

# Thyroid Nodules FAQ

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## WHAT IS THE THYROID GLAND?

The thyroid gland located in the neck produces thyroid hormones which help the body use energy, stay warm and keep the brain, heart, muscles, and other organs working normally.

## 1 SYMPTOMS

### What are the symptoms of a thyroid nodule?

The term thyroid nodule refers to any growth of thyroid cells that forms a lump within the thyroid. Most thyroid nodules do not cause any symptoms. Rarely, a nodule can cause pain, difficulty swallowing or breathing, hoarseness, or hyperthyroid symptoms.

## 2 CAUSES

### What causes a thyroid nodule?

Thyroid cancer is the most important cause of a thyroid nodule. Fortunately, cancer occurs in less than 10% of nodules (see *Thyroid Cancer brochure*). This means that about 9 of 10 nodules are benign (noncancerous). These include colloid nodules, follicular neoplasms, and thyroid cysts. Autonomous nodules, which overproduce thyroid hormone, can occasionally lead to hyperthyroidism. We do not know what causes most noncancerous thyroid nodules to grow.

## 3 DIAGNOSIS

### How is a thyroid nodule diagnosed?

Most nodules are discovered during an examination of the neck for another reason. Blood tests of thyroid hormone (thyroxine, or T4) and thyroid-stimulating hormone (TSH) are usually normal. Specialized tests are necessary to determine whether a thyroid nodule is cancerous. You may be asked to undergo a thyroid fine needle biopsy, a thyroid scan, and/or a thyroid ultrasound.

**Thyroid fine needle biopsy.** This simple procedure is done in the doctor's office, and patients usually return home or to work after the biopsy without any ill effects. Your doctor will use a very thin needle to withdraw cells from the thyroid nodule. The cells are then examined under a microscope. A benign (noncancerous) result is found in 70-80% of biopsies. A definite cancer is found in about 5% of biopsies, but another 10% of nodules may be suspicious for cancer. These nodules all require surgery. In up to 20% of biopsies, a definite diagnosis cannot be made. These nodules may be re-evaluated with a second fine needle biopsy or may need to be removed by surgery.

**Thyroid ultrasound.** Thyroid ultrasound, which uses sound waves to obtain a picture of the thyroid, can determine if a nodule is solid or cystic or whether it has characteristics that are associated with thyroid cancer. The ultrasound can be used to keep an eye on thyroid nodules to see if they are growing. Thyroid ultrasound also can be used to localize the nodule and assist the placement of the needle within the nodule during a fine needle biopsy. Ultrasound is especially helpful if the nodule is hard to feel.

**Thyroid scan.** A thyroid scan uses a small amount of a radioactive substance, usually radioactive iodine, to obtain a picture of the thyroid gland. A scan is usually done in hyperthyroid patients (see *Hyperthyroidism brochure*) to determine if a nodule is causing the hyperthyroidism due to overactivity. In the past, this test was also routinely done to determine which nodules were at highest risk for containing a thyroid cancer. This has largely been replaced by the use of thyroid ultrasound and fine needle biopsy.

### FURTHER READING

Further details on this and other thyroid-related topics are available in the patient information section on the American Thyroid Association® website at [www.thyroid.org](http://www.thyroid.org).

## 4 TREATMENT

### How are thyroid nodules treated?

An experienced thyroid surgeon should remove all thyroid nodules thought to contain a thyroid cancer. Benign thyroid nodules need to be watched closely, and at least require annual neck examinations. Thyroid ultrasound is also often used to follow nodules over time to make sure that they do not enlarge or develop a worrisome appearance.

