

**B GROUP VITAMINS AND THEIR CLASSIFICATION**

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**ANNOTATION**

Vitamins are derived from Latin and *vita* means life, medicine is an organic compound necessary for the vital activity and normal metabolism of a living organism. They have different chemical structures. There are reports that people get sick as a result of a lack of nutrients. It is mentioned in Chinese books and later in the works of Hippocrates.

**Keywords:** Vitamins, hypovitaminosis, avitaminosis, enzymes, pantothenic acid, amino acids, vitamin-like compounds, thiamine, biocatalyst, polyneuritis, riboflavin, cyanocobalamin, pyridoxine.

**INTRODUCTION**

The scientific study of vitamins began in the 18th century. The English physician J. Lind (1757), the French physiologist F. Majandi (1816), the Russian physician N. I. Lunin (1880), the Dutch physician Eikman (1897), and the English scientist F. Hopkins (1906) made significant contributions to the study of vitamins. Vitamins are not synthesized in the body, and a person receives the necessary vitamins with various nutrients. Hypovitaminosis occurs when there is a lack of vitamins in the diet, and avitaminosis when there is no vitamin at all. The main source of vitamins is plants. Microorganisms also play an important role in the production of vitamins. The biological significance of vitamins is that they have a regulating effect on metabolism. Vitamins enhance chemical reactions in the body, affect the body's absorption of nutrients, promote normal cell growth and development of the whole organism, enter the body of enzymes and ensure their normal function and activity. Vitamins are involved in energy metabolism, biosynthesis of amino acids and fatty acids (pantothenic acid), photoreception (vitamin A), blood clotting (vitamin K), and calcium uptake (vitamin D). Thus, when the body lacks or does not have enough vitamins, the metabolism is disrupted. Lack of vitamins in food reduces a person's ability to work, reduces the body's resistance to disease and the adverse effects of the external environment. Vitamin deficiencies are caused not only by a lack of vitamins in the diet, but also by a violation of their absorption in the intestine, their delivery to the tissues and their conversion into biologically active forms. However, the excess of some vitamins over physiological needs can also lead to hypervitaminosis. In recent years, the chemical structure

of more than 30 vitamins has been fully studied, and many have been synthesized. Initially, vitamins were conditionally capitalized in the Latin alphabet: A, B, C, D, E, P, and so on. b-n is marked. Later, the unique name of international standardization on the chemical structure of vitamins was adopted. Vitamins are divided into water-soluble, fat-soluble and vitamin-like compounds. In addition to vitamins, there are provitamins that are converted into vitamins by various changes in the body. Provitamins include carotene, provitamin A, some sterols that convert to vitamin D, ergosterol, and others. A person's daily vitamin needs depend on the general condition of the body, the way of working, health or disease. Vitamins A, B, B2, C, D, PP are especially important for human life. Their effect is very important in the functioning of the human body. Lack of any of these vitamins can lead to various diseases in the human body. The B vitamins group includes the following vitamins.

(Thiamine), studied by K. Funk in 1912, its name is derived from the Greek word thiamine "thion-sulfur". Thiamine is found in many foods. It is found mainly in the husks and husks of grains. Thiamine is important in the metabolism of carbohydrates in the body; When food is high in carbohydrates, more thiamine is needed to digest them. Without thiamine, polyneuritis can occur. When the body does not have or does not have enough of this vitamin, it can lead to serious diseases of the nervous system, as well as decreased intestinal peristalsis, constipation, muscle weakness, and decreased physical and mental performance. Vitamin B1 (thiamine) balances the body's protein and carbohydrate metabolism. This vitamin normalizes carbohydrate metabolism and is necessary for the functioning of the nervous system, cells and the gastrointestinal tract. They are converted to thiamine pyrophosphate in humans and animals, acting as a special biocatalyst for the decarboxylation reaction of pyruvic acid, eliminating the highly toxic substance pyruvic acid and regulating the excitability of the nervous system. Its deficiency leads primarily to changes in the functioning of the nervous system, memory loss, as well as dysfunction of the gastrointestinal tract and vascular system. Avitaminosis B1 is associated with paralysis due to chronic disease (polyneuritis, inflammation of peripheral nerve fibers). At the same time, there is a violation of water metabolism, dysfunction of the cardiovascular system. Vitamin B1 produces immunity against purulent infections, which is especially necessary in the treatment of: rashes, itchy skin. Many people who are mentally and physically active should take more of this vitamin based on their doctor's advice. Excessive hair loss and graying indicate a deficiency of this vitamin. It is a water-soluble vitamin, so when it is boiled, its water is rich in this vitamin. This vitamin is destroyed by soda. The daily requirement of this vitamin is 1-2 mg. Which products contain this vitamin: wholemeal breads, cereals (buckwheat, oats, juice), peas, soy, brewer's yeast, liver, beef. Its natural sources are yeast, especially brewer's yeast, bread yeast (yeast), grains, cereals, bread (especially black bread), and vegetables. Vitamin B2 (riboflavin) - plays a balancing role in the process of cell metabolism and the process in the surface layer of the skin, but also participates in the process of respiration. Riboflavin is involved in growth and is a growth factor. Involved in the metabolism of proteins, fats and carbohydrates. It regulates the central nervous system, affects the metabolism of the eyeball, helps to sense light and color. Lack of this vitamin can cause blemishes on your face. Riboflavin enters the body through food, and a lack of riboflavin in the diet can lead to cracking of the corners of the mouth, lips, hair loss, conjunctivitis and

blepharitis, inflammation of the mucous membranes, hair loss, dizziness. With a long-term deficiency of this vitamin, the skin loses its smoothness and begins to look old. Avitaminosis B2 is associated with growth retardation, hair loss, damage to the mucous membranes (especially the corners of the mouth), decreased ability to work, and impaired hemoglobin synthesis. Its important food sources are milk and dairy products, fish, eggs, liver, cereals (buckwheat and oatmeal) and bread. The daily requirement of vitamin B2 is 2-5 mg. Vitamin B6 (pyridoxine) performs important functions in the body. Necessary for the nervous system and protein metabolism. It plays an important role in nitrogen metabolism, ensuring the normal digestion of protein and fat. This vitamin is taken for hair loss and inflammation of the skin. The main products that contain vitamin B6 are liver, beans, cereals (buckwheat, soybeans), wheat flour, yeast. The daily requirement of vitamin B6 is 1-2 mg. Pyridoxine (vitamin B6) is found in many plant and animal products: yeast, wheat germ, liver, fish, beef and legumes. will be frozen. It is found in liver, milk, potatoes, carrots, eggs, butter, rice, wheat and cabbage. Lack of pyridoxine in the body leads to stunted growth, gastrointestinal disorders, and anemia. Stomatitis, skin inflammation, irritability, insomnia are observed in pregnant women. The amount of pyridoxine needed by the human body is produced by intestinal bacteria. Vitamin B12 (Cyanocobalamin) is a highly biologically active substance. Methionine is involved in the synthesis of nucleic acids and in the process of blood formation. Cyanocobalamin is found in animal products. These include: liver, meat, some types of fish, cheese, etc. Vitamin B12 is also produced in the intestinal flora. The daily requirement of vitamin B12 is 15-20 mcg. It enters the body with food, and if it is not enough in the body, anemia develops. Cyanocobalamin is especially abundant in beef liver. Vitamin B9 - slows down the aging process. Folic acid is found in coarse flour and baked goods, cereals (buckwheat, oats, onions), beans, cauliflower, mushrooms, liver, cottage cheese, cheese and caviar. It is important to know that 80-90% of the vitamins in a product are lost as a result of cooking. Folic acid is involved in the metabolism and synthesis of some amino acids, as well as in the synthesis of nucleic acids, enhances the blood-forming function of the bone marrow, promotes better absorption of vitamin B12. Folic acid is found in plant and animal products, especially in the liver, kidneys and green leaves. Intestinal microorganisms synthesize large amounts of folic acid. Even if not now, a woman who is planning a pregnancy in the coming years will also need folic acid. This is because the fetus's need for folic acid begins in the early days of pregnancy, when the woman is unaware of the pregnancy. To avoid missing this important period, it is advisable for all women who are able to become pregnant to take folic acid daily in consultation with their doctor. The daily human requirement for folic acid is 25-35 mcg for infants, 50-100 mcg for children, 200 mcg for adults and 400 mcg for pregnant women. Pantothenic acid (belongs to B vitamins) - prevents skin inflammation, protects against hair loss, has a positive effect on tissues, is involved in the absorption of food in the intestines. It is mainly used for inflammation, frostbite and leg injuries. Pantothenic acid (vitamin B5) is abundant in plant and animal tissues. Normalizes the activity of the nervous system and adrenal and thyroid glands.

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