



Digestive system
Gastro-intestinal Tract

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General structure of the digestive system

Composed of two separate categories of organs:

- digestive organs
- accessory digestive organs.

Digestive organs collectively make up the:

- gastrointestinal (GI) tract.
- Also called:
 - ✓ the digestive tract
 - ✓ alimentary canal

General structure of the digestive system

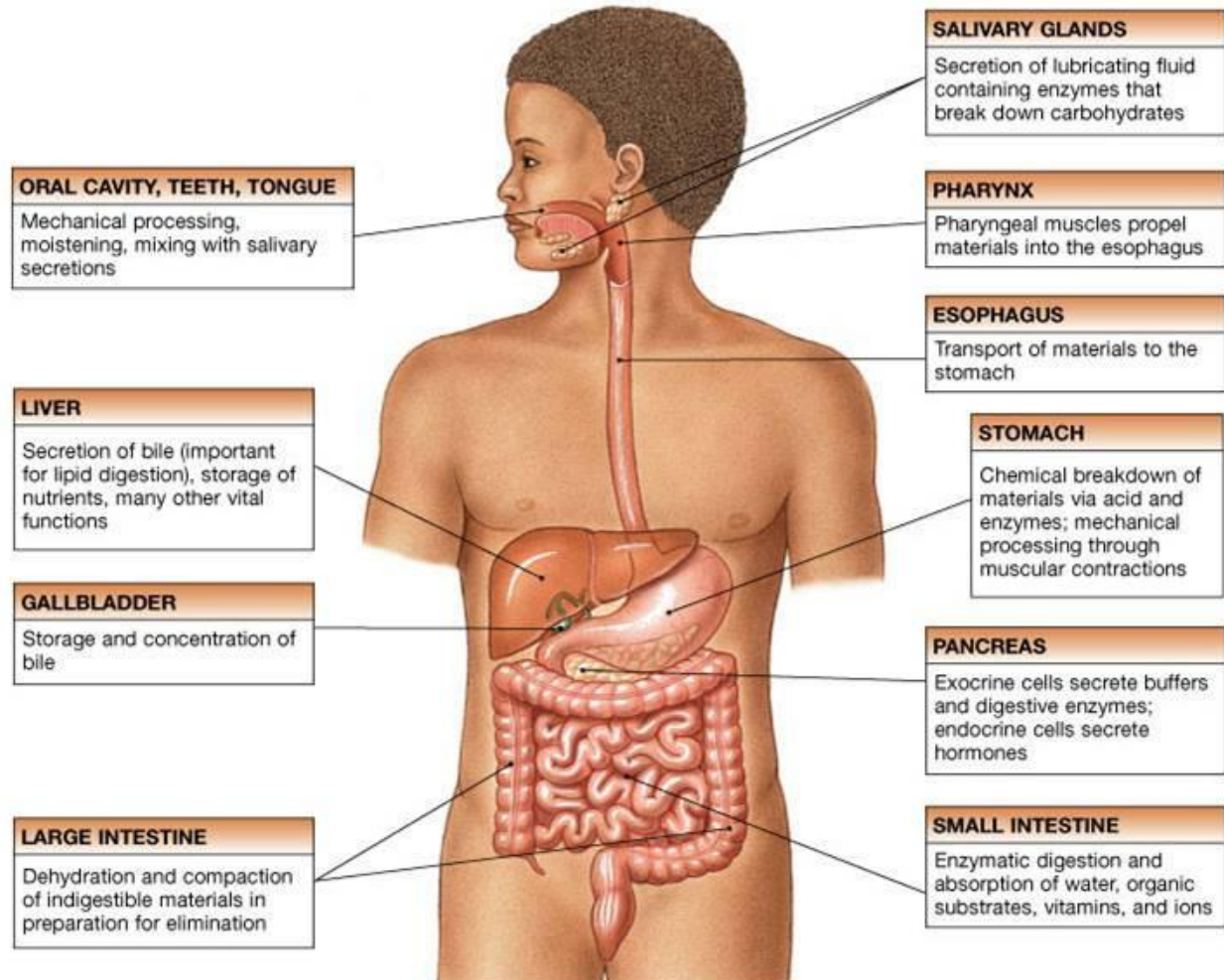
- **The GIT organs:**

- oral cavity
- Pharynx
- esophagus
- stomach
- small intestine
- large intestine
- continuous tube

about 30 feet (9-10 meters) from mouth to anus.

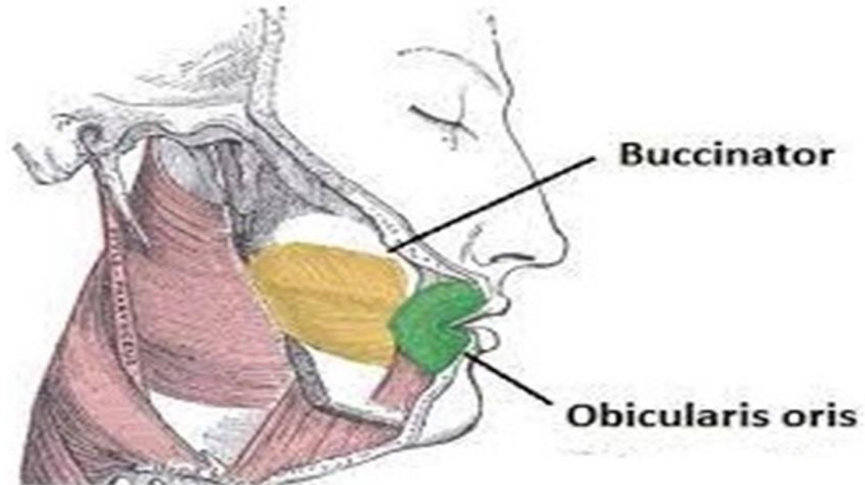
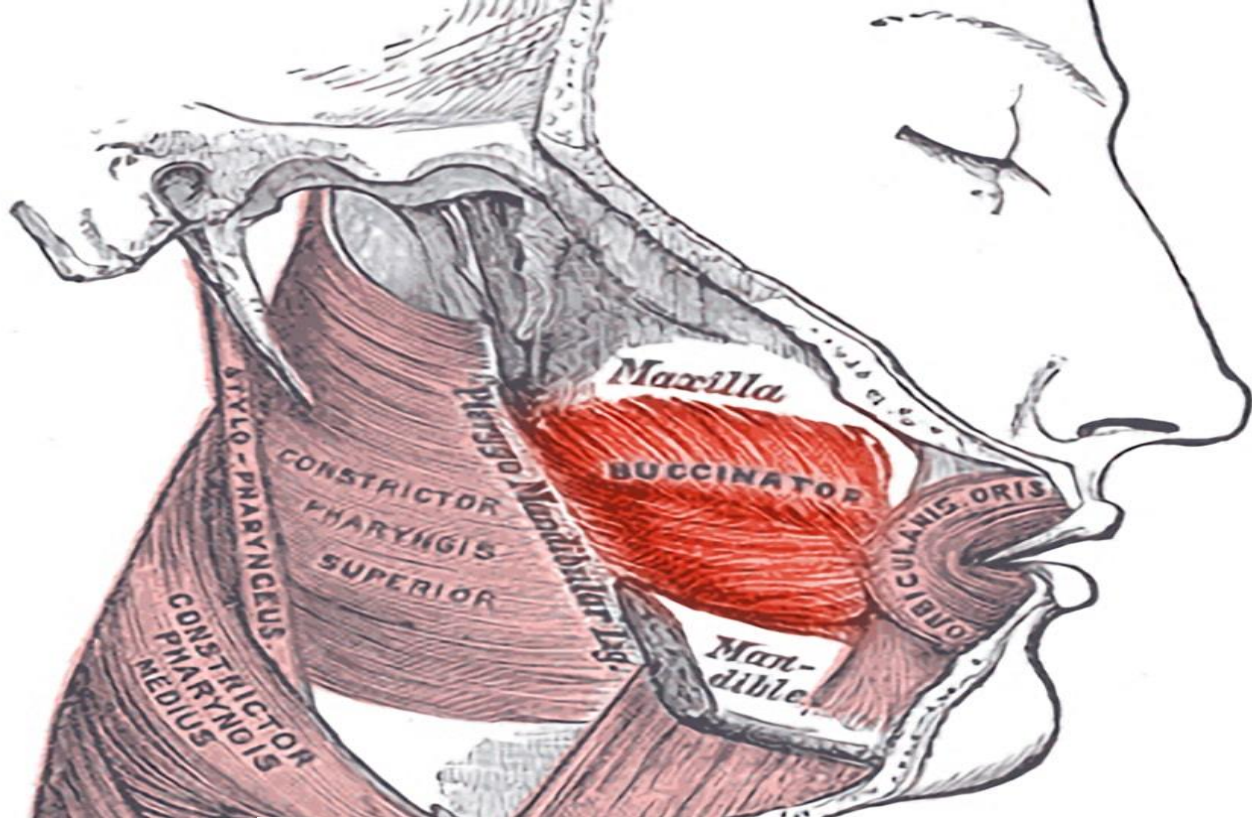
- smooth muscle in the wall responsible for motility pushes materials from one end to the other.

Functions of the GIT organs



The Mouth & Oral Cavity

- The mouth is the opening of the oral cavity. It is made by the upper & lower lips, that contain a circular skeletal muscle (orbicularis oris) which opens & closes the mouth.
- The oral cavity is the space behind the mouth. It is bounded by the cheeks laterally
- The cheeks contain the right & left buccinator muscles,
- Gingivae or gums
- Lips

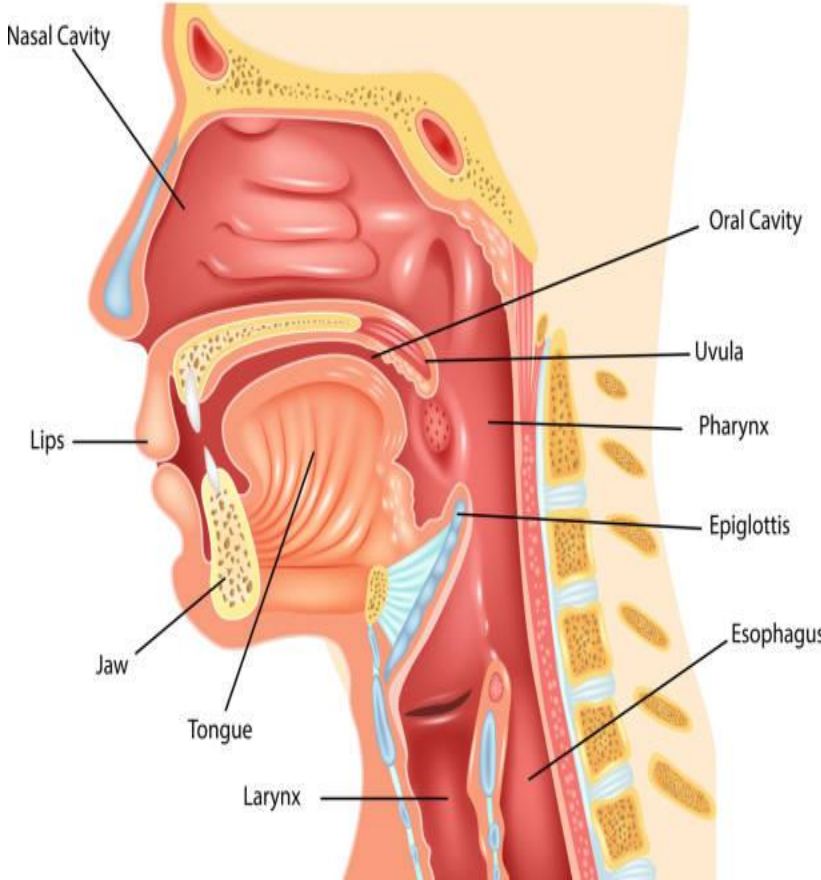
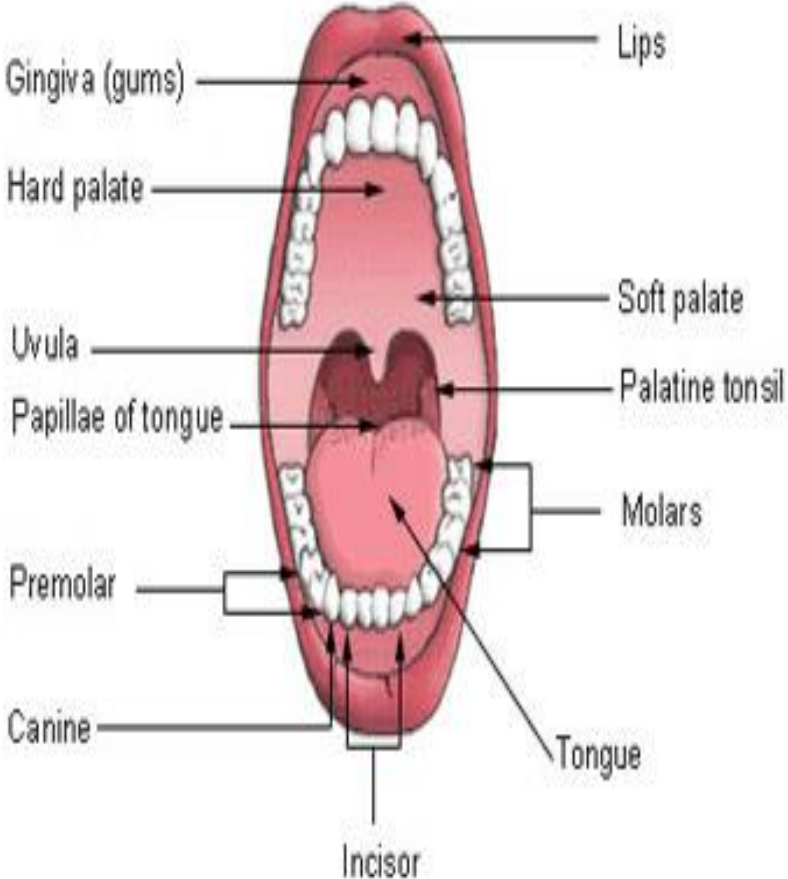


Oral cavity (mouth)

- Entrance to the GI tract.
- Initial site of digestion:
 - Mechanical digestion: (by mastication)segmentation
 - Chemical digestion: (by digestive enzymes)
- Bounded anteriorly by the teeth and lips.
- Bounded posteriorly by the oropharynx.
- Superior Boundary is formed by the hard and soft palates.
- Floor or inferior surface of the oral cavity
 - the tongue
 - the mylohyoid muscle covered with mucosa

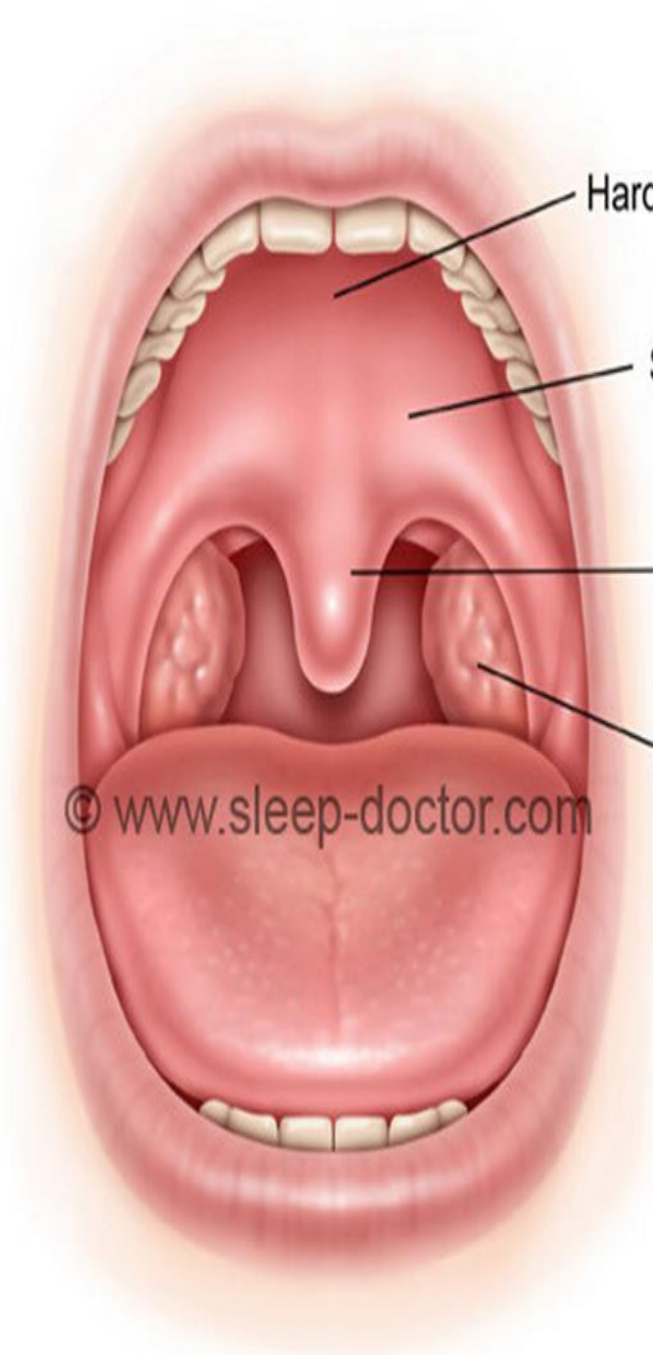
HUMAN DIGESTIVE SYSTEM

Mouth (Oral Cavity)



Palate

- The **hard palate** forms the anterior aspect of the palate.(two thirds) hard bony
- The **Soft palate** posterior one third soft and muscular primarily composed of skeletal muscle
- extending inferiorly from the posterior part of the soft palate is the uvula
- When swallowing the soft palate and the uvula elevate to close off the opening of the nasopharynx



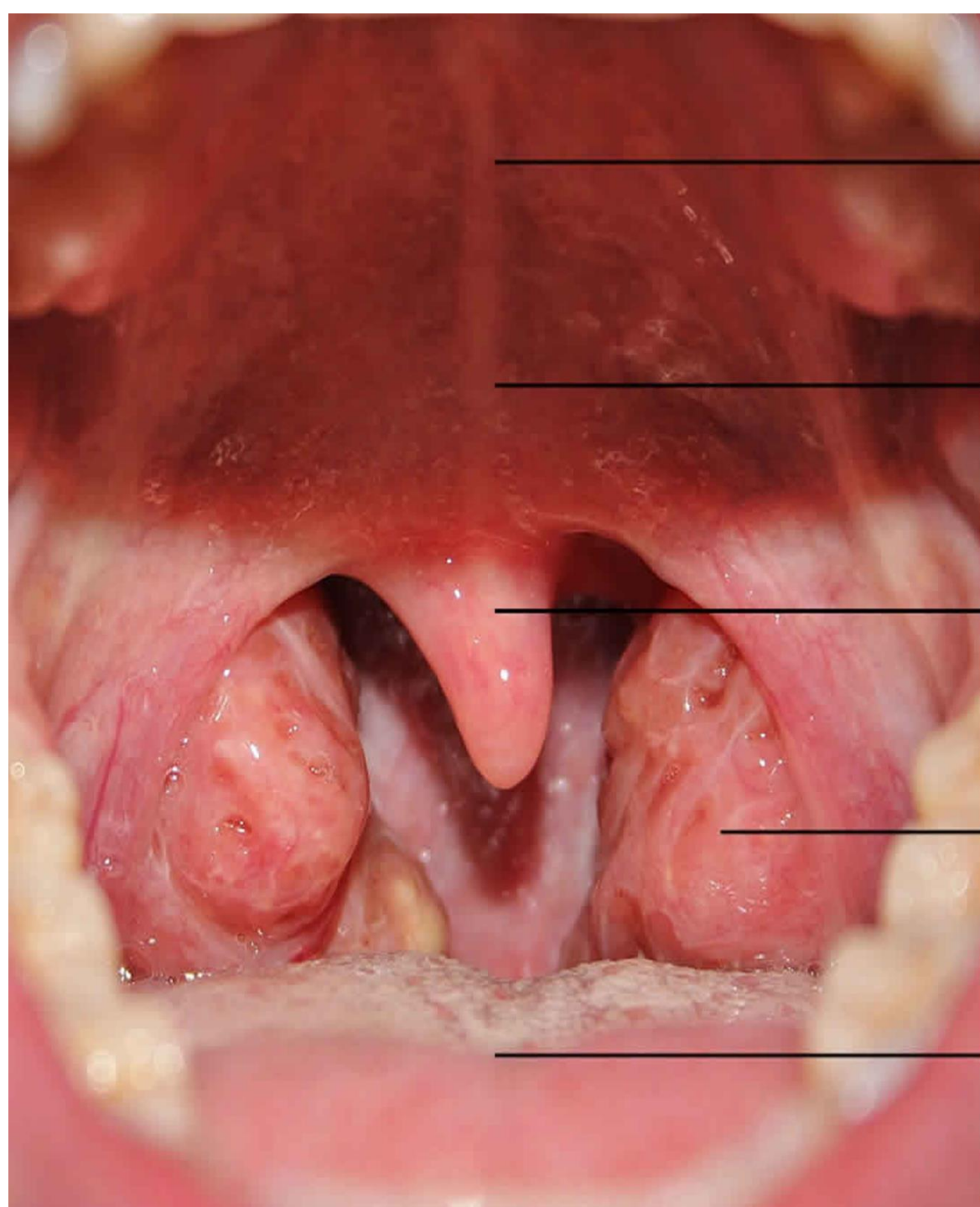
Hard Palate (Bone)

Soft Palate

Uvula

Tonsil

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Hard palate

Soft palate

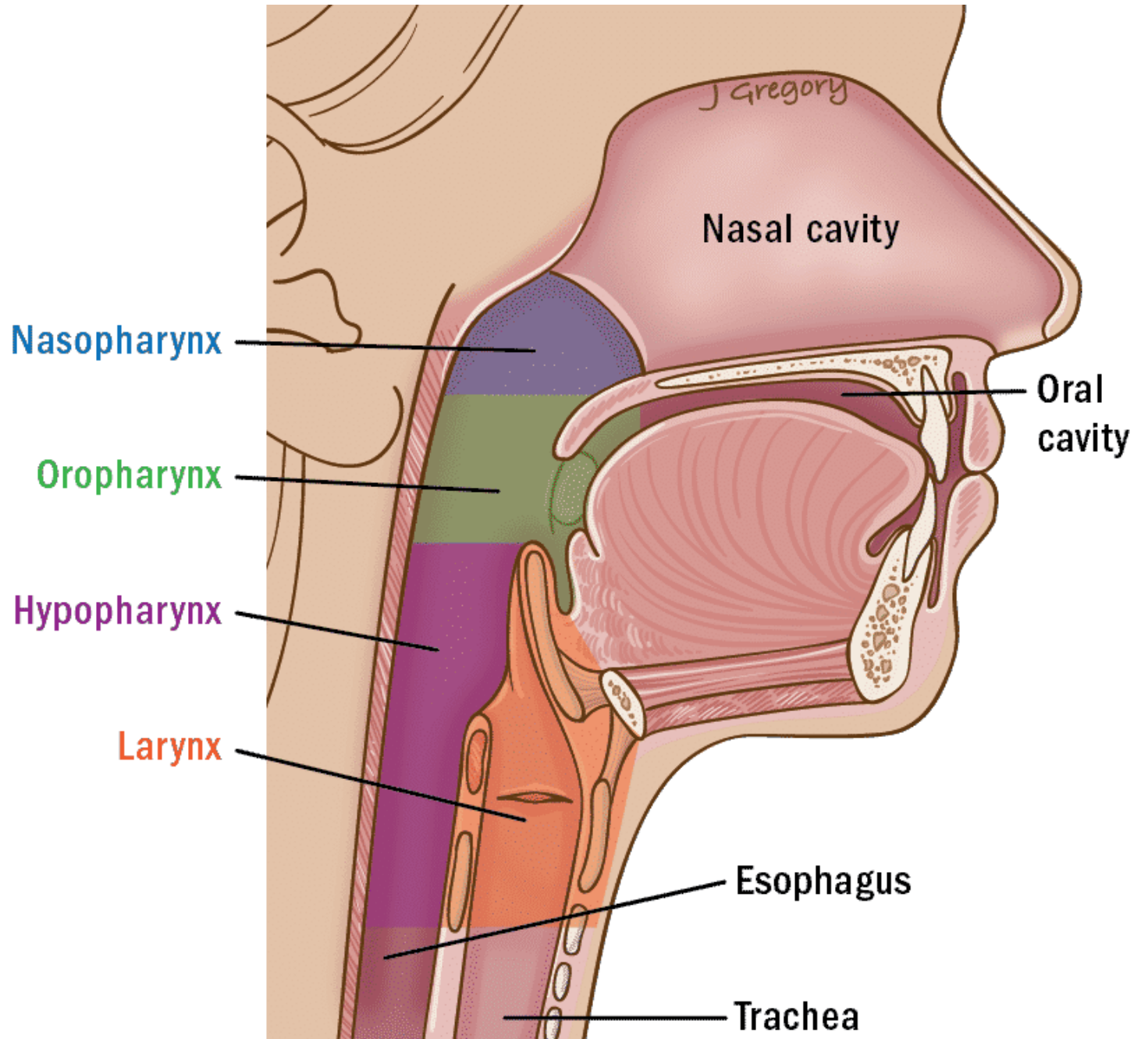
Uvula

Tonsil

Tongue

The Pharynx

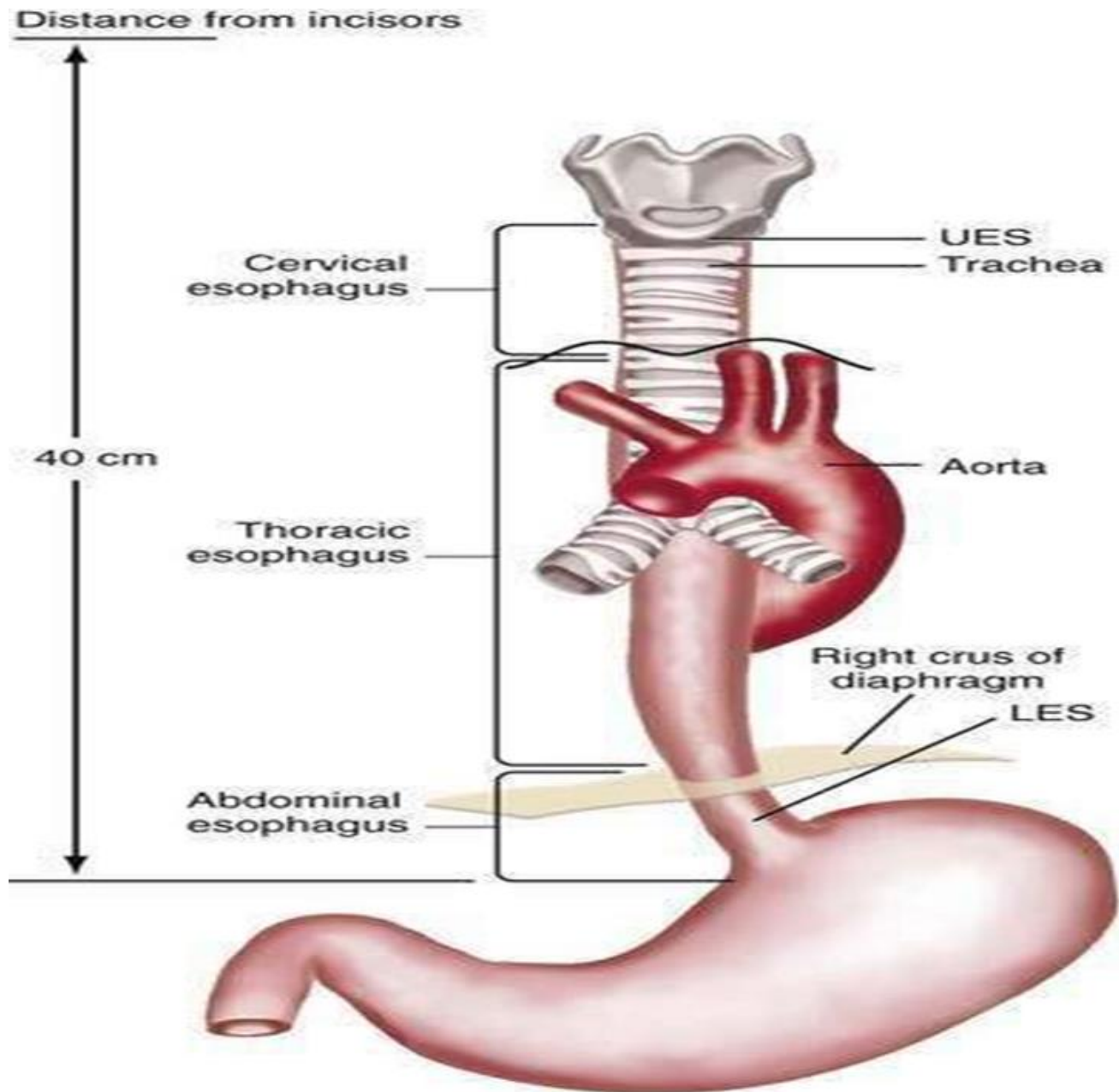
- The pharynx is a common passage for food & air, extending from the nasal cavity to the esophagus, it is divided into 3 parts:
 1. The nasopharynx: the upper part, continuous anteriorly with the nasal cavity
 2. The oropharynx: in the middle, continuous anteriorly with the oral cavity
 3. The laryngopharynx: the lower part, continuous anteriorly with the larynx



The Esophagus

- The esophagus is a muscular tube connecting the throat (pharynx) with the stomach

the esophagus run vertically posterior to the trachea, & anterior to the aorta, to perforate the diaphragm & enter the abdomen. In the abdomen, the esophagus runs shortly (3-4 cm) to open into the stomach, forming an acute angle with it.



Stomach

The **stomach**, is an intra peritoneal digestive • organ located between the esophagus and the duodenum.

It has a 'J' shape, and features a lesser and greater curvature. The anterior and posterior surfaces are smoothly rounded with a The stomach has four main anatomical divisions; the cardia , fundus, body and pylorus:

Cardia – surrounds the superior opening of the stomach .

Fundus – the rounded, often gas filled portion superior to and left of the cardia.

Body – the large central portion inferior to the fundus.

Pylorus – This area connects the stomach to the duodenum peritoneal covering.

The stomach has two curvatures:

Greater curvature – forms the long, convex, lateral border of the stomach.

Lesser curvature – forms the shorter, concave, medial surface of the stomach

Sphincters of the Stomach

There are two sphincters of the stomach, located at each orifice. They control the passage of material entering and exiting the stomach.

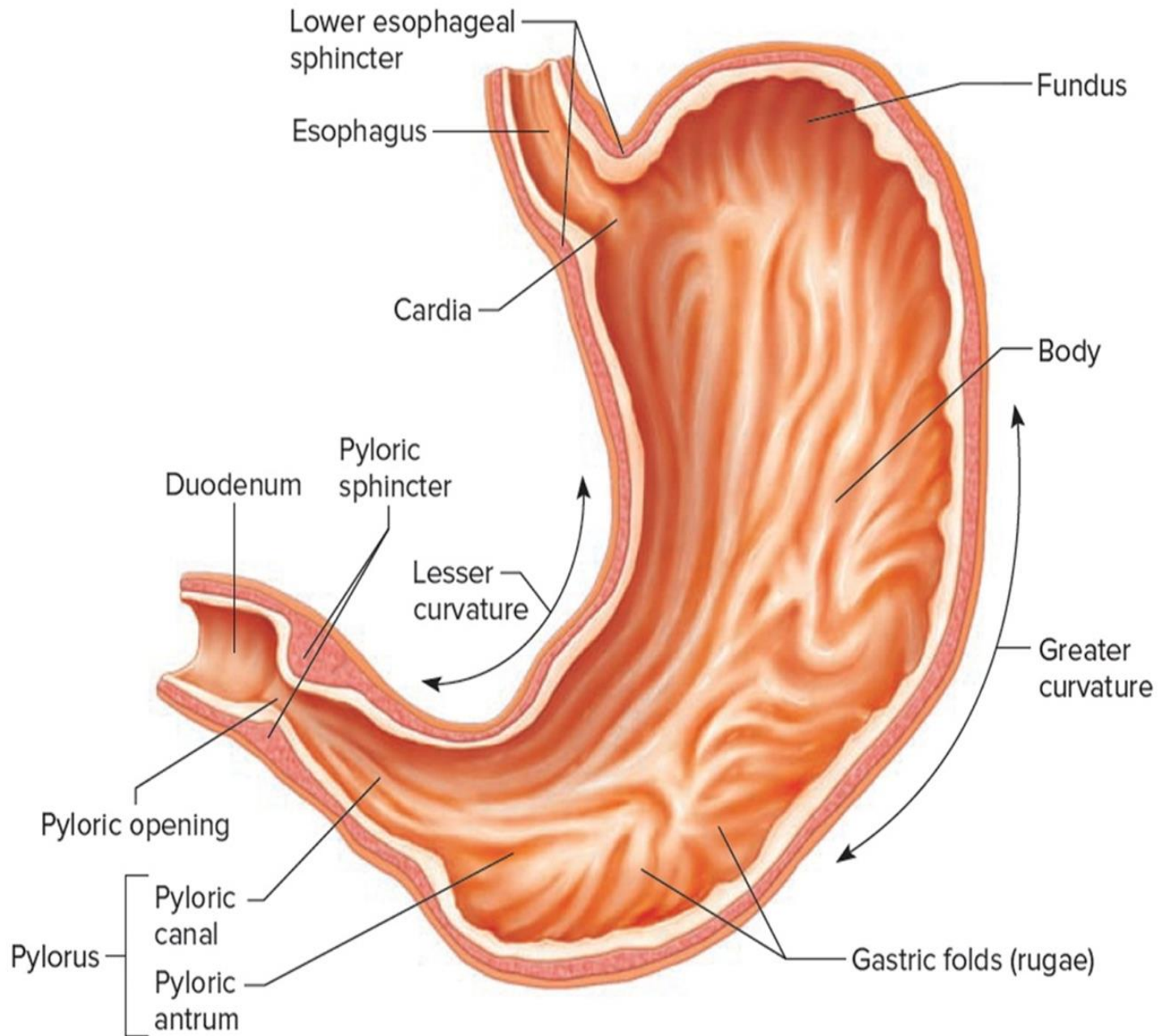
1-Inferior Esophageal Sphincter

The esophagus passes through the diaphragm through the esophageal hiatus . It descends a short distance to the **inferior esophageal sphincter** which marks the transition point between the esophagus and stomach . It allows food to pass through the cardiac orifice and into the stomach and is not under voluntary control.

2- Pyloric Sphincter

The pyloric sphincter lies between the **pylorus** and the first part of the **duodenum**. It controls the exit of **chyme** (food and gastric acid mixture) from the stomach.

Emptying of the stomach occurs intermittently. Gastric peristalsis pushes the chyme through the pyloric canal into the duodenum for further digestion.



Small Intestine

- Finishes chemical digestion
- thin walled tube (about 6 meters 20 feet in length+ coiled)
- Extends from the pylorus of the stomach to the cecum of the large intestine (occupies a significant portion of the abdominal cavity).

❖ The duodenum

- first segment of the small intestine
- approximately 25 centimeters (10 inches) long
- originates the pyloric sphincter

❖ The jejunum

- middle region of the small intestine
- approximately 2.5 meters (7.5 feet)
- primary region for chemical digestion and nutrient absorption

❖ The ileum

- is the last region of the small intestine
- about 3.6 meters (10.8 feet) in length
- terminates at the ileocecal valve

Small
intestine

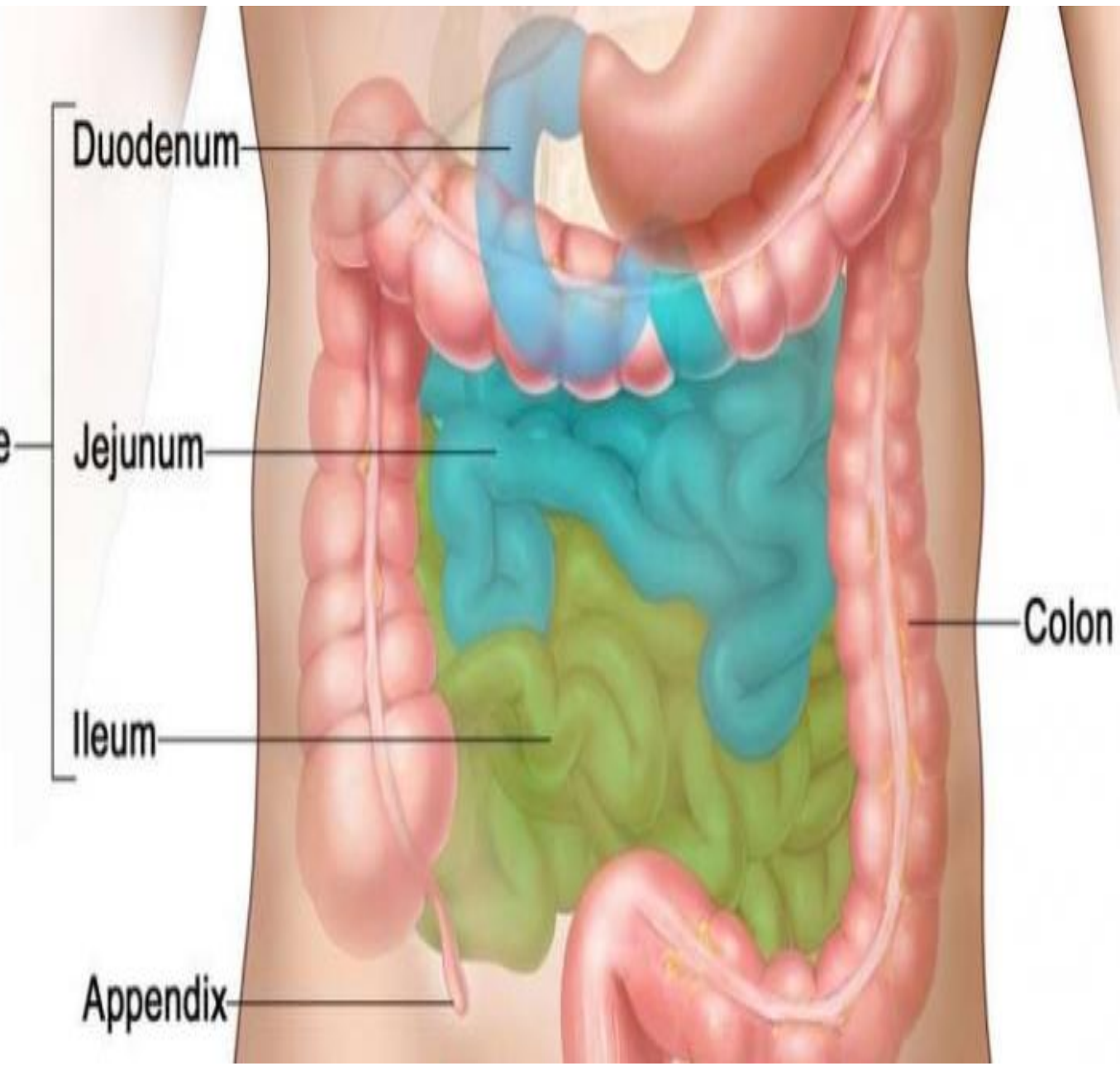
Duodenum

Jejunum

Ileum

Appendix

Colon



Large Intestine

- approximately length of 1.5 meters
- Absorbs most of the water and electrolytes from the remaining digested material
- Stores fecal material until the body is ready to defecate
- **Composed of four segments: the cecum,**
- **Colon** ascending colon (on the right), transverse colon (horizontally below the stomach & above the jejunum), descending colon (on the left), & sigmoid colon (left inferior region). The sigmoid colon enters the pelvic cavity & becomes the rectum
- **, rectum, anal canal and anus.(appendix which is a rudimentary structure sits at the ileocecal junction which is the junction between the small and large intestine).**

