

## **THE EFFECT OF “BIOGENIC SUBSTANCES” ON THE HUMAN BODY**

***Murtazayeva Xadicha Nuriddinovna***

*Teacher of Termez branch of Tashkent medical academy*

***Abdukarimov Yahyo Ravshan o'g'li***

*Student of Termez branch of Tashkent medical academy*

**Annotation:** This article explores the impact of biogenic substances on the human body. Biogenic substances are natural compounds found in living organisms that have beneficial effects on human health. The author discusses the various ways in which these substances can positively impact the body, including boosting immunity, improving cognitive function, and reducing inflammation. Additionally, the article highlights potential sources of biogenic substances, such as certain foods and supplements, and emphasizes the importance of incorporating these substances into one's diet.

**Keywords:** Calcium, macronutrient, hypocalcemia, vitamin D deficiency, amyloidosis, heart rate, blood clotting.

Biogenic substances are compounds that are naturally produced by living organisms. These substances are essential for the proper functioning of the human body and play a crucial role in maintaining overall health and well-being. In this article, we will explore the effects of biogenic substances on the human body and why they are vital for our health.

One of the most well-known biogenic substances is collagen, which is a protein that is found in abundance in the body. Collagen is essential for maintaining the structural integrity of our skin, joints, and bones. As we age, our bodies produce less collagen, leading to sagging skin, joint pain, and weakened bones. By supplementing with collagen, we can help support the health of these important structures in our body.

Another important biogenic substance is melatonin, which is a hormone that regulates our sleep-wake cycle. Melatonin is produced by the pineal gland in the brain and helps us fall asleep and stay asleep throughout the night. Low levels of melatonin can lead to sleep disturbances and insomnia. By taking melatonin supplements, we can help regulate our sleep patterns and improve the quality of our sleep.

Probiotics are another essential biogenic substance that plays a crucial role in maintaining a healthy gut microbiome. Probiotics are beneficial bacteria that help support digestion, boost the immune system, and promote overall gut health. By consuming probiotic-rich foods or supplements, we can help maintain a healthy balance of good bacteria in our gut and prevent digestive issues such as bloating, gas, and constipation.

In addition to collagen, melatonin, and probiotics, there are countless other biogenic substances that are essential for the proper functioning of the human body. From vitamins and minerals to antioxidants and essential fatty acids, these substances play a vital role in supporting our health and well-being.

Ca is from the Latin “calx” an alkaline earth metal in the table of D. I. Mendeleev. A chemically active element. Its deficiency in the body leads to anemia, caries and other serious diseases.

The first symptoms of a decrease in calcium in the body:

- Deterioration of hair and nails;
- Increased sensitivity of teeth;
- There is a general weakness;
- Reduced performance;
- Muscle spasms and cramps;
- Unreasonable weight loss;

There are more than 80 types of chemical elements in the human body that play a significant role in its normal functioning. For example, blood and bones contain about 25-30 elements. All these elements can be divided into 3 groups:

Macronutrients, Oligobiogenic elements, Trace elements;

**Macronutrients** – their content in the human body is more than 1%. Calcium is part of the macronutrients, and it is 2.5%.

### **THE ROLE OF CALCIUM IN THE BODY.**

The human body contains about 1 kg of calcium for about 70 kg of weight, of which 99% is in the bones. Calcium is not synthesized in the body. It enters the body when eating food or various chemicals such as: cAd3, D-Type Lamera and others. Calcium serves as a building material for the body, supports metabolic processes. It is also involved in hormone secretion and blood clotting. Also:Reduces the risk of developing cancer, regulates the strength of teeth, bones, nails and hair, normalization of sleep, provides vascular and muscle tone;

It is responsible for the regulation of the nervous, endocrine and digestive systems;

Calcium absorption into the body occurs in the walls of the small intestine, and its exit from the body is carried out through the genitourinary organs. Calcium metabolism in the adult body occurs continuously, and it occurs every 10-12 years. In children, this process occurs throughout the year.

### **WHICH CONTRIBUTES TO THE OCCURRENCE OF CALCIUM DEFICIENCY IN THE BODY. PATHOLOGY.**

The norm of calcium in the blood of an adult is 2.25-2.75 mmol/l. With a decrease in calcium levels, a pathological condition is observed, which is called Hypocalcemia. Calcium supports the heart rate and is involved in blood clotting. It affects the functional activity of muscle, nervous and bone tissues. Hypocalcemia can occur in diseases of the urinary and digestive systems, metabolic disorders and endocrine glands. There are two types of hypocalcemia, namely primary hypocalcemia and secondary hypocalcemia. Primary hypocalcemia occurs when there is a lack of calcium in the diet and when fermented milk products are rejected. Secondary hypocalcemia is a consequence of various diseases, and it can often be associated with diseases such as:

- Impaired metabolism of calcium, magnesium and phosphorus.
- Vitamin deficiency of group D vitamins
- Diabetes mellitus
- Amyloidosis, kidney failure
- Poisoning with phosphorus-containing substances

Vitamin D deficiency is a more common cause of hypocalcemia. Since vitamin D is involved in the absorption and assimilation of calcium. Calcium deficiency can lead to bone deformity and rickets, as well as night crying and early caries. In adults, low calcium levels can cause osteoporosis. Due to a lack of calcium in humans, A / D often increases, neurological disorders and tetany develops. With a chronic lack of calcium in the body, synthetic calcium-containing drugs, vitamin and mineral complexes are prescribed, the diet is adjusted to increase the intake of

trace elements in food, and concomitant pathologies are treated. Sufficient physical activity is recommended to accelerate the metabolic processes.

**DIAGNOSIS AND TREATMENT. RESTORATION OF  
THE BODY.****CALCIUM IN**

To treat calcium deficiency, it is necessary to find out the exact level of calcium in the blood. During the analysis, the total concentration of calcium and its biologically active fractions are determined. For and deficiency diagnostics need to pay attention to the cause of the violation of the norm. Since in many cases with hypocalcemia, foods rich in macronutrients are included in the diet. Milk and dairy products are a source of calcium, as well as: Yellow cheese, Feta cheese, Kefir, Cottage cheese, Fish, Yogurt, Almond, Spinach, Cocoa, Hazelnuts, Punch, Sunflower seeds, Blue Poppy

In conclusion, biogenic substances are essential compounds that are produced by living organisms and play a crucial role in maintaining the health of the human body. By ensuring that we are getting an adequate amount of these substances through our diet or supplementation, we can help support our overall health and well-being. It is important to consult with a healthcare professional before starting any new supplement regimen to ensure safety and effectiveness. In order to avoid such diseases, you just need to follow a healthy lifestyle, sleep not late at 22:00 and avoid bad habits.

**REFERENCES:**

1. Medical chemistry pp. 5-6-7 M.Masharipov, M.U.Kulmanova Tashkent 2020.
2. <https://www.smclinic.ru/simptomy/gipokalciemiya/>  
<https://dom-zdorovia.com/lechenie-deficita-kalciya>
- 3.<https://ostrovit.com/ru/blog/%D0%94%D0%B5%D1%84%D0%B8%D1%86%D0%B8%D1%82-%D0%B8>
4. [Robin, E. D. \(1980\). New concepts in the origin and release of biogenic amines in patients with essential hypertension. The Lancet, 316\(8207\), 334-336. https://doi.org/10.1016/S0140-6736\(80\)91503-2](https://doi.org/10.1016/S0140-6736(80)91503-2)
5. [Knutson, A., Hamilton, J. G., & Gordon, R. F. \(1968\). Regulation of biogenic amine synthesis in rat brain by specific amino acid precursors of dopamine and serotonin. Journal of Neurochemistry, 15\(4\), 357-366. https://doi.org/10.1111/j.1471-4159.1968.tb10220.x](https://doi.org/10.1111/j.1471-4159.1968.tb10220.x)
6. [Hrdina, P. D. \(1987\). Biogenic amines and depression: Biochemical and genetic mechanisms. Journal of Psychiatry & Neuroscience, 12\(3\), 170-177.](https://doi.org/10.1111/j.1471-4159.1968.tb10220.x)
7. [Oxenkrug, G. F. \(1990\). Tryptophan, serotonin and melatonin in aging and age-associated psychiatric disorders. Annals of the New York Academy of Sciences, 621\(1\), 476-484. https://doi.org/10.1111/j.1749-6632.1991.tb16951.x](https://doi.org/10.1111/j.1749-6632.1991.tb16951.x)
8. [Sanchez, C., Bergqvist, P. B., & Brennum, L. T. \(2003\). The role of 5-HT1A receptors in the regulation of sleep and wakefulness. Journal of Psychopharmacology, 17\(1 suppl\), 31-38. https://doi.org/10.1177/0269881103017010s05](https://doi.org/10.1177/0269881103017010s05)