

# Hyperthyroidism

## Definition

Hyperthyroidism is a condition in which the thyroid gland makes too much thyroid hormone. The condition is often referred to as an "overactive thyroid."

## Alternative Names

Overactive thyroid

## Causes

The thyroid gland is an important organ of the endocrine system. It is located in the front of the neck just below the voice box. The gland produces the hormones thyroxine (T4) and triiodothyronine (T3), which control the way every cell in the body uses energy. This process is called your metabolism.

Hyperthyroidism occurs when the thyroid releases too much of its hormones over a short (acute) or long (chronic) period of time. Many diseases and conditions can cause this problem, including:

- Getting too much iodine
- Graves disease (accounts for most cases of hyperthyroidism)
- Inflammation (thyroiditis) of the thyroid due to viral infections or other causes
- Noncancerous growths of the thyroid gland or pituitary gland
- Taking large amounts of thyroid hormone
- Tumors of the testes or ovaries

Related topics:

- Factitious hyperthyroidism
- Hypothyroidism
- Painless (silent) thyroiditis

## Symptoms

- Difficulty concentrating
- Fatigue
- Frequent bowel movements
- Goiter (visibly enlarged thyroid gland) or thyroid nodules
- Heat intolerance
- Increased appetite
- Increased sweating
- Irregular menstrual periods in women

- Nervousness
- Restlessness
- Weight loss (rarely, weight gain)

Other symptoms that can occur with this disease:

- Breast development in men
- Clammy skin
- Diarrhea
- Hair loss
- Hand tremor
- Weakness
- High blood pressure
- Itching - overall
- Lack of menstrual periods in women
- Nausea and vomiting
- Pounding, rapid, or irregular pulse
- Protruding eyes (exophthalmos)
- Rapid, forceful, or irregular heartbeat (palpitations)
- Skin blushing or flushing
- Sleeping difficulty

## **Exams and Tests**

Physical examination may reveal thyroid enlargement, tremor, hyperactive reflexes, or an increased heart rate. Systolic blood pressure (the first number in a blood pressure reading) may be high.

Subclinical hyperthyroidism is a mild form of hyperthyroidism that is diagnosed by abnormal blood levels of thyroid hormones, often in the absence of any symptoms.

Blood tests are also done to measure levels of thyroid hormones.

- TSH (thyroid stimulating hormone) level is usually low
- T3 and free T4 levels are usually high

This disease may also affect the results of the following tests:

- Cholesterol test
- Glucose test
- Radioactive iodine uptake
- T3RU
- Triglycerides
- Vitamin B12 (in rare cases)

## Treatment

How the condition is treated depends on the cause and the severity of symptoms.

Hyperthyroidism is usually treated with one or more of the following:

- Antithyroid medications
- Radioactive iodine (which destroys the thyroid and stops the excess production of hormones)
- Surgery to remove the thyroid

If the thyroid must be removed with surgery or destroyed with radiation, you must take thyroid hormone replacement pills for the rest of your life.

Beta-blockers such as propranolol are used to treat some of the symptoms, including rapid heart rate, sweating, and anxiety until the hyperthyroidism can be controlled.

## Outlook (Prognosis)

Hyperthyroidism is generally treatable and only rarely is life threatening. Some of its causes may go away without treatment.

Hyperthyroidism caused by Graves disease usually gets worse over time. It has many complications, some of which are severe and affect quality of life.

## Possible Complications

Thyroid crisis (storm), also called thyrotoxicosis, is a sudden worsening of hyperthyroidism symptoms that may occur with infection or stress. Fever, decreased mental alertness, and abdominal pain may occur. Immediate hospitalization is needed.

Other complications related to hyperthyroidism include:

- Heart-related complications including:
  - Rapid heart rate
  - Congestive heart failure
  - Atrial fibrillation
- Increased risk for osteoporosis, if hyperthyroidism is present for a long time
- Surgery-related complications, including:
  - Scarring of the neck
  - Hoarseness due to nerve damage to the voice box
  - Low calcium level due to damage to the parathyroid glands (located near the thyroid gland)
- Treatments for hypothyroidism, such as radioactive iodine, surgery, and medications to replace thyroid hormones can have complications.

## **When to Contact a Medical Professional**

Call your health care provider if you have symptoms that could be caused by too much thyroid hormone production. Go to an emergency room or call the local emergency number (such as 911), if you have:

- Change in consciousness
- Dizziness
- Rapid, irregular heartbeat

Call your health care provider if you are being treated for hyperthyroidism and you develop symptoms of underactive thyroid, including:

- Depression
- Mental and physical sluggishness
- Weight gain

## **Prevention**

There are no known ways to prevent hyperthyroidism.