



King Saud University  
College of Medicine  
GIT Block



Anatomy Team 430  
**Stomach & Esophagus**

Done By:  
*Ahmed Andijani*

## **Remember:**

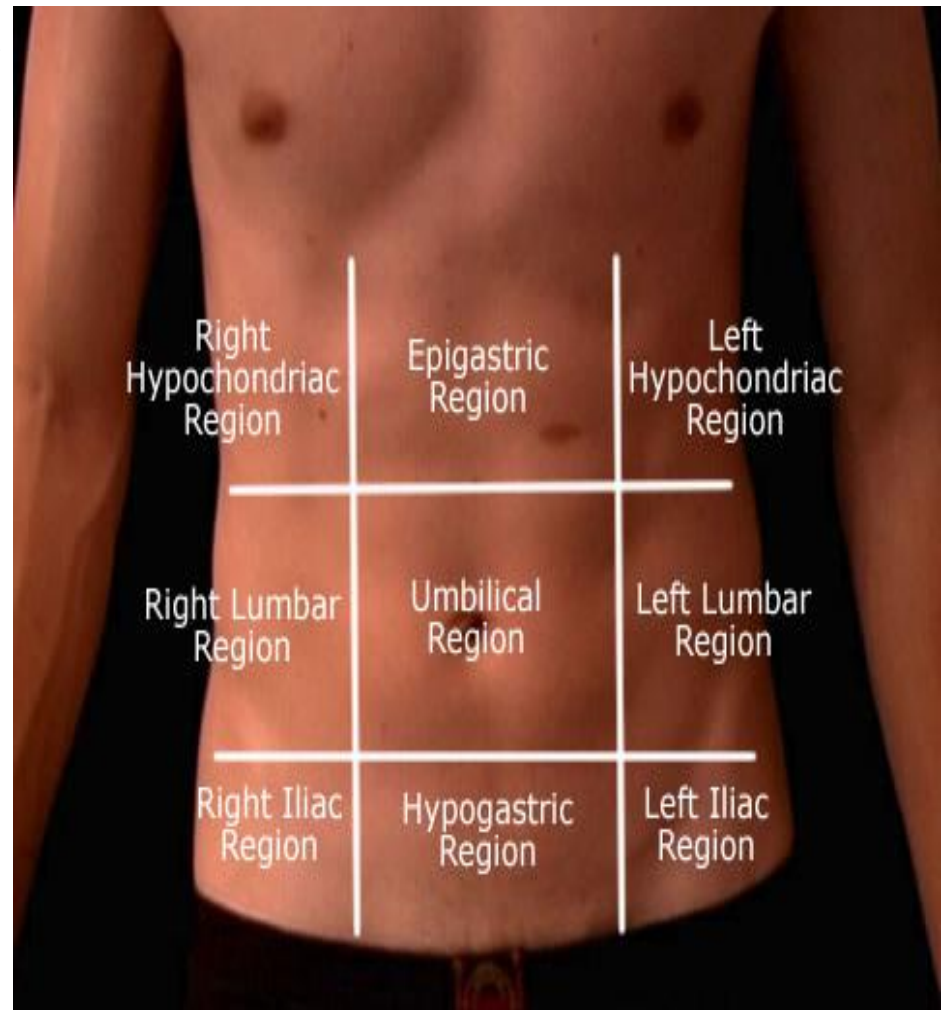


**-Abdominal cavity is divided into 9 compartments by:**

a) 2 vertical planes:  
Midclavicular lines.

b) 2 horizontal planes:  
Subcostal lines L3.  
Intertubercle lines L5.

**-NB. Transpyloric plane is located in L1 & beneath 8<sup>th</sup> costal cartilage.**





## **Locations**

### **Esophagus**

#### ***-Begins:***

As the continuation of the pharynx at the level of the 6th cervical vertebra.

#### ***-Ends:***

By piercing the diaphragm at the level of the 10th thoracic vertebra to join the stomach.

### **Stomach**

-It is located in the upper part of the abdomen.

#### ***-Extends:***

From beneath the left costal margin.

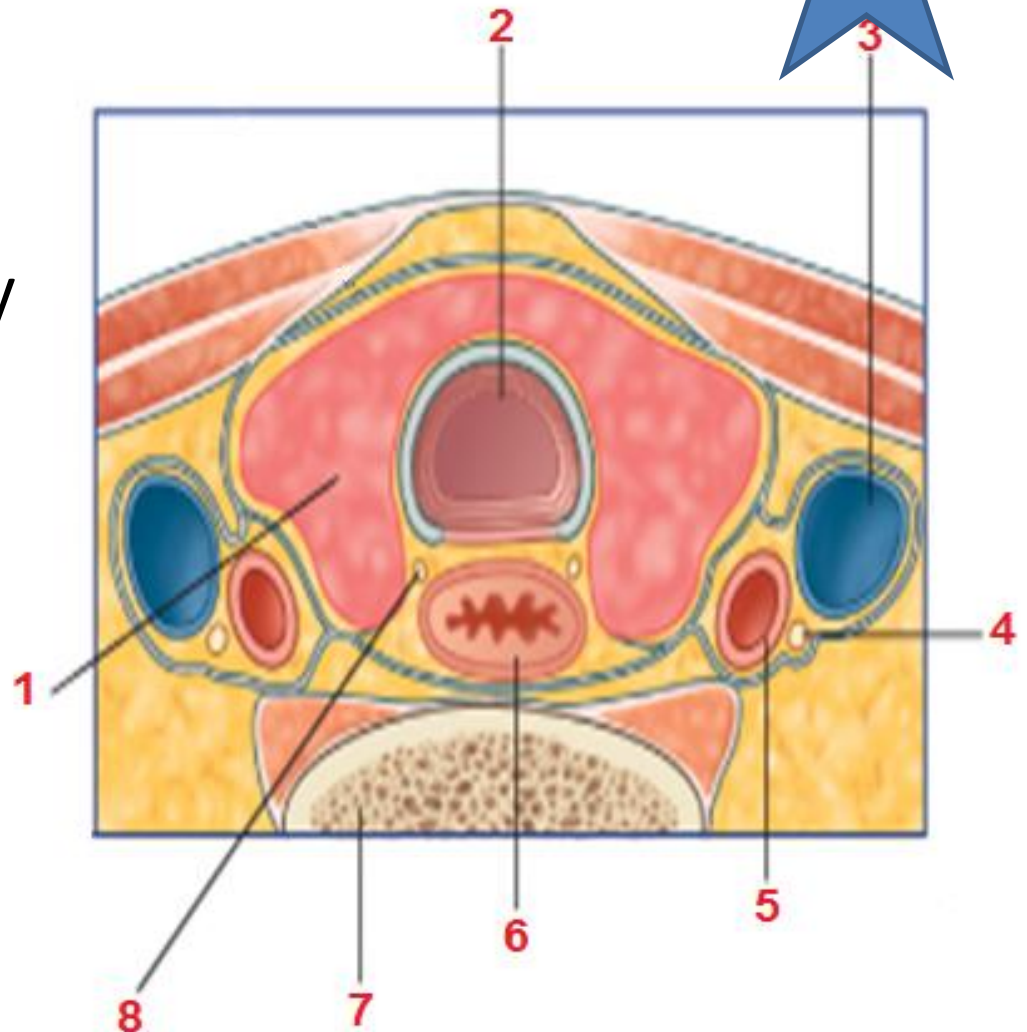
#### ***Into:***

The epigastric and umbilical regions.

## ***Cervical Part***

- 1- Thyroid Gland (**Lateral**)
- 2- Trachea (**Anterior**)
- 3- Internal Jugular Vein
- 4- Vagus Nerve
- 5- Common Carotid Artery
- 6- Esophagus
- 7- Vertebral Body (**Posterior**)
- 8- Right & left Recurrent Laryngeal Nerves (**anterior**).

## **Esophagus, *Relations***





# Esophagus:

## Relations (Anterior)



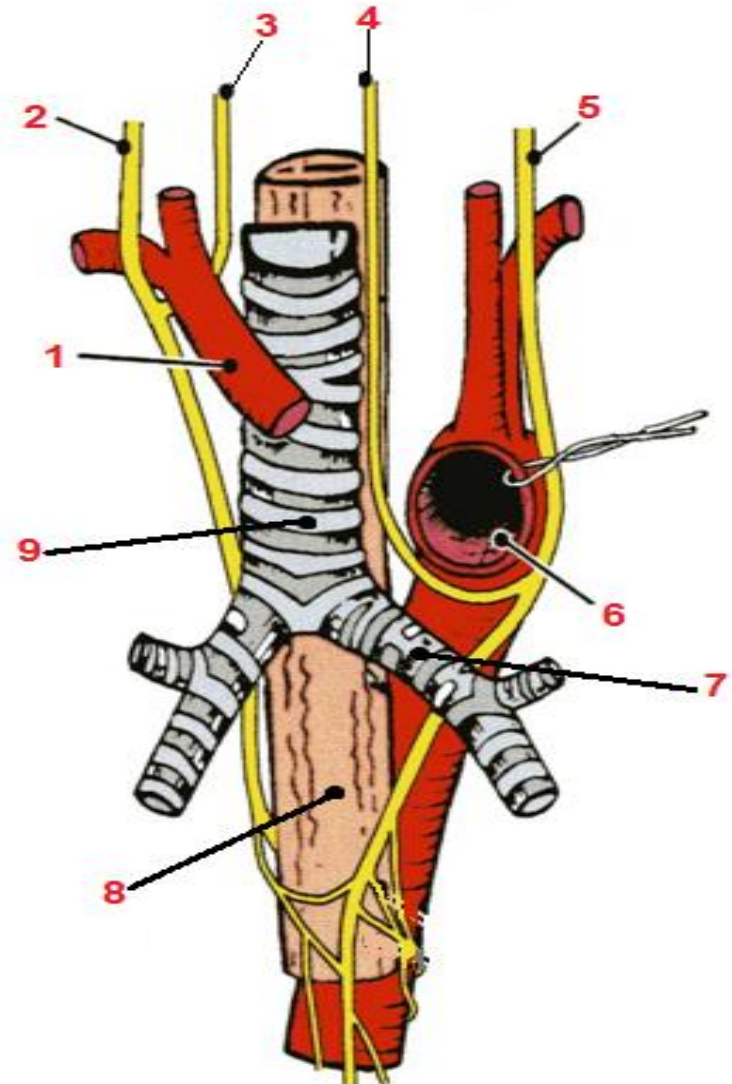
### Thoracic Part

- 1- Brachiocephalic artery
- 2- Right Vagus Nerve
- 3- Right Recurrent Laryngeal Nerve
- 4- Left Recurrent Laryngeal Nerve (anterior).
- 5- Left Vagus Nerve
- 6- Arch of Aorta .
- 7- Left Principal Bronchus (anterior).
- 8- Esophagus .
- 9- Trachea

Also Anterior Relations (not in the picture)

Pericardium (anterior).

Left atrium (anterior).



# Esophagus:

## Relations



### *Thoracic Part (Posterior)*

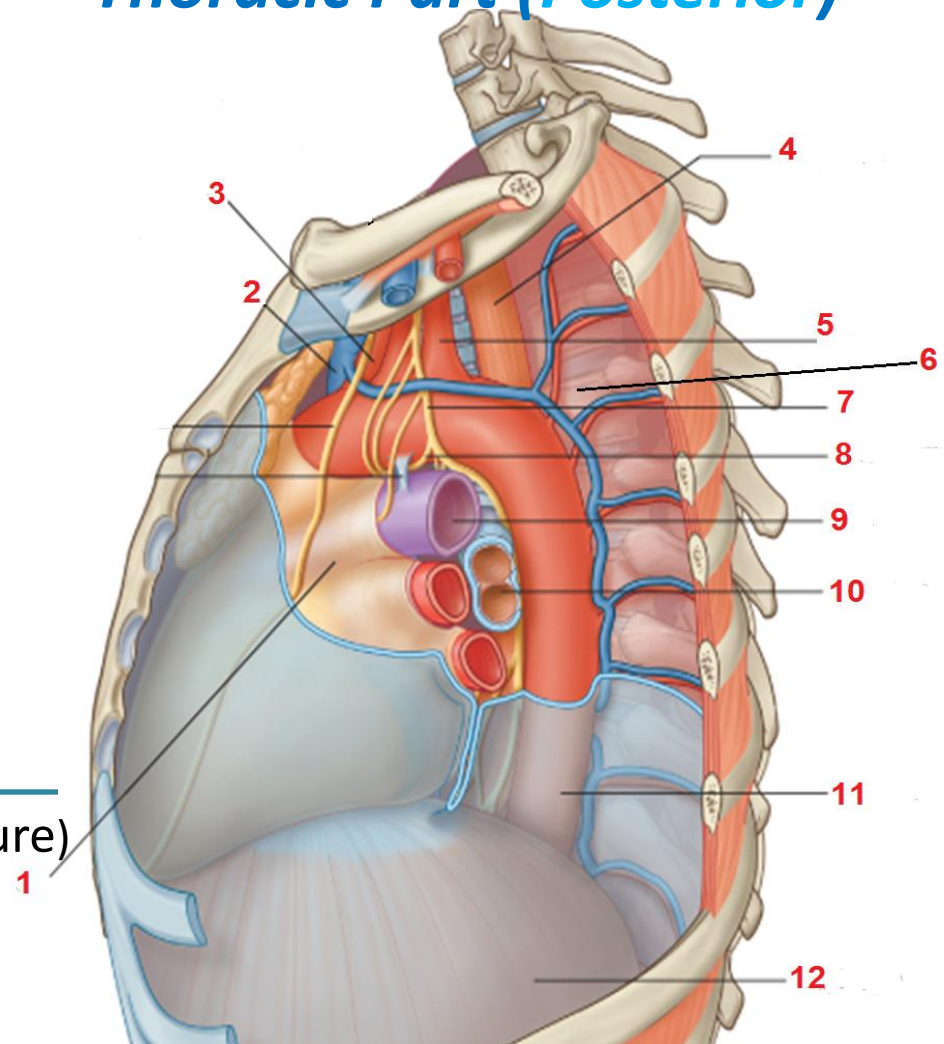
- 1- Pericardial Sac (*Anterior*)
- 2- Left Brachiocephalic Vein
- 3- Left Common Carotid Artery
- 4- Esophagus
- 5- Left Subclavian Artery
- 6- *Body of Thoracic Vertebra*
- 7- Left Vagus Nerve
- 8- Left Recurrent Laryngeal Nerve
- 9- Left Pulmonary Artery
- 10- Bronchus
- 11- *Thoracic Aorta*
- 12- Diaphragm

Also Posterior Relations (Not in the Picture)

*Thoracic duct*

*Azygos vein*

*Right posterior intercostal arteries*



# Esophagus:

## *Relations*

### *Thoracic Part (Lateral)*

| On the Right side:  | On the Left side:   |
|---|---|
| Right mediastinal pleura<br>Terminal part of the<br>azygos vein | Left mediastinal pleura<br>Left subclavian artery<br>Aortic arch<br>Thoracic duct |

# Esophagus:

## *Relations*

- 1- Right Crus.
- 2- Costal origin of diaphragm
- 3- Sternal origin of diaphragm
- 4- Costal Cartilage
- 5- Inferior Vena Cava (T8)
- 6- Esophagus (T10)
- 7- Abdominal Aorta (T12)
- 8- Left Crus (**Posterior**)
- 9- Quadratus Lumborum Muscle
- 10- Medial Arcuate Ligament
- 11- Lateral Arcuate Ligament

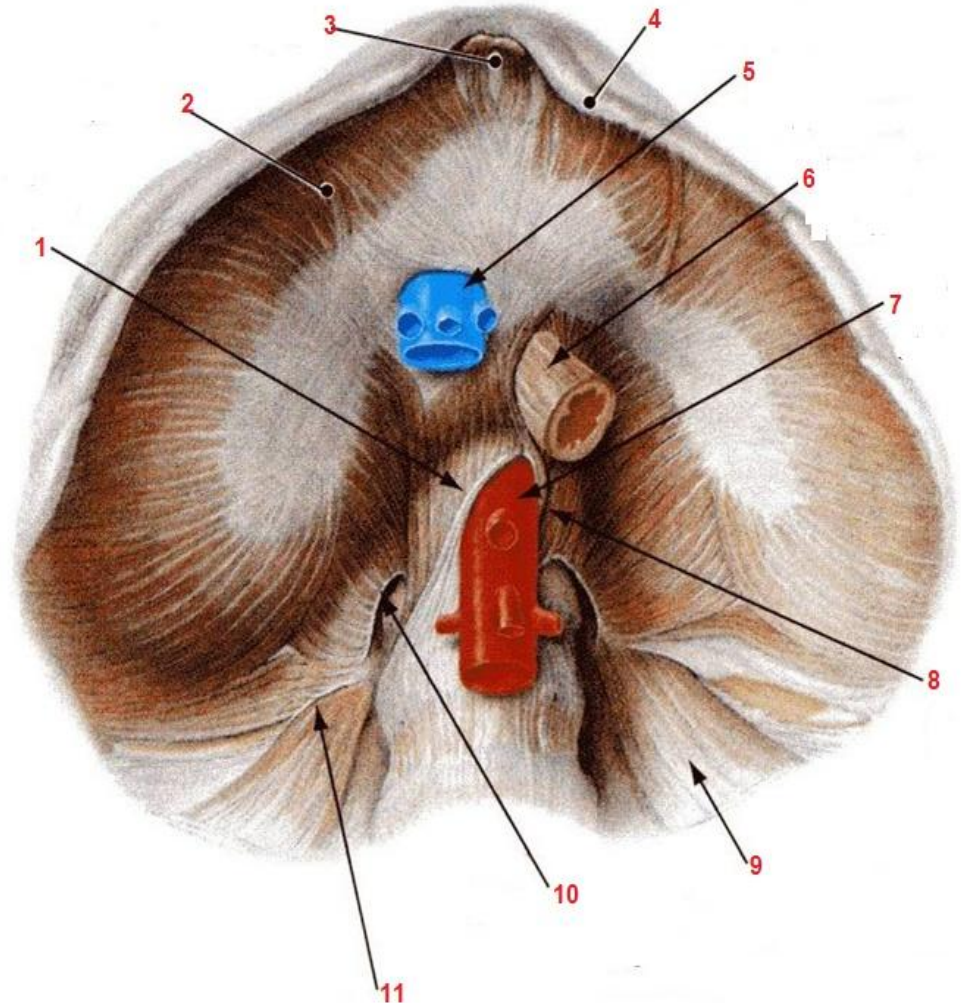
At the opening of the diaphragm, the esophagus is accompanied by:

**The two vagi**

**Branches of the left gastric vessels**

**Lymphatic vessels**

## *Abdominal Part*





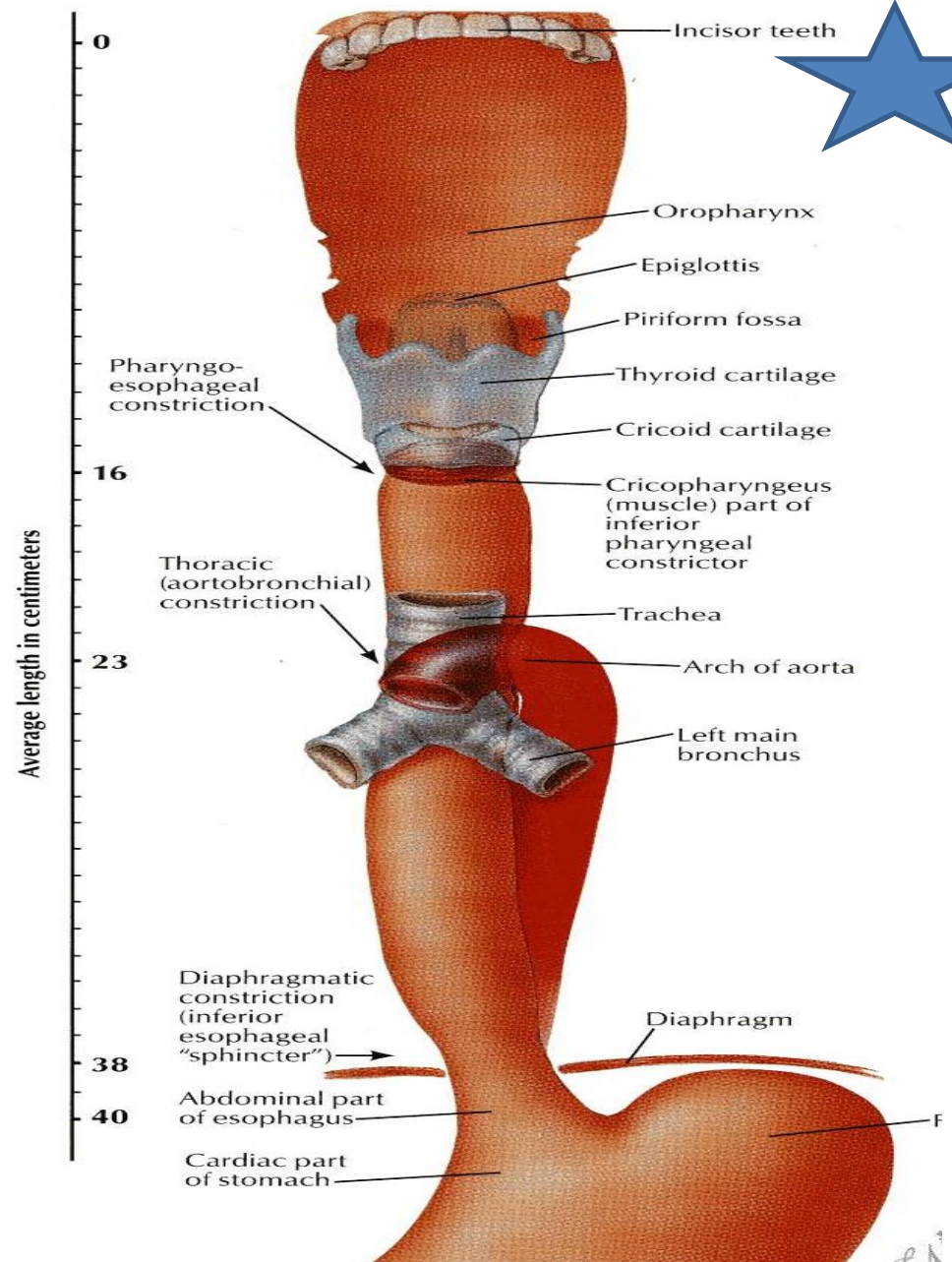
# Esophagus:

## *Constrictions*

The first is at the junction with the pharynx (pharyngeoesophageal junction-16 cm from incisors).

The second is at the crossing with the aortic arch and the left main bronchus-23 cm from incisors.

The third is at the junction with the stomach -40 cm from incisors.



# Esophagus:

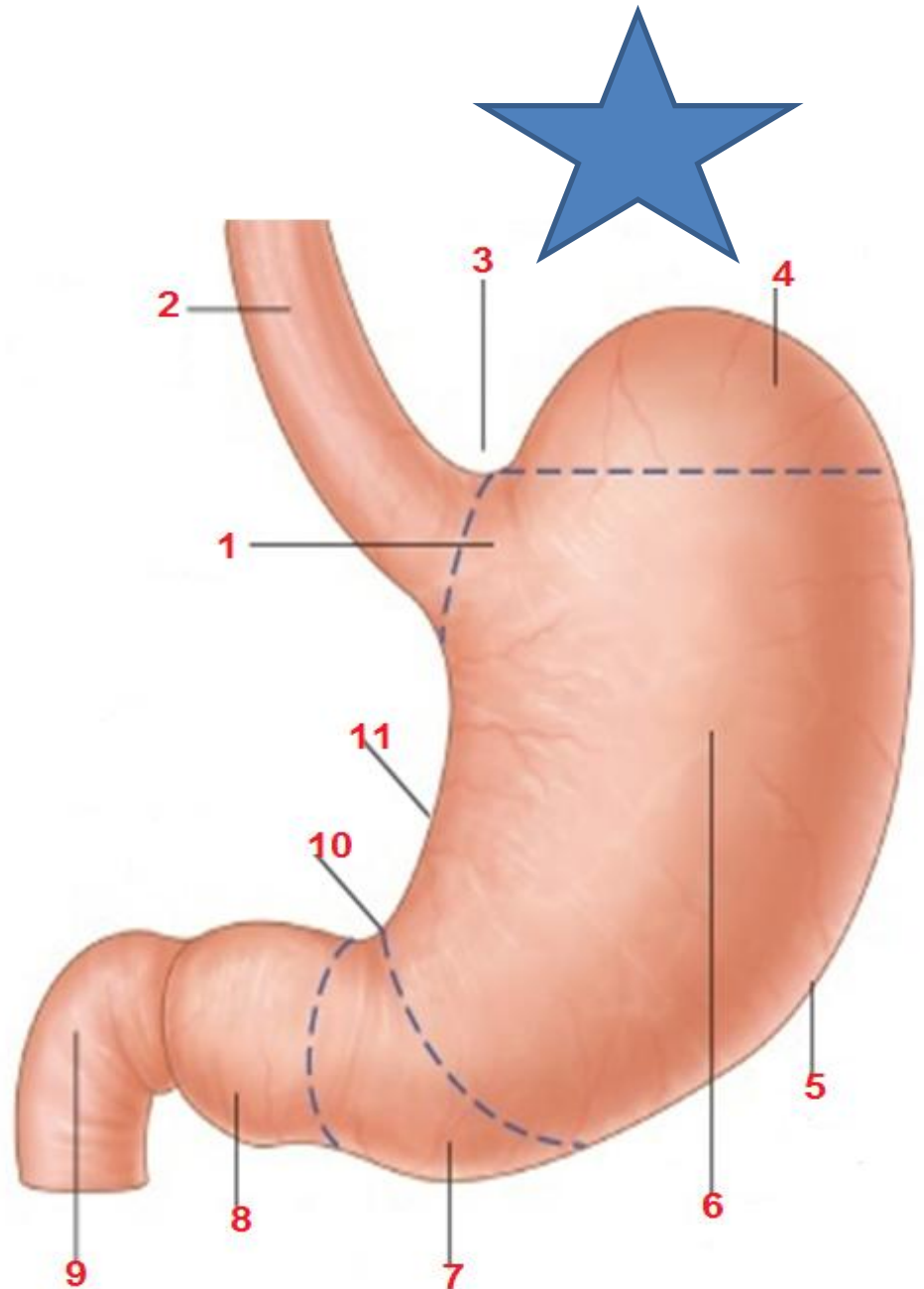
## *Supplies & Drainage*



| Part                | Arterial Supply          | Venous Drainage   | Lymph Drainage                               | Nerve Supply  |
|---------------------|--------------------------|---|--|---|
| <i>Upper Third</i>  | inferior thyroid artery. | the inferior thyroid veins.                                 | deep cervical nodes.                         | <b>Sympathetic:</b><br>Sympathetic Trunk<br><br><b>Parasympathetic:</b><br>Vagus Nerves.<br><br>Inferior to the roots of the lungs, the vagus nerves join the sympathetic nerves to form the esophageal plexus. |
| <i>Middle Third</i> | thoracic aorta.          | azygos veins.   | the superior and inferior mediastinal nodes. |   |
| <i>Lower Third</i>  | left gastric artery.     | left gastric vein, which is a tributary of the portal vein. | celiac lymph nodes in the abdomen.           |   |

# Stomach:

- 1- Cardia
- 2- Abdominal Esophagus
- 3- Cardiac Notch
- 4- Fundus
- 5- Greater Curvature
- 6- Body
- 7- Pyloric Antrum
- 8- Pyloric Canal
- 9- Duodenum
- 10- Angular Incisure
- 11- Lesser Curvature



# Stomach:



| Part                     | Location & Extension   | Further Notes  |
|--------------------------|--|--|
| <b>Fundus</b>            | -Its summit reaches to the left <b>5th intercostal space</b> .                     | -In X-Ray film it appears black.<br>-Usually full of gas.  |
| <b>Body</b>              | <b>From:</b> the level of the fundus<br><b>To:</b> The level of Incisura Angularis | Incisura Angularis: A constant notch on the lesser curvature   |
| <b>Lesser Curvature</b>  | Extends from the cardiac orifice to the pylorus.                                   | -Attached to the liver by the <b>lesser omentum</b> .  |
| <b>Greater Curvature</b> | Extends from the cardiac orifice to the pylorus.                                   | - <b>Its upper part</b> is attached to the <b>spleen by gastrosplenic ligament, which carries short gastric vessels</b> .<br>- <b>Its lower part</b> is attached to the <b>transverse colon by the greater omentum</b> . |
| <b>Pyloric Antrum</b>    | The pyloric antrum extends from Incisura angularis to the pylorus                  |  |
| <b>Pylorus</b>           | It lies in the transpyloric plane <b>L1</b> .                                      | It has pyloric sphincter and pyloric canal.  |



# Stomach:

## Relations

### *Anterior:*

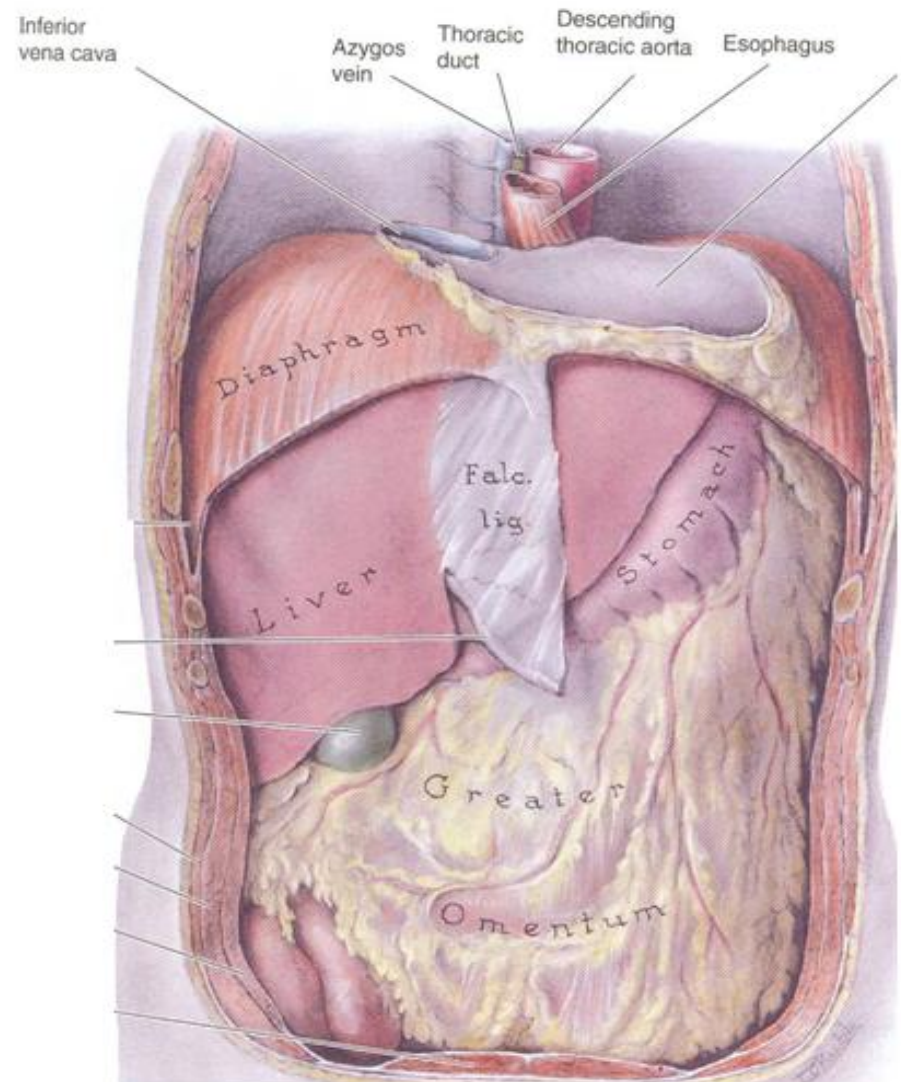
Anterior abdominal wall

Left costal margin

Left pleura & lung

Diaphragm

Left lobe of the liver



# Stomach:

## Relations

### *Posterior: (Important)*

(Stomach bed)

Peritoneum (Lesser sac)

Left crus of diaphragm

Left suprarenal gland

Part of left kidney

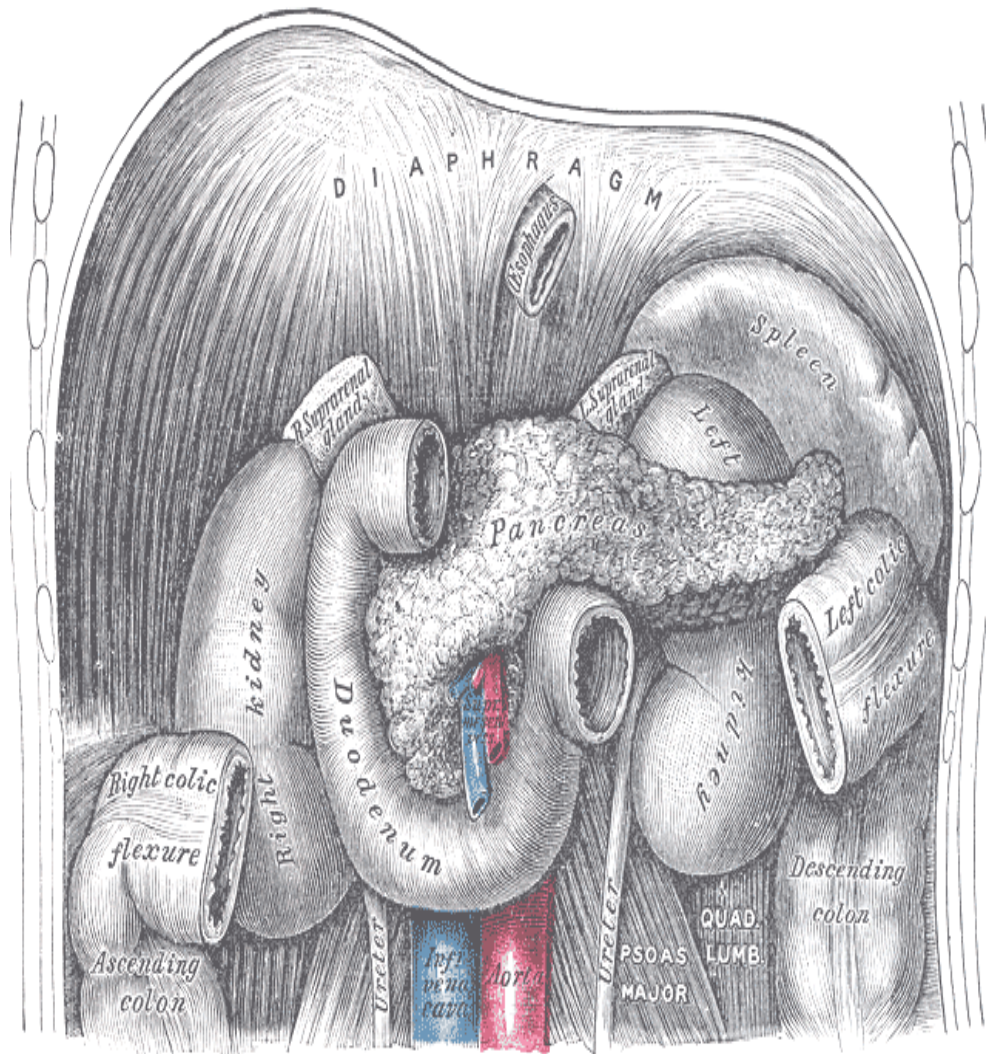
Spleen

Splenic artery

Pancreas

Transverse mesocolon

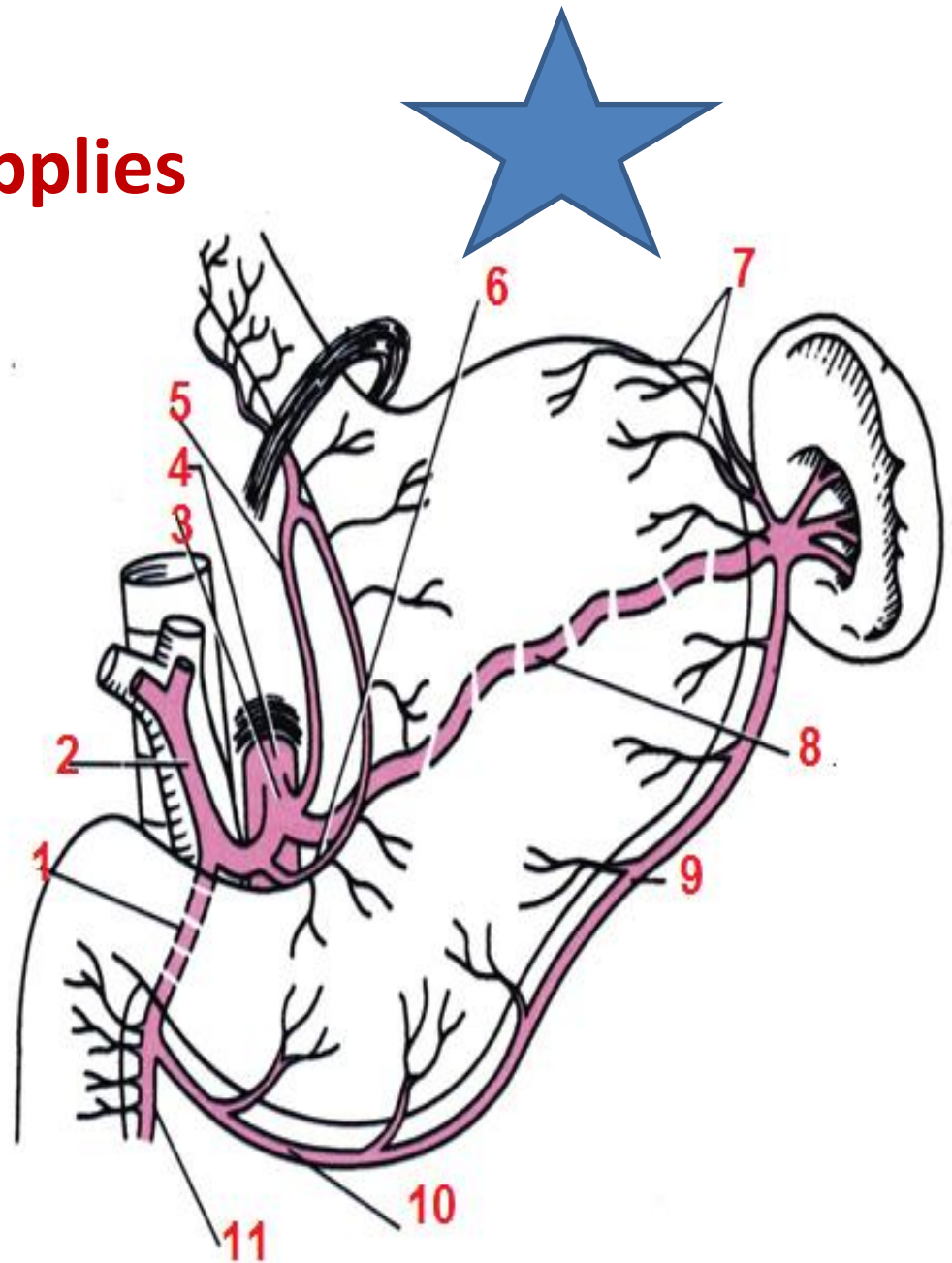
*They are separated from the stomach by Peritoneum of the Lesser sac (except the spleen)*



# Stomach:

## Arterial Supplies

- 1- Gastro Duodenal Artery
- 2- Hepatic Artery
- 3- Celiac Artery
- 4- Abdominal Aorta
- 5- Left Gastric Artery
- 6- Right Gastric Artery
- 7- Short Gastric Arteries
- 8- Splenic Artery
- 9- Left Gastroepiploic Artery
- 10- Right Gastroepiploic Artery
- 11- Superior  
Pancreaticoduodenal Artery





# Stomach:



## Blood Supply & Lymph Drainage

| Arterial Supply  | Venous Drainage  | Lymph Drainage  | Nerve Supply   |
|--|--|---|--|
| <p><b><u>All Arise from Celiac Trunk</u></b></p> <p><b><u>Left gastric artery:</u></b><br/>It is a branch of celiac artery. Runs along the lesser curvature.</p> <p><b><u>Right gastric artery:</u></b><br/>From the hepatic of celiac. Runs to the left along the lesser curvature.</p> <p><b><u>Short gastric arteries:</u></b><br/>arise from the splenic artery. Pass in the <b>gastrosplenic ligament</b>.</p> <p><b><u>Left gastroepiploic artery:</u></b><br/>from splenic artery Pass in the <b>gastrosplenic ligament</b>, along the greater curvature</p> <p><b><u>Right gastroepiploic artery:</u></b><br/>from the gastroduodenal artery of hepatic. Passes to the left along the greater curvature.</p> | <p><b><u>All of them drain into the portal circulation.</u></b></p> <p>The right and left gastric veins drain directly into the portal vein.</p> <p>The short gastric veins and the left gastroepiploic vein join the splenic vein.</p> <p>The right gastroepiploic vein drain in the superior mesenteric vein</p> | <p><b><u>The lymph vessels follow the arteries.</u></b></p> <p>Left and right gastric nodes</p> <p>Left and right gastroepiploic nodes and the Short gastric nodes</p> <p><b>Ultimately, all the lymph from the stomach is collected at the celiac nodes.</b></p> | <p><b><u>Sympathetic fibers</u></b> are vasoconstrictors, antiperistaltic &amp; carry pain sensation. It is derived from the celiac plexus.</p> <p><b><u>Parasympathetic fibers</u></b> from <b>both vagi are for motility &amp; secretory</b></p> <p><b>Anterior vagal trunk:</b><br/>Formed from the left vagus Supply the anterior surface of the stomach Gives a hepatic branch &amp; from it a branch to the pylorus.</p> <p><b>Posterior vagal trunk:</b><br/>Formed from the right vagus Supply the posterior surface of the stomach Gives a large branch to the celiac &amp; the superior mesenteric plexuses.</p> |



