

# 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 symptoms of [hyperthyroidism](#).

## 2 CAUSES

### What causes a thyroid nodule?

Fortunately, 9 out 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.

Thyroid cancer is the most important cause of a thyroid nodule. Fortunately, cancer occurs in less than 10% of nodules (see [Thyroid Cancer brochure](#)).

## 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 testing, such as a thyroid ultrasound, thyroid fine needle biopsy, or a thyroid scan.

### What is a Thyroid ultrasound?

Thyroid ultrasound, which uses sound waves to obtain a picture of the thyroid should be used to evaluate thyroid nodules. It can determine if a nodule is solid or cystic (meaning that the nodule contains fluid). It is also used to look for features 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 is used to localize the nodule and assist the placement of the needle within the nodule during a fine needle biopsy.

### What is fine needle thyroid biopsy?

This is also called a *fine needle aspiration* of the thyroid or simply F.N.A. This 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 60-80% 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.

### What is molecular testing?

Some thyroid nodules for which a definite diagnosis cannot be made may undergo additional testing called molecular testing. This may provide more information about the risk of cancer in these nodules. It may require a second fine needle biopsy depending on the type of test available or offered. Depending on the results, the nodule may be monitored with ultrasound over time, or it may need to be removed by surgery to determine for sure whether there is cancer.

### 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).

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## 3 DIAGNOSIS

### What is a 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 who have nodules (see *Hyperthyroidism brochure*) to determine if a nodule is causing the hyperthyroidism due to overactivity. In the past, this test was also done to determine which nodules were at higher risk for containing a thyroid cancer, but thyroid ultrasound and fine needle biopsy have largely replaced thyroid scans for this purpose.

## 4 TREATMENT

### How are thyroid nodules treated?

Thyroid nodules that are known or suspected to be thyroid cancer are typically first treated by thyroid surgery. An experienced thyroid surgeon should remove all thyroid nodules thought to contain thyroid cancer. In some cases, a small thyroid cancer (< 1 cm) may be able to be monitored without surgery. Benign thyroid nodules need to be watched periodically. This is done by annual neck examination and often thyroid ultrasound is used over time to make sure that a nodule does not enlarge or develop a worrisome appearance. When benign thyroid nodules cause symptoms, they may also need to be removed.



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