

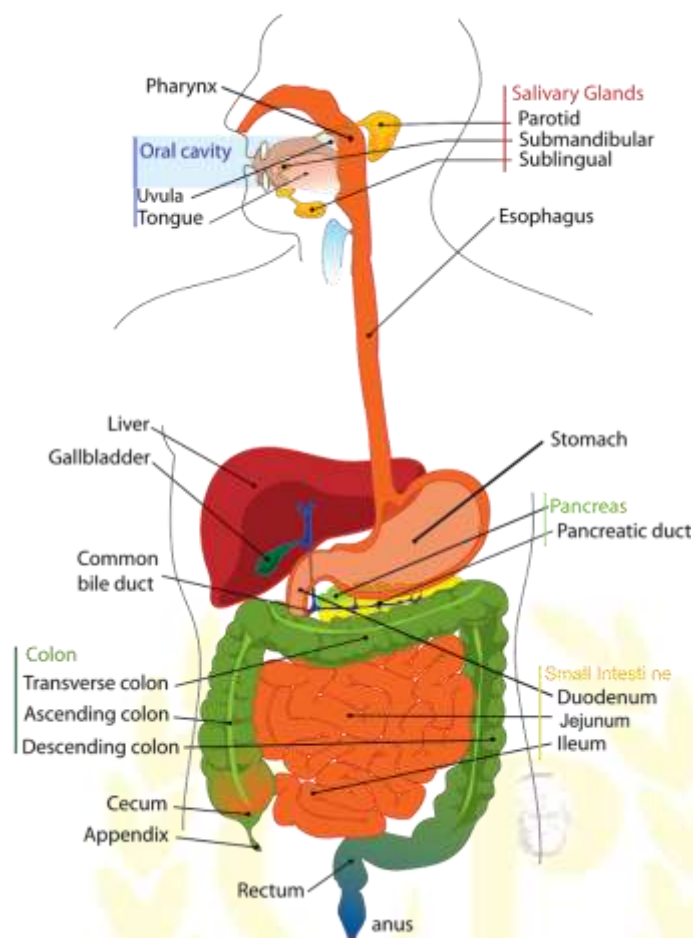
## Different Ways of Taking Food

- Nutrition in animals include nutrients requirements, mode of intake of food and its utilization in the body.
- **Digestion:** It is the process by which animals' breakdown complex food substances into simpler substances.
- Different ways of taking food.

Name of the animal	Kind of food	Mode of feeding
Snail	Grass	Chewing
Ant	Insects	scrapping
Eagle	Flesh	Swallowing
Humming bird	Nectar	sucking
Lice	Blood	sucking
Mosquito	Blood	sucking
butterfly	nectar	sucking
Housefly	Decaying matter	Brewing

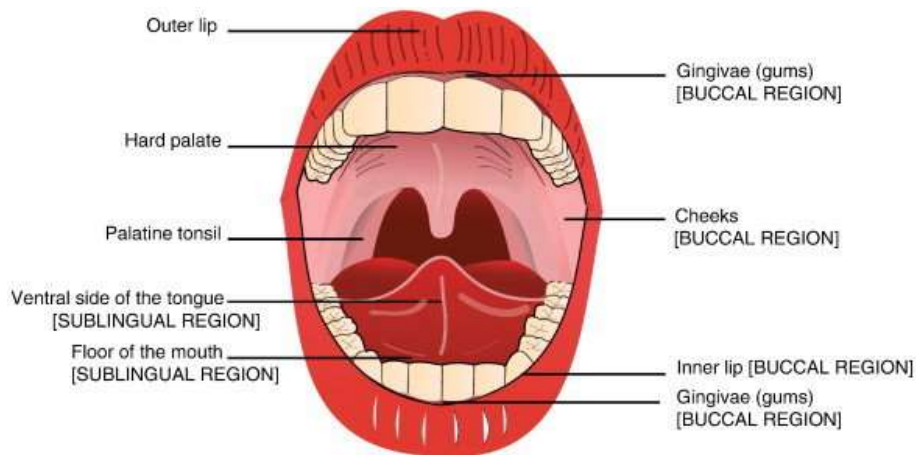
## Digestion in Humans

- The digestive tract and the associated glands together make the Digestive system.
- The food we eat passes through a canal inside our body. This canal is called as Alimentary Canal or Digestive Tract.
- The canal is divided into different parts:
  - Buccal Cavity
  - Foodpipe or Oesophagus
  - Stomach
  - Small Intestine
  - Large Intestine ending at the rectum
  - Anus



- The three glands associated with the alimentary canal that secrete digestive juices which are used to convert the complex food substances into simpler substances are:
  - liver
  - pancreas
  - salivary glands
- **Ingestion** – The process of taking in the food through the mouth is called Ingestion.
- The food is chewed with the help of teeth, saliva and tongue present in the mouth.
- The saliva secreted by the salivary glands mixes with the food and breaks down the starch into food into sugar.

### The mouth or Buccal cavity

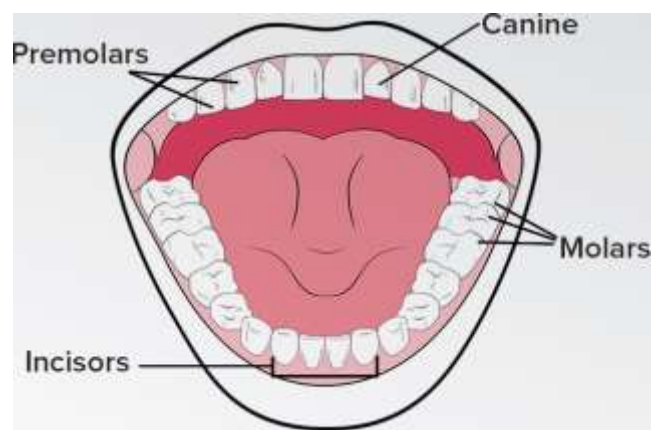


- **Ingestion** – the process of taking in the food is called Ingestion.
- The food is chewed with the help of teeth, saliva and the tongue present in the mouth.
- The **salivary glands** present in our mouth secrete saliva which mixes with food and breaks the starch present in the food into sugar.
- The **tongue** present in the mouth mixes saliva with the food during chewing and helps in swallowing the food. It also has taste buds which help in identifying different tastes of food.

## Teeth

- **Milk Teeth** – The set of teeth grown in the early childhood that falls off after a certain age around 6 to 10 years. These teeth are called Milk Teeth.
- **Permanent Teeth** – The set of teeth that grow after the milk teeth fall off are called Permanent Teeth.

## Different types of Teeth



- **Incisors** are cutting and biting teeth.
- **Canines** are piercing and tearing teeth.
- **Molars** are grinding teeth present only in adults.
- **Premolars** are grinding and chewing teeth.

## Tooth Decay

- Tooth decay is gradual damage to a tooth's surface or enamel.
- The main cause of tooth decay is growth of bacteria if we do not keep our mouth and teeth clean.
- The bacteria breaks down the sugar present in leftover food in the teeth and releases acid that gradually damage the teeth.
- Tooth decay causes severe pain and even tooth loss. The main culprits of tooth decay are chocolates, sweets, soft drinks and other sugar products.

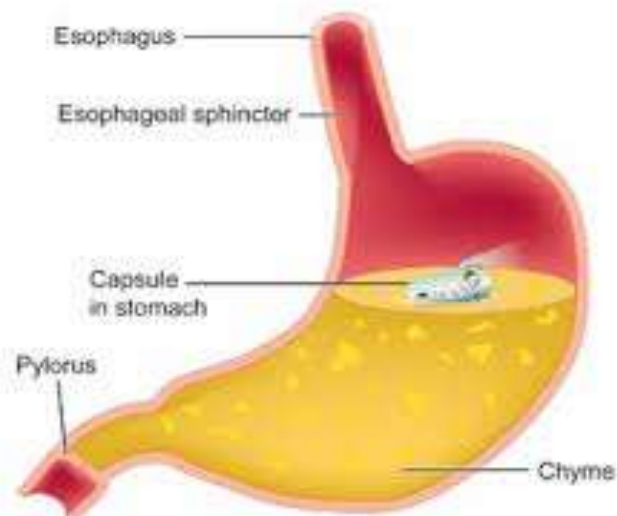
## How to prevent tooth decay

- One should clean the teeth with a brush at least twice a day.
- Rinse your mouth after every meal.
- Do not put dirty fingers or any unwashed object in the mouth.

## Food Pipe or Oesophagus

- The food pipe starts from the neck region and extends till the chest area.
- The swallowed food passes into the food pipe and is pushed down by the movement of its wall.
- The food moves downwards and reaches the stomach.

## Stomach



- It is the widest part of the alimentary canal.
- It is a thick-walled bag like structure in a flattened J shape.
- The inner walls of stomach secrete three things:
  - **Mucous:** It protects the stomach lining.
  - **Hydrochloric acid:** It kills the bacteria present inside the stomach and activates the digestive juices.
  - **Digestive juices:** They help in digestion of the food by breaking down the proteins present in the food into simpler substances.

## Small Intestine

- It is highly coiled and about 7.5-metre-long structure.
- The liver and pancreas secrete digestive juices into the small intestine.
- Its inner walls also secrete juices.
- The small intestine breaks the carbohydrates into sugar, fats into fatty acids and glycerol and proteins into amino acids.

## The liver

- It is a reddish-brown gland.
- It is the largest gland in the body.
- It secretes bile juice which is stored in the gall bladder.
- The bile juice is responsible for digestion of fats.

## Pancreas

- It is a cream-coloured gland.
- It secretes pancreatic juice that helps in digestion of fats, carbohydrates and proteins.

## Absorption in the intestine

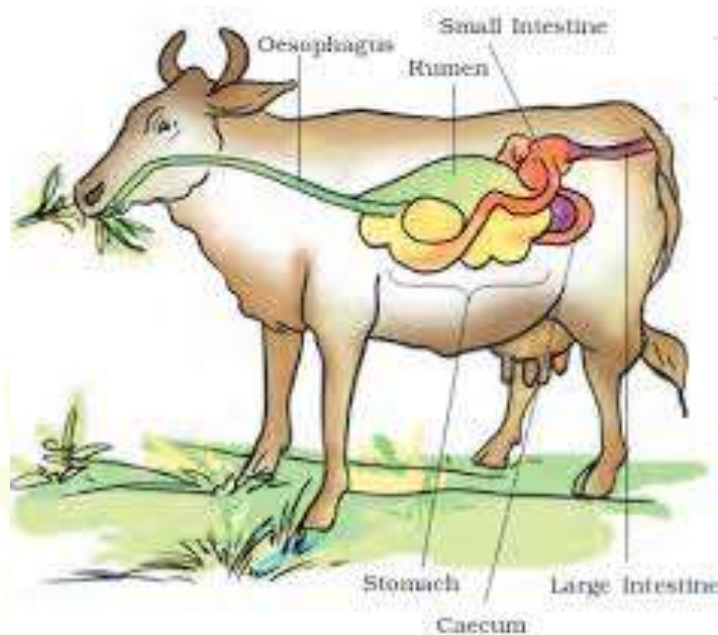
- **Absorption:** The process by which the digested food enters the blood vessels of the small intestine is called Absorption.
- The small intestine contains small finger-like structures called **Villi**. They increase the surface area for absorption of the digested food.
- The digested food gets into the blood vessels through villi and reaches all the organs of the body.
- **Assimilation:** The process by which the organs utilize the digested food to build complex substances required by the body such as proteins is called Assimilation.

## Large Intestine

- It is a wide tube-like structure which is 1.5 metre long.
- Any undigested food left passes through the small intestine and enters the large intestine.

- Its main function is to absorb water and some salts from the undigested food.
- The rest of the waste passes through the rectum.
- **Egestion:** It is the process by which the remaining waste (faecal matter) is removed through the anus.

## Digestion in grass- eating Animals



- Grass eating animals are called as **Ruminants**.
- These animals swallow grass quickly and store in Rumen which is a sac like structure.
- The food is partially digested in rumen and is called **Cud**.
- The process where the cud returns to the mouth in small lumps to chew is called **Rumination**.
- Grass eating animals can digest cellulose while several other animals cannot. These animals have different type of bacteria present in the stomach that helps in digesting the cellulose.
- Animals like horses, rabbit, etc., have a large sac-like structure called Caecum, where the digestion of cellulose takes place.

## Feeding and digestion in Amoeba

- Amoeba is a microscopic single- celled organism.
- Amoeba has a cell membrane, a rounded dense nucleus and many small bubble-like vacuoles in its cytoplasm.

- It uses false teeth called pseudopodia to take in the food present in the surroundings.
- The pseudopodia engulf the food in and the food gets stored in the food vacuole.
- Food vacuole secretes digestive juices which break down the food into simpler substances.
- The amoeba then absorbs the digested food and uses it for fulfilling different life processes like multiplication and growth.
- The undigested food is then expelled out of the vacuole.

