



**Understanding**  
Hypothyroidism  
and goiter, thyroid  
nodules, and  
thyroid cancer

This pamphlet will help you to better understand goiter, thyroid nodules and thyroid cancer, their connection to hypothyroidism, and how they can be treated. You can use this brochure as a guide to help you talk to your doctor about these conditions.

## What is hypothyroidism?

Hypothyroidism occurs when the thyroid becomes damaged or inflamed, making it unable to produce enough of the hormone thyroxine.<sup>1</sup> This is the opposite of hyperthyroidism, in which the body produces too much thyroxine.<sup>1</sup> For more information on hypothyroidism, refer to the brochure titled *Understanding and Managing Hypothyroidism*.

## What is a goiter?

A goiter is an enlarged thyroid gland. It can range from an enlargement that is slight and unnoticeable to a lump that is visible and pronounced. In some cases a goiter is not associated with thyroid disease, and in other cases the presence of a goiter can be a sign of hypothyroidism. If you have a goiter, your healthcare provider can use tests to determine what may be causing it.

## Thyroid nodules and thyroid cancer

Thyroid nodules are lumps that may develop on the thyroid. They can range in size, and they can appear as a single nodule or as many nodules. If you have many, it causes a goiter—this is called a multinodular goiter.

Most thyroid nodules are benign, which means they are harmless. But in about 5% of cases, these nodules can be cancerous.<sup>1</sup> This risk might

be higher for you if you have a family history of thyroid cancer, or if you have a history of radiation exposure, particularly to the head or neck.<sup>2</sup> Because thyroid cancer is a possibility, it is important to share with your healthcare provider if you think you see or feel nodules on your thyroid.

## Signs and symptoms of a goiter or thyroid nodule

In addition to seeing or feeling lumps on your throat, other signs and symptoms of a goiter or thyroid nodule can include<sup>3</sup>:

- Hoarse voice
- Difficulty swallowing
- Feeling of fullness in the throat
- Pain in the neck or ear

If you are experiencing any of these symptoms, see your doctor right away for a proper diagnosis.



## Diagnosing thyroid conditions

Your doctor will evaluate your symptoms, perform a physical examination, and use tests to determine if you have a goiter, thyroid nodules or thyroid cancer. And since these conditions can be associated with hypothyroidism, your doctor may use a thyroid-stimulating hormone (TSH) test to determine if you have hypothyroidism, too.

TSH is produced by the pituitary, a small gland in your brain. TSH is a hormone your body naturally produces if it senses that your thyroid is not releasing enough of its main hormone, thyroxine. A healthy thyroid receives the message and responds by producing more thyroxine. This helps to keep your hormone levels within a normal range.

If you have hypothyroidism, your TSH levels will often be elevated because your thyroid is not able to produce enough thyroxine. This overproduction of TSH can enlarge the thyroid, causing a goiter.<sup>3</sup>

A TSH test can help determine if your thyroid is underperforming, and if you may have hypothyroidism. It is recognized as the most reliable test of its kind.<sup>3</sup>

Your healthcare provider may also use other tests to determine the nature of a goiter or thyroid nodule. These may include other thyroid function tests or scans, an ultrasound or a biopsy. A specific biopsy called fine needle aspiration is often used to determine the nature of a goiter or thyroid nodule.<sup>3</sup> This procedure can be done in a doctor's office under local anesthetic and can determine if a thyroid nodule is cancerous or benign.

## Treatment for thyroid conditions

If hypothyroidism is causing your goiter or thyroid nodules, your healthcare provider will probably prescribe a medication that replaces the thyroid hormone your body needs but is not producing.

If you are prescribed a thyroid replacement treatment, it is important to keep taking your medication, even if your goiter or thyroid nodules disappear. Your healthcare provider will carefully monitor your TSH levels regularly. Over time, your treatment strength may need to be adjusted.<sup>3</sup> Generally, thyroid replacement therapy is to be taken for life.

It is also possible that a goiter or small thyroid nodule will not require any immediate treatment. Your healthcare provider may just monitor your thyroid levels over time to make sure no further action is needed.

Sometimes thyroid nodules can be shrunk with thyroid hormone treatment. However, if a nodule is cancerous or if cancer is suspected, it will be removed with surgery. Depending on the specific case, this can mean removing all or part of the thyroid as well. Without the thyroid, or sometimes with a partial thyroid, you become hypothyroid and will probably be prescribed thyroid replacement therapy.<sup>3</sup>

Thyroid cancer is rare compared to other types of cancers; however, the rate of newly diagnosed thyroid cancer is increasing. The reason for this is unclear. Even though the diagnosis of cancer is serious, the prognosis is very good.<sup>1</sup> Most cancerous thyroid tissue can be removed with surgery.<sup>1</sup> Some cases also require radioactive iodine therapy. This means you swallow a small amount of the substance, which causes it to eliminate any thyroid tissue missed in surgery.

## 5 tips for maintaining your thyroid health

- 1. Notify your healthcare provider if you notice any lumps on your neck.** Though goiter and thyroid nodules are generally harmless, there is a chance that a lump could be cancerous. Your doctor can use a simple procedure to determine if a nodule is cancerous.
- 2. Ask your doctor about a TSH test.** If you suspect you may have hypothyroidism due to the presence of goiter, nodules or other hypothyroid symptoms, a simple TSH blood test can help your doctor make a diagnosis.
- 3. Make prescribed medications part of your daily routine.** Thyroid replacement medication must be taken at the same time every day, exactly as your doctor prescribed. By associating your pill with a part of your everyday routine, such as making morning coffee or walking the dog, you are more likely to remember to take it on time.
- 4. Continue to take your medication as your doctor prescribed, even if your symptoms go away.** Unless explicitly instructed by your doctor, it is important to consistently take your medicine as your doctor prescribes.
- 5. Schedule regular checkups to test your thyroid function.** If you have had a cancerous nodule removed, it is possible that the cancer could return. Even if you have a benign nodule or goiter, it is important that you doctor checks in to monitor it. Periodic monitoring of your thyroid function can help ensure thyroid health.

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## The bottom line

Goiter, thyroid nodules and hypothyroidism are manageable. If a nodule is cancerous, which is rare, the prognosis is very good, and it can usually be treated with surgery.

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**References:** 1. Baskin HJ, Cobin RH, Gharib H, et al; for the American Association of Clinical Endocrinologists. American Association of Clinical Endocrinologists medical guidelines for clinical practice for the evaluation and treatment of hyperthyroidism and hypothyroidism. *Endocr Pract.* 2002;8:457-469. 2. Popoveniuc G, Jonklass J. Thyroid nodules. *Med Clin North Am.* 2012;96:329-349. 3. Cooper DS, Doherty GM, Haugen GR, et al. Revised American Thyroid Association management guidelines for patients with thyroid nodules and differentiated thyroid cancer. *Thyroid.* 2009;19:1167-1214.