

Thyroid Cancer



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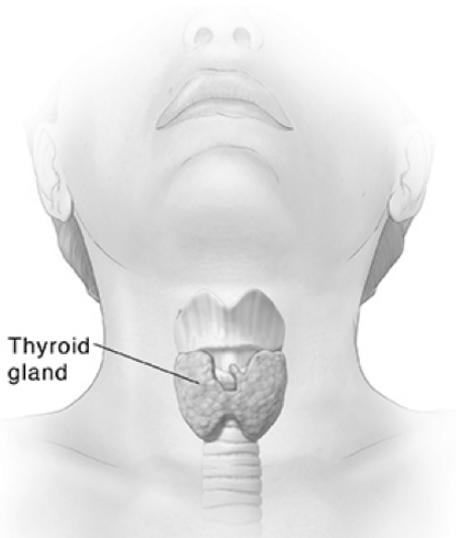
What is Thyroid Cancer?

The thyroid is a gland at the base of the throat near the trachea (windpipe). It is shaped like a butterfly, with a right lobe and a left lobe. The isthmus, a thin piece of tissue, connects the two lobes. A healthy thyroid is a little larger than a quarter. It usually cannot be felt through the skin.

The thyroid uses iodine, a mineral found in some foods and in iodized salt, to help make several hormones.

Thyroid hormones do the following:

- Control heart rate, body temperature, and how quickly food is changed into energy (metabolism).
- Control the amount of calcium in the blood.



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What are thyroid nodules?

Thyroid nodules usually do not cause symptoms or need treatment. Sometimes the thyroid nodules become large enough that it is hard to swallow or breathe and more tests and treatment are needed. Only a small number of thyroid nodules are diagnosed as cancer.

Signs of thyroid cancer

Thyroid cancer may not cause early signs or symptoms. It is sometimes found during a routine physical exam. Other conditions may cause the same signs or symptoms. Signs or symptoms may occur as the tumor gets bigger:

- A lump (nodule) in the neck
- Trouble breathing
- Trouble swallowing
- Pain when swallowing
- Hoarseness

What are risk factors for thyroid cancer?

Anything that increases your risk of getting a disease is called a risk factor. Having a risk factor does not mean that you will get cancer; not having risk factors does not mean that you will not get cancer.

Risk factors for thyroid cancer include the following:

- Being between 25 and 65 years old
- Being female
- Being exposed to radiation to the head and neck as an infant or child or being exposed to

radiation from an atomic bomb. The cancer may occur as soon as 5 years after exposure

- Having a history of goiter (enlarged thyroid)
- Having a family history of thyroid disease or thyroid cancer
- Having certain genetic conditions such as familial medullary thyroid cancer (FMTC), multiple endocrine neoplasia type 2A syndrome (MEN2A), and multiple endocrine neoplasia type 2B syndrome (MEN2B)
- Being Asian

What are the main types of thyroid cancer?

There are four main types of thyroid cancer:

- Papillary thyroid cancer: The most common type of thyroid cancer
- Follicular thyroid cancer
- Medullary thyroid cancer
- Anaplastic thyroid cancer

Are there genetic links to thyroid cancer?

The genes in cells carry hereditary information from parent to child. A certain change in the RET gene that is passed from parent to child (inherited) may cause medullary thyroid cancer.

There is a genetic test that is used to check for the changed gene. The patient is tested first to see if he or she has the changed gene. If the patient has it, other family members may also be tested to find out if they

are at increased risk for medullary thyroid cancer. Family members, including young children, who have the changed gene may have a thyroidectomy (surgery to remove the thyroid). This can decrease the chance of developing medullary thyroid cancer.

What tests are used to detect (find) and diagnose thyroid cancer?

The following tests and procedures may be used:

Physical exam and history

Laryngoscopy: A procedure in which the doctor checks the larynx (voice box) with a mirror or with a laryngoscope. A laryngoscope is a thin, tube-like instrument with a light and a lens for viewing. A thyroid tumor may press on vocal cords. The laryngoscopy is done to see if the vocal cords are moving normally.

Blood hormone studies: A procedure in which a blood sample is checked to measure the amounts of certain hormones released into the blood by organs and tissues in the body. An unusual (higher or lower than normal) amount of a substance can be a sign of disease in the organ or tissue that makes it. The blood may be checked for abnormal levels of thyroid-stimulating hormone (TSH). TSH is made by the pituitary gland in the brain. It stimulates the release of thyroid hormone and controls how fast follicular thyroid cells grow. The blood

may also be checked for high levels of the hormone calcitonin and antithyroid antibodies.

Blood chemistry studies: A procedure in which a blood sample is checked to measure the amounts of certain substances, such as calcium, released into the blood by organs and tissues in the body. An unusual (higher or lower than normal) amount of a substance can be a sign of disease.

Ultrasound exam: A procedure in which high-energy sound waves (ultrasound) are bounced off internal tissues or organs in the neck and make echoes. The echoes form a picture of body tissues called a sonogram. This procedure can show the size of a thyroid nodule and whether it is solid or a fluid-filled cyst. Ultrasound may be used to guide a fine-needle aspiration biopsy.

Biopsy: The removal of tissue so cells can be viewed under a microscope by a pathologist to check for signs of cancer.

- **Fine-needle aspiration biopsy of the thyroid:**

The removal of thyroid tissue using a thin needle. The needle is inserted through the skin into the thyroid. Several tissue samples are removed from different parts of the thyroid. A pathologist views the tissue samples under a microscope to look for cancer cells.

CT scan (CAT scan): A procedure that makes a series of detailed pictures of areas inside the body, such as the neck, taken from different angles. A dye may be injected into a vein or swallowed to help the organs or tissues show up more clearly. This procedure is also called computed tomography, computerized tomography, or computerized axial tomography

How does thyroid cancer spread?

Cancer can spread through tissue, the lymph system, and the blood:

- **Tissue:** The cancer spreads from where it began by growing into nearby areas.
- **Lymph system:** The cancer spreads from where it began by getting into the lymph system. The cancer travels through the lymph vessels to other parts of the body.
- **Blood:** The cancer spreads from where it began by getting into the blood. The cancer travels through the blood vessels to other parts of the body.

The process used to find out if cancer has spread within the thyroid or to other parts of the body is called staging. It is important to know the stage in order to plan treatment. Not every person needs every test.

The following stages are used for thyroid cancer:

Stages I (1) II (2) or III (3)

Stages 1, 2, or 3 describe the involvement of cancer in the layers of the tissue, muscle, or lymph node involvement and nearby organs.

Stage IV (4)

In stage IV, the tumor may be any size and cancer may have spread to lymph nodes. One or more of the following is true:

- There are one or more tumors in both lungs
- Cancer is found in fluid around the lungs or the heart
- Cancer has spread to other parts of the body, such as the brain, liver, adrenal glands, kidneys, or bone

How is thyroid cancer treated?

Treatment for thyroid cancer depends on the type and stage of the disease. Below is a brief description of different treatments for thyroid cancer.

Surgery

Surgery is the most common treatment for thyroid cancer. One of the following procedures may be used:

- **Lobectomy:** Removal of the lobe in which thyroid cancer is found. Lymph nodes near the

cancer may also be removed and checked under a microscope for signs of cancer.

- **Near-total thyroidectomy:** Removal of all but a very small part of the thyroid. Lymph nodes near the cancer may also be removed and checked under a microscope for signs of cancer.
- **Total thyroidectomy:** Removal of the whole thyroid. Lymph nodes near the cancer may also be removed and checked under a microscope for signs of cancer.

Radiation therapy, including radioactive iodine therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing. The way the radiation therapy is given depends on the type and stage of the cancer being treated.

Radiation therapy may be given after surgery to kill any thyroid cancer cells that were not removed. Follicular and papillary thyroid cancers are sometimes treated with radioactive iodine (RAI) therapy. RAI is taken by mouth and collects in any remaining thyroid tissue, including thyroid cancer cells that have spread to other places in the body. Since only thyroid tissue takes up iodine, the RAI destroys thyroid tissue and thyroid cancer cells without harming other tissue. Before a full treatment dose of RAI is given, a small test-dose is given to see if the tumor takes up the iodine.

Thyroid hormone therapy

Hormone therapy is a cancer treatment that removes hormones or blocks their action and stops cancer cells from growing. Hormones are substances made by glands in the body and circulated in the bloodstream. In the treatment of thyroid cancer, drugs may be given to prevent the body from making thyroid-stimulating hormone (TSH), a hormone that can increase the chance that thyroid cancer will grow or recur.

Also, because thyroid cancer treatment kills thyroid cells, the thyroid is not able to make enough thyroid hormone. Patients are given thyroid hormone replacement pills.

Chemotherapy

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping them from dividing.

Targeted therapy

Targeted therapy is a type of treatment that uses drugs or other substances to identify and attack specific cancer cells without harming normal cells.

Watchful waiting

Watchful waiting is closely monitoring a patient's condition without giving any treatment until signs or symptoms appear or change.

Follow-up tests may be needed

Some of the tests that were done to diagnose the cancer or to find out the stage of the cancer may be repeated. Some tests will be repeated in order to see how well the treatment is working. Decisions about whether to continue, change, or stop treatment may be based on the results of these tests.

Support is available for coping with changes that may have happened as a result of cancer treatment. Your healthcare team can offer ideas as well as a plan of care for long-term follow-up.

What are Clinical Trials

Clinical trials are done to find out if new cancer treatments are safe and effective or better than the standard treatment.

People who take part in a clinical trial may receive:

- The standard drugs alone or
- The standard drugs plus the new treatment being studied

Taking part in a clinical trial helps improve the way cancer will be treated in the future. Even when clinical trials do not lead to effective new treatments, they often answer important questions and help move research forward.

Some clinical trials only include people who have not yet received treatment. Other trials test treatments for those whose cancer has not gotten better. There are also clinical trials that test new ways to stop cancer from coming back or reduce the side effects of cancer treatment.

Many of today's standard treatments for cancer are based on earlier clinical trials. **Ask if there is a clinical trial right for you.**

To learn more about thyroid cancer

- **American Cancer Society**

<https://www.cancer.org/>

- **National Cancer Institute**

<https://www.cancer.gov/>

- **National Comprehensive Cancer Network
Guidelines for Patients**

<https://www.nccn.org/patients/guidelines/cancers.aspx>

- **MedlinePlus**

<https://medlineplus.gov/>

Common Questions

What does the pathology report say?

What is the stage of my cancer?

What are my goals for treatment?

What are my treatment choices?

What kind of support services are available for me about finances, emotions, spiritual questions, etc.?

| My Health Care Team | Contact Information |
|---------------------------------------|---------------------|
| Surgeon: | |
| Radiation Oncologist: | |
| Endocrinologist: | |
| Primary Care Doctor: | |
| Medical Oncologist: | |
| Navigator: | |
| Nurse: | |
| Registered Dietitian Nutritionist: | |
| Other: | |
| | |
| | |

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https://www.cancer.gov/types/thyroid/patient/thyroid-treatment-pdq#section/_1

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