

COMMON THYROID DISEASES, CAUSES AND ITS TREATMENT METHODS

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Annotation: *Several types of problems can arise when your thyroid produces too much hormone (hyperthyroidism) or not enough (hypothyroidism). Some of the most common thyroid-related conditions include Hashimoto's thyroiditis, Graves' disease, goiter, thyroid nodules, and thyroid cancer.*

Key words: *hormone, common, thyroid, diseases, symptoms, treatment.*

INTRODUCTION

Your thyroid is a small, butterfly-shaped gland located at the base of your neck just below the center of your throat. It's part of an intricate network of glands called the endocrine system. Your endocrine system is responsible for coordinating many of your body's activities. Your thyroid gland manufactures hormones that regulate your body's metabolism. Several different problems can arise when your thyroid produces too much hormone (hyperthyroidism) or not enough (hypothyroidism). When your thyroid is underproducing or overproducing, it can cause bothersome symptoms such as irritability, fatigue, weight loss, weight gain, and more. Four common issues associated with the thyroid include Hashimoto's thyroiditis, Graves' disease, goiter (enlarged thyroid), and thyroid nodules. Keep reading to learn about common thyroid disorders and diseases as well as their symptoms and treatment.

Hyperthyroidism, in hyperthyroidism, your thyroid gland is overactive. It produces too much thyroid hormone. This can cause many of your body's functions to speed up. Grave's disease is the most common cause of hyperthyroidism, affecting about 70 percent of people with an overactive thyroid. Nodules on your thyroid — a condition called toxic nodular goiter or multinodular goiter — can also cause the gland to overproduce its hormones. Hyperthyroidism can also be caused by:

- thyroid gland inflammation
- too much iodine intake



- taking too much thyroid hormone medication
- overactive thyroid nodules, also known as toxic nodular goiter or multinodular goiter
- noncancerous pituitary gland tumor

Hyperthyroidism symptoms; excessive thyroid hormone production may lead to symptoms that can include: restlessness, nervousness, racing heart rate, irritability, increased sweating, shaking, anxiety, trouble sleeping, thin skin, brittle hair and nails, muscle weakness, weight loss, increased appetite, frequent bowel movements, bulging eyes (in Graves' disease)

Hyperthyroidism diagnosis and treatment: a doctor or healthcare professional can diagnose hyperthyroidism by running tests that measure your levels of thyroid hormone or how effectively your thyroid is working. A blood test measures the levels of thyroid hormone (thyroxine, or T4) and thyroid-stimulating hormone (TSH) in your blood. Your pituitary gland releases TSH to stimulate your thyroid to produce its hormones. High thyroxine and low TSH levels can indicate that your thyroid gland is overactive. A doctor might also give you radioactive iodine by mouth or as an injection and then measure how much of it your thyroid gland takes up. Your thyroid takes in iodine to produce its hormones. Taking in a lot of radioactive iodine is a sign that your thyroid is overactive. This low level of radioactivity resolves quickly and isn't dangerous for most people. Treatments for hyperthyroidism destroy your thyroid gland or block it from producing its hormones. Treatments can include:

- Antithyroid medication. Antithyroid drugs such as methimazole (Tapazole) can prevent your thyroid from producing its hormones and reduce symptoms.
- Radioiodine therapy. A large dose of radioactive iodine damages your thyroid gland. You can take it as a pill or liquid by mouth. As your thyroid gland takes in iodine, it also pulls in the radioactive iodine, which damages the gland. But this option isn't safe for people who are pregnant or breastfeeding.
- Beta-blockers. Beta-blockers can help lessen symptoms.
- Surgery. Surgery can be performed to remove your thyroid gland. This may return your thyroid levels to typical ones.

If you have radioactive iodine treatment or surgery that destroys your thyroid gland, you'll develop hypothyroidism and need to take thyroid hormone daily.

Hypothyroidism is the opposite of hyperthyroidism. Your thyroid gland is underactive and can't produce enough of its hormones. This can cause some of your body's functions to slow down. Hypothyroidism is often caused by Hashimoto's thyroiditis, a surgery that removed your thyroid gland, or damage from radiation treatment. It can also be caused by:

- thyroiditis
- congenital hypothyroidism, meaning that you can be born with the condition



- iodine deficiency
- pituitary gland or hypothalamus disorders
- medications, including heart medications, cancer medications, and bipolar disorder medications

You may be more likely to develop it if you have other health conditions, such as celiac disease, type 1 or 2 diabetes, rheumatoid arthritis, or lupus. Too little thyroid hormone production leads to symptoms such as: fatigue, dry skin and hair, increased sensitivity to cold temperatures, memory problems, constipation, depression, weight gain, weakness or muscle and joint pain, slow heart rate, heavy and irregular menstruation, fertility problems, coma.

Hypothyroidism diagnosis and treatment

Doctors often diagnose hypothyroidism with blood tests and imaging tests. A doctor will perform blood tests to measure your TSH and thyroid hormone levels. A high TSH level and low thyroxine level could mean that your thyroid is underactive. These levels could also indicate that your pituitary gland is releasing more TSH to try to stimulate your thyroid gland to make its hormone. Imaging tests can include ultrasounds or scans using radioactive iodine to test your thyroid function. The main treatment for hypothyroidism is to take thyroid hormone pills. It's important to get the dosage right because taking too much thyroid hormone can cause symptoms of hyperthyroidism. People with hypothyroidism who are pregnant may need higher or more frequent doses during pregnancy.

Common thyroid problems. Hashimoto's thyroiditis:

Hashimoto's thyroiditis is also known as chronic lymphocytic thyroiditis. It's the most common cause of hypothyroidism in the United States, affecting about 5 in 100 Americans Trusted Source. It can occur at any age, but it's most common in middle-aged women. The condition occurs when your body's immune system mistakenly attacks and slowly destroys your thyroid gland and its ability to produce hormones. Some people with mild cases of Hashimoto's thyroiditis may have no obvious symptoms. The condition can remain stable for years, and symptoms are often subtle. They're also not specific, which means they mimic symptoms of many other conditions. Hashimoto's thyroiditis symptoms: fatigue, depression, constipation, mild weight gain, dry skin, dry, thinning hair, paleness, puffy face, heavy and irregular menstruation if you menstruate, intolerance to cold, enlarged thyroid or goiter. Hashimoto's thyroiditis diagnosis and treatment

Testing the level of TSH is often the first step when screening for any type of thyroid disorder. A doctor might order a blood test to check for increased levels of TSH as well as low levels of thyroid hormone (T3 or T4) if you're experiencing some of the above symptoms. Hashimoto's thyroiditis is an autoimmune disorder, so the blood test would also show abnormal antibodies that might be attacking your thyroid. There's no known cure for Hashimoto's thyroiditis. Hormone-replacing medication is often used to



raise your thyroid hormone levels or lower your TSH levels. It can also help relieve your symptoms of the disease. The condition is usually identified at an early stage and can remain stable for years because it progresses slowly.

Graves' disease. Graves' disease was named for the doctor who first described it more than 150 years ago. It's the most common cause of hyperthyroidism in the United States, affecting about 1 in 200 people. Graves' disease is an autoimmune disorder that occurs when your body's immune system mistakenly attacks your thyroid gland. This can cause your gland to overproduce the hormone responsible for regulating your metabolism. The disease is hereditary, and you may develop it at any age. It's much more common in women between the ages of 20 to 30, according to the Department of Health and Human Services Trusted Source. Other risk factors can include: family history, stress, pregnancy, smoking, history of infection with the Epstein-Barr virus, which causes infectious mononucleosis (commonly known as mono).

Graves' disease symptoms. When there's a high level of thyroid hormone in your bloodstream, your body's systems can speed up and cause symptoms that are common to hyperthyroidism. These can include: anxiety, irritability, fatigue, hand tremors, increased or irregular heart rate, excessive sweating, difficulty sleeping, unintended weight loss, trouble sleeping, diarrhea or frequent bowel movements, altered menstrual cycle if you menstruate, goiter. You may also experience other symptoms unique to Graves' disease. These can include bulging eyes and thickened and reddened skin, generally on your shins and upper feet.

Graves' disease diagnosis and treatment. Doctors typically diagnose Graves' disease with tests that can include:

Physical exam. A physical exam can reveal an enlarged thyroid, enlarged bulging eyes, and signs of increased metabolism, including a rapid pulse and high blood pressure.

Blood tests. A doctor typically also orders blood tests to check for high levels of T4 and low levels of TSH, both of which can be signs of Graves' disease.

Radioactive iodine test. A radioactive iodine uptake test might also be administered to measure how quickly your thyroid takes up iodine. A high uptake of iodine may be a sign of Graves' disease.

Antibody tests. These tests can discover antibodies common to Graves' disease. There's no treatment to stop the immune system from attacking the thyroid gland and causing it to overproduce hormones. But the symptoms of Graves' disease can be controlled, often with a combination of treatments.

These treatment options can include:

Beta-blockers. Beta-blockers help control your rapid heart rate, anxiety, and sweating.

Antithyroid medications. Antithyroid medications prevent your thyroid from producing excessive amounts of hormone.



Radioactive iodine. Radioactive iodine destroys all or part of your thyroid.

Surgery. Surgery that removes your thyroid gland is a permanent option if you can't tolerate antithyroid drugs or radioactive iodine.

Successful hyperthyroidism treatment usually results in hypothyroidism. If you have hypothyroidism, you'll typically have to take hormone-replacement medication from that point forward. Graves' disease can lead to heart problems and brittle bones if it's left untreated.

Goiter. Goiter is a noncancerous enlargement of your thyroid gland. The most common cause of goiter worldwide is iodine deficiency in your diet. Worldwide, an estimated 15.8 percent Trusted Source of the general population has a goiter. But this percentage varies and is more common in places with high levels of iodine deficiency. In the United States, goiter affects 4.7 percent Trusted Source of the general population. Goiter can affect anyone at any age, especially in areas of the world where foods rich in iodine are in short supply. But not all cases of goiter are caused by iodine deficiency. Goiters can also be caused by: Graves' disease, congenital hypothyroidism, thyroiditis, pituitary gland tumors.

Goiters are more common if you're older than 40 years old and in women, which makes you more likely to have a thyroid disorder. Other risk factors include your family medical history, certain medication usage, pregnancy, and radiation exposure.

Goiter symptoms: you might not have any symptoms if your goiter isn't severe. Your goiter may cause one or more symptoms if it grows large enough, depending on the size. These symptoms can include: swelling or tightness in your neck, difficulty breathing or swallowing, coughing or wheezing, hoarse voice.

Goiter diagnosis and treatment. Goiters can be diagnosed with the diagnostic tests used to test for hyperthyroidism. A doctor will feel your neck area and have you swallow during a routine physical exam. Blood tests will reveal the levels of thyroid hormone, TSH, and antibodies in your bloodstream. This information will be used to diagnose thyroid disorders that are often a cause of goiter. An ultrasound of your thyroid can be used to check for swelling or nodules. Goiter is usually treated only once it becomes severe enough to cause symptoms. The treatments usually overlap with hyperthyroidism because a goiter is often a symptom of hyperthyroidism. Goiters are often associated with highly treatable thyroid disorders, such as Graves' disease. Treatment can include radioactive iodine therapy to shrink your thyroid gland or surgery to remove all or part of your thyroid gland. Although goiters aren't usually a cause for concern, they can cause serious problems if they're left untreated. These problems can include difficulty breathing and swallowing.

Thyroid nodules. Thyroid nodules are growths that form on or in your thyroid gland. A 2015 study that grouped populations into men and women reported that about 1 percent of men and 5 percent of women living in iodine-sufficient countries have thyroid



nodules that are large enough to feel. Having thyroid nodules is about 4 times more common in women than in men, while the rate of thyroid cancer in men is double the rate of women, about 8 and 4 percent, respectively. As with other thyroid-related problems, the risk of developing nodules increases with age. The causes aren't always known but can include iodine deficiency and Hashimoto's thyroiditis. The nodules can be solid or fluid-filled. Most nodules are benign, but they can also be cancerous in a small percentage of cases. Most thyroid nodules don't cause any symptoms. But if they grow large enough, they can cause swelling in your neck and lead to breathing and swallowing difficulties, pain, and goiter.

Symptoms of thyroid nodules. Some nodules produce thyroid hormone, causing abnormally high levels in your bloodstream. When this happens, the symptoms are similar to those of hyperthyroidism and can include: high pulse rate, nervousness, increased appetite, shaking, weight loss, clammy skin.

On the other hand, if the nodules don't overproduce thyroid hormone or present with hypothyroidism, symptoms can include: fatigue, weight gain, hair loss, dry skin, increased sensitivity to cold temperatures. Thyroid nodules that don't overproduce thyroid hormone and aren't associated with Hashimoto's thyroiditis don't cause these symptoms.

Thyroid nodules diagnosis and treatment. Nodules can be identified during a routine physical exam. But a doctor will likely run additional tests to confirm. These can include: an ultrasound, other imaging, such as a CT scan, can determine if there's compression of your trachea or esophagus, a TSH test and a thyroid scan can check for hyperthyroidism or hypothyroidism, a fine-needle aspiration biopsy to determine whether your nodule is cancerous.

Benign thyroid nodules aren't typically life threatening and usually don't need treatment. Often, nothing is done to remove the nodule if it doesn't change over time. If the nodule grows, a doctor may do another biopsy and recommend radioactive iodine. Cancerous nodules are pretty rare. Only about 4 to 6.5 percent of thyroid nodules are caused by thyroid cancer.

The treatment a doctor recommends may vary depending on your type of tumor. Treatment options for cancerous thyroid nodules can typically include:

Surgery. Removing your thyroid through surgery is usually the treatment of choice.

Radioactive iodine. This may also be used after surgery depending on the risk for reoccurrence.

Radiation therapy. Radiation therapy is sometimes used with or without surgery. External beam radiation therapy may be used if you have bulky disease, a classification of Hodgkin's lymphoma.

Chemotherapy. Chemotherapy is required very rarely if your cancer spreads to other parts of your body.



Conclusion, thyroid issues are typically caused by your body overproducing or underproducing the thyroid hormone. These conditions can be diagnosed through a physical exam, imaging, and thyroid function tests. If nodules are present, a biopsy may be needed to rule out thyroid cancer. Most of the time, thyroid issues aren't serious and are only treated once symptoms become bothersome. For hyperthyroidism, treatment typically involves damaging your thyroid to limit its function. For hypothyroidism, treatment often involves you taking supplemental thyroid hormone as a medication.

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