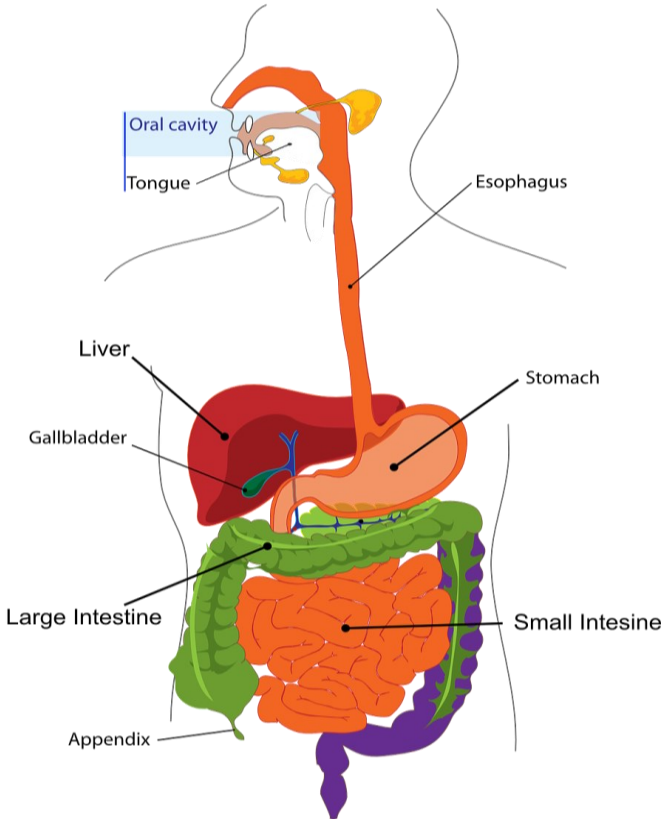
Nutrition in Animals

What is the Alimentary Canal?

The alimentary canal is commonly referred to as the pathway through which food enters our bodies and ejects through the anus after digestion. It is a tube-like structure that begins in the mouth and ends in the anus. The alimentary canal, also known as the digestive (gastro-intestinal) tract, is crucial to human digestion and also acts as an immune barrier to various harmful microbes.



Organs of the Alimentary Canal:

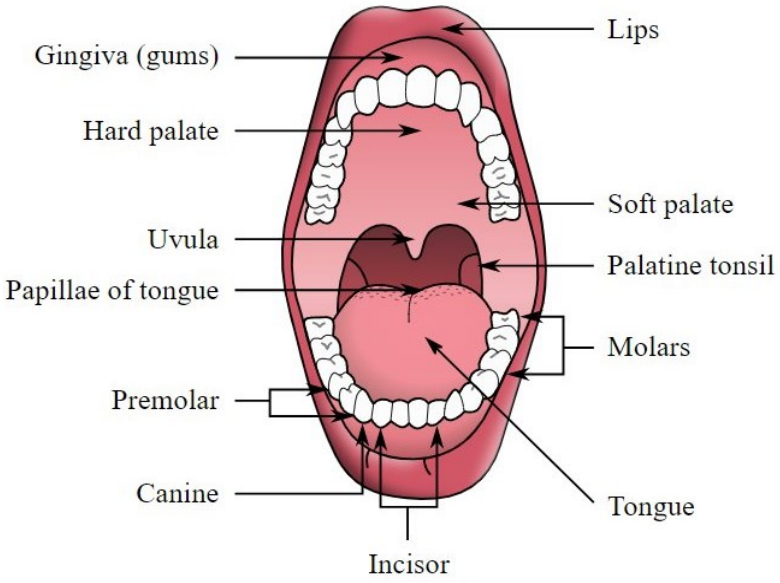
It consists of

- Mouth
- Oesophagus,
- Stomach
- Small intestine,
- Large intestine ending in the rectum
- Anus

And many secretive glands found within the above organs.

Mouth:

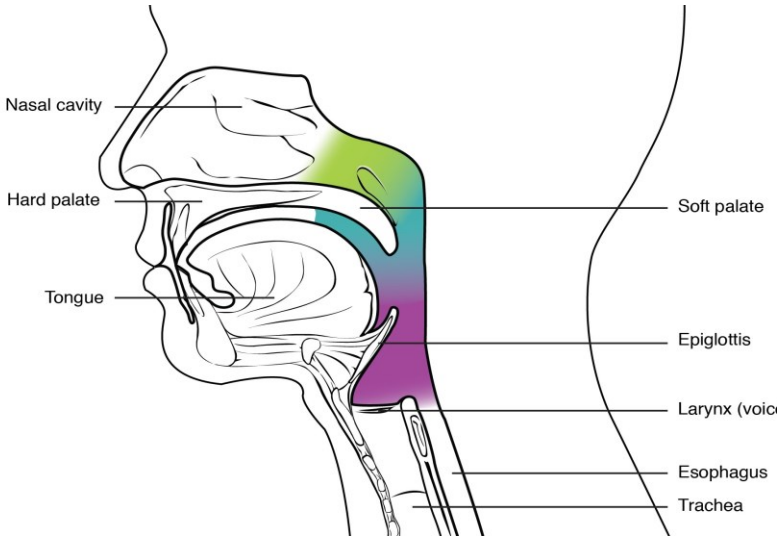
The mouth is the starting point for our digestive system. Food is consumed through the mouth. Carbohydrate digestion, such as starch digestion, begins in the buccal cavity. This process is known as ingestion. It consists of the mouth, tongue, and teeth. When food is consumed in the mouth, the teeth break it down into small particles, and the tongue and salivary gland help the food to be swallowed into the oesophagus.



Pharynx:

It is the common passage for food and air. The epiglottis keeps food from entering the windpipe.

Oesophagus (Food pipe):



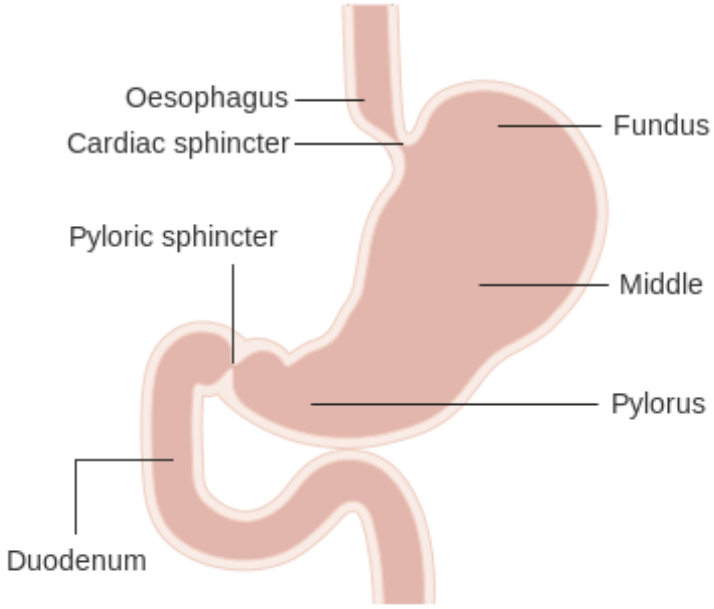
The oesophagus is a long muscular tube connecting the buccal cavity to the stomach. The food pipe is another term for the oesophagus. It runs down the back of the neck and across the chest. It measures approximately 30 cm in length.

What happens when a food particle or foreign substance strikes the oesophagus?

If you take large sips of water, this obstruction will slide down your stomach. This occurs when the food is not properly chewed or was too dry for the saliva to provide adequate lubrication. Thus, the oesophagus plays a vital role in passing food particles from the buccal cavity to the stomach.

Stomach:

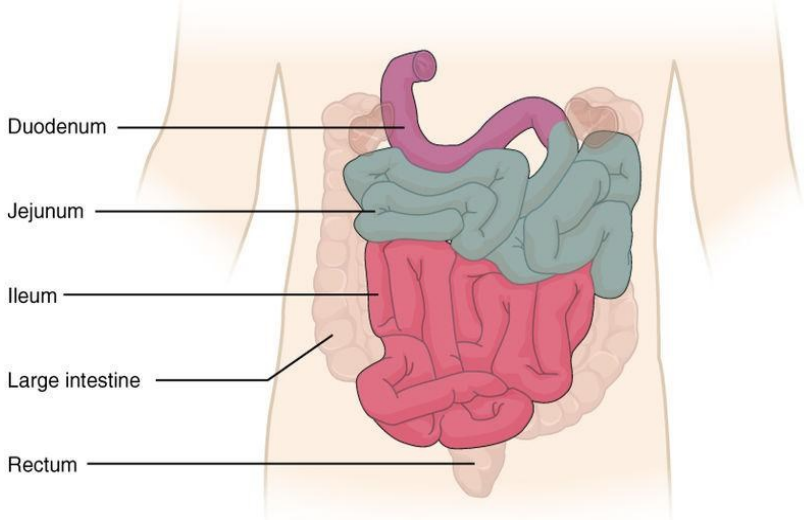
The stomach is a thick-walled bag-like structure. It is a J-shaped structure found on the left side of the abdomen. The stomach is the largest portion of the alimentary canal, where food is digested further. It collects food from the food pipe at one end and opens into the small intestine.



The digestive juices and acids in the stomach start the process of digestion by breaking down food particles.

Small intestine:

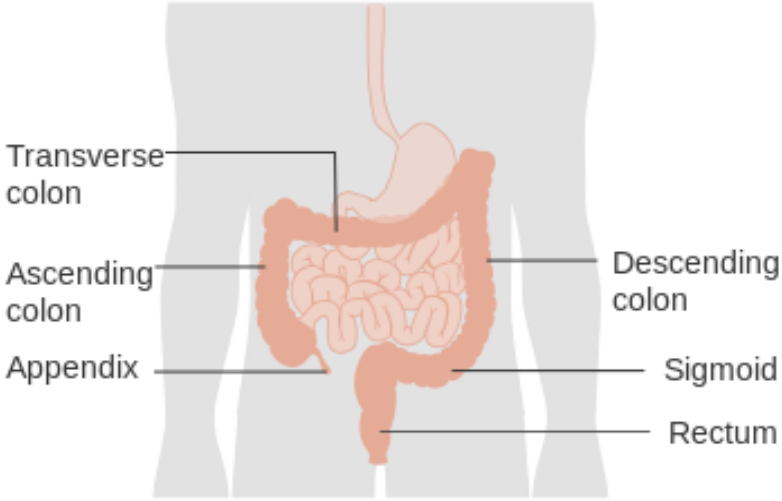
The small intestine is a long, narrow tube that measures approximately 7m in length. It is arranged in a highly coiled tube and is the site of complete food digestion.



The food's nutrients are broken down and absorbed by the small intestine. The remaining solid particles are then pushed into the large intestine.

Large intestine:

The large intestine is nearly 1.5 metres in length. They are named large intestines because of their diameter. It is much larger than the small intestine but much shorter.



In the large intestine, the remaining minerals and water is absorbed, and the undigested food is temporarily stored in the rectum until further defecation of the faecal matter through the anus.

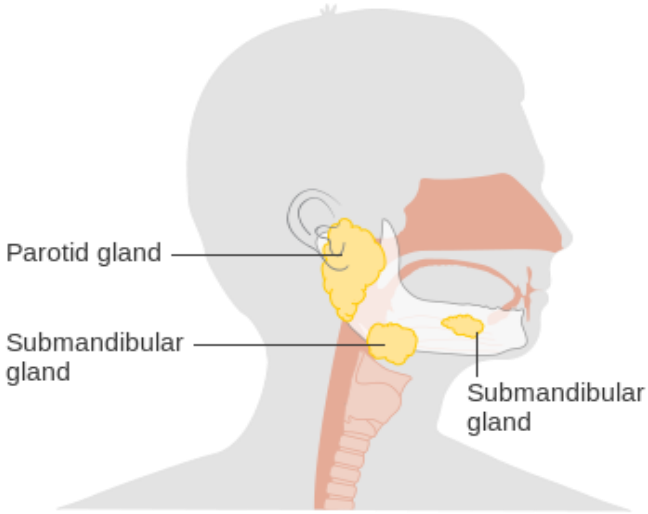
Anus:

It is the final part of the alimentary canal. The anus excretes the undigested, semi-solid waste from the body. This is known as egestion.

The faeces are occasionally removed through the anus. The anus's primary function is to expel solid faeces from the body.

Salivary glands:

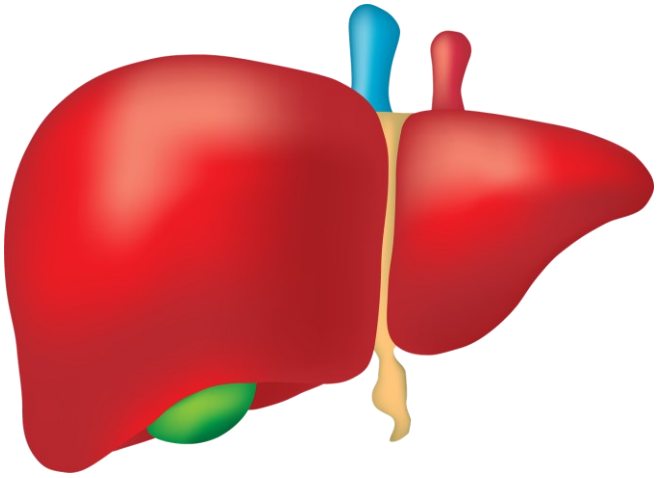
The salivary glands in the mouth secrete saliva. The mouth has three pairs of salivary glands. Saliva contains the salivary enzyme amylase, which breaks down starch into a simple sugar called maltose.



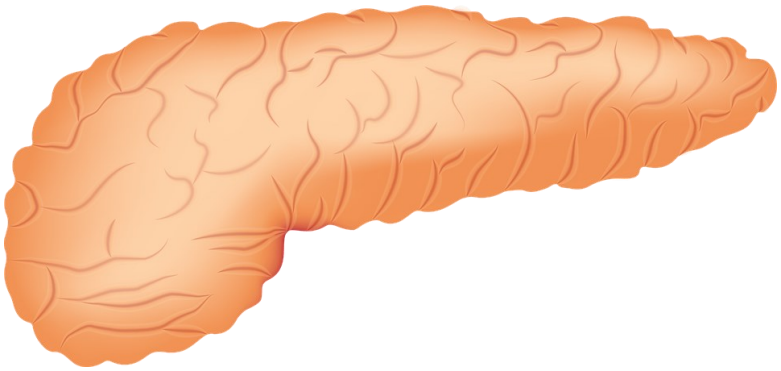
Liver:

The liver is the largest gland in the body and is located in the upper part of the abdomen on the right side. The liver produces bile juice, temporarily stored in a sac called the gall bladder.

Bile is essential in fat digestion. Bile breaks down fats into tiny droplets, which facilitates further breakdown.



Pancreas:

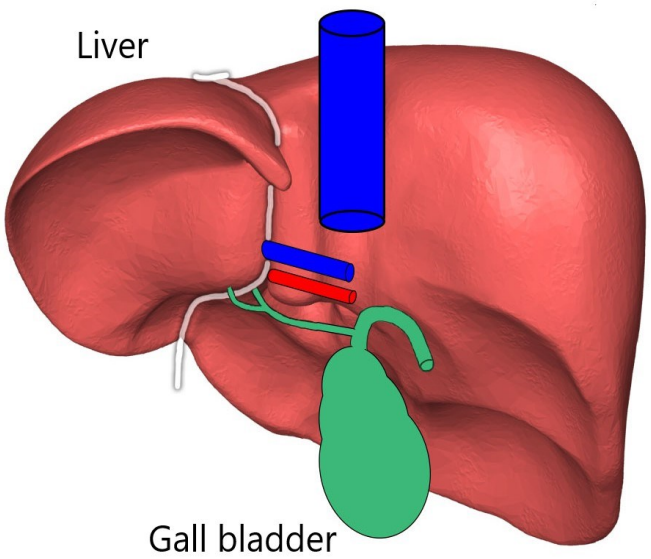


The pancreas is a large, cream-coloured gland located just below the stomach. The pancreas secretes pancreatic juice.

Pancreatic juice completely breaks down fats into fatty acids and glycerol.

Gall bladder:

The gall bladder stores bile, concentrates it and regulates its composition, such as the percentage of water and bile salts.



It reacts to intestinal hormones by emptying and refilling the bile. It also regulates bile flow into the small intestine.