

Thyroid Cancer: Diagnosis



How is thyroid cancer diagnosed?

If your healthcare provider thinks you might have thyroid cancer, you will need certain exams and tests to be sure. Diagnosing thyroid cancer starts with your healthcare provider asking you questions. They will ask you about your health history, your symptoms, risk factors, and family history of disease. Your healthcare provider will also give you a physical exam.

What tests might I need?

You may have one or more of these tests:

- Blood tests
- Imaging tests
- Biopsy

Blood tests

A variety of blood tests will be used to see if your thyroid gland is working the way it should. These tests also help to check your overall health. These blood tests might include:

- **TSH (thyroid-stimulating hormone).** This hormone is made by the pituitary gland in the brain. It tells the thyroid to make hormones called T3 (triiodothyronine) and T4 (thyroxine). This test can tell a lot about the overall activity of your thyroid gland.
- **Thyroid hormone levels.** This test is used to check the level of the thyroid hormones, T3 and T4, in your body.
- **Calcitonin.** Levels of this hormone may be checked if your healthcare provider thinks you may have medullary thyroid cancer (MTC).
- **CEA (carcinoembryonic antigen).** If MTC is suspected, this protein may be checked. MTC causes very high levels of CEA in the blood.
- **RET-proto-oncogene test.** This is another blood test that checks for MTC.

Imaging tests

These tests can be used to look at the size of the thyroid gland. They can also be used to find the size and location of nodules or lumps that might be cancer.

- **Ultrasound.** A thyroid and neck ultrasound is the most common imaging test used. During this painless test, sound waves are used to look for thyroid cancer. The sound waves bounce off your thyroid and send back signals. A computer uses the signals to create an image of your thyroid. The test can help show if a nodule is solid or fluid-filled. The image can show the size and location of any thyroid nodules and nearby swollen lymph nodes. This could mean cancer has spread to them. Ultrasound may be used to help guide a needle into the thyroid nodule or swollen lymph node to do a biopsy.
- **Radionuclide or radioiodine scan.** This test by itself can't diagnose thyroid cancer. A very small, harmless amount of radioactive iodine, called a radiotracer, is swallowed or put in a vein. Over time, it's absorbed by thyroid cells. This makes the thyroid cells easy to see on the scan that's done with a special camera several hours later.

- **CT scan.** This test uses X-rays to get detailed cross-sectional images of the body. It can be used to find the location and size of thyroid cancers. It can also be used to help guide a biopsy needle into the area that's thought to be cancer. If MTC is suspected, a CT scan can be used to find other tumors in the body that are often linked with the MTC. You may be given a contrast agent in your vein or to swallow before the CT scan to make the image details more clear. The CT scan might be combined with a PET scan. This uses radioactive sugar to find cancer cells as well.

Biopsy

A biopsy is a test to take small pieces of tissue from the body. The tissue (called a sample) is then looked at under a microscope. A biopsy is the only way to know for sure if a thyroid change is cancer.

During a biopsy, the healthcare provider will use an imaging test, such as an ultrasound, to guide a very thin needle into your thyroid to take out cells and fluid. This is called a **fine needle aspiration**. This procedure can be done in the healthcare provider's office. The sample is sent to a pathologist, an expert who looks for changes in cells. The pathologist checks the cells and fluid under a microscope for any signs of cancer.

If the fine needle aspiration biopsy results are not clear, it may be repeated. Or a surgical biopsy may be needed. This is when surgery is used to take out the nodule or the affected part of the thyroid gland to check for cancer cells.

Getting your test results

When your healthcare provider has the results of your biopsy, they will contact you with the results. Your provider will talk with you about other tests you may need if thyroid cancer is found. Make sure you ask all of the questions that occur to you so that you can understand the results and what follow-up you need. Consider writing your questions down so you won't forget anything.

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