

## VITAMINS AND THE CONSEQUENCES OF THEIR DEFICIENCY

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### ABSTRACT

When the amount of vitamins is insufficient, symptoms of hypovitaminosis appear in the body and undergo certain changes. In general, this hypovitaminosis is often caused by a lack of vitamins in food, or their poor absorption from the gastrointestinal tract (liver dysfunction, gastrointestinal diseases), or an increase in the body's need for them (pregnancy, obesity). In postoperative period, chronic infectious diseases, etc.), occurs as a result of a large amount of vitamins leaving the body (increased air and body temperature, heavy physical work and stress). The most serious disease is the deficiency of several vitamins, which is called polyvitaminosis.

**Keywords:** hypervitaminosis, hypovitaminosis, avitaminosis, beri-beri, anemia, antineuric, growth vitamin, antidermatitis, antipellargic.

### INTRODUCTION

If the human body does not have enough vitamins or exceeds the norm, their balance is disturbed. If the body lacks some vitamins, it is called hypovitaminosis, and if there is a lack of several vitamins, it is called avitaminosis.

Table 1 Classification and nomenclature of vitamins

A sign through Narf	Chemical name	Physiological name	One day's need for a person, mg
Water soluble			
B <sub>1</sub>	Thiamine	Antineuric	2,0
B <sub>2</sub>	Riboflavin	Growth vitamin	2,0
B <sub>3</sub>	Pantothenic acid	Antidermatitis	12,0
B <sub>5</sub> (PP)	Nicotinic acid and nicotinamide	Antipellargic	25,0
B <sub>6</sub>	Pyridoxine	Antidermatitis	2,0
B <sub>12</sub>	Cyanocobalamin	Antianemic	0,003
C	Ascorbic acid	Antisengotic	75
H	Biotin	Antiseborrhoea	0,15
Fat soluble			
A	Ritinol	Antixerophthalmic	2,5
D	Calciferol	Antirickets	0,025 (for children) 0,0025 (for children)
E	Tocopherol	Antisterile	15,0
K	Phylloquinone	Antihemorrhagic	0,25
Q	Ubikinon	-	-

If the amount of vitamins or vitamins increases in the tissues, this is also the cause of the disease, and such a condition is called hypervitaminosis. The imbalance of this type of vitamins is observed in fat-soluble vitamins.

The body's demand for vitamins increases in infectious diseases, burns, bone fractures and wounds. Vitamins cause wounds and burns, bones to bind together and heal faster. They complement each other in their effects. In hypovitaminosis and avitaminosis, the growth of a young organism slows down, body weight begins to decrease, appetite decreases, work capacity decreases, weakness occurs, pain occurs in the intestines, digestion in the stomach worsens. Often hypovitaminosis is replaced by fatigue and flu patients.

Below we provide information about several vitamins. When these vitamins are lacking in the body, pathological conditions and types of diseases are caused. **Vitamin V<sub>1</sub> (thiamine)**. Lack of vitamin B<sub>1</sub> in the body causes beri-beri, that is, beri- impotence disease in Senegalese language, polyneuritis disease. Thiamine is a complex chemical compound composed of pyrimidine and thiazole rings.

**Vitamin B<sub>2</sub> - riboflavin**. In case of lack of vitamin B<sub>2</sub>, there is a decrease in coenzyme in the body, including a decrease in the amount of flavin mononucleotide. If the body lacks this vitamin, the mucous membranes, primarily the oral cavity, become inflamed, and the lips become dry. The eyes get tired quickly. Later, the cornea of the eye becomes inflamed and cataract develops. Vitamin B<sub>2</sub> is widely distributed in plants and animals.

**Vitamin V<sub>3</sub> - pantothenic acid**. When this factor is lacking, animals develop various pathological symptoms: growth arrest, dermatitis, loss of wool and hair, adrenal gland necrosis, blood clotting, loss of appetite, nerve paralysis, and symptoms of internal organ diseases. ladi

According to its chemical nature, vitamin RR (nicotinic acid, nicotinamide, V<sub>5</sub>) is nicotinic acid and its amide. Lack of this vitamin causes a skin disease - pellagra, that is, rough skin in Italian.

**Vitamin V<sub>6</sub> (pyridoxine)**. As a result of lack of this vitamin in food, the protein exchange in the body is disturbed, that is, the peramination of amino acids is derailed. Deficiency of this vitamin is manifested, especially in children, and causes disorders of the central nervous system and other diseases.

**Vitamin V<sub>12</sub> (cyanocobalamin)**. deficiency causes anemia. This disease is accompanied by a disruption of the nervous system and a sharp decrease in the amount of acid in the gastric juice. This vitamin is often found in beef liver, kidney and fish products.

In young children, B<sub>12</sub> deficiency can appear much sooner. Nitric oxide interferes with the metabolism of vitamin B<sub>12</sub>, so when nitric oxide is used for anesthesia (eg, during dental surgery) and threshold levels of vitamin B<sub>12</sub> develop B<sub>12</sub>-deficient polyneuropathy.

**Vitamin V<sub>13</sub>** The biological function of B<sub>13</sub> is its pyrimidine nucleotide biosynthetic precursor; it is in great demand in the human body: 1-1.5 g/day, orotic acid is often synthesized from aspergine acid, and there is no deficiency in the human body.

However, K-salt of orotic acid is used in medicine for patients with protein metabolism, normalization of liver functions, myocardial infarction and other heart diseases, as well as accelerates adeptasia when steroid hormones are used for a long time, besides, it is clearly anabolic.

**Vitamin V<sub>15</sub>** Cabbage, spinach found in the shade. A lack of choline in the diet can lead to fatty deposits in the liver, kidney damage, and bleeding.

**Vitamin C is ascorbic acid.** Vitamin C deficiency causes scurvy. The permeability of blood vessels, especially capillaries, is disturbed, bleeding under the skin, bleeding from the gums is observed, the disease is also called scurvy. When a person is infected with scurvy, the biosynthesis of hyaluronic acid and a special protein - collagen is also disturbed. This, in turn, causes bone tissue damage, teeth becoming brittle and falling out quickly.

**Vitamin H (biotin, bios II).** Biotin deficiency causes tori depigmentation and specific eczematous dermatitis, growth retardation and nerve damage. In birds, the metabolism is disturbed, feather production is poor, and few eggs are born. Biotin is needed by plants, microorganisms, and any cell, its content is high in the cells of malignant tumors (tumors).

**Fat-soluble vitamins.** Fat-soluble vitamins include A, D, K, E, Q, F. One of the most important biological properties of vitamins of this group is their accumulation in the body.

**Vitamin A (retinol).** As a result of lack of vitamin A in food, the body stops growing. As a result of the drying of the skin and mucous membranes, pathogenic microbes enter the body and cause diseases such as dermatitis, bronchitis and inflammation of the respiratory tract. In the case of avitaminosis, the eye is also damaged, and the eye becomes blind.

**Vitamin D (calciferol).** If this vitamin is consumed a lot, the intoxication of this vitamin will begin in older people and young children. The amount of calcium and phosphorus in the blood increases, calcium deficiency begins in internal organs (lungs, kidneys, veins), and bones become brittle.

**Vitamin E (tocopherol).** If there is a lack of vitamin E in the body of children, the metabolism of proteins, fats and carbohydrates is disturbed. This, in turn, causes damage to the genitals and loss of reproductive ability.

**Vitamin K (phylloquinone).** Vitamin K deficiency is rare because the foods we usually eat contain large amounts of vitamin K<sub>1</sub>. Vitamin K<sub>2</sub> is produced by the body on its own.

The first signs of vitamin K deficiency in the body are hemorrhagic syndrome, which is manifested in the form of bleeding from the nose and stomach, subcutaneous and intradermal bleeding. Vitamin deficiency leads to hypovitaminosis, i.e. increased fatigue, loss of appetite, lack of sleep.

**Vitamin F.** Usually, the lack of this substance is manifested by pink and other skin diseases, including eczema. Of course, such diseases cannot be life-threatening. But if you understand the causes of such problems, it becomes clear: everything is more serious than it seems.

When a large amount of toxins and slags accumulate in the body, they begin to be thrown out. The skin is also involved in this process.

**Vitamin N (lipoic,  $\alpha$ -lipoic, or thioctic acid).** Among the substances that affect the growth of microorganisms like lipoic acid and are included in the account of vitamins are A-factor actinosets, which respond to the production of streptomycin, respond to the growth of other antibiotics and the transition to the stage of sporulation of light fungi.

**Vitamin P.** If the amount of vitamin P is low, hyaluronidase becomes active and breaks it down, as a result of which the permeability of blood vessels changes and bleeding is observed. A person's daily need for vitamin P is not clearly defined. It is always found together with vitamin C in herbal products.

**Vitamin Q.** Under normal conditions, ubiquinones are synthesized in the human body in the necessary amount, but in the case of protein or calorie deficiency (starvation), anemia occurs in children or changes in the brain and bones appear, which are lost with the introduction of vitamin Q | Ubiquinones are also necessary in the development of embryos, because they participate in the formation of erythrocytes and in medicine they stimulate myocardial mitochondria, they are useful in the treatment of anthracyclic antibiotics in cardiovascular diseases and muscular dystrophy, when vitamin Q is in high concentration in cancer patients, they play the role of classic antivitamin Q.

**Vitamin U.** Vitamin U (lat. *ulcus- yazva*, wound), it is called anti-ulcer factor and methylmethionine, Vitamin U is a substance that is resistant to heat. It is used in the treatment of gastric ulcer and duodenal ulcer. It is used in the treatment of peptic ulcers and gastrointestinal tract colds.

Currently, such types of vitamins have been added to science for years. They are very necessary for the body, and a person should control the intake of these vitamins in the body.

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