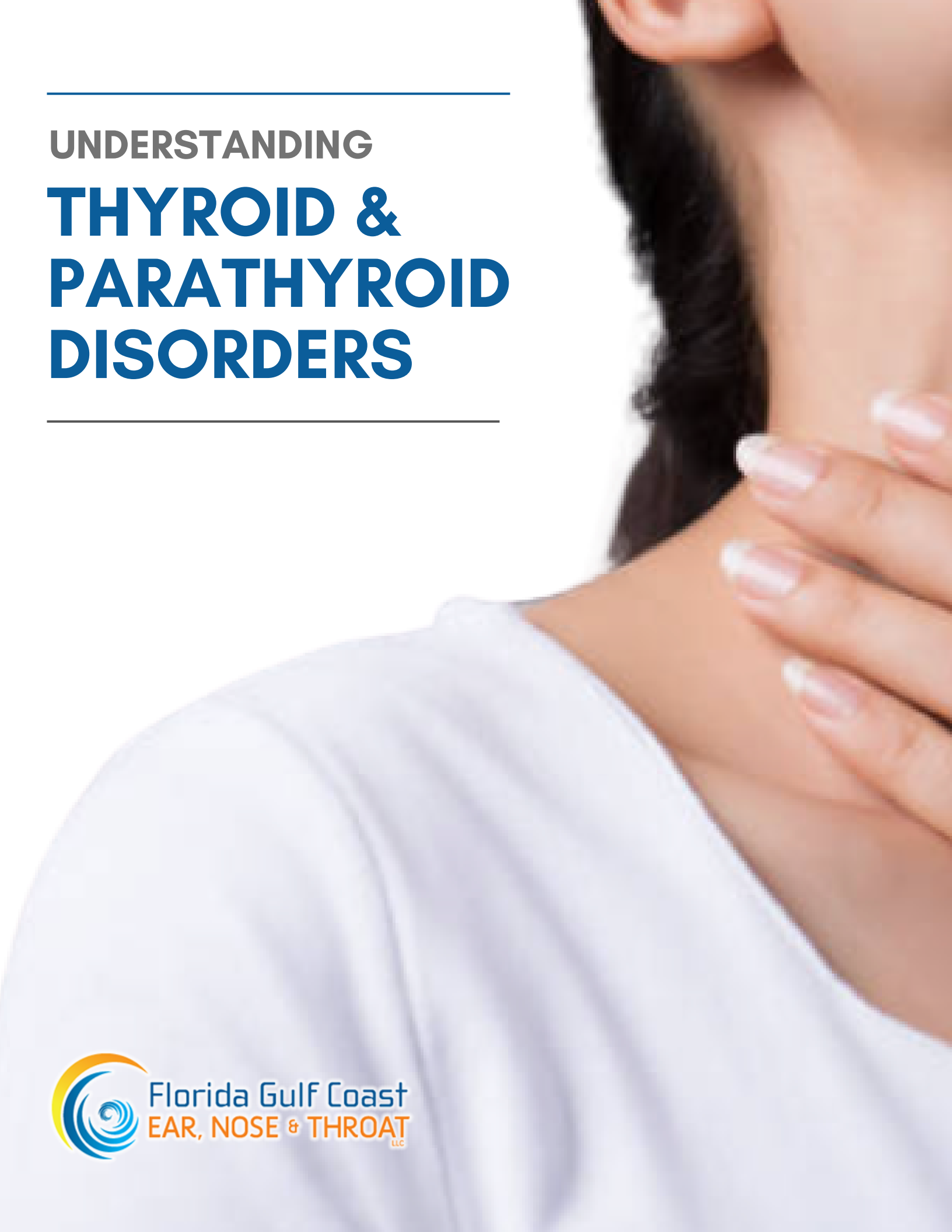
UNDERSTANDING

THYROID & PARATHYROID DISORDERS



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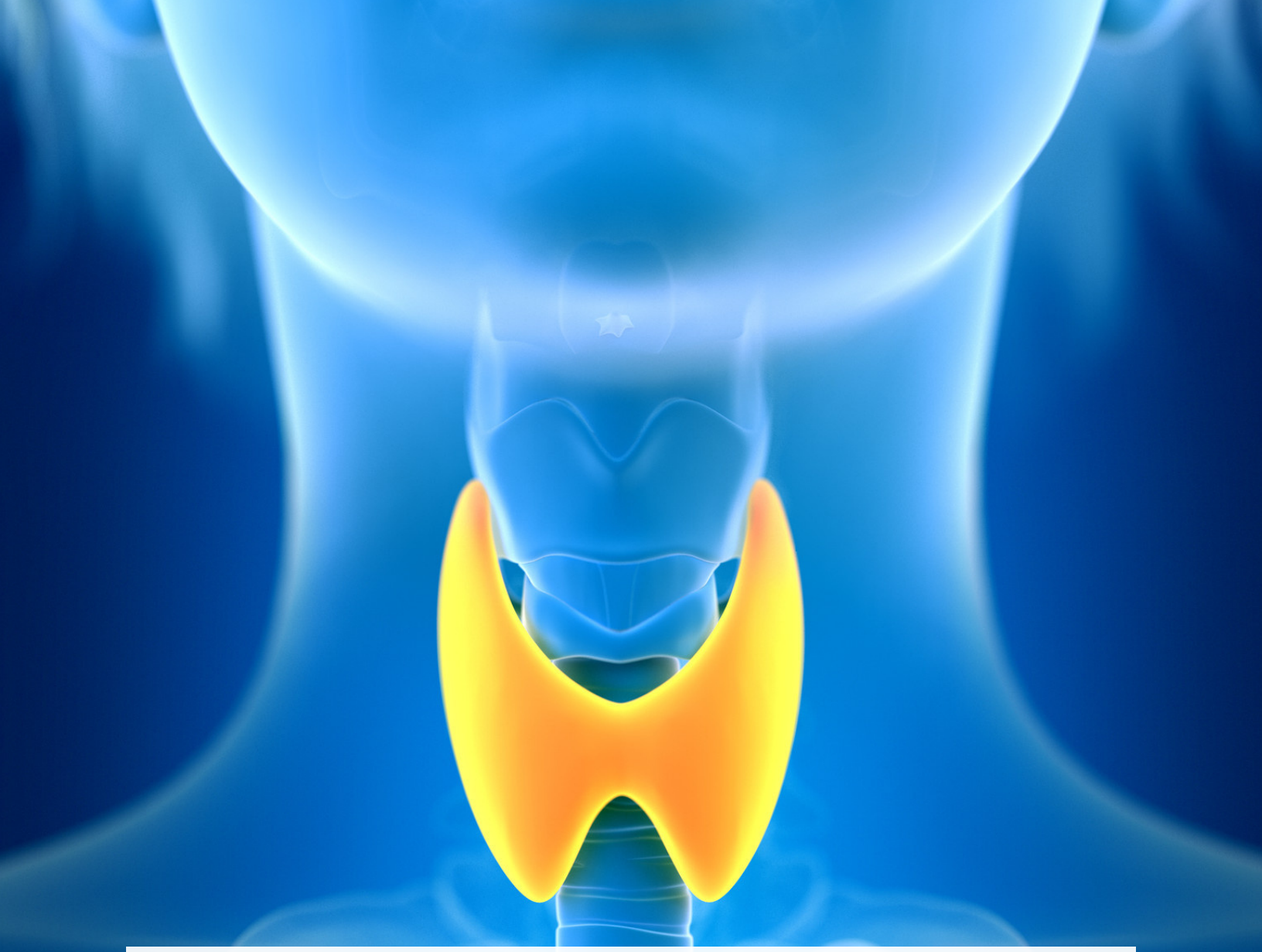


What Are the Thyroid and Parathyroid Glands?

The thyroid gland is a butterfly-shaped gland located in the front of the neck just above the collarbone. It has two lobes, with one lobe on each side of the windpipe. As part of the endocrine system, it produces hormones, known as T3 and T4, that regulate metabolism—the speed at which cells in the body work—and affects other functions, such as heart rate and energy level.

The four rice-sized parathyroid glands are located behind the thyroid, deep within the neck. They control the amount of calcium in the bloodstream. Calcium plays a critical role in the electrical functions of the body.

Thyroid problems affect 20 million Americans, and women experience thyroid problems five to eight times more than men. Most thyroid diseases are lifelong conditions but can usually be managed with a variety of treatments.

THYROID DISORDERS

The most common thyroid disorders are caused by an imbalance of hormones. It's critical that the thyroid produces the correct amount of hormones. If too little thyroid hormone is produced, this is hypothyroidism; if too much is produced, this is hyperthyroidism. Both can affect many functions in the body.

HYPOTHYROIDISIM

When the thyroid gland produces too little hormone, this is known as hypothyroidism or underactive thyroid. Hypothyroidism affects up to 5% of the U.S. population, with a further estimated 5% being undiagnosed.

Signs and symptoms of hypothyroidism include:

- Weight gain
- Fatigue
- Increased sensitivity to cold
- Dry skin
- Constipation
- Muscle weakness
- Problems with memory or concentration

Hypothyroidism can be caused by:

- Hashimoto’s Disease. This disorder causes the body's immune system to attack thyroid tissue and eventually destroy the thyroid gland, leading to the underproduction of thyroid hormone.
- Over-response to hyperthyroidism treatment. People who produce too much thyroid hormone are often treated with medications to reduce the hormone, and sometimes the body can then produce too little.
- Thyroid surgery. Removing any part of the thyroid gland can reduce hormone production.
- Radiation therapy. Radiation used to treat cancers of the head and neck can reduce hormone production.
- Medications. Several medications can contribute to hypothyroidism. Be sure to understand the side effects of any medications you’re taking so your doctor can monitor your thyroid function.

Treatment of Hypothyroidism

Hypothyroidism is commonly treated with thyroid hormone replacement therapy. Taken orally, this medication increases the amount of thyroid hormone the body produces.

HYPERTHYROIDISM

When the thyroid gland produces too little hormone, this is known as hypothyroidism or underactive thyroid. Hypothyroidism affects up to 5% of the U.S. population, with a further estimated 5% being undiagnosed.

Hyperthyroidism can be caused by:

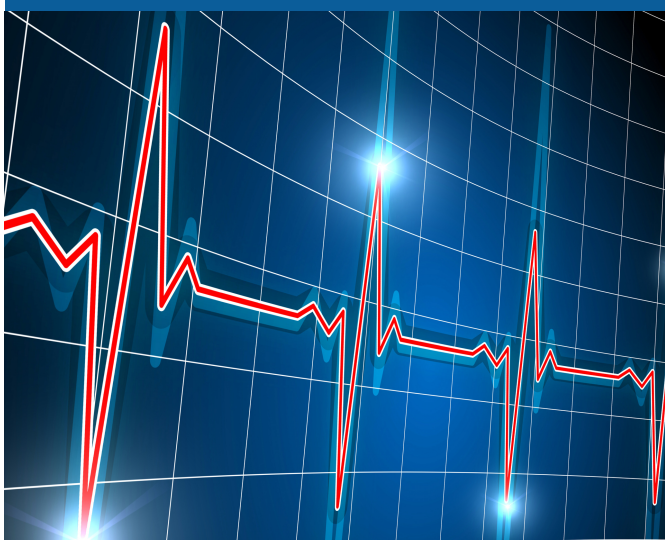
- Toxic nodule or multinodular goiter -- A single nodule or lump in the thyroid – or several nodules forming a goiter -- can produce more thyroid hormone than the body needs and lead to hyperthyroidism.
- Graves' disease - Graves' disease is an autoimmune disorder in which the body's immune system attacks the thyroid. Patients with Graves' disease often have enlargement of the thyroid gland and become hyperthyroid.
- Sub-acute thyroiditis - A viral infection can cause inflammation of the thyroid gland, resulting in excess amounts of thyroid hormone. It usually resolves on its own.
- Postpartum thyroiditis - Some women can develop hyperthyroidism after childbirth, followed by a period of hypothyroidism. It usually resolves after a few months
- Excessive iodine consumption- Consuming too much iodine can cause hyperthyroidism. In most cases, it usually resolves when the excess iodine is discontinued.

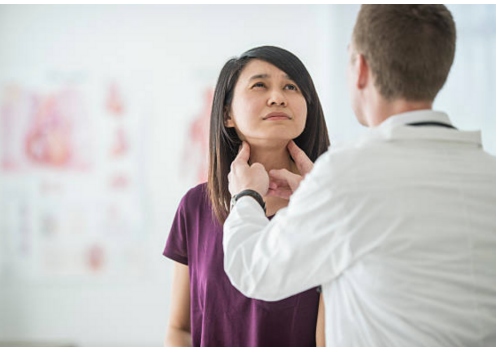
Treatment of Hyperthyroidism

Hyperthyroidism is commonly treated with antithyroid drugs that block or reduce the thyroid's production of hormones. Other options include oral radioactive iodine followed by thyroid hormone replacement therapy, and beta blockers, which block the action of thyroid hormones on the body.

Signs and symptoms of hyperthyroidism include:

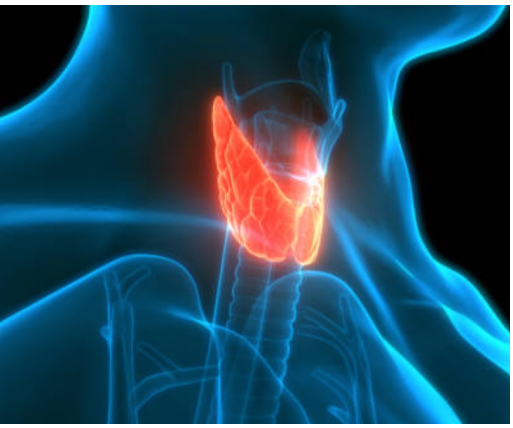
- Weight loss
- Rapid heartbeat (tachycardia)
- Increased sensitivity to heat
- Excess sweating
- Tremors
- Irritability and nervousness
- Muscle weakness
- Frequent bowel movements
- Changes in menstrual patterns
- Sleep difficulty
- High blood pressure
- Increased appetite





THYROID NODULES

Thyroid nodules are growths or lumps in the thyroid gland. They are common, and the vast majority of nodules are benign, or non-cancerous. Often, no specific treatment is needed, and the thyroid can simply be monitored for signs of hyperthyroidism. If the nodule causes affects breathing or swallowing, your doctor may recommend surgery.



THYROID CANCER

Thyroid cancer is found in about 5% of thyroid nodules. There are several types of thyroid cancer, some more aggressive than others, but overall, the prognosis for thyroid cancer is positive, with survival rates between 75%-100%. Like other thyroid conditions, thyroid cancer is more common in women than men. Other factors that increase the risk of thyroid cancer include exposure to radiation and genetics. Thyroid cancer is treated with surgery, chemotherapy, and radiation.

ENLARGED THYROID

An enlargement of the thyroid gland, also known as a goiter, appear as a swelling in the neck. It can be small or large, can cause no symptoms, or can cause and increase or decrease in thyroid hormones.

In the United States, a goiter can develop when the thyroid gland does not make enough hormones, so it attempts to make more by growing larger. As in hypothyroidism, a goiter can also be a side effect of certain medications. In other parts of the world, goiters can develop from a lack of iodine. In other cases, there are no known causes.

Treatment depends on the cause of the goiter, symptoms, and complications resulting from the goiter. Small goiters that aren't noticeable and don't cause problems usually don't need treatment.

PARATHYROID DISORDERS

The most common parathyroid disorders are caused by an imbalance of the parathyroid hormone, known as PTH. PTH regulates the amount of calcium in the body.

HYPOPARATHYROIDISM

When the parathyroid glands produce too little hormone, this is known as hypopararthyroidism or underactive parathyroid. This leads to low blood calcium.

Treatment of Hypoparathyroidism

Treatment of hypoparathyroidism includes oral calcium carbonate tablets and a prescription parathyroid hormone used with supplemental calcium and vitamin D.

Signs and symptoms of hypoparathyroidism include:

- Tingling lips, fingers, and toes
- Muscle aches, cramps, and spasms
- Calcium deposits in some tissues
- Dry hair and skin
- Brittle nails
- Patchy hair loss
- Pain in the face, legs, and feet
- Painful menstrual periods

HYPERPARATHYROIDISM

When the parathyroid glands produce too much hormone, this is known as hyperpararthyroidism or overactive parathyroid. This leads to high blood calcium levels.

There are two types of hyperparathyroidism. In primary hyperparathyroidism, an enlargement of one or more of the parathyroid glands causes overproduction of the hormone. Surgery is the most common treatment for primary hyperparathyroidism. Secondary hyperparathyroidism occurs due to another disease that first causes low calcium levels in the body. Over time, increased parathyroid hormone levels occur. Factors that may contribute to secondary hyperparathyroidism include severe calcium deficiency, severe vitamin D deficiency, and chronic kidney failure.

Treatment of Hyperparathyroidism

Treatment of hyperparathyroidism include surgical removal of enlargements or tumors, hormone replacement therapy, and calcimimetics -- a drug that mimics calcium in the blood and may encourage the parathyroid glands to release less parathyroid hormone.

Signs and symptoms of hyperparathyroidism include:

- Osteoporosis
- Kidney stones
- Bone and joint pain
- Thinning hair
- Excessive urination
- Abdominal pain
- Muscle weakness
- Depression or forgetfulness
- Itching

PARATHYROID TUMORS

Parathyroid tumors may increase the levels of parathyroid hormones. Parathyroid tumors are extremely rare and are usually benign, or non-cancerous. Surgery to remove the tumor is recommended if it is causing abnormal blood calcium levels.

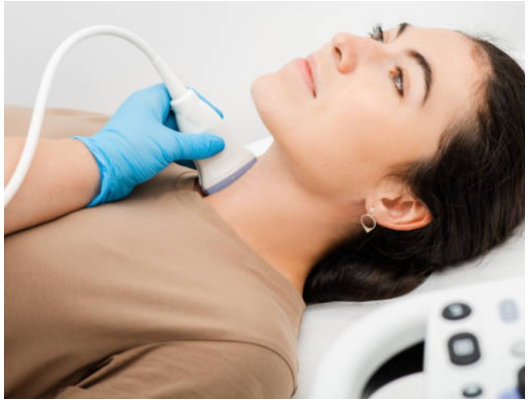
TESTING FOR AND DIAGNOSING THYROID DISORDERS

If your physician suspects a thyroid disorder, a blood test will likely be ordered. Blood tests for your thyroid include:

- TSH – The is most accurate measure of thyroid activity and measures the amount of Thyroid Stimulating Hormone. High levels of TSH indicate an underactive thyroid, while low levels indicate an overactive thyroid.
- T3 and T4 – These tests measure the amount of the two types of thyroid hormones.
- TSI – This measures thyroid stimulating immunoglobulin, an antibody that instructs the thyroid gland to produce more thyroid hormones. This test is performed when overactive thyroid is suspected.
- Antithyroid Antibody Test – This test measures the antibodies that instruct the body to destroy thyroid tissue and cells, resulting in underactive thyroid.

Other testing and diagnostic tools include:

- Ultrasound -- An ultrasound creates an image of the thyroid and can reveal enlargements or nodules on the thyroid.



- Thyroid Scan -- Like ultrasound, a thyroid scan creates an image of the thyroid. The patient ingests a small amount of radioactive iodine to help generate the image. It is often performed with a radioactive iodine uptake test.

- Radioactive Iodine Uptake Test -- This test involves giving a small amount of radioactive iodine to measure how much is taken up by the thyroid. This test can tell the difference between several causes of increased thyroid hormone blood levels.

- Fine Needle Aspiration (FNA) Biopsy -- In this test, a small needle collects tissue samples for testing under a microscope.

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With expert understanding of the anatomy and functioning of the ears, nose, throat, and related parts of the head and neck, your physicians at Florida Gulf Coast ENT are specially trained in evaluating, diagnosing, and treating disorders of the thyroid and parathyroid glands. As ENTs, we are also surgeons and can remove thyroid nodules, tumors, and other masses. Florida Gulf Coast ENT is the premier care provider for your thyroid and parathyroid health.

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