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Qambarov Barkamol Baxtiyorjon o'g'li
Fergana Medical Institute of Public Health
Fergana, Uzbekistan

MICRO ELEMENTS IN THE HEALTHY NUTRITION OF THE POPULATION PLACE. FLUORINE, COPPER, ZINC.

Abstract: This article is about the importance of nutrition in human health and the role of micronutrients in food in the body. From our microelements, fluorine, copper and zinc are useful for the body, and information about what happens if these elements are not available.
Keywords: Healthy lifestyle, fluoride, tooth enamel, copper, zinc, hormones, fruits.

INTRODUCTION

For human health, it is necessary to have a sufficient amount of vitamins and minerals in the body. Otherwise, negative changes may occur in the body and serious complications may occur. Microelements are present in the body in very small amounts (milligrams and micrograms) and perform a number of functions. In particular, they are considered components of enzyme systems and participate in the processes of metabolism control. The amount of the mentioned elements in food depends on a number of factors. For example, there are more of them in the green part of plants than in the vascular part. Dried legumes, vegetables and fruits contain more minerals than fresh ones, and meat from young animals has more minerals than older ones.

METHODS

Fluoride. In the human body, fluorine ensures the creation of bone tissue, tooth dentin and its enamel. Almost all fluorine in the body (99%) is collected in hard tissues. Its increase in soft tissues, for example, in the walls of vessels, indicates a disease. 75% of the fluoride that enters the body with food is received through drinking water and liquid foods. When the amount of fluorine in 1 liter of drinking water is 0.5 mg, its deficiency is observed in humans, and first of all, caries develops in the teeth. In order to prevent it in these cases, it is necessary to enrich the water with water-soluble elements of this element. Tea is the most fluorine-rich product among beverages consumed by the population. 100 grams of dry tea leaves contain up to 90 mg of fluoride. Its amount in 100 ml of brewed liquid tea is 0.1-0.4 mg. Unlike tea, other foods are very low in fluoride. Below we present the amount of fluorine contained in 100 g of some products in mg: canned sardine fish (with bones) – 0.2-0.4 mg; in red grape wine and grape juice – 0.15-0.3 mg; 0.2 mg in crabs; 0.01-0.7 mg in fish; 0.17 mg in poultry meat; 0.05-0.07 mg in bread and cereals; 0.01-0.06 mg in fruit juice, soft drinks, some vegetables and greens.

Microelements are important for the body, because these elements are important for the construction, development and complete metabolism of our body. Therefore, these substances should be included in the food and the diet should be good.

RESULTS

Copper This trace element is important in controlling the processes of oxygenation of cells, maturation of red blood cells and formation of hemoglobin. It also participates in the release of proteins and carbohydrates from the body, and suppression of insulin activity. The daily requirement

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for it is equal to 2.0 mg and is covered by peas, vegetables, berries, meat, liver, fish and bread products. 1 liter of water also contains about 1 mg of copper. A long-term lack of copper in the human body can lead to the development of iron deficiency anemia and bone fragility. Its excessive accumulation causes a disease called "Wilson Konovalov" in medical language.

Zinc is the only metal that is included in all enzymes and cannot be replaced by any other metal. Zinc participates in many metabolic processes and ensures the normal functioning of all cells in the body. The amount of zinc in organs and tissues indicates how important it is in the functioning of these organs.

Organs rich in zinc: pituitary gland, retina, prostate gland (more than 150 mg), liver, kidney, muscle, hair, bone (more than 100 mg). Among the metals in the brain, zinc and iron make up the largest part, the zinc-iron index is equal to 1, and this ratio is much lower in other organs. The synthesis and breakdown of carbohydrates, fats, proteins and nucleic acids directly depends on the supply of zinc to the body. 20 percent of the body's zinc reserve is located in bone tissue. The rate of zinc entering the bone tissue is higher than that of calcium, and it is stored longer in bone tissue than in muscle tissue. It has been found that zinc increases the absorption and metabolism of calcium and phosphorus, and also increases the synthesis of collagen fibers. This increases the elasticity of the skin and ensures the formation of the bone surface. Therefore, zinc deficiency can lead to the development of osteoporosis. This trace element is present in a number of important enzymes and participates in the processes of oxidation, regeneration, respiration of tissues, growth and development of the body, production of insulin in the nervous system and pancreas. Its deficiency causes not only the above conditions, but also a decrease in the activity of the pituitary gland in the gonads and brain. Sufficient in beef, chicken and goose meat, fish and beef liver, beans, peas, corn, as well as milk, apples, pears, prunes, cherries, cabbage, beets, carrots, potatoes it also contains a small amount of zinc. The body's daily requirement for it is 10-12 mg. Due to the presence of sulfur amino acids in the composition, zinc in animal products is better absorbed by the body. On the contrary, phytates present in plant products reduce its absorption. More than 2/3 of the zinc needed by humans comes from animal products. Zinc deficiency in children leads to smallness, anemia, retardation of mental development. In adults, it causes changes such as skin changes, taste and smell disturbances, bone density and strength decrease, and the adaptation process slows down. Therefore, it is important not to forget that it is important to get the required level of zinc microelement in the body with food. At this point, we would like to remind you that zinc does not accumulate excessively in the body and is excreted through the intestines.

DISCUSSION

Biological effects of zinc: Antioxidant; In protein, DNA, RNA synthesis;
In cell division, growth and regeneration;
Normal growth of skin, nails and hair;
Accelerates wound healing and epithelization process;
Body and skeletal weight increase;
In the synthesis of growth hormone, gonadotropin and corticotropin;
In the exchange and absorption of calcium and phosphorus;
In the formation of collagen fibers that provide skin elasticity;
In the formation of the joint surface;
Prevents macular degeneration and cataracts;
Increases immunity;
Antitumor (anticoncerogenic) effect;

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Participates in the synthesis of insulin and in the management of fat-carbohydrate metabolism;
To strengthen the normal functioning of the brain and the ability to remember;
It normalizes the sense of appetite and taste;
Participates in blood production and prevents anemia;
Male hormone - in the production of testosterone and in the formation of sperm;
When removing alcohol from the body;
Zinc is a powerful natural antioxidant.

Zinc is an active part of the superoxide dismutase enzyme, which is a powerful natural antioxidant. This enzyme neutralizes superoxide free radicals, which are constantly occurring in the body and are extremely harmful. The antioxidant effect is further enhanced when ascorbic acid is used together with zinc. The antioxidant properties of zinc and ascorbic acid are used to prevent the development of cataracts and macular degeneration. Zinc accumulates in the retina and helps the absorption of vitamin A. The activity of retinol-binding protein in the retina is also directly dependent on zinc.

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