Cancer

Lung Cancer

What is lung cancer?

Cancer develops when cells grow out of control. Lung cancer begins in the lungs and can spread to the lymph nodes and elsewhere in the body, a process known as metastasis. Lung cancer is often diagnosed late and is difficult to treat.

There are three main types of lung cancer: non-small-cell lung cancer (NSCLC), small-cell lung cancer (SCLC) and lung carcinoid tumor. About 80 to 85 percent of lung cancers are NSCLC, which can be further broken down into adenocarcinomas, squamous cell carcinomas and large cell (undifferentiated) carcinomas.

Who gets lung cancer?

An estimated 222,500 people will be diagnosed with lung cancer in 2017 and more than 155,800 people will die of the disease, according to the National Cancer Institute. It is the leading cause of cancer death in the United States for both men and women, accounting for about a quarter of all cancer deaths.

Lung cancer mainly affects older people, and two thirds of people diagnosed with the disease are age 65 or older. Men are at higher risk of lung cancer than women, but the gap is closing, according to the American Cancer Society.

What are the risk factors for lung cancer?

A variety of factors increase the likelihood of developing lung cancer, such as:

- Tobacco smoke: Smoking cigarettes is the leading risk factor for lung cancer. Smoking cigars, pipes, low-tar cigarettes and menthol cigarettes can increase a lung cancer risk as much as regular cigarettes. In addition, inhaling secondhand smoke from someone else's cigarette can also cause lung cancer. According to the Centers for Disease Control and Prevention, 7,300 people who never smoked die from lung cancer due to secondhand smoke each year.
- Personal or family history: Lung cancer survivors are at risk of developing another lung cancer, especially if they smoke. A person's risk of lung cancer is also higher if a relative had the

disease.

- Exposure to radon: Exposure to radon gas, which forms naturally from the decay of radioactive elements in rocks and soil and can get trapped in houses and buildings, can cause lung cancer.
- Exposure to other substances: Asbestos, arsenic, diesel exhaust and other cancer-causing agents found at workplaces increase lung cancer risk. Some researchers estimate that air pollution may be responsible for about 5 percent of all deaths from lung cancer worldwide.
- Radiation therapy to the chest: People who have had radiation therapy for other types of cancers are at higher risk for lung cancer.

What are the symptoms of lung cancer?

About one fourth of all people with lung cancer have no symptoms when the cancer is diagnosed. Usually, signs and symptoms don't show up until the disease has reached a more advanced stage. These may include:

- A new cough that doesn't go away
- Changes in a chronic cough or "smoker's cough"
- Coughing up blood
- Recurring infections such as bronchitis or pneumonia
- Shortness of breath
- Chest pain
- Wheezing
- Hoarseness
- Fatigue or weakness
- Loss of appetite or unexplained weight loss

How is lung cancer diagnosed?

The American Cancer Society recommends lung cancer screening using computed tomography (CT) scans for individuals 55 to 74 years old who have at least a 30-year history of smoking a pack a day and for those who currently smoke or quit within the past 15 years.

A chest X-ray is often the first test performed on a person with symptoms of lung cancer. CT scans use X-rays to make detailed cross-sectional images that make lung tumors more visible. If a mass or nodule is found, a biopsy may be done to determine if it is malignant. Another test is sputum cytology, which examines a sample of mucus to see whether it contains cancer cells.

NSCLC is classified according to clinical stage (based on results from physical exams, biopsies and imaging tests) and pathological stage (based on what doctors find as a result of surgery).

How is lung cancer treated?

Treatment for lung cancer depends on how advanced the cancer is when it is detected, including how many tumors there are and whether the cancer has spread to nearby lymph nodes or other parts of the body.

Surgery: Some localized lung tumors can be surgically removed. Surgeons may remove and entire lung (pneumonectomy), a lobe of a lung (lobectomy) or a wedge-shaped section of lung tissue.

Radiofrequency ablation: Small lung tumors may be destroyed by heating them with radio waves.

Radiation therapy: Radiation may be used to shrink tumors that cannot be surgically removed, which can help relieve pain and other symptoms, or to kill any cancer cells that remain after surgery. It is often used in conjunction with other forms of treatment.

Chemotherapy: Traditional chemotherapy works by killing fast-growing cells, including cancer cells. It can also destroy rapidly dividing healthy cells, such as those in the gut, bone marrow or hair follicles, leading to side effects including nausea, low blood cell counts and hair loss.

Targeted therapy: Targeted drugs work against cancers with specific characteristics. For example, they may interfere with signaling pathways that regulate cell growth. Targeted treatment is often better tolerated than chemotherapy, but cancer may develop resistance over time.

Immunotherapy: The newest type of treatment helps the immune system fight cancer. For example, some tumors can turn off immune responses against them, and drugs known as checkpoint inhibitors can restore T cells' ability to recognize and destroy cancer cells. The risk with this type of treatment is that it can trigger excessive immune responses against healthy tissue as well. Current immunotherapy drugs work for only a subset of patients, and it is hard to predict who will benefit.

For more information about lung cancer, please visit our sister site Cancer Health.

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