

Chapter 2: Components of Food

WHAT DO DIFFERENT FOOD

ITEMS CONTAIN?

- Food is a basic requirement for all living organisms because it provides energy for carrying out various physical activities.
- Food contains components needed by our body. These components are called nutrients.
- Our food mainly contains five types of nutrients namely vitamins, minerals, carbohydrates, proteins and fats. Apart from this food also contains water and dietary fibres/roughage which are also required by us.

Carbohydrates

- Carbohydrates are mostly present as starch and glucose. These are energy giving food.
- Wheat, potato, rice etc. are good sources of Carbohydrates.



Test for starch

- Carbohydrates present in all food item are tested by Iodine test. Few drops of dilute iodine solution are added to the sample food item. If the colour changes from brown to blue-black, the presence of starch is confirmed.

Proteins

- Proteins are body building nutrients used to build and repair tissues.
- Nails, hairs, skin, muscles and blood all are made from proteins.
- Examples of protein rich food are egg, meat, fish, oats dal, almond, milk and yogurt.



Test for Protein

- Proteins in the food sample are tested by using Copper Sulphate and caustic soda solutions.
- The sample food item is taken in the form of a dilute paste and above solutions are added. If the colour changes to purple, the presence of protein is confirmed.

Fats

- Fats act as fuel in our body but they provide more energy than carbohydrates. The body uses fat as a fuel source. Fats are essential for the absorption of vitamins A, D, E and K within the body. Examples of fat-rich foods are Butter, cheese, oil etc.
- Fat may also be hazardous to our health. It can cause high cholesterol and heart diseases.
- Fats leave greasy and transparent spot-on paper.

Test for Fats

- Take a little quantity of food item, wrap it in a piece of paper and crush it. After removing the paper, let it dry. If an oily patch is visible on the paper when holding it against light, it is proof that the food contains fats.

Vitamins

- Vitamins help in protecting our body from various diseases.
- Vitamins keep our eyes, bones, teeth and gums healthy.
- Major sources of Vitamins are Fruits and vegetables.

Vitamins	Functions of Vitamins
Vitamin A	Keeps eyes and skin healthy
Vitamin C	Help heal wounds, maintains healthy gums and blood vessels, fights infections
Vitamin D	Keeps bones and teeth healthy
Vitamin E	Maintains healthy skin and hair, slows down ageing
Vitamin K	Helps in blood clotting, body repair and bone healing
Vitamin B1	Helps our body to use energy from the food we eat.

Minerals

- Minerals are needed by our body in small quantities for correct growth of body and to maintain proper health.
- The essential minerals required by our body are Calcium, Phosphorus, Magnesium, Sodium and Potassium.
- Examples of mineral rich food includes leafy vegetables, fish, beans etc.

Dietary Fibre / Roughage

- Roughage doesn't provide any nutrient to our body but is an essential component of our food.
- Roughage helps in easy absorption of food, helps in movement of bowel and prevents constipation. It helps our body to discharge undigested food.
- The major sources of roughage are pulses, whole grains, potatoes, fresh fruits and vegetables.
- Water: Water helps our body to absorb necessary nutrients from food. It also helps in throwing out wastes from body as urine and sweat.

Balanced Diet

- A diet that contains all kinds of essential nutrients in right amount needed for proper growth and maintenance of our body. The diet should also contain a good quantity of roughage and water.
- Balanced diet depends on the age of a person and type of physical work they do.
- Most of the vegetables and fruits skin contain good number of vitamins and minerals.
- Repeated washing of rice, pulses and vegetables results in loss of mineral and vitamins present in them.
- Eating too much of fat rich food can be harmful for us and we may end up suffering from a condition called obesity.
- Most of the junk food and oily food contains lot of fats. We should utilize the fat in the form of physical energy to balance the body.

Deficiency Diseases

- Diseases caused because to lack of nutrients over a long period are called deficiency diseases.
- We can prevent deficiency diseases by taking a balanced diet. If a person is deficient of both carbohydrate and protein this can eventually make that person very thin and weak.

Vitamin	Disease	Symptoms
Vitamin A	Night Blindness	Poor vision or no vision at night
Vitamin B1	Beri -Beri	weak muscles, Nervousness, paralysis
Vitamin C	Scurvy	Bleeding gums, late healing of wounds
Vitamin D	Rickets	Weak bones, decaying teeth
Vitamin K	Haemorrhage	Prevents clotting of blood

Deficiency of Minerals

Mineral	Disease	Symptoms
Calcium	Hypocalcaemia	Weak bones and tooth decay
Iodine	Goitre	Gland in the neck appears swollen, mental disability in children
Iron	Anaemia	Weakness

