

# Classes of Food

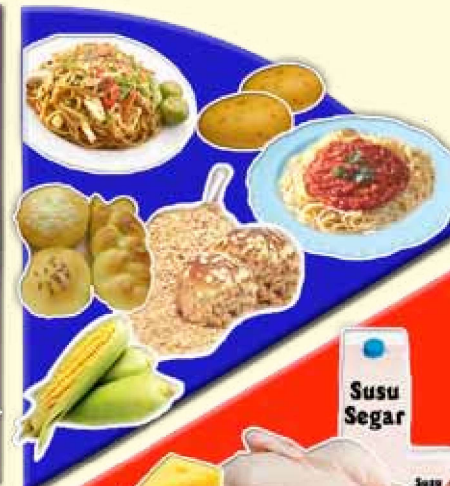
## **WATER**

- Maintains the balance of fluids inside and outside of our cells



## **CARBOHYDRATES**

- Give us energy



## **VITAMINS AND MINERALS**

- Provide protection against illness and keep the body healthy



## **PROTEINS**

- Help in growth and repair of cells or tissues, including teeth and nails



## **FATS**

- Give us slow releasing energy
- Too much fat can lead to obesity and heart diseases

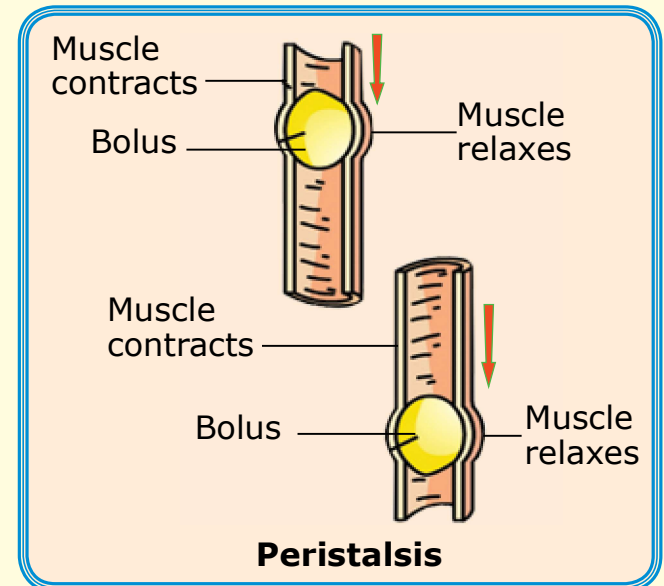
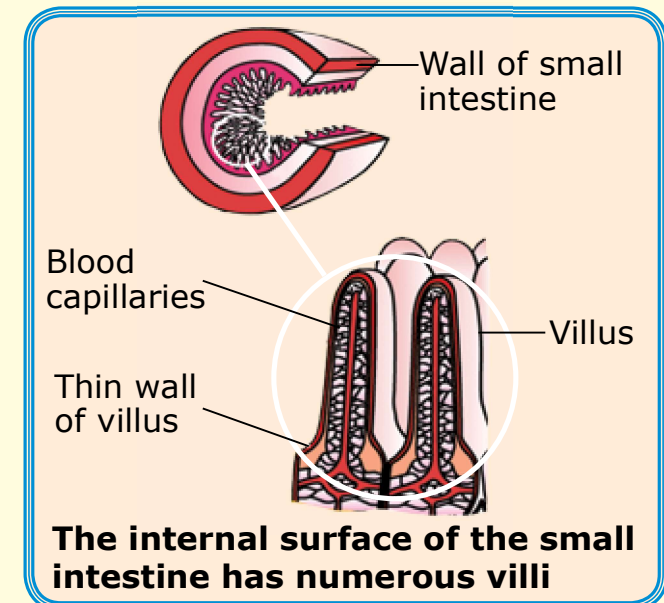
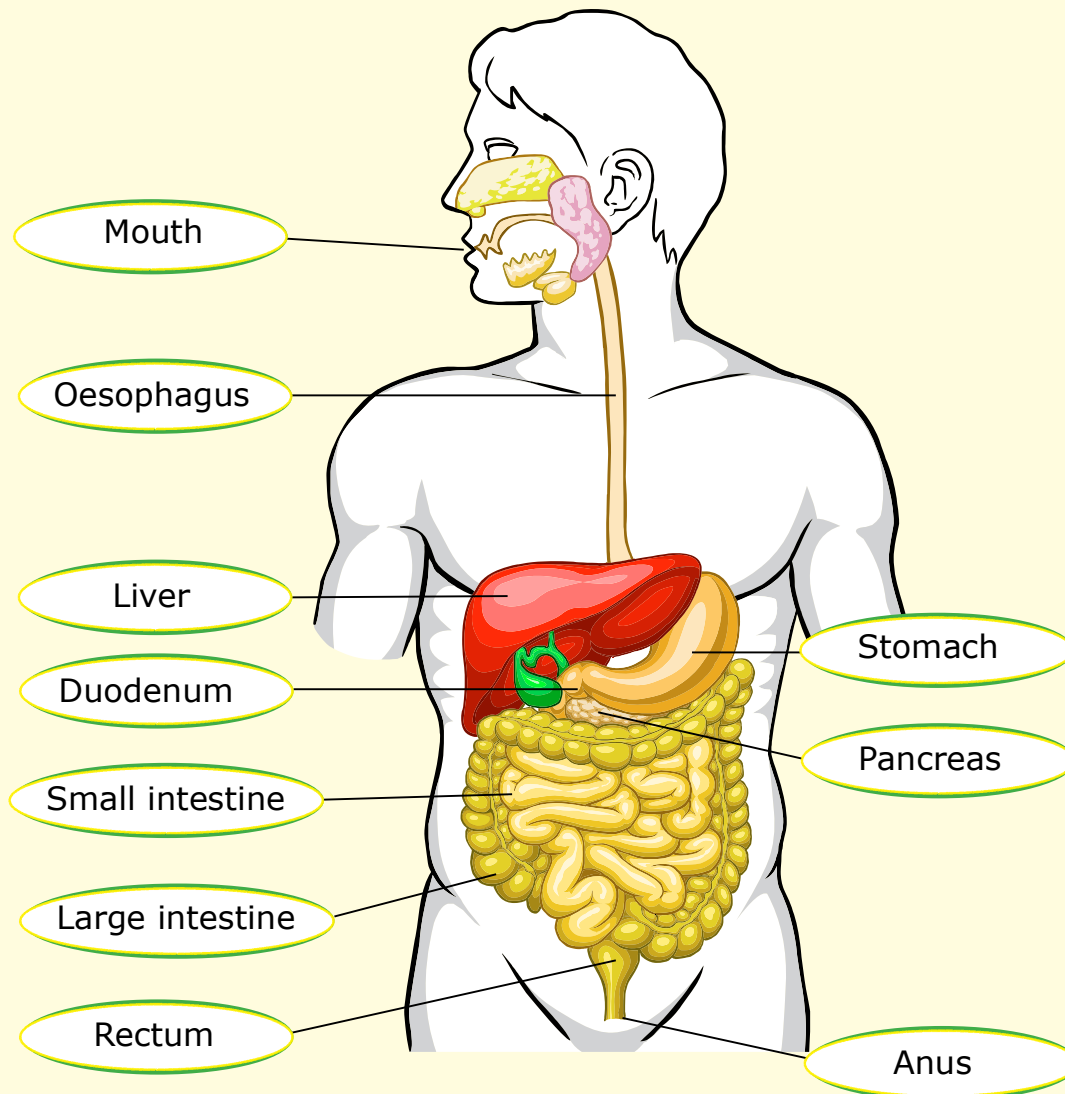


## **FIBRE**

- Not absorbed into the body but helps in digestion and defecation



# The Human Digestive System



# The Flow of Food in the Digestive System

## 1. Mouth

Food in the mouth is softened by saliva and broken down by the teeth with the help of the tongue.

Starch  $\xrightarrow{\text{Salivary amylase}}$  maltose

## 2. Oesophagus

- The movement of food is assisted by the contraction of smooth muscles in the walls of the **oesophagus**.
- The process of peristalsis pushes the bolus into the stomach.

## 3. Stomach

- Gastric glands in the walls of the stomach secrete **hydrochloric acid**.
- Hydrochloric acid activates protease and kills bacteria in the food that enters the stomach.

Protein  $\xrightarrow{\text{Protease}}$  Polypeptides

## 4. Duodenum

- The duodenum receives these secretions:
- Bile to emulsify fat.
- Pancreatic juice that contains amylase enzymes, protease and lipase.

Starch  $\xrightarrow{\text{Pancreatic amylase}}$  maltose  
Polypeptides  $\xrightarrow{\text{Protease}}$  dipeptides  
Fat  $\xrightarrow{\text{Lipase}}$  fatty acids and glycerol

## 5. Small intestine

- Intestinal glands in the walls of the small intestine secrete intestinal juices that contain **maltase** and **protease enzymes**.

Maltose  $\xrightarrow{\text{Maltase}}$  glucose  
Dipeptides  $\xrightarrow{\text{Protease}}$  amino acid

## 6. Large intestine

- Digested food seeps through into the villus on the walls of the small intestine whereas undigested food enters the large intestine.
- **Water reabsorption** happens in the large intestine.

## 7. Rectum

- Food that is undigested, known as **faeces**, enters the rectum and is stored here temporarily.

## 8. Anus

- Defecation (excretion of faeces) happens through the anus.