

THE THYROID: A SMALL GLAND WITH A BIG JOB

The thyroid is a small, butterfly-shaped gland located at the base of the throat. This gland plays a very important role in the body by primarily producing two hormones, T4 and T3. These hormones travel through the blood to every part of the body and control the rate of body functions. They tell the cells in the body how fast to use energy and produce proteins.

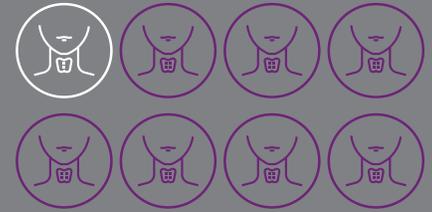
Thyroid diseases primarily affect the amount of T4 and T3 produced by the thyroid. An underactive thyroid does not produce enough hormones and can slow body functions. An overactive thyroid produces too much hormone and can accelerate body functions. Both can lead to various symptoms that range from mild to severe.

THYROID TESTING

- The first test a health practitioner will usually order to detect thyroid dysfunction is a test for thyroid stimulating hormone (TSH).
- If the TSH level is outside the normal range, the health practitioner will usually order a test for free thyroxine (free T4).
- Sometimes, a test for the other major thyroid hormone, triiodothyroine (free T3), may be ordered as well or all tests may be ordered together as a thyroid panel.
- Tests for thyroid antibodies may be used to help differentiate different types of thyroid diseases and identify autoimmune thyroid conditions, such as Hashimoto thyroiditis (the most common cause of underactive thyroid) and Graves disease (the common cause of overactive thyroid). These antibodies include: thyroid peroxidase (TPO) antibody, thyroglobulin (TG) antibody, and thyroid stimulating hormone receptor (TSHR) antibodies.

To learn more, visit www.labtestsonline.org and read the article on Thyroid Diseases.

About 20 million Americans have some form of thyroid disease, and approximately 60% of those with thyroid disease do not know it. Women are more likely than men to have thyroid problems.



1 IN 8 WOMEN
WILL DEVELOP A THYROID
DISORDER IN THEIR LIFE



Meet Erin

“Cancer is part of my story, but it is not my entire story,” says Erin Carter. First diagnosed with papillary thyroid cancer at age 22 and again when she was pregnant at age 30, Erin has battled cancer for the past eight years. She has a BRAF mutation, meaning that the typical treatment with radioactive iodine does not work for her, so she continues to rely on the lab to catch a possible recurrence early on.

“My life would be a lot different without pathologists and laboratory professionals. The whole course of my cancer treatment was dictated by all of my test results. Without that team of people, I would not be where I am today.”

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www.ascp.org/patients
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THYROID CANCER

Thyroid cancer is a thyroid disease that is fairly common and has become more common over the past few decades. About 63,000 new cases are diagnosed in the U.S. each year, making it the 8th most common type of cancer and the fastest growing type. The four main types of thyroid cancers are:

- **Papillary thyroid cancer**—about 80% of thyroid cancer cases are papillary. This type affects more women than men and is more common in younger people.
- **Follicular thyroid cancer**—about 15% of thyroid cancers are follicular, a more aggressive type of cancer that tends to occur in older women.
- **Anaplastic thyroid cancer**—also found in older women, accounts for about 2% of thyroid cancers and tends to be both aggressive and difficult to treat.
- **Medullary thyroid cancer (MTC)**—accounts for 3% of thyroid cancers and is malignant; it can spread beyond the thyroid and be difficult to treat if it is not discovered early.

Thyroid cancer is ultimately diagnosed by pathologists and laboratory professionals through a biopsy. However, typically you will receive imaging scans and blood tests to rule out other conditions before a biopsy is done. Laboratory tests help your healthcare provider diagnose your signs and symptoms, assess thyroid function, and determine the type of thyroid cancer. Examples of these tests include:

- **Thyroid stimulating hormone (TSH), T3 and Free T4**—TSH levels are usually normal or high with thyroid cancer and T3 and T4 are usually normal with thyroid cancer.
- **Calcitonin**—this is a hormone produced by special cells in the thyroid called C-cells. Elevated levels indicate that medullary thyroid cancer (MTC) is likely present.
- **Carcinoembryonic antigen (CEA)**—blood tests for this protein are sometimes used to look for MTC. CEA is often elevated in people with MTC.
- **Thyroglobulin (Tg)**—this is a protein made by the thyroid. Thyroglobulin levels may be measured to monitor treatment of papillary and follicular cancers.

To learn more, visit www.labtestsonline.org and read the article on Thyroid Cancer.

DO YOU HAVE AN UPCOMING LAB TEST? QUESTIONS TO ASK YOUR HEALTH PRACTITIONER

When lab tests are ordered, you should feel comfortable in finding out why the test needs to be done, how it will be done, and what the healthcare practitioner expects to learn from it. Here are some examples of questions you might wish to ask your practitioner to get the conversation started:

- What information do you expect to gain from this test? How could it change the course of my care?
- What are the risks and benefits of testing?
- What are the risks and benefits of acting on the results (undergoing treatment)?
- What is the evidence that supports this screening and how does it fit my situation?
- What do I need to know or do before the test?
- What happens during and after the test?
- What is the reference range? What can it mean if my results are outside of that range?
- What factors may affect the results?
- What course of action may be next, after the test?
- If results are not normal, what are the next steps?