

## SYMPTOMS, TREATMENT AND PREVENTION OF HYPERTHYROIDISM IN CHILDREN

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**Abstract.** *Hyperthyroidism is a pathological condition in which the level of thyroid hormones in the blood is increased. These biologically active substances ensure the regulation of metabolic processes and the maturation of the organism, as well as the functioning of most organs and tissues. Symptoms of hyperthyroidism often appear in adolescents, girls are affected more often than boys. Prepubertal children are somewhat less affected, and infants are rarely affected. In the second case, excess thyroid hormones are associated with the presence of toxic goiter in the mother. Its antibodies, which penetrate the placenta, circulate in the blood of the fetus and stimulate the overproduction of thyroid hormones.*

**Key words:** *Hyperthyroidism, Causes of hyperthyroidism in children, Symptoms of hyperthyroidism in children.*

### СИМПТОМЫ, ЛЕЧЕНИЕ И ПРОФИЛАКТИКА ГИПЕРТИРЕОЗА У ДЕТЕЙ

**Аннотация.** *Гипертиреоз – патологическое состояние, при котором в крови повышен уровень гормонов щитовидной железы. Эти биологически активные вещества обеспечивают регуляцию обменных процессов и созревания организма, а также функционирование большинства органов и тканей. Симптомы гипертиреоза чаще появляются у подростков, девочки болеют чаще, чем мальчики. Дети препубертатного возраста поражаются несколько меньше, а младенцы болеют редко. Во втором случае избыток гормонов щитовидной железы связан с наличием токсического зоба у матери. Его антитела, проникающие через плаценту, циркулируют в крови плода и стимулируют перепроизводство гормонов щитовидной железы.*

**Ключевые слова:** *Гипертиреоз, Причины гипертиреоза у детей, Симптомы гипертиреоза у детей.*

Hyperthyroidism is often associated with thyrotoxicosis. If we go deeper into the terminology, hyperthyroidism is an increase in thyroid hormones, and thyrotoxicosis is a set of pathological processes that occur in the body against this background.

#### **Causes of hyperthyroidism in children**

The development of hyperthyroidism in adolescence is associated with damage to the thyroid or pituitary gland, which regulates its activity. The most common reasons for the development of this condition are:

diffuse toxic goiter (DTZ, Graves' disease): causes hyperthyroidism in 9 out of 10 patients;

Hashimoto's thyroiditis: the production of thyroid hormones is stimulated by specific antibodies;

inflammatory processes in the thyroid gland of viral or bacterial origin;

Pituitary adenoma: the concentration of thyroid-stimulating hormone (TSH) in the blood increases, which in turn stimulates the thyroid gland.

### **Classification**

Depending on the mechanism of development of hyperthyroidism in children, there are three forms: primary (associated with damage to the thyroid gland), secondary (due to pathology of the pituitary gland) and third (appears against the background of hypothalamus diseases); which in turn affects the pituitary gland)

The presence of clinical manifestations and their severity also make it possible to distinguish:

subclinical (mild severity): there is an increase in hormones, but there are no signs of pathology;

manifest: characterized by bright characteristic symptoms;

complex (severe): accompanied by serious damage to the heart, nervous system and other organs.

### **Symptoms of hyperthyroidism in children**

Infantile hyperthyroidism is usually manifested by non-specific symptoms: the baby's agitation, sleep disorders and intestinal disorders. In rare cases, the process is accompanied by enlargement of the thyroid gland. At the age of 6 months, the amount of maternal antibodies in the blood disappears. In most cases, this is accompanied by a decrease in symptoms and normalization of hormone levels.

If hyperthyroidism occurs during adolescence or shortly before puberty, children develop a classic set of symptoms characteristic of an excess of thyroid hormones:

irritability, moodiness, excessive aggression;

deterioration of academic performance due to restlessness and impaired concentration;

excessive sweating;

trembling of the fingers;

increased blood pressure and heart rate;

increased frequency of bowel movements, periodic cramps abdominal pain;

increased appetite with rapid weight loss.

Depending on the characteristics of the thyroid gland, the clinical picture can be supplemented by fever, neck pain and difficulty swallowing. The development of diffuse toxic goiter is accompanied by eye discharge (exophthalmos).

Hyperthyroidism in children is dangerous both in infancy and in later life. The most common complication in babies in the first year of life is early recovery of fontanelles and skull sutures. With a milder course, growth and mental development are delayed.

Adolescent hyperthyroidism is fraught with the development of thyrotoxic crisis. This, in turn, can lead to arrhythmia, severe hypertensive crisis and acute heart failure. Without help, the risk of serious complications is high.

### **Diagnosis of hyperthyroidism in children**

Examination of a child suspected of hyperthyroidism begins with a detailed collection of complaints and anamnesis (history of the development of the disease and life history). The endocrinologist will then conduct a general examination that will assess your heart rate, breathing and blood pressure.

The thyroid gland is palpated, reflexes and muscle strength are checked.

The initial diagnosis is confirmed by laboratory and instrumental studies:

blood test for thyroid hormones (T3, T4, TSH);

ECG, ultrasound examination of the heart, consultation with a cardiologist: allows to evaluate the activity of the cardiovascular system;

Ultrasound examination of the thyroid gland;

general studies: blood and urine tests.

If necessary, the list of studies will be expanded.

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