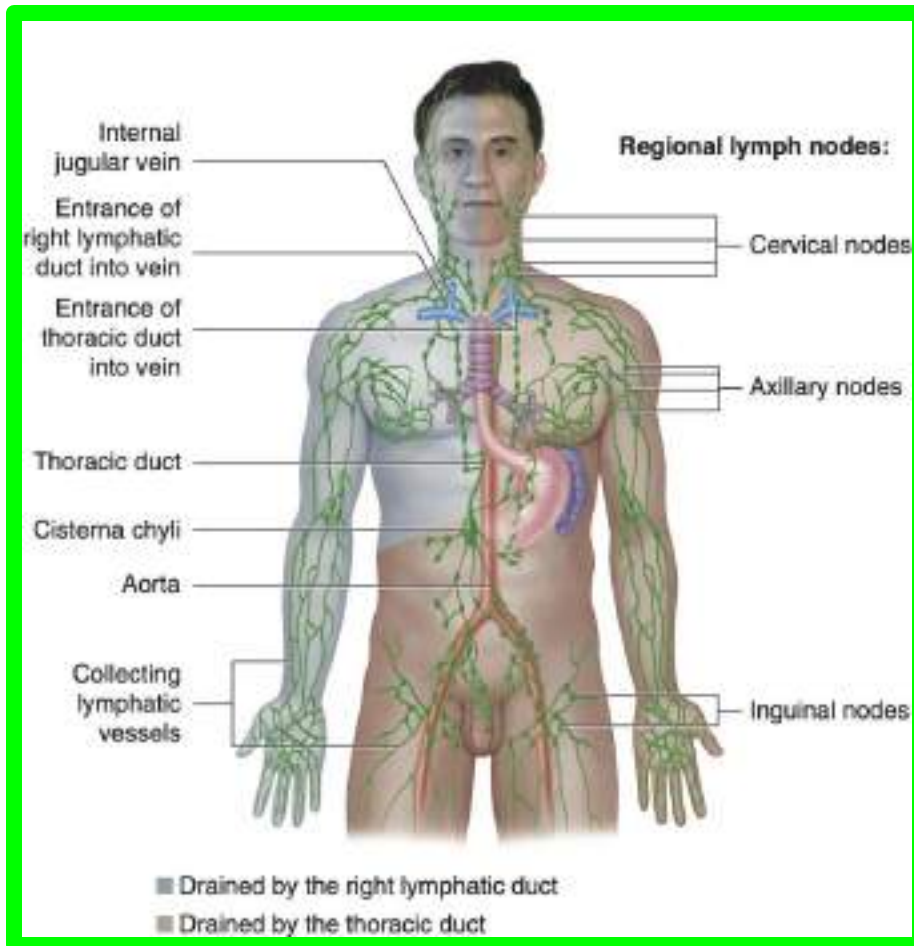
## \*\* Tributaries:

- 5) Efferent from the posterior mediastinal lymph nodes.
- 6) Efferent from the posterior intercostal lymph nodes.



# The right lymphatic duct

- ❖ Usually empty into the junction of the **Rt. subclavian** and **Rt. internal jugular veins**
- ❖ Otherwise they open into either of these veins.



# Spleen

❖ It is a **lymphatic organ** connected to the vascular system.

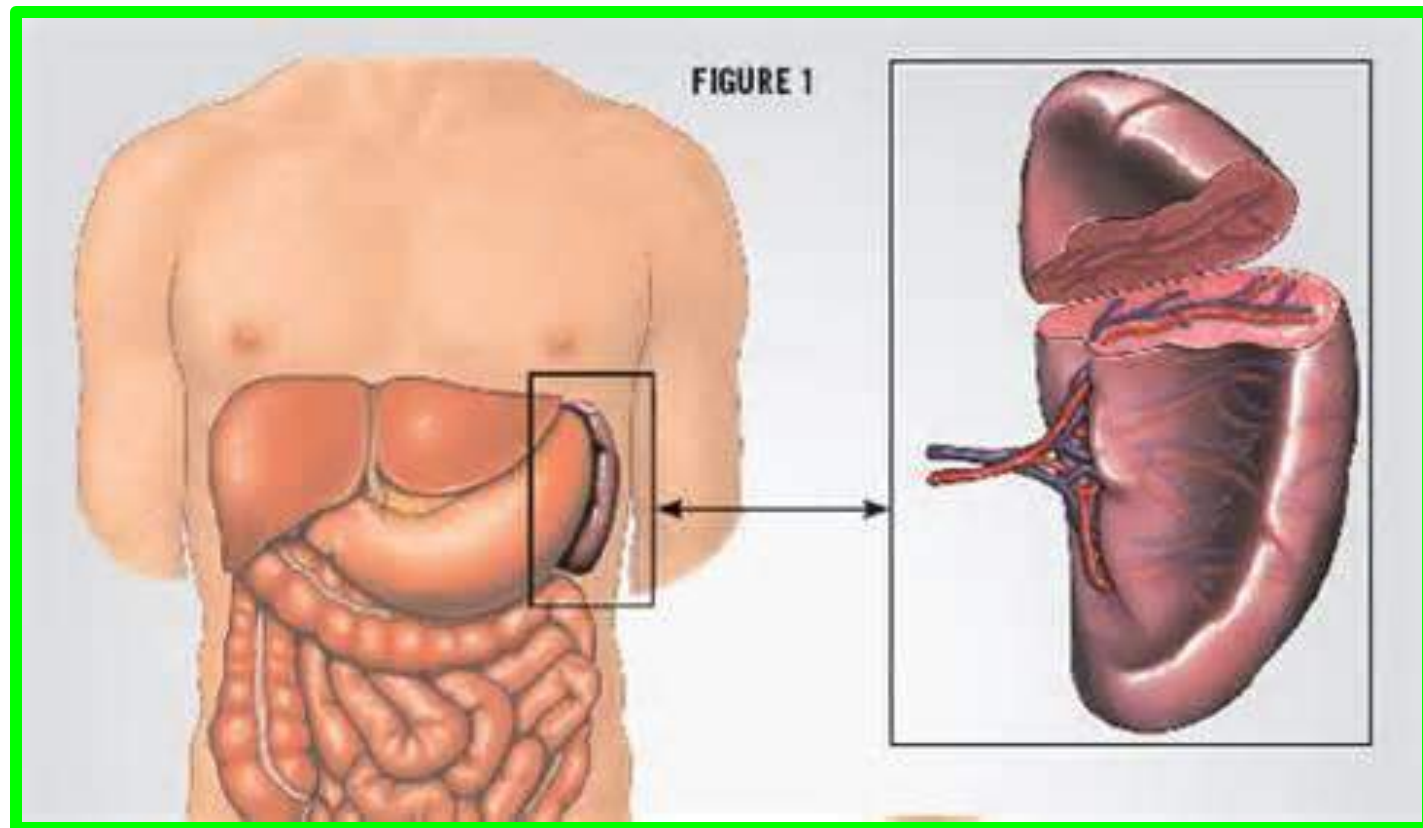
**\*\* Position:** It lies in the **left hypochondrium**

❑ Always remember the odd numbers **1, 3, 5, 7, 9, and 11.**

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

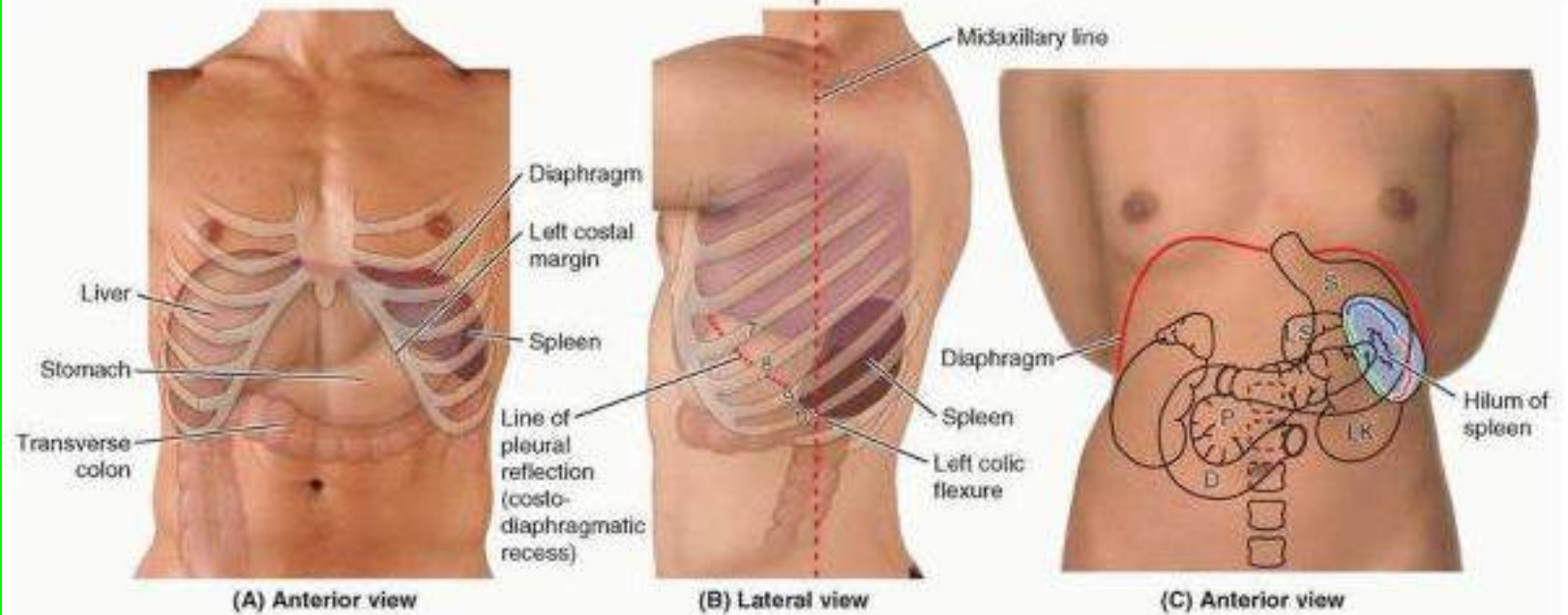
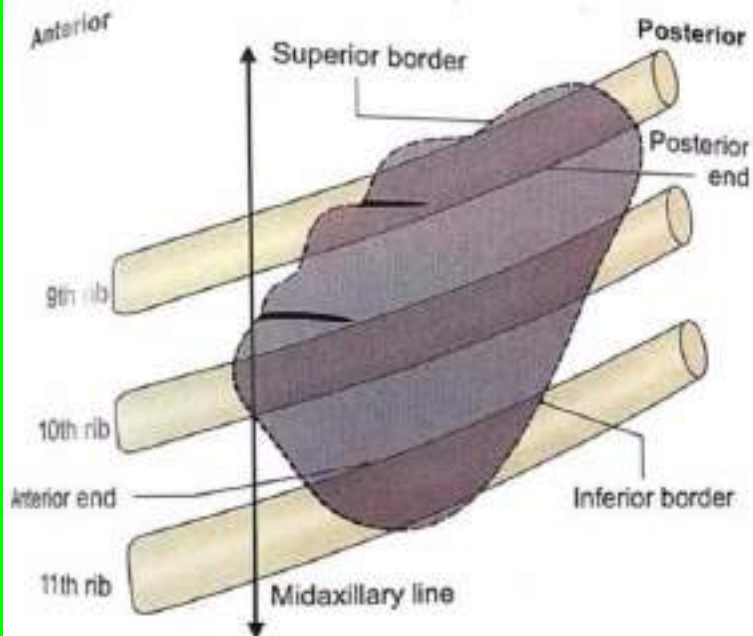
**\*\* Functions:**

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



## \*\* 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**.



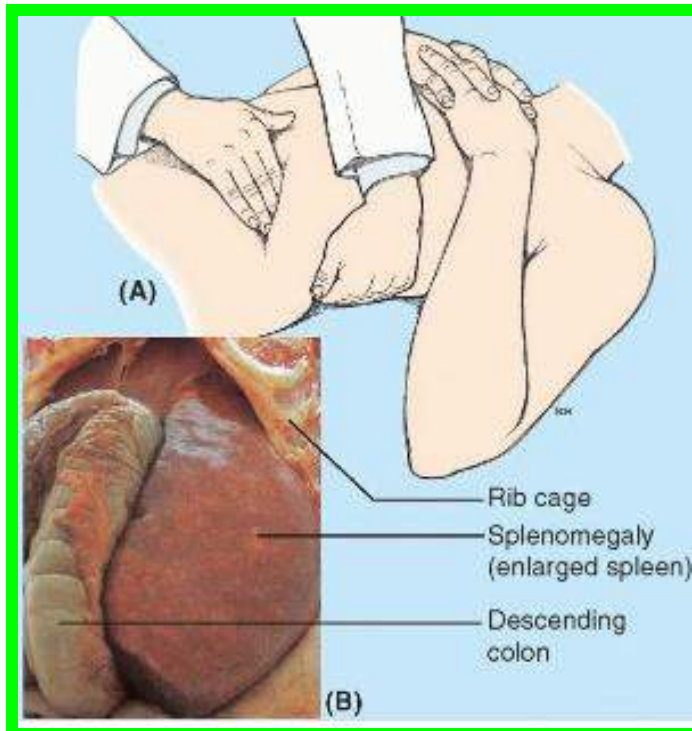
❖ The normal spleen is not palpable.

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

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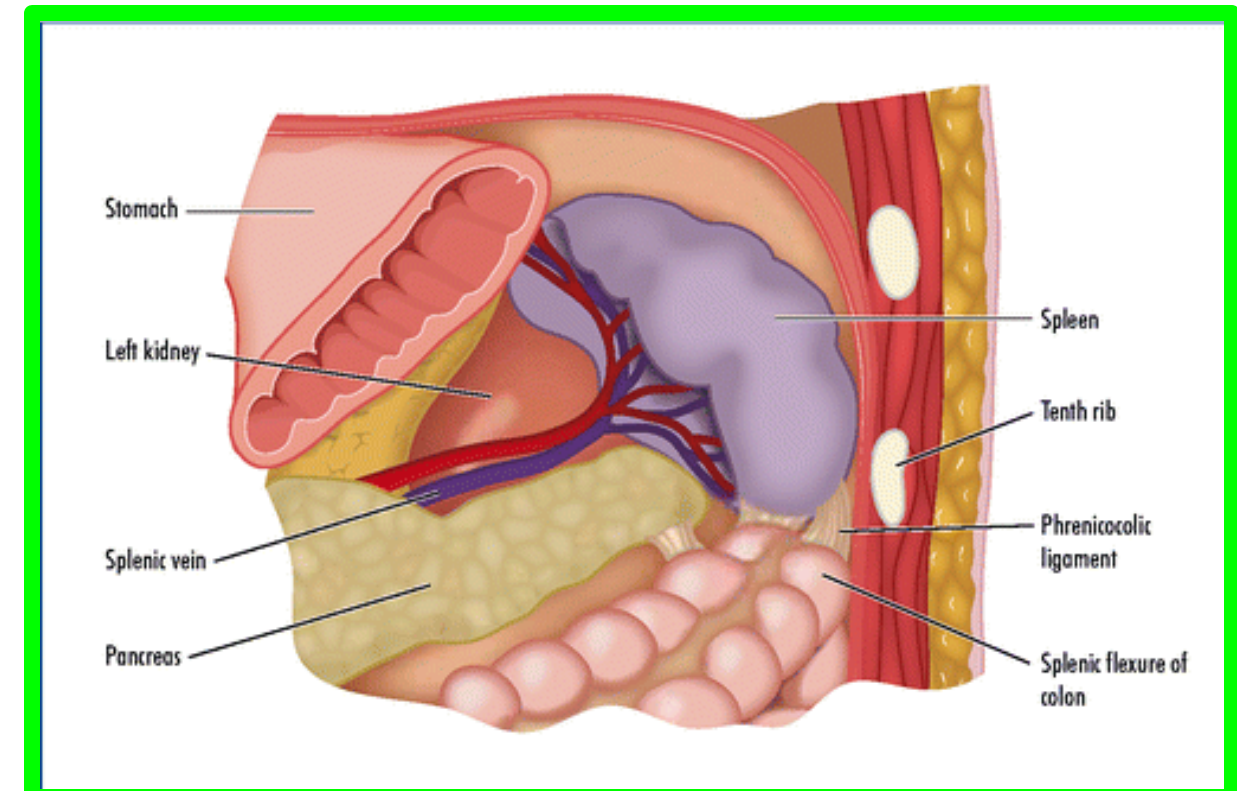
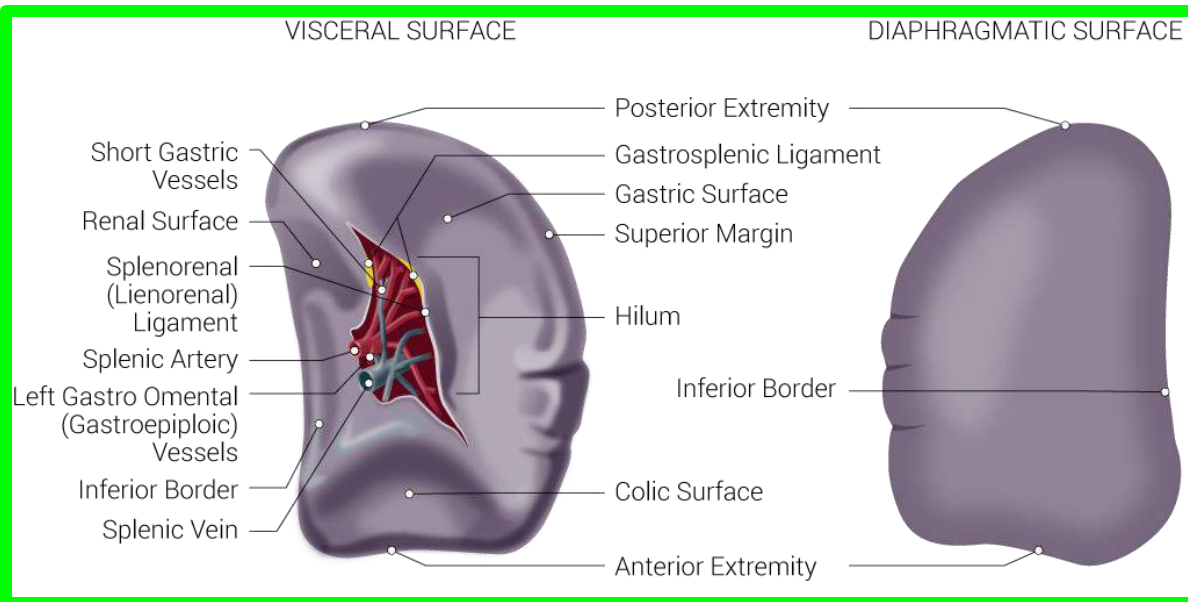
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## \*\* Features of the spleen

The spleen has;

### A. 2 Ends

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



## B. 2 Borders

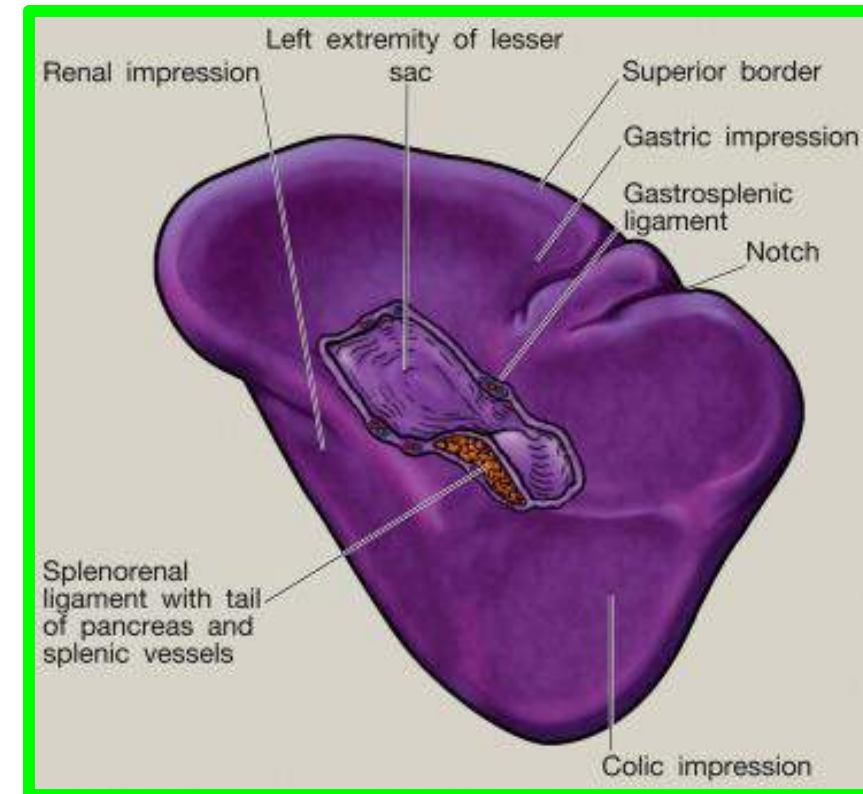
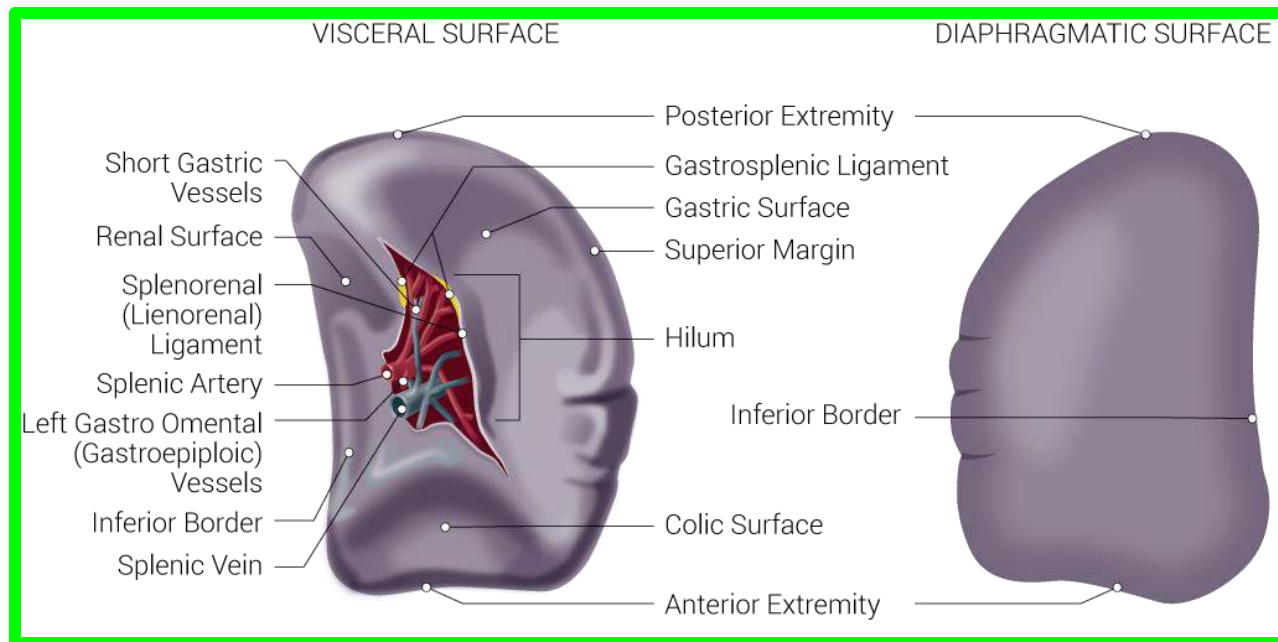
### 1. Upper border: sharp.

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

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

### 2. Lower border: thick and round.

## C. 2 Surfaces: diaphragmatic and visceral



# Spleen

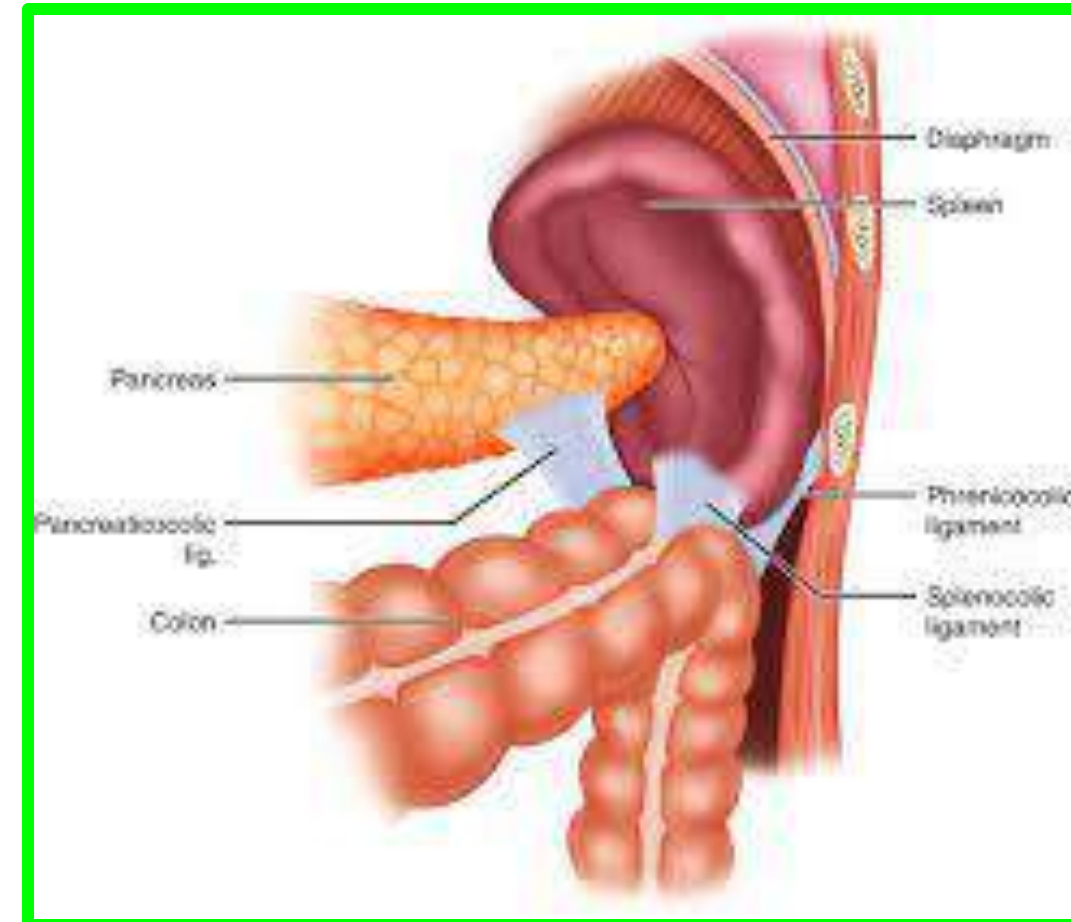
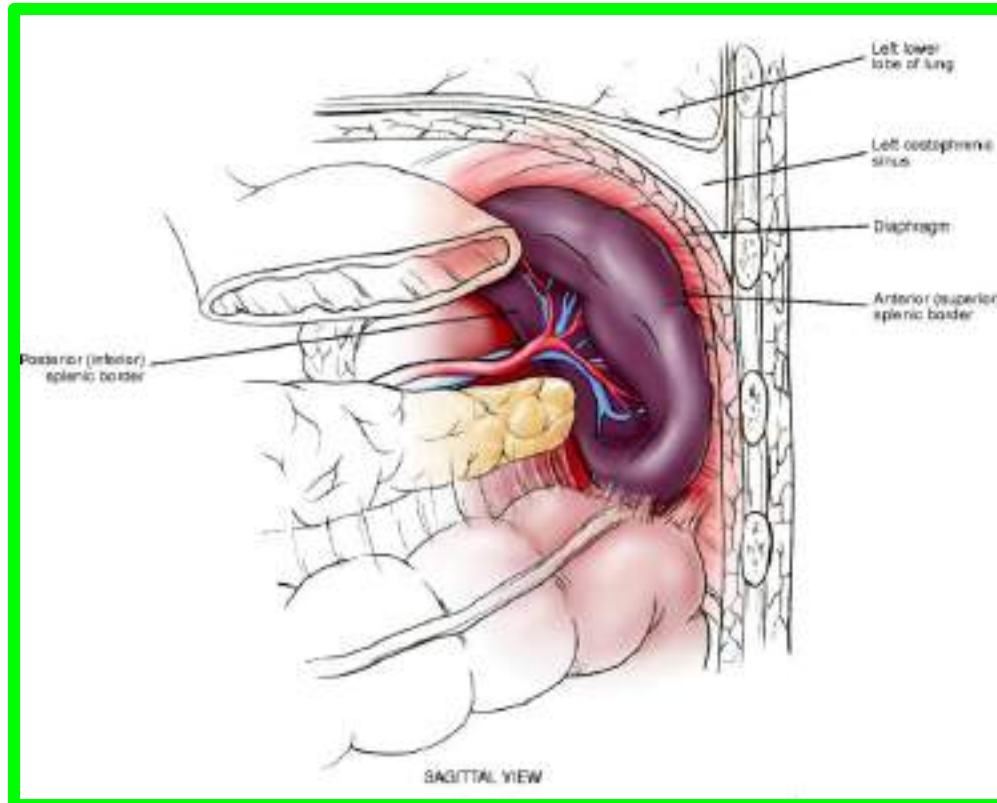
## • Relations of the spleen

### 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.



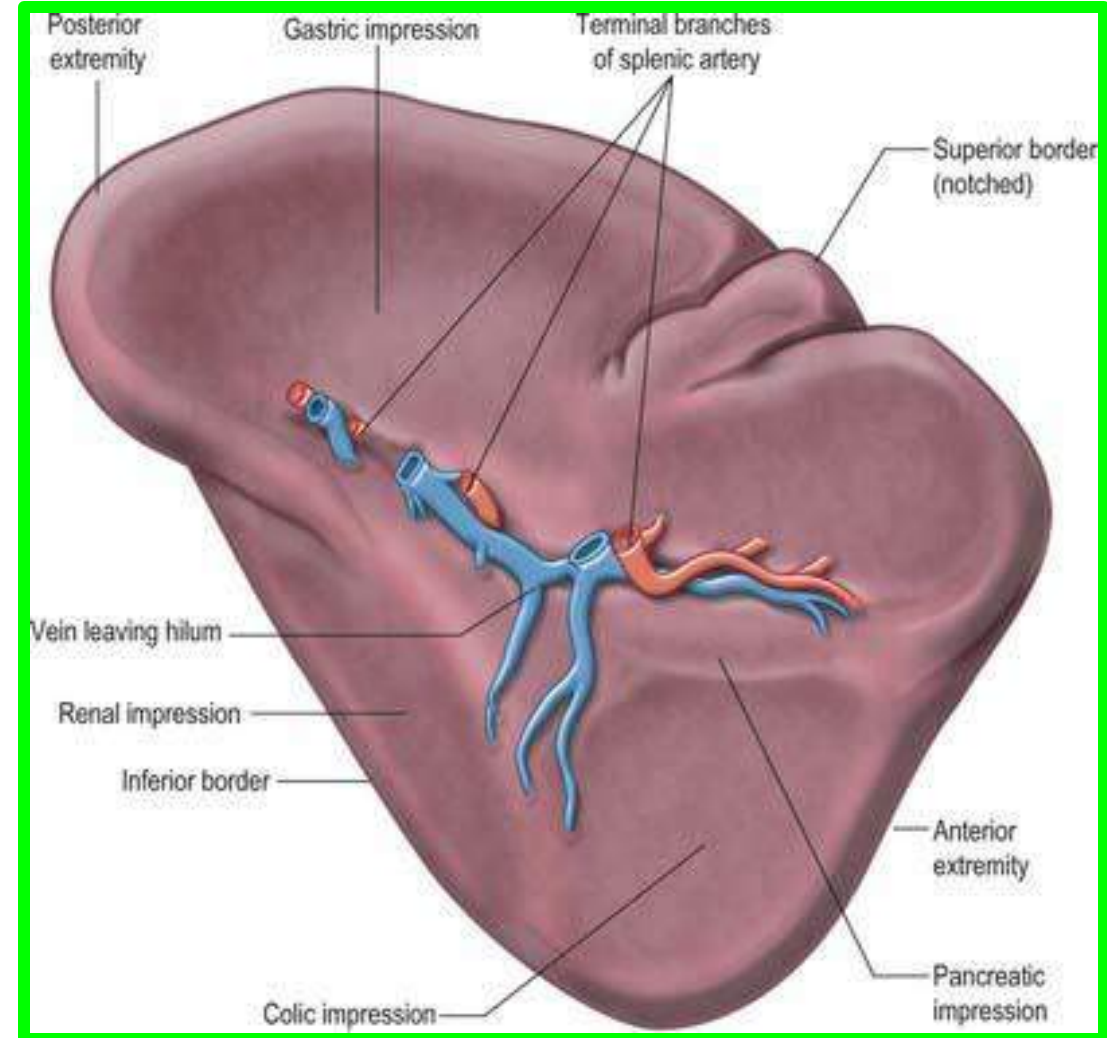
# Spleen

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

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

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

- ✓ It is related to **the posterior surface of the stomach.**

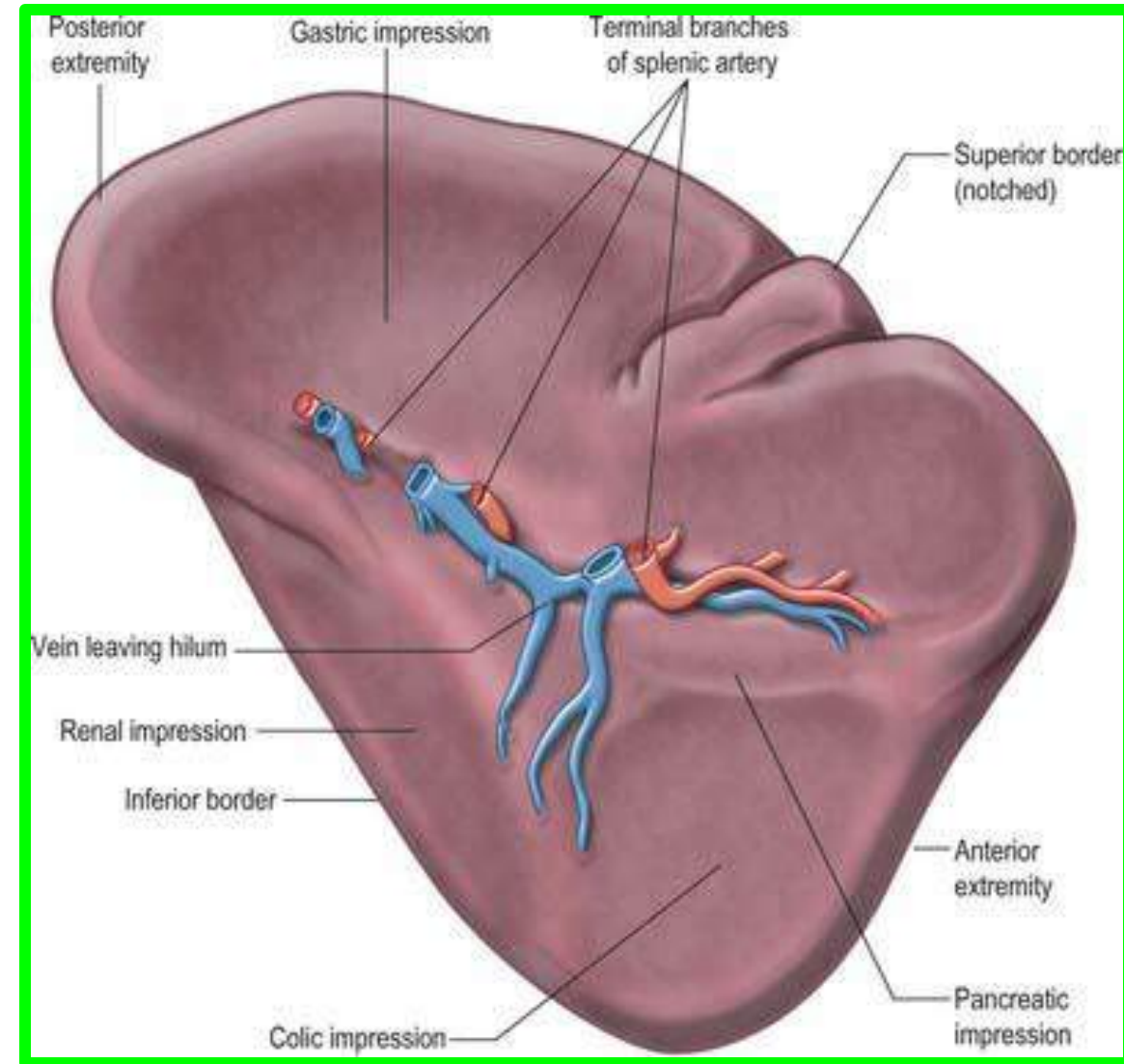


**B. Renal Impression:** between the hilum and lower borders. It is related to **the anterior surface of the left kidney.**

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

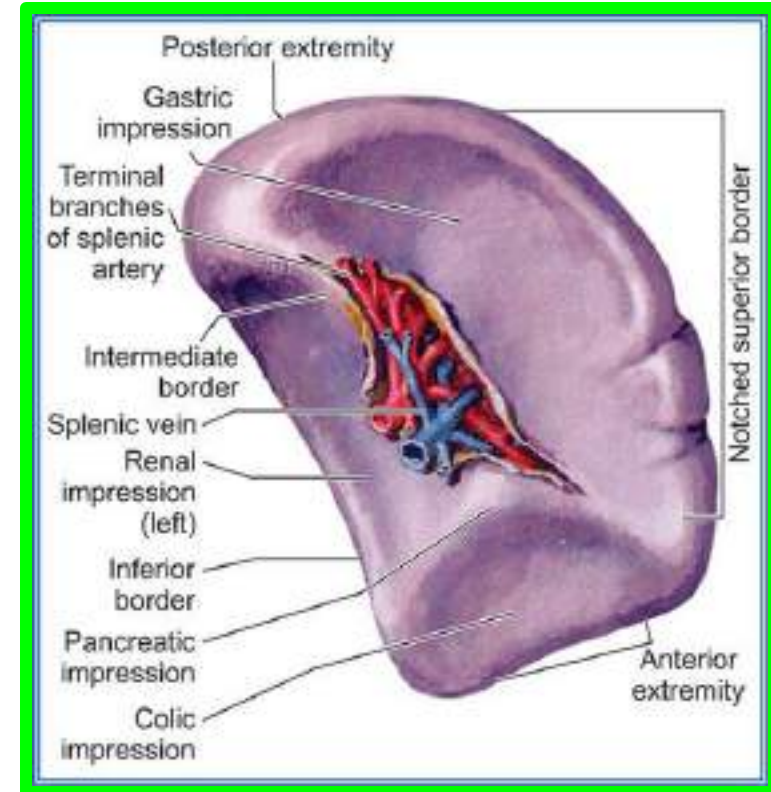
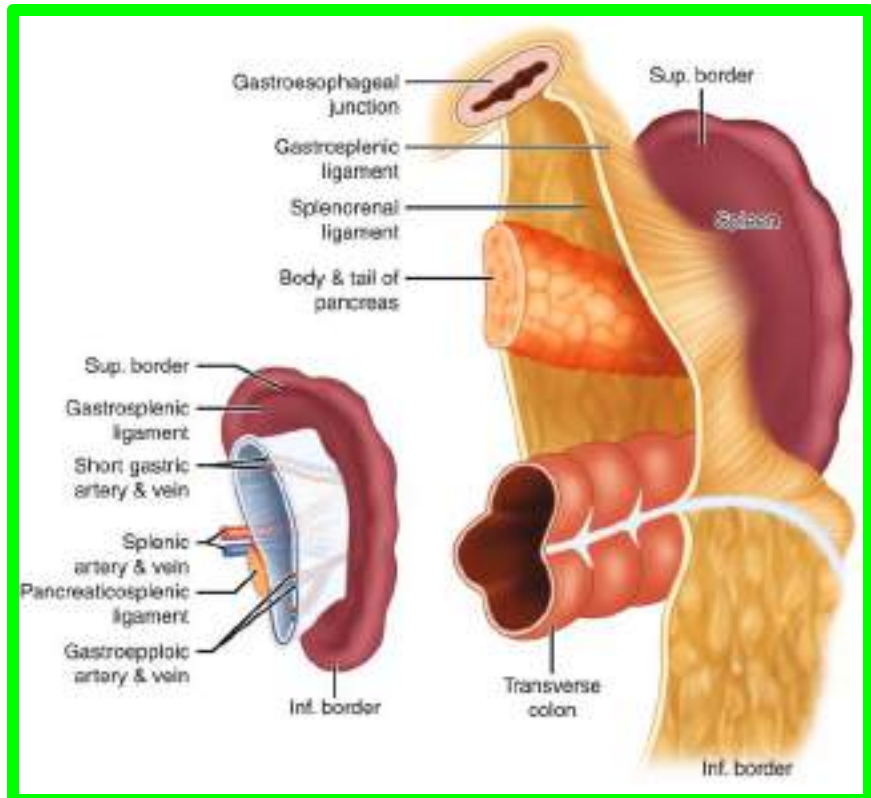
**C. Colic impression:** lies close to the anterior (lateral) end of the spleen. It is related to **the left colic flexure.**

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



**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**.



# Spleen

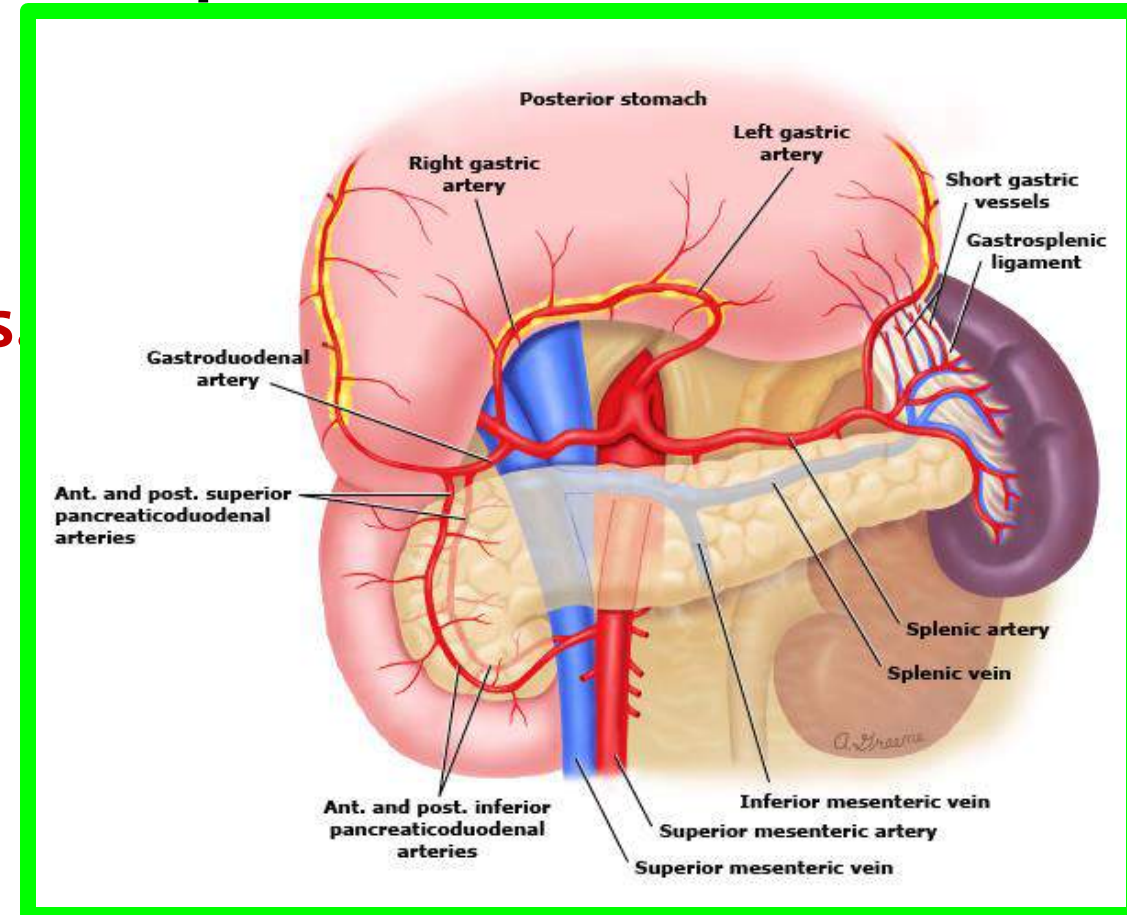
## \*\* Ligaments (Peritoneal folds) of the spleen:

❖ The spleen is almost completely surrounded by peritoneum except at the hilum.

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

## \* Contents:

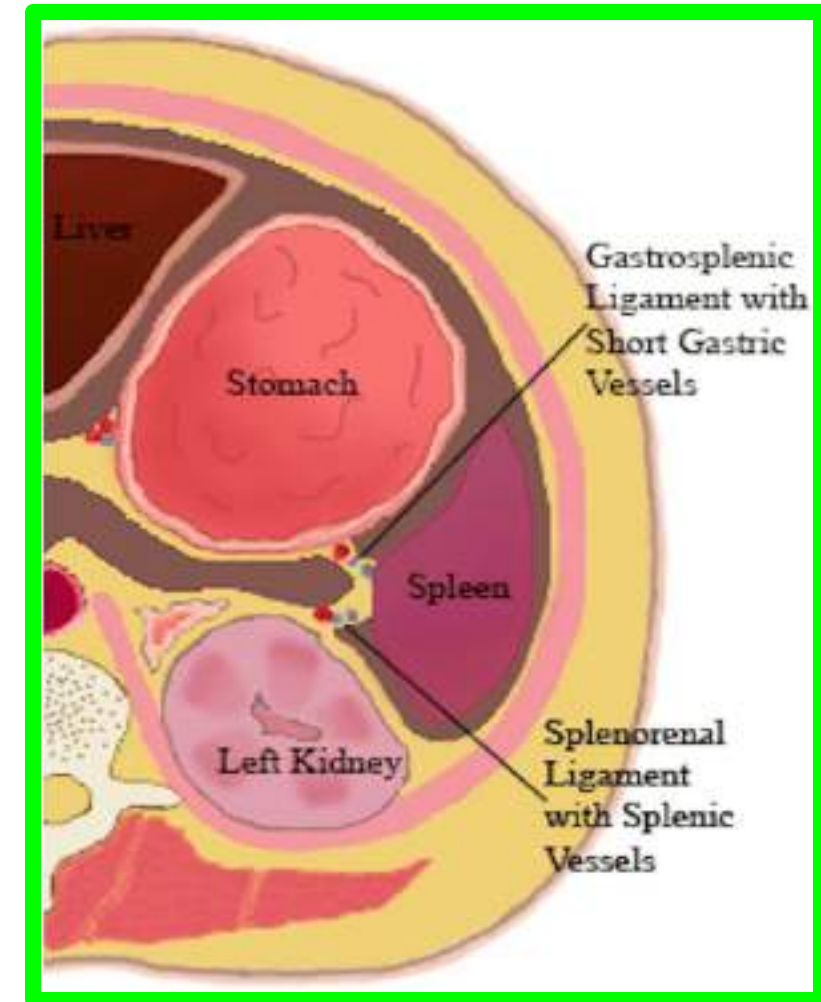
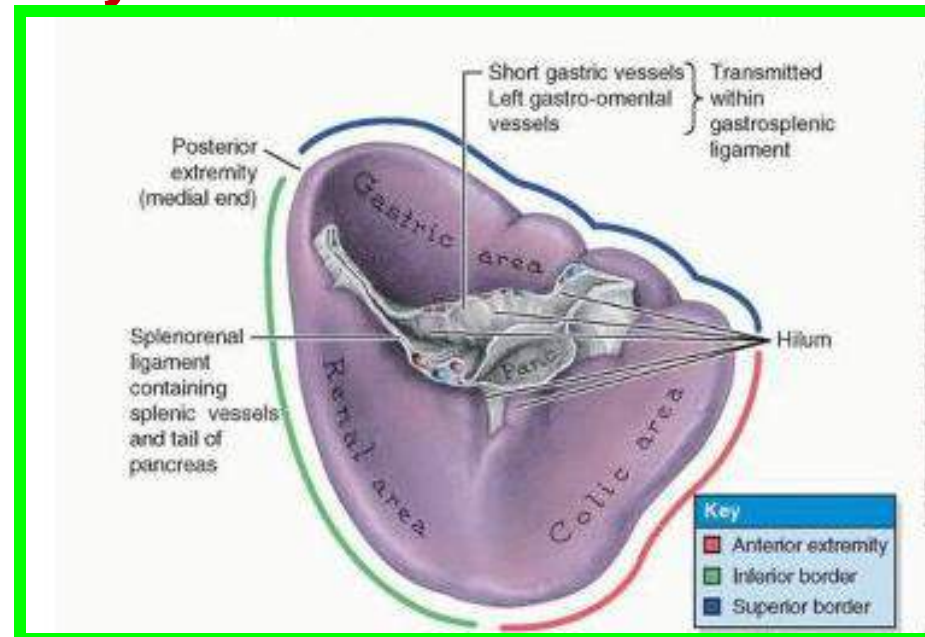
1. Short gastric vessels.
2. Left gastro-epiploic vessels.
3. Sympathetic plexus around the arteries.
4. Pancreatico-splenic lymph nodes.
5. Extraperitoneal fatty tissue.



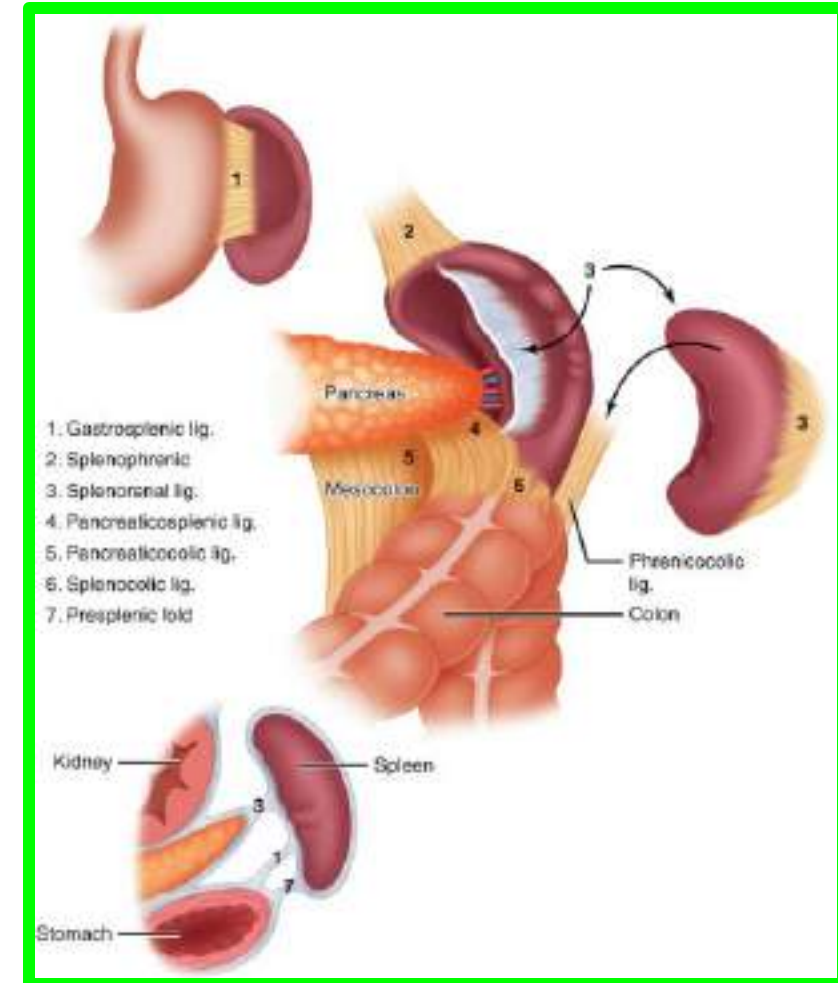
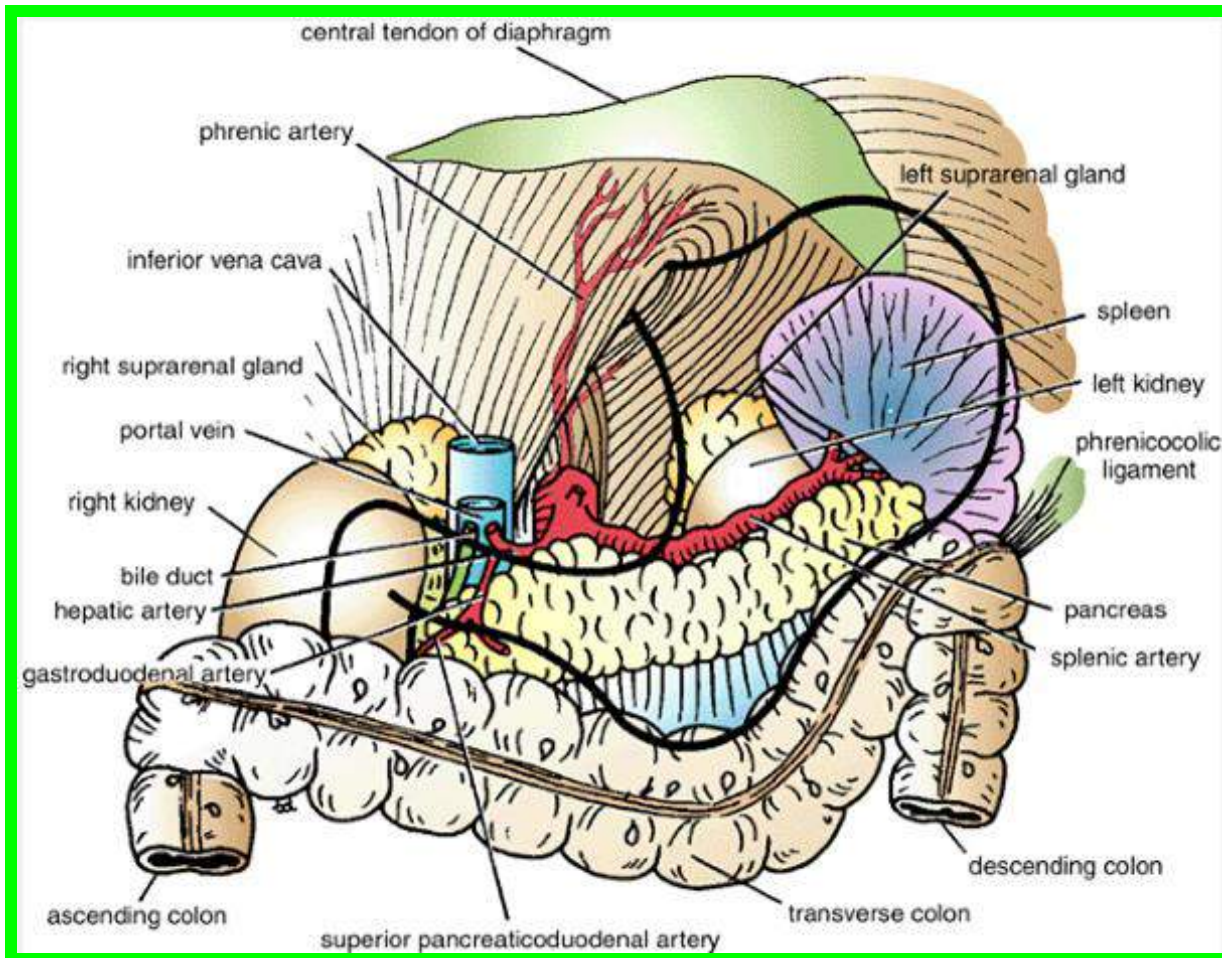
## 2. Lienorenal ligament, between the hilum of the spleen and left kidney.

### \* Contents

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



**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.



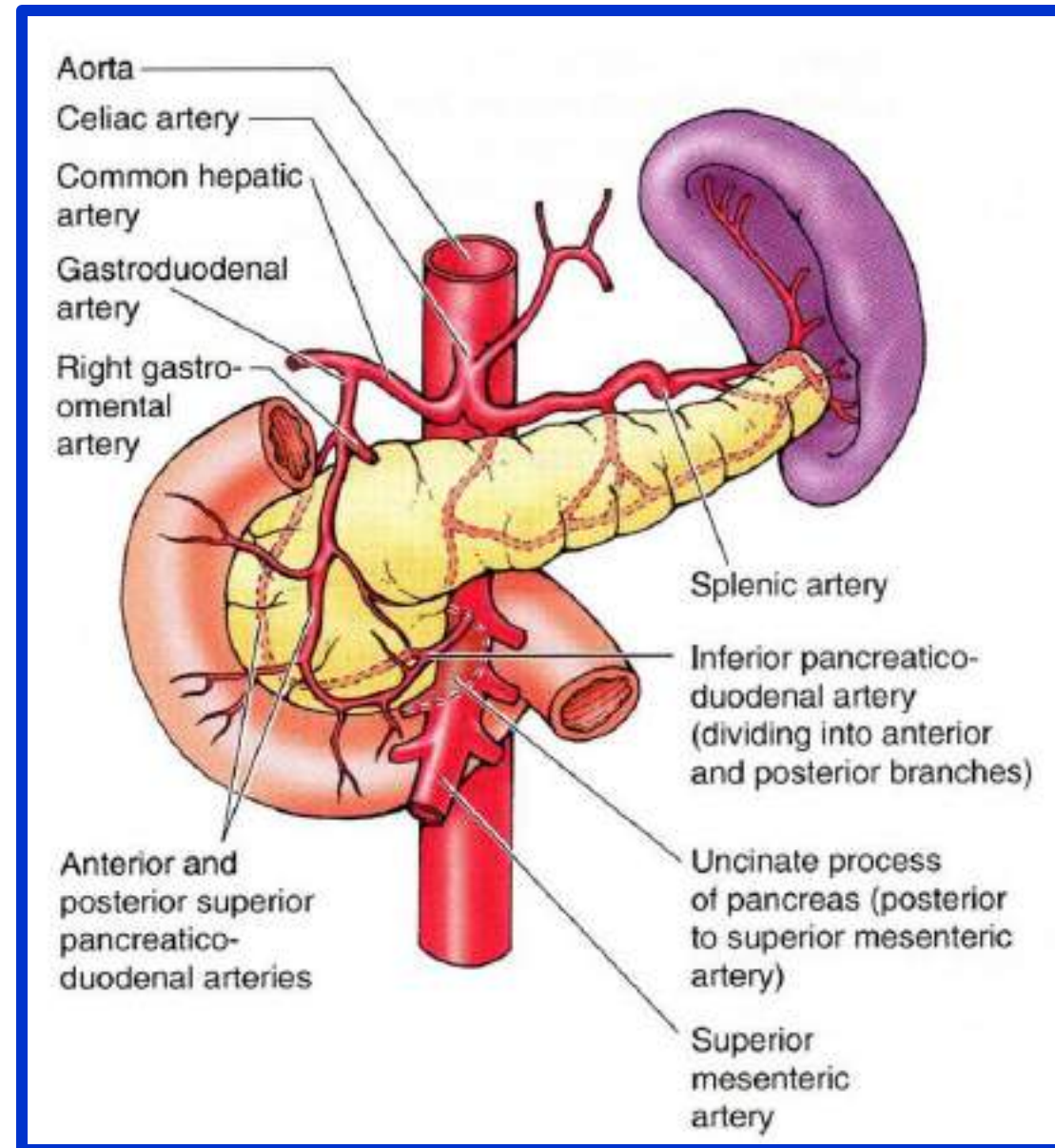
# Spleen

- 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:

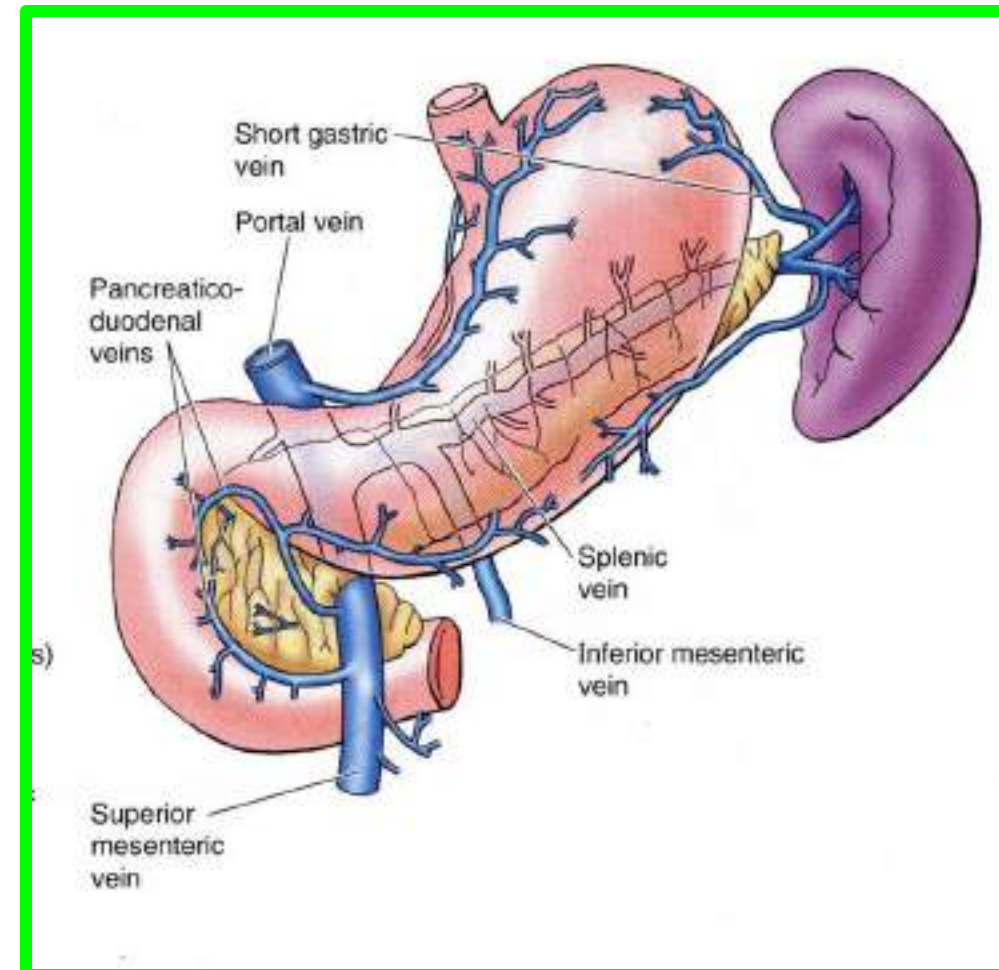
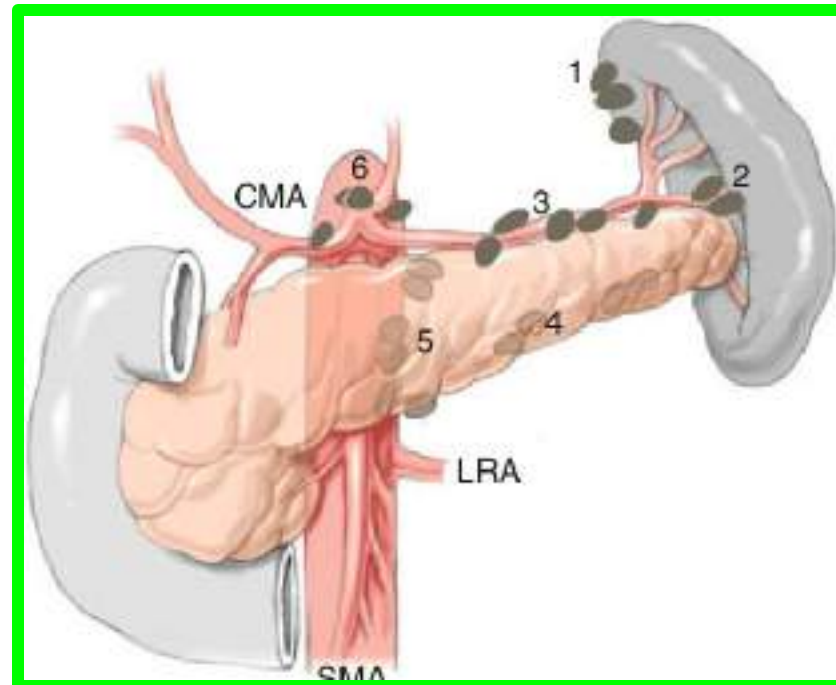
☐ Splenic vein runs a straight course behind the pancreas.

✓ 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.





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**Sunday 29 March 2026**