

Vitamins are defined as

"small organic molecules present in diet which are required in small amounts."

- Most of the vitamins are not synthesized in the body and hence they must be supplied in the diet.
- However few vitamins are synthesized in the body. Though most of them are present in diet as such some are present as **precursors**.
- The precursor forms of vitamins are called as **provitamins**. In the body these provitamins are converted to vitamins.

Classification of Vitamins

- Vitamins are divided into two groups.
 1. fat soluble vitamins
 2. water soluble vitamins.

Fat Soluble Vitamins

- They are vitamins A, D, E and K. They have some common properties.

They are:

1. Fat soluble.
2. Require bile salts for absorption.
3. Stored in liver.
4. Stable to normal cooking conditions.
5. Excreted in feces.

Water Soluble Vitamins:

- They are members of vitamin B complex and Vitamin C.
Their common properties are
 1. Water solubility.
 2. Except Vitamin B₁₂ others are not stored.
 3. Unstable to normal cooking conditions.
 4. Excreted in urine.

BIOLOGICAL IMPORTANCE

1. Vitamins are essential for growth, maintenance and reproduction. However, they are not used for energy production.
2. Fat soluble vitamins are required for normal colour vision, blood clotting, bone formation and maintenance of membrane structure.
3. Most of the water soluble vitamins function as coenzymes or prosthetic groups of several enzymes involved in carbohydrate, lipid and amino acid metabolism etc.
4. Vitamins A and D act as steroid hormones.
5. Deficiency of fat soluble vitamins produce night blindness, skeletal deformation, haemorrhages and hemolysis.

BIOLOGICAL IMPORTANCE (Cont..)

6. Deficiency of water soluble vitamins produce beriberi, glossitis, pellagra, microcytic anaemia, megaloblastic anaemia and scurvy.
7. Some vitamin analogs are used as drugs. For example folic acid analogs are used as anticancer agents and antibiotics.
8. Moderate consumption of some vitamins is found to decrease occurrence or severity of some diseases.
For example carotenes, Vitamin E and Vitamin D consumption at moderate level reduces incidence of cancer and cardiovascular diseases.