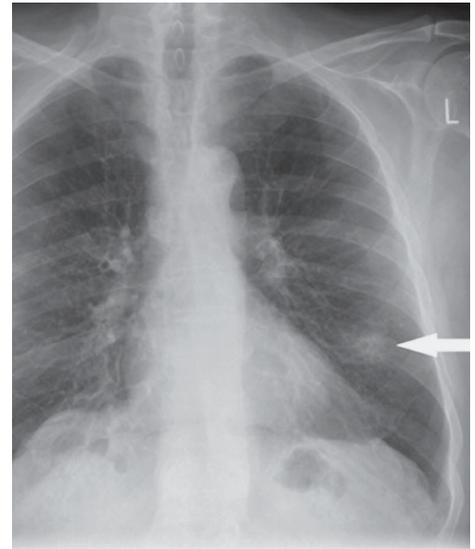


# Staging of Lung Cancer

Once you are diagnosed with lung cancer, staging tells you and your healthcare provider about the size of your cancer (tumor) and whether it has spread. The stage of your cancer is based on the results from tests like a CT (“cat”) scan, and biopsies. How your lung cancer stage is described also depends on what type of lung cancer you have.



CLIP AND COPY

A biopsy involves removing a piece of tissue (usually from either your lung, lymph nodes or other tissue site), and looking at it under a microscope. The stages of lung cancer are listed as I, II, III, and IV for non small cell lung cancer (NSCLC) and “limited” or “extensive” for small cell lung cancer (SCLC). NSCLC may be further subdivided by letter designations, for example IIIA, IIIB or IIIC. The higher the number (or when the word “extensive” is used) means the bigger the tumor and/or the more the cancer has spread. All stages of lung cancer can be treated.

Once your lung cancer is diagnosed, staging tells you and your healthcare provider about the size of your cancer (tumor) and how far it has spread. The stage of your cancer is based on your symptoms, results from tests like a CT (“cat”) scan, and biopsies. A biopsy involves removing a piece of tissue (usually from your lung or lymph node), and looking at it under a microscope. The stages of lung cancer are listed as I, II, III, and IV for non small cell lung cancer (NSCLC) and “limited” or “extensive” for small cell lung cancer (SCLC). NSCLC may be further subdivided by letter designations, for example IIIA, IIIB or IIIC. The higher the number (or when the word

“extensive” is used) means the bigger the tumor and/or the more the cancer has spread.

## Why is it important to know the stage of my lung cancer?

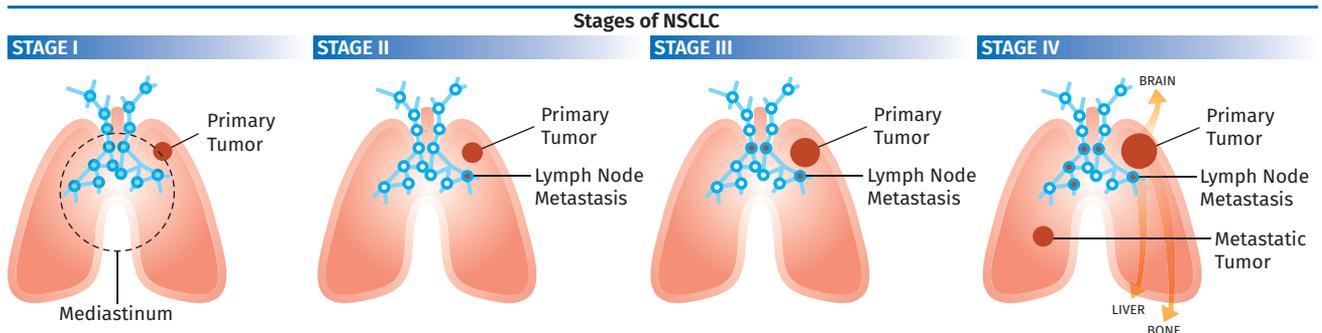
Finding out the stage of your lung cancer is important for two reasons. Staging your lung cancer:

- tells how much your cancer has spread.
- helps decide which therapy (or therapies) could be used.

Knowing the stage of your cancer helps your healthcare team know the risks versus the benefits of different procedures and treatments. Treatments that are good for one stage may not be helpful for another stage, and in fact can be harmful to you. For example, if cancer has spread outside the lung (called metastases), surgery to remove part of the lung may not improve your chance of living longer and may cause unnecessary harm.

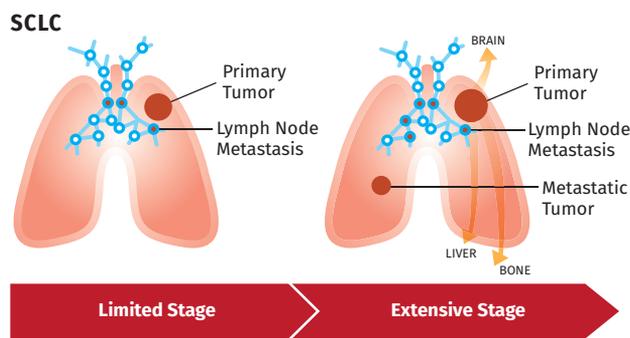
## How does staging differ between small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC)?

Both NSCLC and SCLC are staged by the TNM system. The initials TNM stand for the size and location of the **T**umor, the spread of cancer in the lymph **N**odes



and if and where the cancer has spread (**M**etastases).

- The **T** number increases as the tumor gets bigger and how close it is to major structures in the chest like large airways in the lungs, heart, major blood vessels, or tissues outside the lung.
- The **L** number says whether your cancer has spread to the lymph nodes. Lymph nodes are part of your immune system and cancer cells can spread into the lymph system. Usually, if the cancer has spread, it spreads to the nodes closest to the main tumor and then goes further away. Imaging studies, such as CT or PET scans, are used to find possible lymph nodes affected by the cancer, but a biopsy is the best way to find out if the lymph nodes have cancer. The lymph node is rated as:
  - ◆ N0=no lymph node involvement
  - ◆ N1, N2, N3 = lymph nodes involved at different sites inside or outside the chest
- The **M** says that metastases (spread of cancer) has happened throughout the body and is growing in other tissues or organs. Lung cancer may spread to the brain, bones, adrenal glands, liver or other areas. The **M** stage is based on *if* the cancer has spread and *where* it has spread. Like the lymph node staging, imaging studies may help find out if a cancer has spread, but a biopsy is often a better way to find this out.



SCLC is staged by the TNM system, but treating physicians also commonly describe SCLC as “limited” and “extensive” stages. Limited stage SCLC occurs when the lung cancer is limited to one side of the chest. Extensive stage occurs when the lung cancer has spread to the other side of the chest or to other organs such as the liver or brain.

### How will my lung cancer be staged?

Your healthcare provider will ask you about how you are feeling. Changes in how you are feeling may be a sign that your cancer has spread. You will also have tests that can tell if your cancer is bigger or has spread to other areas of your body. Some tests are

*non-invasive* (you are not cut or poked with a needle for a biopsy) such as a CT scan (to identify anatomy), PET scan (to identify tissues with very active cells), MRI (often used to look at the brain or bones), and/or bone scan (to look at bones where the cancer may be). These tests may be able to give an idea of the stage of your lung cancer but these may not be accurate. Another test, a biopsy, is an invasive test where a piece of tissue is taken and examined. Biopsies of tissue are the best way to stage your cancer.

### How do you get biopsies that are used to diagnose and stage lung cancer?

There are several tools that are used to reach the tissue that is to be biopsied. These include: bronchoscopy, CT-guided needle biopsy, mediastinoscopy, surgery or other biopsy procedures. Some of these procedures are done in the operating room under general anesthesia, while others only require medications that make you a little sleepy.

- **Bronchoscopy:** A camera on a long skinny tube (a fiber optic bronchoscope) is put into your mouth or nose, goes into your trachea (windpipe), and into the airways (breathing tubes) of your lungs. The bronchoscope can be used to look at the inside of your airways. Bronchoscopy can be done with or without ultrasound to biopsy the airways, the lung tissue, or lymph nodes. There are newer types of bronchoscopy that may also be offered to you if needed, that can reach further into your lungs.

- **Endoscopic Ultrasound (EUS) or Endobronchial Ultrasound (EBUS):** Like the bronchoscope, an EUS is a long tube that has an ultrasound device and a camera attached. This tube can be put through your mouth, into your trachea (windpipe) or esophagus (food tube). The ultrasound uses sound waves to “see” areas of your lung, mediastinum (the area between your lungs), or areas around your esophagus that are not visible from inside the trachea or esophagus. Seeing these areas helps to guide a needle into the likely cancer tissue, usually a lymph node, to obtain a small biopsy.

- **Mediastinoscopy:** Also like a bronchoscope, a tube with a camera is put into your mediastinum (area between your lungs). To get into this area, a small cut is made just above your sternum (breast bone). This is done so that groups of lymph nodes in the mediastinum can be biopsied.

- **Thoracic Surgery:** Sometimes, the best way to biopsy something in your chest area is to have surgery. Whether you have surgery or not will be

decided by you and your surgeon. Usually, one or more incisions (cuts) are made so that the surgeon can remove the cancerous part of the lung and/or lymph node tissue.

- **Other biopsy procedures:** Depending on your symptoms and test results, other biopsies may be done. Where the biopsy is done depends on where the cancer may be. Common places that are biopsied are your lungs, liver, bones, and brain. These types of biopsies can be done with a needle or through surgery by cutting a piece of tissue out of your body.

### How good are these tests at staging lung cancer?

If your biopsy finds cancer cells, this is proof that you have cancer. If cancer is found in biopsies taken from different parts of your body, this means that the cancer has spread. On the other hand, not finding cancer cells (a negative result) can mean two things:

- it can mean that the cancer has not spread or
- the biopsy “missed” the cancer that was really there.

Usually, the bigger the piece of tissue from biopsy, the better the chance to prove that cancer is not there. For example, if a lung biopsy is negative, but the sample was small, another biopsy may be needed to make sure that your cancer did not spread.

### Action Steps:

1. If you smoke, it is never too late to get the help you need to quit. Ask your healthcare provider, or call 1-800-QUITNOW.
2. If you notice any of your symptoms getting worse, or any new symptoms, contact your healthcare clinician right away. New symptoms might include:
  - a cough that doesn't go away
  - coughing up blood
  - difficulty swallowing
  - weight loss that can't be explained
  - bone pain
  - shortness of breath
  - hoarseness that does not go away
  - increasing fatigue
3. Talk to your healthcare provider about what the plan is to stage your cancer and watch for any new spread.

### Healthcare Provider's Contact Number:

**Authors:** Christopher Slatore MD, MS; Suzanne C Lareau RN, MS; Bonnie Fahy, RN, MN.

**Reviewers:** Marianna Sockrider MD, DrPH; Donald Sullivan, MD, MA, MCR, Robert Smyth, MB MSc; Lynn Tanoue, MD

### Resources:

#### American Thoracic Society

- [www.thoracic.org/patients](http://www.thoracic.org/patients)
  - Flexible Bronchoscopy
  - Lung Cancer
  - Screening for Lung Cancer
  - Treatment of Lung Cancer (SCLC, Early NSCLC, Advanced NSCLC)

#### American Cancer Society 1-800-227-2345

- [http://www.cancer.org/docroot/ETO/content/ETO\\_1\\_2X\\_Staging.asp](http://www.cancer.org/docroot/ETO/content/ETO_1_2X_Staging.asp)

#### National Cancer Institute 1-800-422-6237

- <https://www.cancer.gov/types/lung>
- <http://www.cancer.gov/cancertopics/pdq/treatment/non-small-cell-lung/Patient/page2>
- <https://www.cancer.gov/types/lung/patient/small-cell-lung-treatment-pdq>

#### National Lung Cancer Partnership 1-608-233-7905

- <http://www.nationallungcancerpartnership.org/>

This information is a public service of the American Thoracic Society. The content is for educational purposes only. It should not be used as a substitute for the medical advice of one's healthcare provider.