CONDITION

Thyroid disorders

Thyroid disorders are conditions that affect thyroid hormone levels, gland size, or thyroid tissue

WHAT IT IS
Conditions affecting thyroid function, size, or tissue

BODY SYSTEM
Hormone system

MAIN SYMPTOMS
Fatigue, weight changes, temperature intolerance, heart-rate changes

WHAT CAUSES IT
Immune conditions, inflammation, nodules, medicines, or cancer

HOW IT IS DIAGNOSED
Thyroid blood tests, imaging, and biopsy when needed

MAIN TREATMENT
Hormone replacement, antithyroid treatment, monitoring, or surgery

CAN IT BE CURED?
Sometimes - some causes resolve or are removed

IS IT AN EMERGENCY?
Sometimes - severe breathing trouble, confusion, or collapse

LONG-TERM OUTLOOK
Usually manageable with appropriate treatment and monitoring

Overview

The thyroid is a small, butterfly-shaped gland at the front of your neck. It makes hormones that help control how your body uses energy. These hormones affect your heart rate, temperature, digestion, muscles, mood, menstrual cycle, and many other functions.

"Thyroid disorders" is a broad term rather than one single diagnosis. A disorder may affect how much hormone the thyroid makes, the gland's size, or the structure of its tissue.

The main types include:

Symptoms can develop slowly and may resemble those of other conditions. Blood tests can usually identify an underactive or overactive thyroid. Nodules and enlargement may require imaging or a tissue sample.

Thyroid disorders matter because untreated hormone changes can affect the heart, bones, pregnancy, mood, and day-to-day functioning. Most can be controlled successfully once the specific problem is understood.

- Hypothyroidism: the thyroid does not make enough hormone
- Hyperthyroidism: the thyroid makes too much hormone
- Thyroiditis: inflammation of the thyroid, which may temporarily raise or lower hormone levels
- Goitre: an enlarged thyroid
- Thyroid nodules: lumps within the gland, most of which are not cancer
- Thyroid cancer: abnormal thyroid cells growing in an uncontrolled way

Symptoms

Symptoms depend on whether thyroid hormone levels are low, high, or normal. A goitre or nodule may cause no hormone-related symptoms at all.

An underactive thyroid may cause:

These symptoms often appear gradually. Weight gain is usually modest and is not enough by itself to show that you have a thyroid disorder.

An overactive thyroid may cause:

Graves' disease, an immune-related cause of hyperthyroidism, can sometimes affect the eyes. Possible symptoms include dryness, a gritty feeling, sensitivity to light, swelling around the eyes, or eyes that appear more prominent.

A goitre or thyroid nodule may appear as a lump or swelling in the lower front of the neck. A large swelling can sometimes cause hoarseness, coughing, difficulty swallowing, or pressure when lying down.

Children may have changes in growth, school performance, energy, or puberty. In older adults, symptoms can be less typical, such as reduced mobility, low mood, confusion, or a heart rhythm problem.

- Tiredness, slowed thinking, or low mood
- Feeling unusually cold
- Weight gain despite no clear change in eating
- Dry skin, hair changes, constipation, or muscle aches

- Heavy or irregular menstrual periods
- A slower-than-usual heart rate
- Feeling hot, sweaty, restless, or anxious
- A fast, pounding, or irregular heartbeat
- Weight loss despite a normal or increased appetite
- Shaking hands, muscle weakness, or frequent bowel movements
- Difficulty sleeping
- Lighter or less frequent menstrual periods

Causes and risk factors

Many thyroid disorders result from the immune system mistakenly targeting the thyroid.

Hashimoto's thyroiditis is a common immune cause of hypothyroidism. It gradually damages thyroid tissue, reducing hormone production. Graves' disease causes the thyroid to become overactive.

Thyroiditis can also occur after a viral illness, after pregnancy, or because of an immune reaction. Hormone levels may rise when stored hormone leaks from the inflamed gland. Levels can then fall before recovering. Some people are left with permanent hypothyroidism.

Other causes include thyroid surgery, radioactive iodine treatment, radiation to the neck, and certain medicines. Too little or too much iodine can also disrupt thyroid function. Iodine is a mineral the thyroid uses to make hormone.

A thyroid nodule is an area of altered tissue within the gland. Nodules become more common with age. Most are benign, meaning they are not cancer. Some make thyroid hormone independently, while others do not affect hormone levels.

Risk is higher if you have a family or personal history of thyroid or other immune conditions. Pregnancy and the year after giving birth can also affect thyroid function. Previous neck radiation raises the risk of thyroid nodules and cancer.

Diagnosis

Diagnosis usually begins with your symptoms, medical history, and an examination of your neck. The clinician may also check your pulse, skin, reflexes, eyes, and hands.

The main blood test measures thyroid-stimulating hormone , usually called TSH. TSH is made by the pituitary gland in the brain and tells the thyroid how hard to work. It is commonly interpreted with free T4, one of the thyroid hormones.

In primary hypothyroidism, TSH is usually high and free T4 may be low. In hyperthyroidism, TSH is usually low and thyroid hormone levels may be high. Results need to be interpreted in context because pregnancy, acute illness, medicines, and pituitary conditions can affect them.

Blood tests for thyroid antibodies may help identify Hashimoto's thyroiditis or Graves' disease. They are not required in every case.

If you have a nodule or enlarged thyroid, an ultrasound can show its size and features. Ultrasound cannot always determine whether a nodule is benign. A fine-needle aspiration biopsy may be recommended for certain nodules. This procedure uses a thin needle to collect cells for examination.

A thyroid uptake scan can sometimes help find the cause of hyperthyroidism or show whether a nodule is making hormone. It uses a small amount of radioactive material and is not suitable in every situation.

Tell the clinician arranging tests about medicines and supplements. High-dose biotin, found in some hair and nail supplements, can interfere with certain thyroid blood tests.

Treatment and management

Treatment is based on the exact disorder, symptom severity, test results, age, pregnancy status, and other health conditions.

Hypothyroidism is usually treated with a manufactured form of the hormone T4. Regular blood tests help show whether the amount is appropriate. Treatment is often lifelong when thyroid tissue has been permanently damaged, although temporary thyroiditis may recover.

Hyperthyroidism may be managed with medicines that reduce thyroid hormone production. Other options include radioactive iodine, which gradually reduces thyroid activity, or surgery to remove part or all of the gland. Medicines may also be used for a limited time to control symptoms such as a fast heartbeat.

Each option has different benefits and long-term effects. Radioactive iodine and surgery commonly lead to hypothyroidism, which then requires hormone replacement. Eye problems related to Graves' disease may need separate treatment.

Thyroiditis often improves without treatment aimed at hormone production because the gland is releasing stored hormone rather than making too much. Treatment may instead focus on

inflammation, pain, or heart-rate symptoms. Follow-up blood tests are important because hormone levels can change over time.

Many small, low-risk nodules need only ultrasound or clinical monitoring. Nodules may require biopsy, surgery, or other treatment if they have concerning features, grow, make excess hormone, or cause pressure symptoms.

Thyroid cancer treatment often involves surgery. Radioactive iodine and thyroid hormone treatment may be used for some types. Follow-up is tailored to the cancer type and the chance of it returning.

Do not change or stop thyroid medicine based only on symptoms. Taking more thyroid hormone than needed can affect the heart and bones, while too little may leave symptoms and abnormal blood results unresolved.

Complications

Untreated hypothyroidism can contribute to high cholesterol, fertility problems, nerve symptoms, and heart problems. During pregnancy, uncontrolled thyroid hormone changes can affect both the pregnant person and the developing baby.

Severe untreated hypothyroidism can very rarely lead to myxoedema coma , with marked drowsiness, low body temperature, slow breathing, and reduced consciousness. Despite its name, a person may not initially be in a coma.

Untreated hyperthyroidism can cause an irregular heart rhythm, heart failure, muscle loss, and thinning bones. A rare, life-threatening worsening called thyroid storm can cause fever, severe agitation or confusion, vomiting, and a very fast heartbeat.

A large goitre can press on the windpipe or swallowing tube. Thyroid nodules may occasionally be cancerous, but most are benign. Prompt assessment is especially important for a firm or growing lump, persistent hoarseness, or swollen neck glands.

Treatment also needs monitoring. Antithyroid medicines can rarely affect infection-fighting blood cells or the liver. Your care team should explain the specific warning symptoms linked to your medicine.

Prevention

Many thyroid disorders cannot be reliably prevented. This includes inherited tendencies, Hashimoto's thyroiditis, Graves' disease, most thyroid nodules, and many thyroid cancers.

Getting an appropriate amount of iodine supports normal thyroid function, but extra iodine does not prevent most thyroid problems. Large amounts from supplements, seaweed products, or some medicines can trigger or worsen thyroid dysfunction in susceptible people. Do not start iodine supplements specifically for your thyroid unless a qualified professional has advised them.

Avoiding tobacco is particularly relevant in Graves' disease because smoking is linked with a greater risk and severity of thyroid eye problems.

If you take a medicine known to affect the thyroid, planned blood-test monitoring can identify changes early. This is monitoring rather than prevention. People who are pregnant or planning pregnancy may need earlier testing when they have thyroid symptoms, previous thyroid problems, or relevant risk factors.

Living with it and what to expect

The course depends on the type of thyroid disorder. Permanent hypothyroidism is usually a long-term condition, but many people feel well once hormone levels are stable. Blood tests are more frequent when treatment begins or changes, then usually become less frequent once results are steady.

Some forms of hyperthyroidism enter remission, meaning tests remain normal after treatment stops. Others return or require definitive treatment with radioactive iodine or surgery. Long-term follow-up remains important because hypothyroidism can develop later.

Thyroiditis may shift through overactive, underactive, and recovery phases over several months. Recovery is common in some forms, but permanent hypothyroidism is possible. Symptoms and blood results do not always change at the same speed.

Most benign nodules remain stable or grow slowly. Monitoring may involve repeat examination or ultrasound. New symptoms or meaningful growth can lead to another assessment.

Taking thyroid hormone consistently helps keep levels stable. Food, iron, calcium, antacids, and some other medicines can affect absorption, so follow the timing instructions supplied with your medicine. Tell healthcare professionals that you take thyroid treatment when new medicines are being considered.

Pregnancy can change hormone requirements and test targets. Contact your maternity or thyroid care team promptly if you become pregnant while using thyroid medicine rather than waiting for a routine review.

When to get medical help

Arrange a routine appointment if you have persistent symptoms of an underactive or overactive thyroid, a new neck swelling, or a change in an existing thyroid lump. Symptoms alone cannot confirm the cause, but blood tests and an examination can guide the next steps.

Seek prompt medical advice if you have:

Call emergency services for severe difficulty breathing, collapse, reduced consciousness, chest pain, or severe confusion. Fever with marked agitation and a very fast heartbeat also needs emergency assessment, as do profound drowsiness, unusually low body temperature, and slow breathing.

Routine follow-up is appropriate for stable symptoms, planned blood tests, medication reviews, and monitoring of a known benign nodule. Emergency care is not usually needed for an unchanged neck lump or mild, long-standing symptoms.

- A thyroid lump that is enlarging or feels firm
- Persistent hoarseness, swallowing difficulty, or neck pressure
- A sustained fast or irregular heartbeat
- New or worsening eye pain, double vision, or vision changes
- Significant symptoms during pregnancy or after giving birth
- Fever or a severe sore throat while taking an antithyroid medicine

Common questions

Can thyroid problems make me gain weight?

Hypothyroidism can cause some weight gain, partly through fluid retention and slower energy use. Many other factors affect weight, so weight change alone does not establish a thyroid diagnosis. Treating hypothyroidism may reverse the thyroid-related portion, but it is not a general weight-loss treatment.

Can stress cause a thyroid disorder?

Stress can worsen sleep, palpitations, fatigue, and other symptoms that overlap with thyroid problems. It is not considered the sole cause of common thyroid disorders. Immune activity, inherited susceptibility, inflammation, medicines, and thyroid tissue changes are more direct causes.

Is a thyroid lump usually cancer?

Most thyroid nodules are not cancer. The chance cannot be judged by touch alone. Ultrasound

features, your history, nodule size, and sometimes a needle biopsy help determine whether further investigation is needed.

Will I need thyroid medicine for life?

Many people with permanent hypothyroidism need lifelong hormone replacement. Temporary thyroiditis may recover. Treatment for hyperthyroidism can stop after remission in some people, while radioactive iodine or removal of the thyroid usually leads to lifelong replacement therapy.

Can thyroid disorders affect pregnancy?

Yes. Both low and high thyroid hormone levels can affect fertility, pregnancy, and fetal development. Most people with a well-managed thyroid disorder can have a healthy pregnancy, but medicine and blood-test needs may change.

Can thyroid problems cause anxiety or depression?

Overactive thyroid function can cause anxiety, restlessness, and poor sleep. Underactive function can contribute to low mood, slowed thinking, and tiredness. These symptoms can also have other causes, and they may need attention even after thyroid levels return to the target range.

Sources

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