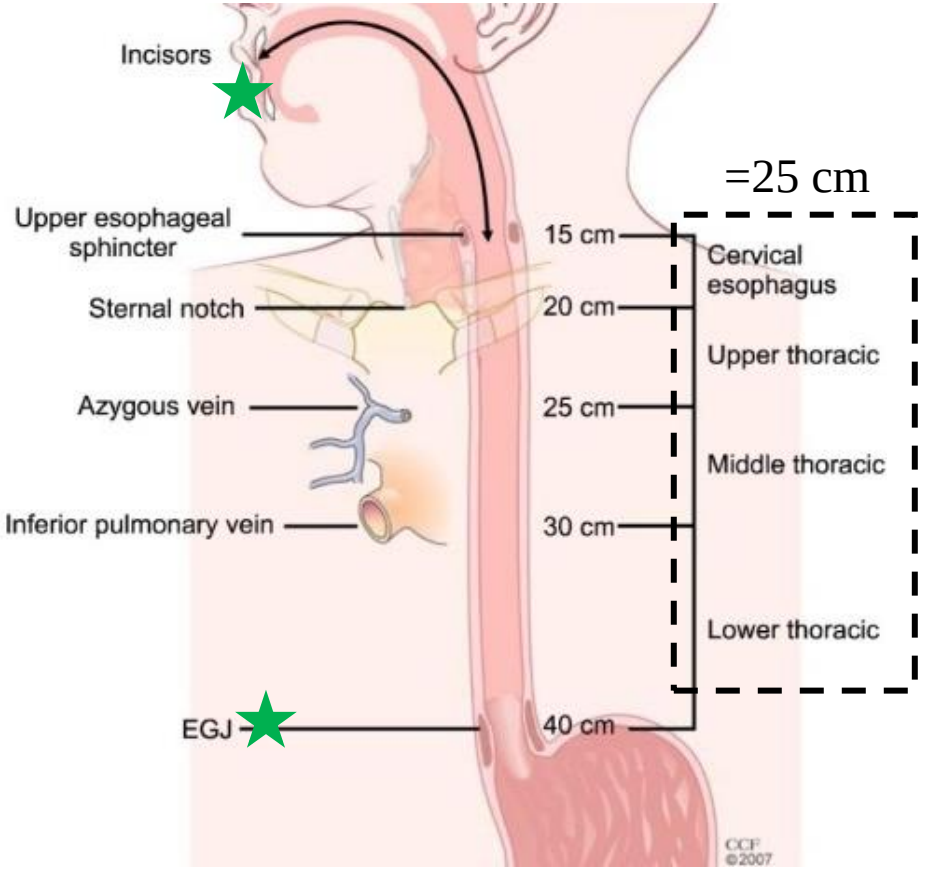
L (3) – Esophagus & Stomach.

1- The esophagus

The esophagus is a **muscular, collapsible tubular structure**, approximately 25 cm (10 inches) long. It begins at the lower border of **the cricoid cartilage** (level of C6 vertebra) **and ends at the cardia of the stomach** (around T11 vertebra). The abdominal portion of the esophagus—the segment below the diaphragm—is relatively short, measuring approximately 1.3 cm.

Clinically, it is also measured from the **incisor teeth to the cardia of the stomach**, giving a total length of about 45 cm. This measurement is particularly useful in ☺ **endoscopy**, where gastroenterologists pass a *fiberoptic tube from the oral cavity down to the cardiac orifice, using this length as a guide to identify the gastroesophageal junction.



** fiberoptic endoscope (تنظير): the use of flexible scope with a camera and light source at the tip. → allow doctors to see what's inside the body, take biopsies, remove foreign bodies etc.*

2- The esophagus relations

➢ Relate to HISTOLOGY

the wall of the esophagus, like most of the gastrointestinal (GI) tract, is composed of four concentric layers (from innermost to outermost):

Consists of 4 layers : mucosa, submucosa, muscularis, adventitia.

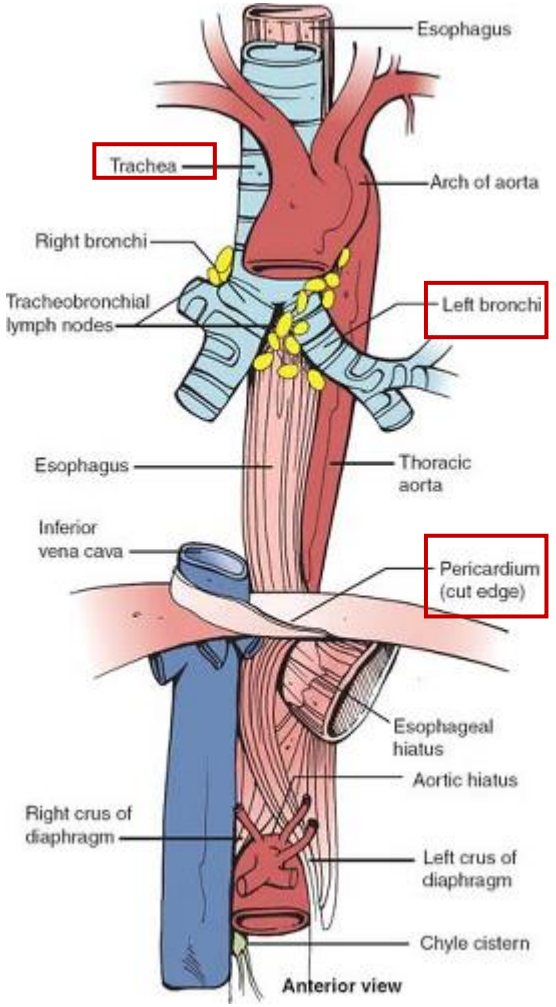
Thoracic Esophagus – Anatomical Relations:

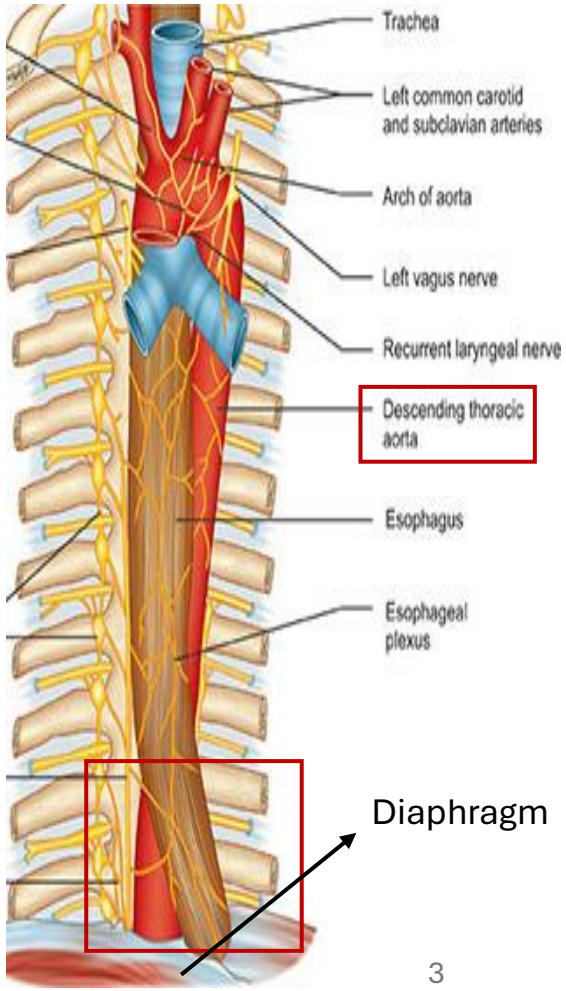
Anteriorly:

- Trachea.
- Left recurrent laryngeal nerve.
- Left principal (main) bronchus → causes a physiological constriction – slide 10.
- Pericardium (specifically the oblique sinus) → separates the esophagus from the left atrium.

Posteriorly:

- Bodies of thoracic vertebrae.
- Right posterior intercostal arteries.
- Descending thoracic aorta (at the lower end, before passing through the diaphragm).



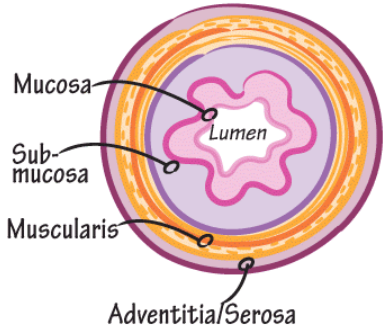


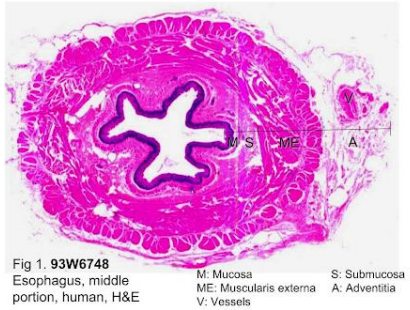
Extra slide:
NOT REQUIRED

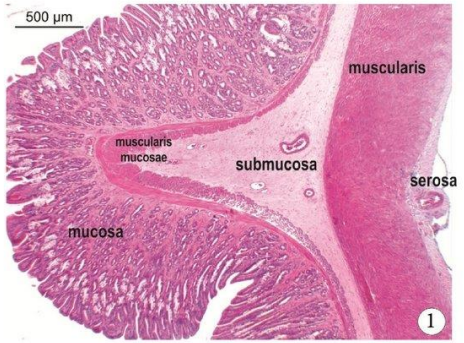
Adventitia vs serosa

- **Relate to HISTOLOGY**

Feature	**Adventitia**	**Serosa**
Location	Retroperitoneal organs (only anteriorly covered by peritoneum) (e.g., **esophagus**, colon)	Intraperitoneal organs (surrounded by visceral peritoneum.) (e.g., **stomach**, small intestine)
Structure	Loose connective tissue, no mesothelium	Mesothelium + connective tissue
Function	Anchors organ, provides support - fixed	Reduces friction, provides lubrication - mobile
Peritoneal Covering	No peritoneal covering	Covered by peritoneum







2- The esophagus relations

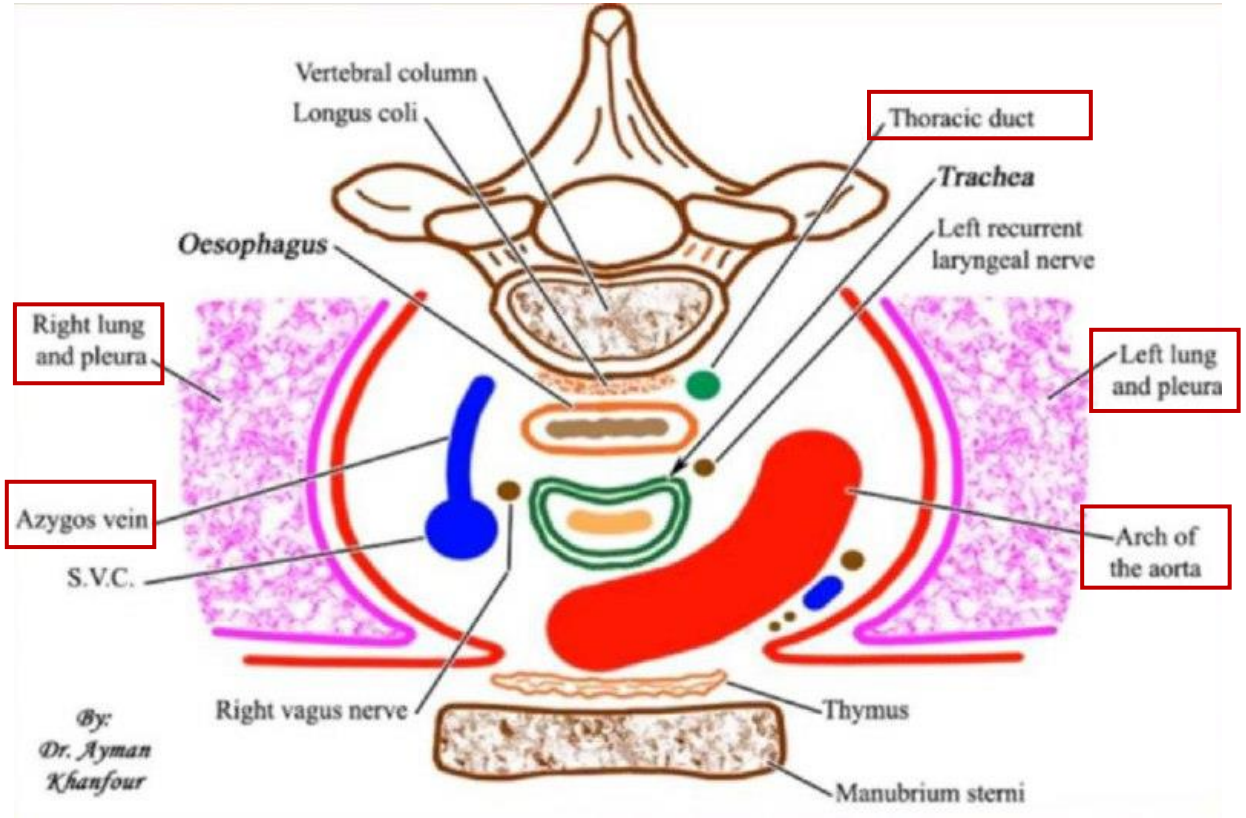
Thoracic Esophagus – Anatomical Relations: Cont.

Right Side:

- Mediastinal pleura (right).
- Right lung.
- Azygos vein.

Left Side:

- Mediastinal pleura (left).
- Left lung.
- Left subclavian artery.
- Arch of the aorta.
- Thoracic duct.



Vagus Nerve and the Esophagus triple relation! :

In the Thorax (before diaphragm): Further explained, slide 41

- Left vagus nerve lies on the left side of the esophagus.
- Right vagus nerve lies on the right side of the esophagus.

In the Abdomen (after diaphragm):

- Left vagus nerve becomes the anterior to the esophagus → also called the anterior gastric nerve. = vagal trunk
- Right vagus nerve becomes the posterior to esophagus → also called the posterior gastric nerve.

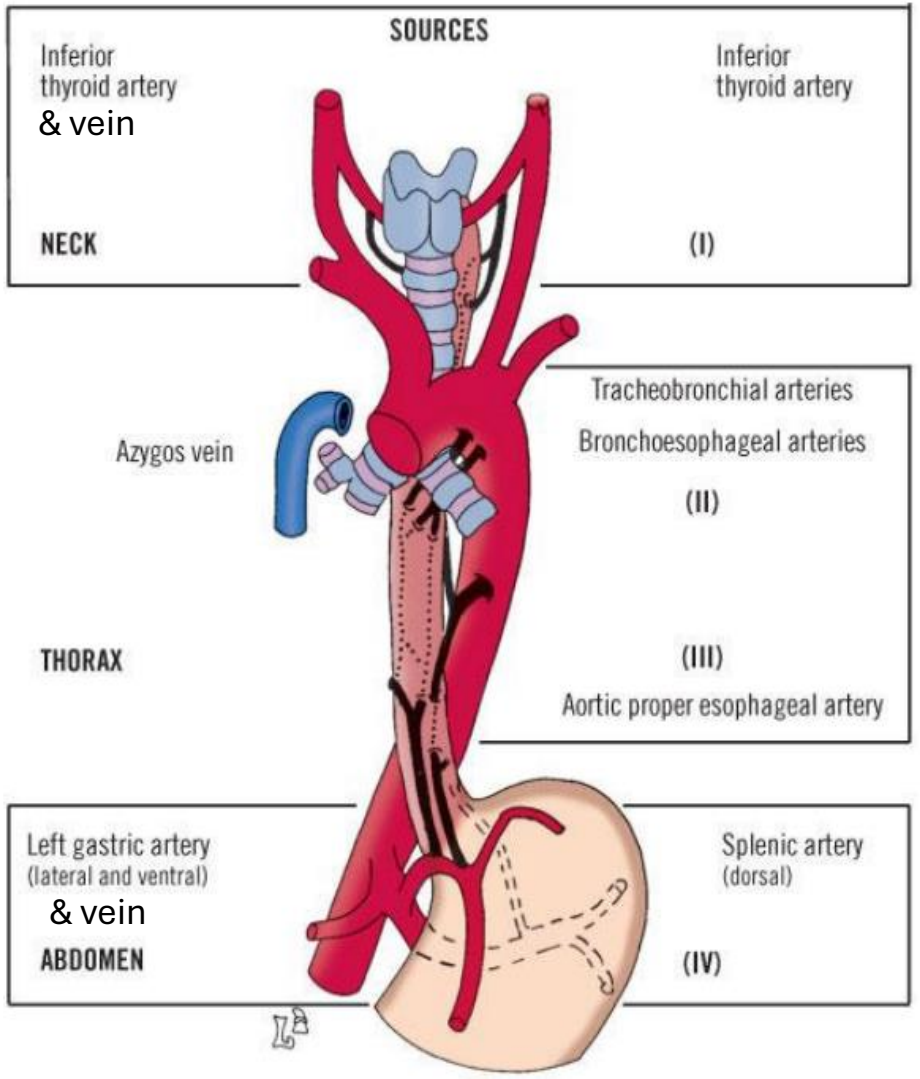
3- The esophagus blood supply

Arterial Supply:

1. **Upper third** (cervical part):
   Supplied by the **inferior thyroid artery.**

2. **Middle third** (thoracic part):
   Supplied by branches from **descending thoracic aorta**:
   1. **Tracheobronchial arteries.**
   2. **Bronchoesophageal arteries.**
   3. **Aortic proper esophageal arteries.**

3. **Lower third** (abdominal part):
   Supplied by the **left gastric artery** (branch of the **celiac trunk** from the abdominal aorta) supplies the stomach and then the lower third of the esophagus. - slide 31



Venous Drainage:

•**Lower third**: Drains into the **left gastric vein** → which is a tributary of the portal vein. - slide 34

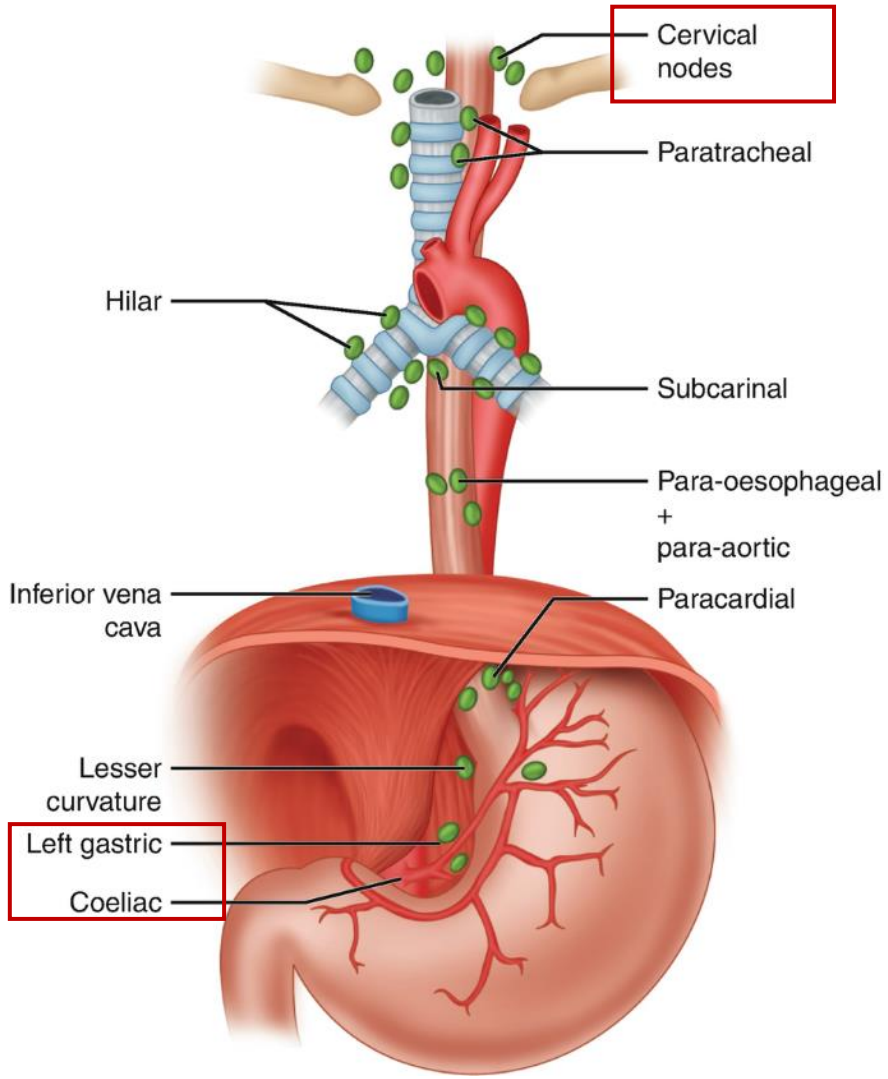
4- The esophagus lymphatics

Lymphatic Drainage of the Esophagus:

1.Upper third (cervical part):
→ Drains into the **deep cervical lymph nodes**.

2.Middle third (thoracic part):
→ Drains into the **superior and posterior mediastinal lymph nodes** (related to the lungs).

3.Lower third (abdominal part): - slide 36
→ Drains into the **left gastric lymph nodes** (along left gastric vessels) and then to the **celiac lymph nodes**.



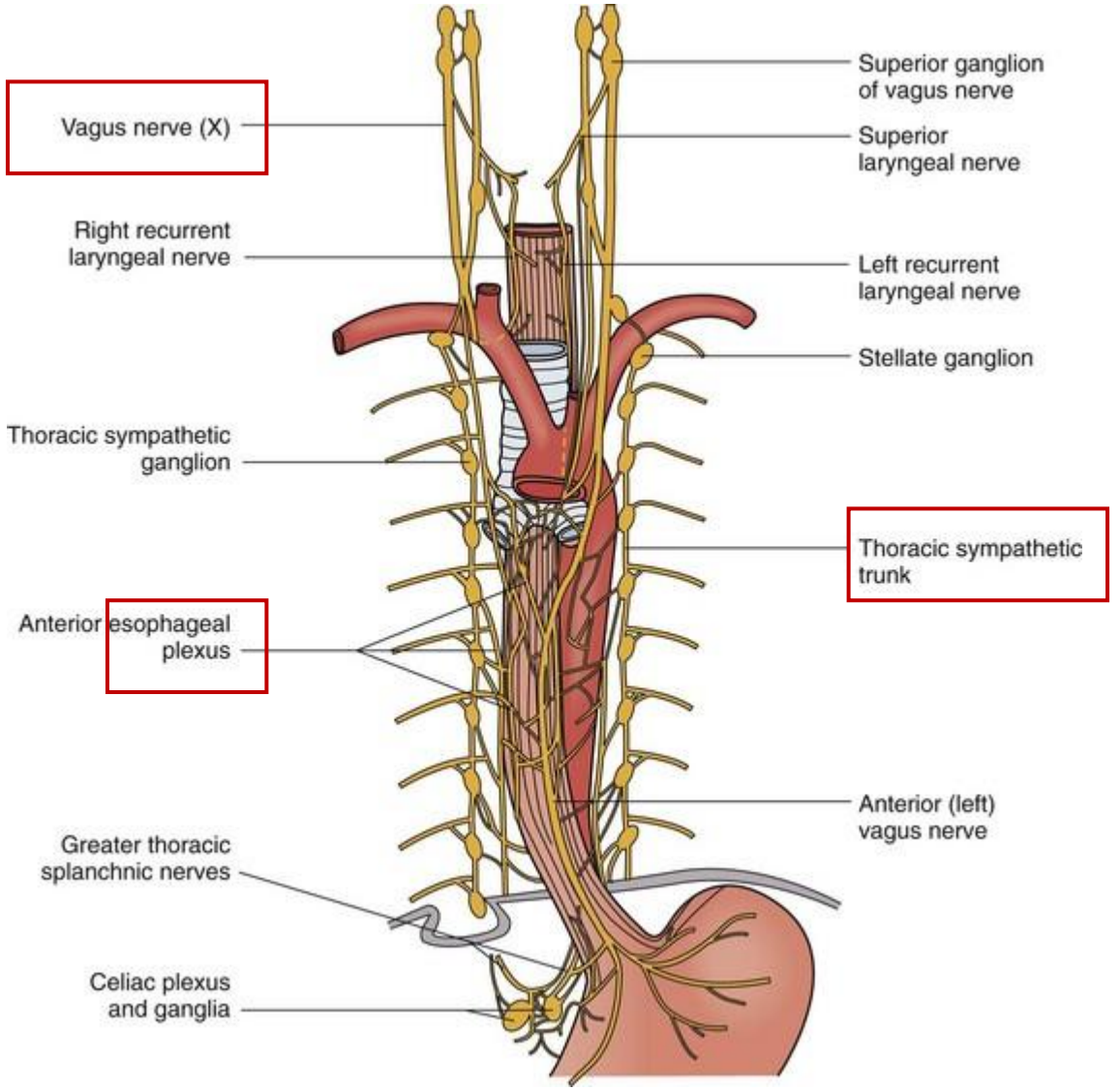
5- The esophagus innervation

Innervation of the Esophagus:

•**Parasympathetic supply**:
→ From the **vagus nerves (CN X).**
→ Promotes peristalsis and glandular secretion.

•**Sympathetic supply**:
→ Arises from the **superior cervical sympathetic ganglion**, with efferent and afferent fibers traveling via the sympathetic trunks.
→ Modulates vasoconstriction and pain sensation.

•These fibers (sympathetic and parasympathetic) form a mixed **esophageal plexus** around the esophagus.

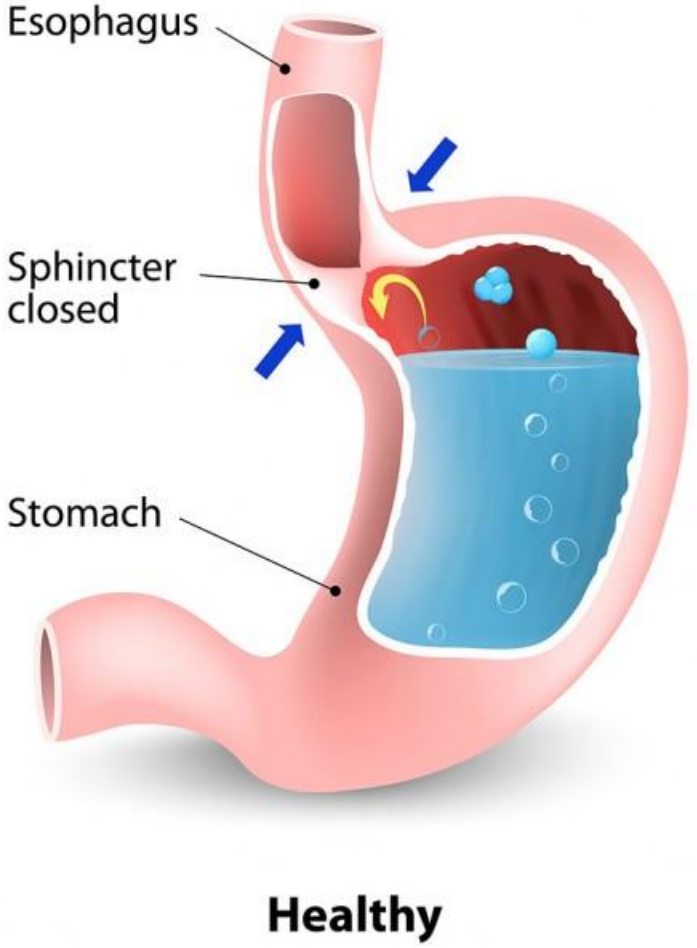


6- Gastroesophageal Sphincter

- The lower end of the esophagus **lacks a distinct anatomical sphincter** (why?) there's no thickened ring of circular muscle as seen in typical sphincters like the pyloric sphincter. – slide 17
- However, it functions as a **physiological** sphincter since the circular smooth muscle in this region maintains **tonic** contraction (sustained, continuous contraction).

→ **Thus, it is a Physiological, Not Anatomical Sphincter.**

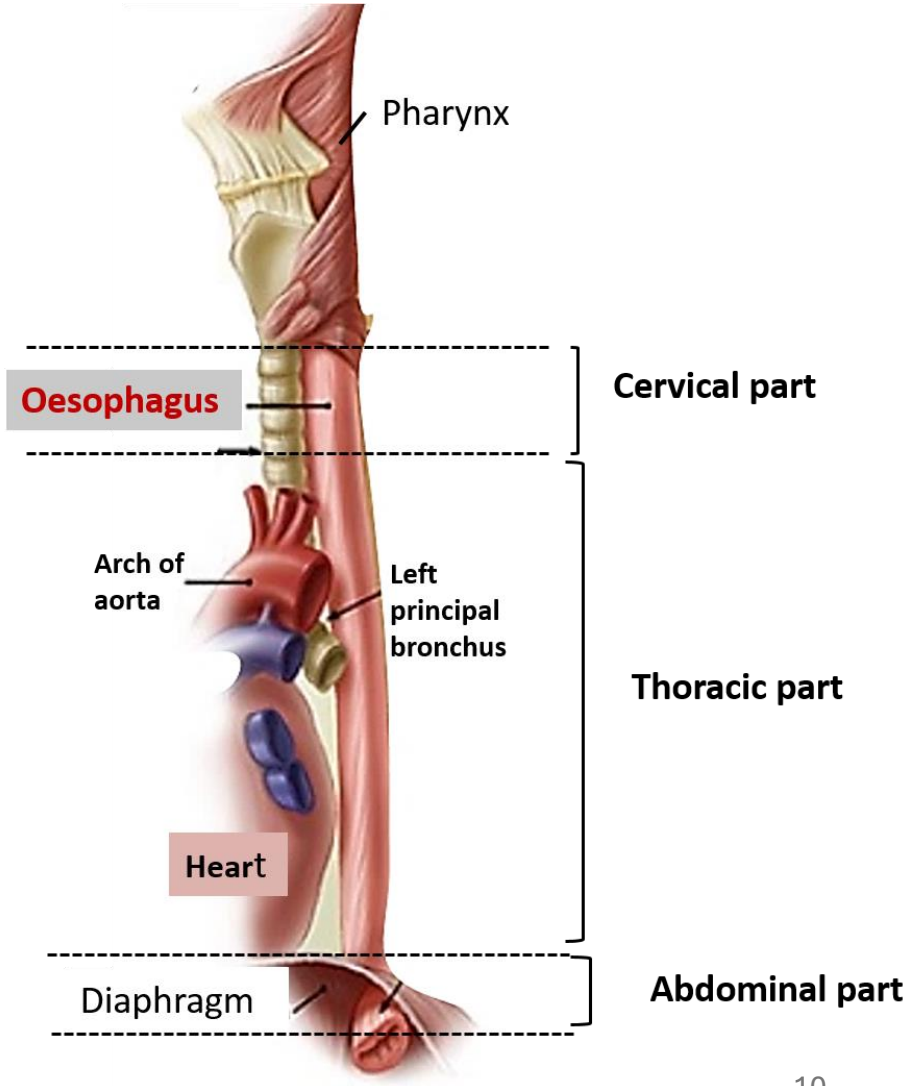
- **Function:** prevents reflux of acidic gastric contents back into the esophagus. Recall: ☹ **GERD**
- **Innervation:** closure of the sphincter is under vagal N. control.



7- Constriction sites

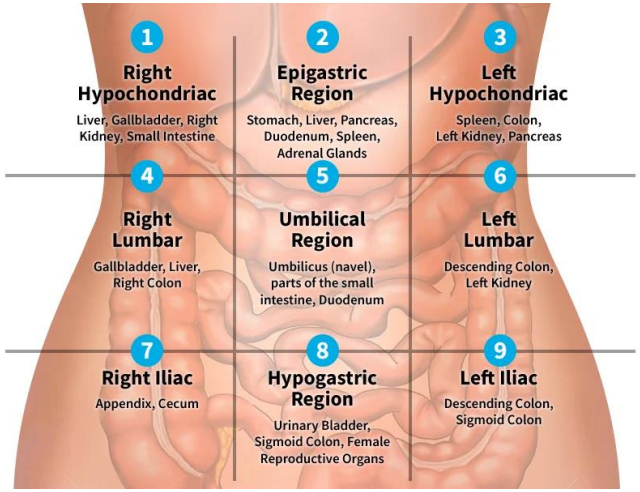
- Constrictions of the esophagus are natural narrowing's where ☹ **swallowed objects (especially in children) may get lodged:**
- There are 4 potential locations:

#	Location	Cause
1	**Cervical (upper) constriction**	the pharynx is wider than the esophagus.
2	**Thoracic (aortic arch) constriction**	Arch of the aorta crossing esophagus
3	**Bronchial constriction**	Left main bronchus crossing esophagus
4	**Diaphragmatic constriction**	Esophageal hiatus in diaphragm



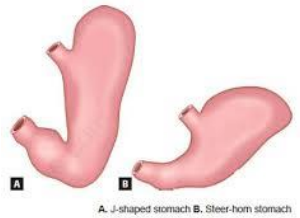
8- The stomach

- The stomach is a dilated, muscular part of the alimentary canal, situated between the esophagus and the duodenum (first part of the small intestine).

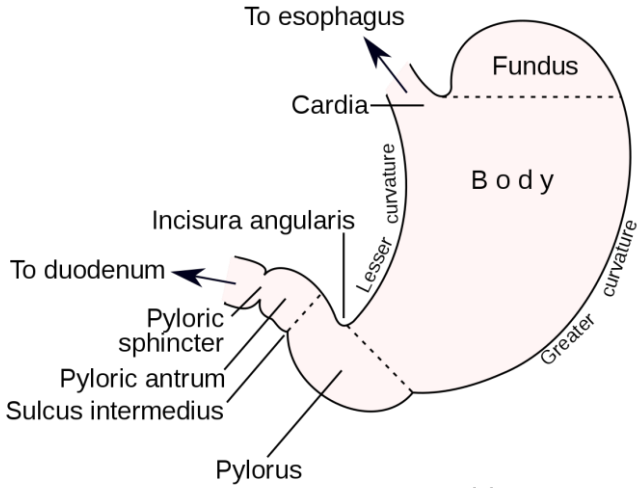


- It occupies the **left upper quadrant** of the abdomen, so, it Lies mainly in the **epigastric region** but extends into the left hypochondriac region.

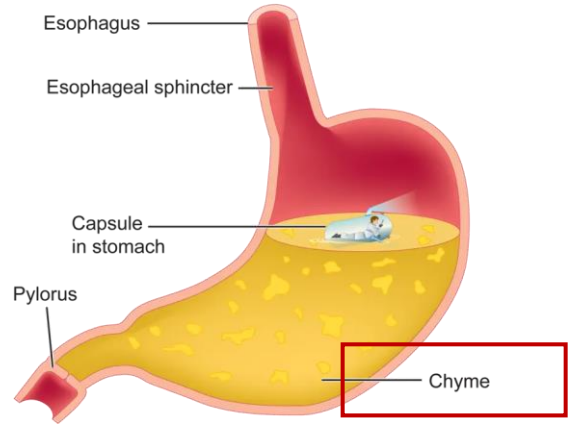
- Typical shape: Roughly J-shaped but
  In obese individuals appears as ☹ **steer-horn shaped**



Feature	Details - To be explained -
Openings (2)	- **Cardiac orifice** (physiological only; no sphincter muscle). - **Pyloric orifice** (both anatomical and physiological — due to thickened circular smooth muscle).
Curvatures (2)	- **Lesser curvature:** shorter, concave. - **Greater curvature:** longer, convex.
Surfaces (2)	- **Anterior surface & Posterior surface.**



9- Functions of the Stomach



The stomach has three main functions:

- **Food Storage**
  - •Acts as a reservoir for ingested food.
  - •Capacity in adults: ~1500 Ml.

- **Mechanical & Chemical Digestion**
  - •Mixes food with gastric secretions (acid, enzymes) to form a semi-fluid mixture called **chyme**.
  - •Chyme stays in the stomach for 2–4 hours.
  - •The pyloric sphincter regulates chyme release:
    - It opens, lets out a small amount of chyme to the duodenum, then closes.
    - This cycle repeats until the stomach is emptied (~4 hours).

Gradual release!
سبحان الله،
Worth searching..

- **Regulation of Chyme Delivery**
  - •Controls the rate of chyme entry into the small intestine.
  - •Ensures efficient digestion and absorption in the duodenum.

10- Parts of the Stomach

The stomach is anatomically divided into **three main parts**:

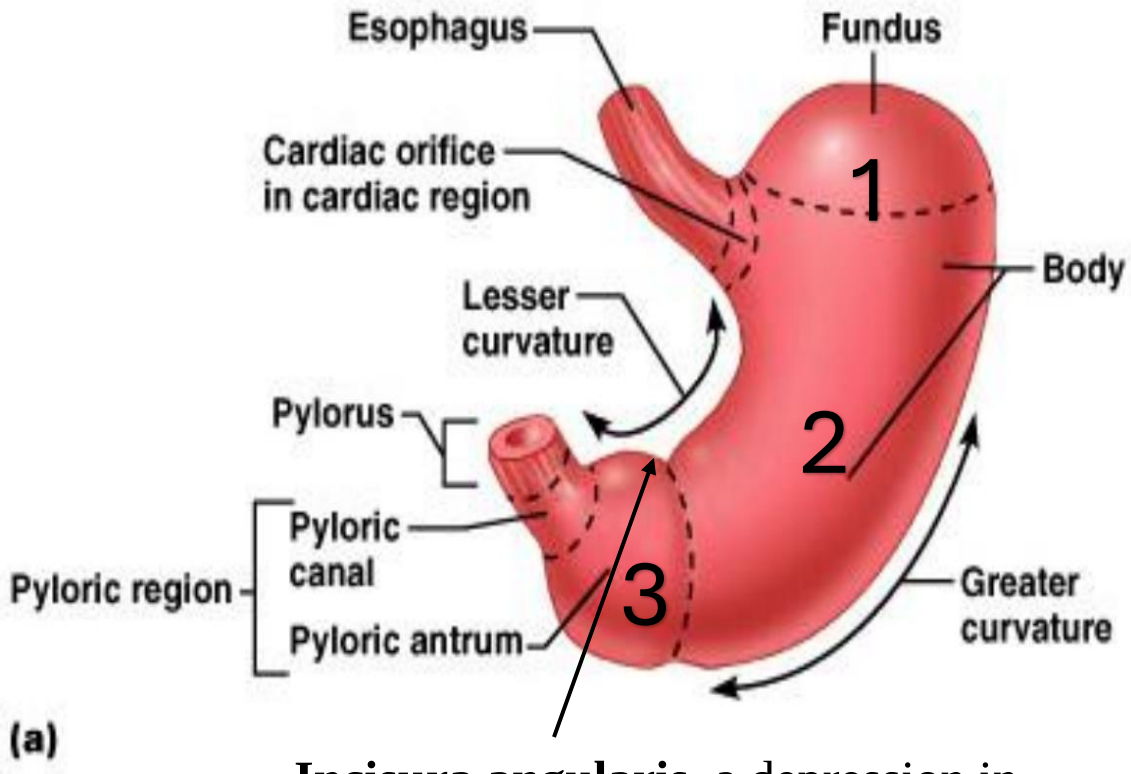
1. Fundus

- Dome-shaped, uppermost part.
- Located above and to the left of the cardiac orifice.
- Usually filled with gas, seen as a **dark spot on X-ray(normally).** Although the ***cricopharyngeal** muscle prevents air entry, some air is swallowed and collects in the fundus.

2. Body

- Largest central part
- Extends from the cardiac orifice to the incisura angularis (a notch on the lesser curvature).

3. Pyloric Region



Incisura angularis, a depression in the lesser curvature that separates the body from the pylorus.

** Recall L(2): marks the transition from the hypopharynx to the cervical esophagus, it contracts tonically to prevent air from entering the esophagus during breathing and to prevent reflux from the esophagus into the pharynx.*

10- Parts of the Stomach

3. Pyloric Region – cont.

This is the distal part of the stomach, and it's divided into three subparts:

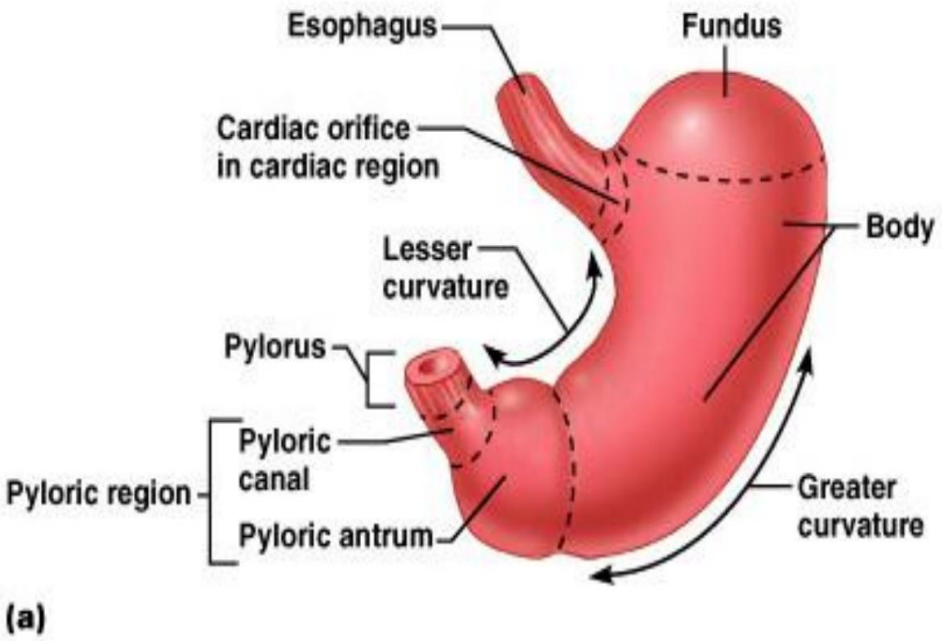
a. Pyloric Antrum

- From the incisura angularis to the pyloric canal.

b. Pyloric Canal

c. Pylorus

- Most tubular part of the stomach.
- Contains the pyloric sphincter (anatomical sphincter: thickened circular smooth muscle).
- Attached to the duodenal cap (first part of the duodenum)— common site of ☹ **peptic ulcers,** which is commonly caused by **helicobacter pylori.**



11- Gastric and Duodenal Ulcers

The main causative agent for both types: **Helicobacter pylori**

Gastric Ulcer

Less common than duodenal ulcers.

Suspected to be **malignant until proven otherwise**.

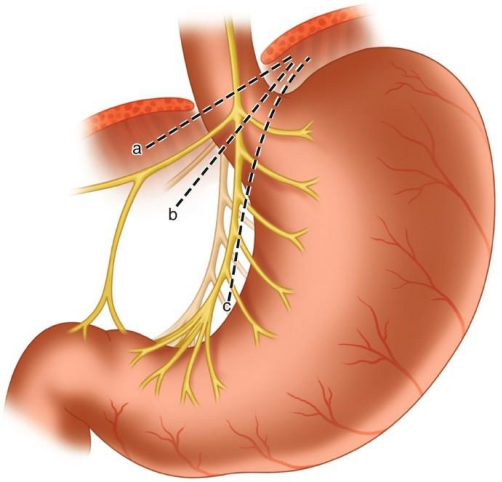
Duodenal Ulcer (Peptic Ulcer)

More common than gastric ulcers.

Generally **benign** and **peptic in origin**.

- **Treatment Evolution ☺**

Old Treatment	- **Truncal vagotomy**: Sectioning vagus nerves below diaphragm → many complication
Improved Surgical Option	- **Highly selective vagotomy**: cut all branches of vagi except *latarjet N.
Drainage Procedure	- **Pyloroplasty** : Bypasses or widens pyloric canal - **Gastrojejunostomy:** Creates a connection between stomach and jejunum.
Modern Management	- **Gastroscopy** available in clinics - Treated with **2 antibiotics + proton pump inhibitor (PPI)**

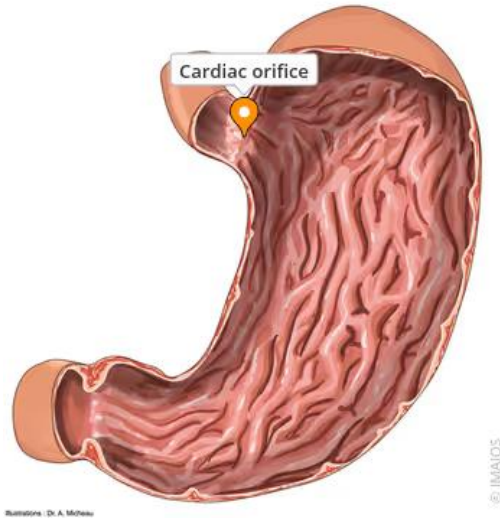


* Latarjet N. : further explained in slide 41

12- Stomach Openings

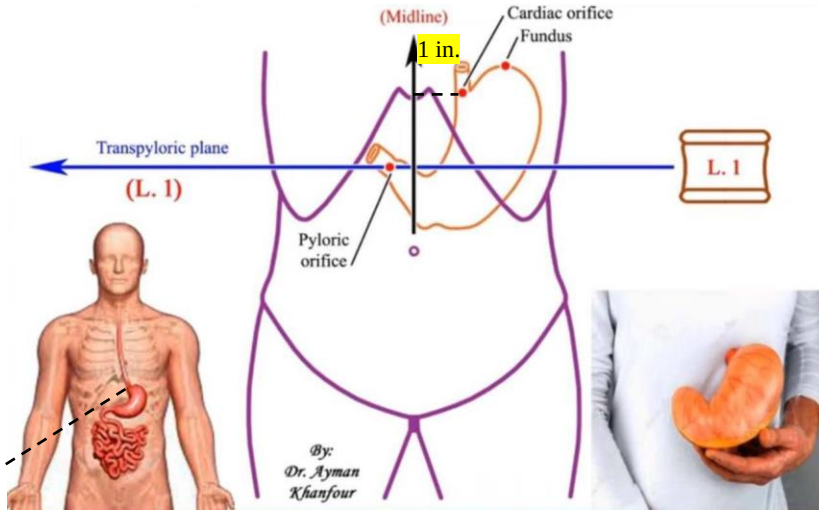
- Cardiac Orifice
- Pyloric Orifice

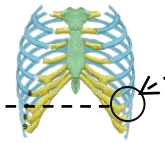
1- Cardiac Orifice



- Location: Junction of esophagus and stomach.
- Type: **Physiological sphincter** only (no visible thickened muscle).
- Function: Prevents regurgitation of stomach contents into the esophagus.

- **Surface anatomy:**
  - At the 7th left costal cartilage.
  - 1 inch left of the midline.
  - ~ 45 cm from the incisors (used during endoscopy) – recall 2nd slide.
  - ~10 cm from the anterior abdominal wall.





At the 7th left costal cartilage

12- Stomach Openings

Cardiac Orifice

Pyloric Orifice

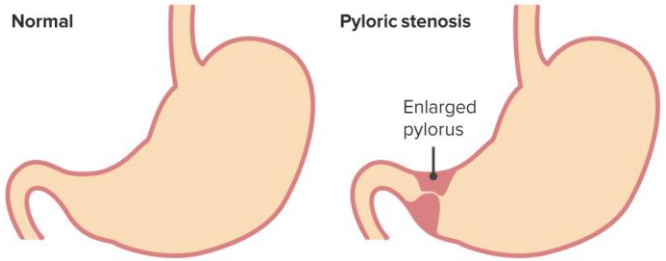
2- Pyloric Orifice

- Location: Between the pyloric canal and duodenum.
- Type: **Both anatomical and physiological** sphincter, since it is formed by thickened circular smooth muscle.
- **Surface anatomy:** 1 inch right of the midline.
- **Vein of Mayo**: A small vein crosses the pyloric sphincter, Used as a surgical landmark.
- **Nerve Control**:
  - **Sympathetic** fibers → contract the sphincter (tighten)
  - **Vagus** nerve → relax the sphincter (open)
  - The sphincter receives **motor** fibers from the sympathetic system (contraction) and **inhibitory** fibers from the vagus nerve (relaxation).

☹ **Congenital anomalies: Hypertrophy of pyloric muscle**

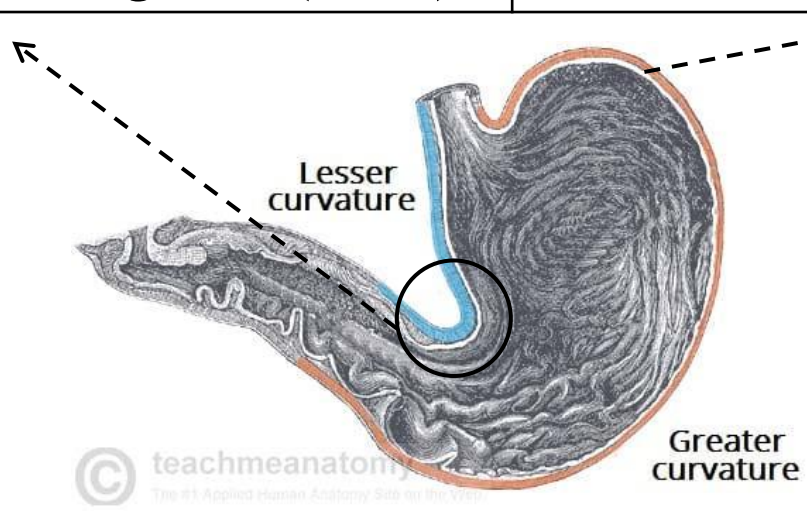
It is seen in newborns where it blocks gastric emptying, the muscle obstructs the passage of food from the stomach to the small intestine, leading to **projectile vomiting** after feeding.

☺ **Treatment:** Surgical relief to reduce construction – pyloroplasty.



13- Stomach curvature

Feature	Lesser Curvature	Greater Curvature
Position	Right border of the stomach	Left border of the stomach
Extent	From cardiac orifice to pylorus	From left of cardiac orifice, **over fundus** to pylorus
Length	Shorter	Much longer
Omental Attachment	Lesser omentum	Greater omentum
Related Arteries	Right & Left Gastric Arteries	Right & Left Gastroepiploic Arteries
Anatomical Features	Site of incisura angularis (notch)	Smooth curve, arches over the fundus



14- Stomach Layers

➢ Relate to HISTOLOGY

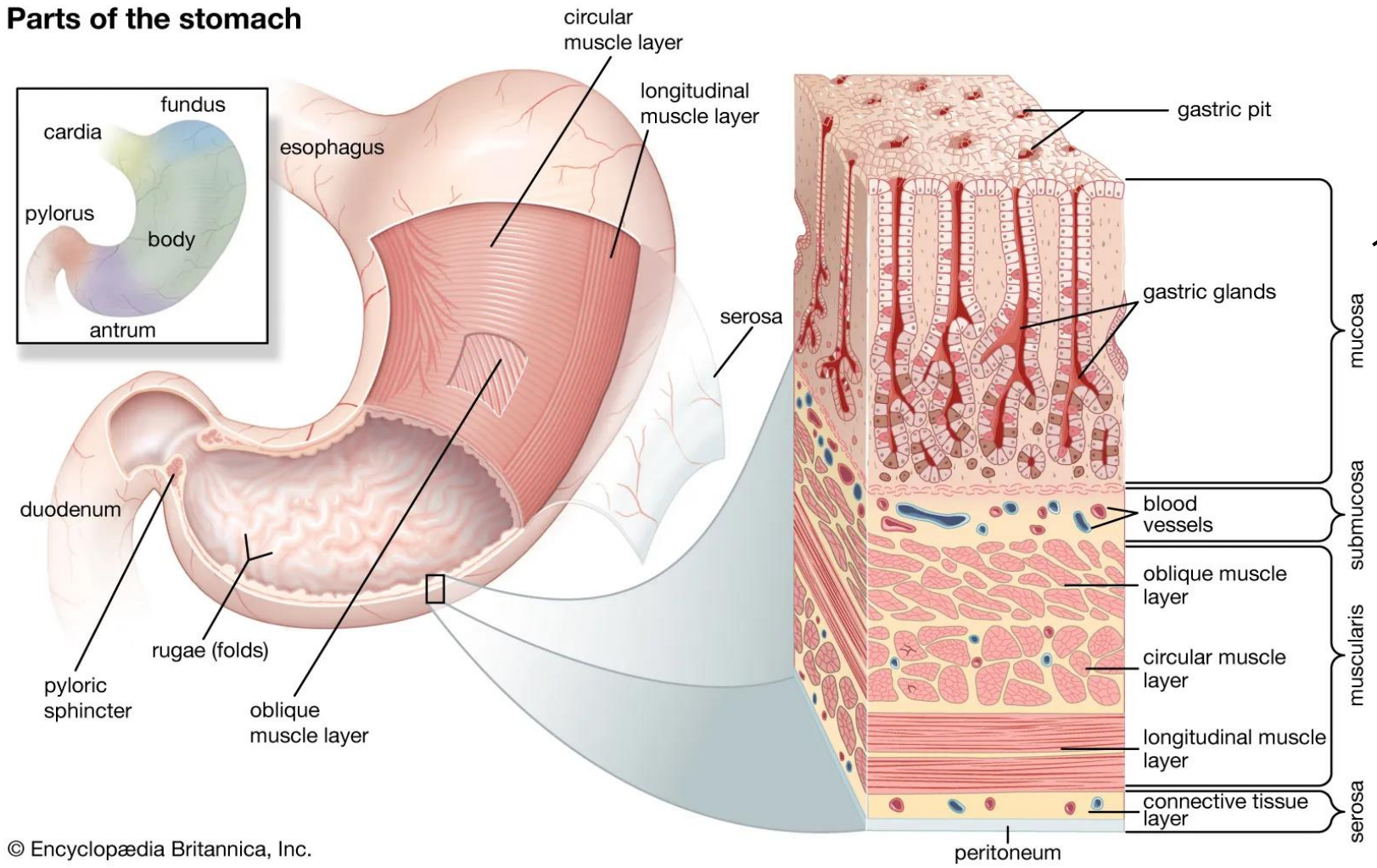
STOMACH, like most of the gastrointestinal (GI) tract, is composed of four concentric layers (from innermost to outermost):

Consists of 4 layers : mucosa, submucosa, muscularis, serosa. – recall Serosa vs Adventitia?

Layer	Subdivisions / Components	Notes
1. Mucosa	Consists of 3 layers: 1. **Simple columnar epithelium** (with no goblet cells) 2. **Lamina propria** (filled with **gastric glands** → open into **gastric pits** → open into **gastric lumen**) 3. **Muscularis mucosae** (thin smooth muscle layer)	- The lining epithelium of the luminal surface, gastric pits, and glands is **simple columnar, devoid of goblet cells**. - **Rugae** (mucosal folds) are oriented longitudinally along the lesser curvature, or transversely/obliquely, aiding the swift passage of fluids through the stomach. - Lamina propria (mucosa) is rich in blood and lymphatic vessels.
2. Submucosa	Connective tissue	- Rich in blood and lymph vessels

14- Stomach Layers

Mucous membrane = mucosa



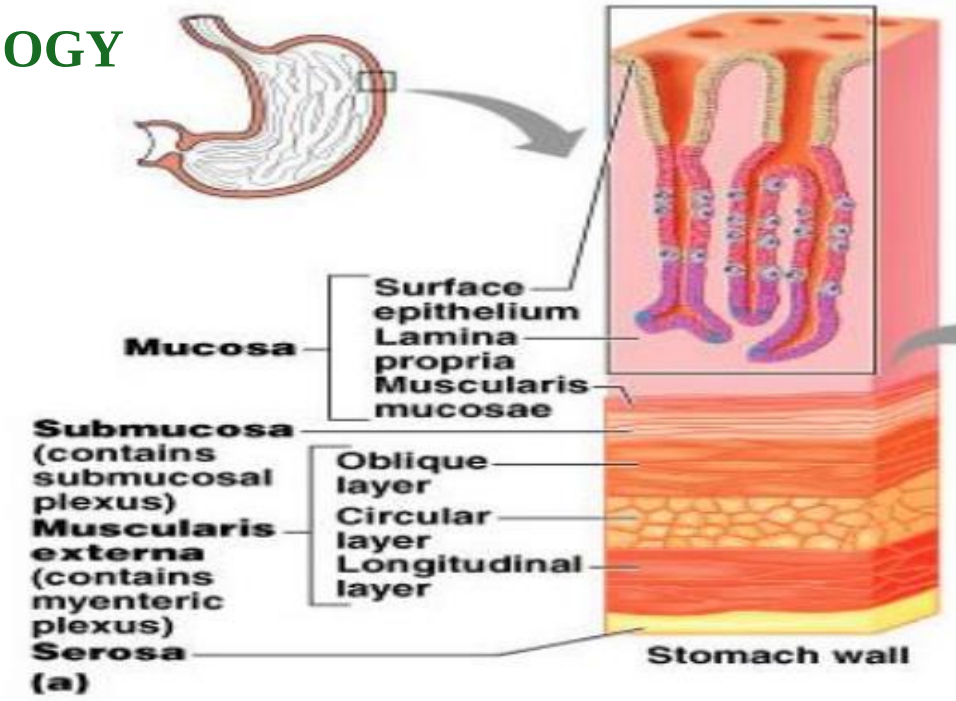
thick

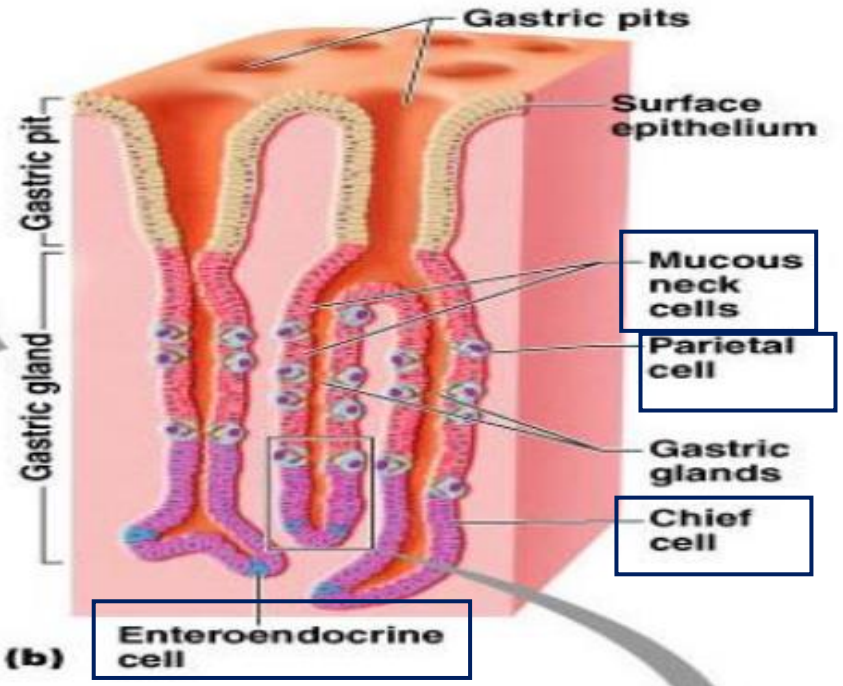
vascular

Rugae are folds of the **mucosa**

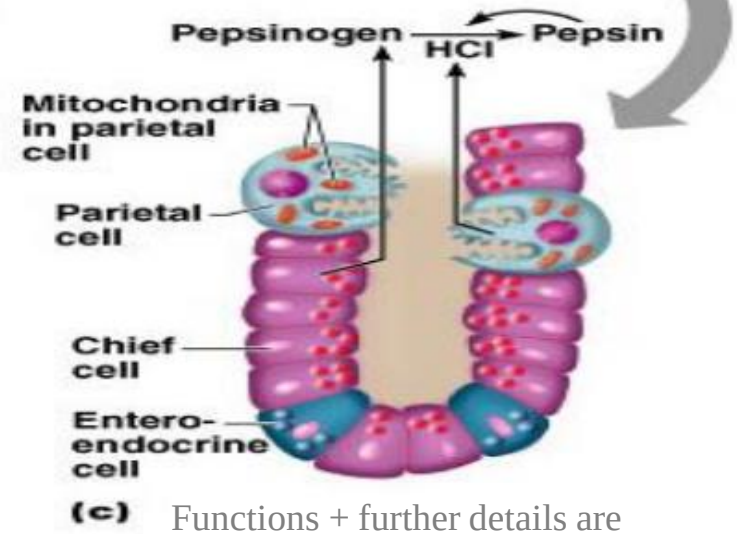
- **Mainly longitudinal**
- Designed to **allow expansion** of the stomach when food enters. **Flatten out** when the stomach is **distended** (e.g., after a meal), increasing surface area and volume capacity.

➢ Relate to HISTOLOGY





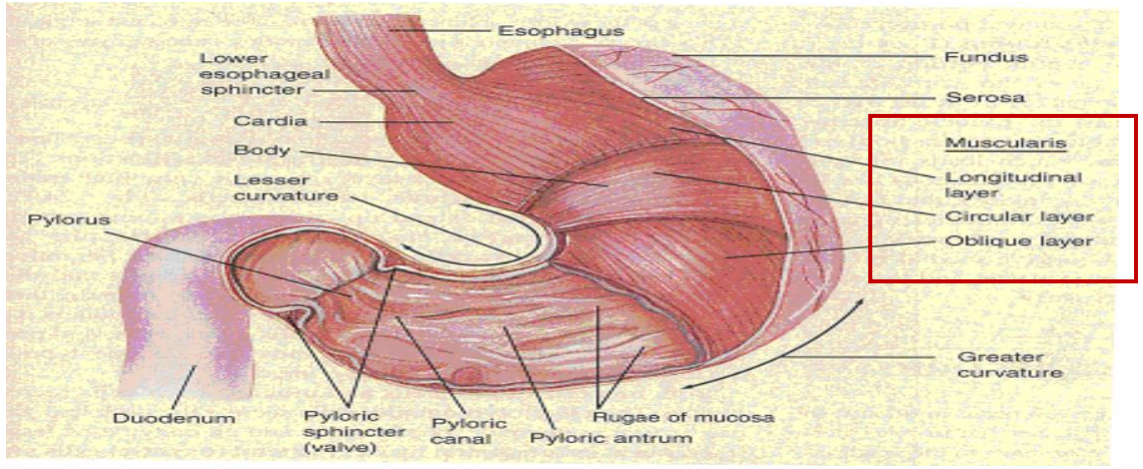
Cell Type	Location
Enteroendocrine cells (G cells)	Scattered in the gland (mostly in pyloric region)
Parietal cells	**Superficial** to chief cells (middle part of gland)
Chief cells	**Deep** in the gland (base)
Mucus neck cells	Neck region of gland



Functions + further details are explained in HISTO lectures

14- Stomach Layers

3. Muscularis externa (muscular wall)	Unlike most of the GI tract (which has only two muscle layers), the stomach has three muscular layers **- Oblique (innermost)** – unique to stomach **- Circular (middle)** **- Longitudinal (outermost)**	- Myenteric plexus lies between circular and longitudinal layers. - At the pyloric sphincter, the oblique layer is absent, The circular muscle thickens and with the longitudinal layer, forms the pyloric sphincter.
4. Serosa (Visceral peritoneum)	Formed by mesothelium (simple squamous epithelium).	The stomach is completely covered with peritoneum; hence it is entirely enclosed by serosa.



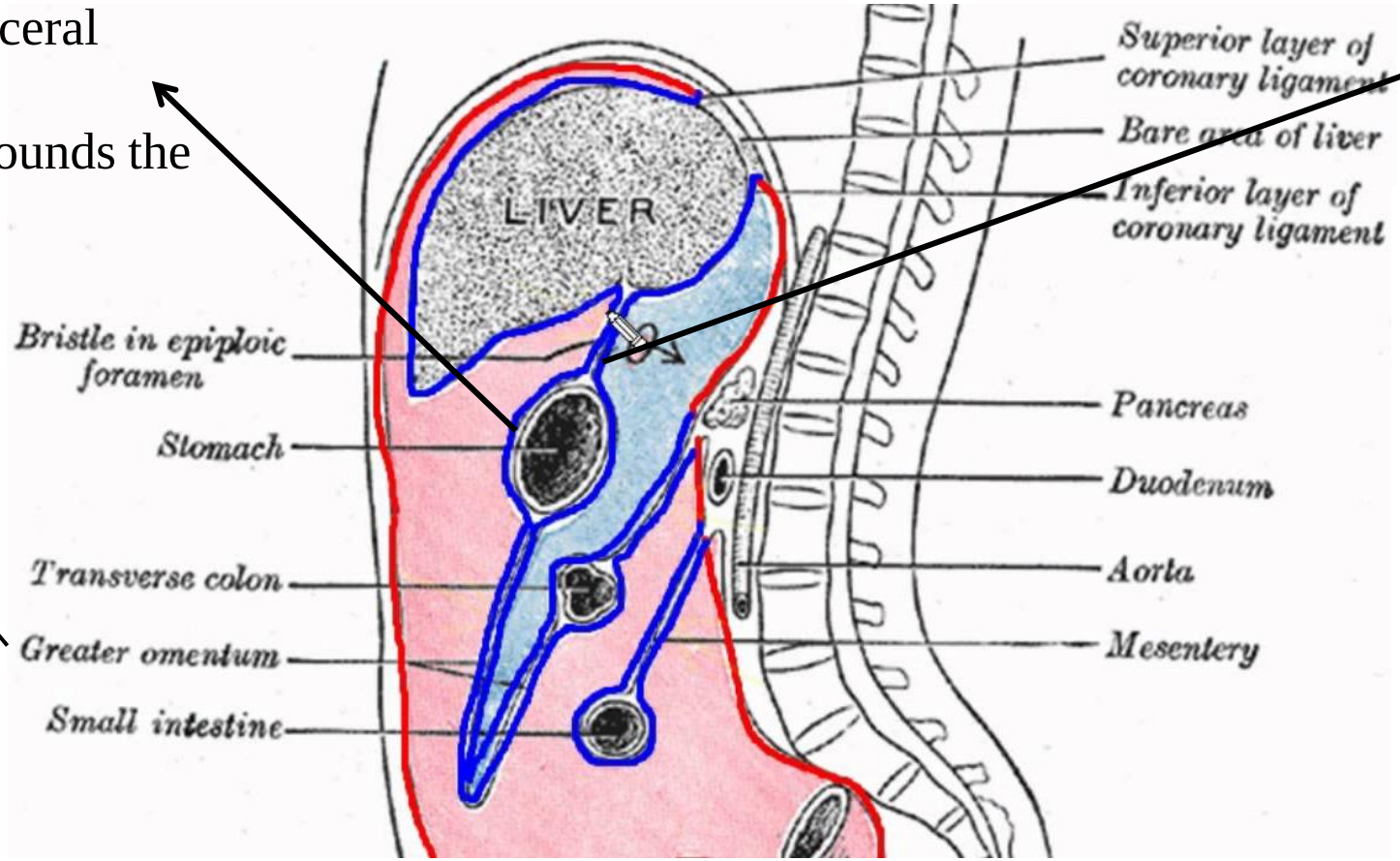
Next slide:

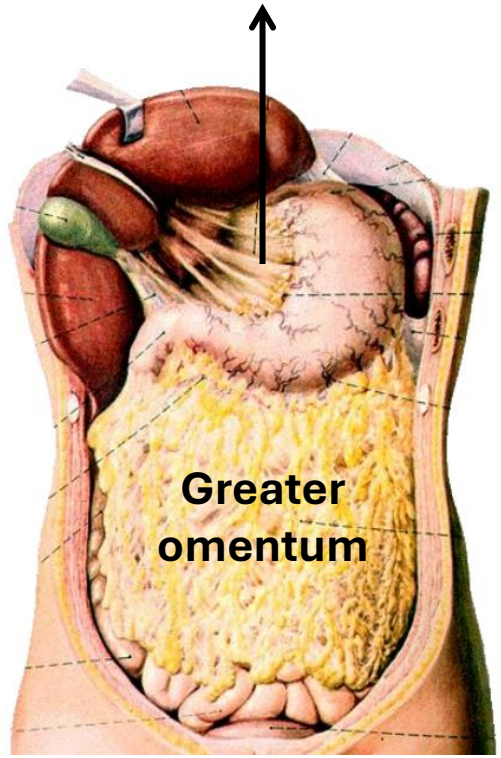
14- Stomach Layers

Serosa (Visceral peritoneum) – cont.

Peritoneum (visceral peritoneum) completely surrounds the stomach

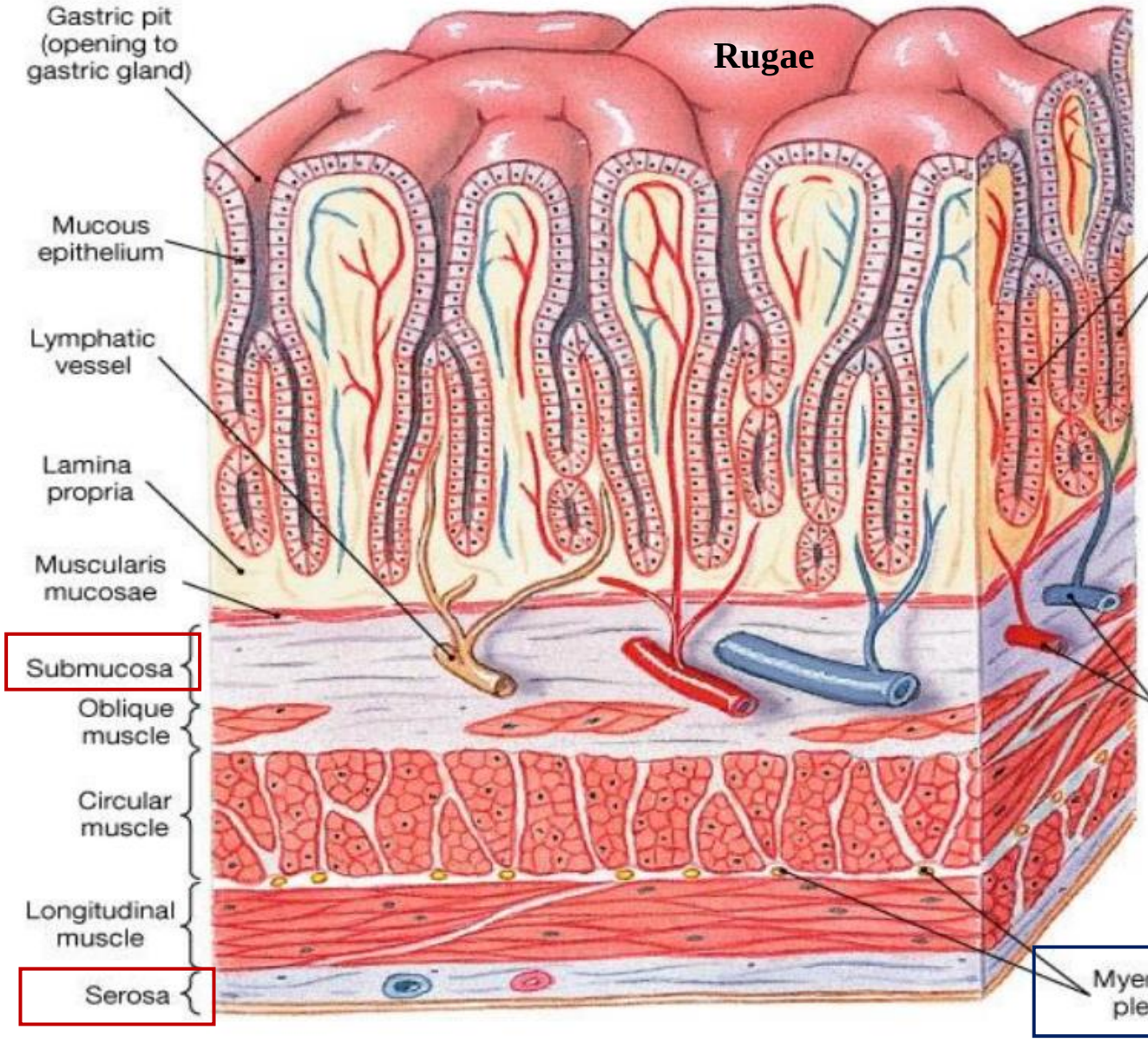
It leaves the lesser curvature as the **lesser omentum**





It leaves the greater curvature as **greater Omentum** which extends from the lower part of the greater curvature to the transverse colon.

General view:



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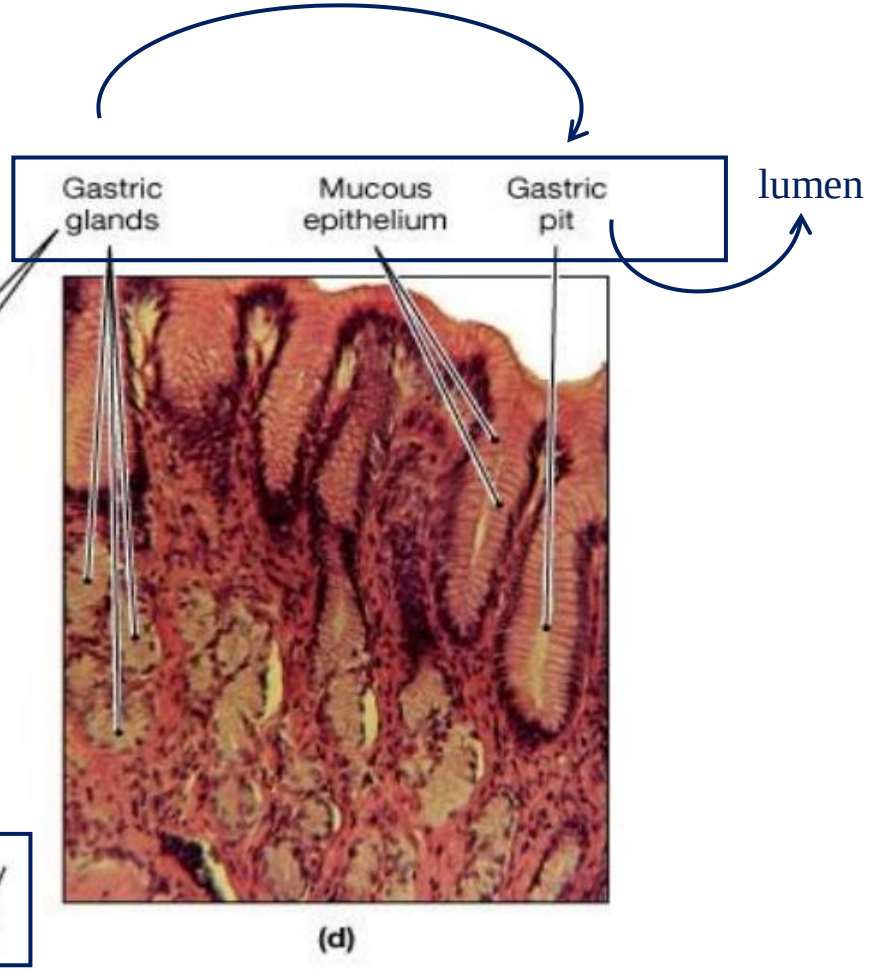


Highly vascularized: In lamina propria & submucosa between circular and longitudinal layers.

15- Curvatures & Omentums.

1- Lesser Curvature & Lesser Omentum:

•The **lesser curvature** of the stomach is suspended from the **liver** by the **lesser *omentum**, which consists of two parts:

1.Hepatogastric ligament – connects the **liver** to the **stomach**

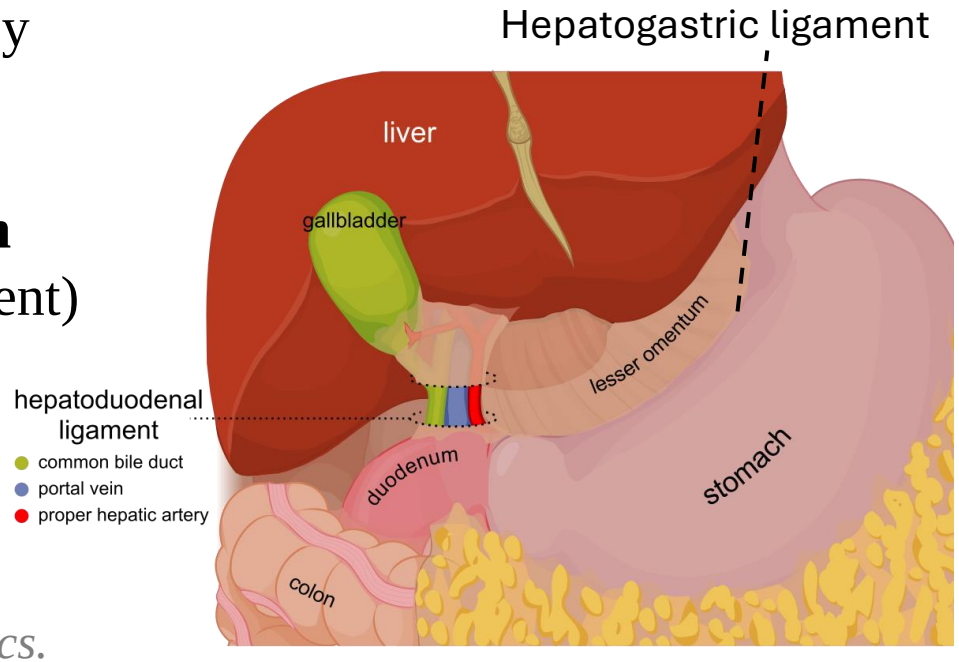
2.Hepatoduodenal ligament – connects the **liver** to the **duodenum**

•The free edge of the lesser omentum (in the hepatoduodenal ligament) contains the portal triad:

•**Common bile duct** (on the right)

•**Proper hepatic artery** (on the left)

•**Portal vein** (posterior)

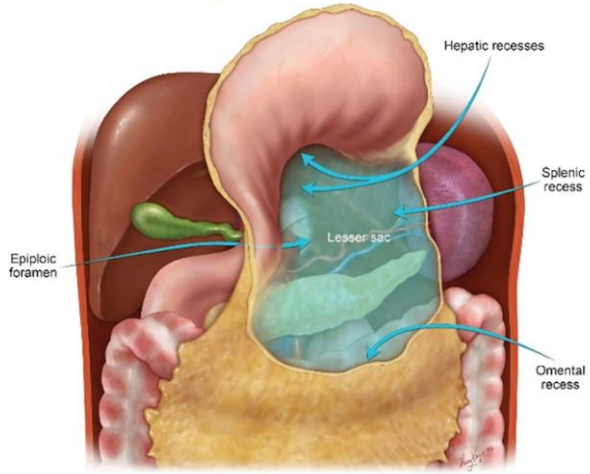


** Double layer of peritoneum contains fat, blood vessels, nerves, and lymphatics.*

Omental Foramen (Epiploic Foramen / Foramen of Winslow):

•Found behind the free edge of the lesser omentum

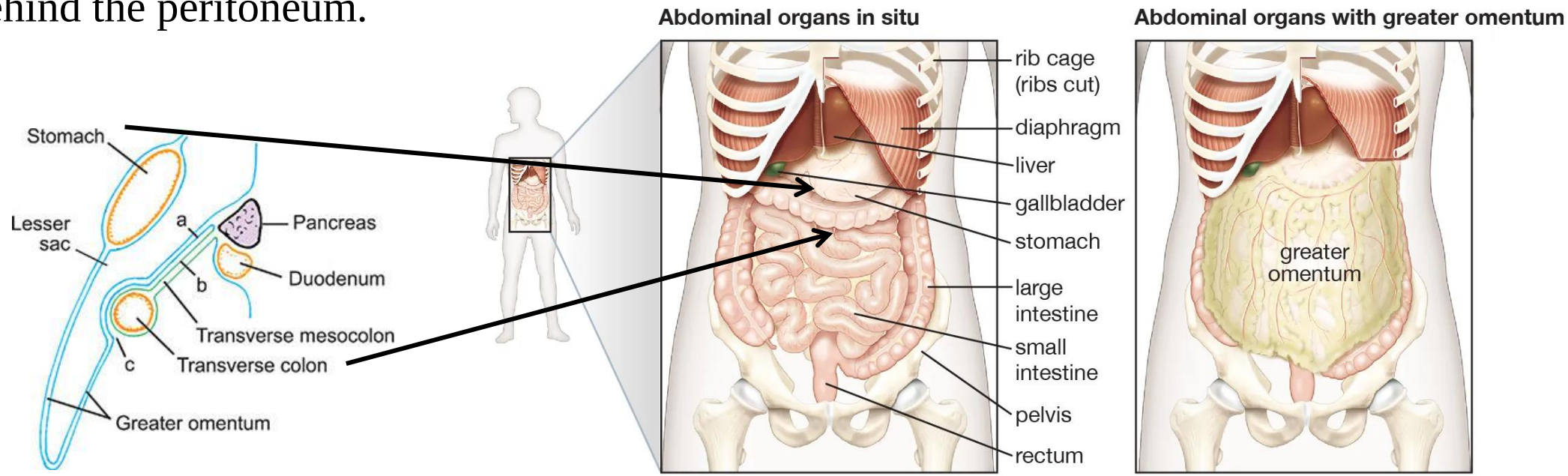
•Connects the **greater sac** (main peritoneal cavity) with the **lesser sac** (omental bursa, behind the stomach)



15- Curvatures & omentums

2- Greater Curvature & Greater Omentum:

- Two layers of peritoneum arise from the greater curvature, forming the greater omentum, which contains fat, blood vessels, nerves, and lymphatics.
- The greater omentum: descends from the greater curvature of the stomach(ORIGIN), then ascends, and attaching eventually to the transverse colon(ENDING).
- Transverse colon is an **intraperitoneal** organ just like the stomach, meaning it is entirely enclosed by the peritoneum, while the ascending and descending colon are **retroperitoneal** organs, meaning they lie behind the peritoneum.



16- Stomach Relations

Anterior & Superior Relations of the Stomach:

1.Anterior Abdominal Wall

Especially at the epigastric region (upper central abdomen).

2.Left Costal Margin

The lower border of the rib cage; overlaps stomach when it extends to the left hypochondriac region.

3.Left Pleura and Left Lung

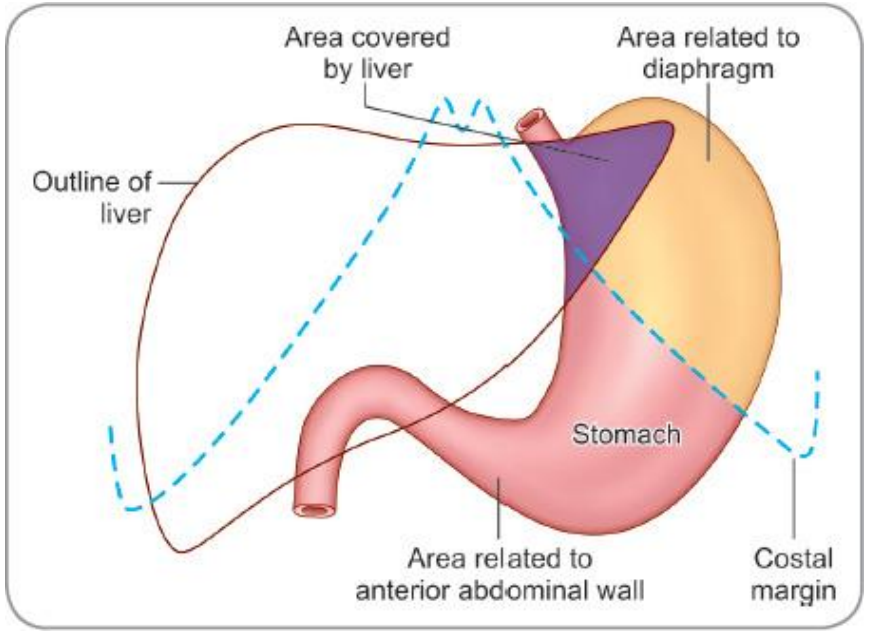
The pleural cavity and lower part of the lung lie above and partially in front of the stomach.

4.Diaphragm

A muscular partition separating the thoracic cavity (lungs/heart) from the abdomen. Lies superior to the stomach.

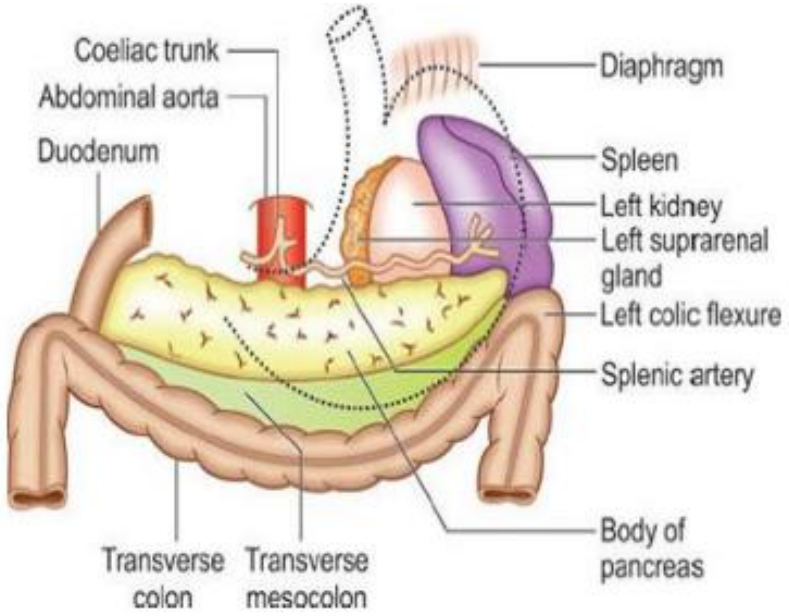
5.Left Lobe of the Liver

May extend over the anterior surface of the stomach, especially the lesser curvature and anterior wall of the body.



16- Stomach Relations

Posterior Relations of the Stomach (Stomach Bed)



1. **Lesser sac (Omental bursa)**
2. **Left crus of the diaphragm**.
3. **Spleen**
   Lies laterally and relates to both the anterior and posterior aspects of the stomach.
4. **Left suprarenal (adrenal) gland**
5. **Upper part of the left kidney**
6. **Pancreas (body)**
7. **Splenic artery**
   Runs along the superior border of the pancreas, posterior to the stomach.
   Splenic vein Lies behind the pancreas, so not part of the true stomach bed.
8. **Transverse mesocolon**
9. **Transverse colon**

- The peritoneum forms the greater sac and the lesser sac. The **greater sac** lies in front of the stomach, while the **lesser sac** lies behind it.
- When the stomach expands (is full), it pushes posteriorly into the lesser sac — hence, the need for this potential space.

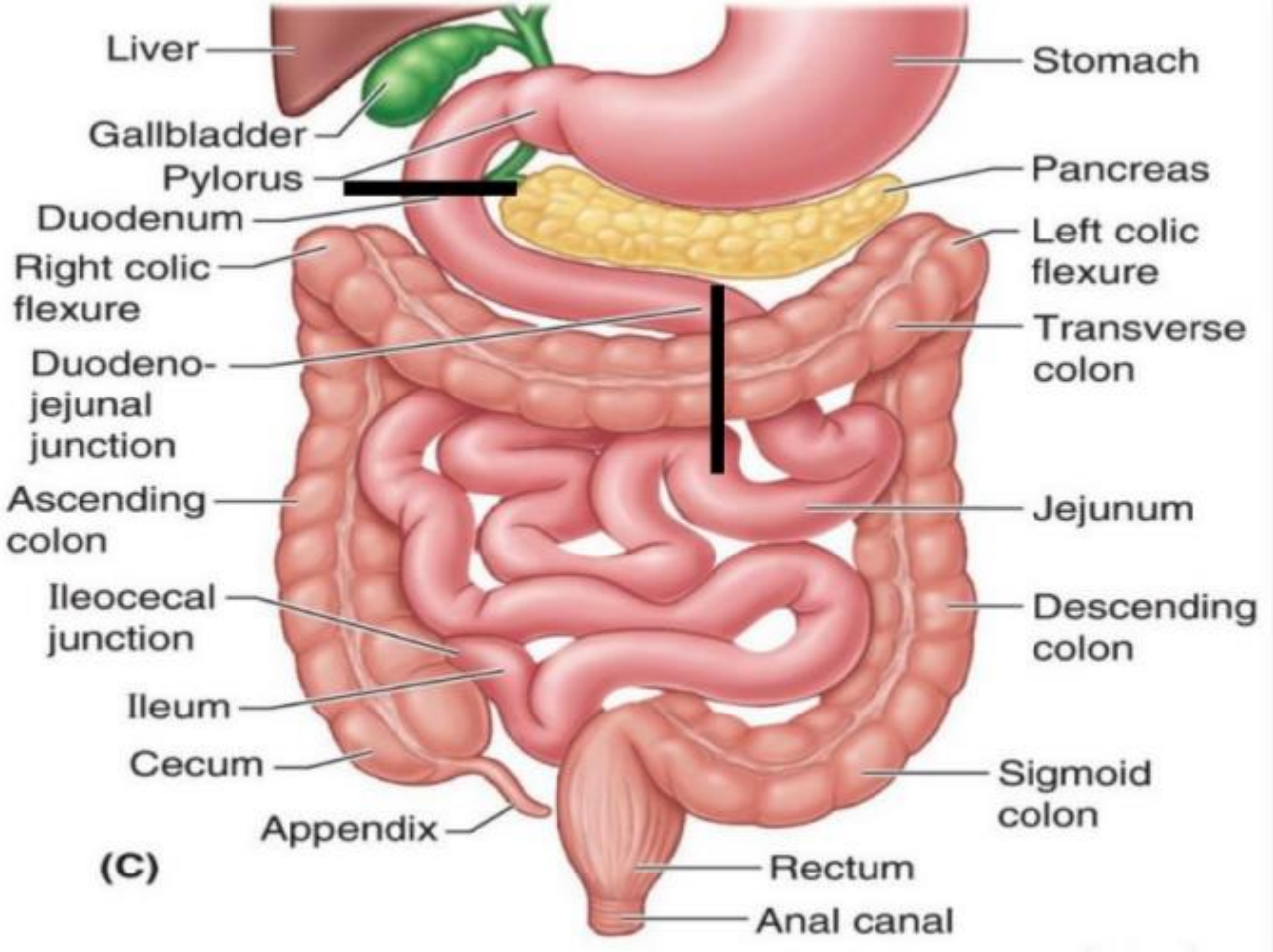
17- Blood supply of the gut

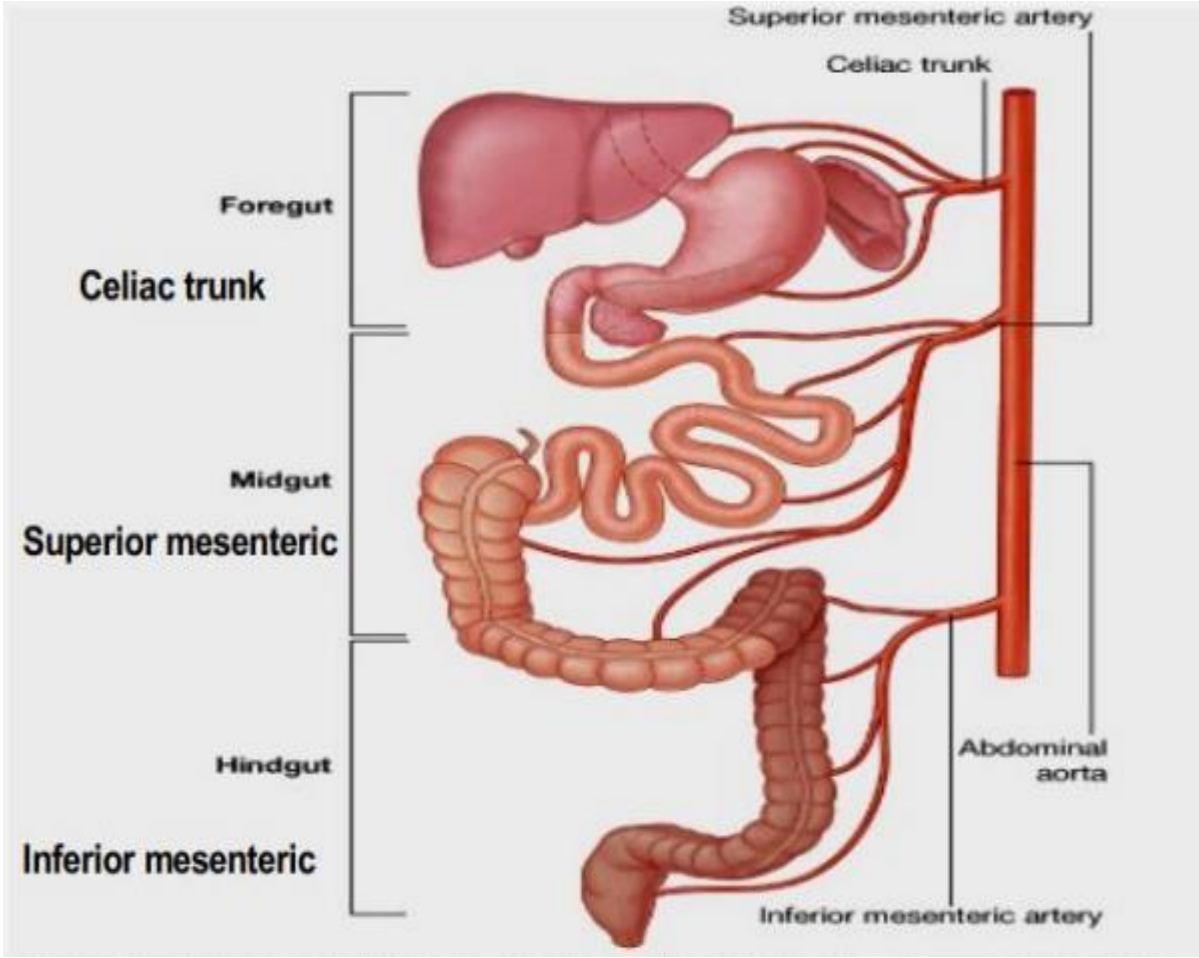
- **Relate to Embryology**

Region	Structures Derived	Main Arterial Supply
Foregut	- Lower esophagus - Stomach - Upper half of the duodenum	**Celiac trunk**
Midgut	- Lower half of the duodenum - Small intestine - Proximal 2/3 of transverse colon	**Superior mesenteric artery (SMA)**
Hindgut	- Distal 1/3 of the transverse colon - Descending colon - Rectum - Upper part of the anal canal	**Inferior mesenteric artery (IMA)**

17- Blood supply of the gut

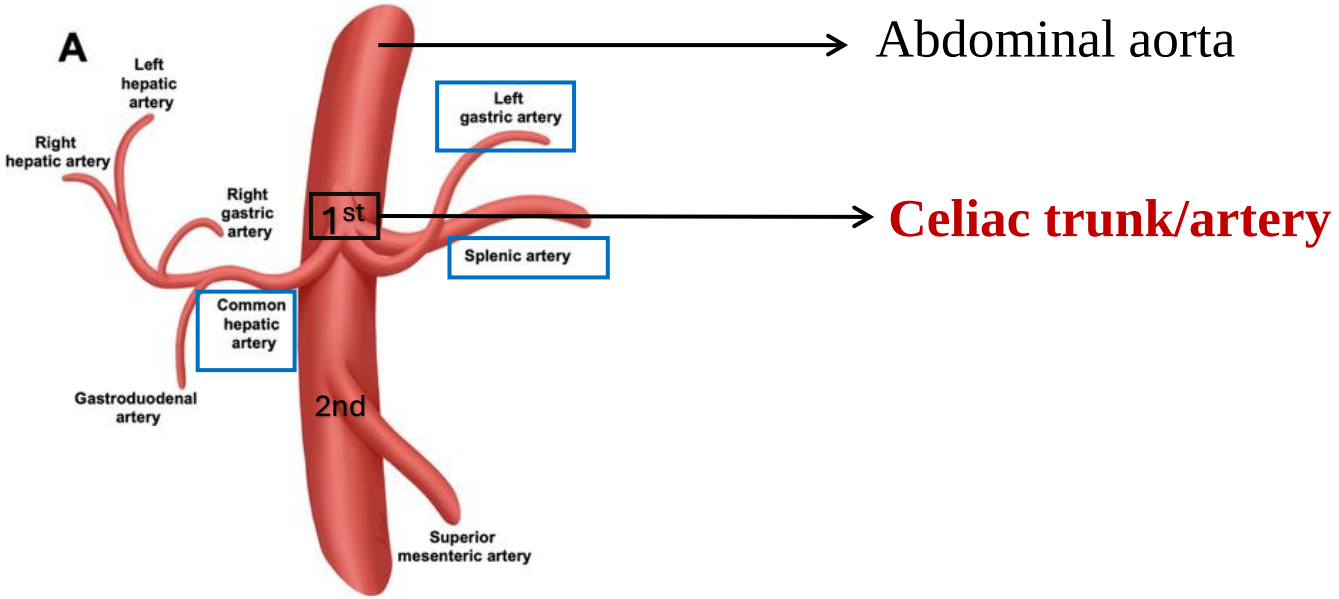
- **Relate to Embryology**

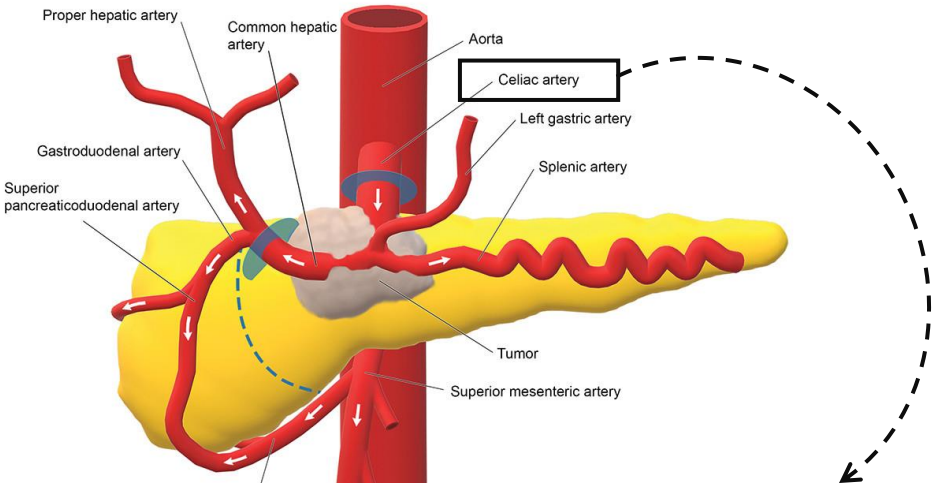




18- Arterial blood supply of the stomach

- The **celiac trunk** is the *first major artery* from the abdominal aorta, and it supplies the **foregut** structures — **including the stomach**. Where it gives ***three main branches**:





Notice how it is located **above the pancreas**.

1. Left Gastric Artery

It arises from the **celiac trunk**.

It passes upward and to the left, gives **small esophageal branches** to supply the **lower third of the esophagus**.

Then, it descends along the **lesser curvature & omentum**, thus supply the right part of the stomach.

18- Arterial blood supply of the stomach

2. Common Hepatic Artery

It gives two important branches relevant to the stomach:

a. **Right Gastric Artery**:

➔ Runs along the **lesser curvature**, thus supply the right side of stomach.

b. **Gastroduodenal Artery**:

➔ From it comes the **Right Gastroepiploic Artery**, supplies the **greater curvature** & **omentum**.

➔ Also gives the **Superior Pancreaticoduodenal Artery**, but this mainly supplies the *pancreas* and *duodenum* (not directly the stomach).

3. Splenic Artery

As it runs to the spleen, it gives off:

a. **Left Gastroepiploic Artery**:

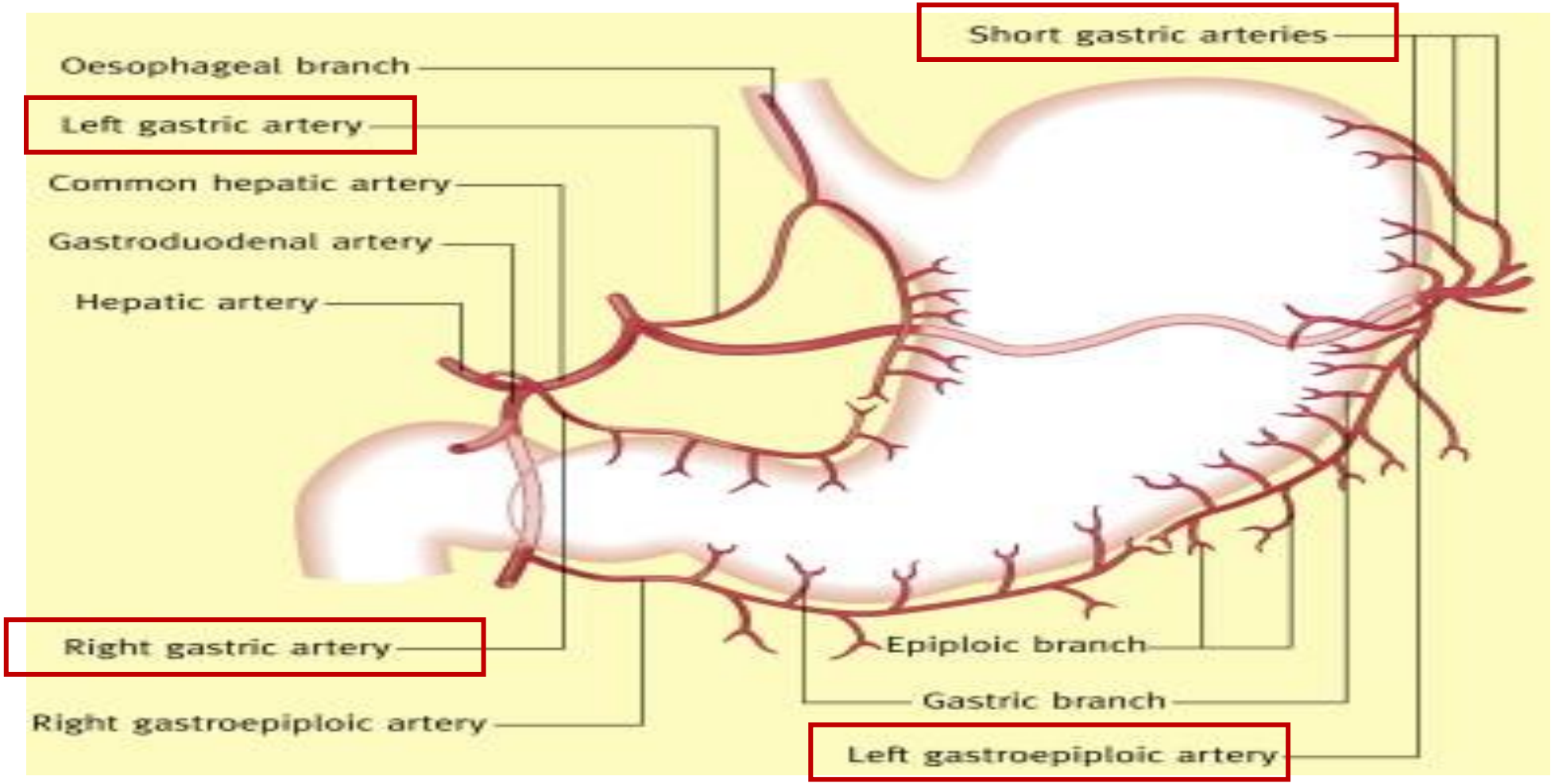
➔ Supplies the **greater curvature** & **omentum**.

b. **Short Gastric Arteries**:

➔ These go directly into the **fundus.**

Note that: The splenic artery has a tortuous (wavy) course, to allow elongation/stretch when the stomach distends, preventing tension or rupture of the artery during gastric filling or expansion.

18- Arterial blood supply of the stomach



Recall:

- **Lesser curvature = left and right gastric arteries.**
- **Greater curvature = left and right gastroepiploic arteries.**
- **Fundus = short gastric arteries.**

19- Venous drainage of the stomach

- Venous drainage of the stomach follows the arteries in reverse, and all ultimately drain into the portal vein → to the liver for detoxification and processing.

1- Left Gastric Vein

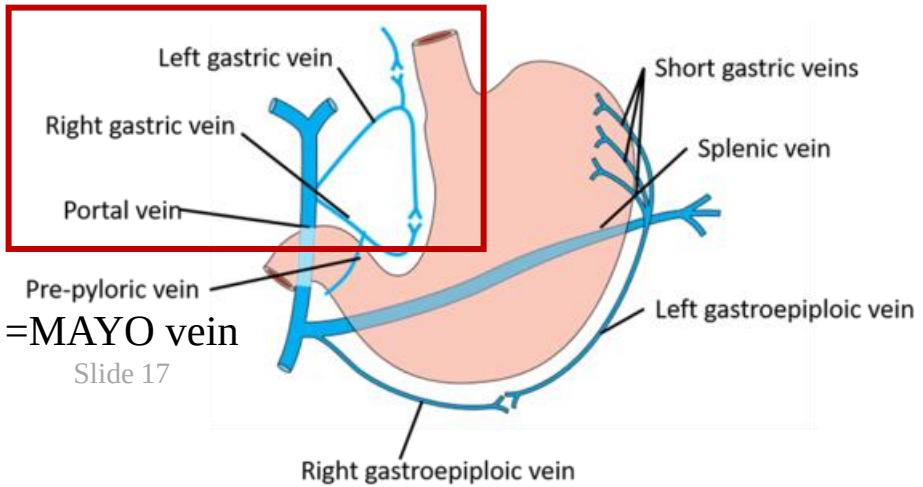
Drains from: Lesser curvature + Lower esophagus

Drains directly into the portal vein.

2- Right Gastric Vein

Drains from: Lesser curvature

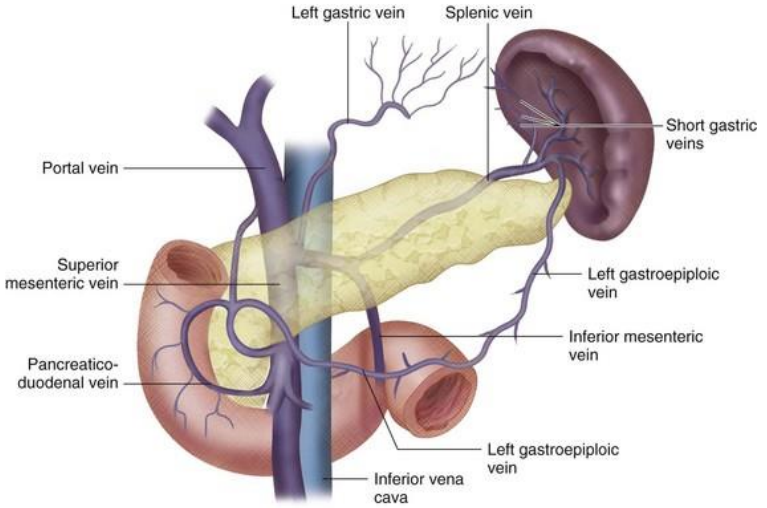
Drains directly into the portal vein

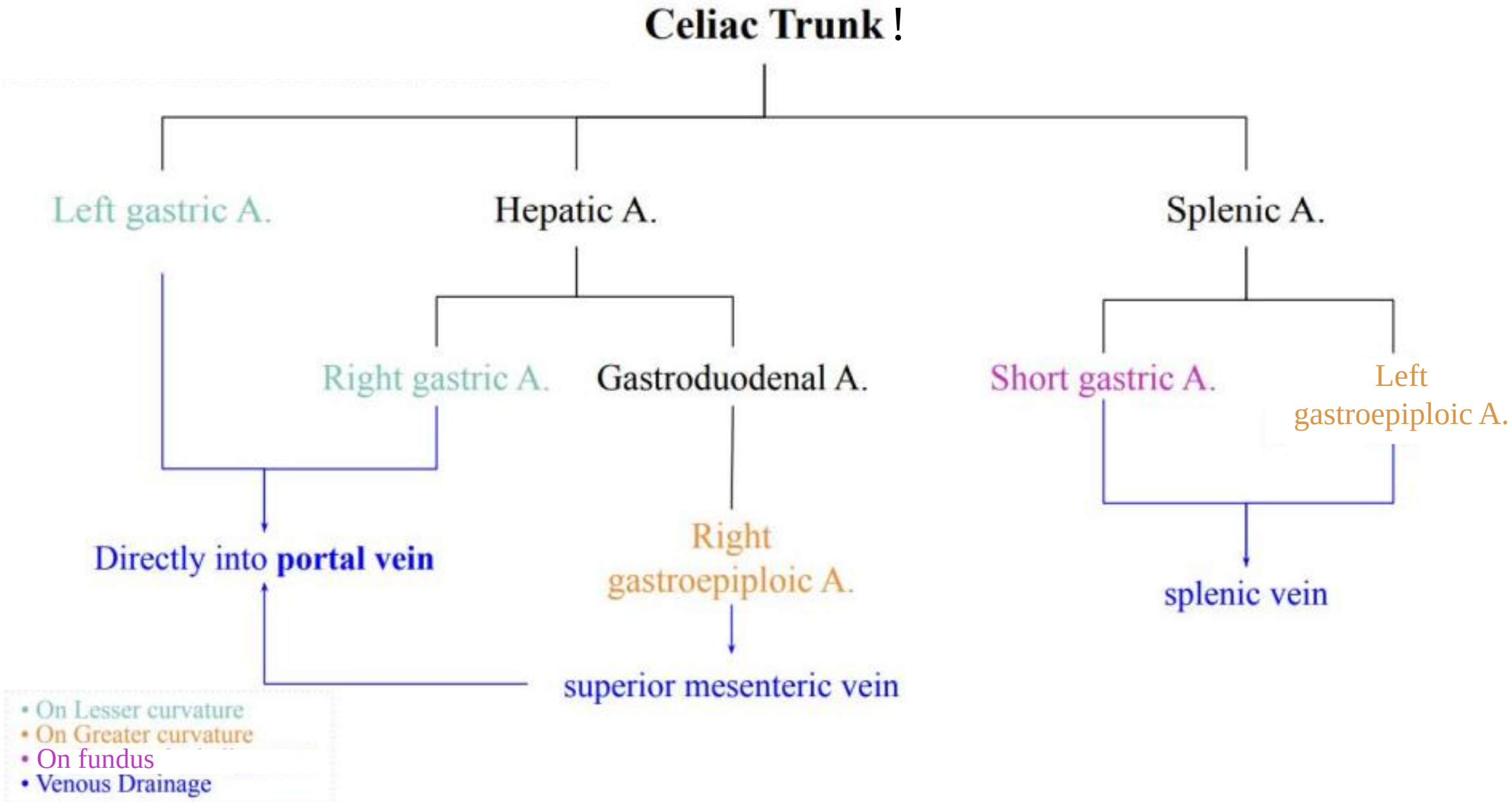


3- Short gastric veins and left gastroepiploic veins join the **splenic vein.**

4- Right gastroepiploic vein joins the **superior mesenteric vein.**

The **splenic vein joins the superior mesenteric vein behind the neck of pancreas** → forming the portal vein → blood flows to the liver for processing.



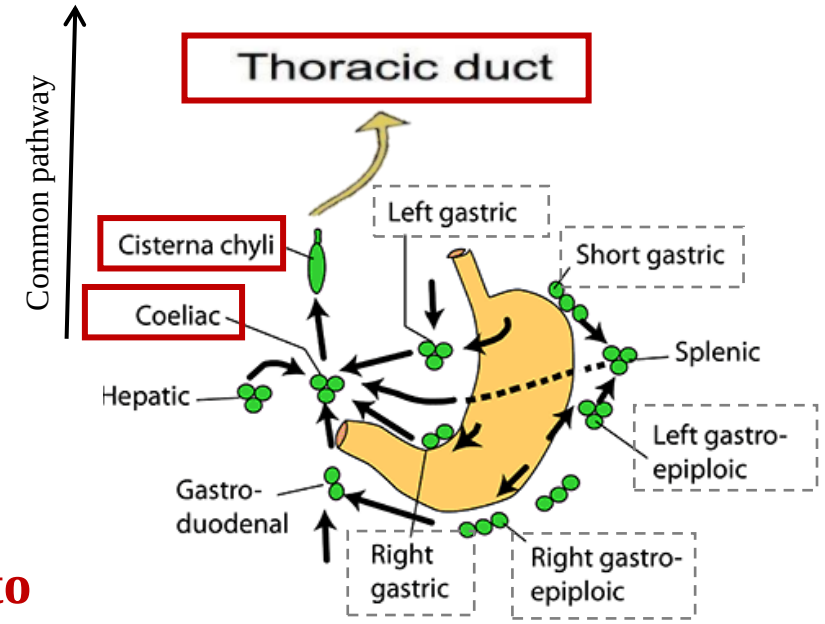

Celiac Trunk !
Left gastric A.
Hepatic A.
Splenic A.
Right gastric A.
Gastroduodenal A.
Short gastric A.
Left gastroepiploic A.
Directly into portal vein
Right gastroepiploic A.
splenic vein
superior mesenteric vein
• On Lesser curvature
• On Greater curvature
• On fundus
• Venous Drainage

20- Lymphatic drainage of the stomach

- **Lymphatics follow arteries of the stomach → converge into celiac nodes → cisterna chyli → thoracic duct.**

1- Follow the arteries of stomach

- The left and right gastric nodes
- The left and right gastroepiploic nodes
- The short gastric nodes



2- All the lymphatic drainage from the organs supplied by the celiac trunk—including the stomach, spleen, and duodenum—first **drains into the celiac lymph nodes**, located around the coeliac trunk.

3- From there, lymph flows into larger lymphatic vessels that **drain into the cisterna chyli**, located near the abdominal opening of the aorta.

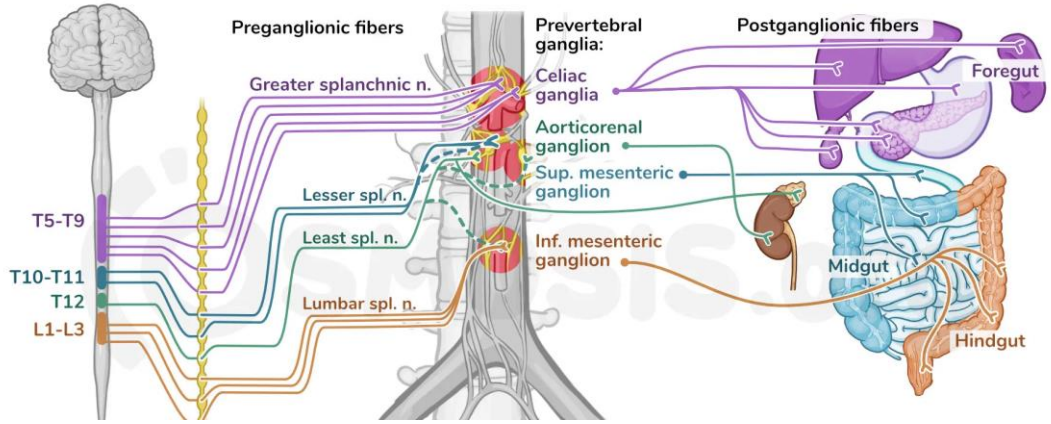
4- Finally, to the **thoracic duct.**

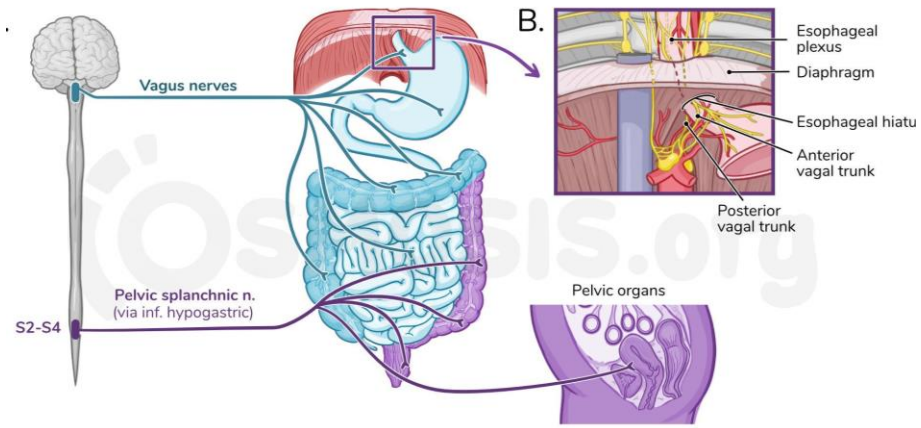
21- Nerve supply of the stomach

Autonomic Nerve Supply of the Stomach

Briefly - further clarification in next slides

Type	Origin	Function
Sympathetic	T5–T9 spinal cord → Greater splanchnic nerve → Celiac ganglion → Celiac plexus	- Inhibits gastric motility & secretion - Carries pain sensation - Contracts pyloric sphincter (motor)
Parasympathetic	Vagus nerve (CN X): Left vagus → Anterior vagal trunk Right vagus → Posterior vagal trunk	- Stimulates gastric glands (secretomotor) - Promotes peristalsis (motor) - Relaxes pyloric sphincter (inhibitory to smooth muscle)





MODIFIED :

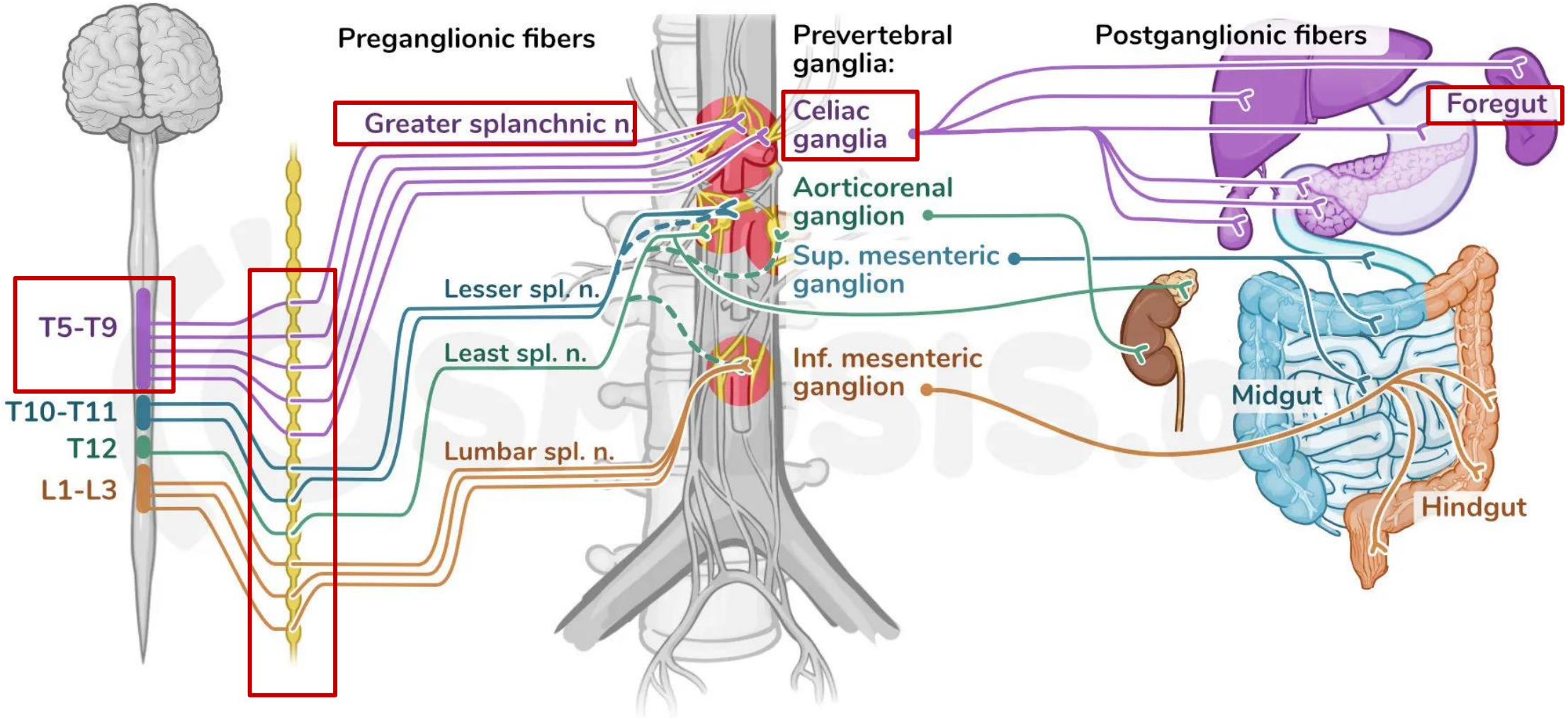
21- Nerve supply of the stomach

Sympathetic Nerve Supply of the Stomach

- In general, the sympathetic supply to the abdomen and GI tract comes from the **thoracic and lumbar regions** of the spinal cord, via the **thoracic splanchnic nerves** (greater, lesser, and least) and **lumbar splanchnic nerves**.
- To innervate foregut structures (including the stomach), **preganglionic sympathetic fibers** arise from the **thoracic spinal cord levels T5–T9**. These fibers pass through the **sympathetic chain ganglia without synapsing**, emerge and bundle together to form the **greater splanchnic nerve**, which exits the thorax via the diaphragm and enters the abdomen alongside other thoracic splanchnic nerves.
- The greater splanchnic nerve carries preganglionic fibers that **synapse in the celiac ganglia** (a prevertebral/preaortic ganglion). The **postganglionic fibers** then enter the **celiac plexus**, following branches of the **celiac trunk** to reach and innervate the stomach **-** (foregut).
- Functionally, the **sympathetic fibers** are responsible for **conveying pain sensations**, **inhibiting peristalsis**, **reducing gastric secretions**, and **contracting the pyloric sphincter**.

21- Nerve supply of the stomach

Sympathetic Nerve Supply of the (foregut) - Stomach



sympathetic chain ganglia

MODIFIED :

21- Nerve supply of the stomach

Parasympathetic Nerve Supply of the Stomach

- The parasympathetic innervation of the stomach comes from the **right and left vagus nerves**.
- The vagus nerve carries parasympathetic fibers that distribute through **celiac and superior mesentric plexuses** to foregut and midgut structures. They synapse in the walls of the target organs.
- These vagal fibers are **secreto-motor** to the **gastric glands** and **motor** to the **muscular wall** of the stomach, facilitating **peristaltic movements**. They also provide **inhibitory fibers to the pyloric sphincter**, promoting gastric emptying.
- The vagus nerve descends into the abdomen as the **vagal trunk**, wrapping around the esophagus. As it passes through the diaphragm:
  - The **left vagus nerve** becomes the **anterior vagal trunk**
  - The **right vagus nerve** becomes the **posterior vagal trunk**.

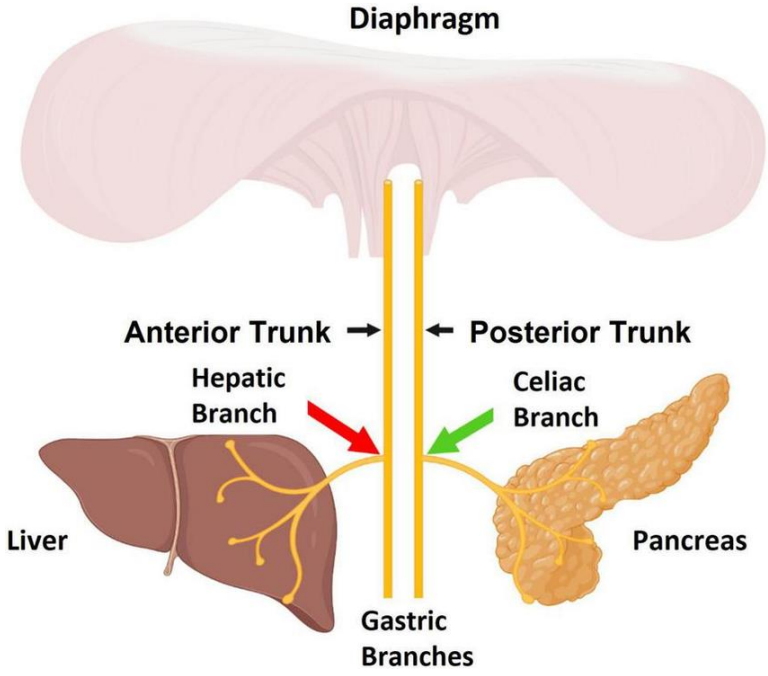
  Both trunks give off branches to abdominal organs:

Recall: triple relation

21- Nerve supply of the stomach

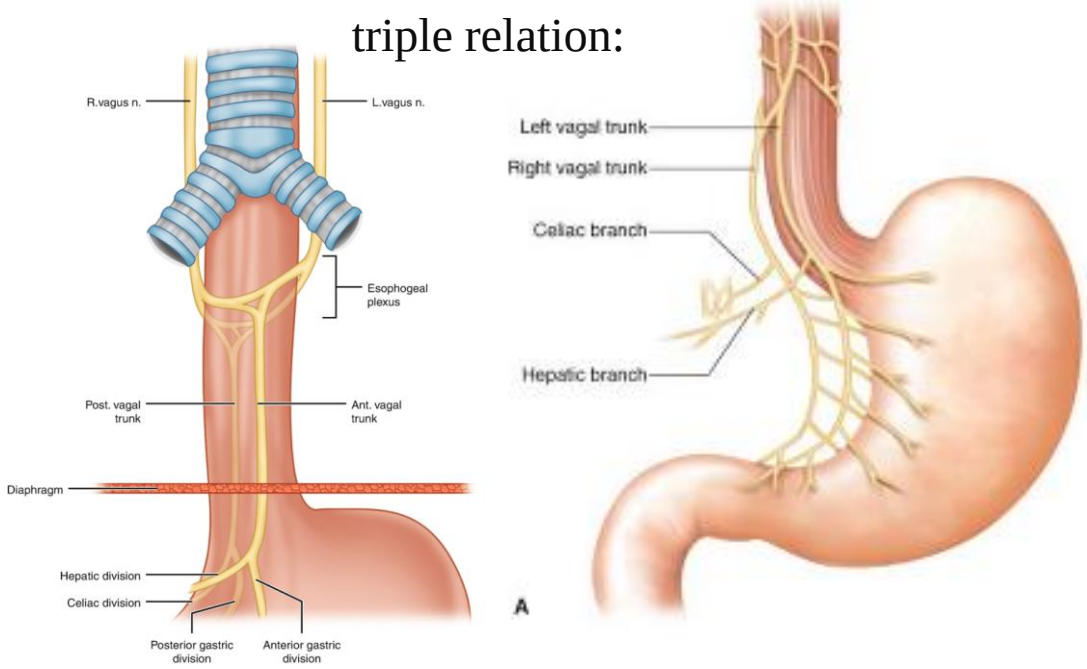
- The **anterior vagal trunk** (mostly from the left vagus) supplies the 1- **anterior surface of the stomach**, gives off a 2-**hepatic branch** to the liver, and a key branch called the 3-**anterior nerve of Latarjet**, which innervates the **pylorus**.
- Notably, the nerve of Latarjet is crucial for gastric evacuation. Damage to this nerve (e.g., during surgery) can result in ☹ **impaired gastric emptying.**

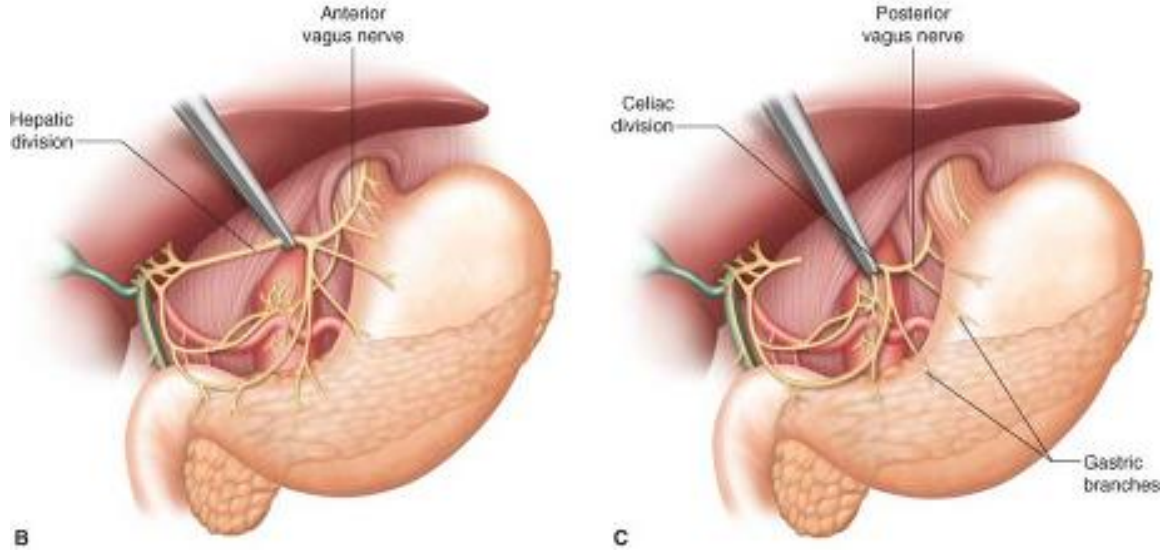
- The **posterior vagal trunk** (mostly from the right vagus) supplies the 1-**posterior surface of the stomach**, gives off the 2-**posterior nerve of Latarjet** to the **pylorus**, and also sends 3-**long branches to the duodenum, small intestine, jejunum, and up to the lateral third of the transverse colon**.
- Beyond this point, **parasympathetic innervation** is taken over by the **pelvic splanchnic nerves** (S2, S3, S4), which supply the **hindgut.**



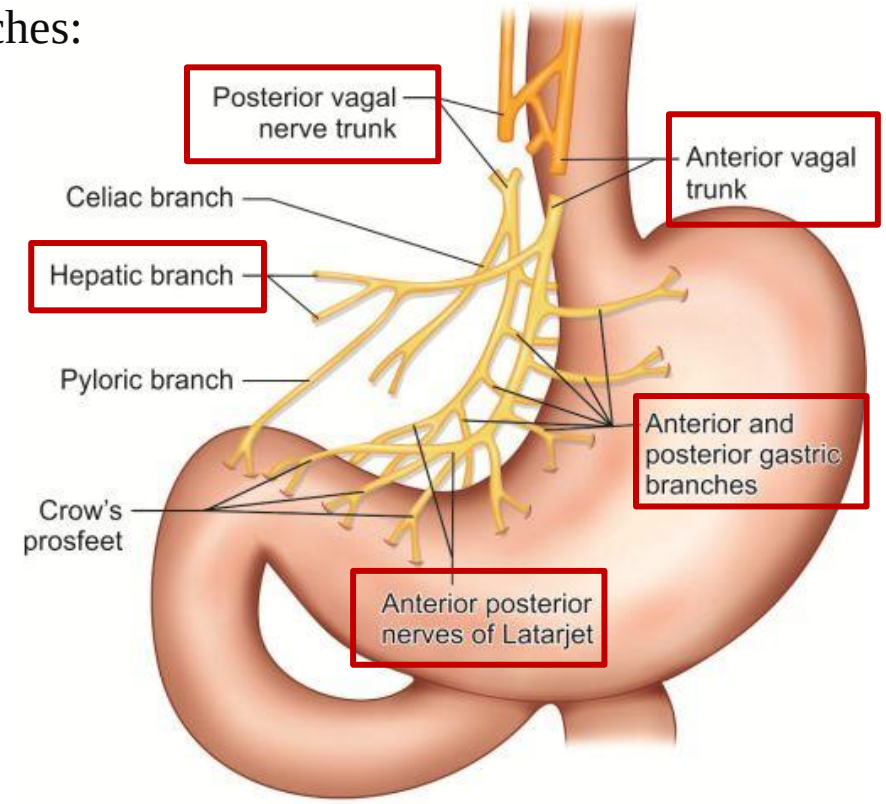
21- Nerve supply of the stomach

triple relation:





Branches:



21- Nerve supply of the stomach

Parasympathetic Nerve Supply of the Stomach: