



Iodine Deficiency as a Social Problem Endemic Goiter as a Disease of the Whole Organism

Kariyeva Halima Ikromjonovna

Senior teacher of the Department of Physical Education, Samarkand institute of Economics and Service, Samarkand, Uzbekistan

Annotation: The article considers iodine deficiency as a social problem. Endemic goiter has been studied as a disease of the whole organism. The causes and consequences of iodine deficiency have been studied. Recommendations for the diagnosis and treatment of this disease are given.

Key words: disease, iodine, goiter, iodine deficiency, social problem, symptoms, endemic goiter

Date of Submission: 20-11-2021

Date of Acceptance: 25-12-2021

Iodine is a very important trace element necessary for normal human growth and development. Once in the body, it selectively accumulates in the thyroid gland, where, passing through a complex path of transformations, it becomes an integral part of thyroid hormones: thyroxine and triiodothyronine. Thyroid hormones regulate the metabolic rate in the body and are involved in the work of all organs. The human body contains from 20 to 50 mg of iodine, of which 60% is in the thyroid gland, 40% in the muscles, ovaries, and blood. The daily requirement for it, depending on age, is from 100 to 200 mcg, and a person consumes about 3-5 grams of iodine over a lifetime. The daily requirement for iodine depends on age and physiological condition.

Daily intake of iodine:

- 50 mcg for infants (first 12 months).
- 90 mcg for young children (2 to 6 years old).
- 120 mcg for school-age children (7 to 12 years old).
- 150 mcg for adults (12 years and older).
- 200 mcg for pregnant and lactating women.

Iodine takes part in the regulation of energy metabolism of body temperature. In the metabolism of proteins, fats and water-electrolyte metabolism, iodine increases oxygen consumption, promotes growth, and activates mental work.

The consequences of iodine deficiency:

- prenatal abortion;
- stillbirth;
- congenital anomalies and, as a result, increased mortality during childbirth;
- endemic cretinism. In early childhood, mental and physical development disorders.

Adults:

- goiter;
- violation of the reproductive system, impotence, early menopause.
- Iodine takes part in regulation:
- energy metabolism, body temperature;
- rates of biochemical reactions;
- protein, fat and water-electrolyte metabolism;
- metabolism of a number of vitamins;
- -the processes of growth and development of the body, including neuropsychic development.

In addition, iodine increases oxygen consumption by tissues.

The benefits of iodine: - provides more energy, promotes growth, facilitates dieting by burning excess fat, activates mental work, guarantees the health of teeth, skin, nails, hair

The vast majority of iodine is in the ocean. A large amount of mineral matter is washed away from the soil surface by snow, freezing, rain, wind, floods and rivers. All crops that are grown on such soils have a lack of iodine - 10 micrograms / kg instead of 1 mg/kg.

Iodine in food:

- marine products - red and brown algae (kelp), halibut, cod, herring, shrimp, haddock, sea salt, shellfish, sardines;
- iodized salt, beef liver, eggs, milk;
- onions, sorrel, cabbage, carrots (if grown on iodine-rich soil).

Some of the iodine comes from water.

The recommended level of daily iodine intake for an adult is 150 mcg, the maximum allowable amount of consumption is 300 mcg. During pregnancy and lactation, the norm increases to 175 - 200 mcg.

Iodine deficiency occurs if the amount of trace element intake per day is less than 10 micrograms.

Iodine in the human body: role, rate of iodine, deficiency and excess, food.

WHO researchers estimate that 1 billion people in developing countries are at high risk of developing diseases caused by iodine deficiency.

The reasons for the lack of iodine in the body:

Unsatisfactory amount of micronutrient intake with food.

Low consumption of seafood by humans.

Lack of iodine prophylaxis in iodine-deficient regions.

The presence in the diet of factors that impede the assimilation and utilization of iodine (intake of an excess amount of bromine, iron, manganese, lead, calcium, chlorine, cobalt).

Taking medications that impede the absorption and utilization of iodine (lithium carbonate).

- Disorders of iodine metabolism.
- Increase in background radiation.
- Contamination of the habitat.
- Increased sensitivity of the body to allergens.

Symptoms of iodine deficiency in the body:

1. Increased production of thyroid hormones.

2. Goiter formation.
3. The emergence of iodine deficiency pathologies:
 - hypothyroidism (extreme manifestations in children - cretinism, in adults - myxedema);
 - loss of strength, decreased performance, drowsiness, development of edema of the extremities, trunk, face;
 - increased cholesterol levels;
 - weight gain;
 - bradycardia (a type of arrhythmia with a low heart rate);
 - constipation;
 - lowering the intellectual level;
 - slowing down the mental reaction;
 - impaired cognitive functions, attention;
 - deaf and dumbness;
 - various types of paralysis;
 - a decrease in fertility (the ability of a sexually mature organism to reproduce offspring);
 - the birth of a dead fetus;
 - congenital malformations;
 - deaf and dumbness;
 - various types of paralysis;
 - increased mortality.

In the first 6 months of the mother's pregnancy, the embryo, with iodine deficiency, develops physical, neurological and mental defects of cretinism, which can be prevented with the help of the mother's iodization carried out on time.

Physical development is a complex of body properties that determine the mass, density, shape of the body, its structural and mechanical qualities. Physical development depends on inheritance, social conditions, health status, lifestyle, and degree of physical activity.

The reasons for the lag in physical development include: - emotional problems, impaired absorption of food, diseases during the newborn period.

The delay in physical development is a significant lag of the child according to anthropometric criteria from his peers. A delay in the formation of motor abilities and cognitive skills is characteristic. The assessment of anthropometric data (height, weight, chest circumference, head, is carried out using tables. Compiled specifically for children of different ages and genders.

Diseases resulting from iodine deficiency. Endemic goiter

Endemic goiter is a disease of the whole body, which is accompanied by an increase in the thyroid gland. Endemic goiter is an enlargement of the thyroid gland caused by iodine deficiency in the body. Normal human growth and development depend on the proper functioning of the thyroid gland.

The thyroid gland is located in the front of the neck. It covers the trachea, as if it has opened the wings of a butterfly. Weight 25-30 gr.

Thyroid function. Controls the growth and development of major tissues and organs, as well as the normal functioning of the nervous system. Regulates mental processes in the body. It controls the mineral, protein, carbohydrate and fat balance in the body. Produces the hormone thyroxine T₃, T₄, using the iodine contained in food. Thyroxine plays an important role in the growth and development of the brain and fetus. (Fig. 26).

Due to the fact that iodine dissolves well in water, it is easily washed out of the soil and carried away by the stream into the world's oceans. Therefore, the iodine content is scarce in mountain

ranges and areas remote from the sea.

People living on the coasts of the seas and oceans do not suffer from iodine deficiency. The main function of iodine in the body is to participate in the regulation of energy metabolism, body temperature, increase oxygen consumption by tissues, activate mental work, guarantee the preservation of teeth, as well as improve the condition of the skin, nails and hair.

About 200 million people in the world suffer from endemic goiter, which WHO calls one of the most common human ills. More than 2 billion people live in conditions of iodine deficiency, among them 740 million have endemic goiter, more than 6 million suffer from cretinism. In 43 million people worldwide, 100 thousand children with congenital cretinism are born from a lack of iodine. According to the WHO, 40.2% of the population of Uzbekistan live in regions where there is a deficiency of iodine in water and soil.

The iodine requirement depends on age and immunological status. During puberty, during pregnancy and during breastfeeding, the need for iodine increases.

The cause of endemic goiter is insufficient intake of iodine into the body, which is extremely necessary for the production of thyroid hormones. 90% of iodine enters the body with food, i.e. with food, 5% through water and another 5% through air. To make up for iodine deficiency, it is necessary to include in the diet such products as sea cabbage, seafood (fish, squid), walnuts, persimmons, lemon, cucumbers, honey, potatoes, carrots, beets, figs, strawberries, egg yolk, liver, animal tongue, dairy products, oatmeal and buckwheat, greens.

Also, the cause of endemic goiter may be the systematic use of certain medications that block the doubling of iodine, a hereditary predisposition to the development of goiter with a genetic deficiency of thyroid hormones, as well as stress and change of residence.

Predisposing factors: - heredity, burdened by goiter, water pollution, iodine deficiency in the environment (soil, air, food), the impact of worm infestations (parasites) and unsatisfactory sanitary, genetic and social conditions.

Symptoms of endemic goiter.

1. Dry skin, hair and nails, hoarseness of voice, feeling of pressure in the throat, headache, brittle nails.
2. Hair loss, irritability, drowsiness.
3. Puffiness of the head and neck.
4. Suffocation, coughing attacks, difficulty breathing and swallowing, loss of strength, decreased performance, development of edema of the limbs, trunk and face.

Iodine deficiency during pregnancy can lead to toxicosis, Down's disease, fetal abnormalities, malformations, speech and hearing impairment, development of deaf-mute, dwarfism, delayed puberty.

Classification according to the degree of enlargement of the thyroid gland.

According to the WHO recommendations, the thyroid gland is considered enlarged if the size of each lobe on palpation is larger than the distal phalanx of the patient's thumb.

The form of endemic goiter is diffuse, nodular and mixed.

Diagnostics. One of the methods for determining the thyroid gland is to examine it while swallowing food or water. When swallowing, you can determine the external shape, the size of the 4 consistency of the thyroid gland.

Self-medication is life-threatening.

Treatment. A specialist endocrinologist prescribes:

1. Diet, foods rich in iodine. The tactics of treating endemic goiter depends on the enlargement of the thyroid gland. (Fig. 28). With a slight increase in the thyroid gland, potassium iodide is prescribed. With a decrease in the function of the thyroid gland, hormones "Levothyroxin" "Eutiroxin" or "Trieste" are prescribed to control the content of thyroid hormones in the blood. If the goiter compresses the surrounding tissues and organs, surgical treatment is performed. From folk remedies, you can take the powder from the leaves of seaweed one teaspoon at bedtime. The course of treatment is 20-30 days. Goiter tablets are taken on an empty stomach 30 minutes before breakfast, once a day.

Prevention. Regular consumption of iodized table salt. Add salt after cooking, as trace elements of iodine are destroyed during heating. Eat seafood, dried fruits, seeds, berries, herbs, vegetables, rose hips, green tea, honey, etc.

Individual prophylaxis is prescribed for patients who have undergone surgery on the thyroid gland. Based on the results of the patient's examination, the doctor recommends a diet with a high iodine content, choosing the dosage of medications.

It is necessary to regularly carry out mass and group preventive measures among children, adolescents and pregnant women to replenish the lack of micronutrients. In areas with a high risk of a goiter epidemic, control the quality of drinking water, consume foods rich in iodine, iodized salt, and take potassium iodine supplements throughout the year.

Such table salt should not be stored for more than the period indicated in the package, since iodine salts are destroyed over time. The same happens when salt is stored in a humid atmosphere. For prevention purposes, it is necessary to give up bad habits. Proper nutrition and a healthy lifestyle reduce the risk of developing the disease. Adults over 40 are advised to visit an endocrinologist annually and undergo examinations.

References:

1. Л. В. Мартыненко и др. Рациональное питание и здоровый образ жизни. М.: Медицина, 1988 г.
2. В.Э. Назаров. Валеология. Учеб.пособие. СПб., 2004 г.
3. Ахророва, Ш. У. Жамият ривожда миллий кадриятларнинг ўрни.Научно-просветительский журнал" Наставник".
4. Э. М. Прохорова. Валеология. Словарь терминов и понятий. М.: ИНФРА-М, 2012 г.
5. Убайдуллаев, Б. С. Общественные отношения и социальная политика / Б. С. Убайдуллаев // Лучшее студенческое исследование 2021 : Сборник статей Международного научно-исследовательского конкурса, Петрозаводск, 24 мая 2021 года.
6. Akhrorova, Sh. Жамият ва ижтимоий муносабатларда маънавий омиллар. Архив Научных Публикаций JSPI. - 2020. -23(1).
7. S.U. Akhrorova, (2020) "National interests and their value in social relations", Asian Journal of Multidimensional Research, Vol. 9, pp. 235-239
8. Ahrorova, Sh.U. Жамият ижтимоий-тарихий барқарор тизим сифатида /Актуальные научные исследования в современном мире / ОО "Институт социальной трансформации", 2020/9

9. S.U. Akhrorova, (2020) "Manifestation of national spiritual features in the subjects of social policy", *ACADEMICIA: An International Multidisciplinary Research Journal*, Vol. 10, pp. 2130-2134
10. Ахророва, Ш. У. Аспект национальных ценностей в социальной политике в Узбекистане / Ш. У. Ахророва // *Credo New*. – 2013. – № 4. – С. 18.
11. Ahrorova, Sh. U. The meaning of national values for social life in Uzbekistan / Sh. U. Ahrorova // *Europäische Fachhochschule*. – 2014. – No 3. – P. 128-129.
12. Ахророва, Ш. У. Жамият ривожда миллий қадриятларнинг ўрни. Научно-просветительский журнал "Наставник".
13. Убайдуллаев, Б. С. Общественные отношения и социальная политика / Б. С. Убайдуллаев // Лучшее студенческое исследование 2021 : Сборник статей Международного научно-исследовательского конкурса, Петрозаводск, 24 мая 2021 года.
14. Ahrorova, Sh.U. Жамият ижтимоий-тарихий барқарор тизим сифатида / Актуальные научные исследования в современном мире /ОО "Институт социальной трансформации", 2020/9