

Components of Food

Key Points

Nutrients are the substances in the food that every living organism need for energy, growth and development.



Macro Nutrients

- Carbohydrates
- Proteins
- Fats

Micro Nutrients

- Minerals
- Vitamins



Carbohydrates

Common energy-giving compounds



Carbohydrates rich foods-

- Potato
- Sweet potato
- Bread, Rice
- Wheat, Honey
- Common sugar
- Jaggery
- Milk



► Fats too provide us energy.

Fat rich foods-

- Milk
- Nuts
- Meat
- Butter
- Cheese

► Fats provide more than double the energy provided by carbohydrates or proteins.

► They are stored under skin and around various organs like eyes, liver, heart and kidney. It acts as shock absorbent.

Proteins



Body-building foods

Help the body in its growth, repair of body cells and tissues, protect and help the body to fight against infections and regulate body functions.

Protein rich food

- Meat, Eggs, Cheese, Fish, Pulses, Peas, Milk
- Soyabean are excellent source of protein for vegetarians.
- Soyabeans are also used to make soya milk.



► Also involve in formation of fat soluble vitamins and various hormones.

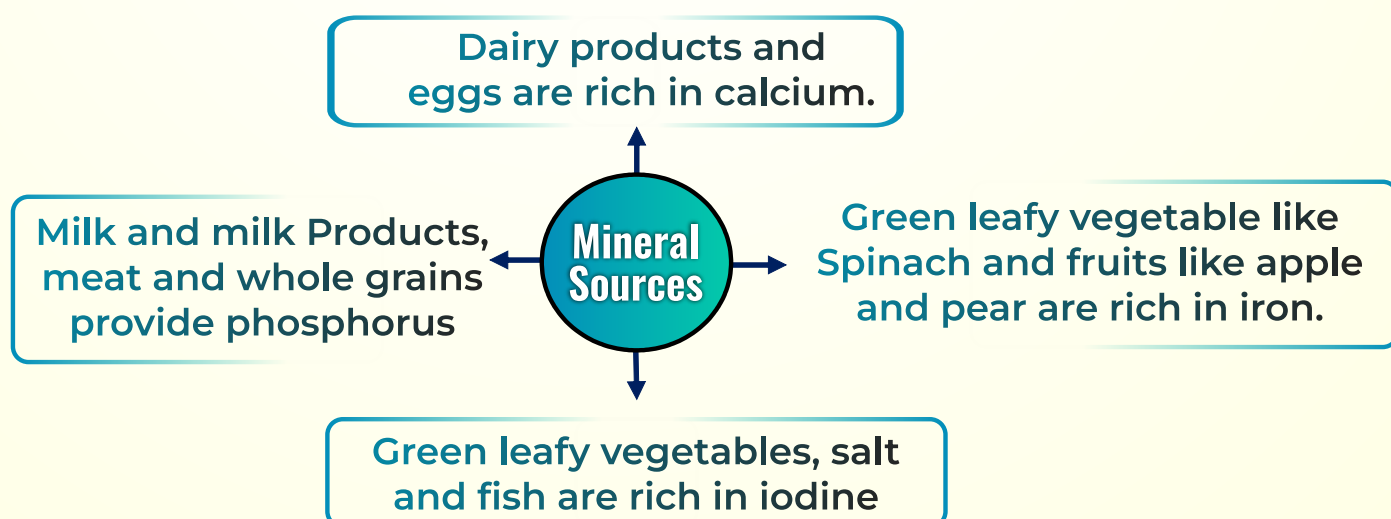
NOTE

- Starch gives blue-black colour with iodine.
- Copper sulphate and Caustic soda are used in protein test.

Mineral Salts

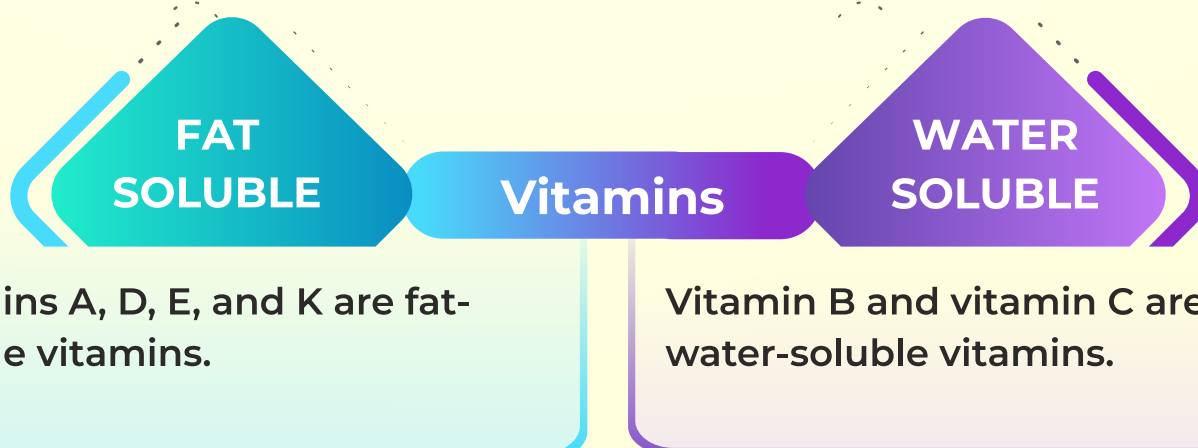
- ▶ Required in small quantities
- ▶ Have no energy value
- ▶ Rich sources are Milk, Cheese, Green leafy Vegetables (like Spinach), Pulses, Meat and Eggs

MINERALS SOURCES



Vitamins

- ▶ Vitamins are neither body building nor energy giving food but are very important for proper functioning of our body.
- ▶ Vitamin can be produced by our body but most have to be supplied through food.



SOURCES OF VITAMINS



Cereals, Fish and Whole grains are rich in vitamin B.



Citrus fruits such as Oranges are rich in vitamin C.



Carrots are rich in vitamin A.



Fish contains vitamin D.

Water

- ▶ Water is indispensable. About 70 percent of our body weight is that of water.
- ▶ Helps in transporting substances in the organism.
- ▶ Helps to maintain a constant body temperature.
- ▶ Helps in the absorption of food and excretion of waste products from the body.
- ▶ Our body needs 2-3 litres of water every day.

Dietary Fibres/Roughage

- ▶ Fibers come from plants. Fiber is the substance that gives plants their form.
- ▶ The fibers that we eat are known as dietary fibers.
- ▶ Main sources of roughage- Pulses, Potatoes, Fresh Fruits and Vegetables.



Special Point

Roughage does not provide any nutrient to our body, but is an essential component of our food which helps our body to get rid of undigested food.

Balanced Diet

A diet that contains adequate amount of different components of food required for the healthy functioning of our body is called a balanced diet.

Milk group:

Includes milk and milk products.

Meat group:

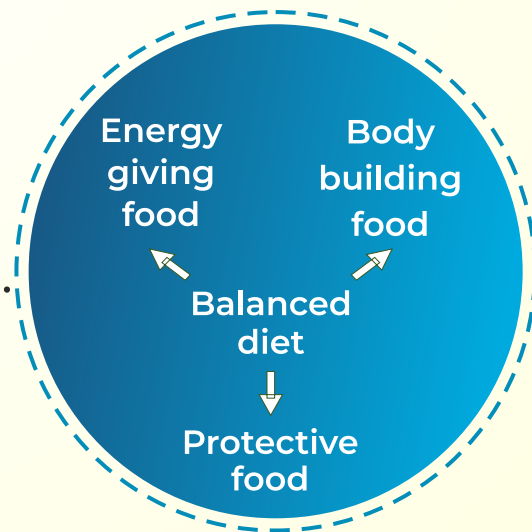
Includes meat (chicken, fish, lamb, etc.) and meat substitutes (beans, peas, nuts, and seeds).

Fruit and vegetable group:

Includes fruits and vegetables.

Grain group:

Includes breads and cereals.

**Effect of Cooking on Nutrients**

- ▶ Cooking make the food easily digestable.
- ▶ It improves flavour and taste of food.
- ▶ It kills harmful germs present in raw food.
- ▶ Cooking results in loss of certain nutrients Like Vitamin C gets easily destroyed by heat during cooking. It is advised to include fruits and raw vegetables in our diet.
- ▶ In case of rice, it is a common practice to use excess water during cooking and then throw off the extra water. This results in loss of nutrients.



Diseases due to imbalance in the diet

Imbalances in the diet may be due to following three reasons:

- ▶ Inadequate quantity of food (under-nourishment or under nutrition).
- ▶ Excess of food (over nutrition).
- ▶ The food lacks in some essential component, i.e. nutrient.

The condition of nutrition in which the food is either in inadequate quantity or in excess, or it lacks in some essential nutrient is called malnutrition.



Deficiency Diseases

- ▶ Diseases that occur due to lack of nutrients over a long period are called deficiency diseases
- ▶ It can not be transmitted from one person to another.
- ▶ If the diet is deficient in both carbohydrates and proteins for a long time will impact the growth of an individual.
- ▶ Serious diseases like marasmus and kwashiorkor develop in the case of children if protein is not sufficient in diet.
- ▶ Protein deficiency for a long time than he/she is likely to have
 - Stunted growth
 - Swelling of face
 - Discolouration of hair
 - Skin diseases
 - Diarrhoea



Deficiency of Vitamins

Vitamin	Function	Deficiency disease	Symptoms	Sources
A (Retinol)	Keep eyes, hair, and skin healthy	Night blindness	Dryness of eyes, Improper vision	Green leafy vegetables and fruits, butter, egg yolk, carrots, and fish.
B₁ (Thiamine)	Helps digestion, maintains nervous system	Beriberi	Inflammation (a condition characterized by redness and/or swelling) of nerves. Digestive problems and heart abnormalities	Eggs, whole grains, sprouts.
B₂ (Riboflavin)	Keeps skin and mouth healthy	Skin disorders	Irritation of eyes, Skin and intestinal disorders, Inflammation of the tongue	Eggs, milk, green leafy vegetables.
B₁₂ (Cyanocobalamin)	Formation of red blood cells	Anemia	Pale skin, lack of stamina and appetite, frequent headaches	Meat, fish, eggs.
C (Ascorbic acid)	Helps to resist infections and keeps teeth, gums, and joints healthy	Scurvy	Loosening of teeth, Spongy and bleeding gums, Increased susceptibility to diseases, Slow healing of wounds Weakness, Pain in the limbs	Citrus fruits such as lime, orange, lemon, tomatoes and sprouts.
D (Calciferol)	Aids in the normal growth of bones in children	Rickets	Weak bones, Joint and bone deformities such as bow legs and pigeon chest, Softening of ribs, Protruding abdomen	Milk, fish and eggs.
K	Helps in blood clotting	Haemorrhage (Excessive bleeding)	Affects clotting of blood	Spinach, cabbage, or any other green leafy vegetable.

