

Definition:

- group of organic compounds which are essential for normal growth and nutrition and are required in small quantities in the diet because they cannot be synthesized by the body.

- Vitamins are classified based on their solubility. The fat-soluble vitamins are A, D, E and K. They can be stored in the body.
- The water-soluble vitamins are the B-complex vitamins and vitamin C. They are easily flushed out of the body.

Fat-Soluble Vitamins

- fat-soluble vitamins are vitamins that dissolve in fat.

Water-Soluble Vitamins:

- are vitamins that dissolve in water.

Vitamin A

- Vitamin A is an antioxidant. It can come from plant or animal sources. Plant sources include colorful fruits and vegetables. Animal sources include liver and whole milk.
- Vitamin A plays a role in:
- Vision
- Bone growth
- Reproduction
- Cell functions
- Immune system

• **Vision**

- Vitamin A is required for the maintenance of normal vision. A deficiency in vitamin A can lead to visual disturbances. In the eyes, a form of vitamin A called retinal is combined with a protein called opsin to give rhodopsin, an essential light absorbing molecule needed for color vision and seeing in dim light.

- **Immune system**
- Vitamin A is essential for maintaining healthy immune function and deficiency can lead to an impaired response to infection.
- **Cell growth**
- One form of Vitamin A, retinoic acid is, a key hormone-like growth factor for epithelial cells and other cell types in the body.

- **Gene transcription and protein formation**

- Vitamin A in the form of retinoic acid is essential for gene transcription. Retinol is taken up by the cell where it is oxidized to retinaldehyde which is then oxidized to give retinoic acid. Retinoic acid binds to the nuclear receptors in order to regulate gene transcription.

- **Skin health**

- Retinoic acid also maintains skin health by activating genes that cause immature skin cells to develop into mature epidermal cells.

Vitamin A Deficiency

- Inflammatory skin conditions.
- Dry eyes.
- Night blindness.
- Infertility and Trouble Conceiving.
- Delayed growth in children.
- Throat and chest infections.
- Poor wound healing.