

## **INFLUENCE OF BIOGENIC ELEMENTS ON STUDENTS' LIVING PRODUCTIVITY**

Most customers in Ukraine consume cheap food products with a low biological value, but high energy intensity. In addition, there is a shortage of vitamins in the food ration of the population. The lack of vitamins is accompanied by disruptions of the body's activity and decrease in immunity. Students with an active lifestyle and sufficient mental workload have the greatest need for vitamins.

Vitamins are not a source of energy or plastic material, however, however, they participate in the enzyme systems as coenzymes or their precursors (niacin, thiamin, riboflavin, biotin, pantothenic acid, vitamin B6, vitamin B12, folate, vitamin K); as the components of the body's antioxidant defense system (ascorbic acid, some carotenoids, vitamin E); as the factors of genetic regulation (vitamins A, D); as the compounds performing specific functions, which, binding to the protein part, immediately carry out the chemical reactions catalyzed by this enzyme. They also take part in the formation and functioning of cell membranes and cell organelles [1; 2],

provide an adequate immune response and support the body's resistance to various infections, radiation and the effects of poisons. Vitamin H is a constituent part of enzymes involved in glucose metabolism – pyruvate dehydrogenase and transketolase. Biotin contributes to the formation of fatty acids; participates in the metabolism of amino acids and carbohydrates; ensures normal functioning of sweat glands, nervous tissue, bone marrow, male seminal glands, skin and hair cells; minimizes symptoms of zinc deficiency [2].

The purpose of the study was to determine the content of water- and fat-soluble vitamins in the diet of students, in order to prevent the development of possible diseases associated with a lack of vitamins. The research was conducted on the basis of Oles Honchar Dnipro National University. 108 respondents were

interviewed (78 females and 30 males, age group – from 18 to 20 years old). When determining the content of vitamins in the diet of students, insufficient daily intake of vitamins D, C, B9 and biotin was found out. The average content of vitamin C in food rations of female students was 1.03 times below the norm, and of males – 1.27 times below the norm. The diet of a significant number of students is unbalanced in terms of vitamin composition, which in turn affects the mental capacity and well-being of young people. As vitamin D takes part in the regulation of metabolism of assimilation of calcium and phosphorus in the body, the formation of the bone system depends on it. Vitamin B9, like vitamin B12, is necessary for hematopoiesis and the construction of coenzymes. Vitamin C participates in the formation of erythrocytes and strengthens the walls of blood vessels; effectively counteracts the destruction of body cells by free radicals; participates in the synthesis of steroid hormones of the adrenal cortex, as well as thyroid hormones; stimulates the function of collagen-synthesizing cells; contributes to strengthening of bone tissue and teeth [3]. The lack of these vitamins in the diet of students affects the body's susceptibility to diseases of skin, heart, the thyroid gland, and a decrease of the immune system. The study showed that the intake of vitamins B2, B6, B12 and B5 in students' diets exceeds the recommended values.

Today, even a varied diet does not guarantee a sufficient intake of vitamins. The deficiency of vitamins can be overcome with the help of short-term use of synthetic vitamins and functional products enriched with water- and fat-soluble vitamins.

#### REFERENCES

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