## What Is Lung tumor ?

Lung tumer is a type of cancer that starts in the lungs. Cancer starts when cells in the body begin to grow out of control.

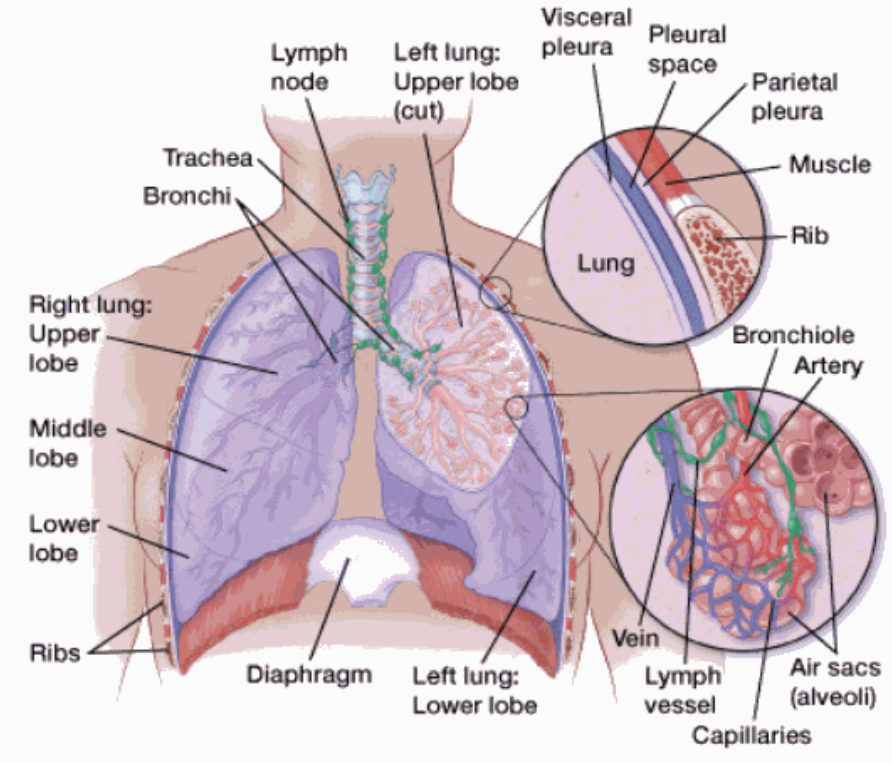
## Normal structure and function of the lungs

Your lungs are 2 sponge-like organs in your chest. Your right lung has 3 sections, called lobes. Your left lung has 2 lobes. The left lung is smaller because the heart takes up more room on that side of the body.

When you breathe in, air enters through your mouth or nose and goes into your lungs through the trachea (windpipe). The trachea divides into tubes called bronchi, which enter the lungs and divide into smaller bronchi. These divide to form smaller branches called bronchioles. At the end of the bronchioles are tiny air sacs known as alveoli.

The alveoli absorb oxygen into your blood from the inhaled air and remove carbon dioxide from the blood when you exhale. Taking in oxygen and getting rid of carbon dioxide are your lungs' main functions.

Lung cancers typically start in the cells lining the bronchi and parts of the lung such as the bronchioles or alveoli.



A thin lining layer called the pleura surrounds the lungs. The pleura protects your lungs and helps them slide back and forth against the chest wall as they expand and contract during breathing.

Below the lungs, a thin, dome-shaped muscle called the diaphragm separates the chest from the abdomen. When you breathe, the diaphragm moves up and down, forcing air in and out of the lungs.

# Types of lung cancer

**There are 2 main types of lung cancer.**

### 1- Non-small cell lung cancer (NSCLC)

About 80% to 85% of lung cancers are NSCLC. The main subtypes of NSCLC are adenocarcinoma, squamous cell carcinoma, and large cell carcinoma. These subtypes, which start from different types of lung cells, are grouped together as NSCLC because their treatment and prognoses (outlook) are often similar.

Adenocarcinoma: Adenocarcinomas start in the cells that would normally secrete substances such as mucus.

This type of lung cancer occurs mainly in people who smoke or used to smoke, but it is also the most common type of lung cancer seen in people who don't smoke. It is more common in women than in men, and it is more likely to occur in younger people than other types of lung cancer.

Adenocarcinoma is usually found in the outer parts of the lung and is more likely to be found before it has spread.

People with a type of adenocarcinoma called adenocarcinoma in situ (previously called bronchioloalveolar carcinoma) tend to have a better outlook than those with other types of lung cancer.

Squamous cell carcinoma: Squamous cell carcinomas start in squamous cells, which are flat cells that line the inside of the airways in the lungs. They are often linked to a history of smoking and tend to be found in the central part of the lungs, near a main airway (bronchus).

Large cell (undifferentiated) carcinoma: Large cell carcinoma can appear in any part of the lung. It tends to grow and spread quickly, which can make it harder to treat.

A subtype of large cell carcinoma, known as large cell neuroendocrine carcinoma (LCNEC), is a fast-growing cancer that is very similar to small cell lung cancer.

Other subtypes: A few other subtypes of NSCLC, such as adenosquamous carcinoma and sarcomatoid carcinoma, are much less common.

### 2- Small cell lung cancer (SCLC)

About 10% to 15% of all lung cancers are SCLC. It is sometimes called oat cell cancer.

This type of lung cancer tends to grow and spread faster than NSCLC. In most people with SCLC, the cancer has already spread beyond the lungs at the time it is diagnosed. Since this cancer grows quickly, it tends to respond well to chemotherapy and radiation therapy. Unfortunately, for most people the cancer will return at some point.

## Other types of lung tumors

Along with the main types of lung cancer, other tumors can occur in the lungs.

Lung carcinoid tumors: Carcinoid tumors of the lung account for fewer than 5% of lung tumors. Most of these grow slowly.

adenoid cystic carcinomas, lymphomas, and sarcomas, as well as benign lung tumors such as hamartomas are rare.

### Cancers that spread to the lungs:

Cancers that start in other organs (such as the breast, pancreas, kidney, or skin) can sometimes spread (metastasize) to the lungs, but these are not lung cancers. For example, cancer that starts in the breast and spreads to the lungs is still breast cancer, not lung cancer. Treatment for metastatic cancer to the lungs is based on where it started (the primary cancer site).

### What are the stages of lung cancer?

Cancer is usually staged based on the size of the initial tumor, how far or deep into the surrounding tissue it goes, and whether it's spread to lymph nodes or other organs. Each type of cancer has its own guidelines for staging.

The general staging for lung cancer is:

- **Stage 0 (in-situ):** Cancer is in the top lining of the lung or bronchus. It hasn't spread to other parts of the lung or outside of the lung.

- **Stage I:** Cancer hasn't spread outside the lung.
- **Stage II:** Cancer is larger than Stage I, has spread to lymph nodes inside the lung, or there's more than one tumor in the same lobe of the lung.
- **Stage III:** Cancer is larger than Stage II, has spread to nearby lymph nodes or structures or there's more than one tumor in a different lobe of the same lung.
- **Stage IV:** Cancer has spread to the other lung, the fluid around the lung, the fluid around the heart or distant organs.

**Symptoms and Causes**

Most lung cancer symptoms look similar to other, less serious illnesses. Many people don't have symptoms until the disease is advanced, but some people have symptoms in the early stages. For those who do experience symptoms, it may only be one or a few of these:

- A cough that doesn't go away or gets worse over time.
- Trouble breathing or shortness of breath (dyspnea).
- Chest pain or discomfort.
- Wheezing.
- Coughing up blood (hemoptysis).
- Hoarseness.
- Loss of appetite.
- Unexplained weight loss.
- Unexplained fatigue (tiredness).
- Shoulder pain.
- Swelling in the face, neck, arms or upper chest (superior vena cava syndrome).
- Small pupil and drooping eyelid in one eye with little or no sweating on that side of your face (Horner's syndrome).
- **Diagnosis and Tests**
- Diagnosing lung cancer can be a multi-step process. Your first visit to a healthcare provider will usually involve them listening to your symptoms, asking you about your health history and performing a physical exam (like listening to your heart and lungs). Since lung cancer symptoms are similar to

many other, more common illnesses, you provider may start by getting blood tests and a chest X-ray.

- If your provider suspects you could have lung cancer, your next steps in diagnosis would usually involve more imaging tests, like a CT scan, and then a biopsy. Other tests include using a PET/CT scan to see if cancer has spread, and tests of cancerous tissue from a biopsy to help determine the best kind of treatment.

## Treatment

Before the appropriate treatment can be defined a careful staging of the disease must be made. The principles of therapy of NSCLC and SCLC are different. SCLC is very seldom surgically resectable, usually widespread at presentation and is generally both more chemosensitive and radiosensitive.
NSCLC: Treatment is based on the stage of the disease at presentation (which may be assessed by thoracic CT, PET scan, brain MRI). Stage I-II are usually resected (adjuvant chemotherapy can be discussed with the patient) and locally advanced stages (III) are treated by combined modality treatments (neoadjuvant chemotherapy, resection if stage IIIA or radiotherapy). If overt distant metastases are detected, therapy is palliative and chemotherapy has been shown to improve median survival and quality of life.

SCLC: If the tumour is confined to one hemithorax (limited disease), a combined modality therapy (chemo- and radiotherapy) is indicated: in more advanced disease (overt distant metastases in brain, liver, bones, surrenal glands or other organs) chemotherapy will be palliative though an excellent remission might be obtained in more than half of the patients.