

The goal of treatment for lung cancer is to destroy or remove the cancer cells without damaging too much healthy tissue, or to slow down and stop the growth of the cancer.

## Lung Cancer

### What Is Lung Cancer?

Lung cancer is a malignant or invasive growth in the lungs. The main function of your lungs is respiration. The air that you breathe in contains several gases, including oxygen that your cells need to function. With each breath, your lungs add fresh oxygen to your blood, which then carries it to your cells.

Cancer is the development of abnormal cells in the body. Normally, cells in the body grow, develop, and die in an orderly fashion. Cancerous cells have a tendency to divide uncontrollably and infiltrate normal body cells, where they interfere with the normal workings of the parts of the body. This uncontrolled growth and spread to other tissues is what defines cancer. In the lungs, this can interfere with breathing.

There are two main types of lung cancer:

- ❖ Small-cell lung cancer (SCLC): it is usually found in active or former cigarette smokers. Although SCLC, also called oat-cell cancer, is less common, it is a more aggressive tumor that is more likely to spread to other body sites.
- ❖ Non-small-cell lung cancer (NSCLC): grows more slowly and takes longer to spread beyond the lung

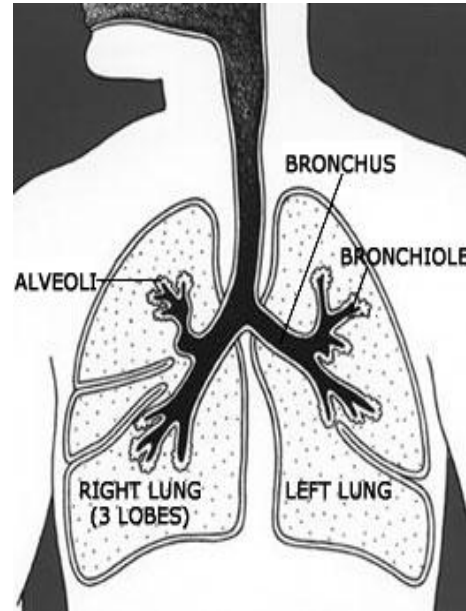
## What Causes Lung Cancer?

Smoking and tobacco use is responsible for almost 90% of lung cancer cases. However, even people who have never smoked or who quit long ago may develop lung cancer. Other causes of lung cancer include exposure to workplace chemicals such as asbestos and environmental pollutants that include secondhand smoke.

You may also be exposed to radon in your home. Radon is a radioactive natural gas that can collect in basements and attics. Most homes and other buildings are safe, but some have high concentrations of radon, which increases your risk of lung cancer. Radon test kits are sold commercially. Although radon sounds serious, the risk of lung cancer from radon is less than that from smoking and is increased by smoking.

In addition, certain lung diseases, such as tuberculosis (TB), increase a person's chance of developing lung cancer. Certain occupations that involve exposure to arsenic, chromium, nickel, aromatic hydrocarbons, and ether may increase the risk of lung cancer.

A person who has had lung cancer is more likely to develop a second lung cancer than the average person is.

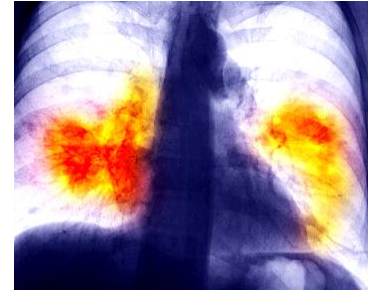


## Who Is at Risk of Lung Cancer?

The most important risk factors for lung cancer include:

- ❖ Smoking and being around secondhand smoke
- ❖ Environmental factors, such as radon gas, asbestos dust, and pollution
- ❖ Having a family history of lung cancer

## What Are the Signs and Symptoms of Lung Cancer?



The most common symptoms include:

- ❖ Chronic cough
- ❖ Coughing up blood
- ❖ Difficulty breathing
- ❖ Wheezing
- ❖ Pain in the chest, back, shoulder, or arm
- ❖ Repeated respiratory infections, such as bronchitis or pneumonia

If lung cancer has metastasized, or spread outside the lung before being detected, it may cause other symptoms. Lung cancer that has spread to the brain can cause difficulties with vision, weakness on one side of the body, or seizures. Cancer that has metastasized to the bone causes bone pain, usually in the backbone, the thigh bones, and the ribs.

Staging is a process used to describe how advanced the cancer is and to assist a physician in determining the prognosis, the prediction of what is likely to happen to you because of the cancer. It helps the physician in planning treatment and evaluating the results.

## How Is Lung Cancer Diagnosed?

To determine if you have lung cancer, your doctor will evaluate your medical history, smoking history, and family history of cancer. Your doctor will also recommend following tests:

- ❖ Sputum cytology: a sample of sputum or mucus coughed up from the lungs is examined for cancer cells
- ❖ Imaging tests: including a chest X-ray as a first step in diagnosis, and a computed tomography (CT) scan, or a magnetic resonance imaging (MRI)
- ❖ Bronchoscopy: a small tube called a bronchoscope is inserted through the nose or mouth and down the windpipe to look inside the airways and lungs

- ❖ Biopsy: a small sample of lung tissue is removed from the suspected tumor area (often during the bronchoscopy) and examined for cancer cells
- ❖ Needle aspiration: a needle is inserted through the side of the chest and into the tumor to remove a sample of tissue
- ❖ Thoracentesis: a needle is used to extract a sample of the fluid that surrounds the lungs to examine for cancer cells

## Prognosis

When you receive a diagnosis of lung cancer, the first question you want answered is "What is going to happen to me?" A prognosis is essentially a forecast for how your cancer is expected to behave. Your prognosis depends on what kind of lung cancer you have, how advanced it is, and whether and where it has spread, which is why your doctor cannot give you an idea of how well you will do until all the diagnostic tests are completed. Your overall health is another key factor in determining your prognosis, which will also be partly based on your doctor's knowledge of how well other people with your type and stage of cancer have done. Even then, a prognosis is an "educated guess" that may change as time goes on and as your treatment progresses. Talk to your doctor about how your cancer is expected to affect your health and well-being after the testing has been completed. You will probably discuss it again with your doctor after your treatment ends.

## What Are Common Treatments?

Lung cancer can be difficult to treat. There are several options and the best one for you depends on what type of cancer you have and its stage. Treatment options for lung cancer include:

- ❖ Surgery
- ❖ Radiation
- ❖ Chemotherapy
- ❖ Targeted therapy

The goal of these treatments is to destroy or remove the cancer cells without damaging too much healthy tissue, or to slow down and stop the growth of the cancer.

People with early stage SCLC are usually treated with radiation and chemotherapy. For a very small lung tumor, a person may be treated with surgery and chemotherapy. Surgery involves removing the tumors in the lungs along with some healthy tissue around the tumors. Chemotherapy uses powerful drugs that kill the cancer cells, but which also can affect healthy tissue. Most people with later stage small cell lung cancer are treated with chemotherapy only.

People with NSCLC are usually treated with surgery, chemotherapy, radiation therapy, or a combination of all three. The treatment choices are different for each stage. Some people with advanced cancer receive targeted therapy, a treatment that uses special drugs that identify and target the cancer cells in the lungs.

You may hear the phrase "palliative care" when treatment for lung cancer is discussed. It is a type of specialized medical care for people with serious illnesses with the goal of giving patients relief from the symptoms and pain. It can include drugs to treat nausea and anything else that helps you feel better and improves the quality of your life during treatment. Palliative care can be provided along with treatments aimed at curing the condition, since the goal is to keep the patient comfortable. Although palliative care is part of hospice care, it is not the same. It can be part of care for anyone at any stage of a disease or condition, whether the underlying problem is curable or not.

### **Can Lung Cancer Be Prevented?**

Lung cancer is one of the easiest cancers to prevent because the most common cause for it is smoking and exposure to secondhand smoke. The best way to prevent lung cancer is to stop smoking and stop being around someone else's smoke.

Even if you have smoked for a long time, quitting can reduce your chances of getting cancer. If you already have lung cancer, quitting makes your treatment work better and can help you live longer.

You should also protect yourself from cancer-causing agents that may be found at your workplace, such as asbestos, radon, vinyl chloride, arsenic, chromium, nickel, and soot and coal products. Have your home tested for radon.

Another way to help improve your health is to eat a healthy diet rich in fruits and vegetables and get some exercise every day. However, if you are a heavy smoker, avoid taking large doses of beta carotene supplements since these are linked to an increased risk of lung cancer.

### **Should I Call My Doctor?**

If you experience any of the following, call your doctor:

- ❖ A persistent cough
- ❖ Changes in a persistent cough
- ❖ Shortness of breath
- ❖ Wheezing
- ❖ Losing weight unintentionally

If any of the following occur, you should seek immediate medical attention:

- ❖ Coughing up a large amount of blood
- ❖ Sudden shortness of breath
- ❖ Sudden weakness
- ❖ Persistent chest pain

**For More Information**

For more information, refer to the following medical resources:

<http://www.nlm.nih.gov/medlineplus/lungcancer.html>

<http://www.cancer.gov/cancertopics/wyntk/lung>

<http://www.mayoclinic.com/health/lung-cancer/DS00038>

The content in this document is neither intended nor recommended as a substitute for seeking professional medical advice, diagnosis or treatment. It is recommended that you seek the advice of your physician or other qualified healthcare professional regarding any medical questions related to the topics contained within this document, your health or conditions.