

Republic of Iraq Ministry of Higher
Education and Scientific Research
Al-Zahraa University for Women
College of Pharmacy



Human Anatomy
second semester/ Lab.5
The Digestive system

By:

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What is the digestive system?

The digestive system is a continuous tube that begins at the mouth and ends at the anus.

Measuring about 30 feet long in the average adult, it is known as the **alimentary canal** or gastrointestinal tract

It has 3 functions:

- the digestion of food into nutrients,
- the absorption of nutrients into the bloodstream
- and the elimination of solid wastes.

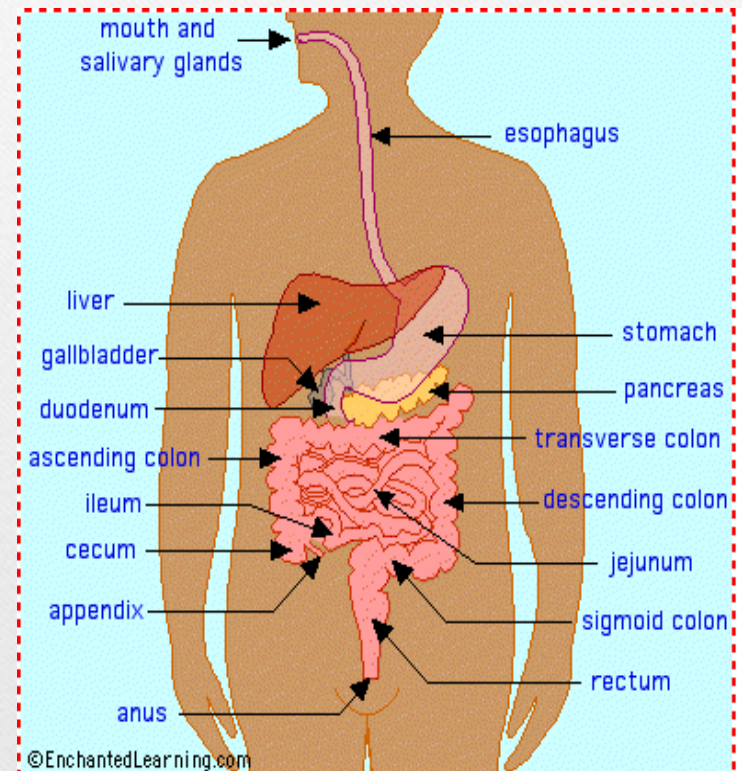
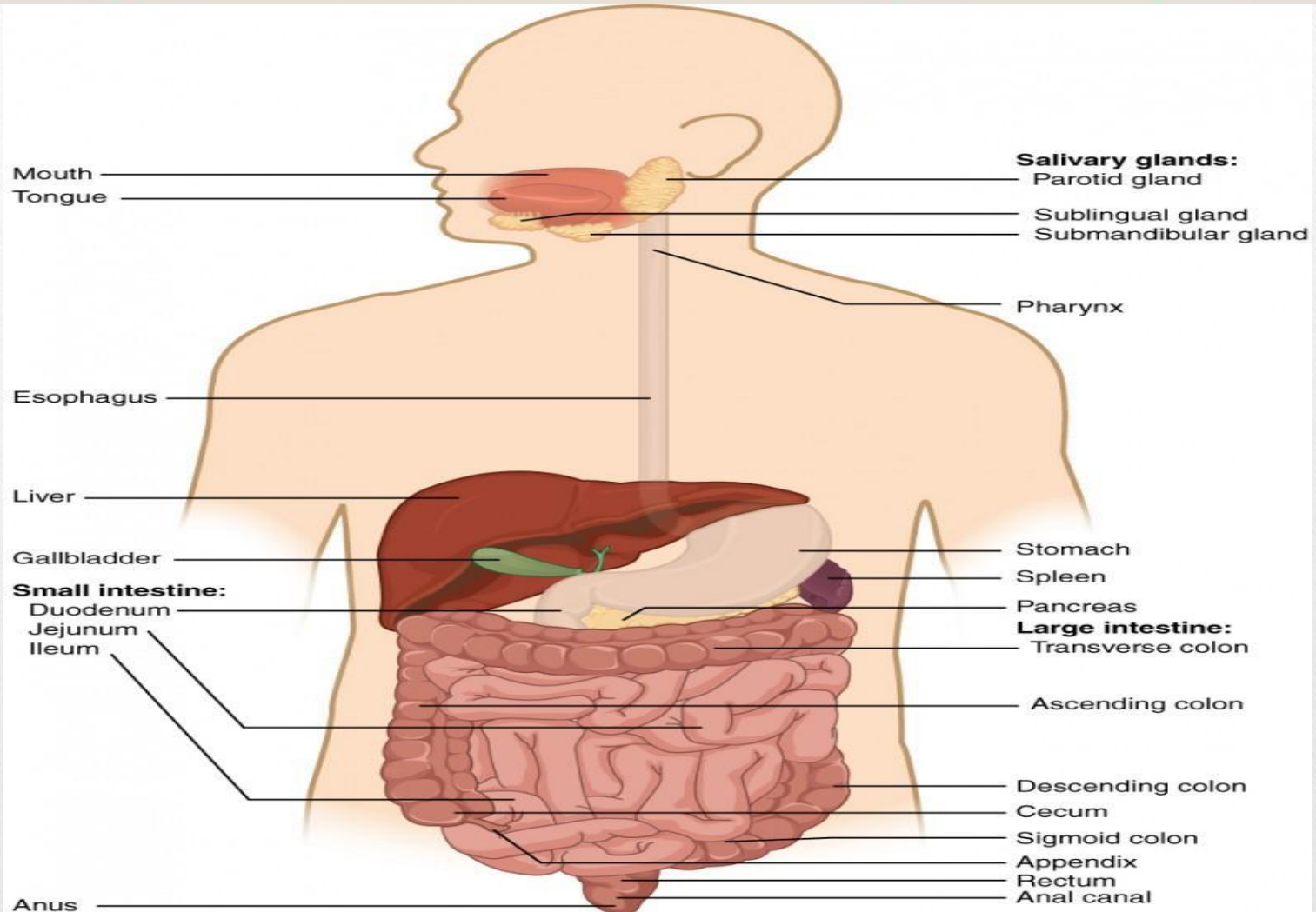


Fig: Anterior view of the Digestive System



DIVISIONS

The Digestive System consists of 2 parts: the **Alimentary Canal**, and their **Accessory Organs**.

The alimentary canal is also called the digestive tract OR gastrointestinal tract GIT (though GIT is technically stomach + intestines only).

The alimentary canal is the long tube that runs from the mouth through to the anus.

ALIMENTARY CANAL

The main parts of the Alimentary Canal are:

- Mouth (Oral cavity)
- Pharynx (Throat)
- Oesophagus (also esophagus)
- Stomach
- Small intestine
- Large intestine
- Rectum and anal canal (anus).

ACCESSORY ORGANS

The Accessory Organs include other organs (mainly glands) that aid digestion.

These include:

- Tongue, salivary glands and tonsils (for mouth)
- Tubular mucous glands (for pharynx, oesophagus, large intestine)
- Liver, Gallbladder, and Pancreas (for small intestine);
- Epiglottis: which tips posteriorly at the pharynx to prevent food from entering the larynx/respiratory tract.
- Mesentery: (newly discovered organ that helps hold the intestines to the posterior abdominal cavity).

Digestion starts in the mouth, where food is chewed and mixed with saliva to form a **bolus**. The bolus produced is then swallowed down the pharynx and oesophagus via **peristaltic contractions** and into the stomach.

In the stomach, it is mixed with gastric juice to form a semifluid substance called **chyme**, then moved to the duodenum (small intestine).

Most of the digestion takes place in the stomach and duodenum of the small intestine.

Water and some minerals are reabsorbed in the colon of the large intestine. The chyme is turned to **faeces**. The faeces is defecated from the anus via the rectum.

LOCATION OF ORGANS

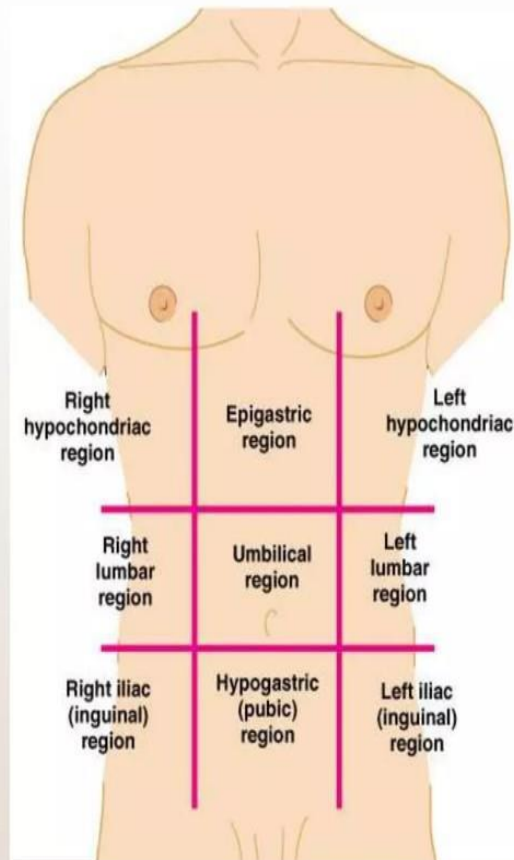
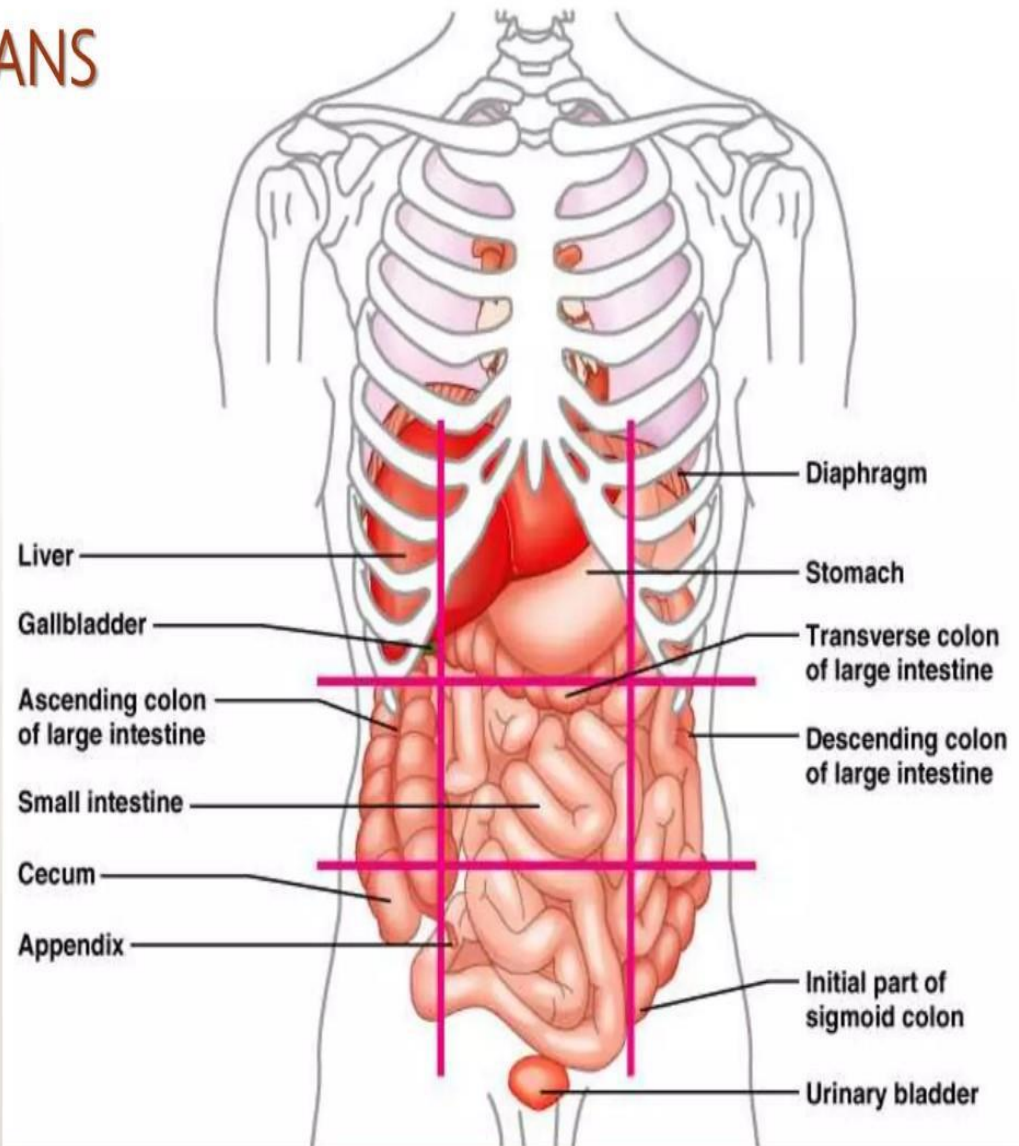


Fig: Abdominopelvic Regions



The mouth or oral cavity is bounded by muscles and bones:

Anteriorly- by the lips

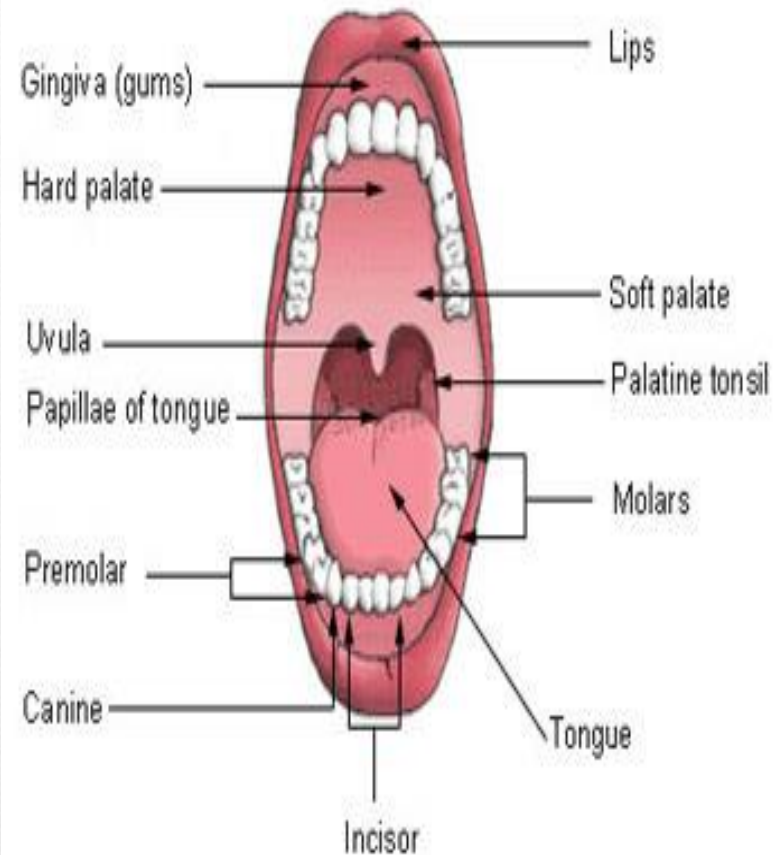
Posteriorly- it is continuous with the oropharynx (part of pharynx)

Laterally- by the muscles of the cheeks

Superiorly- by the bony hard palate and muscular soft palate

Inferiorly- by the muscular tongue and the soft tissues of the floor of the mouth.

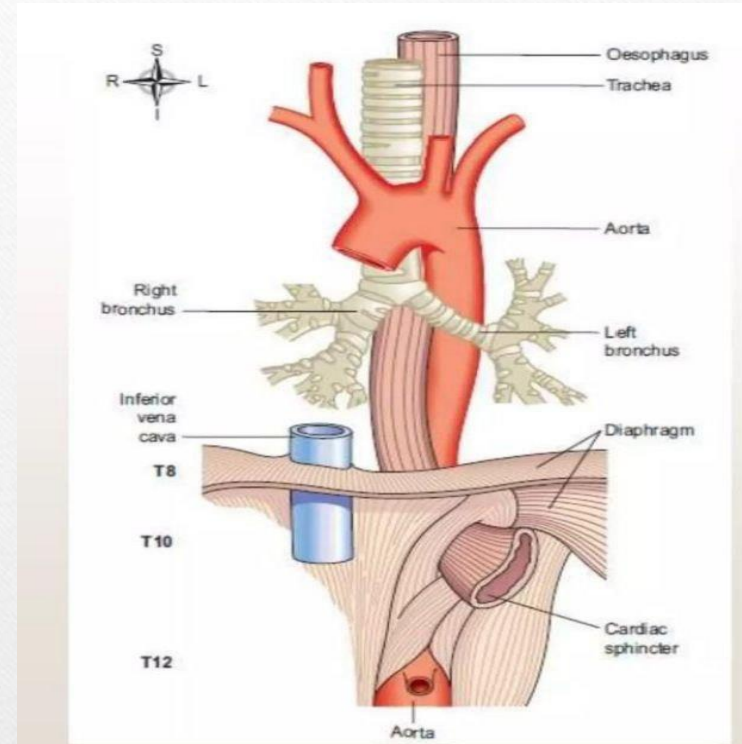
Mouth (Oral Cavity)



OESOPHAGUS

Also called **gullet** or **esophagus**, it is an organ through which food passes from the pharynx to the stomach, aided by **peristaltic Contractions**, of its musculature.

It is about 25 cm long and 2 cm in diameter, and **lies in the median plane (media sternum) in the thorax, anterior to the spinal column, but posterior to the trachea.**

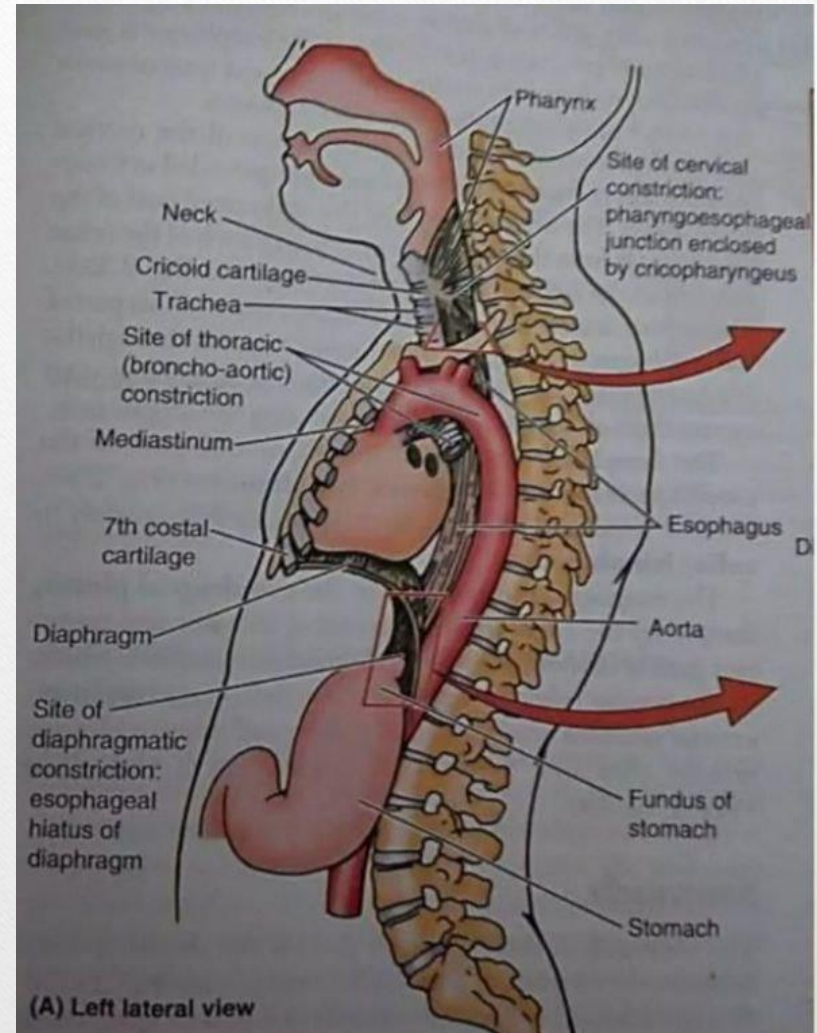


CONSTRICTIONS OF THE OESOPHAGUS

The oesophagus follows the curvature of the vertebral column.

It also has 3 constrictions (narrowing), where adjacent structures produce impressions:

1. Cervical Constriction (Upper Oesophageal Sphincter) - where Pharynx meets Oesophagus.
2. Thoracic (Broncho-Aortic) Constriction where it is first crossed by arch of aorta.
3. Diaphragmatic Constriction: where it passes through the oesophageal hiatus of the diaphragm at T10, before entering the stomach.



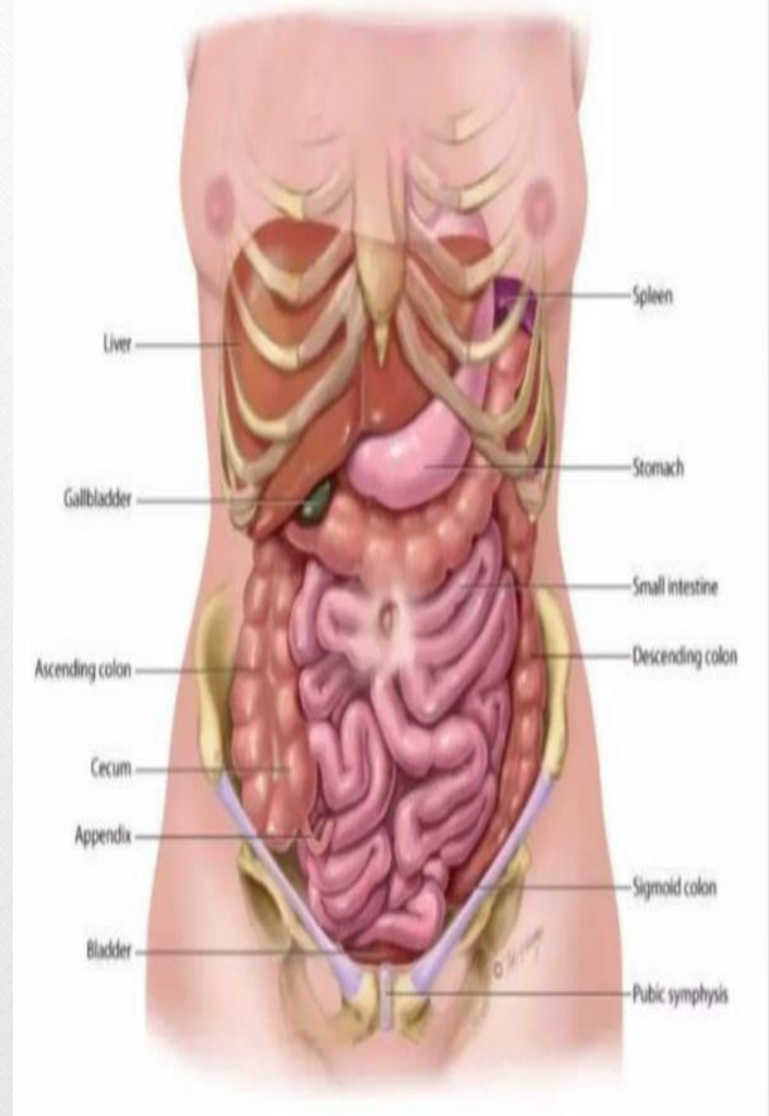
STOMACH

LOCATION OF THE STOMACH

It is the enlarged hollow part of the digestive tract specialized in the accumulation of **ingested food**, and also acts as **food blender**.

It is **located** between the oesophagus and the small intestine.

It is located in the epigastric, umbilical & left hypochondriac regions of the abdominal cavity



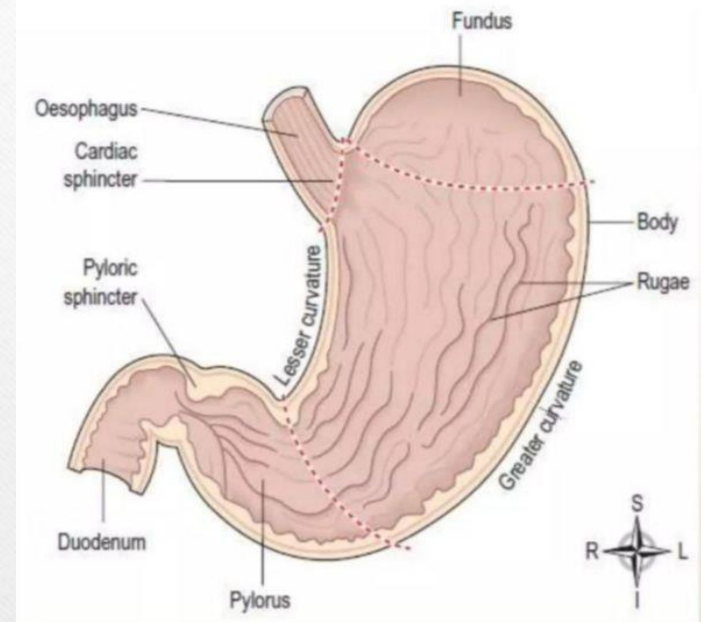
PARTS OF THE STOMACH

The stomach has four (4) parts:

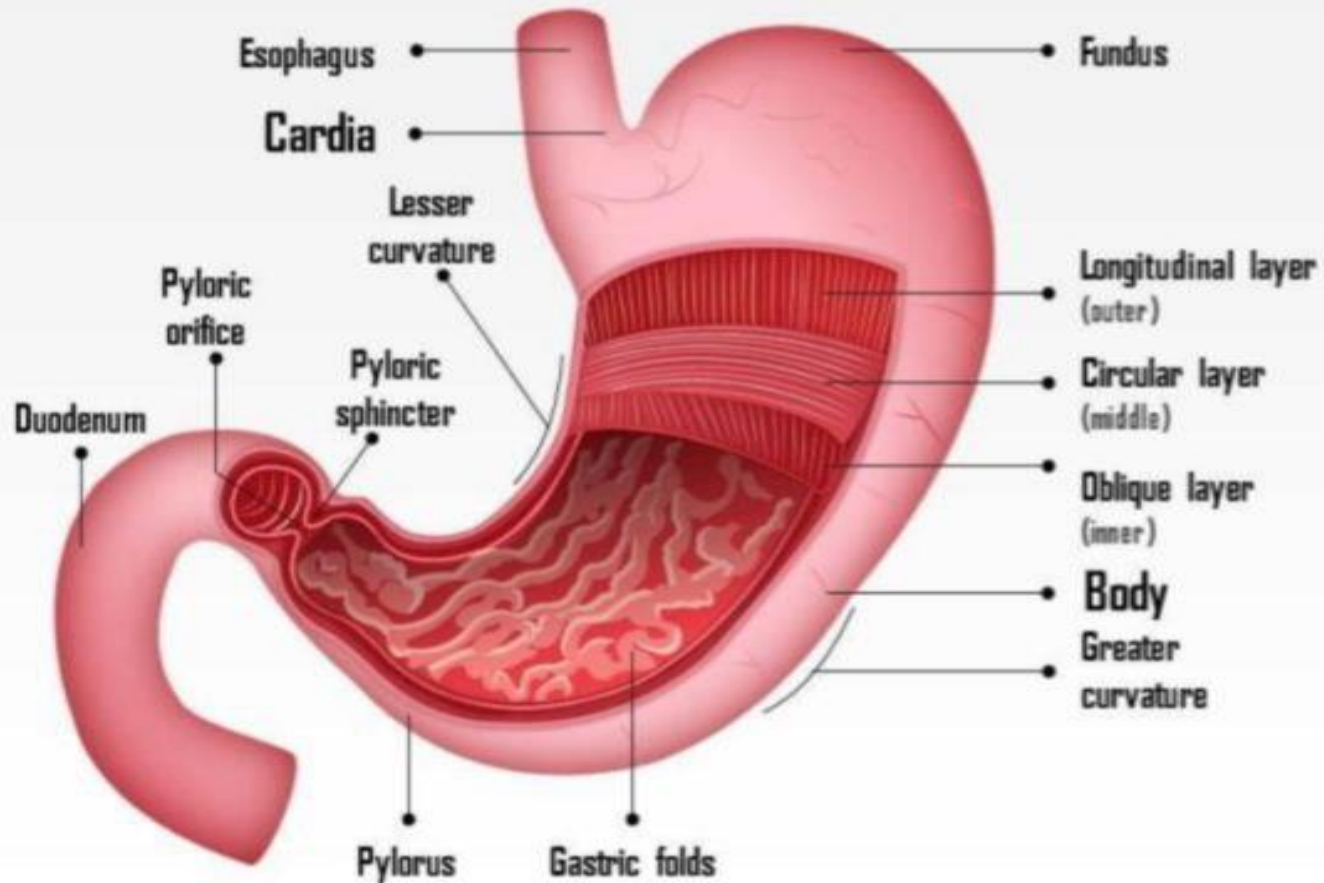
- Cardiac
- Fundus
- Body
- Pylorus

The stomach is continuous with the oesophagus at the Cardiac Sphincter, and with the Duodenum at the Pyloric Sphincter.

The Pyloric Sphincter guards the opening between the stomach and the duodenum. When the stomach is inactive, the pyloric sphincter is relaxed and open, and when the stomach contains food, the sphincter is closed.



Anatomy of Stomach

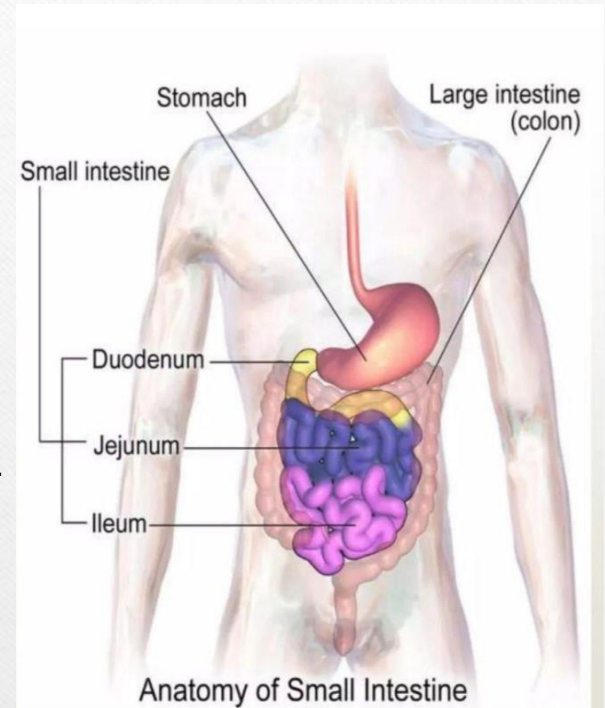


SMALL INTESTINE

The small intestine is the part of the GIT between the stomach and large intestine.

The small intestine is continuous with the stomach at the **Pyloric Sphincter** and leads into the large intestine at the **ileocaecal valve**.

It is about 2.75- 10.49 m long. For an average person, it is 3-5m. It lies in the abdominal cavity Surrounded by the large intestine.



LARGE INTESTINE

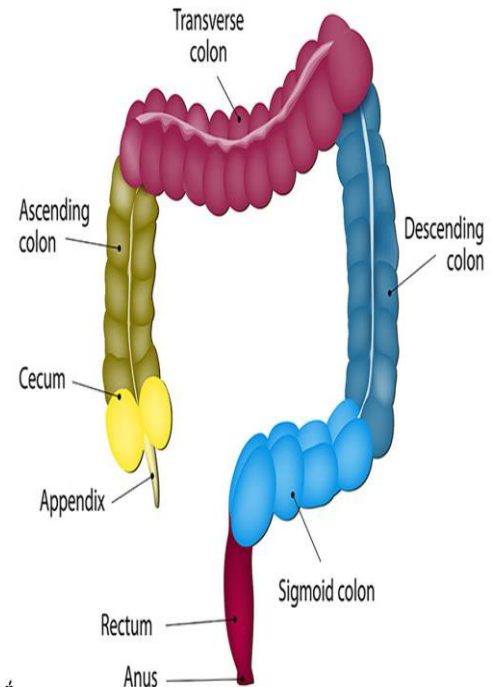
The Large Intestine meets the Small Intestine at the **ileocaecal valve**, then continues to the anal canal.

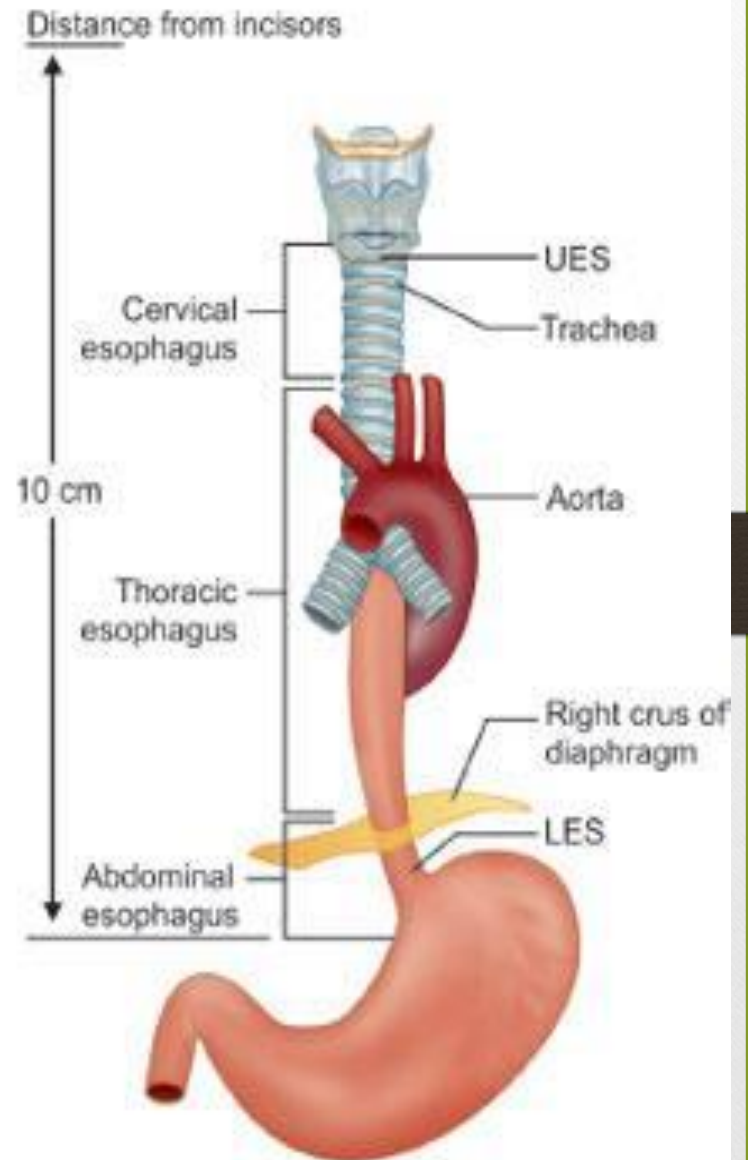
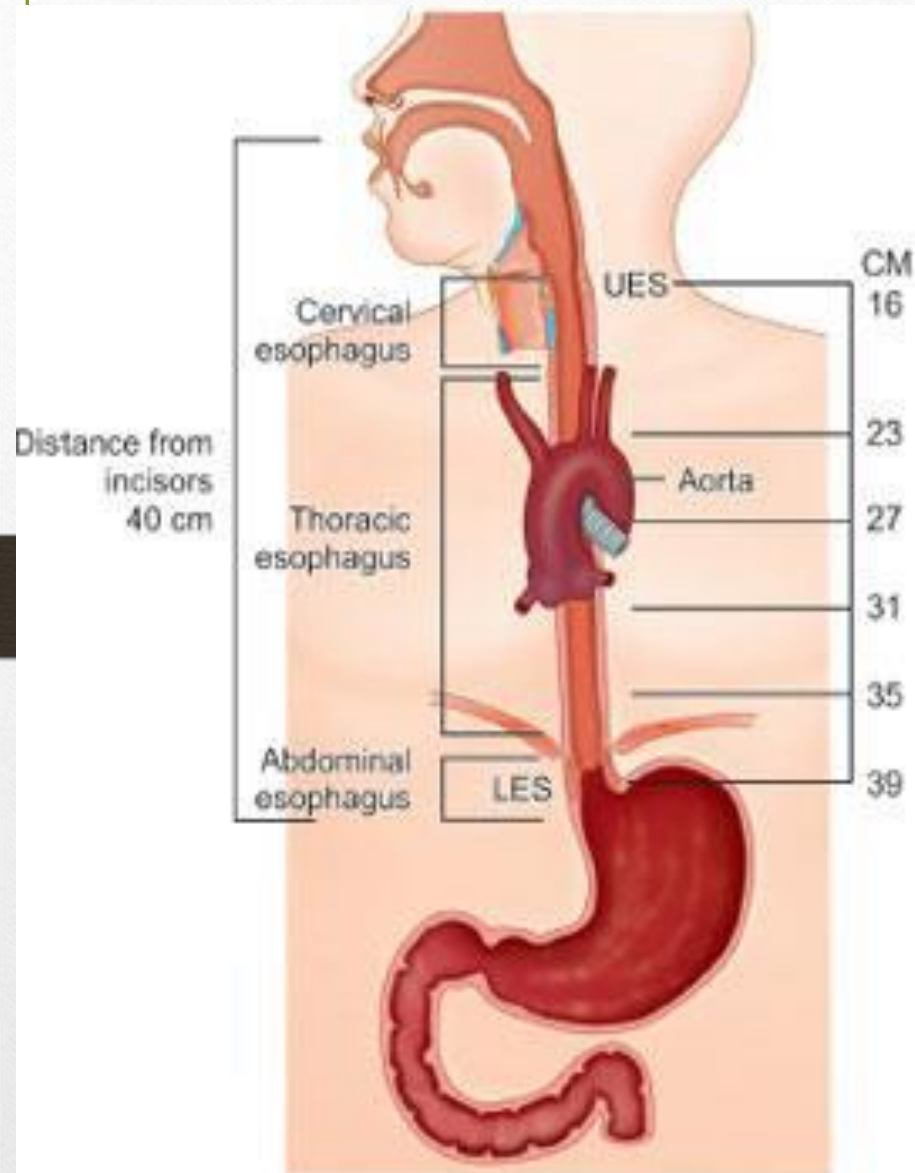
It is about 1.5cm long and 6.5cm wide (Small Intestine: 2.5cm).

It consists of the

- Cecum (proximal end),
- Appendix,
- Colon (ascending, descending, sigmoid, transverse),
- Rectum,
- Anal canal (distal end)

Large Intestine



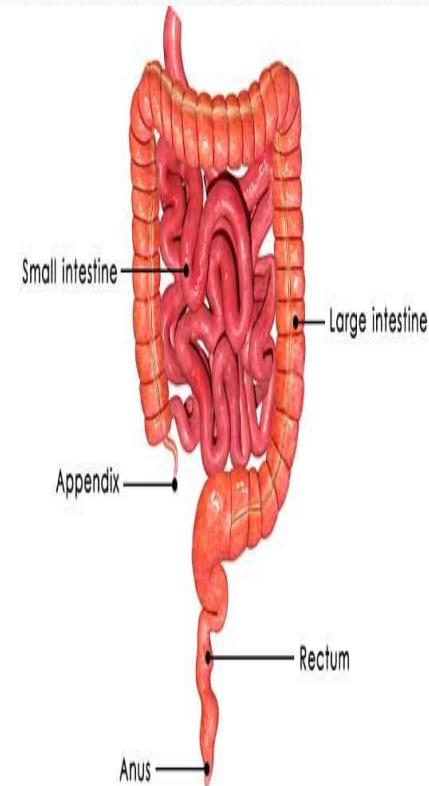


Rectum

- Location: The rectum is approximately 12 cm (4.7 inches) long and is situated between the sigmoid colon (the last part of the large intestine) and the anal canal. It is located in the pelvic cavity and extends downwards to connect to the anus

Anus:

- Location: The anus is the opening at the end of the digestive tract where waste is expelled from the body. It is located at the posterior end of the body, surrounded by the anal sphincters (muscles that control the expulsion of feces).





THANK YOU

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