Nutrition in Human

In humans the food is taken in through the mouth and it passes through a continuous canal starting at the buccal cavity and ending at the anus.



All the components of this canal together are termed as the alimentary canal or digestive tract.

The digestive tract along with the associated digestive glands is termed as digestive system.

The different components of the digestive tract and their role in the process of digestion are as follows:

Buccal cavity:

(J)

The buccal cavity is the mouth which contains the teeth, tongue and the palate. This is the beginning of the alimentary canal and thus digestion. The food enters the mouth and is mechanically ground by the different sets of teeth, like the incisors, canines, premolars and the molars.

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The salivary glands present here secrete the clear liquid, saliva, that helps in lubricating the food.

The saliva is mixed with the food by the tongue, which has the taste buds for detecting the various tastes.

This turns the chewed food into a ball called a bolus, which travels down the alimentary canal for further digestion.

Oesophagus or the food pipe:

The partly digested food moves along the oesophagus.

The wall of the oesophagus propels the food forward and downwards towards the stomach.

Any food that is not accepted by our body is pushed back through the mouth and is known as **vomiting**.

Stomach

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The food from the oesophagus is pushed into the stomach, which is a **J** shaped thick-walled bag, being the widest part of the alimentary canal.

The inner wall of the stomach secretes mucus, which protects the stomach lining, hydrochloric acid, which destroys most of the bacteria in the food, helping the digestive juices to act upon the food.

The stomach also secretes digestive juices that break down the proteins to simple substances.

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Small Intestine:

Now the partially digested food enters the small intestine, which is a coiled structure, about 7.5 metres in length.

It has secretions from liver, bile, that acts on the fats and secretions from pancreas, pancreatic juice that acts on carbohydrates, proteins.

At the end of the small intestine, intestinal juice completes the process of digestion of food, and carbohydrates are broken into glucose, fats into fatty acids and proteins into amino acids.

This digested food is then absorbed by the intestinal walls, by the finger like projections called villi, present in them. These absorbed substances are then transported to the various organs of the body through blood vessels.

Once they are in the cell, the glucose is converted to carbon dioxide and water with the release of energy.



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Large intestine:

The undigested food is passed onto the large intestine, which is shorter and wider in comparison to the small intestine, measuring around 1.5 metres.

The water and salts are absorbed here and the remaining solid waste is passed into the rectum as faeces for egestion from the anus.