

Organ System

Groups of organ systems work together to make complete, functional organisms. There are 11 major organ systems in the human body, which include the circulatory, respiratory, digestive, excretory, nervous and endocrine systems.

Digestive system

Digestive tract starts at the mouth and ends at the anus. In the system the large insoluble food molecules breakdown into a small water-soluble food molecule. So that they can be absorbed through the small intestine into blood.

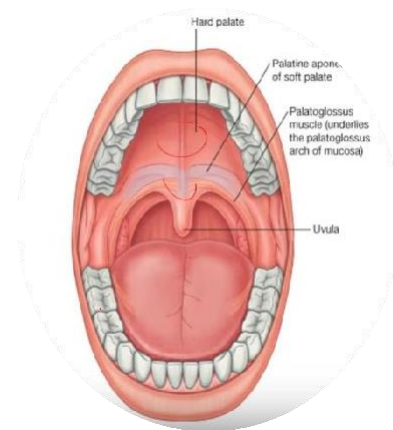
Digestive system parts:

1-Mouth:

1- Food enters the Gastrointestinal tract by ingestion.

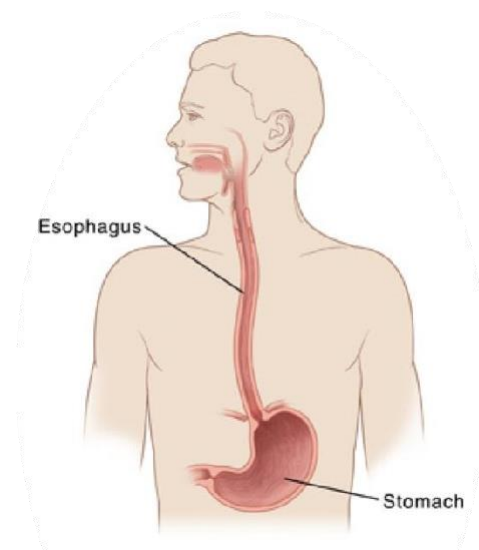
2- Mechanical digestion: Chewing is a form of mechanical digestion, the physical process of breaking food into smaller pieces. Mechanical digestion prepares food particles for chemical digestion.

3- Chemical digestion: salivary glands in your mouth secrete saliva. Saliva contains a digestive enzyme, called **amylase**, which breaks down starch into smaller molecules such as di- or monosaccharides.



2-Esophagus:

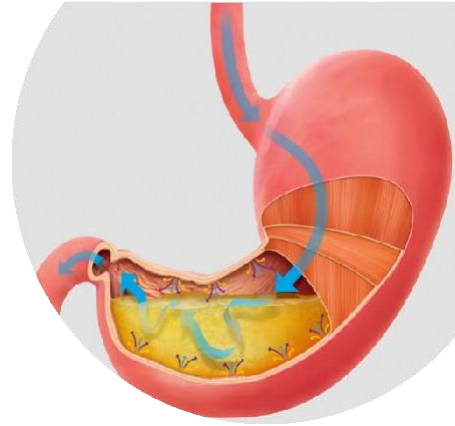
Located in your throat near your trachea, the esophagus receives food from your mouth when you swallow. By means of a series of muscular contractions the esophagus delivers food to your stomach.



3-Stomach:

The **stomach** is a muscular enlargement of the digestive tract. Both physical and chemical digestion take place in the stomach.

The stomach is a hollow organ, or "container," that holds food while it is being mixed with enzymes that continue the process of breaking down food into a usable form. The inner lining of the stomach contains millions of glands that secrete a mixture of chemicals called gastric juice. When the contents of the stomach are sufficiently processed, they are released into the small intestine.



4-Small Intestine:

A long muscular tube, with a small diameter that breaks down food using enzymes released by the pancreas and bile from the liver.

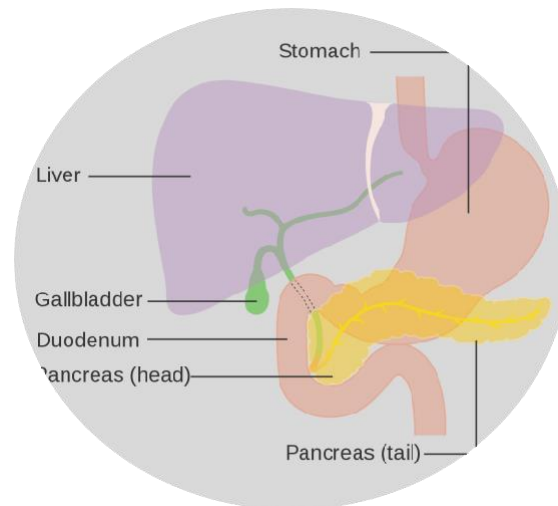
Contents of the small intestine start out semi-solid, and end in a liquid form after passing through the organ.



Muscle contractions contribute to further mechanical breakdown of the food. At the same time, carbohydrates and proteins undergo further chemical digestion with the help of enzymes produced and secreted by the pancreas and liver. Once the nutrients have been absorbed and the leftover-food residue liquid has passed through the small intestine, it then moves on to the large intestine.

5-Pancreas:

The pancreas secretes digestive enzymes into the duodenum, the first segment of the small intestine. These enzymes break down protein, fats, and carbohydrates. The pancreas also makes insulin, secreting it directly into the bloodstream. Insulin is the chief hormone for metabolizing sugar.



6-Liver:

The liver has multiple functions, but its main function within the digestive system is to process the nutrients absorbed from the small intestine. Bile from the liver secreted into the small intestine also plays an important role in digesting fat. In addition it takes the raw materials absorbed by the intestine and makes all the various chemicals the body needs to function. The liver also detoxifies potentially harmful chemicals and breaks down or secretes many drugs.

7-Gall Bladder:

A small sac stores and concentrates bile secreted by the liver.



8-Large Intestine:

The last segment of the gastrointestinal tract. The large intestine is a highly specialized organ that is responsible for processing waste. After 18 to 24 hours in the large intestine, the remaining indigestible material, now called feces.

9-Rectum:

It is the rectum's job to receive stool from the colon, to let the person know that there is stool to be evacuated, and to hold the stool until evacuation happens.

10-Anus:

The anus is the last part of the digestive tract.

Function of digestive system

1- **Ingestion:** the oral cavity allows food to enter the digestive tract and have chewing occurs , and the resulting food bolus is swallowed.

2- Digestion:

A- **Mechanical digestion:** muscular movement of the digestive tract (mainly in the oral cavity and stomach) physically break down food into smaller particles.

B- **Chemical digestion:** hydrolysis reactions aided by enzymes (mainly in the stomach and small intestine) chemically break down food particles into nutrient molecules , small enough to be absorbed.

3- **Secretion:** enzymes and digestive fluids secreted by the digestive tract and its accessory organs facilitate.

4- **Absorption:** passage of the end – products (nutrients) of chemical digestion from the digestive tract into blood or lymph for distribution to tissue cells.

5- **Elimination:** undigested material will be released through the rectum and anus by defecation.