



# Anatomy

Faculty of Medicine - JU2017

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Number

6

Done by:

**ABDUL AZIZ ALSHAMALI**

Corrected by:

**ABDULAZIZ ALSHAMALI**

Doctor

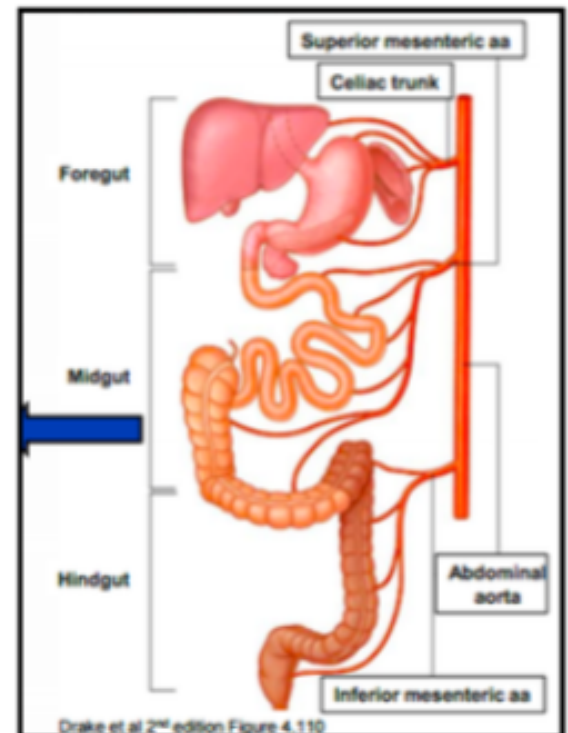
**Mahir Hadidi**

# THE ABDOMEN – GI

- In the abdomen, the abdominal aorta is continuation of the thoracic aorta as it starts from **T12** level and ends at **hip bone** as then divides into **two branches** which are right common iliac artery & left common iliac artery.
- The aorta in the abdomen gives **paired** branches and **single** branches.
- The single branches can be known as:
  - 1) celiac artery ( at the level of T12)
  - 2) superior mesenteric artery (mesentery- المساريقا =double layer of peritoneum) at level of L1 vertebra.
  - 3) Inferior mesenteric artery

## **Digestive system:-**

- The digestive system in our body is composed of GI tube & accessory glands (liver, gall bladder, pancreas).
- The GI tube is further divided into 3 parts:
  - 1) **Foregut** (القناة الهضمية الأمامية)
    - The celiac artery is responsible for supplying the entire Foregut region which is considered to contain oesophagus, stomach, pancreas).
  - 2) **Midgut** (القناة الهضمية الوسطى)
    - Midgut is supplied by superior mesenteric artery.
  - 3) **Hindgut**
    - Hindgut is supplied by inferior mesenteric artery



## Oesophagus

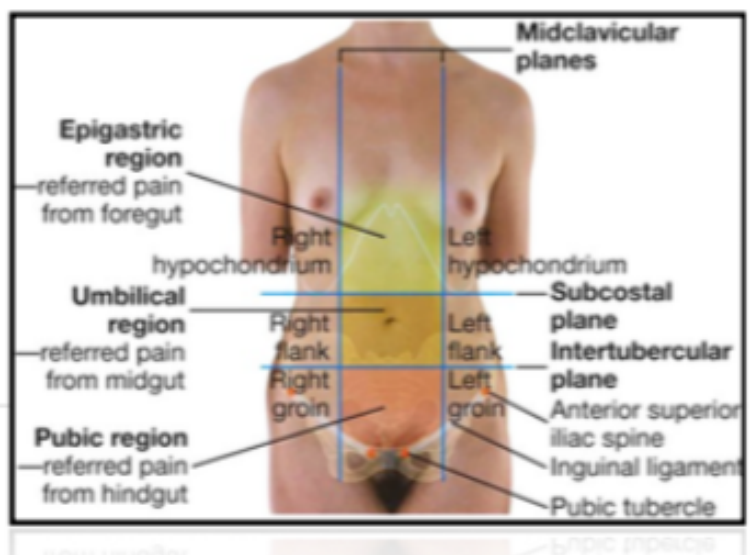
- Is a hollow muscular tube extending from the lower end of pharynx at level of C6 and will pass through the diaphragm at the level of T10 then it ends at the stomach.
- So the oesophagus, to say, is passing three regions or parts (cervical, thoracic & abdominal).
- The abdominal part is the shortest one and about 1.5 cm long.
- In our bodies we have **two** vein circulations. One through inferior vena cave & superior vena cave **AND** one related only to the digestive system that is also described as portal circulation.

## Stomach

- Is also called the upper dilated part of GI and located in both **epigastric region** & **left hypochondriac region**. A part of it enters the umbilical region when it is full.
- It has three main parts: Fundus, Body and Pylorus.
- **By the way**, don't forget that the abdomen is divided into **9 regions** that are based on two lines which are known as **superior horizontal line** (subcostal line which passes the body of vertebra L3) and **inferior horizontal line** (inter-tubercular line which passes the body of L5).
- Note that the vertical planes pass from the midpoint of the clavicles inferiorly to a point midway between the anterior superior iliac spine and pubic symphysis.



**-For instance**, spleen is located in the left hypochondrium region and the liver is found in right hypochondrium region.





- Also, the **size and shape** of stomach depend on:

- 1) Habits of eating
- 2) posture of person
- 3) position of the stomach

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- Stomach has 2 ends (**openings**), one is called **cardiac** and the other is called **pyloric**. Also, the stomach is fixed relatively at these two points.

1) **cardiac opening**: The **opening** of the esophagus into the **stomach**.  
By which the food enters to the stomach & it has been called **cardiac opening** because it is near the heart.

2) **Pyloric opening**: The **pyloric sphincter** is a band of smooth muscle at the junction between the **pylorus** of the stomach and the duodenum of the small intestine.

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- **Additionally**, the stomach has 2 surfaces:

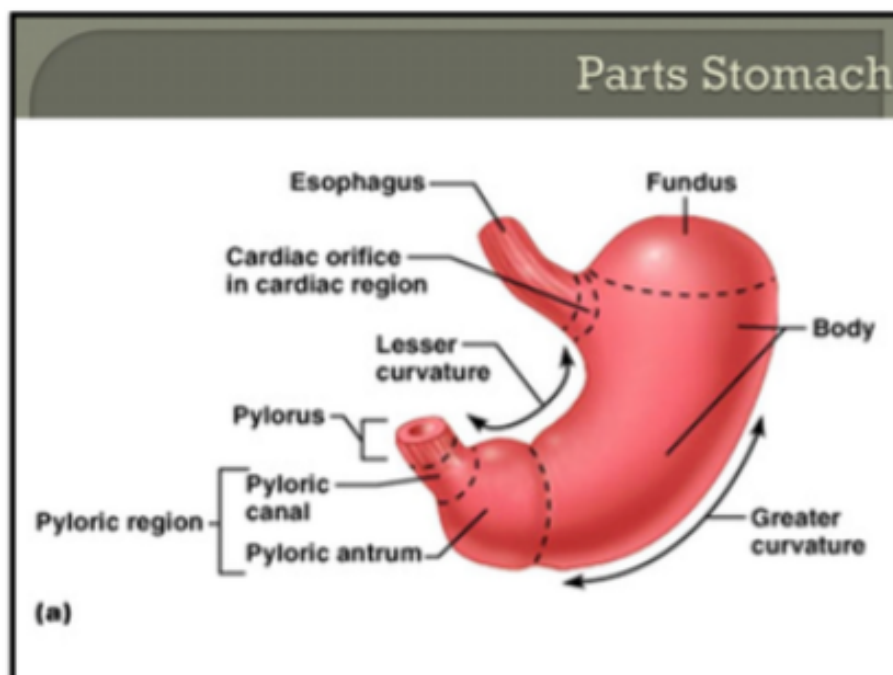
- 1) **parietal** (anteriorly)
- 2) **visceral** (posteriorly)

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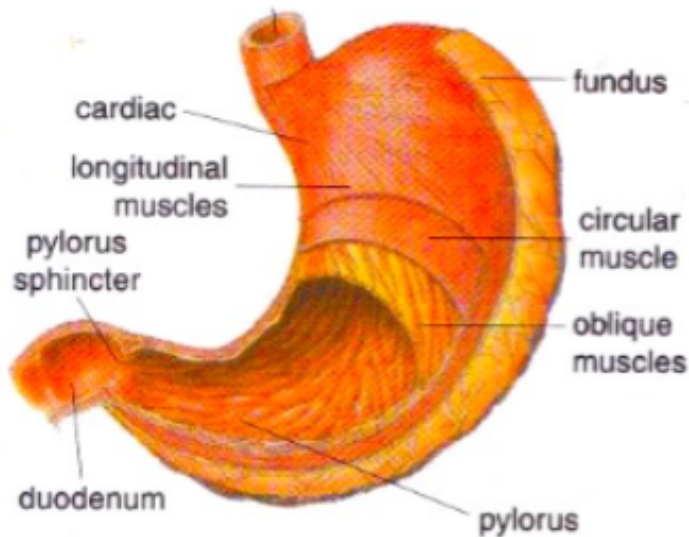
- **Moreover**, our stomach has **2 curves** (curvatures) as they oppose each other in terms of their directions & locations :

- 1) **Big** curvature called **greater curvature**. (left side)
- 2) **small** curvature called **lesser curvature**. (right side)

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- **Fundus**: the highest part of the stomach and almost always filled with gases.
  - **Body**: is the largest portion of the stomach where mixing of food and secretion of HCl takes place.

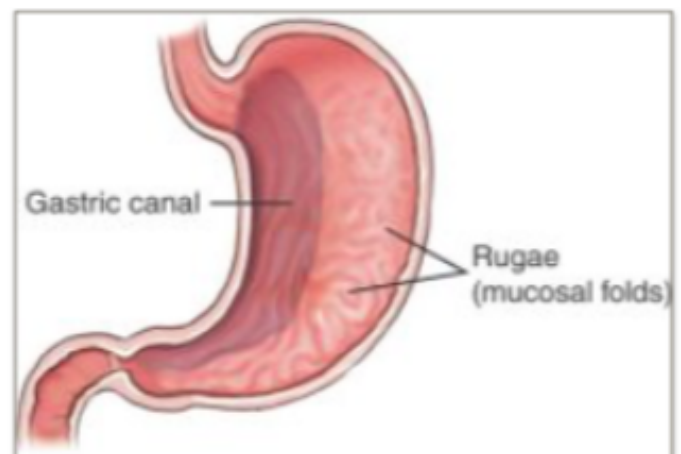


- The body of stomach is separated from Pylorus by the **angular notch**.
- The entire GI tube, except for stomach, is composed of 2 muscular layers that are named as **outer longitudinal muscle & inner curriculum muscle** to form sphincters.
- **The stomach**, in particular, has **3 muscular layers (outer longitudinal muscle - middle circular muscle - inner oblique muscle)**.



Parts of stomach and muscle that compose the stomach.

- At the **pyloric sphincter**, the **emptiness** process of food in stomach happens and the food enters the duodenum.
- The stomach is drawn into **mucosal folds** that are called **rugae** (روقي).
- There is almost always **2 longitudinal folds**, one is in anterior surface & one is in posterior surface >>> This is, by the way, called **Gastric Canal**.
- After fasting (الصيام), the first we eat or drink enters the gastric canal & that is why this area is a common site for the gastric ulcer (قرحة المعدة).
- When eating butter (الزبدة) or even drinking milk, for example, this cause a lining and souping the mucosa as it reduces the absorption & that's why we feel full quickly. (نشبع بسرعة).



# Peritoneum

- The **peritoneum** is the serous membrane that forms the lining of the abdominal cavity or coelom in amniotes and some invertebrates, such as annelids. It covers most of the intra-abdominal (or coelomic) organs, and is composed of a layer of mesothelium supported by a thin layer of connective tissue.
- Before the organs are formed, there is a serous sac called Peritoneum and the structures then get into it.
- The Peritoneum is **continuous in males** BUT it is **not continuous in females** because of the fallopian tube.
- Embryologically, when the structures (organs) start to grow from behind, some of them will be completely covered by Peritoneum (Intra peritoneal organ such as stomach and duodenum).
- Whereas some of the organs are located behind the peritoneum with only part of their surface covered in peritoneum (Retro-peritoneal organs such as kidneys and Aorta). (**retro = behind**)
- The **lesser omentum** is a double layer of peritoneum that extends from the liver to the lesser curvature of the stomach and the first part of the duodenum.
- The **greater omentum** is full of **lymphocytes** (the policeman of the abdomen) that any infection is surrounded by this omentum to prevent it from spreading out.
- The **arterial supply** for the stomach comes from **branches of celiac artery** and the **venous relation** is considered to be the **portal vein** as it must go to the liver for filtration.

## Lesser & Greater Omentum



(a)

- Lesser attaches stomach to liver
- Greater covers small intestines like an apron