

The Importance of Microelements in Mastering Lessons by Schoolchildren Studying in Urban and Rural Conditions (Using the Example of Iodine Preparation)

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Abstract: Protecting human health is one of the most pressing problems in our country. Healthy growth and development, the absence of childhood and adolescent diseases are seen as the way to ensure the country's prosperity in the future. Iodine is one of the microelements important for the mental and physical development of children. Today, consistent reforms in the healthcare system are focused on public health and disease prevention.

Keywords: iodine deficiency, iodine, iodized table salt, prevention, endemic goiter.

The health of the population and the freedom from diseases will definitely affect the development and potential of the country. The problem of protecting the health of the growing young generation and prolonging human life is gaining priority in the field of state policy. Healthy growth and development, absence of childhood and adolescent diseases are seen as a way to ensure the country's prosperity in the future. Iodine is one of the microelements important for mental and physical development of children. It is known that Central Asia, including Uzbekistan, is geographically a dry region, and due to its distance from seas and oceans, iodine deficiency diseases are often observed among the population living in this region, and this can cause serious danger. For this reason, more attention is paid to the prevention of this disease in our country. Iodine deficiency develops gradually over time. Due to the uneven distribution of iodine in the environment and mainly stored in the seas and oceans, the amount of iodine in the soil and groundwater in places far from the sea is very low. Since the amount of iodine in plants depends on its amount in the soil, the plants and vegetables grown in these areas contain a small amount of iodine. Iodine deficiency is also observed among people who consume vegetables and pulse crops grown in these regions. Therefore, consumption of vegetables, plants and meat of animals grown in these areas does not satisfy the daily requirement of iodine. In addition, 90 percent of the amount of iodine that enters the body is excreted through the kidneys.

Thus, if the daily requirement of iodine is not met, iodine deficiency may develop, which in turn affects the activity of the hormonal system, disrupts the functioning of the thyroid gland and, as a result, leads to severe growth and development disorders of the body. can cause diseases. The most common disorders are endemic goiter due to iodine deficiency or hypothyroidism in cases of moderate to severe iodine deficiency. Symptoms of hypothyroidism include:

- Tired
- Problems concentrating
- Reduced ability to work
- Decreased mental capacity
- Lack of physical strength

Iodine is necessary for the normal functioning of the thyroid gland. The daily intake of iodine depends on age. The UN Children's Fund - UNICEF, the International Council for the Control of Iodine Deficiency – ICCID and the World Health Organization - WHO recommend the following iodine intake:

Age groups	Recommended daily intake of iodine mkg
0-59 month	90
6-12 years	120
Children over 12 and adults	150
Pregnant and lactating women	250

Depending on the concentration of iodine in the urine, iodine deficiency is divided into different categories. Iodine is mainly excreted by the kidneys, therefore, the concentration of iodine in urine is the main indicator of iodine deficiency.

Studies show that 1.9 billion people worldwide are at risk of developing iodine deficiency. In 21 countries, the population suffers from mild iodine deficiency, and in 9 countries, moderate iodine deficiency. In the last 10 years, the highest rate of school-aged children with iodine deficiency was observed in Europe compared to other WHO regions. In our country, 3 million children are covered with iodine. Today, 3 million children aged 3-15 and 1.3 million pregnant and lactating women in the republic are covered with iodine preparations, and 673.3 thousand women of childbearing age up to 35 years are covered with iron preparations. As a result, in 2017 -In 2022, maternal mortality will decrease by 1.5 times, and infant mortality by 1.3 times.

Taking into account these circumstances, a number of laws have been developed in the Republic of Uzbekistan for the development of a healthy generation. Including: Decree of the President of Uzbekistan dated November 10, 2020 PF-№ 4887 "On additional measures to ensure healthy nutrition of the population", Public Education of the Cabinet of Ministers of the Republic of Uzbekistan In accordance with the decision No. 146 on approval of the regulation of the Ministry of Education, free distribution of iodine preparation is being widely launched in educational institutions. The information given above is important for the healthy growth and development of children and adolescents, and the enrichment of its composition with various micronutrients is important and determines the relevance of this topic.

The purpose of the study. To study the role of trace element iodine in the mental and physical development of 5-9 grade students of urban and rural schools and to evaluate the specific aspects of the progress of students who received iodine preparations in mastering lessons.

Research objects and methods: General education school No. 151 of Yashnaabad district, Sergeli District 300, Tashkent city of our republic, General education school No. 132 of Shaykhontakhur District, and General education schools No. 44 and 5 of Parkent District, Tashkent Region, Nishon District No. 34 of Kashkadarya Region. 5-9 grade students of the school, their state of mastering the lesson, serve as the object of research. The research used statistical methods, a questionnaire and the methods of obtaining extracts from the personal outpatient card (O26f/u) of each student.

Research results and discussion. According to the results of the investigation carried out in the research facilities, among the students of 5-9 grades studying in general education schools in

urban and rural conditions, mastering classes with excellent grades and physical development in a condition appropriate for their age is not at the standard. It was found that the level of mastery of mental potential lessons of urban students is 1.1 times higher than that of rural students. However, after the statistical analysis of the results of the medical examination, it became clear that the indicators of physical development: height, weight, chest circumference, and body mass index indicators of children studying in rural conditions it was found to be 1.2 times higher among smears. During the research, we investigated the state of fatigue of students before and after class by using the Anfimova table and adding some other mathematical examples to perform subtraction exercises in 1 minute sequence among students studying in urban conditions. Cases of distraction and fatigue were found when working with examples. It was found that students in rural areas spend more than 1 minute to complete mathematical examples.

Among the students, 178 of the 345 students selected as a result of the survey questionnaire in urban conditions take iodine medicine after breakfast, and in rural conditions, most of the students do not take iodine medicine. Currently, based on PF-4887 It turned out that they started taking antistrumin drug.

In a study of adolescents who did not take iodine preparations in general, it was found that 70% of students in urban areas went to study centers after school to learn different languages and specific subjects. This causes them to increase their need for iodine preparations to increase the effectiveness of learning lessons, but among students, the lack of regular consumption of iodine preparations and severe fatigue after loads in additional classes, school team activities it became known that they have low interest and try not to participate in these events. As a result of the research, it was found that 85% of students studying in rural areas do not take iodine preparations. It was found that they spend a lot of time on various gadgets, ignoring their fatigue and indifference, and as a result, they often hear the reproach of "lazy" from their parents. As a result of inquiries, students from different conditions have the same complaints of fatigue, slowness of mastering lessons, indifference, physical development of students studying in urban areas is 1.2 compared to rural conditions in terms of anthropometric indicators. found to be low. As it can be seen from these results, it was known that the growing organism has a high need for the iodine preparation in learning.

Summary.

1. Iodizing table salt is an effective way to prevent iodine deficiency diseases. When buying table salt, it is recommended to pay attention to its ability to meet hygienic requirements. The storage temperature of cooking salts should not exceed 28 degrees. The beneficial properties of table salt that have hardened, become damp, have foreign odors, expired, and damaged packaging are lost. It is recommended not to consume such products. Table salt is the only nutrient that supplies sodium to the human body.

It controls blood circulation and blood pressure in the body, and provides an organic connection between the nervous system and muscles. However, in order to normalize the metabolism in the body, the daily consumption of iodized table salt should not exceed one teaspoon - 5 grams. Mass prevention of iodine deficiency diseases is carried out by using iodized salt in food and consuming iodized food products. The consumption of iodized salt products is important in the prevention of iodine deficiency diseases.

2. Taking into account that the amount of iodine in table salt is insufficient for the growing young generation, it is recommended to give them up to 100 µg of iodine preparations after breakfast until 11:00 in the morning.

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