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TDD: 1-888-220-5446

# Thyroid Disease

## Q: What is the thyroid?

**A:** Your thyroid (THY-roid) is a small gland found at the base of your neck, just below your Adam's apple. The thyroid produces two main hormones called T3 and T4. These hormones travel in your blood to all parts of your body. The thyroid hormones control the rate of many activities in your body. These include how fast you burn calories and how fast your heart beats. All of these activities together are known as your body's metabolism. A thyroid that is working right will produce the right amounts of hormones needed to keep your body's metabolism working at a rate that is not too fast or too slow.

## Q: What kinds of thyroid problems can affect women?

**A:** Women are more likely than men to develop thyroid disorders. Thyroid disorders that can affect women include:

- Disorders that cause hyperthyroidism
- Disorders that cause hypothyroidism
- Thyroid nodules
- Thyroiditis
- Thyroid cancer
- Goiter

## Q: What is hyperthyroidism?

**A:** Some disorders cause the thyroid to make more thyroid hormones than the body needs. This is called hyperthyroidism (hy-pur-THY-roi-diz-uhm), or overactive thyroid. The most common cause of hyperthyroidism is Graves' disease. Graves' disease is an autoimmune disorder, in which the body's own defense system, called the immune system, stimulates the thyroid. This causes it to make too much of the thyroid hormones. Hyperthyroidism can also be caused by thyroid nodules that prompt excess thyroid hormones to be made (see What are thyroid nodules?).

## Q: What are the symptoms of hyperthyroidism?

**A:** At first, you might not notice symptoms of hyperthyroidism. They usually begin slowly. But over time, a speeded up metabolism can cause symptoms such as:

- Weight loss, even if you eat the same or more food
- Eating more than usual
- Rapid or irregular heartbeat or pounding of your heart
- Anxiety
- Irritability
- Trouble sleeping
- Trembling in your hands and fingers
- Increased sweating
- Increased sensitivity to heat
- Muscle weakness
- More frequent bowel movements
- Less frequent menstrual periods with lighter than normal menstrual flow



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In addition to these symptoms, people with hyperthyroidism may have osteoporosis, or weak, brittle bones. In fact, hyperthyroidism might affect your bones before you have any of the other symptoms of the disorder. This is especially true of postmenopausal women, who are already at high risk of osteoporosis.

**Q: What is hypothyroidism?**

**A:** Hypothyroidism (hy-poh-THY-roidiz-uhm) is when your thyroid does not make enough thyroid hormones. It is also called underactive thyroid. The most common cause of hypothyroidism in the United States is Hashimoto's thyroiditis. Hashimoto's thyroiditis is an autoimmune disease, in which the immune system mistakenly attacks the thyroid. This attack damages the thyroid so that it does not make enough hormones. Hypothyroidism also can be caused by:

- Treatment of hyperthyroidism
- Radiation treatment of certain cancers
- Thyroid removal

In rare cases, problems with the pituitary gland can cause the thyroid to be less active.

**Q: What are the symptoms of hypothyroidism?**

Symptoms of hypothyroidism tend to develop slowly, often over several years. At first, you may just feel tired and sluggish. Later, you may develop other symptoms of a slowed down metabolism, including:

- Weight gain, even though you are not eating more food
- Increased sensitivity to cold

- Constipation
- Muscle weakness
- Joint or muscle pain
- Depression
- Fatigue (feeling very tired)
- Pale dry skin
- A puffy face
- A hoarse voice
- Excessive menstrual bleeding

In addition to these symptoms, people with hypothyroidism may have high blood levels of LDL cholesterol. This is the so-called "bad" cholesterol, which can increase your risk for heart disease.

**Q: What are thyroid nodules?**

**A:** A thyroid nodule (NAHD-yool) is a swelling in one section of the thyroid gland. The nodule can be solid or filled with fluid or blood. You can have just one thyroid nodule or many.

Most thyroid nodules do not cause symptoms. But some thyroid nodules make too much of the thyroid hormones, causing hyperthyroidism. Sometimes, nodules get to be big enough to cause problems with swallowing or breathing. In fewer than 10 percent of cases, thyroid nodules are cancerous.

Thyroid nodules are quite common. By the time you reach the age of 50, you have a 50 percent chance of having a thyroid nodule larger than a half inch wide. We do not know why nodules form in otherwise normal thyroids.

You can sometimes see or feel a thyroid nodule yourself. Try standing in front of a mirror and raise your chin slightly. Look for a bump on either side of your



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windpipe below your Adam's apple. If the bump moves up and down when you swallow, it may be a thyroid nodule. Ask your doctor to look at it.

**Q: What is thyroiditis?**

**A:** Thyroiditis (thy-roi-DY-tiss) is inflammation, or swelling, of the thyroid. There are several types of thyroiditis, one of which is Hashimoto's thyroiditis. Other types of thyroiditis include:

**Postpartum thyroiditis**

Like Hashimoto's thyroiditis, postpartum thyroiditis seems to be caused by a problem with the immune system. In the United States, postpartum thyroiditis occurs in about 5 to 10 percent of women. The first phase starts 1 to 4 months after giving birth. In this phase, you may get symptoms of hyperthyroidism because the damaged thyroid is leaking thyroid hormones out into the bloodstream. The second phase starts about 4 to 8 months after delivery. In this phase, you may get symptoms of hypothyroidism because, by this time, the thyroid has lost most of its hormones. Not everyone with postpartum thyroiditis goes through both phases. In most women who have postpartum thyroiditis, thyroid function returns to normal within 12 to 18 months after symptoms start.

Risk factors for postpartum thyroiditis include having:

- An autoimmune disease, like type 1 diabetes
- A personal history or family history of thyroid disorders
- Having had postpartum thyroiditis after a previous pregnancy

**Silent or painless thyroiditis**

Symptoms are the same as in postpartum thyroiditis, but they are not related to having given birth.

**Subacute thyroiditis**

Symptoms are the same as in postpartum and silent thyroiditis, but the inflammation in the thyroid leads to pain in the neck, jaw, or ear. Unlike the other types of thyroiditis, subacute thyroiditis may be caused by an infection.

**Q: What are the symptoms of thyroid cancer?**

Most people with thyroid cancer have a thyroid nodule that is not causing any symptoms. If you have a thyroid nodule, there is a small chance it may be thyroid cancer. To tell if the nodule is cancerous, your doctor will have to do certain tests (see How are thyroid diseases diagnosed?). A few people with thyroid cancer may have symptoms. If the cancer is big enough, it may cause swelling you can see in the neck. It may also cause pain or problems swallowing. Some people get a hoarse voice.

Thyroid cancer is rare compared with other types of cancer. It is more common in people who:

- Have a history of exposure of the thyroid to radiation (but not routine X-ray exposure, as in dental X-rays or mammograms)
- Have a family history of thyroid cancer
- Are older than 40 years of age



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### Q: What is a goiter?

**A:** A goiter is an abnormally enlarged thyroid gland. Causes of goiter include:

- Iodine deficiency. Iodine is a mineral that your thyroid uses for making thyroid hormones. Not getting enough iodine in your food and water can cause your thyroid to get bigger. This cause of goiter is uncommon in the United States because iodine is added to table salt.
- Hashimoto's thyroiditis
- Graves' disease
- Thyroid nodules
- Thyroiditis
- Thyroid cancer

Usually, the only symptom of a goiter is a swelling in your neck. But a very large or advanced goiter can cause a tight feeling in your throat, coughing, or problems swallowing or breathing.

Having a goiter does not always mean that your thyroid is not making the right amount of hormones. Depending on the cause of your goiter, your thyroid could be making too much, not enough, or the right amount of hormones.

### Q: How are thyroid disorders diagnosed?

**A:** Thyroid disorders can be hard to diagnose because their symptoms can be linked to many other health problems. Your doctor will start by taking a medical history and asking if any of your family members has a history of thyroid disorders. Your doctor will also give you a physical exam and check your neck for thyroid nodules. Depending on your symptoms, your doctor may also do other tests, such as:

### Blood tests

Testing the level of thyroid stimulating hormone (TSH) in your blood can help your doctor figure out if your thyroid is overactive or underactive. TSH tells your thyroid to make thyroid hormones. Depending on the results, your doctor might order another blood test to check levels of one or both thyroid hormones in your blood. If your doctor suspects an immune system problem, your blood may also be tested for signs of this.

### Radioactive iodine uptake test

For this test, you swallow a liquid or capsule containing a small dose of radioactive iodine (radioiodine). The radioiodine collects in your thyroid because your thyroid uses iodine to make thyroid hormones. Then, a probe placed over your thyroid measures the amount of radioiodine in your thyroid. A high uptake of radioiodine means that your thyroid is making too much of the thyroid hormones. A low uptake of radioiodine means that your thyroid is not making enough of the thyroid hormones.

### Thyroid scan

A thyroid scan usually uses the same radioiodine dose that was given by mouth for your uptake test. You lie on a table while a special camera creates an image of your thyroid on a computer screen. This test may be helpful in showing whether a thyroid nodule is cancerous. Three types of nodules show up in this test:

- Thyroid nodules that take up excess radioiodine are making too much of the thyroid hormones, causing hyperthyroidism. These nodules show up brightly on the scan and are called "hot" nodules.



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- Thyroid nodules that take up the same amount of radioiodine as normal thyroid cells are making a normal amount of thyroid hormones. These are called "warm" nodules.
- Thyroid nodules that do not take up radioiodine are not making thyroid hormones. They appear as defects or holes in the scan and are called "cold" nodules.

Hot nodules are almost never cancerous. A small percentage of warm and cold nodules are cancerous.

### Thyroid fine needle biopsy

This test is used to see if thyroid nodules have normal cells in them. Local anesthetic may be used to numb an area on your neck. Then, a very thin needle is inserted into the thyroid to withdraw some cells and fluid. The withdrawal of cells and fluid is called a biopsy (BY-op-see). A special type of doctor called a pathologist (path-ol-uh-jist) examines the cells under a microscope to see if they are abnormal. Abnormal cells could mean thyroid cancer.

### Thyroid ultrasound

The thyroid ultrasound uses sound waves to create a computer image of the thyroid. This test can help your doctor tell what type of nodule you have and how large it is. Ultrasound may also be helpful in detecting thyroid cancer, although by itself it cannot be used to diagnose thyroid cancer. You may have repeat thyroid ultrasounds to see if your nodule is growing or shrinking.

### Q: How is hyperthyroidism treated?

**A:** Your doctor's choice of treatment will depend on the cause of your hyperthyroidism and how severe your symptoms are. Treatments include:

- **Antithyroid medicines** block the thyroid's ability to make new thyroid hormones. These drugs do not cause permanent damage to the thyroid.
- **Radioiodine** damages or destroys the thyroid cells that make thyroid hormones. For this treatment, your doctor will give you a higher dose of a different type of radioiodine than is used for the radioiodine uptake test or the thyroid scan.
- **Surgery** to remove most of the thyroid.
- **Beta** (BAY-tuh)-**blockers** are medicines that block the effects of thyroid hormones on the body. These medicines can be helpful in slowing your heart rate and reducing other symptoms until one of the other forms of treatment can take effect. Beta-blockers do not reduce the amount of thyroid hormones that are made.

If your thyroid is destroyed by radioiodine or removed through surgery, you must take thyroid hormone pills for the rest of your life. These pills give your body the thyroid hormones that your thyroid would normally make.

### Q: How is hypothyroidism treated?

**A:** Hypothyroidism is treated with medicine to supply the body with the thyroid hormones it needs to function right. The most commonly used medicine is levothyroxine (le-voh-thy-ROK-suhn). This is a man-made form of T4. It is exactly the same as the T4 that your thyroid makes. When you take T4, your body makes the T3 it needs from the T4 in the pills. A man-made form of T3, called liothyronine (ly-oh-THY-roh-noon), is also available. Some doctors and patients prefer a combination of T4 and





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T3 or T3 by itself. Most patients with hypothyroidism will need to be on thyroid hormone treatment for the rest of their lives.

**Q: How are thyroid nodules treated?**

**A:** Treatment depends on the type of nodule or nodules that you have. Treatments include:

- **Watchful waiting.** If your nodule is not cancerous, your doctor may decide to simply watch your condition. This involves giving you regular physical exams, blood tests, and perhaps thyroid ultrasound tests. If your nodule does not change, you may not need further treatment.
- **Radioiodine.** If you have nodules that are making too much of the thyroid hormones, radioiodine treatment may be used. The radioiodine is absorbed by the thyroid nodules, and it causes them to shrink and make smaller amounts of thyroid hormones.
- **Alcohol ablation** (uh-BLAY-shuhn). In this procedure, your doctor injects alcohol into thyroid nodules that make too much of the thyroid hormones. The alcohol shrinks the nodules and they make smaller amounts of thyroid hormones.
- **Surgery.** All nodules that are cancerous are surgically removed. Sometimes, nodules that are not cancerous but are big enough to cause problems breathing or swallowing are also surgically removed.

**Q: How is thyroid cancer treated?**

- **Surgery.** The main treatment for thyroid cancer is to remove the entire thyroid gland, or as much of it as can be safely removed. Often, surgery alone will cure the thyroid cancer, especially if the cancer is small.
- **Radioiodine.** A large dose of radioiodine will destroy thyroid cancer cells with little or no damage to other parts of the body.

**Q: How is goiter treated?**

**A:** The treatment for goiter depends on the cause of the goiter. If your goiter is caused by not getting enough iodine, you may be given an iodine supplement to swallow and T4 hormone, if need be. Other treatments include:

- Radioiodine to shrink the goiter, especially if parts of the goiter are overactive
- Surgery to remove part or almost all of the thyroid

**Q: Are there any complementary or alternative treatments for thyroid problems?**

**A:** To date, we don't know enough about alternative treatments for thyroid problems. Your doctor can explain which treatment options are best for you.

**Q: Can thyroid disorders cause problems with pregnancy?**

**A:** Both hyperthyroidism and hypothyroidism can make it more difficult for you to become pregnant.

Hyperthyroidism that is not properly treated during pregnancy can cause:

- Early labor and premature babies



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- Preeclampsia (pre-ee-CLAMP-see-uh), a serious condition starting after 20 weeks of pregnancy that causes high blood pressure and problems with the kidneys and other organs
- Fast heart rate of the developing baby
- Smaller babies
- Stillbirths

Women who have hypothyroidism that is not diagnosed or properly treated during pregnancy may be at increased risk for:

- Anemia (lower than normal number of healthy red blood cells)
- Preeclampsia
- Low-birth-weight babies
- Problems with brain development in the baby
- Abnormal bleeding after giving birth

If you are pregnant or are thinking about becoming pregnant, ask your doctor if you need a thyroid test. This is especially true if you or a family member has a history of thyroid problems or conditions related to thyroid disorders, including:

- Prematurely gray hair
- White patches on the skin
- Type 1 diabetes

**Q: Can I exercise if I have a thyroid problem?**

**A:** Some people with thyroid problems may find exercise difficult. It is important to talk to your doctor about the right amount of physical activity for you.

**Q: Should I get tested for thyroid diseases?**

**A:** Ask your doctor or nurse if you need to have a thyroid test. This is especially important if you are of childbearing age, have already had a thyroid problem, or have had surgery or radiotherapy affecting the thyroid gland. You may also be at higher risk if you have:

- Goiter
- Pernicious anemia
- Type 1 diabetes
- Vitiligo
- Prematurely gray hair

At any age, be sure to ask your doctor about any thyroid disorder symptoms you might have. ■



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### *For more information*

For more information about thyroid diseases, contact [womenshealth.gov](http://womenshealth.gov) at 1-800-994-9662 or the following organizations:

#### **The American Thyroid Association**

Phone number: (703) 998-8890

Internet address: <http://www.thyroid.org>

#### **National Cancer Institute**

Phone number: (800) 422-6237

Internet address: <http://www.cancer.gov/cancertopics/wyntk/thyroid>

#### **The Hormone Foundation**

Phone number: (800) 467-6663

Internet address: <http://www.hormone.org/thyroid/>

#### **Thyroid Cancer Survivors, Inc.**

Phone number: (877) 588-7904

Internet address: <http://www.thyca.org/>

#### **National Endocrine and Metabolic Diseases Information Service**

#### **National Institute of Diabetes and Digestive and Kidney Diseases**

Phone number: (888) 828-0904

Internet address: <http://endocrine.niddk.nih.gov/>

#### **This FAQ was reviewed by:**

Jacqueline Jonklass, MD, PhD, MPH  
Assistant Professor  
Division of Endocrinology and Metabolism  
Department of Medicine  
Georgetown University

Mark Helfand, MD, MS, MPH  
Director, Oregon Evidence-Based Practice Center  
Assistant Professor, School of Medicine  
Oregon Health and Science University

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Content last updated April 9, 2009.

Screening recommendation updated January 14, 2010.