

VITAMINS

Q. What are the sources of Vitamins for our body?

Ans: Vitamins are available to our body by two sources. They are 1) diet, 2) Bacteria present in the intestine. These bacteria synthesize the Vitamins and supply them to the body.

Q. Name the various Vitamins in B-Complex Vitamins?

Ans: B-Complex is the group of several B. Vitamins.

It contains

- Thiamine(B₁)
- Riboflavin (B₂)
- Niacin/Nicotinic Acid (B₃)
- Cyanocobalamin (B₁₂)
- Pyridoxine (B₆)
- Folic Acid
- Pantoic Acid and Biotin.

Q. Mention the disease caused by the deficiency of pyridoxine?

Ans: Deficiency of pyridoxine leads to hyper irritability, anemia, nausea and vomiting. In children's pyridoxine deficiency causes convulsions (fits).

Q. What is the method evolved by the National Institute of Nutrition in Hyderabad to prevent blindness in children ?

Ans: National Institute of Nutrition in Hyderabad had evolved a method for the prevention of night blindness and loss of vision due to deficiency of vitamin 'A' in children, by giving a large dose of Vitamin 'A' to school children once in six months.

Q. Mention the water soluble Vitamins and explain any five of them?

Ans: Water soluble Vitamins are 1. Thiamine/B₁

2) Riboflavin B₂, 3) Niacin/Nicotinic Acid B₃, 4) Pyridoxine B₆, 5) Folic Acid B₉,

6) Cyanocobalamin B₁₂, 7) Pantoic Acid, 8) Biotin, 9) Vitamin C.

Vitamin B₁: It is chemically known as Thiamine.

◆ It is necessary for the activity of some of the enzymes of carbohydrates metabolism.

Source of Vitamin B₁: It is available in cereals, like wheat, oil seeds like groundnut, milk, meat, fish, eggs and vegetables.

Deficiency of Vitamin - B₁: Leads to Beri-Beri and loss of appetite.

Vitamin B₂: It is otherwise known as Riboflavin.

◆ It is essential for oxidation - reduction reactions

Sources: It is available in milk, eggs, liver, kidney and green leafy vegetables.

Deficiency: This vitamin leads to glossitis, cracking of mouth at angles.

Vitamin B₃: It is otherwise known as Niacin or Nicotinic Acid. Niacin is essential for the

metabolism of carbohydrates, proteins and fats.

Sources: It is available in Kidney's, Liver, meat, poultry, fish, legumes and groundnut.

Deficiency: Leads to pellagra. It is a skin disease.

Vitamin B₆: It is chemically known as pyridoxine.

◆ It plays an important role in the metabolism of amino acids.

Sources of B₆: It is available in milk, liver, meat, Egg Yolk, Fish, Whole grain cereals, legumes and Vegetables.

Deficiency: Leads to anaemia, Hyper irritability, disorders of nervous system.

Folic Acid/B₉: It is required for the synthesis of Nucleic Acids (DNA+RNA) and also required for the development of Blood Cells in the bone marrow.

Source of B₉: It is available in liver, meat, Eggs, milk, fruits, cereals and leafy vegetables.

Deficiency: Anaemia, Diarrhea, loss of Leucocytes.

Vitamin B₁₂: It is also known as Cyanocobalamin.

◆ It has an important role in the metabolism of nucleic acids and in protein synthesis.

It is not available in ready made food.

Deficiency: Vitamin B₁₂ leads to pernicious anaemia.

Q. Write brief note on Vitamin C.

Ans: Vitamin -C: It is also known as Ascorbic Acid. Vitamin C plays an important role in oxidation reactions and is required for the formation of collagen.

◆ Collagen is required for the formation of blood vessels, connective tissue, cartilage and dentin of teeth

◆ Vitamin C also helps in the absorption and storage of iron. It also helps in healing of wounds and fractures of bones.

Sources of Vitamin-C: It is present in fresh fruits, green leafy vegetables, tomatoes and germinating pulses. Citrus fruits and Indian gooseberry (Amla) are the richest sources of Vitamin.

Deficiency: It leads to a disease called "SCURVY" in this disease the gums swell and start bleeding.

Q. Mention fat soluble Vitamins and explain them, Vitamin A, D, E and K are the fat soluble Vitamins.

Ans:

Vitamin-A: It is otherwise known as Retinol. It is required for normal vision. It helps in the production of pigments such as Rhodopsin of rods and Iodopsin of cones.

Sources: It is available in liver, Eggs, butter whole milk, fish, meat, cod liver oil and Shark liver oil, spinach, amaranthus, carrots, tomato, pumpkin, papaya and mango.

Deficiency: Leads to night blindness, xerophthalmia rupture of cornea, scale formation on skin.

Vitamin-D: It is chemically known as calciferol. It helps in the absorption of calcium and

phosphorus by the intestine and their deposition in the bone.

It also required for the normal growth of bones.

Sources: Liver, Egg Yolk, butter, Cod liver oil and Shark liver oil.

Deficiency: Leads to Rickets (Such as knock knees, bow legs, deformed pelvis)

Vitamin-E: It is chemically known as Tocopherol. It is otherwise known as anti sterility Vitamin. This vitamin is required for the normal functioning of sex organs.

Sources: It is present in fruits, vegetables, germinating seeds, meat, Egg Yolk and Sunflower oil, Cotton seed oil etc.

Deficiency: Leads to sterility in males, abortions in females, reduced life span of R.B.C.

Vitamin- K: It is chemically known as phyllo quinone. It is required for blood coagulation.

Source: This Vitamin present in green leafy vegetables and milk.

Deficiency: Leads to delay in blood clotting.

Fill in the blanks:

1. Vitamin B₁ is also called Thiamine
2. Deficiency of Vitamin C causes a disease called Scurvy
3. When rice is polished or repeatedly washed Vitamin B₁ Vitamin is lost from it
4. The Vitamin that prevents sterility in males is Vitamin E/Tocopherol
5. Rickets is caused due to deficiency of Vitamin D.
6. The Vitamin that is highly sensitive to heat is called Vitamin-C
7. The Vitamin required for coagulation of blood is Vitamin K
8. Deficiency of pantothenic acid results in burning of feet
9. The Vitamin that plays an important role in the metabolism of nucleic acids is Cyanocobalamin
10. Pellagra is caused due to deficiency of B₃ Vitamin

Note: From this lesson minimum 5 marks we will be expected from Board Exam.