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Thyroid Cancer Early Detection, Diagnosis, and Staging

Detection and Diagnosis

Catching cancer early often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that is not always the case.

- [Can Thyroid Cancer Be Found Early?](#)
- [Signs and Symptoms of Thyroid Cancer](#)
- [Tests for Thyroid Cancer](#)

Stages and Outlook (Prognosis)

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and anticipated response to treatment.

- [Thyroid Cancer Stages](#)
- [Thyroid Cancer Survival Rates, by Type and Stage](#)

Questions to Ask About Thyroid Cancer

Get some questions you can ask your cancer care team to help you better understand your diagnosis and treatment options.

- [Questions to Ask About Thyroid Cancer](#)

Can Thyroid Cancer Be Found Early?

Many cases of thyroid cancer can be found early. In fact, most thyroid cancers are now found much earlier than in the past and can be [treated](#)¹ successfully.

- Most early thyroid cancers are found when patients see their doctors because of neck lumps or nodules they noticed. If you have symptoms such as a lump or swelling in your neck, you should see your doctor right away.
- Other thyroid cancers are found by health care professionals during a routine checkup.
- Early thyroid cancers are also sometimes found when people have [imaging tests](#)², such as ultrasounds or CT scans for other health problems.

[Blood tests or thyroid ultrasound](#) can often find changes in the thyroid, but these tests are not recommended as screening tests for thyroid cancer unless a person is at increased risk, such as having a family history of thyroid cancer. There is no recommended screening test to find thyroid cancer early for people at average risk.

People with a family history of medullary thyroid cancer (MTC), with or without multiple endocrine neoplasia type 2 (MEN 2), might have a very high risk for developing this cancer. Most doctors recommend genetic testing for these people when they are young to see if they carry the gene changes linked to MTC. For those who may be at risk but don't get genetic testing, blood tests and thyroid ultrasounds can help find MTC at an early stage, when it may still be curable.

Hyperlinks

1. www.cancer.org/cancer/thyroid-cancer/treating.html
2. www.cancer.org/treatment/understanding-your-diagnosis/tests.html

References

Davidge-Pitts CJ and Thompson GB. Chapter 82: Thyroid Tumors. In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2015.

National Cancer Institute. Physician Data Query (PDQ). Thyroid Cancer Treatment.

02/06/2019. Accessed at https://www.cancer.gov/types/thyroid/hp/thyroid-treatment-pdq#_313_toc. on February 20, 2019.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Thyroid Carcinoma. V.3.2018. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/thyroid.pdf on February 20, 2019.

Schneider DF, Mazeh H, Lubner SJ, Jaume JC, and Chen H. Chapter 71: Cancer of the Endocrine System. In: Niederhuber JE, Armitage JO, Dorshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, Pa. Elsevier: 2014.

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Signs and Symptoms of Thyroid Cancer

Thyroid cancer can cause any of the following signs or symptoms:

- A lump in the neck, sometimes growing quickly
- Swelling in the neck
- Pain in the front of the neck, sometimes going up to the ears
- Hoarseness or other voice changes that do not go away
- Trouble swallowing
- Trouble breathing
- A constant cough that is not due to a cold

If you have any of these signs or symptoms, talk to your doctor right away. Many of these symptoms can also be caused by non-cancerous conditions or even other cancers of the neck area. Lumps in the thyroid are common and are usually benign. Still, if you have any of these symptoms, it's important to see your doctor so the cause can be found and treated, if needed.

References

Davidge-Pitts CJ and Thompson GB. Chapter 82: Thyroid Tumors. In: DeVita VT,

Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2015.

National Cancer Institute. Physician Data Query (PDQ). Thyroid Cancer Treatment. 05/23/2018. Accessed at https://www.cancer.gov/types/thyroid/patient/thyroid-treatment-pdq#_1. on February 20, 2019.

Schneider DF, Mazeh H, Lubner SJ, Jaume JC, and Chen H. Chapter 71: Cancer of the Endocrine System. In: Niederhuber JE, Armitage JO, Dorshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, Pa. Elsevier: 2014.

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Tests for Thyroid Cancer

Thyroid cancer may be diagnosed after a person goes to a doctor because of symptoms, or it might be found during a routine physical exam or other tests. If there is a reason to suspect you might have thyroid cancer, your doctor will use one or more tests to confirm the diagnosis. If cancer is found, other tests might be done to find out more about the cancer.

Medical history and physical exam

If you have any signs or symptoms that suggest you might have thyroid cancer, your health care professional will want to know your complete medical history. You will be asked questions about your possible [risk factors](#)¹, [symptoms](#), and any other health problems or concerns. If someone in your family has had thyroid cancer (especially medullary thyroid cancer) or tumors called *pheochromocytomas*, it is important to tell your doctor, as you might be at high risk for this disease.

Your doctor will examine you to get more information about possible signs of thyroid cancer and other health problems. During the exam, the doctor will pay special attention to the size and firmness of your thyroid and any enlarged lymph nodes in your neck.

Imaging tests

Imaging tests may be done for a number of reasons:

- To help find suspicious areas that might be cancer
- To learn how far cancer may have spread
- To help determine if treatment is working

People who have or may have thyroid cancer will get one or more of these tests.

Ultrasound

[Ultrasound²](#) uses sound waves to create images of parts of your body. You are not exposed to radiation during this test.

This test can help determine if a thyroid nodule is solid or filled with fluid. (Solid nodules are more likely to be cancerous.) It can also be used to check the number and size of thyroid nodules as well as help determine if any nearby lymph nodes are enlarged because the thyroid cancer has spread.

For thyroid nodules that are too small to feel, this test can be used to guide a biopsy needle into the nodule to get a sample. Even when a nodule is large enough to feel, most doctors prefer to use ultrasound to guide the needle.

Radioiodine scan

Radioiodine scans can be used to help determine if someone with a lump in the neck might have thyroid cancer. They are also often used in people who have already been diagnosed with differentiated (papillary, follicular, or Hürthle cell) thyroid cancer to help show if it has spread. Because medullary thyroid cancer cells do not absorb iodine, radioiodine scans are not used for this cancer.

For this test, a small amount of radioactive iodine (called *I-131*) is swallowed (usually as a pill) or injected into a vein. Over time, the iodine is absorbed by the thyroid gland (or thyroid cells anywhere in the body). A special camera is used several hours later to see where the radioactivity is.

For a **thyroid scan**, the camera is placed in front of your neck to measure the amount of radiation in the gland. Abnormal areas of the thyroid that have less radioactivity than the surrounding tissue are called *cold nodules*, and areas that take up more radiation are called *hot nodules*. Hot nodules usually are not cancerous, but cold nodules can be benign or cancerous. Because both benign and cancerous nodules can appear cold, this test by itself can't diagnose thyroid cancer.

After [surgery for thyroid cancer](#)³, whole-body radioiodine scans are useful to look for possible spread throughout the body. These scans become even more sensitive if the entire thyroid gland has been removed by surgery because more of the radioactive iodine is picked up by any remaining thyroid cancer cells.

Radioiodine scans work best if patients have high blood levels of thyroid-stimulating hormone (TSH, or thyrotropin). For people whose thyroid has been removed, TSH levels can be increased by stopping thyroid hormone pills for a few weeks before the test. This leads to low thyroid hormone levels (hypothyroidism) and causes the pituitary gland to release more TSH, which in turn stimulates any thyroid cancer cells to take up the radioactive iodine. A downside of this is that it can cause the symptoms of hypothyroidism, including tiredness, depression, weight gain, sleepiness, constipation, muscle aches, and reduced concentration. One way to raise TSH levels without withholding thyroid hormone is to give an injectable form of thyrotropin (Thyrogen) before the scan.

Because any iodine already in the body can affect this test, people are usually told to avoid foods or medicines that contain iodine for a few days before the scan.

Radioactive iodine can also be used to treat differentiated thyroid cancer, but it is given in much higher doses. This type of treatment is described in [Radioactive iodine \(radioiodine\) therapy](#)⁴.

Chest x-ray

If you have been diagnosed with thyroid cancer (especially follicular thyroid cancer), a plain [x-ray of your chest](#)⁵ may be done to see if cancer has spread to your lungs.

Computed tomography (CT) scan

The [CT scan](#)⁶ is an x-ray test that makes detailed cross-sectional images of your body. It can help determine the location and size of thyroid cancers and whether they have spread to nearby areas, although ultrasound is usually the test of choice. A CT scan can also be used to look for spread into distant organs such as the lungs.

One problem using CT scans is that the CT contrast dye contains iodine, which interferes with radioiodine scans. For this reason, many doctors prefer MRI scans for differentiated thyroid cancer.

Magnetic resonance imaging (MRI) scan

[MRI scans](#)⁷ use magnets instead of radiation to create detailed cross-sectional images of your body. MRI can be used to look for cancer in the thyroid, or cancer that has spread to nearby or distant parts of the body. But ultrasound is usually the first choice for looking at the thyroid. MRI can provide very detailed images of soft tissues such as the thyroid gland. MRI scans are also very helpful in looking at the brain and spinal cord.

Positron emission tomography (PET) scan

A [PET scan](#)⁸ can be very useful if your thyroid cancer is one that doesn't take up radioactive iodine. In this situation, the PET scan may be able to tell whether the cancer has spread.

Biopsy

The actual diagnosis of thyroid cancer is made with a biopsy, in which cells from the suspicious area are removed and looked at in the lab.

If your doctor thinks a biopsy is needed, the simplest way to find out if a thyroid lump or nodule is cancerous is with a [fine needle aspiration \(FNA\)](#)⁹ of the thyroid nodule. This type of biopsy can sometimes be done in your doctor's office or clinic.

Before the biopsy, local anesthesia (numbing medicine) may be injected into the skin over the nodule, but in most cases an anesthetic is not needed. Your doctor will place a thin, hollow needle directly into the nodule to aspirate (take out) some cells and a few drops of fluid into a syringe. The doctor usually repeats this 2 or 3 more times, taking samples from several areas of the nodule. The biopsy samples are then sent to a lab, where they are looked at to see if the cells look cancerous or benign.

Bleeding at the biopsy site is very rare except in people with bleeding disorders. Be sure to tell your doctor if you have problems with bleeding or are taking medicines that could affect bleeding, such as aspirin or blood thinners.

This test is generally done on all thyroid nodules that are big enough to be felt. This means that they are larger than about 1 centimeter (about 1/2 inch) across. Doctors often use ultrasound to see the thyroid during the biopsy, which helps make sure they are getting samples from the right areas. This is especially helpful for smaller nodules. FNA biopsies can also be used to get samples of swollen lymph nodes in the neck to see if they contain cancer.

Sometimes an FNA biopsy will need to be repeated because the samples didn't contain

enough cells. Most FNA biopsies will show that the thyroid nodule is benign. Rarely, the biopsy may come back as benign even though cancer is present. Cancer is clearly diagnosed in only about 1 of every 20 FNA biopsies.

Sometimes the test results first come back as “suspicious” or “of undetermined significance” if FNA findings don’t show for sure if the nodule is either benign or malignant. If this happens, the doctor may order lab tests on the sample (see below).

If the diagnosis is not clear after an FNA biopsy, you might need a more involved biopsy to get a better sample, particularly if the doctor has reason to think the nodule may be cancer. This might include a [core biopsy](#)¹⁰ using a larger needle, a surgical “open” biopsy to remove the nodule, or a [lobectomy](#)¹¹ (removal of half of the thyroid gland). Surgical biopsies and lobectomies are done in an operating room while you are under general anesthesia (in a deep sleep). A lobectomy can also be the main treatment for some early cancers, although for many cancers the rest of the thyroid will need to be removed as well (during an operation called a [completion thyroidectomy](#)¹²).

Lab tests of biopsy (or other) samples

In some cases, doctors might use **molecular tests** to look for specific gene changes in the cancer cells. This might be done for different reasons:

- If FNA biopsy results aren’t clear, the doctor might order lab tests on the samples to see if there are changes in the *BRAF* or *RET/PTC* genes. Finding one of these changes makes thyroid cancer much more likely.
- For some types of thyroid cancer, molecular tests might be done to see if the cancer cells have changes in certain genes (such as the *BRAF*, *RET/PTC*, or *NTRK* genes), which could mean that certain [targeted drugs](#)¹³ might be helpful in treating the cancer.

These tests can be done on tissue taken during a biopsy or surgery for thyroid cancer. If the biopsy sample is too small and all the molecular tests can’t be done, the testing may also be done on blood that is taken from a vein, just like a regular blood draw.

Blood tests

Blood tests are not used to find thyroid cancer. But they can help show if your thyroid is working normally, which may help the doctor decide what other tests may be needed. They can also be used to monitor certain cancers.

Thyroid-stimulating hormone (TSH)

Tests of blood levels of thyroid-stimulating hormone (TSH or thyrotropin) may be used to check the overall activity of your thyroid gland. Levels of TSH, which is made by the pituitary gland, may be high if the thyroid is not making enough hormones. This information can be used to help choose which imaging tests (such as ultrasound or radioiodine scans) to use to look at a thyroid nodule. The TSH level is usually normal in thyroid cancer.

T3 and T4 (thyroid hormones)

These are the main hormones made by the thyroid gland. Levels of these hormones may also be measured to get a sense of thyroid gland function. The T3 and T4 levels are usually normal in thyroid cancer.

Thyroglobulin

Thyroglobulin is a protein made by the thyroid gland. Measuring the thyroglobulin level in the blood can't be used to diagnose thyroid cancer, but it can be helpful after treatment. A common way to treat thyroid cancer is to remove most of the thyroid by surgery and then use [radioactive iodine](#)¹⁴ to destroy any remaining thyroid cells. These treatments should lead to a very low level of thyroglobulin in the blood within several weeks. If it is not low, this might mean that there are still thyroid cancer cells in the body. If the level rises again after being low, it is a sign that the cancer could be coming back.

Calcitonin

Calcitonin is a hormone that helps control how the body uses calcium. It is made by C cells in the thyroid, the cells that can develop into medullary thyroid cancer (MTC). If MTC is suspected or if you have a family history of the disease, blood tests of calcitonin levels can help look for MTC. This test is also used to look for the possible recurrence of MTC after treatment. Because calcitonin can affect blood calcium levels, these may be checked as well.

Carcinoembryonic antigen (CEA)

People with MTC often have high blood levels of a protein called carcinoembryonic antigen (CEA). Tests for CEA can help monitor this cancer.

Other blood tests

You might have other blood tests as well. For example, if you are scheduled for surgery, tests will be done to check your blood cell counts, to look for bleeding disorders, and to check your liver and kidney function.

Medullary thyroid carcinoma (MTC) can be caused by a genetic syndrome that also causes a tumor called pheochromocytoma. Pheochromocytomas can cause problems during surgery if the patient is under anesthesia (in a deep sleep). This is why patients with MTC who will have surgery are often tested to see if they have a pheochromocytoma as well. This can mean blood tests for epinephrine (adrenaline) and a related hormone called **norepinephrine**, and/or urine tests for their breakdown products (called *metanephrines*).

Vocal cord exam (laryngoscopy)

Thyroid tumors can sometimes affect the vocal cords. If you are going to have surgery to treat thyroid cancer, a procedure called a [laryngoscopy](#)¹⁵ will probably be done first to see if the vocal cords are moving normally. For this exam, the doctor looks down the throat at the larynx (voice box) with special mirrors or with a laryngoscope, a thin tube with a light and a lens on the end for viewing.

Hyperlinks

1. www.cancer.org/cancer/thyroid-cancer/causes-risks-prevention/risk-factors.html
2. www.cancer.org/treatment/understanding-your-diagnosis/tests/ultrasound-for-cancer.html
3. www.cancer.org/cancer/thyroid-cancer/treating/surgery.html
4. www.cancer.org/cancer/thyroid-cancer/treating/radioactive-iodine.html
5. www.cancer.org/treatment/understanding-your-diagnosis/tests/x-rays-and-other-radiographic-tests.html
6. www.cancer.org/treatment/understanding-your-diagnosis/tests/ct-scan-for-cancer.html
7. www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html
8. www.cancer.org/treatment/understanding-your-diagnosis/tests/nuclear-medicine-scans-for-cancer.html
9. www.cancer.org/treatment/understanding-your-diagnosis/tests/testing-biopsy-and-cytology-specimens-for-cancer/biopsy-types.html
10. www.cancer.org/treatment/understanding-your-diagnosis/tests/testing-biopsy-and-cytology-specimens-for-cancer/biopsy-types.html
11. www.cancer.org/cancer/thyroid-cancer/treating/surgery.html

12. www.cancer.org/cancer/thyroid-cancer/treating/surgery.html
13. www.cancer.org/cancer/thyroid-cancer/treating/targeted-therapy.html
14. www.cancer.org/cancer/thyroid-cancer/treating/radioactive-iodine.html
15. www.cancer.org/treatment/understanding-your-diagnosis/tests/endoscopy/laryngoscopy.html

References

Davidge-Pitts CJ and Thompson GB. Chapter 82: Thyroid Tumors. In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2015.

National Cancer Institute. Physician Data Query (PDQ). Thyroid Cancer Treatment. 02/06/2019. Accessed at https://www.cancer.gov/types/thyroid/hp/thyroid-treatment-pdq#_313_toc. on February 20, 2019.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Thyroid Carcinoma. V.2.2019. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/thyroid.pdf on May 12, 2020.

Schneider DF, Mazeh H, Lubner SJ, Jaume JC, and Chen H. Chapter 71: Cancer of the Endocrine System. In: Niederhuber JE, Armitage JO, Dorshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, Pa. Elsevier: 2014.

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Thyroid Cancer Stages

After someone is diagnosed with thyroid cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called **staging**. The stage of a cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to [treat](#)¹ it. Doctors also use a cancer's stage when talking about survival statistics.

Thyroid cancers range from stages I (1) through IV (4). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage. Although each person's cancer experience is unique, cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

How is the stage determined?

The staging system most often used for thyroid cancer is the **AJCC** (American Joint Committee on Cancer) **TNM** system, which is based on 3 key pieces of information:

- The extent (size) of the **tumor (T)**: How large is the cancer? Has it grown into nearby structures?
- The spread to nearby lymph **nodes (N)**: Has the cancer spread to nearby lymph nodes?
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to the distant organs such as the lungs or liver?

The systems described below are the most recent AJCC systems effective January 2018 and applies to differentiated, anaplastic and medullary thyroid cancers.

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced. Once a person's T, N, and M categories have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more information see [Cancer Staging](#)².

The staging system in the table below uses the **pathologic stage** (also called the **surgical stage**). It is determined by examining tissue removed during [an operation](#)³. Sometimes, if surgery is not possible right away or at all, the cancer will be given a **clinical stage** instead. This is based on the results of a [physical exam, biopsy, and imaging tests](#). The clinical stage will be used to help plan treatment. Sometimes, though, the cancer has spread further than the clinical stage estimates, and might not predict the patient's outlook as accurately as a pathologic stage.

Cancer staging can be complex, so ask your doctor to explain it to you in a way you understand.

Differentiated (papillary or follicular) thyroid cancer in patients younger than 55

Younger people have a low likelihood of dying from differentiated (papillary or follicular) thyroid cancer. The TNM stage groupings for these cancers take this fact into account. So, all people younger than 55 years with these cancers are stage I if they have no distant spread and stage II if they have distant spread. This table includes patients 55 or older as well as younger than 55.

AJCC Stage	Age at diagnosis	Stage grouping	Differentiated Thyroid Cancer Stage description*
I	Younger than 55 years	Any T Any N M0	The cancer is any size (Any T) and might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
	OR		
	55 years or older	T1 N0 or NX M0	The cancer is no larger than 2 cm [0.8 inches] across and confined to the thyroid (T1). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
OR			
	55 years or older	T2 N0 or NX M0	The cancer is larger than 2 cm [0.8 inches] across but no larger than 4 cm and confined to the thyroid (T2). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
II	Younger than 55 years	Any T Any N M1	The cancer can be any size (Any T). It might or might not have spread to nearby lymph nodes (Any N). It has spread to other parts of the body, such as distant lymph nodes, internal organs, bones, etc. (M1).
	OR		
	55 years or older	T1 N1	The cancer is no larger than 2 cm [0.8 inches] across and confined to the thyroid (T1).

		M0	It has spread to nearby lymph nodes (N1). It has not spread to distant sites (M0).
	OR		
	55 years or older	T2 N1 M0	The cancer is larger than 2 cm [0.8 inches] across but no larger than 4 cm and confined to the thyroid (T2). It has spread to nearby lymph nodes (N1). It has not spread to distant sites (M0).
	OR		
	55 years or older	T3a or T3b Any N M0	The cancer is larger than 4 cm but confined to the thyroid (T3a) or it has grown into the strap muscles around the thyroid (T3b). It might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
III	55 years or older	T4a Any N M0	The cancer is any size and has grown extensively beyond the thyroid gland into nearby tissues of the neck, such as the larynx (voice box), trachea (windpipe), esophagus (tube connecting the throat to the stomach), or the nerve to the larynx (T4a). It might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
IVA	55 years or older	T4b Any N M0	The cancer is any size and has grown extensively beyond the thyroid gland back toward the spine or into nearby large blood vessels (T4b). It might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
IVB	55 years or older	Any T Any N M1	The cancer is any size (Any T) and might or might not have spread to nearby lymph nodes (Any N). It has spread to other parts of the body, such as distant lymph nodes, internal organs, bones, etc. (M1).

* The following additional categories are not listed on the table above:

- **TX**: Main tumor cannot be assessed due to lack of information.
- **T0**: No evidence of a primary tumor. The N categories are described in the table above, except for:
- **NX**: Regional lymph nodes cannot be assessed due to lack of information.

Anaplastic (undifferentiated) thyroid cancer

All anaplastic thyroid cancers are considered stage IV, reflecting the poor prognosis for people with this type of cancer.

AJCC Stage	Stage grouping	Anaplastic Thyroid Cancer Stage description*
IVA	T1, T2 or T3a	The cancer is any size but confined to the thyroid (T1, T2, or T3a).
	N0 or NX M0	It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
IVB	T1, T2 or T3a	The cancer is any size but confined to the thyroid (T1, T2, or T3a). It has spread to nearby lymph nodes (N1).
	N1	It has not spread to distant sites (M0).
	M0	
	OR	
	T3b	The cancer is any size and has grown into the strap muscles around the thyroid (T3b).
IVB	Any N	It might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
	M0	
IVB	OR	
	T4	The cancer is any size and has grown extensively beyond the thyroid gland into nearby tissues of the neck, such as the larynx (voice box), trachea (windpipe), esophagus (tube connecting the throat to the stomach), or the nerve to the larynx or back toward the spine or into nearby large blood vessels (T4).
	Any N	
	M0	

		It might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
IVC	Any T Any N M1	The cancer is any size (Any T) and might or might not have spread to nearby lymph nodes (Any N). It has spread to other parts of the body, such as distant lymph nodes, internal organs, bones, etc. (M1).

* The following additional categories are not listed on the table above:

- **TX:** Main tumor cannot be assessed due to lack of information.
- **T0:** No evidence of a primary tumor. The N categories are described in the table above, except for:
- **NX:** Regional lymph nodes cannot be assessed due to lack of information.

Medullary thyroid cancer

Age is not a factor in the stage of medullary thyroid cancer.

AJCC Stage	Stage grouping	Medullary Thyroid Cancer Stage description*
I	T1	The cancer is 2cm (0.8 inches) or smaller and confined to the thyroid (T1).
	N0	It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
II	T2	The cancer is larger than 2cm but no more than 4cm across and confined to the thyroid (T2).
	N0	It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
	OR	
	T3	The cancer is larger than 4cm and confined the thyroid or any size and growing outside of the thyroid but not involving nearby structures (T3).
N0	It has not spread to nearby lymph nodes (N0) or to	
M0		

		distant sites (M0).
III	T1, T2, or T3	The cancer is any size and might be growing outside of the thyroid but not involving nearby structures (T1, T2, T3).
	N1a M0	It has spread to lymph nodes in the neck (pretracheal, paratracheal, prelaryngeal, or upper mediastinal) (N1a) but not to other lymph nodes or to distant sites (M0).
IVA	T4a Any N M0	The cancer is any size and has grown beyond the thyroid gland into nearby tissues of the neck, such as the larynx (voice box), trachea (windpipe), esophagus (tube connecting the throat to the stomach), or the nerve to the larynx (T4a). It might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
	OR	
	T1, T2, or T3 N1b M0	The cancer is any size and might be growing outside of the thyroid but not involving nearby structures (T1, T2, T3). It has spread to certain lymph nodes in the neck such as cervical or jugular nodes (N1b). It has not spread to distant sites (M0).
IVB	T4b Any N M0	The cancer is any size and has grown either back toward the spine or into nearby large blood vessels (T4b). It might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
IVC	Any T Any N M1	The cancer is any size and might have grown into nearby structures (Any T). It might or might not have spread to nearby lymph nodes (Any N). It has spread to distant sites such as the liver, lung, bone or brain (M1).

* The following additional categories are not listed on the table above:

- **TX:** Main tumor cannot be assessed due to lack of information.

- **T0**: No evidence of a primary tumor. The N categories are described in the table above, except for:
- **NX**: Regional lymph nodes cannot be assessed due to lack of information.

Hyperlinks

1. www.cancer.org/cancer/thyroid-cancer/treating.html
2. www.cancer.org/treatment/understanding-your-diagnosis/staging.html
3. www.cancer.org/cancer/thyroid-cancer/treating/surgery.html

References

American Joint Committee on Cancer. Thyroid – Differentiated and Anaplastic. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 873.

American Joint Committee on Cancer. Thyroid – Medullary. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 891.

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Thyroid Cancer Survival Rates, by Type and Stage

Survival rates can give you an idea of what percentage of people with the same type and stage of cancer are still alive a certain amount of time (usually 5 years) after they were diagnosed. They can't tell you how long you will live, but they may help give you a better understanding of how likely it is that your treatment will be successful.

Keep in mind that survival rates are estimates and are often based on previous outcomes of large numbers of people who had a specific cancer, but they can't predict what will happen in any particular person's case. These statistics can be confusing and may lead you to have more questions. Talk with your doctor about how these numbers may apply to you, as he or she is familiar with your situation.

What is a 5-year relative survival rate?

A **relative survival rate** compares people with the same type and stage of thyroid cancer to people in the overall population. For example, if the **5-year relative survival rate** for a specific stage of thyroid cancer is 90%, it means that people who have that cancer are, on average, about 90% as likely as people who don't have that cancer to live for at least 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the SEER* database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for thyroid cancer in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by [AJCC TNM stages](#) (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized:** There is no sign the cancer has spread outside of the thyroid.
- **Regional:** The cancer has spread outside of the thyroid to nearby structures.
- **Distant:** The cancer has spread to distant parts of the body, such as the bones.

5-year relative survival rates for thyroid cancer

These numbers are based on people diagnosed with thyroid cancer between 2010 and 2016.

Papillary thyroid cancer

SEER Stage	5-Year Relative Survival Rate
Localized	near 100%
Regional	99%
Distant	76%
All SEER stages combined	near 100%

Follicular thyroid cancer

SEER Stage	5-Year Relative Survival Rate
Localized	near 100%
Regional	97%
Distant	64%
All SEER stages combined	98%

Medullary thyroid cancer

SEER Stage	5-Year Relative Survival Rate
Localized	near 100%
Regional	91%
Distant	38%
All SEER stages combined	89%

Anaplastic thyroid cancer

SEER Stage	5-Year Relative Survival Rate
Localized	31%
Regional	10%
Distant	3%
All SEER stages combined	7%

Understanding the numbers

- **These numbers apply only to the stage of the cancer when it is first diagnosed.** They do not apply later on if the cancer grows, spreads, or comes back

after treatment.

- **These numbers don't take everything into account.** Survival rates are grouped based on how far the cancer has spread, but your age and overall health, the [type of thyroid cancer](#)¹ and how well it responds to treatment, and other factors can also affect your outlook.
- **People now being diagnosed with thyroid cancer may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on people who were diagnosed and treated at least five years earlier.

*SEER= Surveillance, Epidemiology, and End Results

Hyperlinks

1. www.cancer.org/cancer/thyroid-cancer/about/what-is-thyroid-cancer.html

References

Howlader N, Noone AM, Krapcho M, et al (eds). SEER Cancer Statistics Review, 1975-2017, National Cancer Institute, Bethesda, MD, https://seer.cancer.gov/csr/1975_2017/, based on November 2019 SEER data submission, posted to the SEER website, April 2020.

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Questions to Ask About Thyroid Cancer

It is important to have honest, open discussions with your cancer care team. They want to answer all of your questions, so that you can make informed treatment and life decisions. For instance, consider these questions:

When you're told you have thyroid cancer

- What [kind of thyroid cancer](#)¹ do I have?

- Has my cancer spread beyond the thyroid gland?
- What is the [stage of my thyroid cancer](#) and what does that mean?
- Is my cancer resectable (removable by surgery)?
- Are there other [tests](#) that need to be done before we decide on treatment?
- Is this form of thyroid cancer hereditary? Should I be tested? Should my family be tested?
- Will I need to see other doctors?
- If I'm concerned about the costs and insurance coverage for my diagnosis and treatment, who can help me?

When deciding on a treatment plan

- How much experience do you have treating this type of cancer?
- How much [surgery](#)² do I need? Should I get other treatments as well?
- What are my [treatment choices](#)³?
- What do you recommend and why?
- What is the goal of treatment?
- Should I get a [second opinion](#)⁴? How do I do that? Can you recommend a doctor or cancer center?
- Should I think about taking part in a [clinical trial](#)⁵?
- What should I do to be ready for treatment?
- What are the risks and possible side effects of treatment?
- How quickly do I need to decide on treatment?
- Will I need to take [thyroid hormone](#)⁶ for the rest of my life?
- How long will treatment last? What will it be like? Where will it be done?
- Will treatment affect my daily activities? Can I still work fulltime?
- Will this treatment affect my ability to have children? Do I need to avoid pregnancy for a while?
- What are the chances that my cancer will [come back](#)⁷ after treatment?
- What will we do if the treatment doesn't work or if the cancer recurs?
- What if I have [transportation problems](#)⁸ getting to and from treatment?

During treatment

Once treatment begins, you'll need to know what to expect and what to look for. Not all

of these questions may apply to you, but getting answers to the ones that do may be helpful.

- How will we know if the treatment is working?
- Is there anything I can do to help manage [side effects](#)⁹?
- What symptoms or side effects should I tell you about right away?
- How can I reach you on nights, holidays, or weekends?
- Do I need to change what I eat during treatment?
- Are there any limits on what I can do?
- Can I exercise during treatment? If so, what kind should I do, and how often?
- Can you suggest a mental health professional I can see if I start to feel [overwhelmed, depressed, or distressed](#)¹⁰?

After treatment

- Are there any limits on what I can do?
- What symptoms should I watch for?
- What kind of exercise should I do now?
- How often will I need to have follow-up exams and tests? Will I need any blood tests?
- How will we know if the cancer has come back? What should I watch for?
- What will my options be if the cancer comes back?
- What type of [follow-up](#)¹¹ will I need after treatment?

Along with these sample questions, be sure to write down some of your own. Keep in mind that doctors aren't the only ones who can give you information. Other health care professionals, such as nurses and social workers, can answer some of your questions. To find out more about speaking with your health care team, see [The Doctor-Patient Relationship](#)¹².

Hyperlinks

1. www.cancer.org/cancer/thyroid-cancer/about/what-is-thyroid-cancer.html
2. www.cancer.org/cancer/thyroid-cancer/treating/surgery.html
3. www.cancer.org/cancer/thyroid-cancer/treating.html
4. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/seeking-a-second-opinion.html

5. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
6. www.cancer.org/cancer/thyroid-cancer/treating/thyroid-hormone-therapy.html
7. www.cancer.org/treatment/survivorship-during-and-after-treatment/understanding-recurrence.html
8. www.cancer.org/treatment/support-programs-and-services/road-to-recovery.html
9. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html
10. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/changes-in-mood-or-thinking.html
11. www.cancer.org/cancer/thyroid-cancer/after-treatment.html
12. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/the-doctor-patient-relationship.html

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