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Hyperthyroidism

Also called: Overactive thyroid

What is hyperthyroidism?

Hyperthyroidism, or overactive thyroid, happens when your thyroid [https://medlineplus.gov/thyroiddiseases.html] gland makes more thyroid hormones than your body needs.

Your thyroid is a small, butterfly-shaped gland in the front of your neck. It makes hormones that control the way the body uses energy. These hormones affect nearly every organ in your body and control many of your body's most important functions. For example, they affect your breathing, heart rate, weight, digestion, and moods. If not treated, hyperthyroidism can cause serious problems with your heart, bones, muscles, menstrual cycle, and fertility. But there are treatments that can help.

What causes hyperthyroidism?

Hyperthyroidism has several causes. They include:

- Graves' disease, an autoimmune disorder in which your immune system attacks your thyroid and causes it to make too much hormone. This is the most common cause.
- Thyroid nodules, which are growths on your thyroid. They are usually benign (not cancer). But they may become overactive and make too much thyroid hormone. Thyroid nodules are more common in older adults.
- Thyroiditis, inflammation of the thyroid. It causes stored thyroid hormone to leak out of your thyroid gland.
- Too much iodine. Iodine is found in some medicines, cough syrups, seaweed and seaweed-based supplements. Taking too much of them can cause your thyroid to make too much thyroid hormone.
- Too much thyroid medicine. This can happen if people who take thyroid hormone medicine for hypothyroidism [https://medlineplus.gov/hypothyroidism.html] (underactive thyroid) take too much of it.

Who is at risk for hyperthyroidism?

You are at higher risk for hyperthyroidism if you:

- Are a woman
- Are older than age 60
- Have been pregnant or had a baby within the past 6 months
- Have had thyroid surgery or a thyroid problem, such as goiter
- Have a family history of thyroid disease
- Have pernicious anemia [https://medlineplus.gov/anemia.html], in which the body cannot make enough healthy red blood cells because it does not have enough vitamin B12 [https://medlineplus.gov/bvitamins.html]
- Have type 1 diabetes [https://medlineplus.gov/diabetestype1.html] or primary adrenal insufficiency, a hormonal disorder
- Get too much iodine, from eating large amounts of foods containing iodine or using iodine-containing medicines or supplements

What are the symptoms of hyperthyroidism?

The symptoms of hyperthyroidism can vary from person to person and may include:

- Nervousness or irritability
- Fatigue [<https://medlineplus.gov/fatigue.html>]
- Muscle weakness
- Trouble tolerating heat
- Trouble sleeping [<https://medlineplus.gov/insomnia.html>]
- Tremor [<https://medlineplus.gov/tremor.html>] , usually in your hands
- Rapid and irregular heartbeat [<https://medlineplus.gov/arrhythmia.html>]
- Frequent bowel movements or diarrhea [<https://medlineplus.gov/diarrhea.html>]
- Weight loss
- Mood swings
- Goiter, an enlarged thyroid that may cause your neck to look swollen. Sometimes it can cause trouble with breathing or swallowing.

Adults over age 60 may have different symptoms than younger adults. For example, they may lose their appetite or withdraw from other people. Sometimes this can be mistaken for depression [<https://medlineplus.gov/depression.html>] or dementia [<https://medlineplus.gov/dementia.html>] .

What other problems can hyperthyroidism cause?

If hyperthyroidism isn't treated, it can cause some serious health problems, including:

- An irregular heartbeat that can lead to blood clots [<https://medlineplus.gov/bloodclots.html>] , stroke [<https://medlineplus.gov/stroke.html>] , heart failure [<https://medlineplus.gov/heartfailure.html>] , and other heart problems [<https://medlineplus.gov/heartdiseases.html>]
- An eye disease called Graves' ophthalmopathy. It can cause double vision, light sensitivity, and eye pain. In rare cases, it can lead to vision loss [<https://medlineplus.gov/visionimpairmentandblindness.html>] .
- Thinning bones and osteoporosis [<https://medlineplus.gov/osteoporosis.html>]
- Fertility problems in women [<https://medlineplus.gov/femaleinfertility.html>]
- Complications in pregnancy, [<https://medlineplus.gov/healthproblemsinpregnancy.html>] such as premature birth [<https://medlineplus.gov/pretermabor.html>] , low birth weight [<https://medlineplus.gov/birthweight.html>] , high blood pressure in pregnancy [<https://medlineplus.gov/highbloodpressureinpregnancy.html>] , and miscarriage [<https://medlineplus.gov/miscarriage.html>]

How is hyperthyroidism diagnosed?

Your health care provider may use many tools to make a diagnosis:

- A medical history, including asking about symptoms
- A physical exam
- Thyroid tests [<https://medlineplus.gov/thyroidtests.html>] , such as
 - TSH [<https://medlineplus.gov/lab-tests/tsh-thyroid-stimulating-hormone-test/>] , T3 [<https://medlineplus.gov/lab-tests/triiodothyronine-t3-tests/>] , T4 [<https://medlineplus.gov/lab-tests/thyroxine-t4-test/>] , and thyroid antibody blood tests [<https://medlineplus.gov/lab-tests/thyroid-antibodies/>]
 - Imaging tests [<https://medlineplus.gov/diagnosticimaging.html>] , such as a thyroid scan, ultrasound [<https://medlineplus.gov/lab-tests/sonogram/>] , or radioactive iodine uptake test. A radioactive iodine uptake test measures how much radioactive iodine your thyroid takes up from your blood after you swallow a small amount of it.

What are the treatments for hyperthyroidism?

The treatments for hyperthyroidism include medicines, radioiodine therapy, and thyroid surgery:

- **Medicines** for hyperthyroidism include
 - Antithyroid medicines, which cause your thyroid to make less thyroid hormone. You probably need to take the medicines for 1 to 2 years. In some cases, you might need to take the medicines for several years. This is the simplest treatment, but it is often not a permanent cure.

- Beta blocker medicines, which can reduce symptoms such as tremors, rapid heartbeat, and nervousness. They work quickly and can help you feel better until other treatments take effect.
- **Radioiodine therapy** is a common and effective treatment for hyperthyroidism. It involves taking radioactive iodine by mouth as a capsule or liquid. This slowly destroys the cells of the thyroid gland that produce thyroid hormone. It does not affect other body tissues. Almost everyone who has radioactive iodine treatment later develops hypothyroidism. This is because the thyroid hormone-producing cells have been destroyed. But hypothyroidism is easier to treat and causes fewer long-term health problems than hyperthyroidism.
- **Surgery** to remove part or most of the thyroid gland is done in rare cases. It might be an option for people with large goiters or pregnant women who cannot take antithyroid medicines. If you have all of your thyroid removed, you will need to take thyroid medicines for the rest of your life. Some people who have part of their thyroid removed also need to take medicines.

If you have hyperthyroidism, it's important not to get too much iodine. Talk to your health care provider about which foods, supplements, and medicines you need to avoid.

NIH: National Institute of Diabetes and Digestive and Kidney Diseases

Start Here

- Hyperthyroidism [<https://familydoctor.org/condition/hyperthyroidism/?adfree=true>] (American Academy of Family Physicians)
Also in Spanish [<https://es.familydoctor.org/condicion/hipertioidismo-es/?adfree=true>]
- Hyperthyroidism (Overactive Thyroid) [<https://www.mayoclinic.org/diseases-conditions/hyperthyroidism/symptoms-causes/syc-20373659?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/hyperthyroidism/symptoms-causes/syc-20373659?p=1>]
- Hyperthyroidism (Overactive Thyroid) [<https://www.niddk.nih.gov/health-information/endocrine-diseases/hyperthyroidism>]
 (National Institute of Diabetes and Digestive and Kidney Diseases)
Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/enfermedades-endocrinas/hipertioidismo>]

Diagnosis and Tests

- Thyroid Function Tests [<https://www.thyroid.org/thyroid-function-tests/>] (American Thyroid Association)
Also in Spanish [<https://www.thyroid.org/las-pruebas-de-funcion-tiroidea/>]
- Thyroid Scan and Uptake [<https://www.radiologyinfo.org/en/info/thyroiduptake>]
 (American College of Radiology; Radiological Society of North America)
Also in Spanish [<https://www.radiologyinfo.org/es/info/thyroiduptake>]
- Thyroid Tests [<https://www.niddk.nih.gov/health-information/diagnostic-tests/thyroid>]
 (National Institute of Diabetes and Digestive and Kidney Diseases)
Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/pruebas-diagnosticas/pruebas-tiroides>]
- Thyroxine (T4) Test [<https://medlineplus.gov/lab-tests/thyroxine-t4-test/>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-tiroxina-t4/>]
- Triiodothyronine (T3) Tests [<https://medlineplus.gov/lab-tests/triiodothyronine-t3-tests/>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/pruebas-de-triyodotironina-t3/>]
- TSH (Thyroid-stimulating hormone) test [<https://medlineplus.gov/lab-tests/tsh-thyroid-stimulating-hormone-test/>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-tsh/>]

Treatments and Therapies

- Radioactive Iodine (I-131) Therapy for Hyperthyroidism [<https://www.radiologyinfo.org/en/info/radioiodine>]
(American College of Radiology; Radiological Society of North America)
Also in Spanish [<https://www.radiologyinfo.org/es/info/radioiodine>]
- Thyroid Surgery [<https://www.thyroid.org/thyroid-surgery/>] (American Thyroid Association)
Also in Spanish [<https://www.thyroid.org/cirugia-de-tiroides/>]
- Thyroidectomy [<https://www.mayoclinic.org/tests-procedures/thyroidectomy/about/pac-20385195?p=1>]
(Mayo Foundation for Medical Education and Research)

Related Issues

- Radioactive Iodine [<https://www.thyroid.org/radioactive-iodine/>] (American Thyroid Association) - **PDF**
- Thyroid and Weight [<https://www.thyroid.org/thyroid-and-weight/>] (American Thyroid Association)
Also in Spanish [<https://www.thyroid.org/tiroides-el-peso/>]
- Thyroid Nodules [<https://www.mayoclinic.org/diseases-conditions/thyroid-nodules/symptoms-causes/syc-20355262?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/thyroid-nodules/symptoms-causes/syc-20355262?p=1>]

Specifics

- Graves' Disease [<https://www.mayoclinic.org/diseases-conditions/graves-disease/symptoms-causes/syc-20356240?p=1>] (Mayo Foundation for Medical Education and Research)
- Graves' Disease [<https://www.niddk.nih.gov/health-information/endocrine-diseases/graves-disease>]
 (National Institute of Diabetes and Digestive and Kidney Diseases)
Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/enfermedades-endocrinas/enfermedad-de-graves>]

Genetics

- Graves disease: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/graves-disease>]
 (National Library of Medicine)

Images

- Thyroidectomy - series [https://medlineplus.gov/ency/presentations/100135_1.htm] (Medical Encyclopedia)
Also in Spanish [https://medlineplus.gov/spanish/ency/esp_presentations/100135_1.htm]

Clinical Trials

- ClinicalTrials.gov: Graves Disease [<https://clinicaltrials.gov/search?cond=%22Graves+Disease%22&aggFilters=status:not%20rec>]
 (National Institutes of Health)
- ClinicalTrials.gov: Hyperthyroidism [<https://clinicaltrials.gov/search?cond=%22Hyperthyroidism%22&aggFilters=status:not%20rec>]
 (National Institutes of Health)

Journal Articles

References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: The impact of thyroid hormone concentration fluctuations on colon cancer proliferation... [<https://www.ncbi.nlm.nih.gov/pubmed/40747299>]
- Article: A Digital Software Support Platform for Hyperthyroidism Management in South Korea:... [<https://www.ncbi.nlm.nih.gov/pubmed/40694676>]
- Article: Single-center prospective study on thyroid function outcomes and neurological prognoses at... [<https://www.ncbi.nlm.nih.gov/pubmed/40678318>]
- Hyperthyroidism -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Hyperthyroidism%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22ast+1+Year%22+%5Bdat%5D+NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]

Find an Expert

- American Thyroid Association [<https://www.thyroid.org/>]
- Find an Endocrinologist [<https://www.endocrine.org/patient-engagement/find-an-endocrinologist-directory>] (Endocrine Society)

- Find an Endocrinology - Thyroid Specialist [<https://www.thyroid.org/patient-thyroid-information/endocrinology-thyroid-doctor/>] (American Thyroid Association)

- National Institute of Diabetes and Digestive and Kidney Diseases [<https://www.niddk.nih.gov>] 

Children

- Hyperthyroidism and Graves' Disease (For Parents) [<https://kidshealth.org/en/parents/hyperthyroidism.html>] (Nemours Foundation)

Women

- Graves' Disease [<https://womenshealth.gov/a-z-topics/graves-disease>] (Department of Health and Human Services, Office on Women's Health)
- Thyroid Disease and Pregnancy [<https://www.niddk.nih.gov/health-information/endocrine-diseases/pregnancy-thyroid-disease>]  (National Institute of Diabetes and Digestive and Kidney Diseases)
Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/enfermedades-endocrinas/enfermedad-tiroides-embarazo>]

Patient Handouts

- Eyes - bulging [<https://medlineplus.gov/ency/article/003033.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003033.htm>]
- Factitious hyperthyroidism [<https://medlineplus.gov/ency/article/000309.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000309.htm>]
- Free T4 test [<https://medlineplus.gov/ency/article/003517.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003517.htm>]
- Graves disease [<https://medlineplus.gov/ency/article/000358.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000358.htm>]
- Hyperthyroidism [<https://medlineplus.gov/ency/article/000356.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000356.htm>]
- Radioactive iodine uptake [<https://medlineplus.gov/ency/article/003689.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003689.htm>]
- Silent thyroiditis [<https://medlineplus.gov/ency/article/000388.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000388.htm>]
- Subacute thyroiditis [<https://medlineplus.gov/ency/article/000375.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000375.htm>]
- T3 test [<https://medlineplus.gov/ency/article/003687.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003687.htm>]
- Thyroid Tests [<https://www.niddk.nih.gov/health-information/diagnostic-tests/thyroid>] 
(National Institute of Diabetes and Digestive and Kidney Diseases)
Also in Spanish [<https://www.niddk.nih.gov/health-information/informacion-de-la-salud/pruebas-diagnosticas/pruebas-tiroides>]
- Thyrotoxic periodic paralysis [<https://medlineplus.gov/ency/article/000319.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000319.htm>]
- TSH test [<https://medlineplus.gov/ency/article/003684.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003684.htm>]
- TSI test [<https://medlineplus.gov/ency/article/003685.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003685.htm>]



MEDICAL ENCYCLOPEDIA

Eyes - bulging [<https://medlineplus.gov/ency/article/003033.htm>]

Factitious hyperthyroidism [<https://medlineplus.gov/ency/article/000309.htm>]

Free T4 test [<https://medlineplus.gov/ency/article/003517.htm>]

Graves disease [<https://medlineplus.gov/ency/article/000358.htm>]

Hyperthyroidism [<https://medlineplus.gov/ency/article/000356.htm>]

Radioactive iodine uptake [<https://medlineplus.gov/ency/article/003689.htm>]

Radioiodine therapy [<https://medlineplus.gov/ency/article/007702.htm>]

Silent thyroiditis [<https://medlineplus.gov/ency/article/000388.htm>]

Subacute thyroiditis [<https://medlineplus.gov/ency/article/000375.htm>]

T3 test [<https://medlineplus.gov/ency/article/003687.htm>]

T3RU test [<https://medlineplus.gov/ency/article/003688.htm>]

TBG blood test [<https://medlineplus.gov/ency/article/003374.htm>]

Thyroid scan [<https://medlineplus.gov/ency/article/003829.htm>]

Thyrotoxic periodic paralysis [<https://medlineplus.gov/ency/article/000319.htm>]

TSH test [<https://medlineplus.gov/ency/article/003684.htm>]

TSI test [<https://medlineplus.gov/ency/article/003685.htm>]

Related Health Topics

Hypothyroidism [<https://medlineplus.gov/hypothyroidism.html>]

Thyroid Cancer [<https://medlineplus.gov/thyroidcancer.html>]

Thyroid Diseases [<https://medlineplus.gov/thyroiddiseases.html>]

Thyroid Tests [<https://medlineplus.gov/thyroidtests.html>]

National Institutes of Health

The primary NIH organization for research on *Hyperthyroidism* is the National Institute of Diabetes and Digestive and Kidney Diseases [<https://www.niddk.nih.gov>]

Hypothyroidism vs. Hyperthyroidism: What's the Difference? [<https://magazine.medlineplus.gov/article/hypothyroidism-vs-hyperthyroidism-whats-the-difference>]

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