

Name of the student: *Date:* 04/11/2020

Vitamins:

Vitamin refers to an essential dietary factor which is required by the organism in small amounts and whose absence results in deficiency diseases.

- Absence of vitamins in regular diet may prolong or may cause vitamin deficiency diseases. Afterwards, it may cause severe harmful effects on the body and even death.
- The vitamins do not have active participation in body formation.
- The calorie value of vitamins is to be considered as zero.

Q. Why is vitamin termed as an essential dietary factor?

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Classification of Vitamins:

Vitamins are generally classified as water-soluble vitamins and fat-soluble vitamins.

1. Fat-Soluble Vitamins

Vitamin A, D, E and K are fat-soluble. These are stored in adipose tissues (lipid-rich cells) and hence are called fat-soluble vitamins.

2. Water-Soluble Vitamins

Vitamins in B-group and vitamin C are water-soluble and cannot be stored in our bodies as they pass with the water in urine. These vitamins must be supplied to our bodies with regular diets.

Q. Why should we eat vitamin B and Vitamin C daily?

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Sources of Vitamins:

The best sources of fat soluble vitamins include:

Vitamin A: Found in potato, carrots, pumpkins, spinach, beef and eggs.

Vitamin D: Found in fortified milk and other dairy products.

Vitamin E: Found in fortified cereals, leafy green vegetables, seeds, and nuts.

Vitamin K: Found in dark green leafy vegetables and in turnip or beet green.

The best sources of water soluble vitamins include:

Vitamin B1 or Thiamin: Found in pork chops, ham, enriched grains and seeds.

Vitamin B2 or Riboflavin: Found in whole grains, enriched grains and dairy products.

Vitamin B3 or Niacin: Found in mushrooms, fish, poultry, and whole grains.

Vitamin B5 or Pantothenic Acid: Found in chicken, broccoli, legumes and whole grains.

Vitamin B6 or Pyridoxine: Found in fortified cereals and soy products.

Vitamin B7 or Biotin: Found in many fruits like fruits and meats.

Vitamin B9 or Folic Acid: Found in leafy vegetables.

Vitamin B12: Found in fish, poultry, meat and dairy products.

Vitamin C: Found in citrus fruits and juices, such as oranges and grapefruits.

Functions of Vitamins:

Based on their role in biological processes and their effect, different vitamins have different functions. Their functions can be best understood by knowing about their deficiency diseases.

Given below is the list of vitamins and their deficiency diseases:

1. **Vitamin A** – Hardening of the cornea in eye, night blindness.
2. **Vitamin B1** – Deficiency may cause beriberi, dwarfism.
3. **Vitamin B2** – Deficiency can cause disorders in the digestive system, skin burning sensations, cheilosis (corners of the mouth become inflamed).
4. **Vitamin B6** – Deficiency of B6 causes convulsions, conjunctivitis, and sometimes neurological disorders.
5. **Vitamin B12** – Its deficiency can cause pernicious (deadly) anemia and a decrease in red blood cells in hemoglobin.
6. **Vitamin C** – It is a water-soluble vitamin, its deficiency causes bleeding in gums and scurvy.

7. **Vitamin D** – It is obtained by our body when exposed to sunlight. Its deficiency causes improper growth of bones, soft bones in kids, rickets.
8. **Vitamin E** – Deficiency of vitamin E leads to weakness in muscles and increases the fragility of red blood cells.
9. **Vitamin K** – It plays an important role in blood clotting. The deficiency of vitamin K increases the time taken by the blood to clot. Severe deficiency may cause death due to excessive blood loss in case of a cut or an injury.

Q. Complete the table with the required information.

Vitamin	Sources	Deficiency diseases
A		
B6		
B12		
C		
D		
E		
K		

Q. Match Column-A with Column-B.

Column-A	Column-B
a) Pantothenic Acid	plays an important role in blood clotting
b) Turnip or beet green	causes convulsions, conjunctivitis, and sometimes neurological disorders
c) Deficiency of vitamin B12	Vitamin A
d) Deficiency of vitamin B1	strengthen in muscles and decreases the fragility of red blood cells
e) Deficiency of fortified cereals and soy products	causes pernicious anemia
f) Hardening of the cornea in eye and night blindness	cause beriberi, dwarfism
g) Vitamin E	legumes and whole grains

Deficiency of which vitamin causes disorder in digestive system?

