



IMPORTANCE OF VITAMINS IN THE HUMAN BODY AND HYGIENIC DESCRIPTION

Sharipova Gulnihol Idiyevna

Bukhara State Medical Institute

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ABSTRACT

Vitamins (Latin: vita-life), drugs - organic compounds necessary for the life activity and normal metabolism of a living organism. They have different chemical structures. Information about people getting sick as a result of a lack of certain substances in the composition of nutrients is recorded in ancient Chinese books, and later in the works of Hippocrates.

The study of V from a scientific point of view began in the 18th century. English doctor J. Lind (1757), French physiologist F. Majandi (1816), Russian doctor NI Lunin (1880), Dutch doctor Eikman (1897), English scientist F. Hopkins (1906) made a great contribution to the study of V. V. is not synthesized in the body, a person receives the necessary V. with various food substances. Hypovitaminosis occurs when there is insufficient vitamin B in food, and avitaminosis occurs when it is completely absent. The main source of vitamin B is plants (see Plants with vitamins). Microorganisms also play a major role in the formation of V. The biological importance of V. consists of a correcting effect on metabolism. V. enhances chemical reactions occurring in the body, affects the body's absorption of nutrients, helps the normal growth of cells and the development of the whole body, enters the body's enzymes and ensures their normal function and activity. V. in energy metabolism in the body (V., V2 V.), in the biosynthesis of amino acids (V6, V12 V.) and fatty acids (pantothenic acid), in the process of photoreception (vitamin A), in blood clotting (vitamin K) and in the absorption of calcium (vitamin D) is involved. Thus, if a vitamin is lacking or completely absent in the body, the metabolism is disturbed. When there is a lack of V. in food, a person's ability to work decreases, and the body's resistance to diseases and adverse effects of the external environment decreases. Vitamin deficiency is caused not only by the lack of vitamins in food, but also by disturbances in the processes of their absorption in the intestines, their delivery to tissues, and their transformation into biologically active forms. But the excess of some vitamins beyond the physiological need can lead to hypervitaminosis. In the following years, the chemical structure of more than 30 vitamins was fully studied and many were synthesized (see Vitamin industry).



Initially, V. was conventionally marked with the initials of the Latin alphabet: A, V, S, D, Ye, R, etc. Later, a single name of international standardization was adopted according to the chemical structure of V. V. is divided into water-soluble, fat-soluble and vitamin-like compounds. Fat-soluble vitamins include A, D, 1 E and K, and water-soluble vitamin B complex and C, RR. In addition to V., there are substances that undergo various changes in the body and become V. - provitamins. Provitamins include carotenes (provitamin A), some sterols that turn into vitamin D (ergosterol, etc.). A person's daily need for V. depends on the general condition of the body, work style, health or illness. A, V, V2, S, D, RR are especially important for human life. Below is a description of the more commonly used V. Retinol (vitamin A) is widely distributed in nature. It is found in plant tissues in the form of provitamin A (carotenoid pigments that turn into retinol in the body). Participates in the formation of vision pigments, ensures normal growth of the organism, adaptation of the eye to different levels of light. If there is a lack of retinol in the body, the skin becomes dry, scaly, itchy, small rashes appear, purulent skin diseases flare up, hair becomes dry, dull and falls out, and nails become brittle. Inability to look at light, squint, conjunctivitis, blepharitis are mainly caused by lack of vitamin A. Provitamin A (carotene) is abundant in plants, especially in their green leaves, vitamin A in animal and fish liver, fish oil.

Thiamine (V, vitamin) is included in many food products. It is mainly found in the husk and husk (bran) of grain. Thiamine is important in carbohydrate metabolism in the body; if the food is rich in carbohydrates, more thiamine is required for their absorption. Without thiamine, polyneuritis occurs. If there is no or lack of this vitamin in the body, a serious disease of the nervous system - beriberi appears, as well as decreased intestinal peristalsis, constipation, muscle relaxation, and a decrease in physical and mental performance. Riboflavin (vitamin B2) is involved in the growth process and is one of the growth factors. Participates in protein, fat and carbohydrate metabolism. Adjusts the state of the central nervous system, affects the metabolism of the eyeball, helps to perceive light and distinguish colors. Riboflavin enters the body with food, and if there is a lack of riboflavin in food, the corners of the mouth, lips crack (see Lip cleft), hair loss, conjunctivitis and blepharitis are observed. Vitamin B2 is abundant mainly in animal products - eggs, cheese, milk, meat, and grains and legumes. Pyridoxine (vitamin V6) is found in many plant and animal products: yeast, wheat germ, liver, fish, beef and legumes. It ensures the normal digestion of protein and fat and plays an important role in nitrogen metabolism. If there is a lack of pyridoxine in the body, children will not grow, the work of the gastrointestinal tract will be disturbed, and anemia will occur. Stomatitis, skin inflammation, irritability, insomnia are observed in pregnant women. The necessary amount of pyridoxine for the human body is produced by intestinal bacteria. Nicotinamide, nicotinic acid (vitamin RR) participates in the respiration of cells, protein metabolism, accelerates the digestion of plant proteins in the body, normalizes the secretion and movement of the stomach, improves the composition of secretions and juice produced by the pancreas, and stabilizes the work of the liver. Pellagra disease occurs when the body lacks nicotinic acid. Nicotinic acid is abundant in poultry, beef, liver, kidney, yeast, rice bran, and wheat bran.

Folic acid (V, vitamin) participates in the metabolism and synthesis of some amino acids, as well as in the synthesis of nucleic acids, enhances the bone marrow's hematopoietic



function, contributes to the better absorption of vitamin V12. Folic acid is abundant in plant and animal products, especially liver, kidney and green leafy vegetables. Intestinal microorganisms synthesize folic acid in large quantities.

Cyanocobalamin (vitamin B12) is a highly biologically active substance. Methionine participates in the synthesis of nucleic acids and blood formation. It enters the body with food, if it is not enough in the body, anemia occurs. Cyanocobalamin is especially abundant in beef liver. It is widely used in medicine, livestock and poultry farming. Pantothenic acid (vitamin B5) is abundant in plant and animal tissues. It normalizes the activity of the nervous system and adrenal and thyroid glands.

Ascorbic acid (vitamin C) is important in metabolism, in the assimilation of connective tissues, in maintaining and restoring these tissues in a normal state. If there is a lack of vitamin C in the body, the structure of bones and joints is damaged, scurvy occurs. Ascorbic acid is not produced or accumulated in the body. Vitamin C is found in vegetables and fruits. Ascorbic acid is part of various multivitamin preparations. Calciferol (vitamin D) affects the mineral exchange of substances and bone formation. It is especially necessary during the period of rapid growth and ossification of the skeleton of young children. Lack of vitamin D in the body causes rickets. Tunes, cod, etc. fish oil is a source of calciferol. In addition, it is abundant in milk, cottage cheese, butter, liver and egg yolk. It also protects the teeth.

Tocopherol (vitamin E, reproduction vitamin) strengthens the activity of muscles and gonads, contributes to the accumulation of all fat-soluble vitamins, especially retinol, in internal organs. The green part of the plants and the oil extracted from them (for example, in sunflower oil) are abundant. Phylloquinone (vitamin K) is one of the main factors of blood clotting. Bleeding from various organs (nose, gums, gastrointestinal tract, etc.) is observed when the body lacks vitamin K. Phylloquinone is found in the green part of lettuce, cabbage, spinach, and nettle. In addition to the above-mentioned V., there are other biologically active substances (vitamin-like compounds) necessary for the body. These include bioflavonoids, choline, inositol, lipoate, orot, pangamate, paraaminobenzoate acids, etc. substances are included.

Fruits, vegetables, etc. V. decreases when ingredients are long, stored and cooked improperly. The most unstable from V. is ascorbic acid, which is destroyed by the sun, hot and humid air. When cooking V., especially ascorbic acid, wipe and wash vegetables quickly. It is necessary to cut it, put it in boiling water, close the lid of the pot. V. preparations are available in pharmacies, but because of their strong biological effect, Vitamin should be taken only on the advice of a doctor.

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