



SNS COLLEGE OF NURSING
Saravanampatti (po), Coimbatore.

DEPARTMENT OF NURSING
COURSE NAME : BSC (NURSING) I YEAR
SUBJECT : NUTRITION
UNIT: III: VITAMINS
TOPIC : VITAMINS



INTRODUCTION



The word Vitamin comes from the Latin word “Vita” – means “Life”. Vitamins are organic components in food that are needed in very small amounts for growth and for maintaining good health.



DEFINITION



Vitamins are defined as “Small organic molecules present in diet which are required in small amount.”

Few vitamins are synthesized in the body though most of them are present in diet as such some are present as “Precursors”. The Precursors forms of vitamins are called as Provitamins.



CLASSIFICATION



- 1) **FAT SOLUBLE VITAMINS:** Vitamins that dissolve in fat. Because fat is easily stored in our body, the fat-soluble vitamins are **A, D, E** and **K**.
- 2) **WATER SOLUBLE VITAMINS:** Vitamins that dissolve in water. They can move through our body pretty easily, and they can also be flushed out by kidneys. It includes **Vitamin B-Complex** and **Vitamin C**.



BIOLOGICAL IMPORTANCE



- ✓ Essential for growth, maintenance and reproduction.
- ✓ Fat soluble vitamins are required for normal color vision, blood clotting, bone formation and maintenance of membrane structure.
- ✓ Vitamins A and D act as steroid hormones.



BIOLOGICAL IMPORTANCE

- ✓ Water soluble vitamins as coenzymes or prosthetic groups of several enzymes involved in carbohydrates, lipid and amino acid metabolism etc.
- ✓ Some vitamins analogs are used as drugs.
- ✓ Moderate consumption of vitamin E and D at moderate level reduces incidence of cancer and cardio vascular disease.



BIOLOGICAL IMPORTANCE

- ✓ Consumption of vitamin C in significant amount reduces severity of cold and aging process.
- ✓ Vit B12, Folic acid and Vit B6 are beneficial to CAD patients.



VITAMIN A



Vitamin A absorbed through lymphatic system into the blood stream along with fat and stored in large amount in liver.

RDA:

For infants 300mcg, children 400 – 600 mcg and Adolescent – 750 mcg.



VITAMIN D



It is absorbed in the presence of bile and fat through lymph and stored in liver. Vitamin D is also referred as sunshine Vitamin, synthesized by body in sun. lack of vitamin D leads to a disease called Rickets.

RDA:

2000IU in infants per day

400IU in children per day.



VITAMIN E



Vitamin E or Tocopherol is an anti oxidant. Vitamin E is absorbed with fat in intestine. it is stored in liver, muscle and body fat.

RDA:

- 1) Infants 0 – 6months old – 4mg / day
- 2) infants 7 – 12 months – 5mg / day
- 3) Children 1- 3 years – 6mg/ per
- 4) 4 – 8 years – 7mg/day
- 5) 9 – 13 years – 11mg/day.



VITAMIN C



Vitamin C is ascorbic acid. It has strong reducing properties. It is absorbed from intestine and passed on through portal to general circulation. Scurvy is the disease which occur due to deficiency of ascorbic acid. Deficiency of vitamin C usually present between 6 months to years of life.

RDA:

- 1) For infants 30 – 40 mg
- 2) For children 40 - 70 mg



VITAMIN B1



It is required for carbohydrate metabolism.
Deficiency causes disease Beri Beri.

RDA:

The daily recommended dietary allowance
of Thiamine is 0.4mg/1000Kcal.



VITAMIN B2



It is a flavo protein which is widely distributed in plants.

RDA:

- 1) It is based on Calorie requirement.
- 2) 0.4mg/ 1000kcal infants.
- 3) 0.8 – 1.2 mg/1000 Kcal for children's.



VITAMIN B3



Essential for normal functioning of skin intestinal tract and nervous system. Deficiency of Niacin leads to “Pellagra”.

RDA:

Requirement are expressed in terms of niacin equivalent. One NE equal to 1mg of niacin, 6.4 to 8NE/1000cal.



VITAMIN B6



It is essential for fatty synthesis. Pyridoxine is essential for maintaining nerves in normal condition.



FOLATE OR VITAMIN B9



Folate is derived from Latin word means leaf because dark leafy vegetables are the best source for folate.

RDA:

For adults is 4000mcg/day.



VITAMIN B12



It promotes maturation of RBCs. It contains cobalt (4-5%). B12 deficiency causes permanent damage to nervous tissue, if untreated.

RDA:

- 1) For infants is 0.3mcg/day
- 2) For children 0.5 – 1.5mcg/day
- 3) For adolescents is 2.0mcg/ day.



VITAMIN B7



Biotin contains fused Imidazole and Thiophene. It is synthesized by internal flora.



VITAMIN B5



Part of coenzyme A which plays an important role in energy metabolism. Is essential for formation of ATP from the breakdown of carbohydrates, protein, fat and alcohol.

RDA:

RDA for adults in 5mg/day.



ASSESSMENT



- Define vitamins.
- Explain about fat soluble vitamins.





REFERENCE

- Darshan sohi, “ A comprehensive textbook of applied Nutrition and dietetics” , 3rd edition, published by Jaypee publication.
- Shella John, Jasmine devaselvam, “Essentials of Nutrition and dietetics for nursing”, 2nd edition, published by Wolters Kluwer.
- <https://www.slideshare.net/aiswarya1995/balanced-diet-57863742>

