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**DISEASES CAUSED BY VITAMIN DEFICIENCY**  
**(ON THE EXAMPLE OF BERI-BERI AND SINGA DISEASE)**

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**Abstract:**

The article contains interesting information about the occurrence and discovery of vitamins in nature, diseases caused by vitamins, symptoms caused by vitamin deficiency in the body, deficiency of B1 and C vitamins, beriberi and tsinga diseases.

**Keywords:** Vitamins, B1 (thiamine), C (Ascorbic acid), pellagra, beri-beri (polyneuritis), tsinga (scorbut), Bering, Lind, Bingdid, Lunin, Funk, collagen biosynthesis, horseradish (pepper), tyrosine, proline, lysine.

**INTRODUCTION**

Although people have long used plants extensively, the internal secrets of most plants, i.e. their composition, especially the vitamins in them, have long been unknown. Many of the vitamins that are important for the human body are concentrated in plants. Different plants synthesize different vitamins. These vitamins differ drastically from each other both in quality and quantity.

It is no exaggeration to say that no one knows that different vegetables and fruits are rich in vitamins. Until recently, the presence of vitamins was questionable in humans. Until the discovery of vitamins, many people's lives were in danger. In other words, thousands of people have contracted various diseases as a result of vitamin deficiencies. As a result of vitamin deficiency, diseases such as "pellagra, beri-beri, singa" have appeared. Soldiers, in particular, suffered greatly from vitamin deficiencies. The sick soldiers were helpless, their legs were weak, their bodies were blurred, and their gums were bruised. There were incidents such as teeth falling out and falling out. In the middle of the last century, such a disease was rampant among the many participants in the voyages and merchant ships who set out on a long voyage. Tsinga disease, in particular, becomes a constant companion of ship's participants on voyages to America and India.

As much as the sailing ship dominated the sea, the number of sailors who died in the siege during this period exceeded the number of sailors who perished in all the battles that had taken place so far.

Until the middle of the 16th century, sailors at sea did not know how to get rid of the tsin and set out on a journey believing in their own destiny. Especially since the beginning of the 16th century, many people have died on long voyages in the seas and oceans over the past hundred years. History has it that 100 of the 103 sailors who sailed across the Atlantic from the Canadian coast fell ill with tsin, 25 of whom died before reaching the ocean. One of the sailors on the ships sailing across the ocean informed the crew members that the tsina disease could be treated with a tincture made from a coniferous plant from the native Indians on the shores of the Indian Ocean. It is doubtful that such a serious calamity can be avoided with a simple drug. Hearing the good news, the sleepless sailors rub their wounded lips with trembling hands, but long for the fragrant drink and consume it. From then on, people begin to believe that it is possible to get rid of this calamity and its suffering. However, the disease persisted until the middle of the XVIII century. One of the Russian tourists who took part in the opening of the Bering Strait, 30 members of the 76-member party under Captain Bering, including Bering Tsing, died.

In the middle of the 18th century, sufficient data were collected on tsinga disease. Eliminating its tragic consequences and completely rescuing humanity from this scourge will become one of the most pressing issues of our time.

In 1795, 30 ml of lemon juice was added to the daily diet of sailors on a voyage. Such success in the fight against gingivitis quickly spread to other countries. The new order freed the British navy from this evil disease. In the following years, each fleet that set out on a voyage began to add fruits and vegetables to its diet.

At a time when tsinga disease was plaguing people in Europe, tsinga disease has been spreading among Asian peoples for a long time. In people with this disease, first of all, as a result of severe pain in the muscles of the legs, especially the legs, the person becomes tired and emaciated.

The disease, which was not treated in time, later caused paralysis of the arms and legs. The disease is particularly prevalent in Japan, Korea, India, Indonesia and the Philippines. In Japan alone, about 50,000 people die each year. This disease is also caused by a lack of vitamins in the human body.

Vitamins were discovered in 1792 by the Russian physician Bingdid, and its properties were later studied by a scientist named N.I. Lunin. By the end of the 19th century, it was discovered that protein, fat, carbohydrates and mineral salts were constantly entering the human and animal body through food. At the same time it was known that there are deficiencies in metabolism and the emergence of diseases. So, it has become clear that there is a lack of anything other than the basic food that enters the body with food.

In 1880, through the experimental invention of the Russian scientist N.I. Lunin, it became clear that vitamins are essential for the human body. He gave preliminary data on the normal functioning of the blood circulation, respiratory tract and metabolism in the body through

vitamins. In 1912, the Polish scientist K. Funk proposed to call them "vitamins" (Latin "Vita" - life), ie life amines. did.

Since the discovery of vitamins in plants, their composition has also been studied in depth. Vitamins are a group of small molecules of various chemical nature that are necessary for the growth, vital activity and reproduction of the organism. It is now well known the composition of most plants and what vitamins they contain.

Vitamins are conventionally divided into two groups: water-soluble and fat-soluble vitamins. Of the water-soluble vitamins, thiamine (vitamin B1) and ascorbic acid (vitamin C) are of great importance. Lack of vitamin B1 disrupts the normal metabolism of carbohydrates in the body, ketoacids (pyruvic acid) begin to accumulate in large quantities, and polyneuritis develops.

Vitamin B1 (thiamine) plays an important role in the normal functioning of the excitatory and inhibitory processes in the central nervous system, as well as in the improvement of mental performance. If it is not present in sufficient amounts in the daily diet, a person has developed hypovitaminosis B1 disease. Symptoms of this are aching muscles of the limbs, weakness, rapid fatigue, a decrease in a person's mental activity, that is, a decrease in skills such as mastery, memory and attention to an important issue. He becomes angry at something trivial. When this vitamin is lacking for a long time, a disease called vitaminosis B1, i.e. beriberi, occurs. Its symptoms are that as a result of profound changes in the nervous system, nerve fibers become paralyzed, sensitivity in the skin increases first, then disappears, and the movement of the limb muscles weakens. A person cannot lift his legs well, and he steps slowly, as if he were chained to his feet. If the disease is not treated in time, breathing will stop and the patient will die as a result of paralysis of the chest and diaphragm muscles.

Sources of vitamin B1 include whole grains, wholemeal flour and other plant and animal products. This vitamin is found in rice husks, wheat bread, beans, peas, egg yolks, nuts, beef liver.

Vitamin C (ascorbic acid) plays an important role in metabolism, especially in the metabolism of proteins and carbohydrates. It has been hypothesized that vitamin C affects the state of protein metabolism in muscles (collagen biosynthesis); it is involved in regulating the metabolism of certain amino acids (tyrosine, proline, lysine) in the formation of connective tissue proteins, hormones of the adrenal cortex. As a result of vitamin C deficiency in humans develops a specific disease - tsinga (scorpion). The disease is preceded by increased fragility of blood capillaries, weakness, rapid fatigue, decreased appetite, stunted growth, bleeding gums when brushing teeth, caries, increased susceptibility to infections, and others. Then gums are injured, teeth move and fall out.

Vitamin C is one of the most common vitamins in nature. The most important sources for a person are plant products - vegetables and fruits. Vitamin C is rich in peppers, lettuce, cabbage, tomatoes, onions, horseradish, cilantro and chestnuts, black currants and citrus

fruits (lemon, orange, mandarin). From non-food sources - the leaves of black currant and especially the fruit of namatak are rich in vitamin C.

Not all vitamins play the same role in the vital activity of the body. While a deficiency of one vitamin is caused by a metabolic disorder, a deficiency of another can not only affect metabolism but also disrupt physiological function; lack of more time- can lead to health problems and death.

The requirement for about 10 vitamins depends on the age, sex and nature of the organism. These vitamins and vitamin-like substances are widely used in medicine and sports practice.

## REFERENCES:

- 1.М.Набиев, Т.Одилов, Ў.Пратов, Ғ.Шерматов. “Қизиқарли Батаника[Interesting Botany]”. “Ўзбекистон” нашриёти.Тошкент-1975.66-68 бетлар.
- 2.Б.Аминов, Т.Тиловов. “Одам ва унинг саломатлиги[Human and his health]”.”Абу Али Ибн Сино” Номидаги Тиббиёт Нашриёти.Тошкент-2001.142-144 бетлар.
- 3.Н.А.Рахматов, Т.М.Маҳмудов, С.Мирзаев. Биокимё[Biochemistry]. “Таълим” нашриёти. Тошкент-2009.129-138 бетлар.
- 4.М.У.Тўйчибоев. ”Биохимия ва спорт биохимияси[Biochemistry and sports biochemistry]”. “Тафаккур бўстони” нашриёти. Тошкент-2015.137-145 бетлар.