

This document is a plain-language summary based on BC Cancer patient education materials (September 2021). It is meant to help you understand lung cancer and does not replace medical advice from your health-care team.

1. What Is Lung Cancer?

Lung cancer is cancer that starts in the lungs. Your lungs sit in your chest and help you breathe by bringing oxygen into your body and removing carbon dioxide. The right lung has three sections (lobes), and the left lung has two lobes.

Sometimes cancer spreads to the lungs from another part of the body (for example, from the breast or colon). This is **not** lung cancer—it is called *secondary* or *metastatic* cancer to the lung. This document focuses on **primary lung cancer**, meaning cancer that begins in the lungs.

Lung cancer is common and serious. It is the leading cause of cancer-related death, largely because it is often diagnosed at a later stage when symptoms appear.

2. Signs and Symptoms

Early lung cancer

Many people with early-stage lung cancer have **no symptoms at all**. This is why lung cancer is often found later, once it has already grown or spread.

Possible symptoms of more advanced lung cancer

Symptoms can vary from person to person and may include: - A new cough, or a cough that is getting worse - Coughing up blood (even small amounts) - Shortness of breath or reduced exercise tolerance - Wheezing not related to asthma or infection - Hoarse voice - Repeated chest infections (pneumonia or bronchitis) - Chest pain - Difficulty swallowing - Unexplained weight loss, fatigue, or weakness - Fever - Swollen lymph nodes in the neck

Lung cancer can also spread to other parts of the body such as the **brain, bones, liver, or lymph nodes**, which may cause symptoms like headaches, bone pain, or neurological changes.

If you notice symptoms that concern you, it is important to speak with your family doctor or nurse practitioner.



3. How Lung Cancer Is Diagnosed

Diagnosing lung cancer usually involves several steps.

Imaging tests

Imaging helps doctors see a tumour and check whether cancer has spread. These may include:

- Chest X-ray
- CT (computed tomography) scan
- MRI (magnetic resonance imaging)
- PET (positron emission tomography) scan

Biopsy (tissue sampling)

To confirm lung cancer, a specialist doctor called a **pathologist** must examine lung cells under a microscope. Samples may be collected in different ways: - **Sputum sample:** mucus that you cough up - **Bronchoscopy:** a thin tube with a camera is passed through your mouth or nose into your lungs; small tissue samples can be taken - **Needle biopsy:** a needle is guided through the chest wall into the tumour using CT or X-ray imaging - **Thoracentesis:** fluid is removed from around the lung using a needle - **Mediastinoscopy or mediastinotomy:** procedures done under anesthesia to sample lymph nodes in the chest

Not everyone needs every test. Your health-care team will recommend what is most appropriate for you.

4. Types of Lung Cancer

There are two main types of lung cancer:

Non-small cell lung cancer (NSCLC)

- Accounts for about **80%** of lung cancers
- Includes several subtypes:
 - **Adenocarcinoma:** the most common type, especially in women and non-smokers



- **Squamous cell carcinoma:** often linked to smoking
- **Large cell carcinoma:** less common

Small cell lung cancer (SCLC)

- Accounts for about **10–15%** of lung cancers
- Grows and spreads more quickly than NSCLC
- Often has already spread by the time it is diagnosed
- Divided into:
 - **Limited stage:** cancer is confined to one side of the chest
 - **Extensive stage:** cancer has spread to the other lung or other parts of the body

Knowing the type of lung cancer helps guide treatment decisions.

5. Staging: How Advanced Is the Cancer?

Staging describes how large the cancer is and whether it has spread.

Non-small cell lung cancer stages

- **Stage 0:** cancer cells are only in the lining of the airway
- **Stage I:** small tumour confined to the lung
- **Stage II:** larger tumour and/or spread to nearby lymph nodes
- **Stage III:** cancer has spread to lymph nodes in the chest or nearby structures
- **Stage IV:** cancer has spread to distant organs (metastatic cancer)

Small cell lung cancer stages

- **Limited stage:** cancer is on one side of the chest
- **Extensive stage:** cancer has spread more widely

The stage helps your care team choose treatment options and discuss prognosis.

6. Treatment Options

Treatment is individualized. Your plan depends on the type and stage of cancer, your overall health, and your preferences.



Surgery

- May cure early-stage lung cancer that has not spread
- Types of surgery include:
 - Removing part of a lung lobe
 - Removing an entire lobe (lobectomy)
 - Removing an entire lung (pneumonectomy)

Radiation therapy

- Uses high-energy X-rays to kill cancer cells
- May be used:
 - When surgery is not possible
 - After surgery in some cases
 - Together with chemotherapy
 - To relieve symptoms such as pain or breathing difficulty

Systemic therapy (chemotherapy and related treatments)

- Commonly used for small cell lung cancer
- May be used before or after surgery in NSCLC
- Can shrink tumours, relieve symptoms, and help people live longer
- Usually cannot cure cancer that has spread widely

Photodynamic therapy

- Uses a light-sensitive drug and laser light to destroy cancer cells
- Rarely used due to side effects and lifestyle limitations after treatment

7. Follow-Up After Treatment

After treatment, regular follow-up visits and tests are important to:

- Check for cancer recurrence
- Manage side effects
- Support recovery and long-term health

Follow-up may eventually be shared between your cancer specialist and your family doctor.



8. Causes and Risk Factors

The biggest risk factor for lung cancer is **smoking**. - About **85–90%** of people with lung cancer have smoked or been exposed to second-hand smoke - Tobacco smoke contains thousands of chemicals, many of which cause cancer

Other risk factors include:

- Long-term exposure to radon gas
 - Exposure to asbestos, heavy metals, or radiation
 - Chronic lung diseases such as emphysema or chronic bronchitis
 - Older age (most commonly between 55–70 years)
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9. Can Lung Cancer Be Prevented?

You can lower your risk by:

- **Not smoking** or quitting smoking at any age
 - Avoiding second-hand smoke
 - Testing your home for **radon** and reducing high levels
 - Following workplace safety rules if exposed to hazardous materials
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10. Screening for Lung Cancer

Low-dose CT scans can detect lung cancer early in people at high risk (such as long-term smokers). In Canada, screening recommendations exist, but organized programs vary by province.

Talk to your health-care provider to see whether lung cancer screening is appropriate for you.

11. Finding Support and More Information

Living with lung cancer can be overwhelming. Support is available:



Lung Cancer Information for Patients and Families

- Your cancer care team
- Family doctors and nurse practitioners
- Cancer support programs and counseling services
- Reliable patient education resources

Never hesitate to ask questions or seek help—your health-care team is there to support you.