



COMMENTARY



Components and Development of the Digestive System

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Description

The gastrointestinal tract and additional digestive organs make up the human digestive system (the tongue, salivary glands, pancreas, liver, and gallbladder). Food is broken down during digestion into ever-smaller pieces so that they can be absorbed and digested by the body [1]. The cephalic phase, the gastric phase, and the intestine phase are the three stages of the digestive process.

The cephalic phase of digestion starts with stomach gland secretions in reaction to the sight and smell of food. In this step, food is mechanically broken down by chewing and chemically broken down in the mouth by digestive enzymes [2]. The salivary and serous glands of the tongue secrete the digesting enzymes lingual lipase and amylase, which are found in saliva. The mechanical process of digestion is started by chewing, during which the food is combined with saliva [3]. This results in a bolus, which is then ingested and passed *via* the oesophagus into the stomach. The gastric phase of digestion is where the second step of digestion starts. As it travels through the duodenum, the first segment of the small intestine, the food is further digested here by combining with gastric acid.

The third stage starts with the intestinal phase in the duodenum, when partially digested food is combined with a number of pancreatic enzymes. The muscles of mastication, the tongue, and the teeth help with food chewing, which aids in digestion. Peristalsis and segmentation contractions also aid in the process. The continuance of digestion depends on the creation of mucus in the stomach and the production of gastric acid.

Peristalsis is the term used to describe the rhythmic contraction of muscles in the oesophagus, stomach, and other parts of the gastrointestinal tract [4]. As a result, chyme is originally produced, and once it is entirely di-

gested in the small intestine, it is absorbed as chyle into the lymphatic system. The small intestine is where food is primarily digested. In the colon of the large intestine, water and several minerals are reabsorbed back into the bloodstream. The anus helps the rectum expel the waste products of digestion (faeces).

Components

The digestion of food involves numerous organs and other elements. The liver, gall bladder, and pancreas are the digestive organs that are considered auxiliary. The tongue, teeth, salivary glands, mouth, and epiglottis are further parts. The gastrointestinal tract is the major component of the digestive system (GI tract). There is a nine-meter space between the mouth and the anus where this begins and ends. The stomach is an important digesting organ [5]. Millions of stomach glands are implanted throughout its mucosa. Their secretions are essential to the organ's operation. The longest section of the GI tract, the small intestine, is where the majority of food digestion occurs. The colon, or large intestine, is the biggest component of the GI tract. Here, water is absorbed, and the leftover waste is kept before defecation. The GI tract contains a variety of specialised cells. These include taste cells, enterocytes, pancreatic duct cells, different gastric gland cells, and microfold cell. The large intestine is one of the digestive system's components that is also a component of the excretory system [6]. The embryo is close to a yolk sac and contains three germ layers at this early stage of development. The embryo expands during the second week of development and starts to encircle and encapsulate parts of this sac. The adult gastrointestinal system is built on the foundation of the enclosed parts. Parts of this foregut start to develop into the gastrointestinal tract's organs, including the oesophagus, stomach, and intestines [7].

The stomach rotates in the fourth week of development.

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The stomach, which was initially located in the embryo's middle, turns such that its body is now on the left. The portion of the gastrointestinal tract that lies immediately below the stomach and will eventually develop into the duodenum is also affected by this rotation [8]. The hepatic diverticulum, which will later grow into the biliary tree, starts to protrude from the developing duodenum's right side by the end of the fourth week. This is closely followed by a second protrusion, the cystic diverticulum, which will eventually grow into the gallbladder.

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