



# Non-Small Cell Lung 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 Non-Small Cell Lung Cancer Be Found Early?](#)
- [Lung Cancer Prevention and Early Detection](#)
- [Non-Small Cell Lung Cancer Signs and Symptoms](#)
- [Tests for Non-Small Cell Lung Cancer](#)
- [Understanding Your Pathology Report](#)

## 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.

- [Non-Small Cell Lung Cancer Stages](#)
- [Non-Small Cell Lung Cancer Survival Rates, by Stage](#)

## Questions to Ask About Non-Small Cell Lung Cancer

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

- [What Should You Ask Your Health Care Team About Non-Small Cell Lung Cancer?](#)
- [Questions Worksheet \[PDF\]](#)

## Can Non-Small Cell Lung Cancer Be

# Found Early?

In the United States, lung cancer is the second most common cancer in both men and women. It's also the leading cause of death from cancer.

Lung cancer can be serious. However, some people with early stage lung cancer can be successfully treated. This is because tests and treatments for cancer are being studied and improved. If lung cancer is found at an earlier stage when it is small and before it has spread, people have a better chance of living longer.

Current and former smokers are at a higher risk of getting lung cancer as they get older. If they quit, smokers can lower their risk of getting and dying from lung cancer.

Usually [symptoms of lung cancer](#) do not appear until the disease is already at an advanced [stage](#). Even when lung cancer does cause symptoms, many people may mistake them for other problems, such as an infection or long-term effects from smoking. This may delay the diagnosis.

Some lung cancers are found early by accident as a result of tests for other medical conditions. For example, lung cancer may be found by tests done for other reasons in people with heart disease, pneumonia, or other lung conditions. A small portion of these people do very well and may be cured of lung cancer.

Screening is the use of tests or exams to find a disease in people who don't have symptoms. Regular chest x-rays have been studied for lung cancer screening, but they did not help most people live longer. In recent years, a test known as a low-dose CAT scan or CT scan (LDCT) has been studied in people at a higher risk of getting lung cancer. LDCT scans can help find abnormal areas in the lungs that may be cancer. Research has shown that using LDCT scans to screen people at higher risk of lung cancer saved more lives compared to chest x-rays. For higher risk people, getting yearly LDCT scans before symptoms start helps lower the risk of dying from lung cancer.

## The National Lung Screening Trial

The National Lung Screening Trial (NLST) was a large clinical trial that looked at using LDCT of the chest to screen for lung cancer. CT scans of the chest provide more detailed pictures than chest x-rays and are better at finding small abnormal areas in the lungs. Low-dose CT of the chest uses lower amounts of radiation than a standard chest CT and does not require the use of intravenous (IV) contrast dye.

The NLST compared LDCT of the chest to chest x-rays in people at high risk of lung cancer to see if these scans could help lower the risk of dying from lung cancer. The study included more than 50,000 people ages 55 to 74 who were current or former smokers and were in fairly good health. To be in the study, they had to have at least a 30 pack-year history of smoking.

A pack-year is the number of cigarette packs smoked each day multiplied by the number of years a person has smoked. Someone who smoked a pack of cigarettes per day for 30 years has a 30 pack-year smoking history, as does someone who smoked 2 packs a day for 15 years.

Former smokers could enter the study if they had quit within the past 15 years. The study did not include people if they had a history of lung cancer or lung cancer symptoms, if they had part of a lung removed, if they needed to be on oxygen at home to help them breathe, or if they had other serious medical problems.

People in the study got either 3 LDCT scans or 3 chest x-rays, each a year apart, to look for abnormal areas in the lungs that might be cancer. After several years, the study found that people who got LDCT had a 20% lower chance of dying from lung cancer than those who got chest x-rays. They were also 7% less likely to die overall (from any cause) than those who got chest x-rays.

Screening with LDCT was also shown to have some downsides that need to be considered. One drawback of this test is that it also finds a lot of abnormalities that have to be checked out with more tests, but that turn out not to be cancer. (About 1 out of 4 people in the NLST had such a finding.) This may lead to additional tests such as other CT scans or more invasive tests such as needle biopsies or even [surgery](#) to remove a portion of lung in some people. These tests can sometimes lead to complications (like a collapsed lung) or rarely, death, even in people who do not have cancer (or who have very early stage cancer).

LDCTs also expose people to a small amount of radiation with each test. It is less than the dose from a standard CT, but it is more than the dose from a chest x-ray. Some people who are screened may end up needing further CT scans, which means more radiation exposure. When done in tens of thousands of people, this radiation may cause a few people to develop breast, lung, or thyroid cancers later on.

The NLST was a large study, but it left some questions that still need to be answered. For example, it's not clear if screening with LDCT scans would have the same effect if different people were allowed in the study, such as those who smoke less (or not at all), or people younger than age 55 or older than 74. Also, in the NLST, patients got 3 scans over 2 years. It's not yet clear what the effect would be if people were screened for

longer than 2 years.

These factors, and others, need to be taken into account by people and their doctors who are considering lung cancer risk and the decision to be screened..

## **American Cancer Society's guidelines for lung cancer screening**

The American Cancer Society (ACS) has a lung cancer screening guideline for people with a higher risk of getting lung cancer. The ACS recommends yearly lung cancer screening with LDCT scans for people who are 55 to 74 years old, are in fairly good health, and who also meet the following conditions:

- Are current smokers or smokers who have quit in the past 15 years. ***and***
- Have at least a 30 pack-year smoking history. (This is the number of years you smoked multiplied by the number of packs of cigarettes per day. For example, someone who smoked 2 packs per day for 15 years [ $2 \times 15 = 30$ ] has 30 pack-years of smoking. A person who smoked 1 pack per day for 30 years [ $1 \times 30 = 30$ ] also has 30 pack-years of smoking.) ***and***
- Receive counseling to quit smoking if they are current smokers. ***and***
- Have been told by their doctor about the possible benefits, limits, and harms of screening with LDCT scans. ***and***
- Have a facility where they can go that has experience in lung cancer screening and treatment.

### **For patients**

The main benefit of screening is a lower chance of dying of lung cancer, which accounts for many deaths in current and former smokers. Still, it's important to be aware that, like with any type of screening, not everyone who gets screened will benefit. Screening with LDCT will not find all lung cancers, and not all of the cancers that are found will be found early.

Even if a cancer is found by screening, you may still die from lung cancer. Also, LDCT often finds things that turn out not to be cancer, but have to be checked out with more tests to know what they are. You might need more CT scans, or even invasive tests such as a lung biopsy, in which a piece of lung tissue is removed with a needle or during surgery. These tests have risks of their own (see above).

If you are at a higher risk, your doctor can explain your risk and how you fit into the ACS lung cancer screening guideline. Your doctor can also talk with you about what happens during screening and the best places to get the yearly screening test. Lung cancer screening is covered by Medicare and by many private health insurance plans. Your health care team can help you find out if your insurance will provide coverage.

Screening should only be done at facilities that have the right type of CT scanner and that have experience in LDCT scans for lung cancer screening. The facility should also have a team of specialists that can give patients the appropriate care and follow-up if there are abnormal results on the scans. You might not have the right kind of facility nearby, so you may need to travel some distance to be screened.

If you are at higher risk and should be screened, you should get a LDCT every year until you reach the age of 74, as long as you are still in good health.

If you smoke, you should get counseling about stopping. You should be told about your risk of lung cancer and referred to a smoking cessation program. Screening is not a good alternative to stopping smoking. For help quitting, see our [Guide to Quitting Smoking](#) or call the American Cancer Society at 1-800-227-2345.

## **What does “in fairly good health” mean?**

Screening is meant to find cancer in people who do not have symptoms of the disease. People who already have symptoms that might be caused by lung cancer may need tests such as CT scans to find the underlying cause, which in some cases may be cancer. But this kind of testing is for diagnosis and is not the same as screening. Some of the possible symptoms of lung cancer that kept people out of the NLST were coughing up blood and weight loss without trying.

To get the most benefit from screening, patients need to be in good health. For example, they need to be able to have surgery and other treatments to try to cure lung cancer if it is found. Patients who need home oxygen therapy probably couldn't withstand having part of a lung removed, and so are not candidates for screening. Patients with other serious medical problems that would shorten their lives or keep them from having surgery might not benefit enough from screening for it to be worth the risks, and so should also not be screened.

Metal implants in the chest (like pacemakers) or back (like rods in the spine) can interfere with x-rays and lead to poor quality CT images of the lungs. People with these types of implants were also kept out of the NLST, and so should not be screened with CT scans for lung cancer according to the ACS guidelines.

## If something abnormal is found during screening

Sometimes screening tests will show something abnormal in the lungs or nearby areas that might be cancer. Most of these abnormal findings will turn out not to be cancer, but more CT scans or other tests will be needed to be sure. Some of these tests are described in [Exams and tests that look for lung cancer](#).

CT scans of the lungs can also sometimes show problems in other organs that just happen to be in the field of view of the scans. Your doctor will discuss any such findings with you if they are found.

- [References](#)

Smith RA, Andrews KS, Brooks D, Fedewa SA, Manassaram-Baptiste D, Saslow D, Brawley OW, Wender RC. Cancer screening in the United States, 2018: A review of current American Cancer Society guidelines and current issues in cancer screening. *CA: Cancer J Clin*. 2018 [Epub ahead of print].

[See all references for Non-Small Cell Lung Cancer](#)

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## Non-Small Cell Lung Cancer Signs and Symptoms

Most lung cancers do not cause any symptoms until they have spread, but some people with early lung cancer do have symptoms. If you go to your doctor when you first notice symptoms, your cancer might be diagnosed at an earlier [stage](#), when [treatment](#) is more likely to be effective. The most common symptoms of lung cancer are:

- A cough that does not go away or gets worse
- Coughing up blood or rust-colored sputum (spit or phlegm)
- Chest pain that is often worse with deep breathing, coughing, or laughing

- Hoarseness
- Weight loss and loss of appetite
- Shortness of breath
- Feeling tired or weak
- Infections such as bronchitis and pneumonia that don't go away or keep coming back
- New onset of wheezing

When lung cancer spreads to distant organs, it may cause:

- Bone pain (like pain in the back or hips)
- Nervous system changes (such as headache, weakness or numbness of an arm or leg, dizziness, balance problems, or seizures), from cancer spread to the brain or spinal cord
- Yellowing of the skin and eyes (jaundice), from cancer spread to the liver
- Lumps near the surface of the body, due to cancer spreading to the skin or to lymph nodes (collections of immune system cells), such as those in the neck or above the collarbone

Most of these symptoms are more likely to be caused by something other than lung cancer. Still, if you have any of these problems, it's important to see your doctor right away so the cause can be found and treated, if needed.

Some lung cancers can cause *syndromes*, which are groups of very specific symptoms.

## **Horner syndrome**

Cancers of the top part of the lungs (sometimes called *Pancoast tumors*) sometimes can affect certain nerves to the eye and part of the face, causing a group of symptoms called *Horner syndrome*:

- Drooping or weakness of one eyelid
- A smaller pupil (dark part in the center of the eye) in the same eye
- Reduced or absent sweating on the same side of the face

Pancoast tumors can also sometimes cause severe shoulder pain.

## **Superior vena cava syndrome**

The superior vena cava (SVC) is a large vein that carries blood from the head and arms back to the heart. It passes next to the upper part of the right lung and the lymph nodes

inside the chest. Tumors in this area can press on the SVC, which can cause the blood to back up in the veins. This can lead to swelling in the face, neck, arms, and upper chest (sometimes with a bluish-red skin color). It can also cause headaches, dizziness, and a change in consciousness if it affects the brain. While SVC syndrome can develop gradually over time, in some cases it can become life-threatening, and needs to be treated right away.

## Paraneoplastic syndromes

Some lung cancers can make hormone-like substances that enter the bloodstream and cause problems with distant tissues and organs, even though the cancer has not spread to those tissues or organs. These problems are called *paraneoplastic syndromes*. Sometimes these syndromes can be the first symptoms of lung cancer. Because the symptoms affect organs besides the lungs, patients and their doctors may suspect at first that a disease other than lung cancer is causing them.

Some of the more common paraneoplastic syndromes that can be caused by non-small cell lung cancer include:

- High blood calcium levels (hypercalcemia), which can cause frequent urination, thirst, constipation, nausea, vomiting, belly pain, weakness, fatigue, dizziness, confusion, and other nervous system problems
- Excess growth/thickening of certain bones, especially those in the finger tips, which is often painful
- Blood clots
- Excess breast growth in men (gynecomastia)

Again, many of these symptoms are more likely to be caused by something other than lung cancer. Still, if you have any of these problems, it's important to see your doctor right away so the cause can be found and treated, if needed.

- [References](#)

[See all references for Non-Small Cell Lung Cancer](#)

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# Tests for Non-Small Cell Lung Cancer

Some lung cancers can be found by [screening](#), but most lung cancers are found because they are causing problems. If you have possible [signs or symptoms of lung cancer](#), see your doctor, who will examine you and may order some tests. The actual diagnosis of lung cancer is made by looking at a sample of lung cells under a microscope.

## Medical history and physical exam

Your doctor will ask about your medical history to learn about your symptoms and possible [risk factors](#). Your doctor will also examine you to look for signs of lung cancer or other health problems.

If the results of your history and physical exam suggest you might have lung cancer, more tests will be done. These could include imaging tests and/or getting biopsies of lung tissue.

## Imaging tests

Imaging tests use x-rays, magnetic fields, sound waves, or radioactive substances to create pictures of the inside of your body. Imaging tests may be done for a number of reasons both before and after a diagnosis of lung cancer, including:

- To look at suspicious areas that might be cancer
- To learn how far cancer may have spread
- To help determine if treatment is working
- To look for possible signs of cancer coming back after treatment

### Chest x-ray

This is often the first test your doctor will do to look for any abnormal areas in the lungs. Plain x-rays of your chest can be done at imaging centers, hospitals, and even in some doctors' offices. If something suspicious is seen, your doctor may order more tests.

### Computed tomography (CT) scan

A CT scan uses x-rays to make detailed cross-sectional images of your body. Instead of taking one picture, like a regular x-ray, a CT scanner takes many pictures as it rotates around you while you lie on a table. A computer then combines these pictures into images of slices of the part of your body being studied.

A CT scan is more likely to show lung tumors than routine chest x-rays. It can also show the size, shape, and position of any lung tumors and can help find enlarged lymph nodes that might contain cancer that has spread from the lung. This test can also be used to look for masses in the adrenal glands, liver, brain, and other internal organs that might be due to the spread of lung cancer.

**CT-guided needle biopsy:** If a suspected area of cancer is deep within your body, a CT scan can be used to guide a biopsy needle into the suspected area.

## **Magnetic resonance imaging (MRI) scan**

Like CT scans, MRI scans provide detailed images of soft tissues. But MRI scans use radio waves and strong magnets instead of x-rays. A contrast material called gadolinium is often injected into a vein before the scan to better see details.

MRI scans are most often used to look for possible spread of lung cancer to the brain or spinal cord. Rarely, MRI of the chest may be done to see if the cancer has grown into central structures in the chest.

## **Positron emission tomography (PET) scan**

For this test, a form of radioactive sugar (known as FDG) is injected into the blood. Because cancer cells in the body are growing quickly, they absorb more of the radioactive sugar. This radioactivity can be seen with a special camera.

**PET/CT scan:** Often a PET scan is combined with a CT scan using a special machine that can do both at the same time. This lets the doctor compare areas of higher radioactivity on the PET scan with the more detailed appearance of that area on the CT scan. This is the type of PET scan most often used in patients with lung cancer.

If you appear to have early stage lung cancer, your doctor can use this test to help see if the cancer has spread to nearby lymph nodes or other areas, which can help determine if surgery may be an option for you. This test can also be helpful in getting a better idea if an abnormal area on another imaging test might be cancer.

PET/CT scans can also be useful if your doctor thinks the cancer might have spread but

doesn't know where. They can show spread of cancer to the liver, bones, adrenal glands, or some other organs. They are not as useful for looking at the brain, since all brain cells use a lot of glucose.

PET/CT scans are often helpful in diagnosing lung cancer, but their role in checking whether treatment is working is unproven. Most doctors do not recommend PET/CT scans for routine follow up of patients with lung cancer after treatment.

## **Bone scan**

For this test, a small amount of low-level radioactive material is injected into the blood. The substance settles in areas of bone changes throughout the entire skeleton. This radioactivity can be seen with a special camera.

A bone scan can help show if a cancer has spread to the bones. But this test isn't needed very often because PET scans, which are often done in patients with non-small cell lung cancer, can usually show if cancer has spread to the bones. Bone scans are done mainly when there is reason to think the cancer may have spread to the bones (because of symptoms such as bone pain) and other test results aren't clear.

## **Tests for diagnosing lung cancer**

Symptoms and the results of certain tests may strongly suggest that a person has lung cancer, but the actual diagnosis is made by looking at lung cells with a microscope.

The cells can be taken from lung secretions (sputum or phlegm), fluid removed from the area around the lung (thoracentesis), or from a suspicious area using a needle or surgery (known as a *biopsy*). The choice of which test(s) to use depends on the situation.

### **Sputum cytology**

A sample of mucus you cough up from the lungs (sputum) is looked at under a microscope to see if it has cancer cells. The best way to do this is to get early morning samples from you 3 days in a row. This test is more likely to help find cancers that start in the major airways of the lung, such as squamous cell lung cancers. It may not be as helpful for finding other types of non-small cell lung cancer. If your doctor suspects lung cancer, further testing will be done even if no cancer cells are found in the sputum.

### **Thoracentesis**

If there is a buildup of fluid around the lungs (called a *pleural effusion*), doctors can perform thoracentesis to find out if it is caused by cancer spreading to the lining of the lungs (pleura). The buildup might also be caused by other conditions, such as heart failure or an infection.

For this procedure, the skin is numbed and a hollow needle is inserted between the ribs to drain the fluid. (In a similar test called *pericardiocentesis*, fluid is removed from within the sac around the heart.) The fluid is checked under a microscope for cancer cells. Chemical tests of the fluid are also sometimes useful in telling a malignant (cancerous) pleural effusion from one that is not.

If a malignant pleural effusion has been diagnosed, thoracentesis may be repeated to remove more fluid. Fluid buildup can keep the lungs from filling with air, so thoracentesis can help a person breathe better.

## Needle biopsy

Doctors can often use a hollow needle to get a small sample from a suspicious area (mass).

- In a **fine needle aspiration (FNA)** biopsy, the doctor uses a syringe with a very thin, hollow needle to withdraw (aspirate) cells and small fragments of tissue.
- In a **core biopsy**, a larger needle is used to remove one or more small cores of tissue. Samples from core biopsies are larger than FNA biopsies, so they are often preferred.

An advantage of needle biopsies is that they don't require a surgical incision. The drawback is that they remove only a small amount of tissue. In some cases (particularly with FNA biopsies), the amount removed might not be enough to both make a diagnosis and to classify DNA changes in the cancer cells that can help doctors choose anticancer drugs.

**Transthoracic needle biopsy:** If the suspected tumor is in the outer part of the lungs, the biopsy needle can be inserted through the skin on the chest wall. The area where the needle is to be inserted may be numbed with local anesthesia first. The doctor then guides the needle into the area while looking at the lungs with either fluoroscopy (which is like an x-ray, but creates a moving image on a screen rather than a single picture on film) or CT scans.

If CT is used, the needle is inserted toward the mass (tumor), a CT image is taken, and the direction of the needle is guided based on the image. This is repeated a few times until the needle is within the mass.

A possible complication of this procedure is that air may leak out of the lung at the biopsy site and into the space between the lung and the chest wall. This is called a *pneumothorax*. It can cause part of the lung to collapse and possibly trouble breathing. If the air leak is small, it often gets better without any treatment. Large air leaks are treated by putting a small tube into the chest space and sucking out the air over a day or two, after which it usually heals on its own.

**Other approaches to needle biopsies:** An FNA biopsy may also be done to check for cancer in the lymph nodes between the lungs:

- *Transtacheal FNA* or *transbronchial FNA* is done by passing the needle through the wall of the trachea (windpipe) or bronchi (the large airways leading into the lungs) during bronchoscopy or endobronchial ultrasound (described below).
- In some patients an FNA biopsy is done during endoscopic esophageal ultrasound (described below) by passing the needle through the wall of the esophagus.

## **Bronchoscopy**

Bronchoscopy can help the doctor find some tumors or blockages in the larger airways of the lungs, which can often be biopsied during the procedure.

For this exam, a lighted, flexible fiber-optic tube (called a *bronchoscope*) is passed through the mouth or nose and down into the windpipe and bronchi. The mouth and throat are sprayed first with a numbing medicine. You may also be given medicine through an intravenous (IV) line to make you feel relaxed.

Small instruments can be passed down the bronchoscope to take biopsy samples. The doctor can also sample cells from the lining of the airways with a small brush (bronchial brushing) or by rinsing the airways with sterile saltwater (bronchial washing). These tissue and cell samples are then looked at under a microscope.

## **Tests to find lung cancer spread in the chest**

If lung cancer has been found, it's often important to know if it has spread to the lymph nodes in the space between the lungs (mediastinum) or other nearby areas. This can affect a person's treatment options. Several types of tests can be used to look for this cancer spread.

## **Endobronchial ultrasound**

Ultrasound is a type of imaging test that uses sound waves to create pictures of the inside of your body. For this test, a small, microphone-like instrument called a transducer gives off sound waves and picks up the echoes as they bounce off body tissues. The echoes are converted by a computer into an image on a computer screen.

For endobronchial ultrasound, a bronchoscope is fitted with an ultrasound transducer at its tip and is passed down into the windpipe. This is done with numbing medicine (local anesthesia) and light sedation.

The transducer can be pointed in different directions to look at lymph nodes and other structures in the mediastinum (the area between the lungs). If suspicious areas such as enlarged lymph nodes are seen on the ultrasound, a hollow needle can be passed through the bronchoscope and guided into these areas to obtain a biopsy. The samples are then sent to a lab to be looked at under a microscope.

## **Endoscopic esophageal ultrasound**

This test is like endobronchial ultrasound, except the doctor passes an endoscope (a lighted, flexible scope) down the throat and into the esophagus (the tube connecting the throat to the stomach). This is done with numbing medicine (local anesthesia) and light sedation.

The esophagus is just behind the windpipe and is close to some lymph nodes inside the chest to which lung cancer may spread. As with endobronchial ultrasound, the transducer can be pointed in different directions to look at lymph nodes and other structures inside the chest that might contain lung cancer. If enlarged lymph nodes are seen on the ultrasound, a hollow needle can be passed through the endoscope to get biopsy samples of them. The samples are then sent to a lab to be looked at under a microscope.

## **Mediastinoscopy and mediastinotomy**

These procedures may be done to look more directly at and get samples from the structures in the mediastinum (the area between the lungs). They are done in an operating room by a surgeon while you are under general anesthesia (in a deep sleep). The main difference between the two is in the location and size of the incision.

**Mediastinoscopy:** A small cut is made in the front of the neck and a thin, hollow, lighted tube is inserted behind the sternum (breast bone) and in front of the windpipe to look at the area. Instruments can be passed through this tube to take tissue samples from the lymph nodes along the windpipe and the major bronchial tube areas. Looking

at the samples under a microscope can show if they have cancer cells.

**Mediastinotomy:** The surgeon makes a slightly larger incision (usually about 2 inches long) between the left second and third ribs next to the breast bone. This lets the surgeon reach some lymph nodes that can't be reached by mediastinoscopy.

## Thoracoscopy

Thoracoscopy can be done to find out if cancer has spread to the spaces between the lungs and the chest wall, or to the linings of these spaces. It can also be used to sample tumors on the outer parts of the lungs as well as nearby lymph nodes and fluid, and to assess whether a tumor is growing into nearby tissues or organs. This procedure is not often done just to diagnose lung cancer, unless other tests such as needle biopsies are unable to get enough samples for the diagnosis.

Thoracoscopy is done in the operating room while you are under general anesthesia (in a deep sleep). A small cut (incision) is made in the side of the chest wall. (Sometimes more than one cut is made.) The doctor then puts a thin, lighted tube with a small video camera on the end through the incision to view the space between the lungs and the chest wall. Using this, the doctor can see possible cancer deposits on the lining of the lung or chest wall and remove small pieces of tissue for examination. (When certain areas can't be reached with thoracoscopy, the surgeon may need to make a larger incision in the chest wall, known as a *thoracotomy*.)

Thoracoscopy can also be used as part of the treatment to remove part of a lung in some early-stage lung cancers. This type of operation, known as *video-assisted thoracic surgery (VATS)*, is described in more detail in [Surgery for Non-Small Cell Lung Cancer](#).

## Lab tests of biopsy and other samples

Samples that have been collected during biopsies or other tests are sent to a pathology lab. A pathologist, a doctor who uses lab tests to diagnose diseases such as cancer, will look at the samples with a microscope and may do other special tests to help better classify the cancer. (Cancers from other organs can spread to the lungs. It's very important to find out where the cancer started, because treatment is different depending on the type of cancer.)

The results of these tests are described in a pathology report, which is usually available within about a week. If you have any questions about your pathology results or any

diagnostic tests, talk to your doctor. If needed, you can get a second opinion of your pathology report by having your tissue samples sent to a pathologist at another lab.

For more information on understanding your pathology report, see [Lung Pathology](#).

## Immunohistochemical tests

For this test, very thin slices of the samples are attached to glass microscope slides. The samples are then treated with special proteins (antibodies) that attach only to a specific substance found in certain cancer cells. If the cancer cells have that substance, the antibody will attach to the cells. Chemicals are then added so that antibodies change color. The doctor who looks at the sample under a microscope can see this color change.

## Molecular tests

In some cases, doctors may look for specific gene changes in the cancer cells that could mean certain [targeted drugs](#) might help treat the cancer. For example:

- The epidermal growth factor receptor (EGFR) is a protein that sometimes appears in high amounts on the surface of cancer cells and helps them grow. Some drugs that target EGFR seem to work best against lung cancers with certain changes in the *EGFR* gene, which are more common in certain groups, such as non-smokers, women, and Asians. But these drugs don't seem to be as helpful in patients whose cancer cells have changes in the *KRAS* gene. Many doctors now test for changes in genes such as *EGFR* and *KRAS* to determine if these newer treatments are likely to be helpful.
- About 5% of non-small cell lung cancers (NSCLCs) have a change in a gene called *ALK*. This change is most often seen in non-smokers (or light smokers) who have the adenocarcinoma subtype of NSCLC. Doctors may test cancers for changes in the *ALK* gene to see if drugs that target this change may help them.
- About 1% to 2% of NSCLCs have a rearrangement in the *ROS1* gene, which might make the tumor respond to certain targeted drugs. A similar percentage have a rearrangement in the *RET* gene. Certain drugs that target cells with *RET* gene changes might be options for treating these tumors.
- Some NSCLCs have changes in the *BRAF* gene. Certain drugs that target cells with *BRAF* gene changes might be option for treating these tumors.

Newer lab tests for certain other genes or proteins may also help guide the choice of treatment. Some of these are described in [What's New in Non-Small Cell Lung Cancer](#)



## [Research and Treatment?](#)

### **Blood tests**

Blood tests are not used to diagnose lung cancer, but they can help to get a sense of a person's overall health. For example, they can be used to help determine if a person is healthy enough to have [surgery](#).

A **complete blood count (CBC)** looks at whether your blood has normal numbers of different types of blood cells. For example, it can show if you are anemic (have a low number of red blood cells), if you could have trouble with bleeding (due to a low number of blood platelets), or if you are at increased risk for infections (because of a low number of white blood cells). This test will be repeated regularly if you are treated with [chemotherapy](#), because these drugs can affect blood-forming cells of the bone marrow.

**Blood chemistry tests** can help spot abnormalities in some of your organs, such as the liver or kidneys. For example, if cancer has spread to the liver and bones, it may cause abnormal levels of certain chemicals in the blood, such as a high level of lactate dehydrogenase (LDH).

### **Pulmonary function tests**

Pulmonary function tests (PFTs) are often done after lung cancer is diagnosed to see how well your lungs are working (for example, how much emphysema or chronic bronchitis is present). This is especially important if surgery might be an option in treating the cancer. Surgery to remove lung cancer may mean removing part or all of a lung, so it's important to know how well the lungs are working beforehand. Some people with poor lung function (like those with lung damage from smoking) don't have enough lung reserve to withstand removing even part of a lung. These tests can give the surgeon an idea of whether surgery is a good option, and if so, how much lung can safely be removed.

There are different types of PFTs, but they all basically have you breathe in and out through a tube that is connected to a machine that measures airflow.

Sometimes PFTs are coupled with a test called an *arterial blood gas*. In this test, blood is removed from an artery (instead of from a vein, like most other blood tests) to measure the amount of oxygen and carbon dioxide that it contains.

- [References](#)

[See all references for Non-Small Cell Lung Cancer](#)

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## Non-Small Cell Lung Cancer Stages

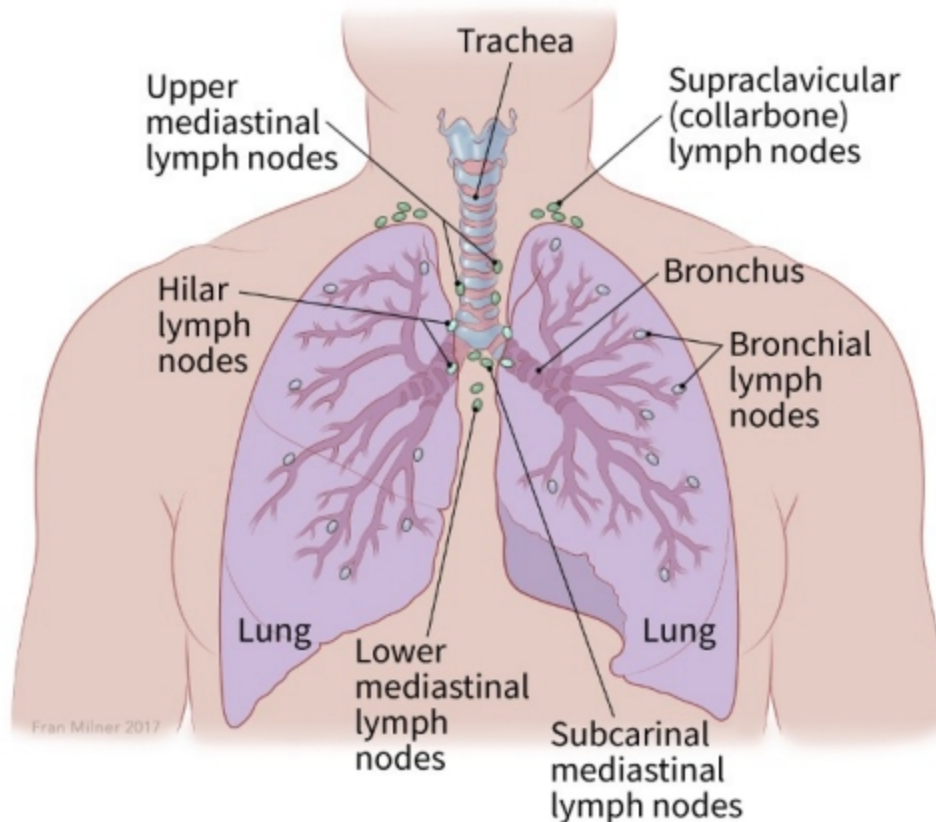
After someone is diagnosed with non-small cell lung cancer (NSCLC), doctors will try to figure out if it has spread, and if so, how far. This process is called staging. The stage of a cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to [treat](#)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

The earliest stage of NSCLC is stage 0 (also called carcinoma in situ, or CIS). Other stages range from 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 (or number) 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 NSCLC is the American Joint Committee on Cancer (AJCC) **TNM** system, which is based on 3 key pieces of information:

- The size and extent of the main **tumor (T)**: How large is the tumor? Has it grown into nearby structures or organs?
- The spread to nearby lymph **nodes (N)**: Has the cancer spread to nearby lymph nodes? (See image.)
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to distant organs such as the brain, bones, adrenal glands, kidneys, liver, or the other lung?



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](#).

The system described below is the most recent version of the AJCC system, effective as of January 2018.

NSCLC is typically given a *clinical stage* based on the results of a physical exam, biopsy, and imaging tests (as described in [Tests for Non-Small Cell Lung Cancer](#)). If surgery is done, the *pathologic stage* (also called the *surgical stage*) is determined by examining tissue removed during the operation.

Staging for NSCLC can be complex, so ask your doctor to explain it to you in a way you understand.

## Stages of non-small cell lung cancer

AJCC	Stage	Stage description*
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Stage	grouping	
<b>Occult (hidden) cancer</b>	<b>TX N0 M0</b>	The main tumor can't be assessed for some reason, or cancer cells are seen in a sample of sputum or other lung fluids, but the cancer isn't found with other tests, so its location can't be determined (TX). The cancer is not thought to have spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
<b>0</b>	<b>Tis N0 M0</b>	The tumor is found only in the top layers of cells lining the air passages, but it has not invaded deeper into other lung tissues (Tis). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
<b>IA1</b>	<b>T1mi N0 M0</b>	The cancer is a <i>minimally invasive adenocarcinoma</i> . The tumor is no larger than 3 centimeters (cm) across, and the part that has invaded into deeper lung tissues is no more than ½ cm across. The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
	<b>T1a N0 M0</b>	OR The tumor is no larger than 1 cm across, it has not reached the membranes that surround the lungs, and it does not affect the main branches of the bronchi (T1a). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
<b>IA2</b>	<b>T1b N0 M0</b>	The tumor is larger than 1 cm but no larger than 2 cm across. It has not reached the membranes that surround the lungs, and it does not affect the main branches of the bronchi (T1b). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
<b>IA3</b>	<b>T1c N0 M0</b>	The tumor is larger than 2 cm but no larger than 3 cm across. It has not reached the membranes that surround the lungs, and it does not affect the main branches of the bronchi (T1c). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
<b>IB</b>	<b>T2a N0 M0</b>	The tumor has one or more of the following features (T2a): <ul style="list-style-type: none"> <li>• It is larger than 3 cm but not larger than 4 cm across.</li> <li>• It has grown into a main bronchus, but is not within 2 cm of the carina (the point where the windpipe splits into the left and right main bronchi) and it is not larger than 4 cm across.</li> <li>• It has grown into the visceral pleura (the membranes surrounding the lungs) and is not larger than 4 cm across.</li> <li>• It is partially clogging the airways (and is not larger than 4 cm across).</li> </ul> The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).

<b>IIA</b>	<b>T2b N0 M0</b>	<p>The tumor has one or more of the following features (T2b):</p> <ul style="list-style-type: none"> <li>• It is larger than 4 cm but not larger than 5 cm across.</li> <li>• It has grown into a main bronchus, but is not within 2 cm of the carina (the point where the windpipe splits into the left and right main bronchi) and it is larger than 4 cm but not larger than 5 cm across.</li> <li>• The tumor has grown into the visceral pleura (the membranes surrounding the lungs) and is larger than 4 cm but not larger than 5 cm across.</li> <li>• The tumor is partially clogging the airways (and is larger than 4 cm but not larger than 5 cm across).</li> </ul> <p>The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).</p>
	<b>IIB</b>	<b>T1a/T1b/T1c N1 M0</b>
OR		
<b>T2a/T2b N1 M0</b>		<p>The tumor has one or more of the following features (T2):</p> <ul style="list-style-type: none"> <li>• It is larger than 3 cm but not larger than 5 cm across.</li> <li>• It has grown into a main bronchus, but is not within 2 cm of the carina (the point where the windpipe splits into the left and right main bronchi) and it is not larger than 5 cm across.</li> <li>• It has grown into the visceral pleura (the membranes surrounding the lungs) and is not larger than 5 cm.</li> <li>• It is partially clogging the airways (and is not larger than 5 cm).</li> </ul> <p>The cancer has also spread to lymph nodes within the lung and/or around the area where the bronchus enters the lung (hilar lymph nodes). These lymph nodes are on the same side as the cancer (N1). The cancer has not spread to distant parts of the body (M0).</p>
OR		
<b>T3 N0 M0</b>	<p>The tumor has one or more of the following features (T3):</p> <ul style="list-style-type: none"> <li>• It is larger than 5 cm but not larger than 7 cm across.</li> <li>• It has grown into the chest wall, the inner lining of the chest</li> </ul>	

		<p>wall (parietal pleura), the phrenic nerve, or membranes of the sac surrounding the heart (parietal pericardium).</p> <ul style="list-style-type: none"> <li>• There are 2 or more separate tumor nodules in the same lobe of a lung.</li> </ul> <p>The cancer has not spread to nearby lymph nodes (N0) or distant parts of the body (M0).</p>
<b>IIIA</b>	<b>T1a/T1b/T1c N2 M0</b>	<p>The cancer is no larger than 3 cm across, has not grown into the membranes that surround the lungs, and does not affect the main branches of the bronchi (T1). The cancer has spread to lymph nodes around the carina (the point where the windpipe splits into the left and right bronchi) or in the space between the lungs (mediastinum). These lymph nodes are on the same side as the main lung tumor (N2). The cancer has not spread to distant parts of the body (M0).</p>
	<b>T2a/T2b N2 M0</b>	<p>The tumor has one or more of the following features (T2):</p> <ul style="list-style-type: none"> <li>• It is larger than 3 cm but not larger than 5 cm across.</li> <li>• It has grown into a main bronchus, but is not within 2 cm of the carina (the point where the windpipe splits into the left and right main bronchi) and it is not larger than 5 cm across.</li> <li>• It has grown into the visceral pleura (the membranes surrounding the lungs) and is not larger than 5 cm.</li> <li>• It is partially clogging the airways (and is not larger than 5 cm).</li> </ul> <p>The cancer has spread to lymph nodes around the carina (the point where the windpipe splits into the left and right bronchi) or in the space between the lungs (mediastinum). These lymph nodes are on the same side as the main lung tumor (N2). The cancer has not spread to distant parts of the body (M0).</p>
	<b>T3 N1 M0</b>	<p>The tumor has one or more of the following features (T3):</p> <ul style="list-style-type: none"> <li>• It is larger than 5 cm but not larger than 7 cm across.</li> <li>• It has grown into the chest wall, the inner lining of the chest wall (parietal pleura), the phrenic nerve, or membranes of the sac surrounding the heart (parietal pericardium).</li> <li>• There are 2 or more separate tumor nodules in the same lobe of a lung.</li> </ul> <p>The cancer has also spread to lymph nodes within the lung and/or around the area where the bronchus enters the lung</p>

		(hilar lymph nodes). These lymph nodes are on the same side as the cancer (N1). The cancer has not spread to distant parts of the body (M0).
	<b>OR</b>	<p>The tumor has one or more of the following features (T4):</p> <ul style="list-style-type: none"> <li>• It is larger than 7 cm across.</li> <li>• It has grown into the space between the lungs (mediastinum), the heart, the large blood vessels near the heart (such as the aorta), the windpipe (trachea), the tube connecting the throat to the stomach (esophagus), the thin muscle separating the chest from the abdomen (diaphragm), the backbone, or the carina.</li> <li>• There are 2 or more separate tumor nodules in different lobes of the same lung.</li> </ul> <p>The cancer may or may not have spread to lymph nodes within the lung and/or around the area where the bronchus enters the lung (hilar lymph nodes). Any affected lymph nodes are on the same side as the cancer (N0 or N1). The cancer has not spread to distant parts of the body (M0).</p>
<b>IIIB</b>	<b>T1a/T1b/T1c N3 M0</b>	The cancer is no larger than 3 cm across, has not grown into the membranes that surround the lungs, and does not affect the main branches of the bronchi (T1). The cancer has spread to lymph nodes near the collarbone on either side of the body, and/or has spread to hilar or mediastinal lymph nodes on the other side of the body from the main tumor (N3). The cancer has not spread to distant parts of the body (M0).
	<b>OR</b>	<p>The tumor has one or more of the following features (T2):</p> <ul style="list-style-type: none"> <li>• It is larger than 3 cm but not larger than 5 cm across.</li> <li>• It has grown into a main bronchus, but is not within 2 cm of the carina (the point where the windpipe splits into the left and right main bronchi) and it is not larger than 5 cm across.</li> <li>• It has grown into the visceral pleura (the membranes surrounding the lungs) and is not larger than 5 cm.</li> <li>• It is partially clogging the airways (and is not larger than 5 cm).</li> </ul> <p>The cancer has spread to lymph nodes near the collarbone on either side of the body, and/or has spread to hilar or mediastinal lymph nodes on the other side of the body from the main tumor (N3). The cancer has not spread to distant parts of</p>

		the body (M0).
	OR	
	<b>T3 N2 M0</b>	<p>The tumor has one or more of the following features (T3):</p> <ul style="list-style-type: none"> <li>• It is larger than 5 cm but not larger than 7 cm across.</li> <li>• It has grown into the chest wall, the inner lining of the chest wall (parietal pleura), the phrenic nerve, or membranes of the sac surrounding the heart (parietal pericardium).</li> <li>• There are 2 or more separate tumor nodules in the same lobe of a lung.</li> </ul> <p>The cancer has spread to lymph nodes around the carina (the point where the windpipe splits into the left and right bronchi) or in the space between the lungs (mediastinum). These lymph nodes are on the same side as the main lung tumor (N2). The cancer has not spread to distant parts of the body (M0).</p>
	OR	
	<b>T4 N2 M0</b>	<p>The tumor has one or more of the following features (T4):</p> <ul style="list-style-type: none"> <li>• It is larger than 7 cm across.</li> <li>• It has grown into the space between the lungs (mediastinum), the heart, the large blood vessels near the heart (such as the aorta), the windpipe (trachea), the tube connecting the throat to the stomach (esophagus), the thin muscle separating the chest from the abdomen (diaphragm), the backbone, or the carina (the point where the windpipe splits into the left and right main bronchi).</li> <li>• There are 2 or more separate tumor nodules in different lobes of the same lung.</li> </ul> <p>The cancer has spread to lymph nodes around the carina (the point where the windpipe splits into the left and right bronchi) or in the space between the lungs (mediastinum). These lymph nodes are on the same side as the main lung tumor (N2). The cancer has not spread to distant parts of the body (M0).</p>
<b>IIIC</b>	<b>T3 N3 M0</b>	<p>The tumor has one or more of the following features (T3):</p> <ul style="list-style-type: none"> <li>• It is larger than 5 cm but not larger than 7 cm across.</li> <li>• It has grown into the chest wall, the inner lining of the chest wall (parietal pleura), the phrenic nerve, or membranes of the sac surrounding the heart (parietal pericardium).</li> <li>• There are 2 or more separate tumor nodules in the same</li> </ul>



		<p>lobe of a lung.</p> <p>The cancer has spread to lymph nodes near the collarbone on either side of the body, and/or has spread to hilar or mediastinal lymph nodes on the other side of the body from the main tumor (N3). The cancer has not spread to distant parts of the body (M0).</p>
		OR
	<b>T4 N3 M0</b>	<p>The tumor has one or more of the following features (T4):</p> <ul style="list-style-type: none"> <li>• It is larger than 7 cm across.</li> <li>• It has grown into the space between the lungs (mediastinum), the heart, the large blood vessels near the heart (such as the aorta), the windpipe (trachea), the tube connecting the throat to the stomach (esophagus), the thin muscle separating the chest from the abdomen (diaphragm), the backbone (spine), or the carina (the point where the windpipe splits into the left and right main bronchi).</li> <li>• There are 2 or more separate tumor nodules in different lobes of the same lung.</li> </ul> <p>The cancer has spread to lymph nodes near the collarbone on either side of the body, and/or has spread to hilar or mediastinal lymph nodes on the other side of the body from the main tumor (N3). The cancer has not spread to distant parts of the body (M0).</p>
<b>IVA</b>	<b>Any T Any N M1a</b>	<p>The cancer can be any size and may or may not have grown into nearby structures (any T). It may or may not have reached nearby lymph nodes (any N). In addition, any of the following is true (M1a):</p> <ul style="list-style-type: none"> <li>• The cancer has spread to the other lung.</li> <li>• Cancer cells are found in the fluid around the lung (called a <i>malignant pleural effusion</i>).</li> <li>• Cancer cells are found in the fluid around the heart (called a <i>malignant pericardial effusion</i>).</li> </ul>
		OR
	<b>Any T Any N M1b</b>	<p>The cancer can be any size and may or may not have grown into nearby structures (any T). It may or may not have reached nearby lymph nodes (any N). It has spread as a single tumor outside of the chest, such as to a distant lymph node or an organ such as the liver, bones, or brain (M1b).</p>
<b>IVB</b>	<b>Any T Any N</b>	<p>The cancer can be any size and may or may not have grown into nearby structures (any T). It may or may not have reached</p>

	<b>M1c</b>	nearby lymph nodes (any N). It has spread as more than one tumor outside the chest, such as to distant lymph nodes and/or to other organs such as the liver, bones, or brain (M1c).
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\*The following additional categories are not listed in the table above:

- **T0:** There is no evidence of a primary tumor.
- **NX:** Nearby lymph nodes cannot be assessed due to lack of information.
- [References](#)

American Joint Committee on Cancer. Lung. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 431-456.

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## Non-Small Cell Lung Cancer Survival Rates, by Stage

Survival rates tell you what portion 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. These numbers can't tell you how long you will live, but they may help give you a better understanding about how likely it is that your treatment will be successful.

### What is a 5-year survival rate?

Statistics on the outlook for a certain type and stage of cancer are often given as 5-year survival rates, but many people live longer – often much longer – than 5 years. The 5-year survival rate is the percentage of people who live at least 5 years after being diagnosed with cancer. For example, a 5-year survival rate of 80% means that an estimated 80 out of 100 people who have that cancer are still alive 5 years after being diagnosed. Keep in mind, however, that many of these people live much longer than 5 years after diagnosis.

But remember, the 5-year survival rates are estimates – your outlook can vary based on a number of factors specific to you.

## Survival rates don't tell the whole story

Survival rates are often based on previous outcomes of large numbers of people who had the disease, but they can't predict what will happen in any particular person's case. There are a number of limitations to keep in mind:

- The numbers below are among the most current available. But to get 5-year survival rates, doctors have to look at people who were treated at least 5 years ago. As treatments are improving over time, people who are now being diagnosed with non-small cell lung cancer (NSCLC) may have a better outlook than these statistics show.
- These statistics are based on the stage of the cancer when it was first diagnosed. They do not apply to cancers that later come back or spread, for example.
- The outlook for people with NSCLC varies by the [stage](#) (extent) of the cancer – in general, the survival rates are higher for people with earlier stage cancers. But many other factors can affect a person's outlook, such as the subtype of NSCLC, gene changes in the cancer cells, the person's age and overall health, and how well the cancer responds to treatment. The outlook for each person is specific to his or her circumstances.

Your doctor can tell you how these numbers may apply to you, as he or she is familiar with your particular situation.

## Survival rates for non-small cell lung cancer, by stage

The numbers below come from thousands of people from all over the world who were diagnosed with NSCLC between 1999 and 2010. Although the numbers are based on people diagnosed several years ago, they are the most recent rates published for the current AJCC staging system.

These survival rates include people who die from causes other than cancer.

- The 5-year survival rate for people with stage IA1 NSCLC is about 92%. For people with stage IA2 NSCLC, the 5-year survival rate is about 83%. For people with stage IA3 NSCLC, the 5-year survival rate is about 77%.
- The 5-year survival rate for people with stage IB NSCLC is about 68%.

- For stage IIA cancer, the 5-year survival rate is about 60%. For stage IIB cancer, the survival rate is about 53%.
- The 5-year survival rate for stage IIIA NSCLC is about 36%. For stage IIIB cancers the survival rate is about 26%. For stage IIIC cancers the survival rate is about 13%.
- NSCLC that has spread to other parts of the body is often hard to treat. The 5-year survival rate for stage IVA NSCLC is about 10%, and for stage IVB the 5-year survival rate is less than 1%. Still, there are often many treatment options available for people with these stages of cancer.

Remember, these survival rates are only estimates – they can't predict what will happen to any individual person. We understand that these statistics can be confusing and may lead you to have more questions. Talk to your doctor to better understand your specific situation.

- [References](#)

Goldstraw P, Chansky K, Crowley J, et al. The IASLC Lung Cancer Staging Project: Proposals for Revision of the TNM Stage Groupings in the Forthcoming (Eighth) Edition of the TNM Classification for Lung Cancer. *J Thorac Oncol*. 2016;11(1):39-51.

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## What Should You Ask Your Health Care Team About Non-Small Cell Lung Cancer?

It's important to have honest, open discussions with your cancer care team. You should ask any question, no matter how small it might seem. Here are some questions you might want to ask:

### When you're told you have lung cancer

- What [kind of lung cancer](#) do I have?
- Where exactly is the cancer? Has it spread beyond where it started?
- What is the [stage](#) of my cancer, and what does that mean in my case?
- Will I need any other [tests](#) before we can decide on treatment?
- Have the cancer cells been checked for gene changes that could affect my treatment options?
- Do I need to see any other doctors or health professionals?
- 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?
- What are my [treatment choices](#)?
- What do you recommend and why?
- What is the goal of my treatment?
- Should I get a second opinion? How do I do that? Can you recommend someone?
- What are the chances my cancer can be cured with these options?
- How quickly do we need to decide on treatment?
- What should I do to be ready for treatment?
- How long will my treatment last?
- What will treatment be like?
- Where will my treatment be done?
- What are the risks and side effects with the treatments you suggest?
- Will treatment affect my daily activities?

## 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 asking 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?
- 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?
- What kind of exercise 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?

## 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?
- What type of follow-up will I need after treatment?
- How often will I need to have follow-up exams and imaging 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?

Along with these sample questions, be sure to write down some of your own. For instance, you might want more information about recovery times. Or you may want to ask about getting a second opinion or about [clinical trials](#) for which you may qualify.

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 [Talking With Your Doctor](#).

- [References](#)

[See all references for Non-Small Cell Lung Cancer](#)

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