

Lung Cancer

Lung cancer is a kind of cancer that starts as a growth of cells in the lungs. The lungs are two spongy organs in the chest that control breathing.

Lung cancer is the leading cause of cancer deaths worldwide.

People who smoke have the greatest risk of lung cancer. The risk of lung cancer increases with the length of time and number of cigarettes smoked. Quitting smoking, even after smoking for many years, significantly lowers the chances of developing lung cancer. Lung cancer also can happen in people who have never smoked.

Symptoms

Lung cancer typically doesn't cause symptoms early on. Symptoms of lung cancer usually happen when the disease is advanced.

Signs and symptoms of lung cancer that happen in and around the lungs may include:

- A new cough that doesn't go away
- Hoarseness
- Shortness of breath
- Chest Pain
- Wheezing
- Coughing up blood, even a small amount

Signs and symptoms that happen when lung cancer spreads to other parts of the body may include:

- Bone Pain
- Losing weight without trying
- Swelling in the face or neck
- Headache
- Loss of Appetite

When to See a Doctor

Make an appointment with your doctor or other healthcare professional if you have any symptoms that worry you.

If you smoke and haven't been able to quit, make an appointment. Your healthcare professional can recommend strategies for quitting smoking. These may include counseling, medicines and nicotine replacement products.

Causes

Lung cancer happens when cells in the lungs develop changes in their DNA. A cell's DNA holds the instructions that tell a cell what to do. In healthy cells, the DNA gives instructions to grow and multiply at a set rate. The instructions tell the cells to die at a set time. In cancer cells, the DNA changes give different instructions. The changes tell the cancer cells to make many more cells quickly. Cancer cells can keep living when healthy cells would die. This causes too many cells.

The cancer cells might form a mass called a tumor. The tumor can grow to invade and destroy healthy body tissue. In time, cancer cells can break away and spread to other parts of the body. When cancer spreads, it's called metastatic cancer.

Smoking causes most lung cancers. It can cause lung cancer in both people who smoke and in people exposed to secondhand smoke. But lung cancer also happens in people who never smoked or been exposed to secondhand smoke. In these people, there may be no clear cause of lung cancer.

How Smoking Causes Lung Cancer

Researchers believe smoking causes lung cancer by damaging the cells that line the lungs. Cigarette smoke is full of cancer-causing substances, called carcinogens. When you inhale cigarette smoke, the carcinogens cause changes in the lung tissue almost immediately.

At first your body may be able to repair this damage. But with each repeated exposure, healthy cells that line your lungs become more damaged. Over time, the damage causes cells to change and eventually cancer may develop.

Types of Lung Cancer

Lung cancer is divided into two major types based on the appearance of the cells under a microscope. Your healthcare professional makes treatment decisions based on which major type of lung cancer you have.

The two general types of lung cancer include:

- **Small cell lung cancer.** Small cell lung cancer usually only happens in people who have smoked heavily for years. Small cell lung cancer is less common than non-small cell lung cancer.
- **Non-small cell lung cancer.** Non-small cell lung cancer is a category that includes several types of lung cancers. Non-small cell lung cancers include squamous cell carcinoma, adenocarcinoma and large cell carcinoma.

Risk Factors

A number of factors may increase the risk of lung cancer. Some risk factors can be controlled, for instance, by quitting smoking. Other factors can't be controlled, such as your family history.

Risk factors for lung cancer include:

- Smoking
- Previous radiation therapy
- Exposure to cancer-causing substances
- Exposure to secondhand smoke
- Exposure to radon gas
- Family history of lung cancer

Complications

Lung cancer can cause complications, such as:

- Shortness of breath
- Pain
- Cancer that spreads to other parts of the body
- Coughing up Blood
- Fluid in the chest

Prevention

There's no sure way to prevent lung cancer, but you can reduce your risk if you:

- Don't smoke
- Avoid secondhand smoke
- Avoid carcinogens at work
- Exercise most days of the week
- Stop Smoking
- Test your home for radon
- Eat a diet full of fruits and vegetables

Diagnosis

Lung cancer diagnosis often starts with an imaging test to look at the lungs. If you have symptoms that worry you, a healthcare professional might start with an X-ray. If you smoke or used to smoke, you might have an imaging test to look for signs of lung cancer before you develop symptoms.

Testing healthy people for lung cancer

People with an increased risk of lung cancer may consider yearly lung cancer screening using low-dose CT scans. Lung cancer screening is generally offered to people 50 and older who smoked heavily for many years. Screening also is offered to people who have quit smoking in the past 15 years.

Discuss your lung cancer risk with your healthcare professional. Together you can decide whether lung cancer screening is right for you.

Tests to diagnose lung cancer

If your healthcare professional thinks you may have lung cancer, a number of tests can be used to look for cancerous cells and to rule out other conditions.

Tests may include:

- Imaging tests
- Sputum cytology
- Biopsy

Your healthcare team can perform a lung cancer biopsy several ways. One way is bronchoscopy. During bronchoscopy, a healthcare professional passes a lighted tube with a camera down your throat into your lungs to examine the area. Special tools can be passed through the tube to collect a sample of tissue.

Mediastinoscopy also is an option. During mediastinoscopy, an incision is made at the base of your neck. Surgical tools are then inserted behind your breastbone to take tissue samples from lymph nodes.

Another option is a needle biopsy. In a needle biopsy, your healthcare professional uses X-ray or CT images to guide a needle through the skin on your chest. The needle goes into the lung tissue to collect cells that could be cancerous.

A biopsy sample also may be taken from lymph nodes or other areas where cancer has spread.

Your cancer cells will be carefully tested in a lab to find out what type of lung cancer you have. The results can help determine the likely outcome of your cancer, called the prognosis, and guide your treatment.

Tests to determine the extent of the cancer

If you're diagnosed with lung cancer, you may have other tests to see if the cancer has spread. These tests help your healthcare team find out the extent of your cancer, also called the stage. Cancer staging tests often involve imaging tests.

Imaging tests may include MRI, CT, bone scans and PET scan. Not every test is right for every person. Talk with your healthcare professional about which procedures will work for you.

The stages of lung cancer range from 1 to 4. The lowest number means that the cancer is small and only in the lung. As the cancer grows larger or spreads outside of the lungs, the numbers get higher. A stage 4 lung cancer has spread to other areas of the body.

Treatment

Treatment for lung cancer usually begins with surgery to remove the cancer. If the cancer is very large or has spread to other parts of the body, surgery may not be possible. Treatment might start with medicine and radiation instead. Your healthcare team considers many factors when creating a treatment plan. These factors may include your overall health, the type and stage of your cancer, and your preferences.

Some people with lung cancer choose not to have treatment. For instance, you may feel that the side effects of treatment will outweigh the potential benefits. When that's the case, your healthcare professional may suggest comfort care to treat only the symptoms the cancer is causing.

- Surgery
- Chemotherapy
- Immunotherapy
- Radiation therapy
- Stereotactic body radiotherapy
- Palliative care

For more information visit

<https://www.cdc.gov/lung-cancer/index.html>

<https://www.mayoclinic.org/diseases-conditions/lung-cancer/symptoms-causes/syc-20374620>

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