**Lung Cancer**

also known as **lung carcinoma**, since about 98–99% of all lung cancers are carcinomas, is a malignant [lung tumor](https://en.wikipedia.org/wiki/Lung_tumor) characterized by uncontrolled [cell growth](https://en.wikipedia.org/wiki/Cell_growth) in [tissues](https://en.wikipedia.org/wiki/Tissue_%28biology%29) of the [lung](https://en.wikipedia.org/wiki/Lung). Lung carcinomas derive from transformed, malignant cells that originate as epithelial cells, or from tissues composed of epithelial cells, In time, this uncontrolled growth can spread beyond the lung – either by direct extension, by entering the lymphatic circulation, or via the blood-borne spread (hematogenous) – the process called metastasis – into nearby tissue or other, more distant parts of the body.

**Types**

Most [cancers](https://en.wikipedia.org/wiki/Cancer) that start in the lung, known as primary lung cancers, are [carcinomas](https://en.wikipedia.org/wiki/Carcinomas). The two main types are



[**Small-Cell Lung Carcinoma**](https://en.wikipedia.org/wiki/Small-cell_lung_carcinoma)(SCLC)

In SCLC, the cells contain dense neuro-secretory granules ([vesicles](https://en.wikipedia.org/wiki/Vesicle_%28biology%29) containing [neuroendocrine](https://en.wikipedia.org/wiki/Neuroendocrine) [hormones](https://en.wikipedia.org/wiki/Hormone)), which give this tumor an endocrine or [paraneoplastic syndrome](https://en.wikipedia.org/wiki/Paraneoplastic_syndrome%22%20%5Co%20%22Paraneoplastic%20syndrome) association. Most cases arise in the larger airways (primary and secondary [bronchi](https://en.wikipedia.org/wiki/Bronchus)). About 60–70% have extensive disease (which cannot be targeted within a single radiation therapy field) at presentation.

[**Non-Small-Cell Lung Carcinoma**](https://en.wikipedia.org/wiki/Non-small-cell_lung_carcinoma) (NSCLC).

The three main subtypes of NSCLC are [adenocarcinoma](https://en.wikipedia.org/wiki/Adenocarcinoma_of_the_lung), [squamous-cell carcinoma](https://en.wikipedia.org/wiki/Squamous-cell_lung_carcinoma), and [large-cell carcinoma](https://en.wikipedia.org/wiki/Large-cell_lung_carcinoma). 40% of lung cancers are adenocarcinomas, which usually come from peripheral lung tissue

**Symptoms**

The most common [symptoms](https://en.wikipedia.org/wiki/Symptom) are coughing (including [coughing up blood](https://en.wikipedia.org/wiki/Hemoptysis)), weight loss, shortness of breath, and [chest pains](https://en.wikipedia.org/wiki/Chest_pain).

**Causes**

The vast majority (85%) of cases of lung cancer are due to long-term [tobacco smoking](https://en.wikipedia.org/wiki/Tobacco_smoking). About 10–15% of cases occur in people who have never smoked. These cases are often caused by a combination of [genetic factors](https://en.wikipedia.org/wiki/Genetics) and exposure to [radon](https://en.wikipedia.org/wiki/Radon) gas, [asbestos](https://en.wikipedia.org/wiki/Asbestos), [second-hand smoke](https://en.wikipedia.org/wiki/Passive_smoking), or other forms of [air pollution](https://en.wikipedia.org/wiki/Air_pollution).

Tobacco smoking is by far the main contributor to lung cancer. Cigarette smoke contains at least 73 known carcinogens

**Metastasis**

The lungs are a common place for the spread of tumors from other parts of the body. These tumors are called metastases or secondary tumors. The most common appearance on chest x-ray is the presence of multiple nodules in the lower lobes. Primary lung cancers also most commonly metastasize to the brain, bones, liver, and [adrenal glands](https://en.wikipedia.org/wiki/Adrenal_gland).  [Immunostaining](https://en.wikipedia.org/wiki/Immunostaining) of a biopsy usually helps determine the original source.

**Imaging**

If a person develop symptoms that suggests lung cancer  [chest radiograph](https://en.wikipedia.org/wiki/Chest_radiograph) (x-ray) is the first investigation. The x-ray may reveal an

* 1. Normal
	2. obvious mass
	3. widening of the [mediastinum](https://en.wikipedia.org/wiki/Mediastinum) (suggestive of spread to [lymph nodes](https://en.wikipedia.org/wiki/Lymph_node) there),
	4. [atelectasis](https://en.wikipedia.org/wiki/Atelectasis) (lung collapse),
	5. consolidation ([pneumonia](https://en.wikipedia.org/wiki/Pneumonia))
	6. [pleural effusion](https://en.wikipedia.org/wiki/Pleural_effusion).

[Computed tomography (CT) imaging](https://en.wikipedia.org/wiki/X-ray_computed_tomography) of the chest is often used for diagnosis and may reveal a spiculated mass which is highly suggestive of lung cancer. CT imaging is also used to provide more information about the type and extent of disease. [Bronchoscopic](https://en.wikipedia.org/wiki/Bronchoscopy%22%20%5Co%20%22Bronchoscopy) or CT-guided [biopsy](https://en.wikipedia.org/wiki/Biopsy) is often used to sample the tumor for [histopathology](https://en.wikipedia.org/wiki/Histopathology).

If there is an intermediate risk of malignancy, further imaging with positron emission tomography (PET scan) is appropriate (if available). It can be done simultaneously as a CT scan in the form of PET-CT.

Staging

For both NSCLC and SCLC, the two general types of staging evaluations are clinical staging and surgical staging. Clinical staging is performed before definitive surgery. It is based on the results of imaging studies (such as CT scans and [PET scans](https://en.wikipedia.org/wiki/Positron_emission_tomography)) and biopsy results. Surgical staging is evaluated either during or after the operation. It is based on the combined results of surgical and clinical findings, including surgical sampling of thoracic lymph nodes

Treatment

treatment for lung cancer depends on the cancer's specific cell type, how far it has [spread](https://en.wikipedia.org/wiki/Cancer_staging), and the person's [performance status](https://en.wikipedia.org/wiki/Performance_status). Common treatments include [palliative care](https://en.wikipedia.org/wiki/Palliative_care), [surgery](https://en.wikipedia.org/wiki/Surgery), [chemotherapy](https://en.wikipedia.org/wiki/Chemotherapy), and [radiation therapy](https://en.wikipedia.org/wiki/Radiation_therapy)