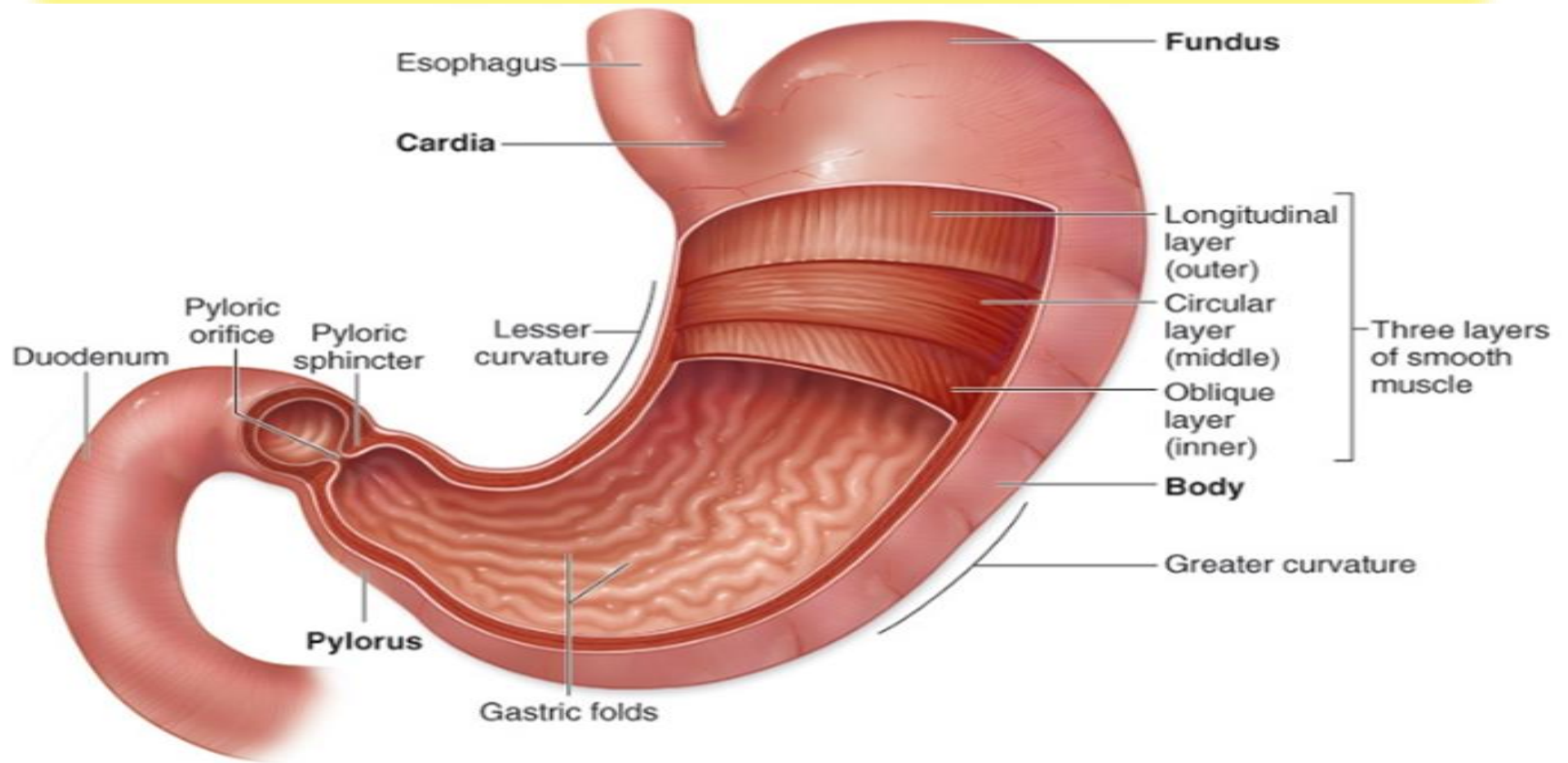


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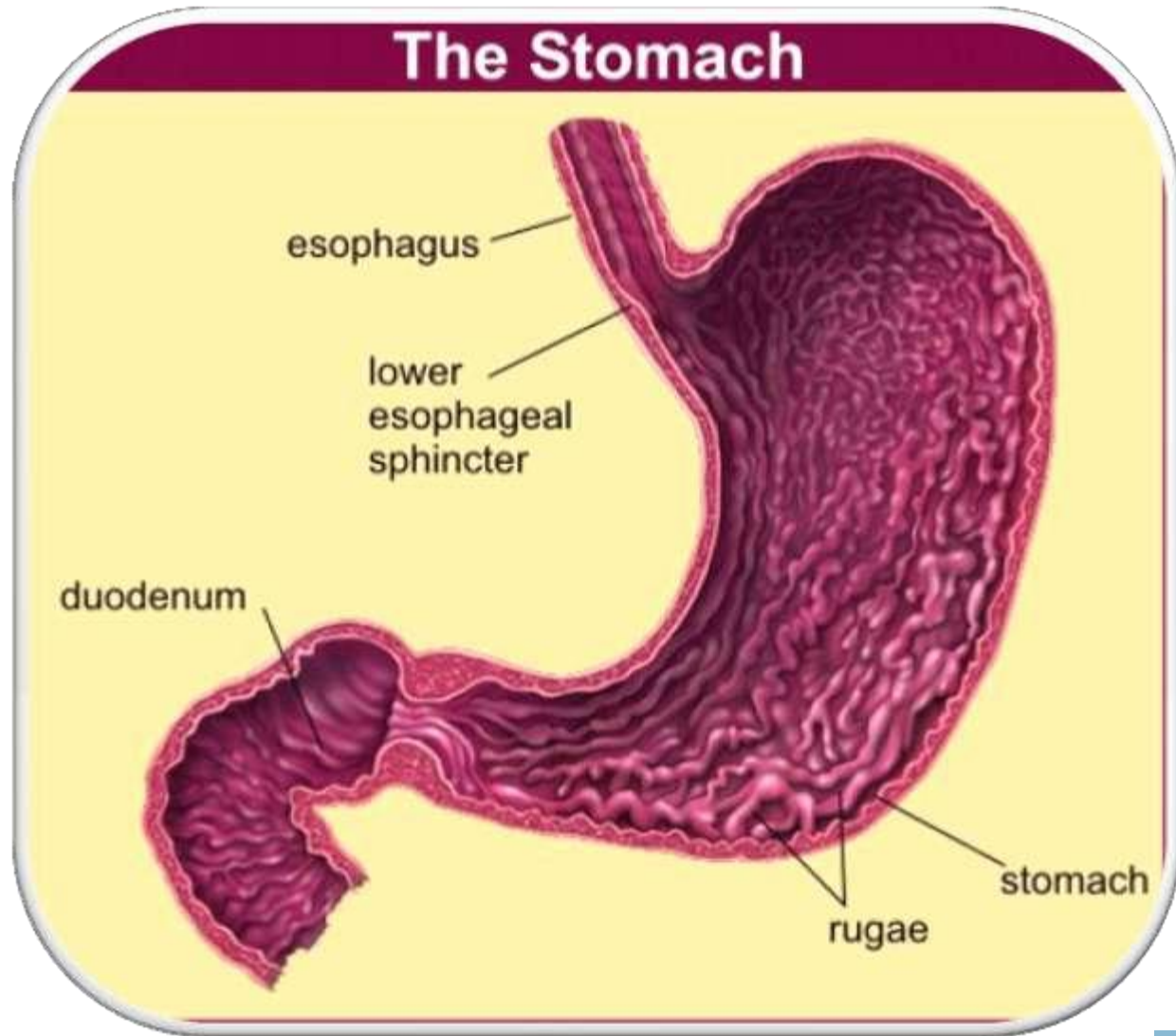
GROSS ANATOMY OF STOMACH

By Dr. Mahvish Javed

STOMACH



When empty, the stomach collapses inward, throwing its mucosa into large, longitudinal folds called **rugae** (**roo'ge**).



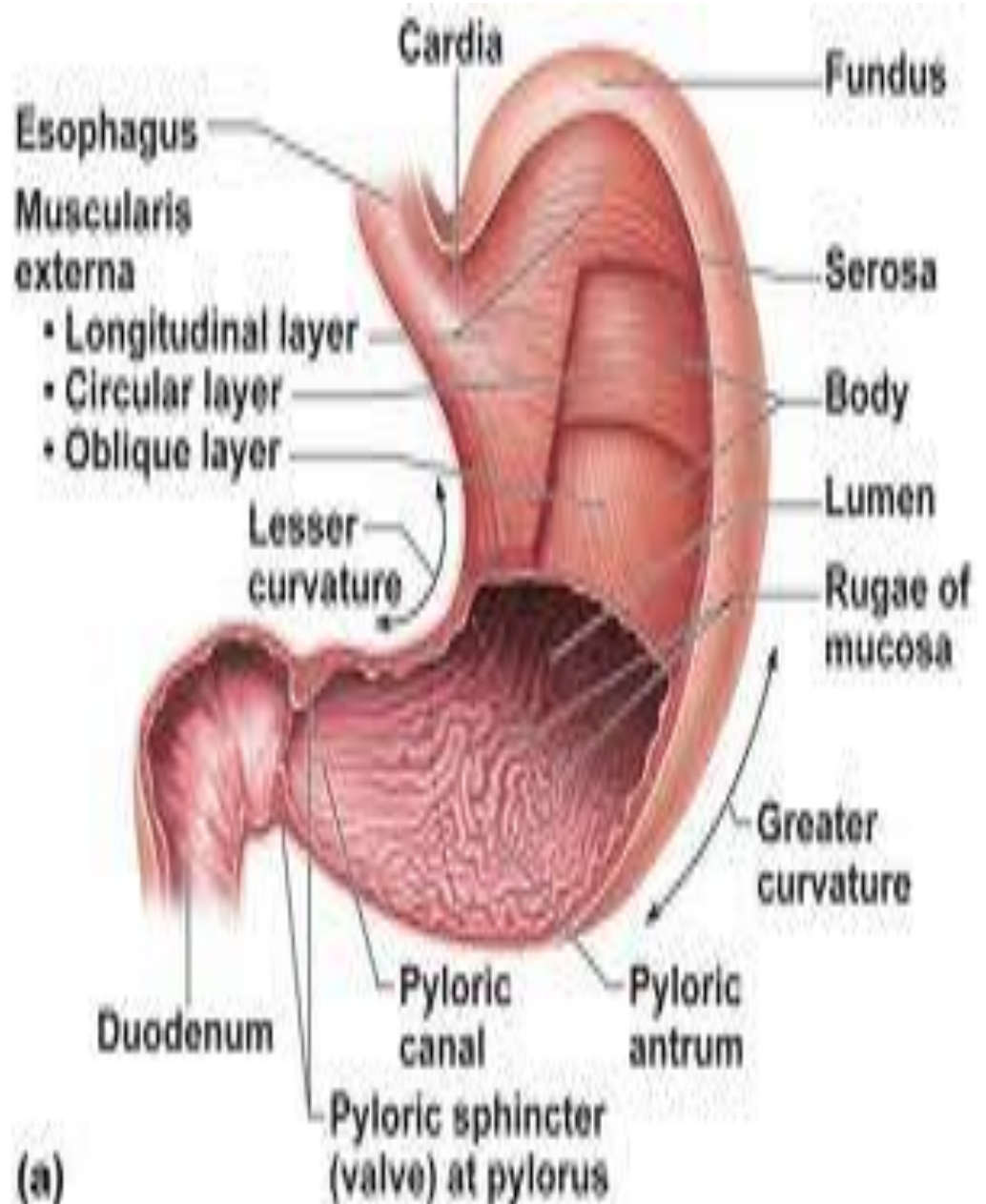
STOMACH

- **Definition**
- **Anatomical position**
- **structure**
- **Anatomical relations**
- **Blood supply**
- **Nerve supply**
- **Lymphatic drainage**
- **Function**
- **Clinical points**



Definition

- *The stomach is a dilated portion of alimentary canal reaching from oesophagus to small intestine.*
- *It is muscular sac*
- *It is J shaped*



(a)

Functions of Stomach

- Digestion.
- Produce acid.
- Reservoir for food.
- Slows food entering intestines.
- Help with vitamin absorption (Vitamin B12).

Functional anatomy

- The stomach can be divided into a **proximal** and a **distal** segment.
- The **proximal stomach** mainly serves as a food reservoir. Its tone determines the rate at which food passes to the distal stomach.
- In the **distal stomach**, food is further processed (chyme formation), it is also responsible for portioning chyme delivery to the small intestine.

Anatomical position

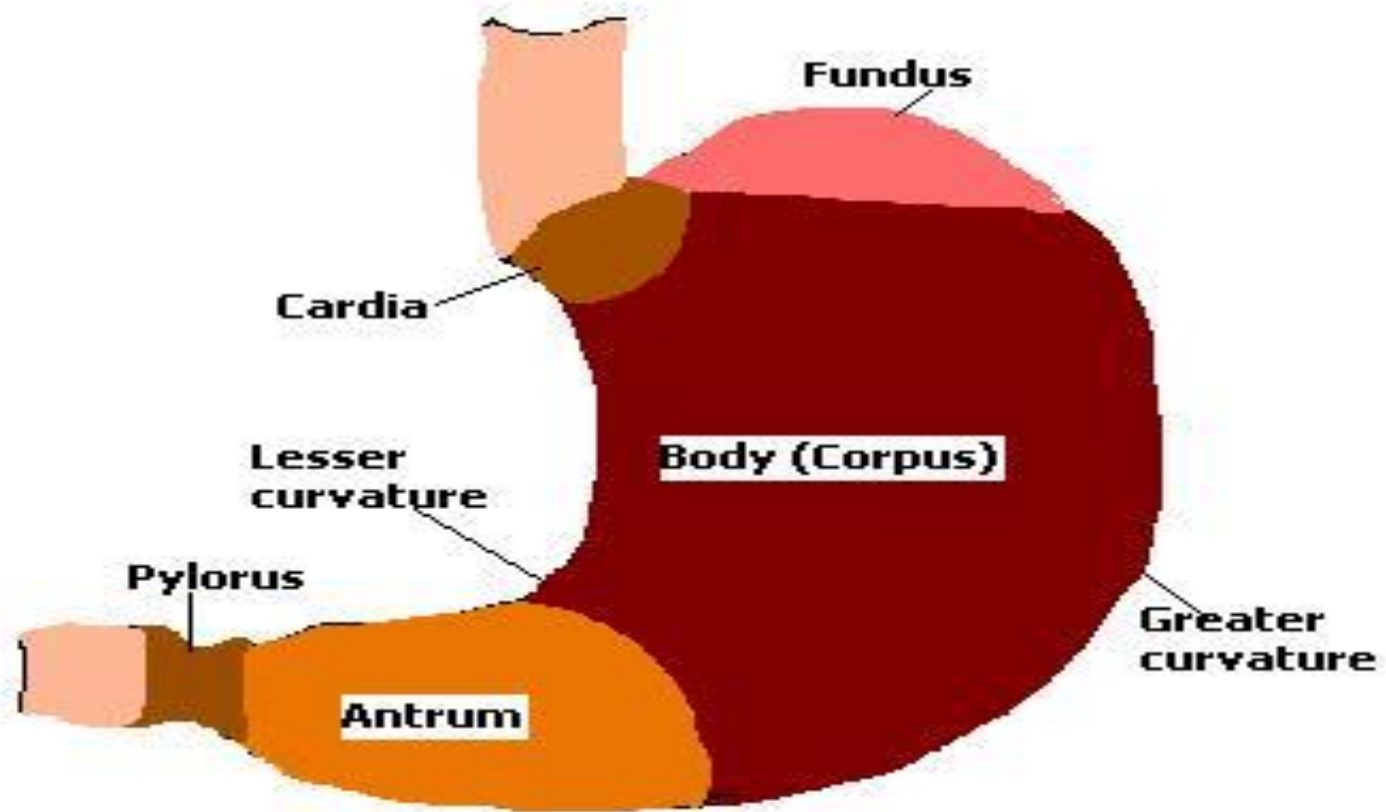
- It occupies upper left hypochondrium, epigastric and umbilical regions, and much of it lies under the cover of ribs.
- It is located at the level of T₁₁ and L₃ vertebra approx.

Anatomical divisions of the stomach

The stomach is divided into four regions.

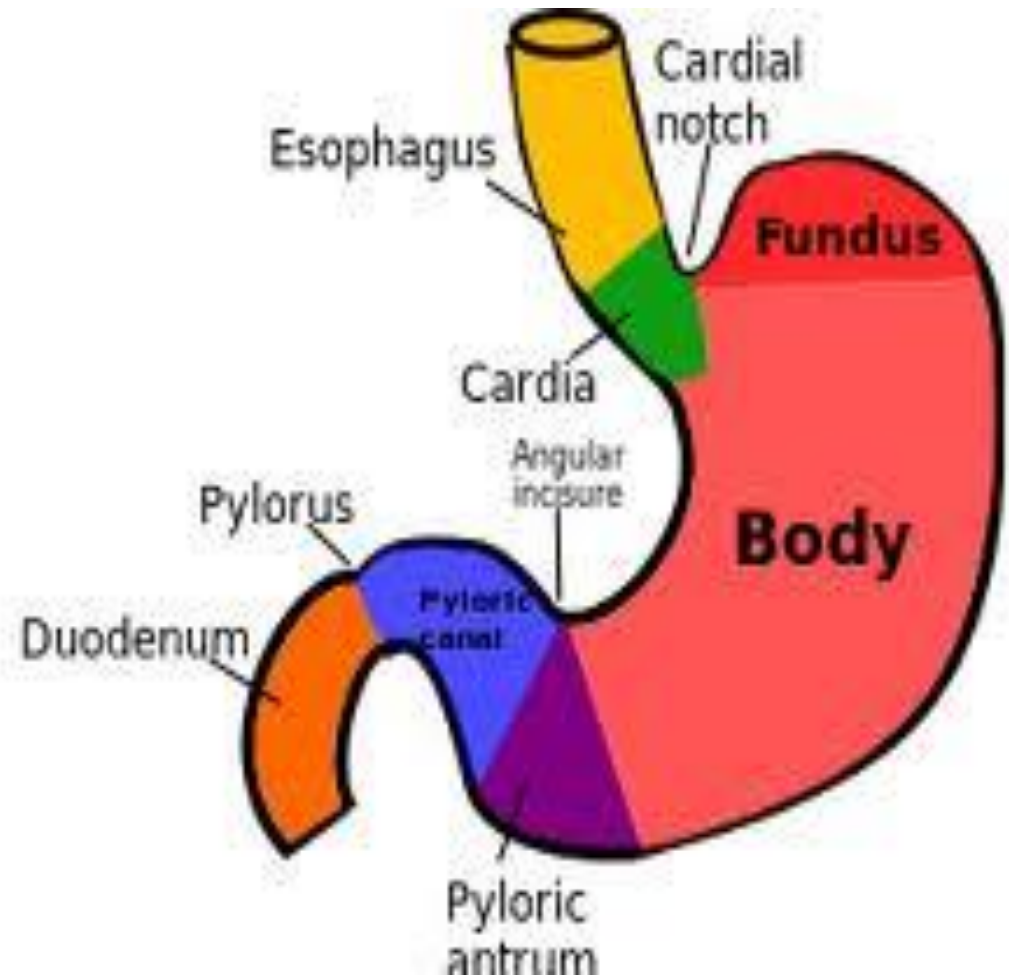
1. The cardia, which surrounds the opening of the oesophagus into stomach.
2. The fundus of stomach, which is the area above the level of cardiac orifice.
3. The body of stomach, which is largest region of the stomach.
4. The pyloric part, which is divided into pyloric antrum and pyloric canal and is the distal end of the stomach.

Anatomical divisions of stomach



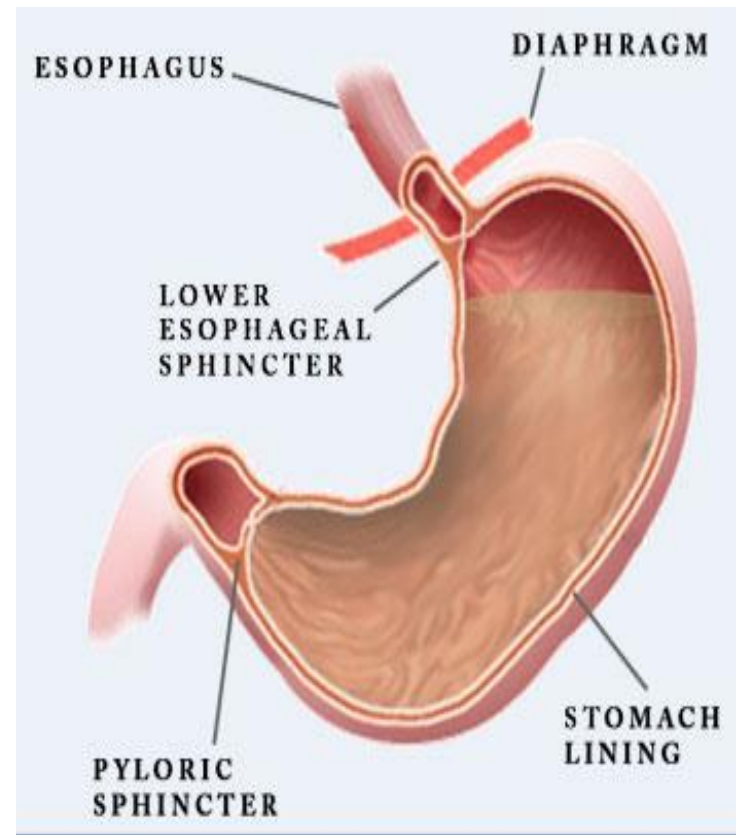
Notch and incisure

- Cardiac notch:
It is the superior end of stomach.
- Angular incisure:
it is a bend on lesser curvature.



SPHINCTERS

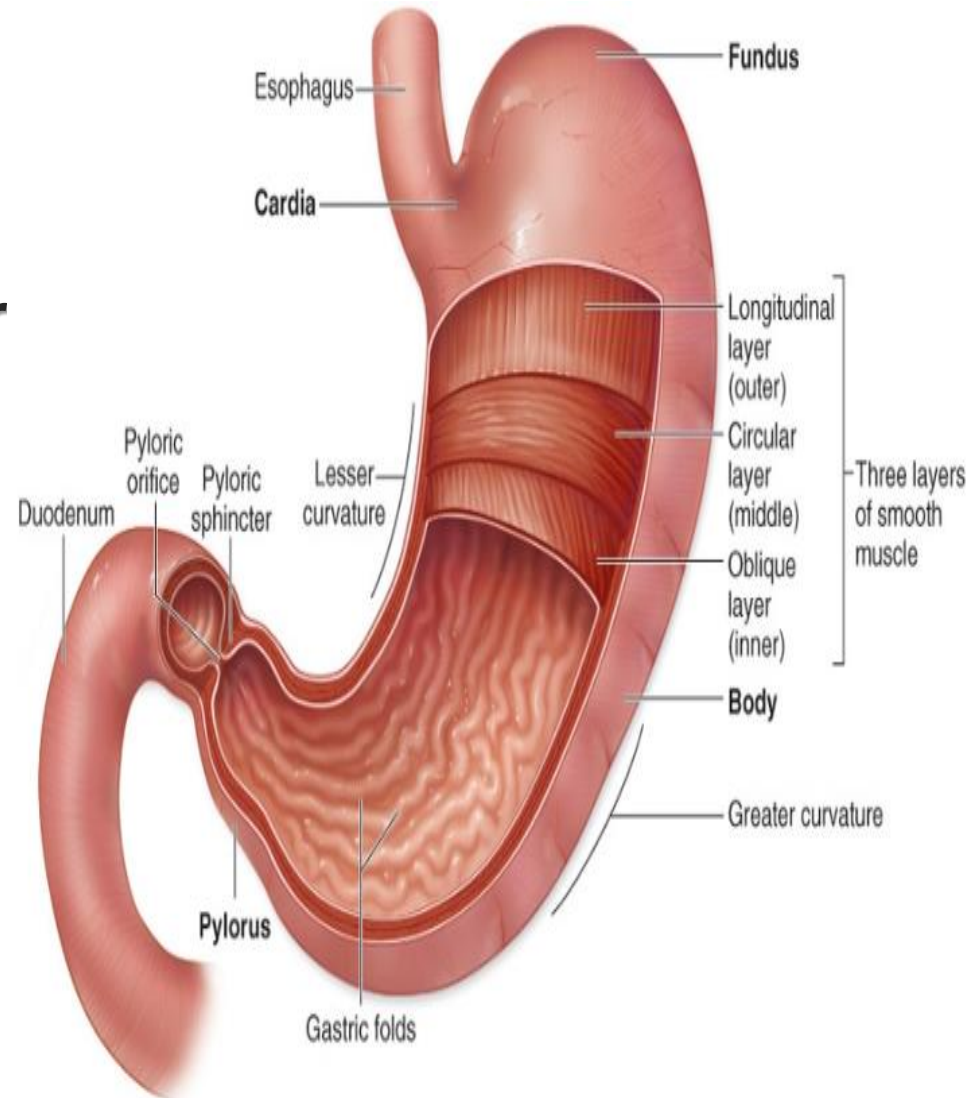
- *The cardiac sphincter, (lower oesophagus sphincter) which closes off the top cardiac end of the stomach.*
- *The pyloric sphincter, which is a thickened ring of gastric circular muscle that surrounds the distal opening of stomach, the pyloric orifice.*

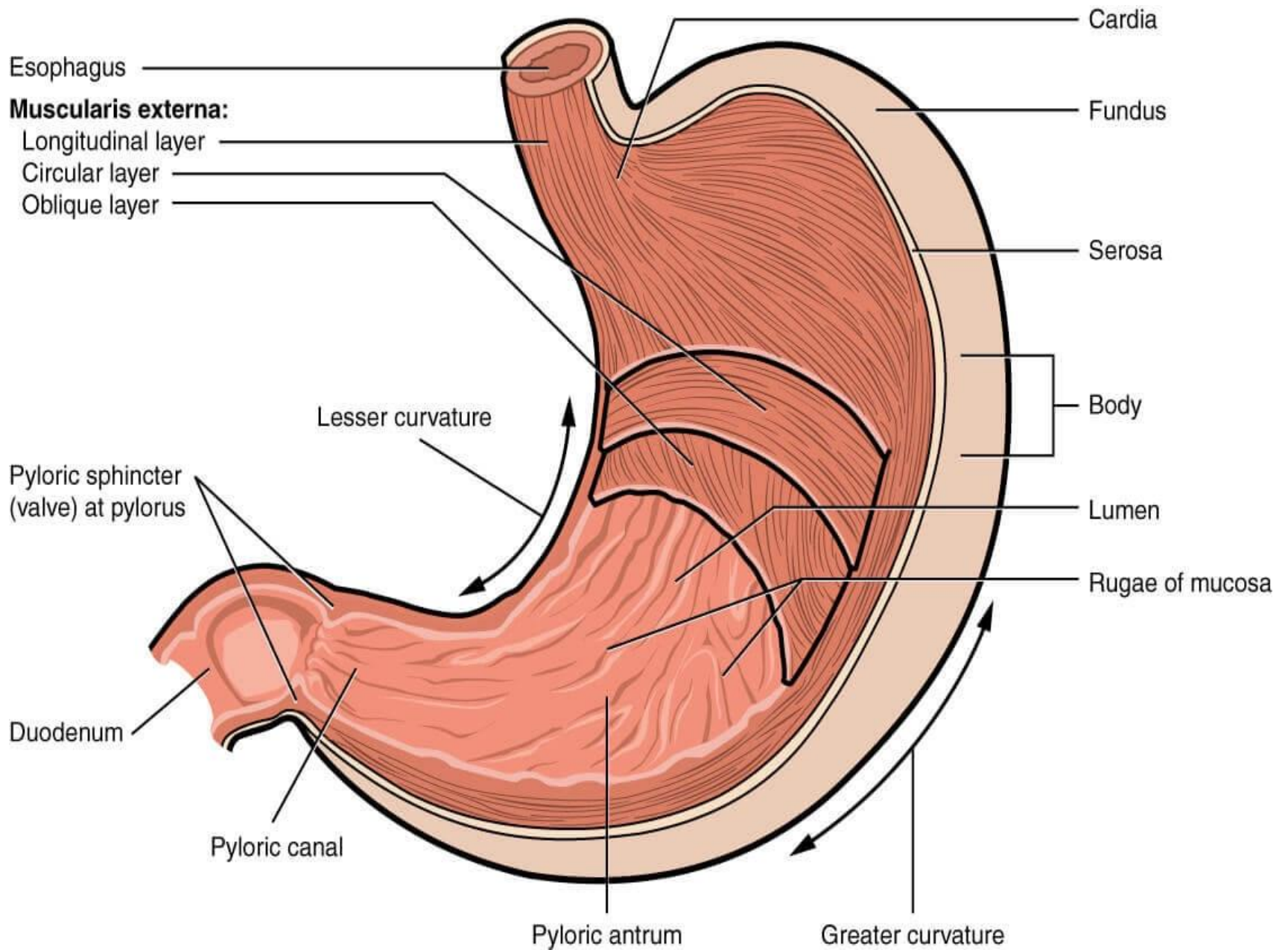


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Other features of stomach

- Greater curvature:
point of attachment for gastrosplenic ligament and greater omentum.
- Lesser curvature:
point of attachment for lesser omentum.





Anatomical relations

- Anterior:

Abdominal wall,
Left costal margin,
Diaphragm,
Left lobe of liver.

- Superior:

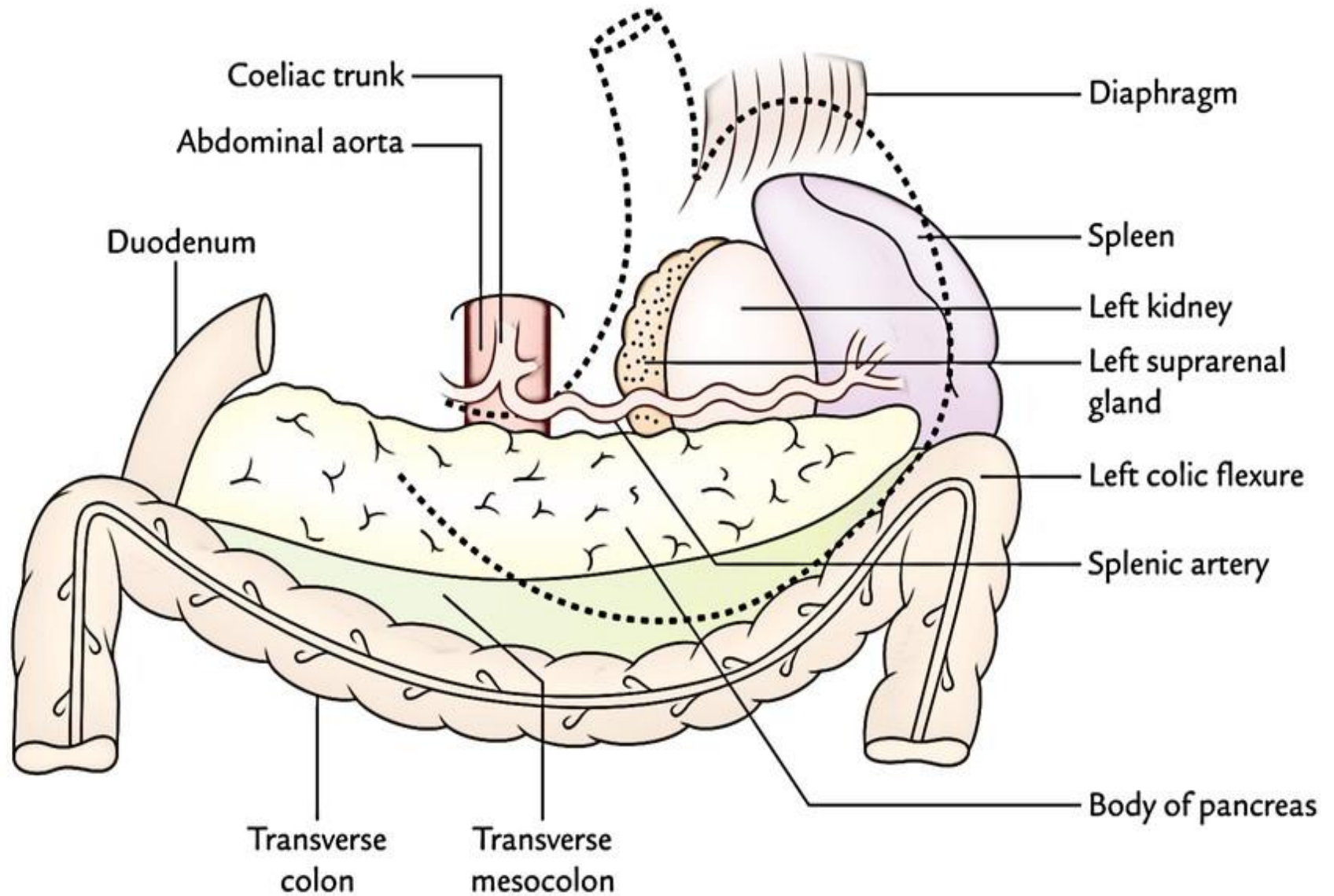
Left dome of
diaphragm.

- Posterior:

Lesser sac,
Pancreas,
Transverse mesocolon,
Transverse colon,
Left kidney/supra renal
gland,
Spleen /splenic artery.

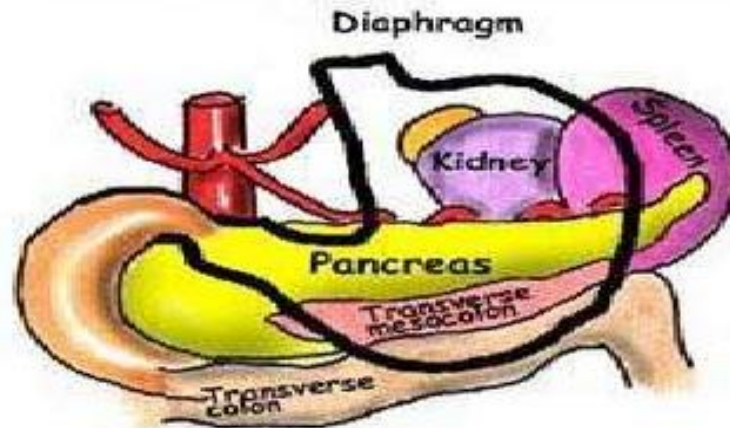
STOMACH BED

- The **stomach bed** refers to the structures upon which the **stomach** rests. These include the Pancreas, Spleen, Left Kidney, Left Suprarenal gland, Transverse colon and its mesocolon, and the diaphragm.



Stomach Anatomical Relation

STOMACH - RELATIONS



ANTERIOR

Abdominal wall
Left costal margin
Diaphragm
Left lobe of liver

SUPERIOR

Left dome of diaphragm

POSTERIOR

Lesser sac
Pancreas
Transverse mesocolon
Transverse colon
Left kidney/suprarenal gland
Spleen/splenic artery

Blood supply of stomach

- **LEFT GASTRIC ARTERY:**

supplies the cardia of the stomach and distal oesophagus.

- **SPLENIC ARTERY:**

gives rise to two branches which help supply the greater curvature of stomach;

»**left gastro epiploic**

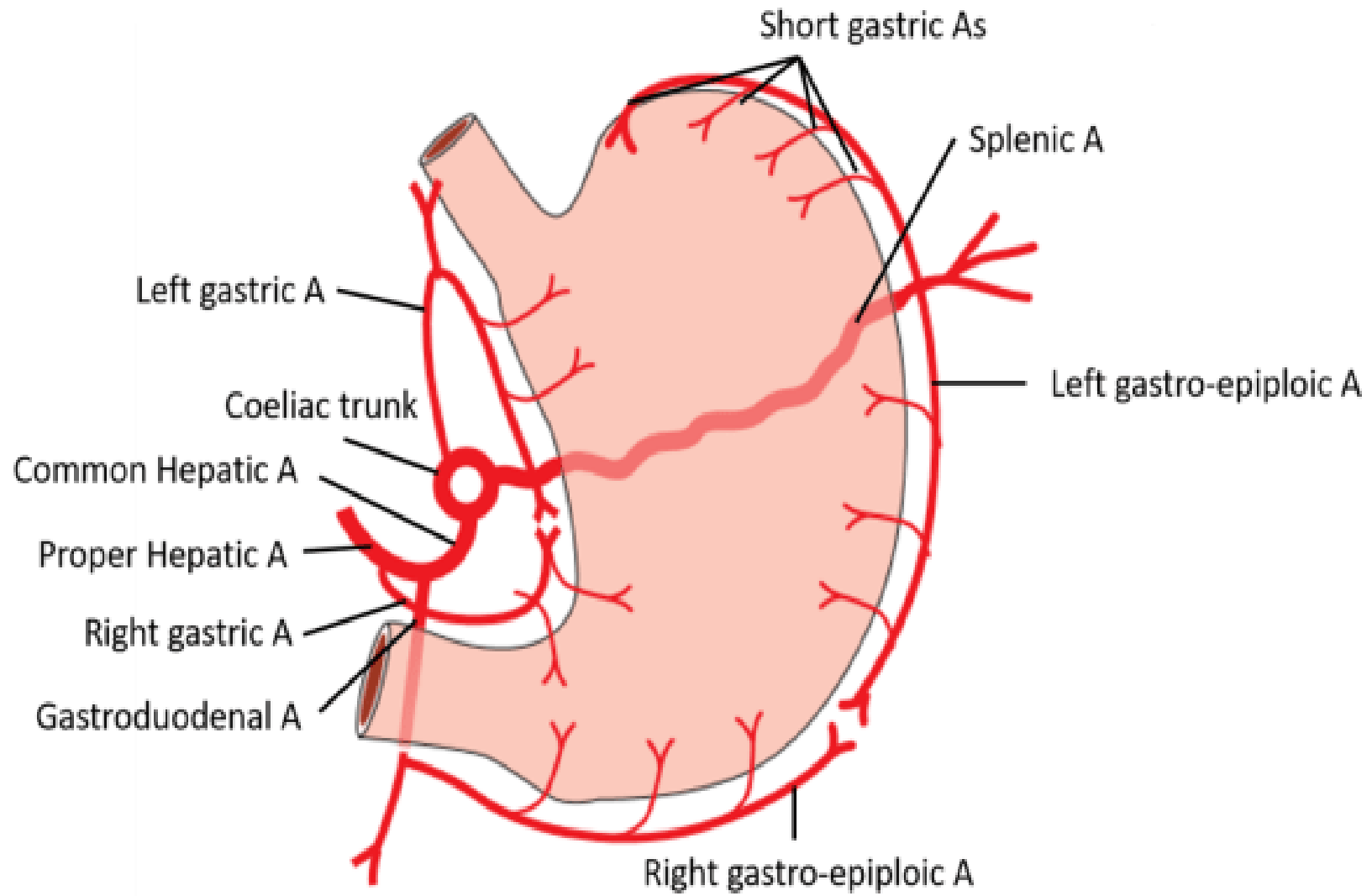
»**short gastric arteries.**

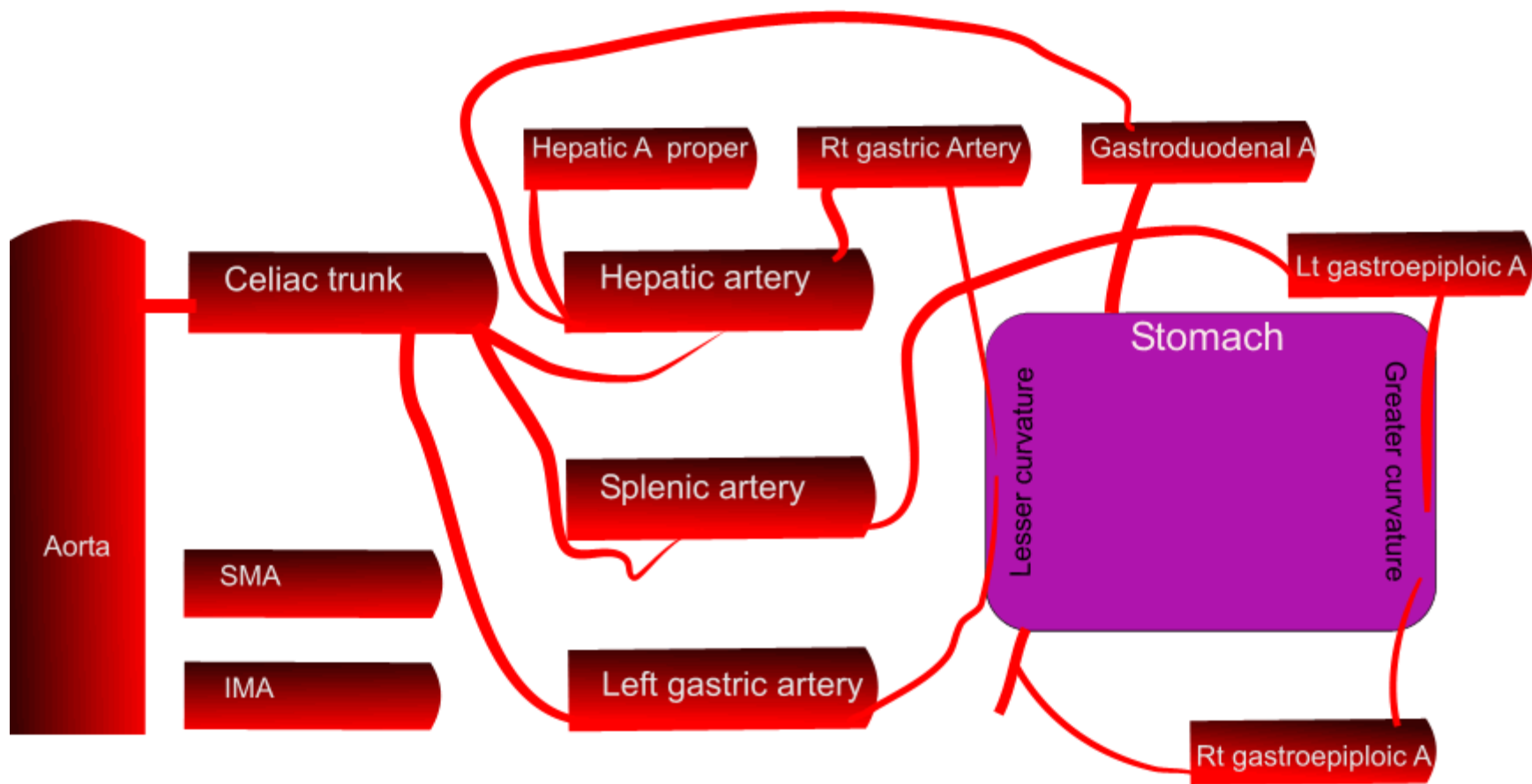
- **HEPATIC ARTERY PROPER:**

gives 2 major branches;

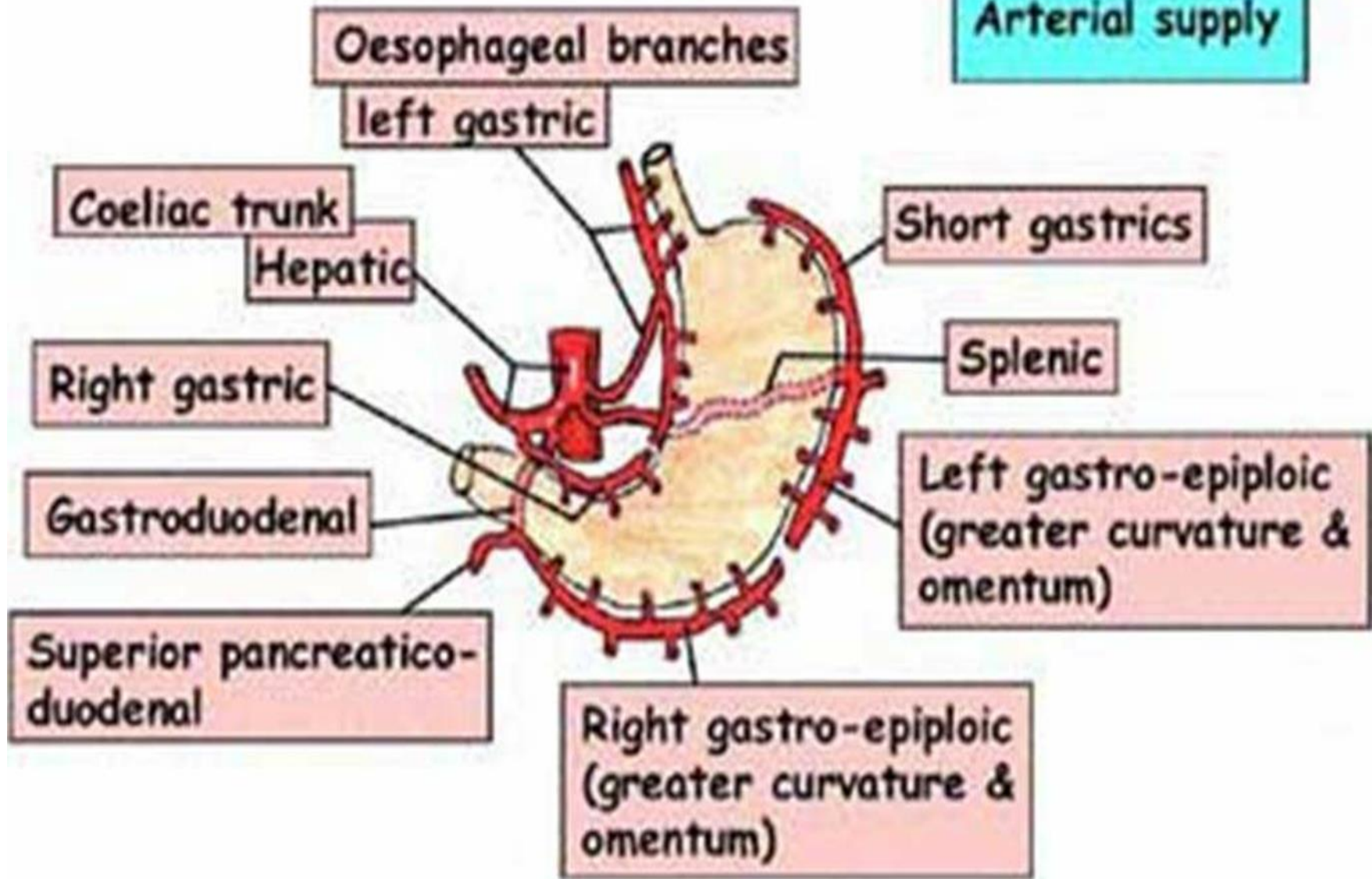
»**right gastric artery**

»**gastroduodenal artery.**

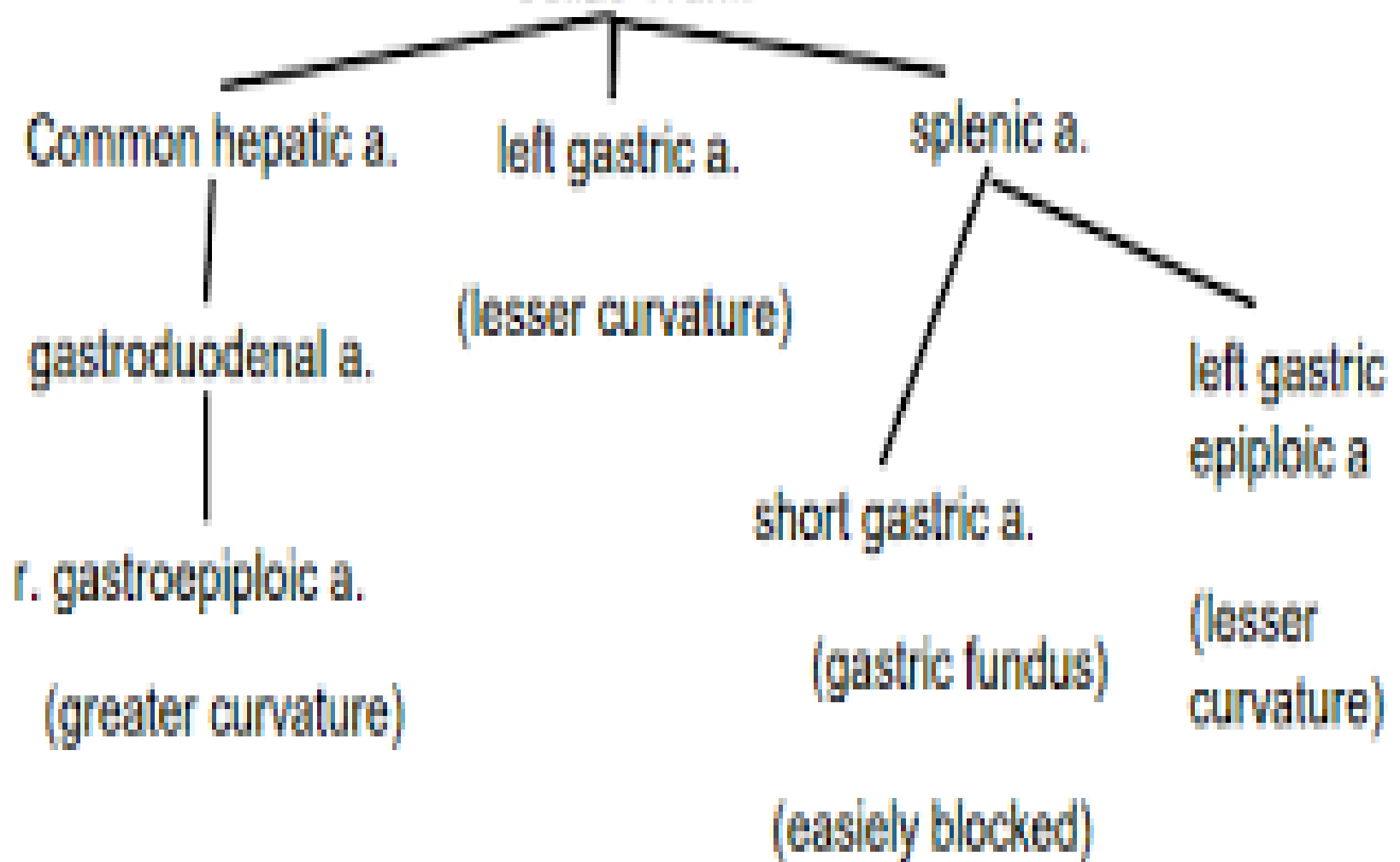




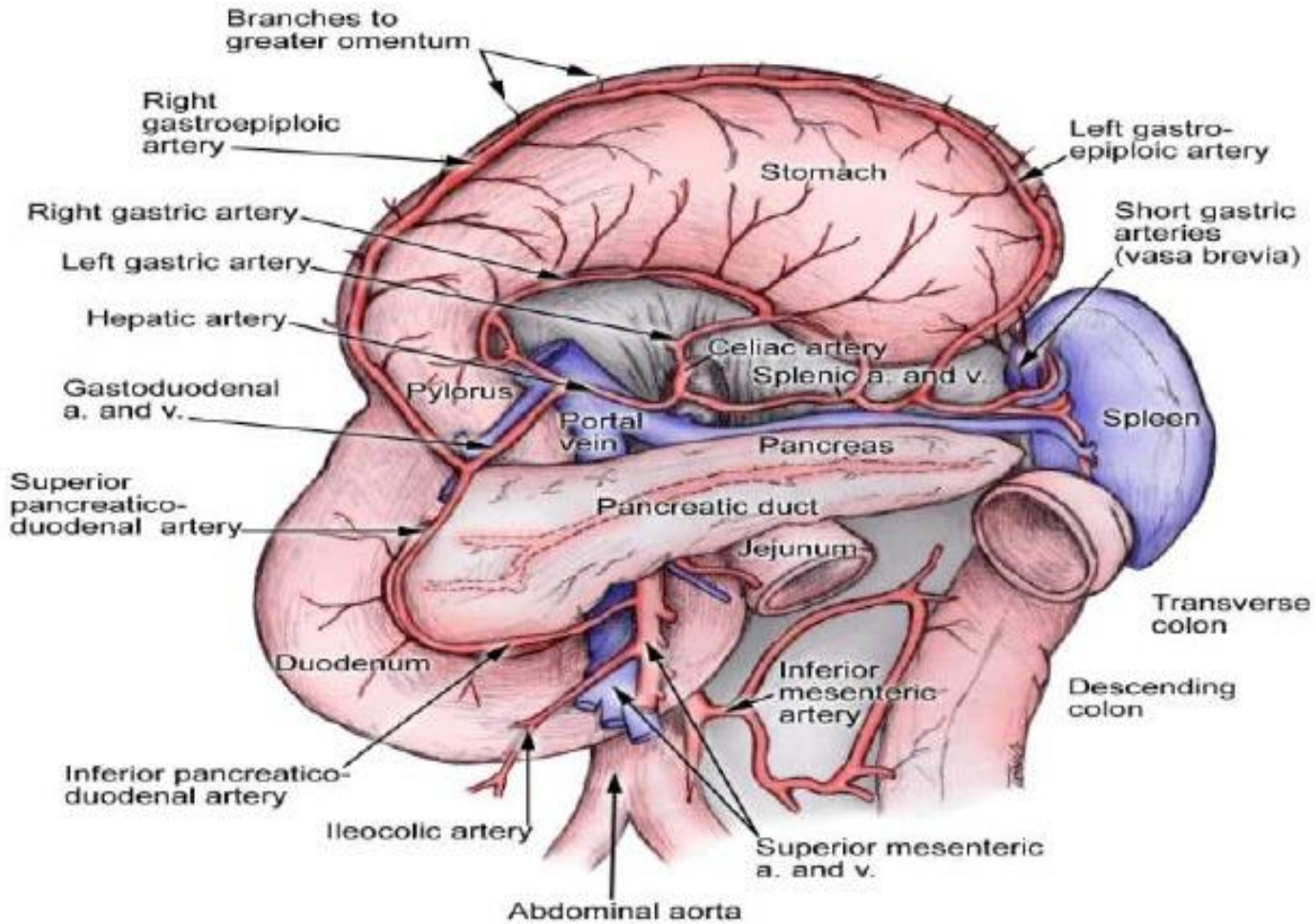
Arterial supply



Celiac Trunk

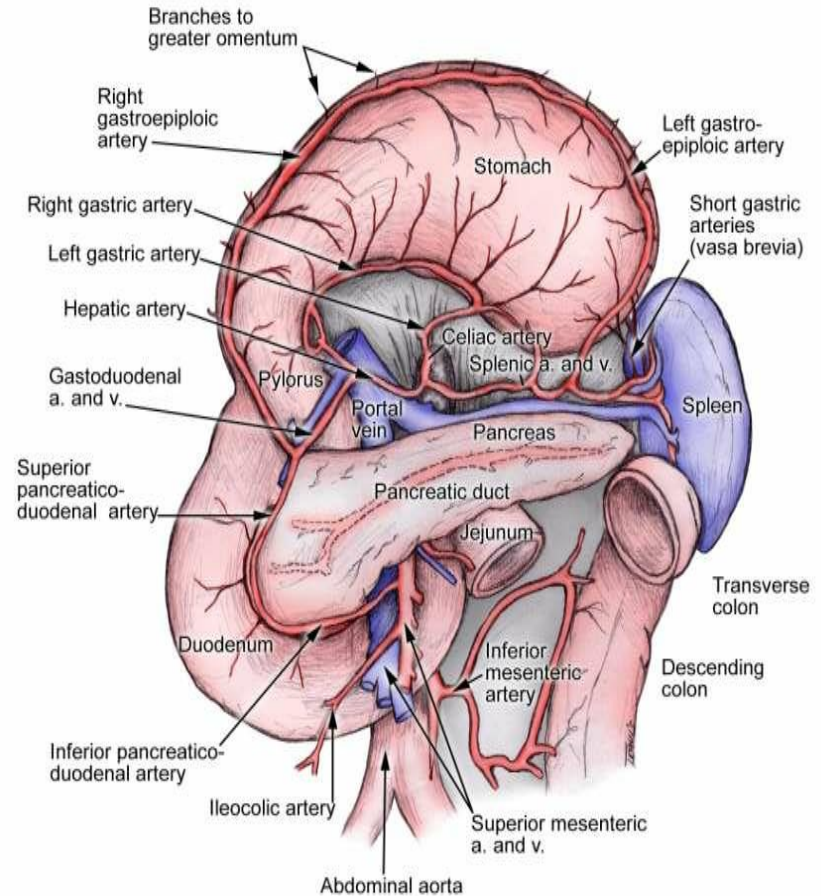


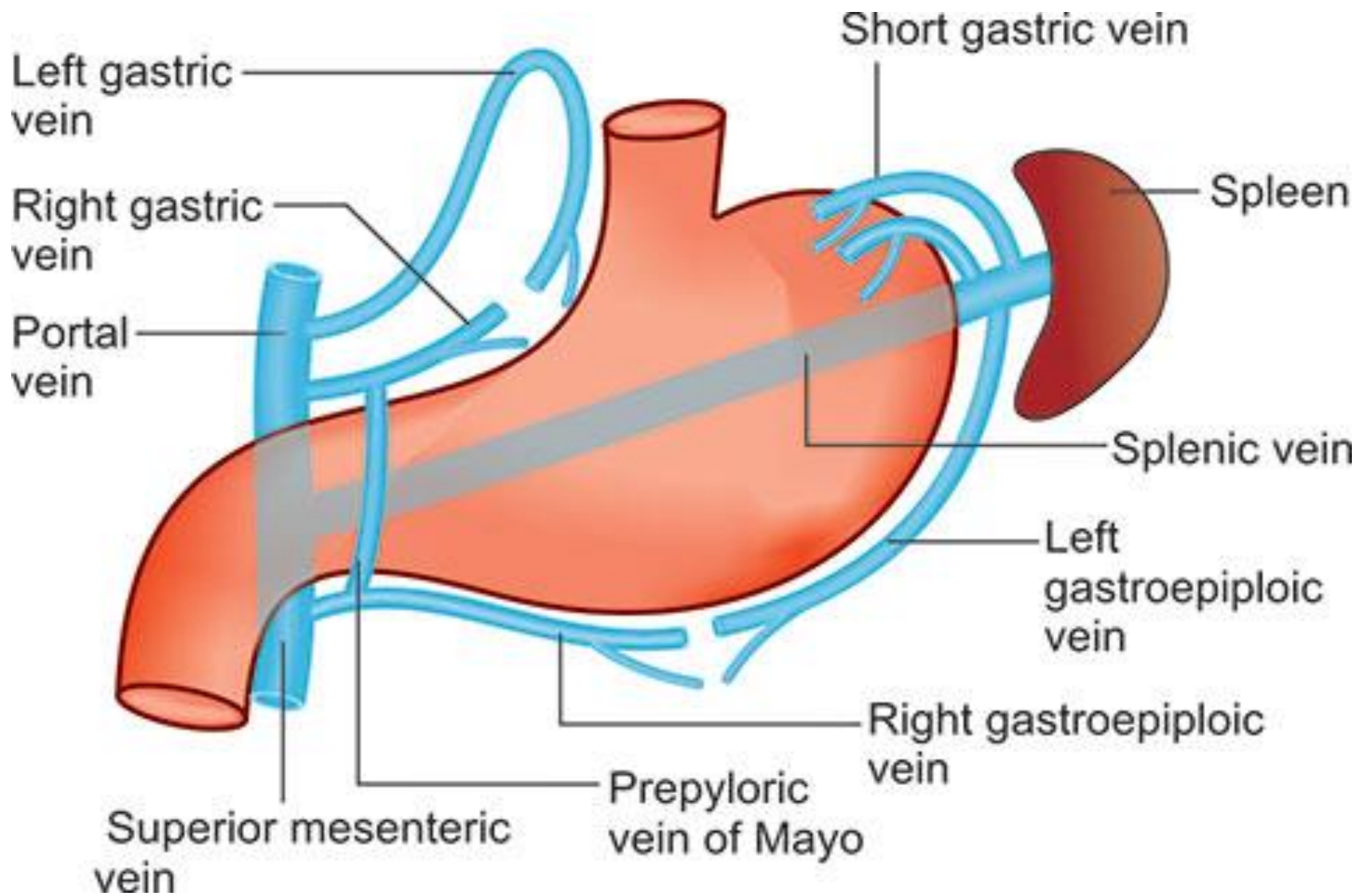
Stomach Blood Supply

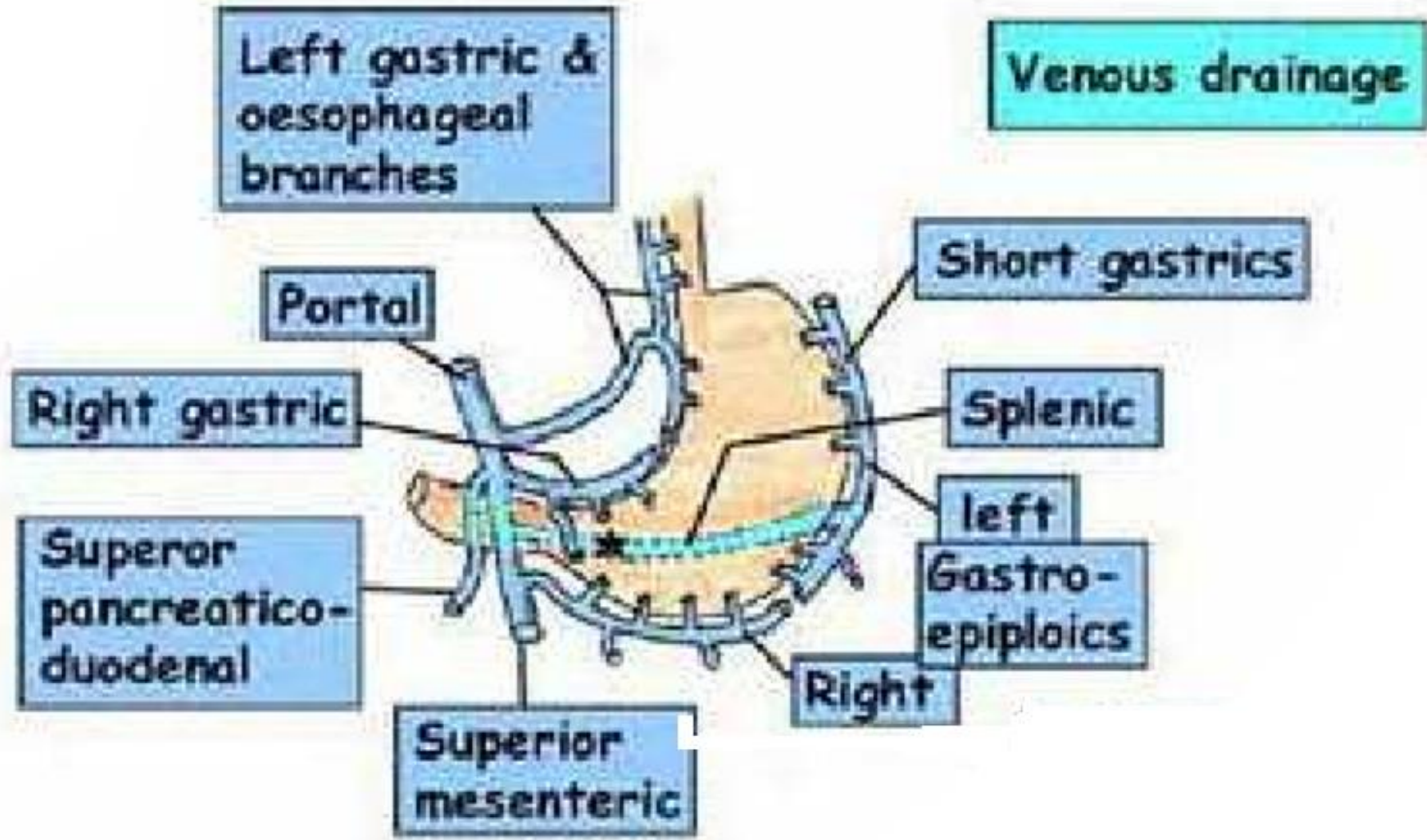


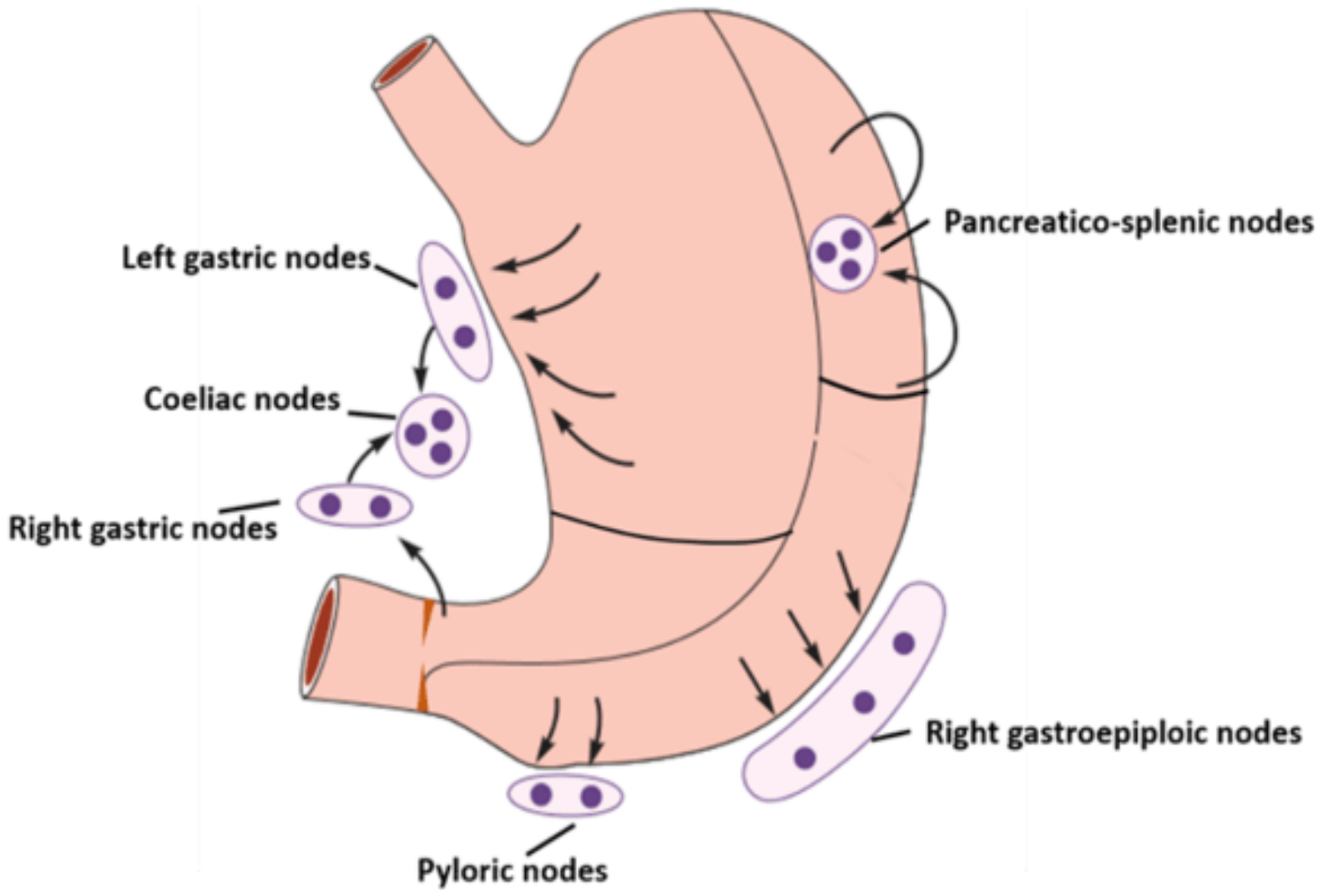
Stomach Venous Drainage

- **Venous Drainage**
 - Parallels arterial supply
- Rt & Lt gastric veins drain to the portal
- Rt gastroepiploic drains to the SMV
- Lt gastroepiploic drains to the splenic



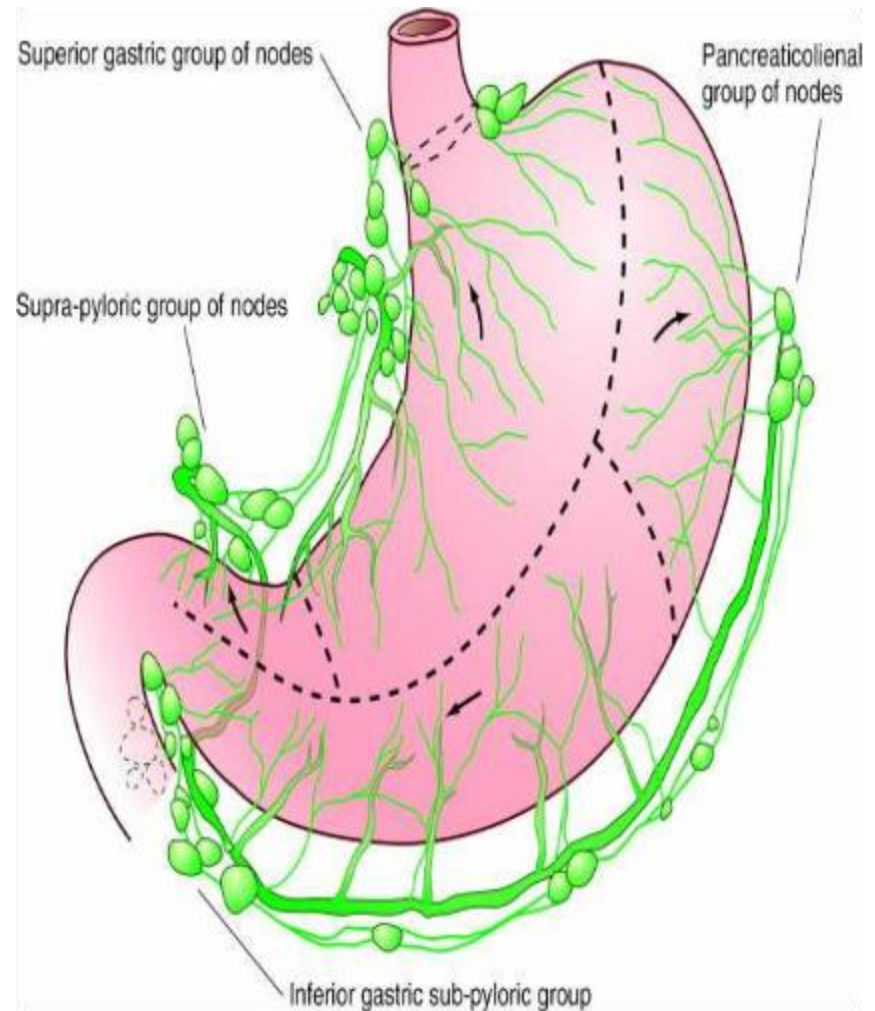






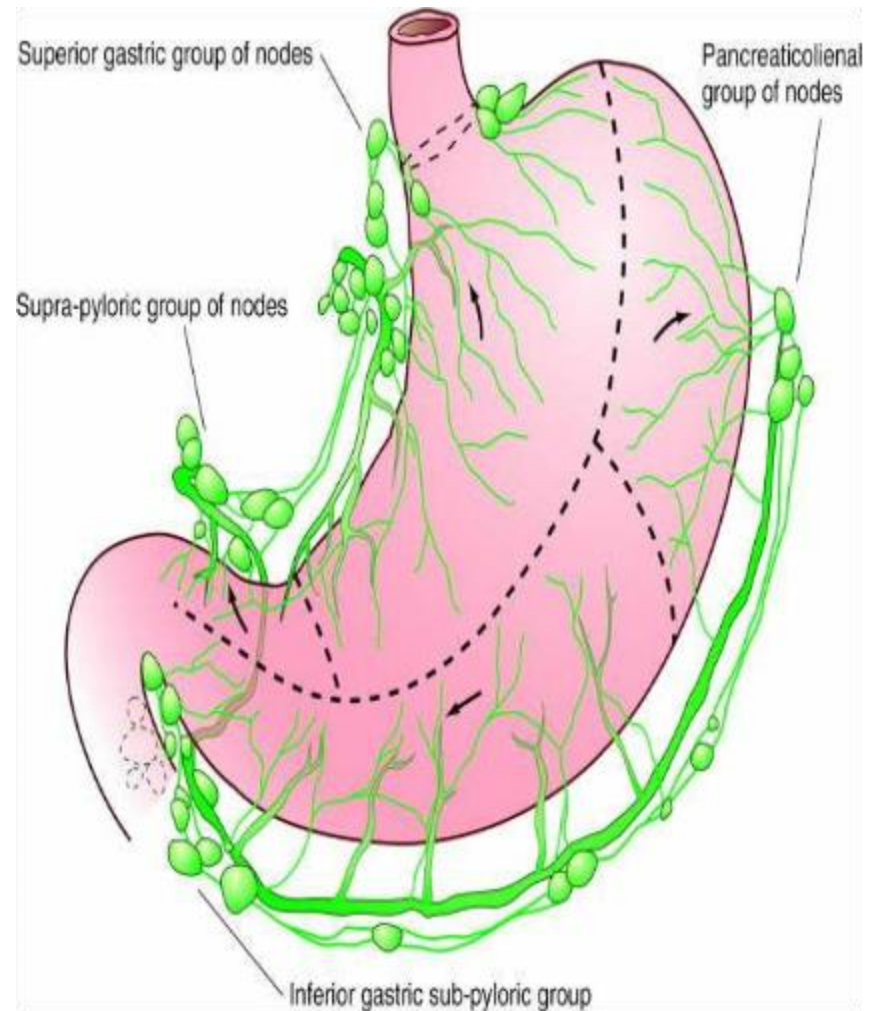
Stomach Lymphatic Drainage

- Lymph from the proximal portion of the stomach drains along the lesser curvature first drains into superior gastric lymph nodes surrounding the Left Gastric Artery.
- Distal portion of lesser curvature drains through the suprapyloric nodes.

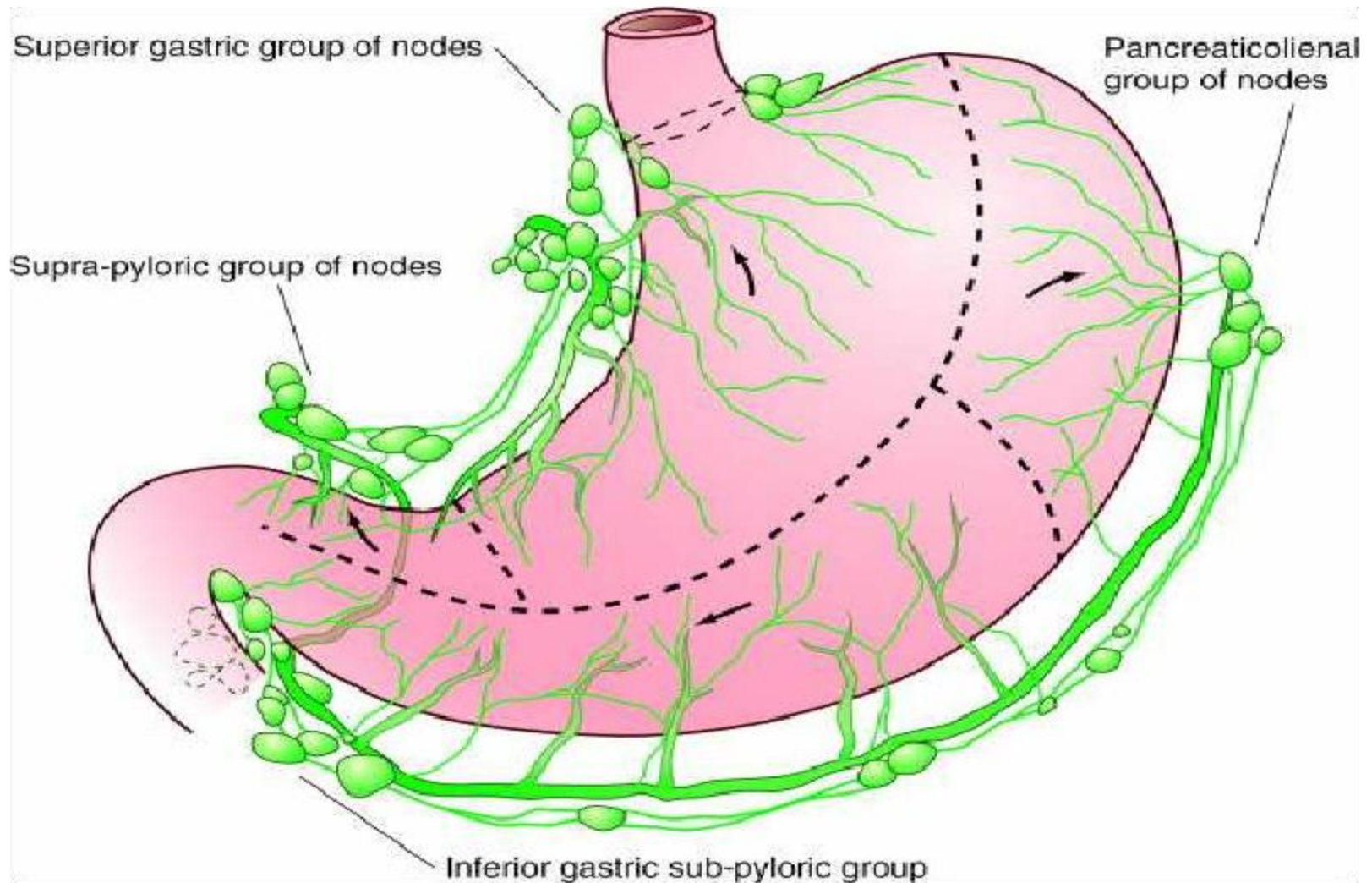


Stomach Lymphatic Drainage

- Proximal portion of the greater curvature is supplied by the lymphatic vessels that traverse the pancreaticosplenic nodes.
- Antral portion of the greater curvature drains into the subpyloric and omental nodal groups.

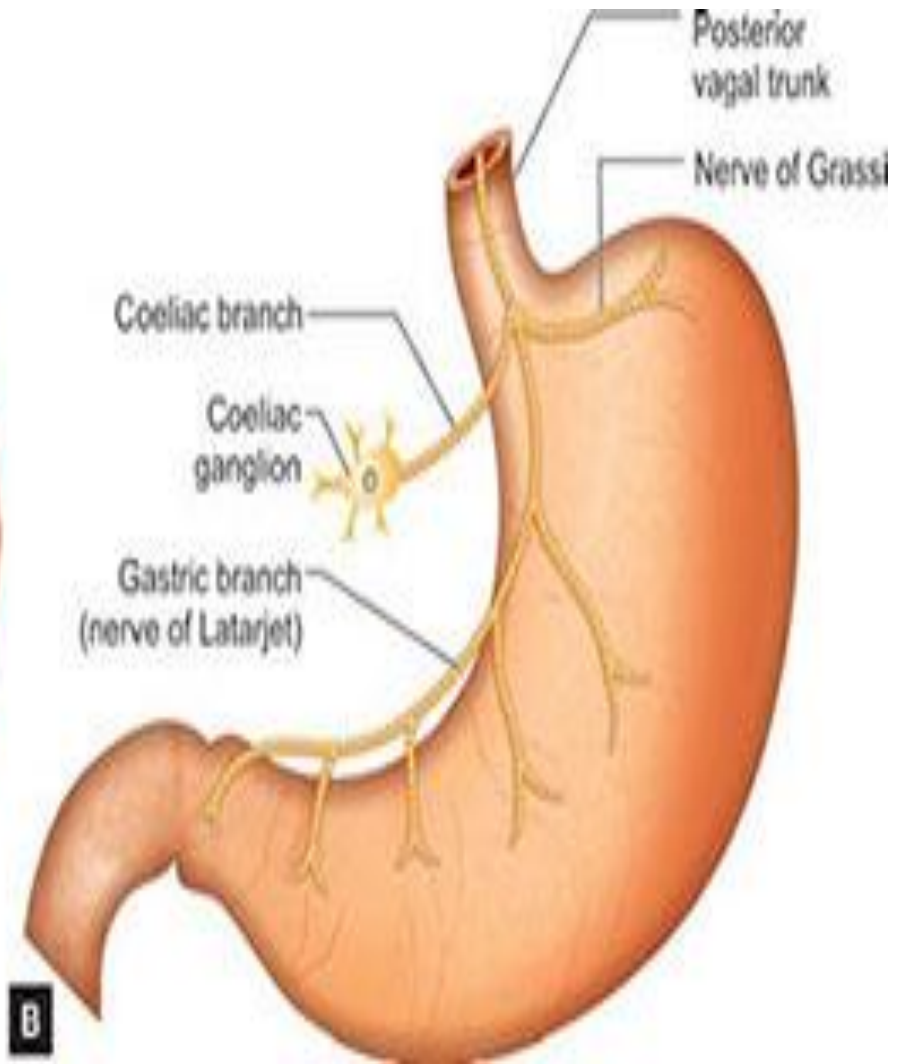
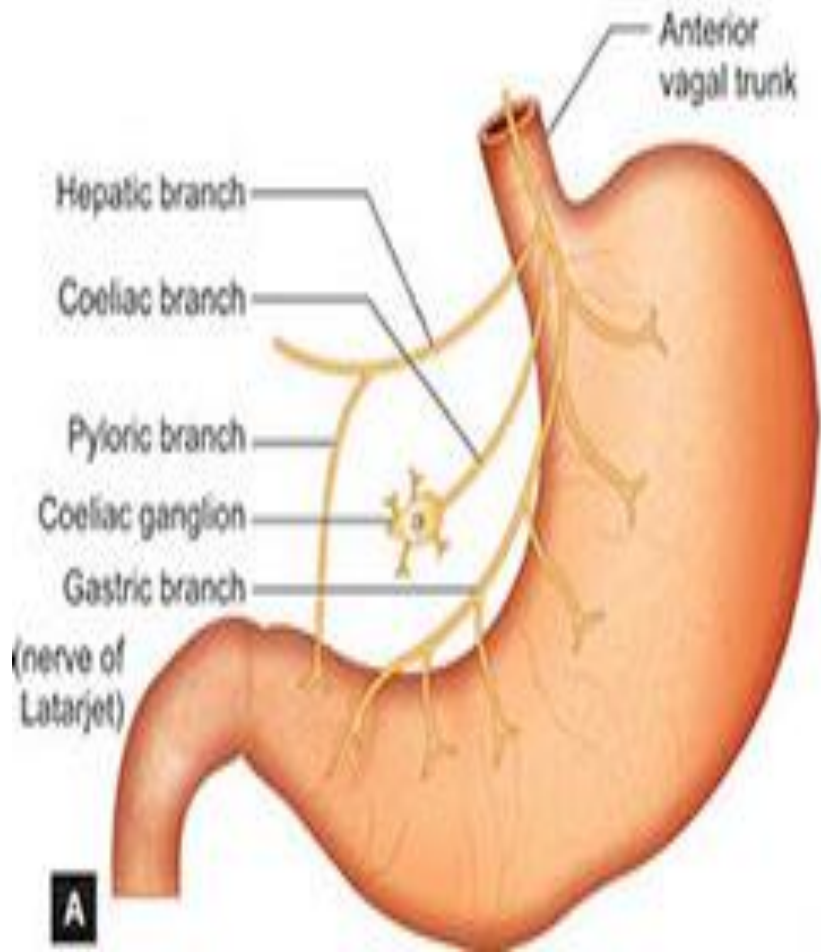


Stomach Lymphatic Drainage



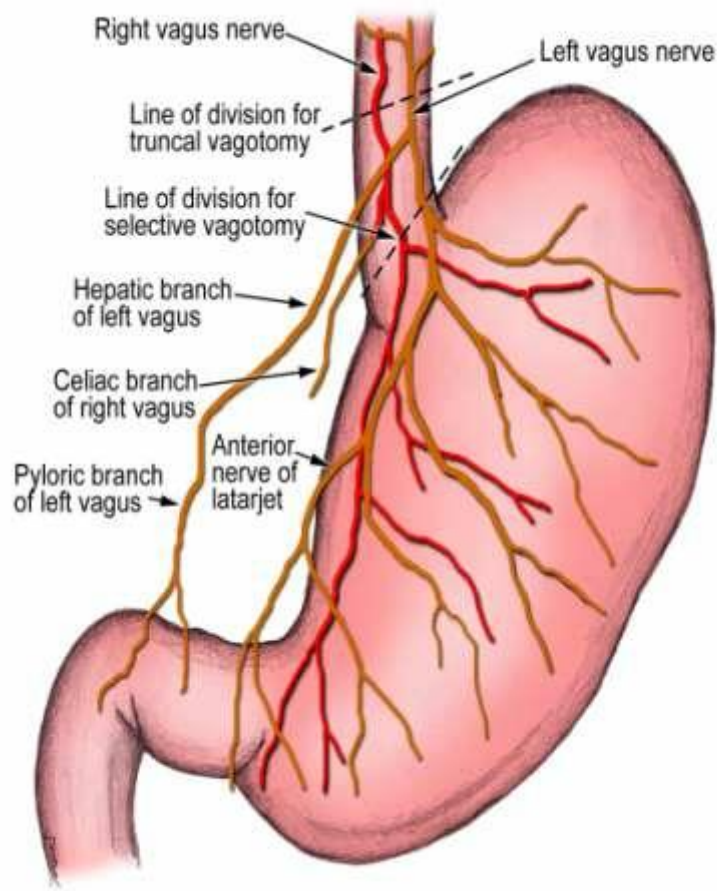
Stomach innervations

- *Parasympathetic innervation of stomach-*
vagus nerve;
90% of fibre in vagal trunk is afferent (info transmitting from stomach to CNS).
- *Sympathetic innervation of stomach-*
Splanchnic nerve;
Derived from spinal segment T6 T9

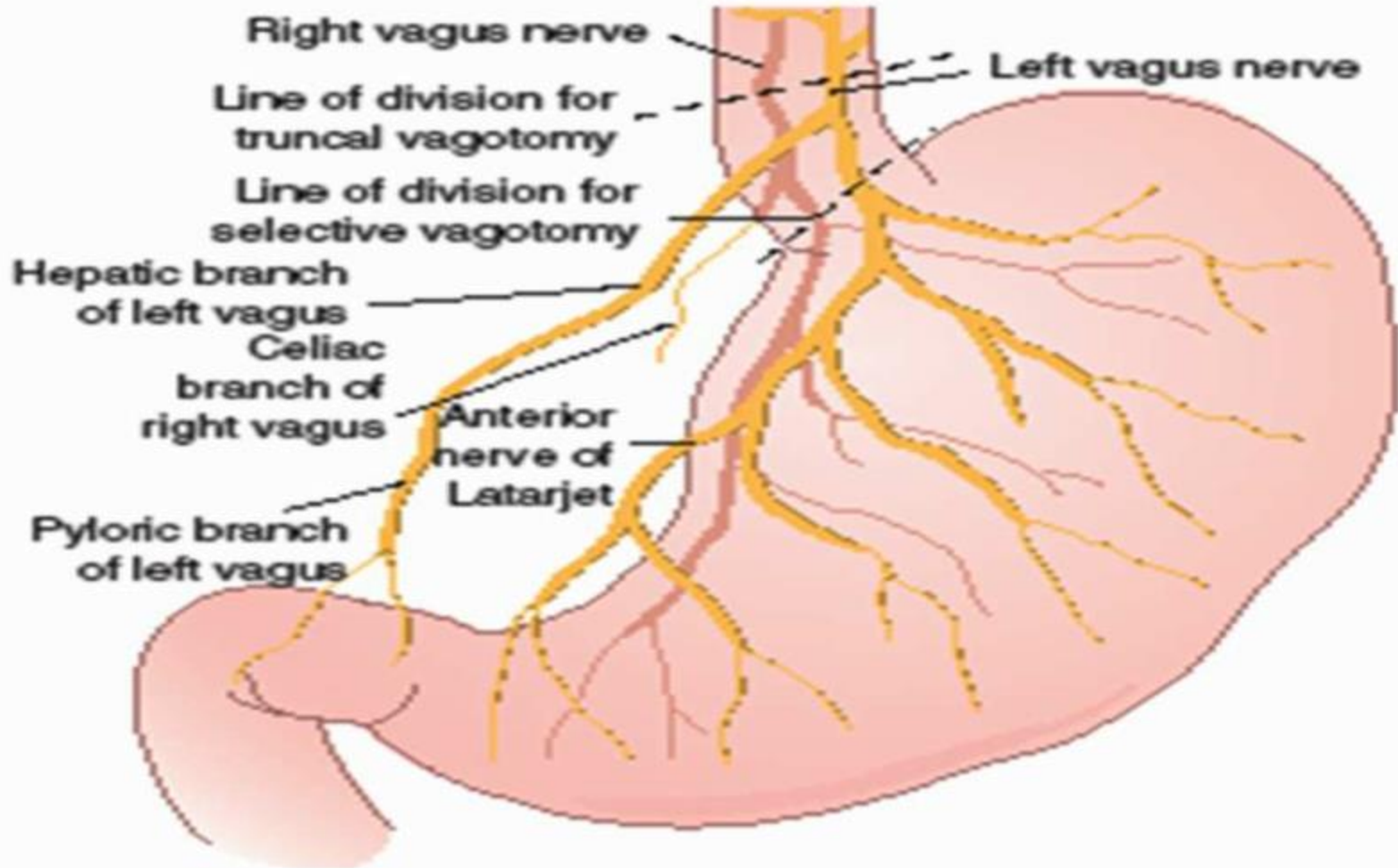


Stomach Innervations

- Parasympathetic innervation of Stomach- Vagus Nerve
 - 90% of fiber in vagal trunk is afferent (info transmitting from stomach to CNS)
- Sympathetic innervation of Stomach- Splanchnic Nerve
 - Derived from spinal segment T6 T9



Stomach Innervations

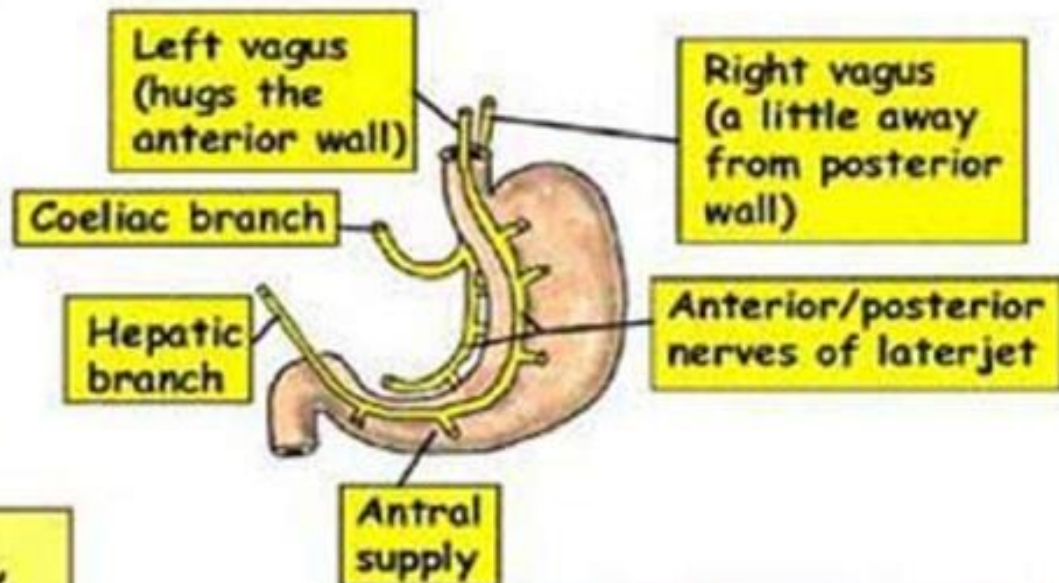


Stomach Innervations

Sympathetics

Greater splanchnic nerves (T5-9) for decreasing motility, vaso-constriction, closing pylorus & sensation

Vagus nerves are 80% sensory. 20% motor for increasing motility, opening pylorus & initiating secretions



Note: Highly selective vagotomy destroys vagus to fundus & body but preserves nerve to antral pump

Stomach diseases

- indigestion:

also called dyspepsia, a feeling of fullness or discomfort during or after a meal.

- Gastroesophageal reflex:

stomach contents travel backward up the oesophagus. It may cause heart burn or coughing.

- GERD:

when symptoms of reflex become frequent or troublesome, they are called GERD.

- Gastritis:

inflammation, irritation or erosion of the stomach lining.

Stomach diseases

- **Gastric ulcer:**

an erosion in the lining of stomach, often causing pain and/or bleeding.

- **Peptic ulcer disease:**

peptic ulcers are holes or breaks in the protective lining of duodenum and stomach.

- **Zollinger- Ellison syndrome:**

one or more tumours that secrete hormones that lead to increased acid production.

THANK YOU