



Understanding Your Child's Thyroid

Patient Education Sheet

This sheet focuses on signs and symptoms of, and treatment options for, thyroid disorders in babies and children.

The Thyroid Gland—The Basics

- The thyroid is a butterfly-shaped gland located at the base of the neck that lies on either side of the windpipe. It produces and releases thyroid hormone.
- Thyroid hormone affects every cell in the body and controls most of the body's functions.
- The amount of thyroid hormone made by the thyroid gland is regulated by the pituitary gland and the hypothalamus in the brain.
- The pituitary gland releases thyroid-stimulating hormone (TSH), which signals the thyroid to produce more thyroid hormone. When the pituitary gland senses that there is the right amount of thyroid hormone in the body, it will decrease thyroid hormone production.
- Physicians can measure the health of the thyroid gland by measuring levels of TSH.
- Too little thyroid hormone production causes a condition known as hypothyroidism; too much thyroid hormone production causes a condition known as hyperthyroidism.

Hypothyroidism and Mild Thyroid Failure

- When a patient has hypothyroidism, he or she may feel tired and cold, have a slow heartbeat, or feel depressed.
- Mild thyroid failure is a mild form of hypothyroidism. In patients who have mild thyroid failure, the thyroid hormone levels are normal, but the TSH level is elevated.
- Patients with mild thyroid failure often do not show any obvious signs or symptoms, but untreated mild thyroid failure may lead to hypothyroidism.

Hyperthyroidism and Mild Hyperthyroidism

- Patients with hyperthyroidism may feel jittery and may experience nervousness, a rapid heartbeat, or unexplained weight loss.
- Patients with mild hyperthyroidism have normal thyroid hormone levels and a decreased TSH level. Untreated mild hyperthyroidism can progress to hyperthyroidism, and may lead to potentially harmful cardiovascular disorders.

Congenital Hypothyroidism

- About 1 in every 4,000 newborns in the United States is found to have hypothyroidism at birth, known as congenital hypothyroidism. Children with this illness are not able to produce enough thyroid hormone to keep their bodies working and growing normally.
- A lack of iodine in the mother's diet can cause a very severe form of hypothyroidism called cretinism. However, iodine is added to table salt in the United States, so cretinism is a rare occurrence in the United States.
- If a child with congenital hypothyroidism is immediately treated, there is a good chance he or she will grow and develop normally. However, the child will need thyroid hormone replacement therapy for the rest of his or her life.
- If congenital hypothyroidism is not detected early and promptly treated, it can result in lower intelligence and poor physical development.

Hashimoto Disease

- Hashimoto disease is an autoimmune condition in which the immune system attacks the thyroid gland. As a result of the damage, the thyroid gland is unable to produce enough thyroid hormone for the body to grow and function properly.

Graves Disease

- Graves disease is also an autoimmune disease in which a child's immune system attacks thyroid cells. However, Graves disease causes the thyroid cells to produce an abundance of thyroid hormone, leading to hyperthyroidism.
- Symptoms include fast heart rate, irritability, bulging eyes, and possibly a goiter.

Neonatal Hyperthyroidism

- Neonatal hyperthyroidism occurs when an expectant mother, who is suffering from hyperthyroidism due to Graves disease, passes the disease on to her unborn baby. The baby may be born with symptoms of Graves disease; however, symptoms usually go away within several months after birth.

Identifying Thyroid Disorders in Children

- Hospitals routinely check all newborns for signs of congenital thyroid disease.
- A common sign of thyroid disease is the presence of a goiter. A goiter is the visible swelling of the thyroid gland. A physician will feel the child's neck where the thyroid is located to determine whether a goiter is present.
- Family health history is another way to determine the possibility of a thyroid disorder. If any family members have had a thyroid disorder or an autoimmune disease, the chance of a child having these conditions is greater because these conditions are hereditary.
- A physician may also conduct a TSH test on the child to diagnose a thyroid disorder. If the child's TSH level is higher than normal, he or she may have hypothyroidism. If the child's TSH level is lower than normal, he or she may have hyperthyroidism.

Treating Thyroid Disorders in Children

- Hypothyroidism in children is usually treated with thyroid hormone replacement therapy. Children will be given a pill that contains a synthetic thyroid hormone called levothyroxine sodium once a day for the rest of his or her life.
- Thyroid hormone pills may be given to infants or children who have difficulty swallowing by crushing the tablet in a small amount of water, breast milk, or nonsoybean formula. The crushed tablet may also be sprinkled over a small amount of food, such as applesauce.
- Because a child's need for thyroid hormone decreases with age, regular visits to the physician are recommended so that the medication dose can be adjusted according to his or her need.
- Hyperthyroidism in children is often treated with antithyroid drugs. This treatment course is preferred because it gives the children a chance for a spontaneous remission of the disease without destroying or removing the gland.
- Another hyperthyroidism treatment option is radioactive iodine therapy, which involves the child taking a substance that will destroy thyroid cells in order to reduce the amount of thyroid hormone the thyroid makes. A physician generally will consider this course if antithyroid medications do not work.
- The last hyperthyroidism treatment option is surgical removal of part or all of the thyroid gland. After the surgery, the child will need lifelong thyroid hormone replacement therapy and regular follow-up visits at the physician's office.

More Information

- Patients and parents of patients who have further questions should contact their physician.