CONDITION

Hyperthyroidism

Hyperthyroidism is a condition in which the thyroid makes too much thyroid hormone.

WHAT IT IS
Excess thyroid hormone speeding the body's processes

BODY SYSTEM
Hormone system

MAIN SYMPTOMS
Fast heartbeat, sweating, weight loss, shakiness

WHAT CAUSES IT
Autoimmune activity, thyroid nodules, inflammation, or excess iodine

HOW IT IS DIAGNOSED
TSH, free T4, and sometimes T3 blood tests

MAIN TREATMENT
Antithyroid medicine, radioactive iodine, or surgery

CAN IT BE CURED?
Sometimes - definitive treatment stops thyroid overactivity

IS IT AN EMERGENCY?
Sometimes - fever, confusion, or a very fast heartbeat

LONG-TERM OUTLOOK
Usually well controlled with treatment and lifelong monitoring

Overview

Hyperthyroidism means your thyroid gland is making more thyroid hormone than your body needs. It is also called an overactive thyroid.

The thyroid is a small, butterfly-shaped gland at the front of your neck. Its hormones help control how quickly your body uses energy. They affect your heart rate, temperature, digestion, muscles, mood, and menstrual cycle.

Too much thyroid hormone speeds up many of these processes. You may feel restless, hot, shaky, or unusually tired. Your heart may beat faster, and you may lose weight despite eating normally or more than usual.

Hyperthyroidism is treatable. The best approach is linked to its cause, your age and general health, whether you are pregnant, and how strongly the condition is affecting your body.

Follow-up remains important because treatment can eventually make thyroid hormone levels too low.

Symptoms

Symptoms often develop gradually, so they can be mistaken for stress, anxiety, menopause, or another condition. Older adults may have fewer obvious symptoms. They may mainly notice tiredness, weakness, weight loss, or an irregular heartbeat.

Common symptoms include:

Graves' disease, a common autoimmune cause, may also affect the eyes. Symptoms can include gritty or dry eyes, redness, light sensitivity, puffy eyelids, or eyes that appear more prominent. Double vision or reduced vision is less common but needs prompt assessment.

Some people have very mild symptoms. Others notice effects across several parts of the body.

- A fast, pounding, or irregular heartbeat
- Feeling hot, sweating more, or disliking warm rooms
- Shaking hands, nervousness, irritability, or difficulty sleeping
- Losing weight without trying, sometimes despite increased appetite
- Frequent bowel movements or diarrhea
- Muscle weakness, especially in the upper arms and thighs
- Tiredness and reduced ability to exercise
- Lighter, less frequent, or absent menstrual periods
- Thinning hair or warm, moist skin
- Swelling at the front of the neck from an enlarged thyroid, called a goiter

Causes and risk factors

The most common causes affect the thyroid in different ways.

Graves' disease happens when the immune system mistakenly sends signals that make the whole thyroid overactive. It can run in families, although having a relative with it does not mean you will develop it.

Overactive thyroid nodules are lumps that make thyroid hormone without following the body's normal controls. One nodule may be responsible, or several nodules may become overactive.

These are sometimes called toxic nodules or toxic multinodular goiter. "Toxic" here means hormone-producing, not cancerous or poisonous.

Thyroiditis means inflammation of the thyroid. It can cause stored thyroid hormone to leak into the blood. This may happen after a viral illness, after pregnancy, or without a clear trigger. The overactive phase is often temporary and may be followed by low thyroid hormone levels.

Other possible causes include taking more thyroid hormone medicine than the body needs, exposure to a large amount of iodine, and certain medicines. Iodine is used by the thyroid to make hormones, but large amounts can trigger hyperthyroidism in a susceptible person.

Risk is higher in people with a family or personal history of autoimmune conditions. Hyperthyroidism is more common in women and becomes more likely with age. Smoking does not cause every form, but it increases the risk and severity of thyroid eye problems associated with Graves' disease.

Diagnosis

Symptoms alone cannot confirm hyperthyroidism. Blood tests are needed.

The usual first test measures thyroid-stimulating hormone, or TSH . TSH is made by the pituitary gland in the brain and tells the thyroid how hard to work. In most cases of hyperthyroidism, TSH is low because the body is trying to reduce thyroid activity.

Blood tests also measure free T4 , one of the main thyroid hormones. A T3 test may be added because some people have high T3 even when free T4 is within range.

Further testing may identify the cause. This can include:

Radioactive iodine tests are not used during pregnancy and are generally avoided while breastfeeding.

Tell the healthcare professional arranging your tests about medicines and supplements. Biotin, found in some hair and nail supplements, can interfere with thyroid blood test results. Do not stop prescribed medicine without advice.

- A blood test for antibodies linked to Graves' disease
- A thyroid scan or radioactive iodine uptake test
- An ultrasound to examine thyroid nodules
- An electrocardiogram, or ECG, if your heartbeat is fast or irregular

Treatment and management

Treatment aims to bring thyroid hormone levels into a safe range, ease symptoms, and reduce complications. The cause of the hyperthyroidism helps determine which options are suitable.

Antithyroid medicines reduce the thyroid's ability to make new hormone. Methimazole or carbimazole is commonly used; propylthiouracil is preferred in some specific situations. These medicines may control Graves' disease over time, but hyperthyroidism can return after they are stopped. They do not usually help thyroiditis because thyroiditis releases hormone already stored in the gland.

Rarely, antithyroid medicines can seriously lower infection-fighting white blood cells or injure the liver. If you develop fever, a severe sore throat, mouth ulcers, yellow skin or eyes, dark urine, or marked itching while taking one, seek urgent medical advice and follow the instructions provided with your medicine.

Beta blockers like metoprolol or propranolol can reduce a fast heartbeat, tremor, sweating, and anxiety-like symptoms. They help with symptoms but do not correct the thyroid hormone level.

Radioactive iodine treatment is swallowed and gradually damages overactive thyroid cells. It often leads to an underactive thyroid, called hypothyroidism. This is managed with daily thyroid hormone replacement. Radioactive iodine is not used during pregnancy or breastfeeding. It may worsen active thyroid eye disease in some people.

Surgery removes part or all of the thyroid. It may be considered for a large goiter, suspicious nodules, severe or recurring hyperthyroidism, or when other treatments are unsuitable. If the whole thyroid is removed, lifelong thyroid hormone replacement is needed.

Thyroiditis often improves without treatment aimed at blocking hormone production. Management may focus on controlling symptoms and checking for a later underactive phase.

Regular blood tests are needed during treatment. They show whether treatment is working and help prevent hormone levels from becoming too high or too low.

Complications

Untreated or poorly controlled hyperthyroidism can place extra strain on the heart. It may cause atrial fibrillation, an irregular rhythm that can increase the risk of blood clots and stroke. It can also contribute to heart failure, especially in people with existing heart conditions.

Long-term excess thyroid hormone can weaken bones and increase the chance of osteoporosis and fractures. Muscle loss and ongoing weakness can also occur.

Graves' eye disease can cause persistent discomfort and changes in appearance. More severe

inflammation may affect eye movement or vision.

During pregnancy, uncontrolled hyperthyroidism can affect both the pregnant person and the developing baby. Treatment needs careful monitoring because thyroid hormone requirements and medicine choices may change.

A rare complication called thyroid storm causes a sudden, severe worsening of hyperthyroidism. It can involve high fever, extreme agitation or confusion, vomiting, diarrhea, and a very fast heartbeat. It is a medical emergency.

Prevention

Most cases of hyperthyroidism cannot be reliably prevented. Graves' disease involves the immune system, and thyroid nodules may develop without a preventable cause.

You can reduce avoidable triggers by not taking iodine or "thyroid support" supplements unless they have been recommended for a clear medical reason. Some seaweed and kelp products contain large and unpredictable amounts of iodine.

If you take thyroid hormone medicine or a medicine known to affect the thyroid, attend the recommended blood tests. This can identify changes before they cause significant symptoms.

Not smoking is especially important if you have Graves' disease because smoking raises the risk of thyroid eye disease and can make it harder to treat.

Living with it and what to expect

Many people return to their usual activities once thyroid hormone levels are controlled. Symptoms such as tremor and a racing heart may improve relatively quickly, while muscle strength, sleep, hair growth, and weight can take longer to settle.

The course is linked to the cause. Thyroiditis may pass over weeks or months, although it can lead to temporary or permanent hypothyroidism. Graves' disease may improve with medicine, return after treatment, or need radioactive iodine or surgery. Overactive nodules usually continue producing hormone unless treated definitively.

Weight gain after treatment is common because metabolism is returning toward its usual rate. Some people regain only weight lost during hyperthyroidism; others gain more. Regular meals, physical activity as your strength returns, and follow-up of thyroid levels can help.

After radioactive iodine or surgery, you may develop an underactive thyroid months or years later. If this happens, thyroid hormone replacement can restore normal hormone levels, but it is

usually needed for life.

Keep attending blood tests even when you feel well. Thyroid levels can change before symptoms become clear. If you are planning pregnancy, discuss this in advance because stable thyroid levels and treatment choices matter before and during pregnancy.

When to get medical help

Arrange a routine appointment if you have ongoing symptoms such as an unexplained fast heartbeat, shakiness, heat intolerance, weight loss, neck swelling, or frequent bowel movements. These symptoms have many possible causes, and blood tests can help clarify what is happening.

Contact your healthcare service promptly if you are pregnant or planning pregnancy and have known or possible hyperthyroidism. Treatment and monitoring may need to be adjusted.

Seek urgent same-day advice if you take an antithyroid medicine and develop fever, a severe sore throat, mouth ulcers, yellow skin or eyes, or dark urine. You may need urgent blood tests.

Get urgent eye care for new double vision, changes in colour vision, reduced vision, or difficulty closing your eyelids.

Call emergency services for:

These symptoms can have causes other than hyperthyroidism, but they need immediate assessment.

- Severe chest pain, fainting, or major difficulty breathing
- A very fast or irregular heartbeat with dizziness or weakness
- High fever with confusion, severe agitation, vomiting, or diarrhea
- Sudden severe worsening in someone known to have hyperthyroidism

Common questions

Can hyperthyroidism go away on its own?

Sometimes. Thyroiditis often settles as the inflammation improves. Graves' disease may enter remission after medicine, but it can return. Hyperthyroidism caused by overactive nodules usually persists until the nodules are treated.

Will I gain weight after treatment?

You may regain weight lost while your metabolism was overactive. Some people gain

additional weight, particularly if treatment causes low thyroid hormone levels. Blood-test monitoring helps identify this.

Can stress cause hyperthyroidism?

Stress can make symptoms such as palpitations, sweating, and poor sleep feel worse. It is not considered the sole cause of hyperthyroidism. The condition usually has a specific thyroid or immune-system cause.

Can I drink coffee if I have an overactive thyroid?

Caffeine can worsen shaking, palpitations, anxiety, and sleep problems. You may find it helpful to reduce coffee, energy drinks, and other caffeinated products while symptoms are active.

Can I have a healthy pregnancy with hyperthyroidism?

Many people do, but thyroid levels need close monitoring. Uncontrolled hyperthyroidism and some treatments can affect pregnancy, so discuss pregnancy plans and medicines with your care team.

Is hyperthyroidism contagious?

No. Hyperthyroidism cannot be passed from one person to another, including when thyroiditis follows a viral infection.

Sources

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