

## BIOMOLECULES

### VITAMINS

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It has been noted that certain organic compounds are essential in small quantities within our dietary intake, and their absence can lead to the development of particular diseases. These essential compounds are commonly referred to as vitamins.

#### CATEGORIZATION OF VITAMINS

Vitamins are categorized into two distinct groups, primarily based on their solubility in either water or fat.

- (i) **Fat-Soluble Vitamins:** These vitamins, including vitamins A, D, E, and K, dissolve readily in fats and oils but do not dissolve in water. They are typically stored in the liver and adipose (fat-storing) tissues of the body.
- (ii) **Water-Soluble Vitamins:** The B group vitamins and vitamin C are considered water-soluble because they easily dissolve in water. These vitamins must be consistently included in our diet as they are swiftly excreted through urine and are not stored in the body, with the exception of vitamin B<sub>12</sub>.

Some important vitamins, their sources and diseases caused by their deficiency are listed in table.

Sr. No.	Name of Vitamins	Source	Deficiency Diseases
1	Vitamin A (Retinol)	Fish liver oil, carrots, butter and milk	Xerophthalmia (hardening of cornea of eye) Night blindness
2	Vitamin B <sub>1</sub> (Thiamine)	Yeast, milk, Green Vegetables and cereals and grams	Beri beri (loss of appetite, retarded growth)
3	Vitamin B <sub>2</sub> (Riboflavin)	Milk, egg white, liver, Kidney	Cheilosis (fissuring at corners of mouth and lips), digestive disorders and burning sensation of the skin
4	Vitamin B <sub>6</sub> (Pyridoxine)	Yeast, milk, egg yolk, cereals and grams	Convulsions
5	Vitamin B <sub>12</sub> (Cyanocobal-amine)	Meat, fish, egg and curd	Pernicious anaemia (RBC deficient in haemoglobin)
6	Vitamin C (Ascorbic acid)	Citrus fruits, amla and green leafy vegetables	scurvy (bleeding gums)
7	Vitamin D (Calciferol)	Exposure to sunlight, fish and egg yolk	Rickets (bone deformities in children) and osteo-malacia (soft bones and joint pain in adults)
8	Vitamin E or Tocopherol ( $\alpha$ , $\beta$ and $\gamma$ ) or Antisterility factor	Eggs, Milk, Fish, Wheat germ oil cotton seed oil etc.	Sterility (loss of sexual power and reproduction)