

Figure (1):show the parts of Gastro-Intestinal tract.

Digestion is the breakdown of large insoluble food molecules into small water-soluble food molecules so that they can be absorbed into the watery blood plasma.

The digestive system may be divided into groups of organs:-

1-The digestive tract, It is composed of several parts;the **mouth, pharynx, esophagus, stomach, small intestine, large intestine.**

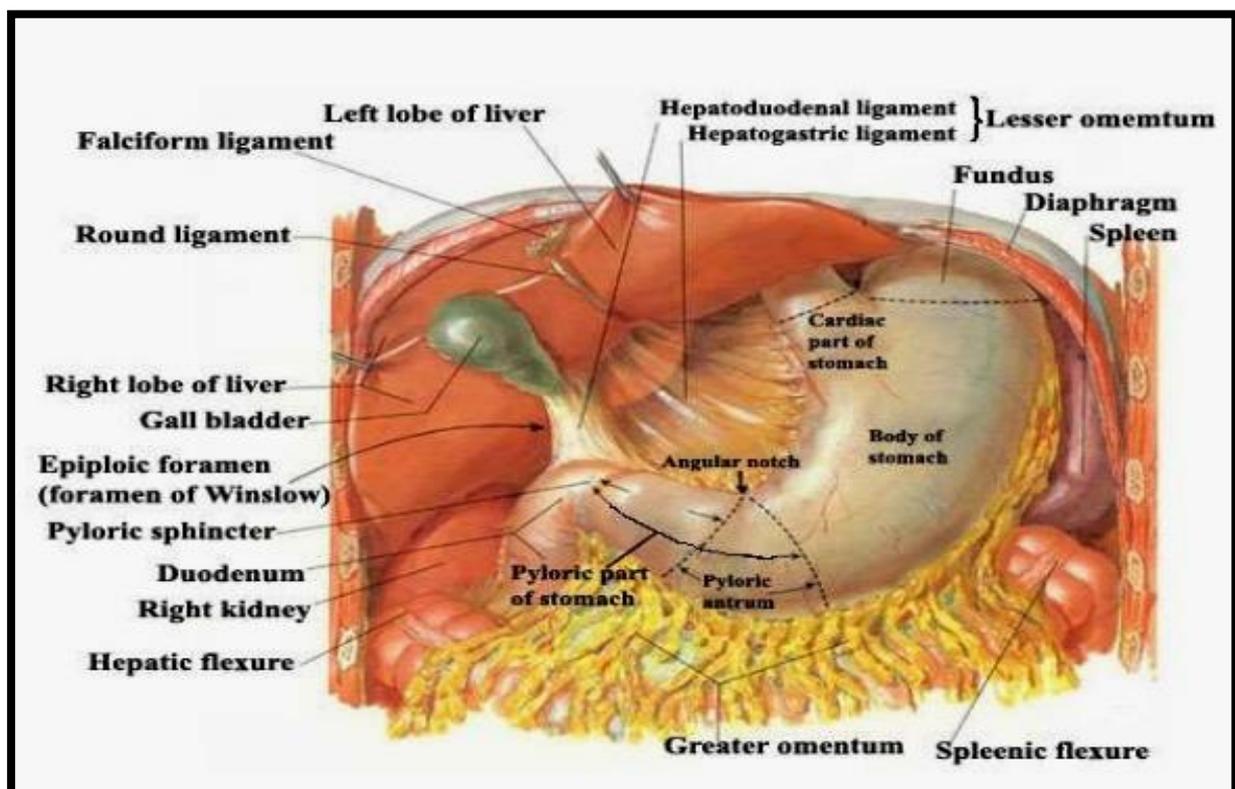
2-The accessory organs(**salivary gland, liver gland, pancreas gland**) which are necessary for the digestive process.

## The peritoneum

The abdominal cavity is lined with a thin ,shiny serous membrane that also folds over the abdominal viscera. The layer of this membrane that lined the abdominal is called the parietal peritoneum; the portion that folds over the organs called the visceral peritoneum.

The sections of the peritoneum around the individual organs are given special names the **mesentery** around the small intestine which has double layers containing the blood vessels ,nerve and other. The section of the mesentery around the large intestine is called **mesocolon**.

The part that extends from the lower border of the stomach into the pelvic part of the abdomen and then loops back up to the transverse colon is named **greater omentum**. The small membrane is named **lesser omentum** that extends between stomach and liver.



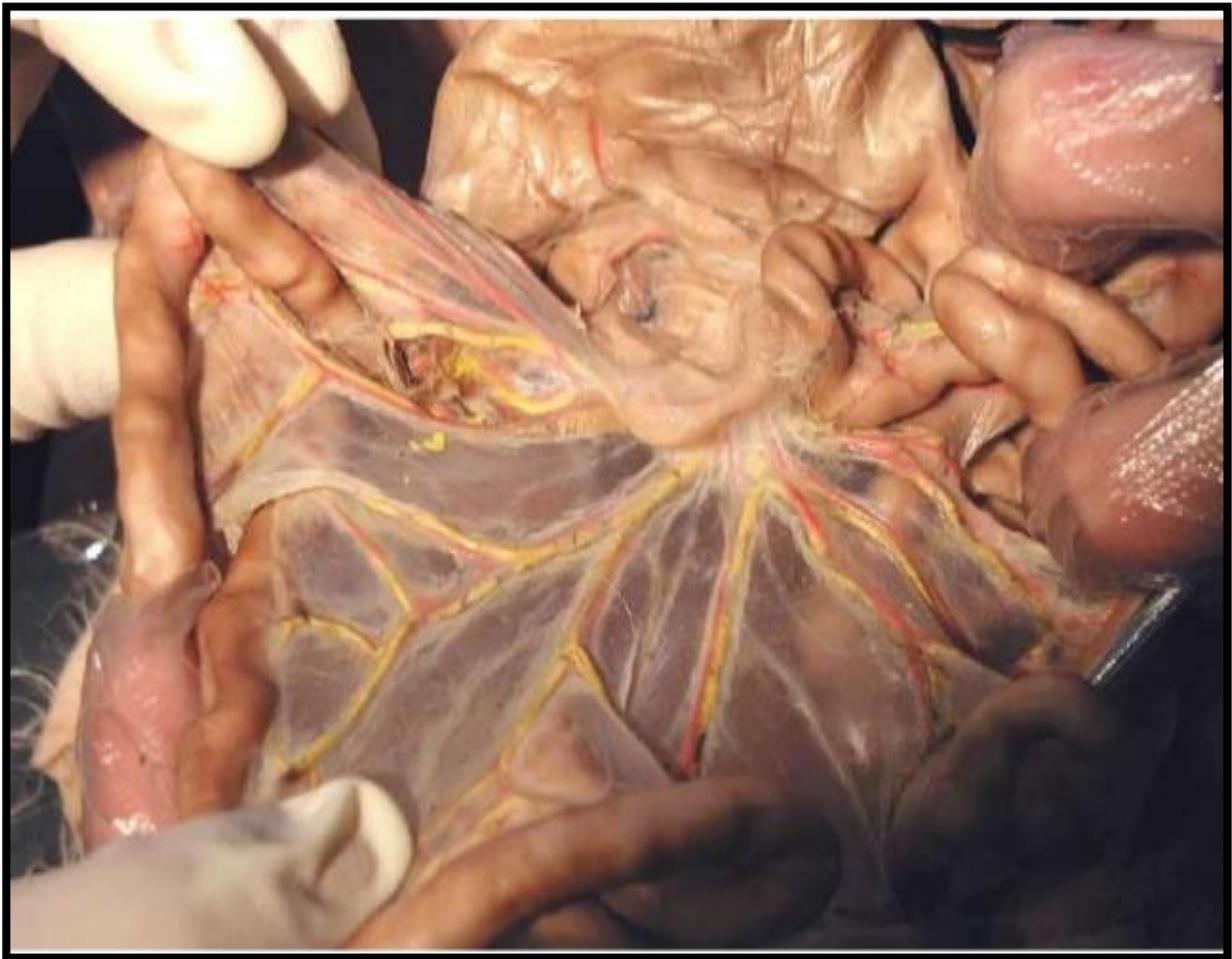
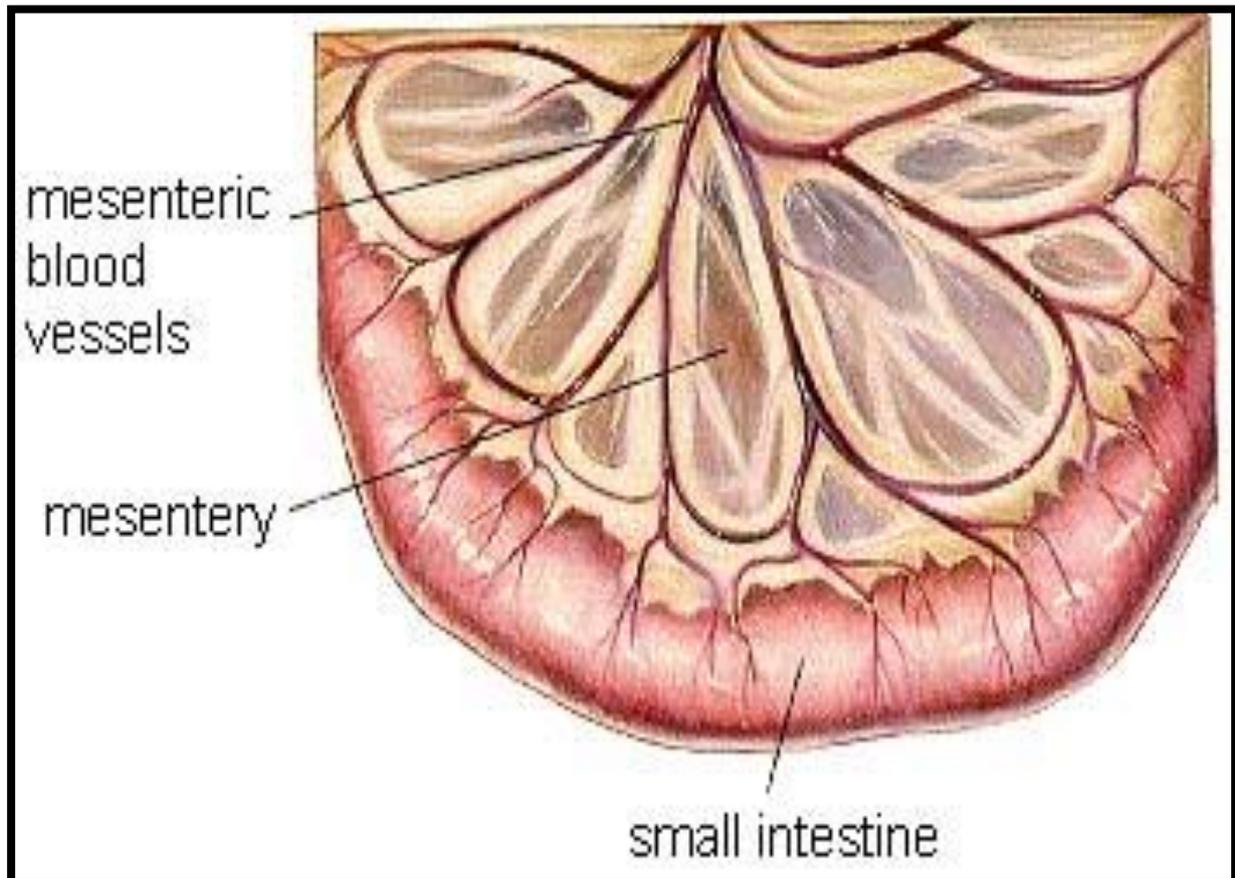


Figure (2):show the peritoneum

## The mouth

The mouth, also called the oral cavity, is where a substance begins its travels through the digestive tract. The oral cavity consists of several components, including the teeth, gingiva (gums), tongue, palate (hard and soft), cheeks, lips, and floor of the mouth.

► **teeth.** A child between 2 and 6 years of age has 20 teeth (incisors, canines, molars); an adult with a complete set has 32 (incisors, canines, premolars, molars)

► **The gingiva:** is the soft tissue in the mouth, that surrounds the teeth and covers the jaw bone.

► **The tongue:** is a muscular organ in the mouth. It is attached to the bottom of the mouth by a membrane on its underside named the lingual frenum. The top surface of the tongue contains papillae that include the taste buds.

► **The palate;** which refers to the roof of the mouth, is divided into two parts:  
-**the hard palate** is the solid, immovable area of roof of the mouth that attaches to the teeth and gums

-**the soft palate**, located behind the hard palate toward the back of the throat, is a flexible area of the mouth where the gag reflex occurs.

► **The cheeks** form the sides of the mouth and continue along the front of the face to the lips. They are composed of subcutaneous membrane, with the outside layer covered by skin and the inside consisting of mucous membrane.

► **The lips;** are the soft and flexible fleshy tissue that connect to the front area of the cheeks, the outside of lips is covered by skin

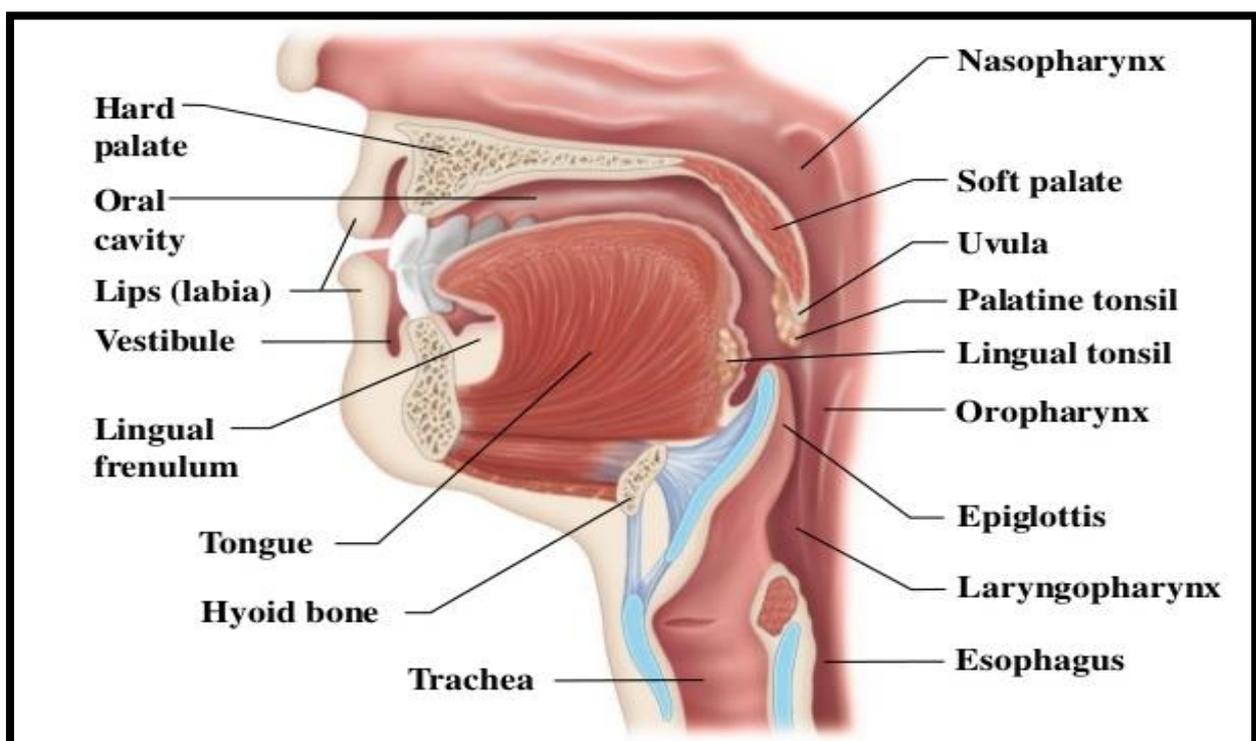


Figure (3): show the oral cavity

## The pharynx and esophagus

The **pharynx** is located behind the mouth and nasal cavity and above the esophagus and the larynx, The human pharynx is conventionally divided into three sections: the nasopharynx, the oropharynx and the laryngopharynx .

The **esophagus** is a hollow muscular tube that transports saliva, liquids, and foods from the mouth to the stomach ,located behind the windpipe (trachea) and heart, Just before entering the stomach, the esophagus passes through the diaphragm. The esophagus is usually between 25 to 30 centimeters in length, while its width averages 1.5 to 2 cm.

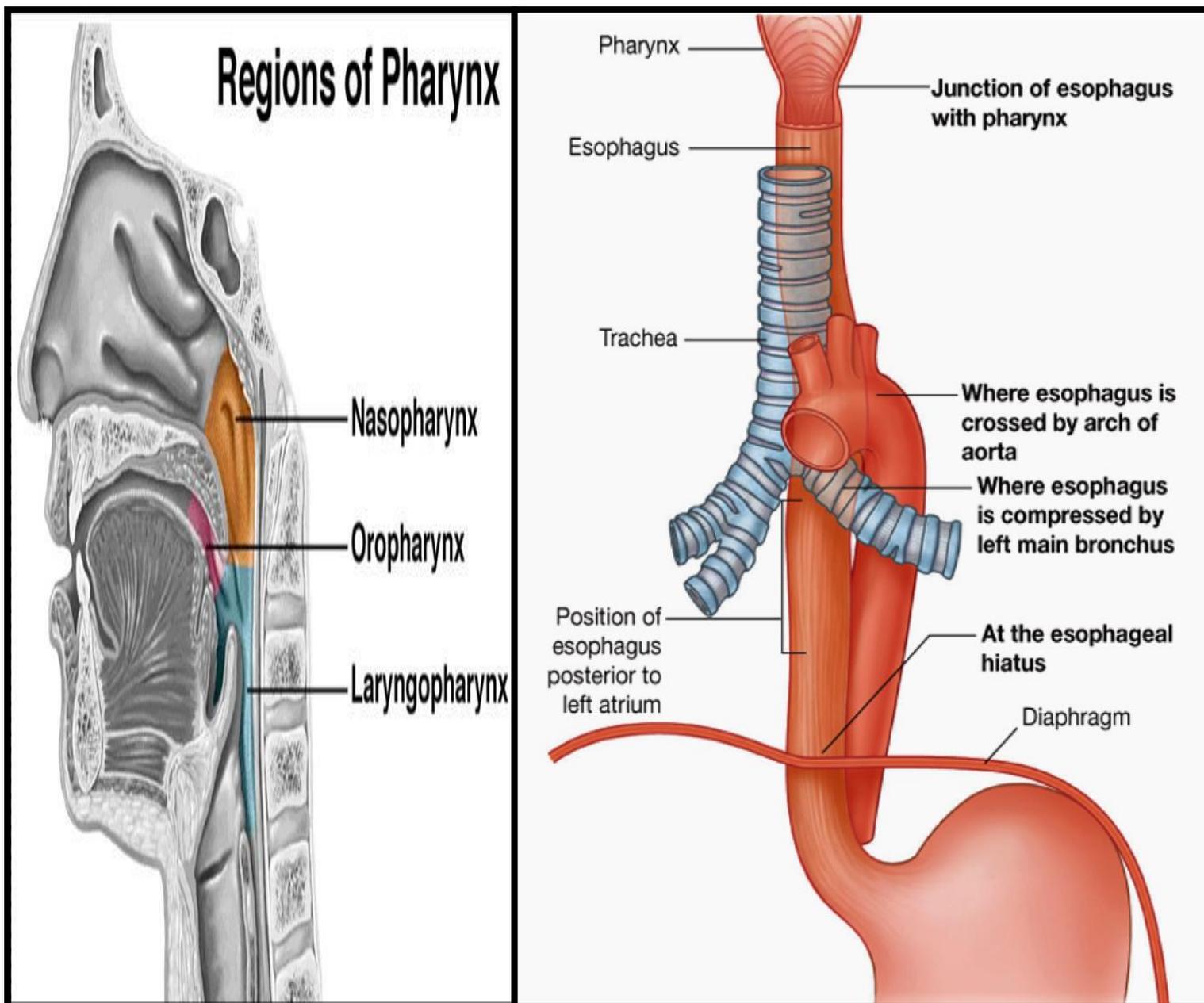


Figure (4):show the pharynx and esophagus

## The stomach

The stomach is a muscular organ located on the left side of the upper abdomen. The stomach receives food from the esophagus.

There are four main regions in the stomach: the cardia, fundus, body, and pylorus. The **cardia (cardiac sphincter)** is the point where the esophagus connects to the stomach, located inferior to the diaphragm, above and to the left of the cardia, is the dome-shaped **fundus**. Below the fundus is the **body**, the main part of the stomach. The funnel-shaped **pylorus** connects the stomach to the duodenum. The smooth muscle **pyloric sphincter** is located at this latter point of connection and controls stomach emptying.

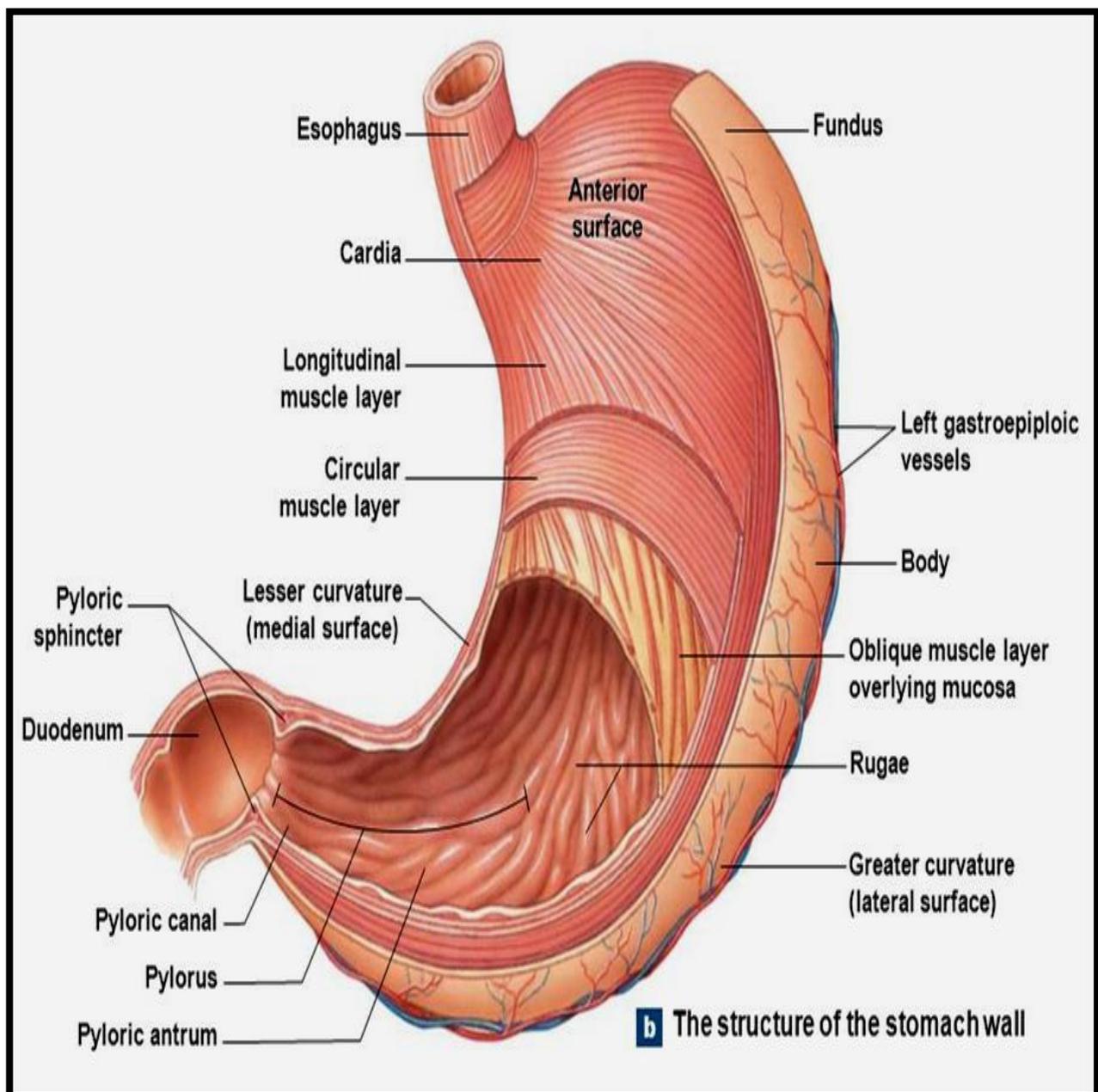


Figure (5):show the stomach

## Small intestine

The longest part of the alimentary canal, the small intestine is about 3-4 meters (10-13 feet) long in person . The small intestine is so called because its lumen diameter is smaller than that of the large intestine, although it is longer in length than the large intestine.

The coiled tube of the small intestine is subdivided into three regions. From proximal (at the stomach) to distal, these are the **duodenum**, **jejunum**, and **ileum**.

## Large intestine

The large intestine is about (1.2-1.5 m)in length.At the beginning of the large intestine is small pouch called **cecum**. Between the ileum of the small intestine and the cecum is a sphincter, called ileocecal valve, Attached to the cecum is a small blind tube containing lymphoid tissue ;it is called **vermiform appendix**.

The large intestine begins in the lower right region of the abdomen. The second portion the **ascending colon**, extends upward along the right side of abdomen toward the liver. The large intestine then bends and extends downward across the abdomen, forming the **transverse colon**. At this point it bends sharply and extends downward on left side of the abdomen into pelvis, forming the descending colon.

The lower part of the colon bends posteriorly in an S shape and continues downward as **the sigmoid colon**, which turn ends in the rectum.A narrow portion of distal large intestine is called the anal canal .This lead to outside of the body through an opening called **the anus**.

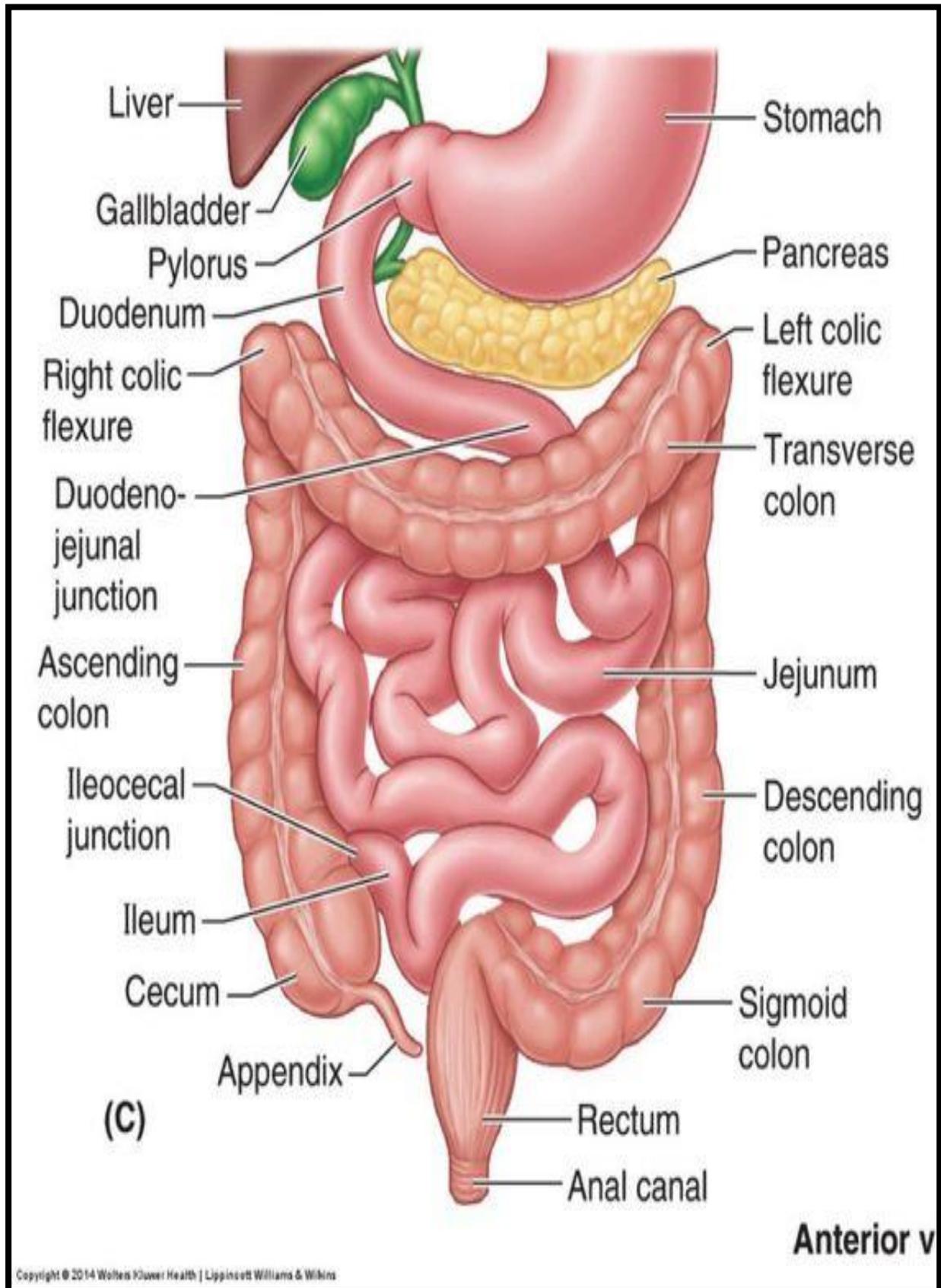


Figure (6):show the small and large intestinal

## The accessory gland

### Salivary gland:

While food is in the mouth .it is mixed with saliva ,the purpose of which is to moisten the food and facilitate the processes of chewing and swallowing .Saliva also help the teeth and mouth clean and reduce bacterial growth. This watery mixture contains mucus and an enzyme called **Salivary Amylase**. It is manufactured mainly by three pairs of gland that function as accessory organs:

- 1-**The parotid glands**,the largest of group are located below and front of the ear.
- 2-**The submandibular or submaxillary glands**, are located near the body of lower jaw.
- 3-**The sublingual glands**, are located under the tongue.

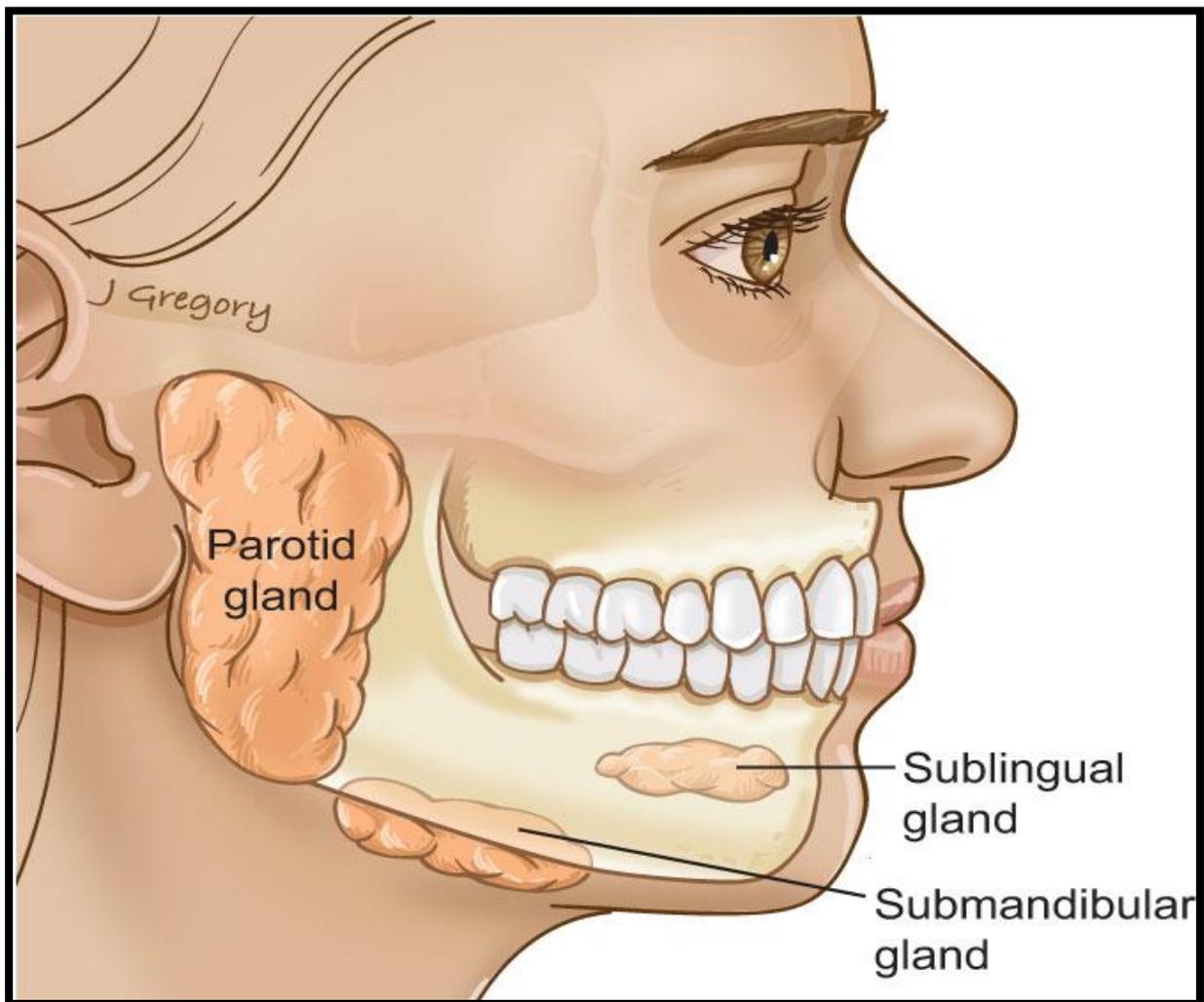


Figure (7):show the salivary gland

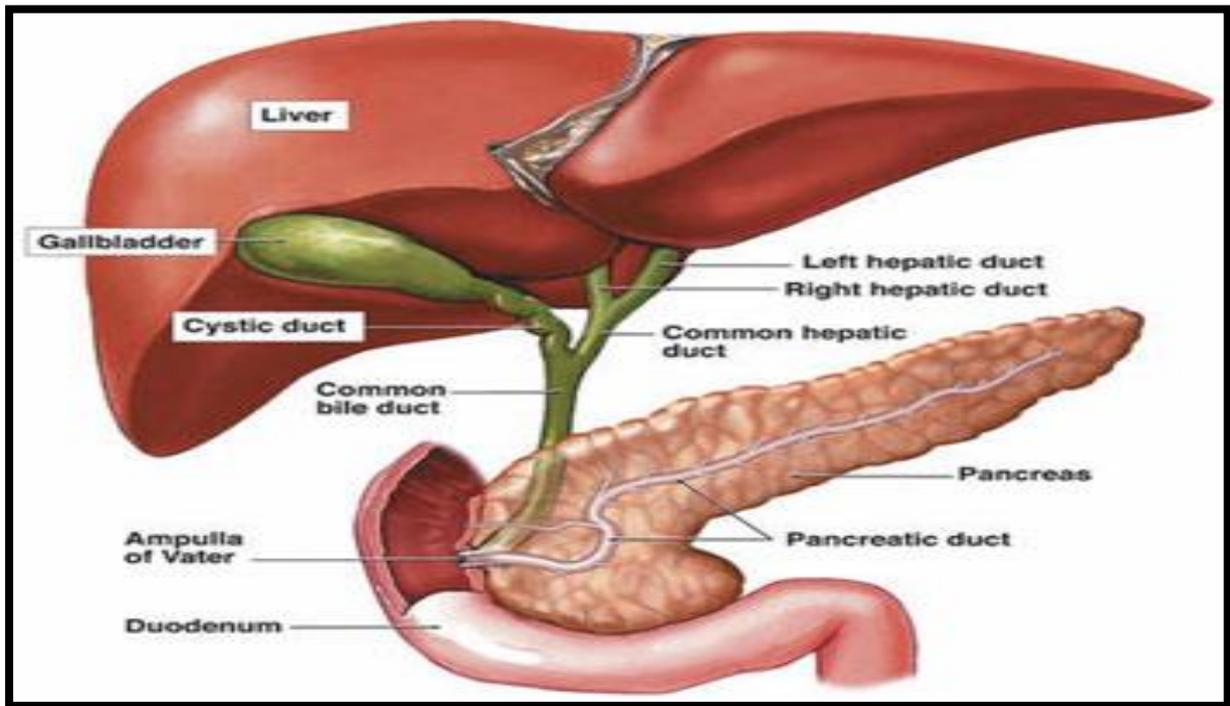
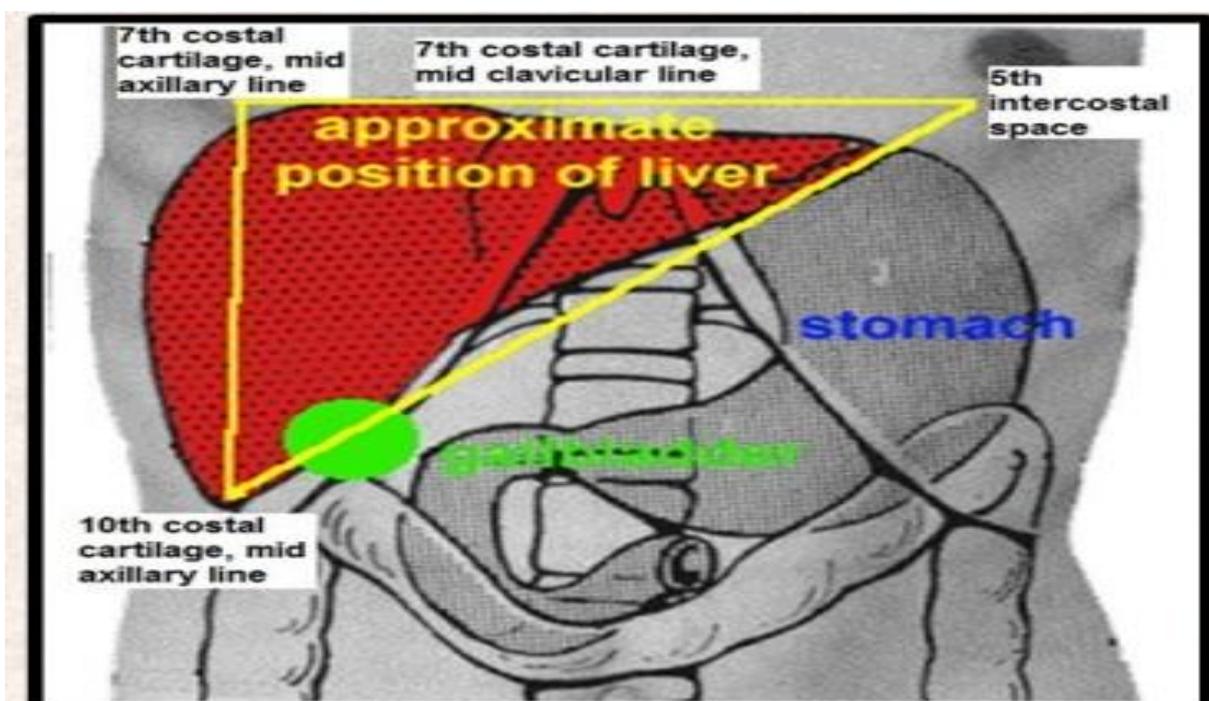


Figure (8):show the accessory gland

### The Liver:

Is the largest glandular organ of the body. It is located in the upper right portion of the abdominal cavity under the dome of the diaphragm. The lower edge of a normal-sized liver is level with the lower margin of ribs ,It has a large right lobe and a smaller left lobe, the right lobe includes two inferior smaller lobes. liver is have two surfaces, diaphragmatic and visceral. The liver has a double blood supply; the portal vein and hepatic artery.



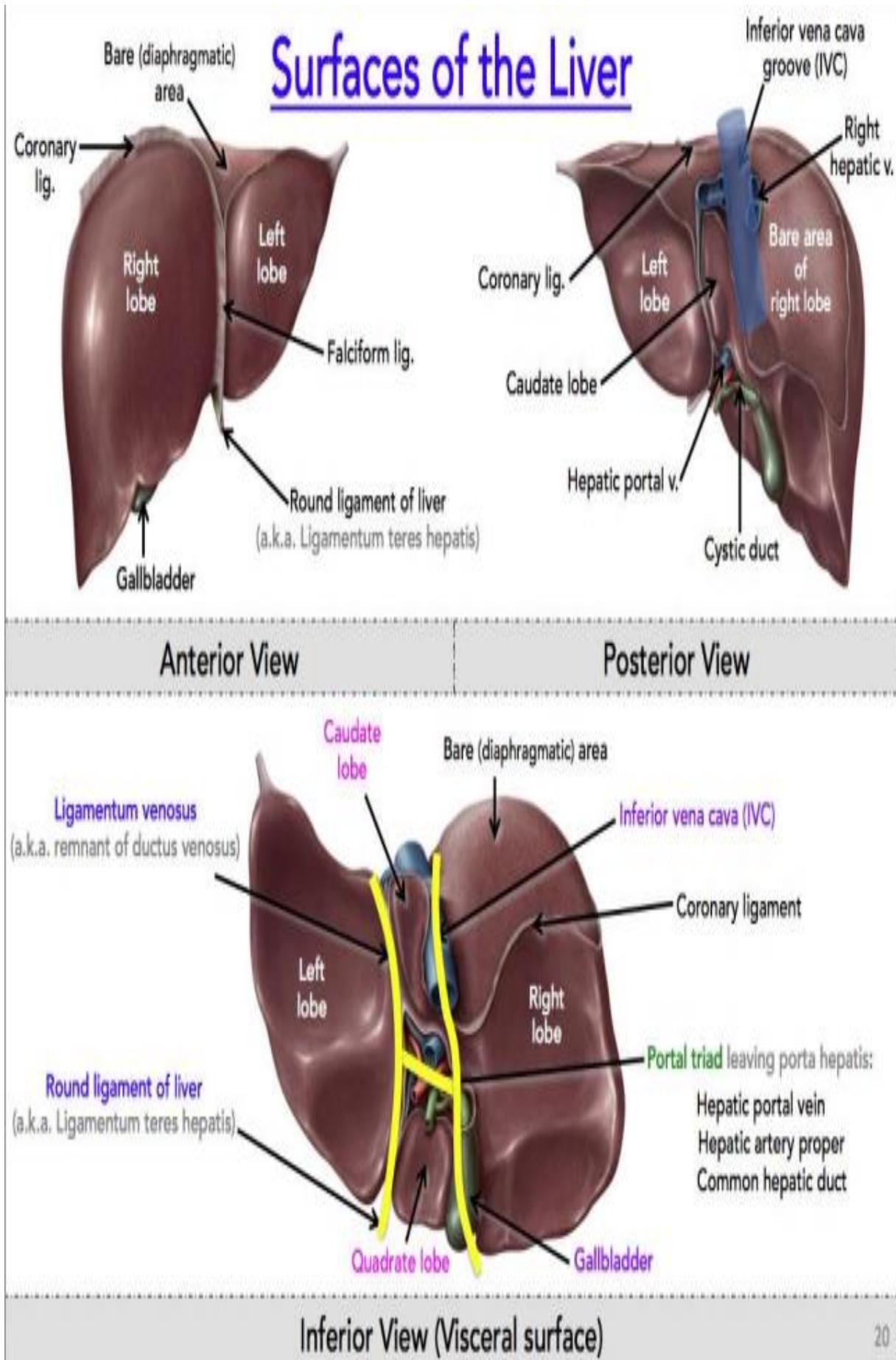


Figure (9):show the **surface of the liver**

## The Gallbladder:

Is a muscular sac on the inferior surface of the liver that serves as storage pouch for bile. Bile from the liver flows into the hepatic duct and then up through the cystic duct connected with gallbladder. When chyme enter the duodenum ,the gallbladder contracts, squeezing bile through the cystic duct into the common bile duct leading to the duodenum.

## The Pancreas:

Is a glandular organ in the digestive system and endocrine system, it is located in the abdominal cavity behind the stomach, about 15 cm (6 inch) long. It is an endocrine gland producing several important hormones, including insulin, glucagon, somatostatin, and pancreatic polypeptide which circulate in the blood. The pancreas is also a digestive organ, secreting pancreatic juice containing digestive enzymes that assist digestion and absorption of nutrients in the small intestine. These enzymes help to further break down the carbohydrates, proteins, and lipids in the chyme. The pancreas is typically divided into five parts: **Head** ,**Uncinate process**, **Neck** .**Body** and**Tail** .

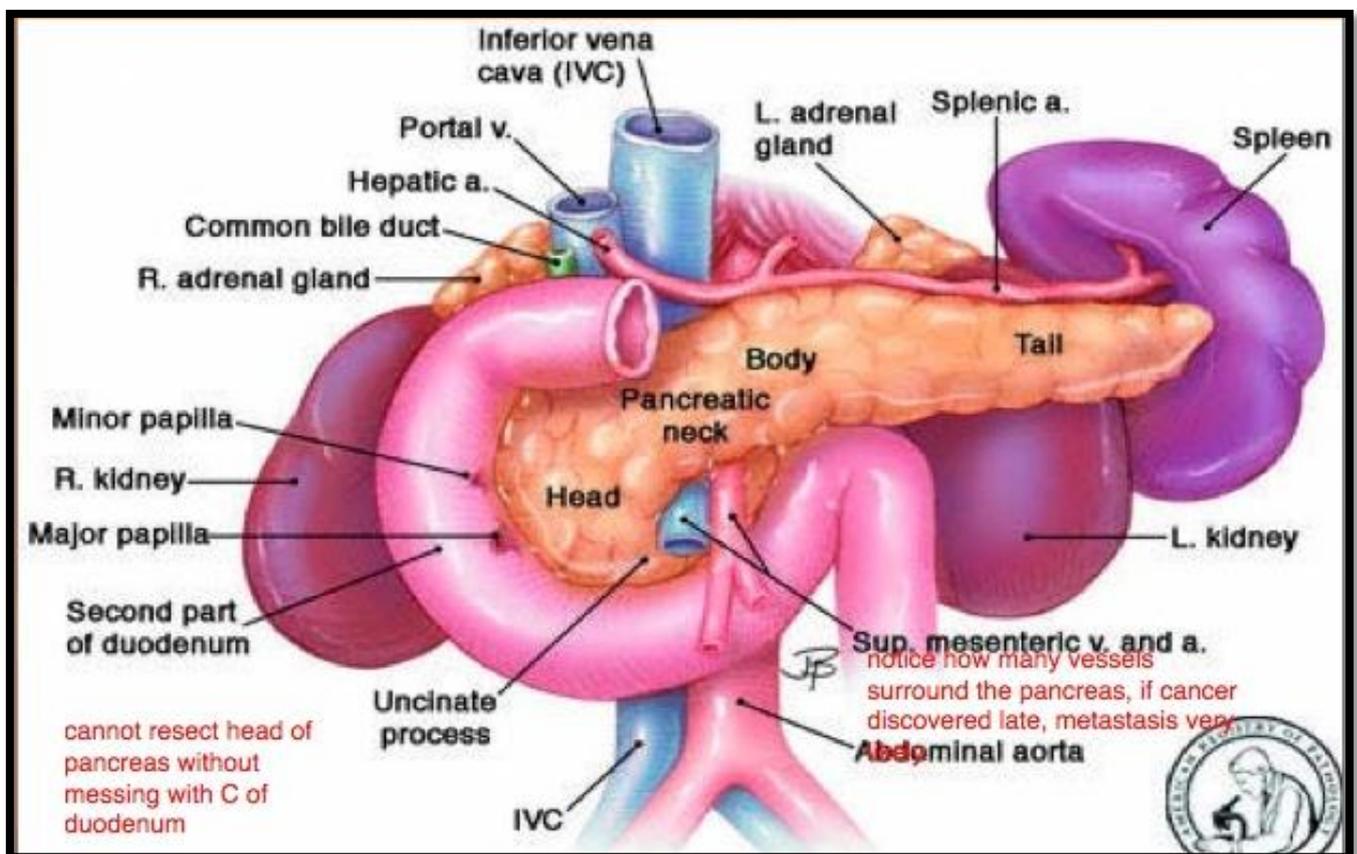


Figure (10):show the parts of pancreas.