



Understanding Lung Cancer

A guide for people with cancer,
their families and friends

Cancer
information

For information & support, call

13 11 20



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Note to reader

Always consult your doctor about matters that affect your health. This booklet is intended as a general introduction to the topic and should not be seen as a substitute for medical, legal or financial advice. You should obtain appropriate independent professional advice relevant to your specific situation and you may wish to discuss issues raised in this book with them.

All care is taken to ensure that the information in this booklet is accurate at the time of publication. Please note that information on cancer, including the diagnosis, treatment and prevention of cancer, is constantly being updated and revised by medical professionals and the research community. Cancer Council Australia and its members exclude all liability for any injury, loss or damage incurred by use of or reliance on the information provided in this booklet.

Cancer Council

Cancer Council is Australia's peak non-government cancer control organisation. Through the eight state and territory Cancer Councils, we provide a broad range of programs and services to help improve the quality of life of people living with cancer, their families and friends. Cancer Councils also invest heavily in research and prevention. To make a donation and help us beat cancer, visit www.cancer.org.au or call your local Cancer Council.



Cancer Council Australia

Level 14, 477 Pitt Street, Sydney NSW 2000

Telephone 13 11 20 **Facsimile** 02 8063 4101

Email info@cancer.org.au **Website** www.cancer.org.au

ABN 91 130 793 725

Introduction

This booklet has been prepared to help you understand more about the most common types of lung cancer.

Many people feel shocked and upset when told they have lung cancer. We hope this booklet will help you, your family and friends understand how lung cancer is diagnosed and treated. We also include information about support services.

We cannot give advice about the best treatment for you. You need to discuss this with your doctors. However, we hope this information will answer some of your questions and help you think about other questions to ask your treatment team.

This booklet does not need to be read from cover to cover – just read the parts that are useful to you. Some medical terms that may be unfamiliar are explained in the glossary. You may also like to pass this booklet to your family and friends for their information.

How this booklet was developed

This booklet was developed with help from a range of health professionals and people affected by lung cancer. It is based on Cancer Council Australia's Clinical practice guidelines for the treatment of lung cancer.

If you or your family have any questions, call Cancer Council **13 11 20**. We can send you more information and connect you with support services in your area. Turn to the last page of this book for more details.



**Cancer
Council
13 11 20**

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What is cancer?

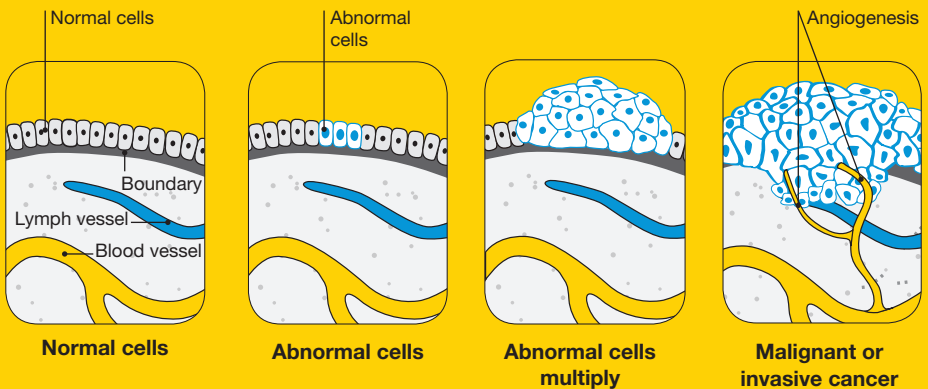
Cancer is a disease of the cells, which are the body's basic building blocks. The body constantly makes new cells to help us grow, replace worn-out tissue and heal injuries. Normally, cells multiply and die in an orderly way.

Sometimes cells don't grow, divide and die in the usual way. This may cause blood or lymph fluid in the body to become abnormal, or form a lump called a tumour. A tumour can be benign or malignant.

Benign tumour – Cells are confined to one area and are not able to spread to other parts of the body. This is not cancer.

Malignant tumour – This is made up of cancerous cells, which have the ability to spread by travelling through the bloodstream or lymphatic system (lymph fluid).

How cancer starts



The cancer that first develops in a tissue or organ is called the primary cancer. A malignant tumour is usually named after the organ or type of cell affected.

A malignant tumour that has not spread to other parts of the body is called localised cancer. A tumour may invade deeper into surrounding tissue and can grow its own blood vessels (angiogenesis).

If cancerous cells grow and form another tumour at a new site, it is called a secondary cancer or metastasis. A metastasis keeps the name of the original cancer. For example, lung cancer that has spread to the bones is called metastatic lung cancer, even though the person may be experiencing symptoms caused by problems in the bones.

How cancer spreads

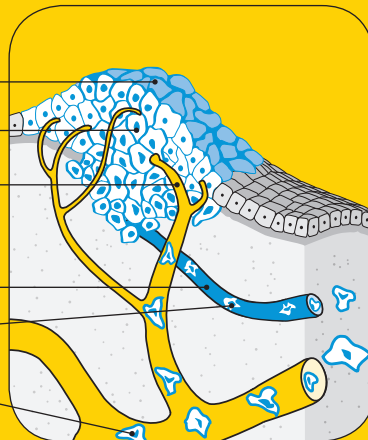
Primary cancer

Local invasion

Angiogenesis –
tumours grow their
own blood vessels

Lymph vessel

Metastasis –
cells invade other
parts of the body via
blood vessels and
lymph vessels





The lungs

The lungs are the main organs for breathing, and make up part of what is called the respiratory system. The respiratory system also includes the nose, mouth, windpipe (trachea) and airways to each lung. The airways to each lung consist of large airways (bronchi) and small airways (bronchioles).

When you breathe in (inhale), air goes into the nose or mouth, down the trachea and into the bronchi and bronchioles. At the end of the bronchioles, tiny air sacs called alveoli, pass oxygen into the blood and collect the waste gas (carbon dioxide). Carbon dioxide is released back into the atmosphere – and removed from the body – as you breathe out (exhale).

The lungs look like two large, spongy cones. Each lung is made up of sections called lobes – the left lung has two lobes and the right lung has three. The lungs rest on the diaphragm, which is a wide, thin muscle that helps with breathing.

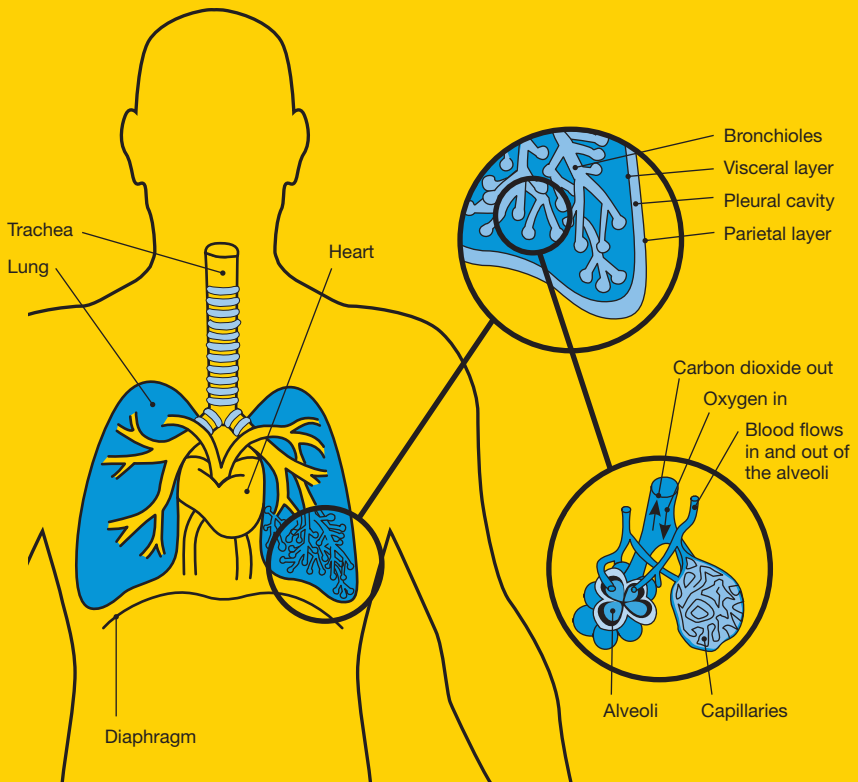
A number of structures lie in the space between the lungs (the mediastinum), including:

- the heart and large blood vessels
- the windpipe (trachea), the tube that carries air into lungs
- the oesophagus (the tube that carries food from the mouth to the stomach)
- lymph nodes that collect lymph fluid and foreign matter from the lungs.

The lungs are covered by two layers of a thin sheet of tissue called the pleura, which is about as thick as plastic cling wrap. Its inner

layer (the visceral layer) is attached to the lungs and its outer layer (the parietal layer) lines the chest wall and diaphragm. Between the two layers is the pleural cavity (also called pleural space), which normally contains a small volume of fluid. This fluid allows the two layers of pleura to slide against each other so your lungs move smoothly against the chest wall as you breathe.

The respiratory system





Key questions

Q: What is lung cancer?

A: Lung cancer is a malignant tumour in the tissue of one or both of the lungs.

A primary cancer starts in the lungs, while a secondary or metastatic cancer starts somewhere else in the body and spreads to the lungs.

Q: What are the different types?

A: There are several types of lung cancer, which are classified according to the type of cells affected. Cancers are named for the way the cells appear when viewed under a microscope.

Non-small cell lung cancer (NSCLC) – Makes up over 60% of lung cancers. NSCLC is classified as:

- squamous cell carcinoma (it mainly affects the cells that line the tubes into the lungs (bronchi))
- adenocarcinoma (affecting smaller airways)
- large cell carcinoma (large round cells under the microscope).

Other less common subtypes also exist.

Small cell lung cancer (SCLC) – Makes up about 12% of lung cancers. SCLC tends to start in the middle of the lungs, and it usually spreads more quickly than NSCLC. Types include:

- small cell carcinoma
- mixed small cell/large cell carcinoma.

Less common lung cancers – Other less common cancers can form in the thoracic (or chest) area. These are known as thoracic cancers and include thymomas, mediastinal tumours and chest wall tumours.

Mesothelioma – A rare type of cancer that affects the covering of the lung (the pleura). It is almost always caused by exposure to asbestos. It is very different to lung cancer. Call Cancer Council 13 11 20 for information about mesothelioma.

Q: How common is lung cancer?

A: About 11,270 people (59% males, 41% females) were diagnosed with lung cancer in Australia in 2012. It is the fifth most common cancer in Australia and is most commonly diagnosed in people aged 60 years and older.

Q: What are the risk factors?

A: While the causes of lung cancer are not fully understood, there are a number of risk factors associated with developing the disease. These factors include:

Age – Lung cancer is most commonly diagnosed in people aged 60 years and older.

Family history – Having family members who have been diagnosed with lung cancer increases your risk.

Personal history – The risk of developing lung cancer is increased if you have been previously diagnosed with lung diseases such as lung fibrosis, chronic bronchitis, emphysema, and pulmonary tuberculosis.

Tobacco smoking – About one in 10 smokers develop lung cancer. Studies from a number of countries suggest that a life-long smoker has between a 10 and 20% risk of developing lung cancer. However, compared with non-smokers, smokers are more than 10 times more likely to develop lung cancer. In Australia about 90% of lung cancer cases in males, and 65% in females, are estimated to be a result of tobacco smoking.

The risk of lung cancer among smokers is strongly related to the length of time and the number of cigarettes a person has smoked.

Passive smoking – Breathing in someone else's tobacco smoke (passive or secondhand smoking) can cause lung cancer.

Non-smokers who have been frequently exposed to secondhand smoke are 20–30% more likely to develop lung cancer than non-smokers who have not been exposed. People who have never smoked and have not been around secondhand smoke have about a 0.5% risk of developing lung cancer.

Exposure to asbestos – Although the use of asbestos has been banned nationally since 2003, it may still be in some older buildings. People who are exposed to asbestos have a greater risk of developing cancer. Some people are exposed to asbestos at work or during home renovations. People who have been exposed to asbestos and are, or have been, a smoker are at even greater risk.

Exposure to other elements – Contact with the processing of steel, nickel, chrome and coal gas may be a risk factor. Exposure to radiation and other air pollution, such as diesel fumes, also increases the risk of lung cancer.

If you are concerned about your risk factors, talk to your doctor.

If you are a smoker

If you need help quitting, call Quitline on **13 78 48**.

Smoking is addictive and this is the main reason people continue to smoke even though many may be concerned about the risks

or have tried to quit. Your doctors understand this and will consider it when caring for you. They shouldn't regard you negatively because you are (or were) a smoker.

Q: What are the symptoms?

A: The main symptoms of lung cancer are:

- a new dry cough or change in a chronic cough
- chest pain or breathlessness
- repeated bouts of pneumonia or bronchitis
- coughing or spitting up blood.

A person may have also experienced symptoms such as fatigue, weight loss, hoarseness or wheezing, difficulty swallowing, and abdominal or joint pain. Lung cancer symptoms can be vague and the disease is often discovered when it is advanced (spread to other parts of the body).

Having any one of these symptoms does not necessarily mean that you have cancer. Some of these symptoms may be caused by other conditions or from the side effects of smoking. Talk to your doctor to have your symptoms checked.

Sometimes, there are no symptoms and the cancer is detected during routine tests (often an x-ray or CT scan) for other conditions. If so, the cancer is more likely to be in an early stage of development (confined to the lungs).

““ I smoked in the past, but I had quit. I just kept having continual colds and I started coughing up blood. ”” James



Diagnosis

Your doctors will perform a number of tests to obtain a diagnosis, determine if the cancer has spread to other parts of your body and develop a treatment plan.

Chest x-ray

A chest x-ray is usually the first imaging test – it is painless and can show tumours 1cm wide or larger. Small tumours may not show up on an x-ray or may be hidden by other organs within the chest cavity. After a chest x-ray, more detailed tests may be required.

CT scan

A CT (computerised tomography) scan is usually the second imaging test. It uses x-ray beams to take three-dimensional pictures of the inside of your body. CT imaging can identify smaller tumours than those found by x-rays, and provide detailed information about the tumour, the lymph nodes in the chest and other organs within the imaging field.

A CT scan is painless and takes about 10 minutes. You will need to lie flat on a table that slides in and out of a large, round scanner. CT scans are usually done at a hospital or a radiology service.

You will receive instructions about preparing for a CT scan. An iodine contrast dye is usually injected into a vein in your arm to make the scan pictures clearer.



Before a CT scan, you may be given an injection or asked to drink a liquid called a contrast to make the images on the computer appear clearer. Tell the doctor if you have any allergies before having this injection.

PET scan

A PET (positron emission tomography) scan is a specialised imaging test that is available at most major hospitals. It is useful in diagnosing lung tumours where a biopsy is inconclusive or not possible. A PET scan can also be used to stage lung cancer (see page 18) or find cancer that has spread to other parts of the body.

You will be injected with a radioactive glucose solution. It takes 30–90 minutes for the fluid to go through your body, then you will have a body scan. The scan shows ‘hot spots’ in the body where there are active cells, such as cancer cells. Not all PET hot spots indicate cancer. The scan will be carefully evaluated by a PET specialist.

““ I had a PET scan and they could tell that the cancer was only in one lung and one lymph node nearby. ”” *Jim*

Sputum cytology

A sputum cytology test is an examination of phlegm or mucus from your lungs (sputum).

You may be asked to collect sputum samples each morning at home. You can collect a sample by coughing deeply and forcefully.

Collect any sputum that you cough up and store the sample in your fridge until you take it to your doctor, who will check for abnormal cells.

Fine-needle aspiration

A fine-needle aspiration biopsy is one way of obtaining cells used for a diagnosis and is generally used where the tumour is in the outer parts of the lungs.

The doctor will use a CT scanner to identify the best place to insert a needle through your chest wall into the tumour. A small piece of tumour can usually be removed with the needle. Sometimes a slightly thicker needle may be used to give a larger core biopsy.

A fine-needle aspiration is done in a hospital or radiology department. You will be observed for a few hours afterwards, as there is a small risk of the lung partly collapsing during this procedure.

A fine-needle biopsy is less likely to be offered when the tumour is close to the heart or major blood vessels, or if you have a lung condition such as emphysema.

Bronchoscopy

A bronchoscopy allows the doctor to look directly into the airways (bronchi). You will be given sedation, and a local anaesthetic will be sprayed on the back of your throat to numb it. Sometimes a general anaesthetic is given.

The doctor will insert a flexible tube called a bronchoscope into your nose or mouth and down your windpipe (trachea). The bronchoscope may feel uncomfortable, but it shouldn't feel painful.

During the bronchoscopy, the doctor will take a tissue sample (biopsy). If the tumour is near your main respiratory tract, the cells can be sampled using techniques called washing and brushing. 'Washing' means that a small amount of fluid is injected into the lung and withdrawn for further examination, while 'brushing' involves the use of a brush-like instrument to remove some cells from the bronchi.

Endobronchial ultrasound

An endobronchial ultrasound (EBUS) is a type of bronchoscopy procedure that allows a doctor to examine the airways (bronchi) and take tissue samples through the airways and windpipe (trachea). Samples may also be taken from a tumour or a lymph node in the middle of the chest or next to the airways. In other cases, samples can be taken from the outer parts on the lung.

The doctor will use a bronchoscope with a small ultrasound probe on the end. The bronchoscope will be put down your throat into your trachea. The ultrasound probe uses soundwaves to create a picture that shows the size and position of the tumour and allows the doctor to measure it.

After an EBUS, you may have a sore throat or cough up a small amount of blood. Tell your medical team how you are feeling so they can monitor you.

Mediastinoscopy

A mediastinoscopy is a less commonly performed procedure that allows a surgeon to examine and sample lymph nodes at the centre of your chest. A rigid tube is inserted through a small cut in the front of your neck and passed down the outside of your trachea. The surgeon will inspect the area between the lungs (mediastinum) and remove some tissue. This is usually a day procedure but some people may need to stay overnight in hospital.

Thoracoscopy or thoracotomy

A thoracoscopy or thoracotomy is an operation performed under a general anaesthetic. It is usually done if other tests are unable to provide a diagnosis. Your surgeon will do this test to take a tissue sample (biopsy) or remove the tumour.

This operation can be done in two ways. The surgeon may be able to make one or two small cuts in your chest to insert a surgical instrument called a thoracoscope, that has a camera attached. If this isn't possible, the surgeon will open the chest cavity through a larger cut on your back. You will wake up with a drain coming from your side and stay in hospital for a few days.

Further tests

Other tests, such as blood and breathing tests, bone and brain scans, or MRI scans may also be required. For information about these tests, talk to your doctor or call **Cancer Council 13 11 20**.



Staging lung cancer

Staging means finding out if and where the lung cancer may have spread to. Your doctor will assign a staging category to your cancer, which will help determine the best treatment. The staging category is worked out using your medical history and imaging and tissue biopsy information.

Non-small cell and small cell lung cancer

Stage 1	The tumour is in only one lobe of the lung and has not spread.
Stage 2	The tumour has spread to nearby lymph nodes, or has grown into the chest wall.
Stage 3A	Tumours have spread to lymph nodes in the centre of the chest (mediastinum).
Stage 3B	Tumours have spread more extensively to lymph nodes in the mediastinum, or have become attached to major blood vessels or the trachea (windpipe).
Stage 4	The cancer cells have spread to distant parts of the body, such as the bones, brain or liver.

Prognosis

Prognosis means the expected outcome of a disease. You will need to discuss your prognosis and treatment options with your doctor, but it is not possible for any doctor to predict the exact course of the illness. Instead, your doctor can give you an idea about common issues that people with the same type of cancer experience.

As in most types of cancer, the results of lung cancer treatment are best when the cancer is found and treated early. See page 18 for more information about staging lung cancer.

Assessing prognosis

Important factors in assessing your prognosis include:

- test results
- the type of cancer you have
- the rate and extent of tumour growth
- how well you respond to treatment
- your age
- fitness
- medical history

Which health professionals will I see?

Often your GP will arrange the first tests to assess your symptoms. This can be a worrying and tiring time, especially if you need several tests. If these do not rule out cancer you will usually be referred to a lung specialist, who will arrange further tests and advise you about treatment options.

You will be cared for by a range of health professionals who will generally specialise in different aspects of your treatment. This multidisciplinary team will meet regularly to design and discuss the most appropriate treatment plan for you, and will support you on an ongoing basis.

This team may include some or all of the health professionals listed on the next page.



Lois' story

I had been having frequent chest colds and in June, I coughed up blood. My daughter insisted that I go to hospital.

After having several different types of scans, I was diagnosed with lung cancer. Within a week I had a pneumonectomy to remove my right lung. The surgeon said he got all the

cancer but I needed to have chemotherapy to be sure it was gone completely.

Now I have good and bad days. I do breathing exercises during rehabilitation to stay well. Sometimes I feel so good that I overdo it. I forget that I have one lung and I tire easily. I'm learning to pace myself.

Health professional	Role
respiratory physician (sometimes called thoracic physician or lung specialist)	diagnoses and stages the cancer and determines initial treatment options
thoracic (chest) surgeon	conducts some diagnostic tests and performs surgery
medical oncologist	prescribes and coordinates chemotherapy and medications to control the cancer
radiation oncologist	prescribes and coordinates radiotherapy
nurses and cancer nurse coordinators	supports you through all stages of your treatment and liaises with other staff to help organise care
palliative care doctors	prescribe or recommend treatment for symptoms of advanced cancer. Liaise with your GP and oncologist to ensure care is well coordinated (see page 38)
dietitian	recommends an eating plan for you to follow while you are in treatment and recovery
speech pathologist	helps with communication and swallowing
physiotherapist and occupational therapist	assist with physical rehabilitation
social worker, counsellor, clinical psychologist, psychiatrist	assist with emotional concerns and in the treatment of depression and anxiety, provide emotional support and link you to other support services



Key points

- There are many different types of tests to diagnose lung cancer. Tests will vary, you probably won't have every test.
- X-rays and CT scans are painless scans that will take pictures of the inside of your body.
- If you are coughing up phlegm, your doctor might ask you for a sample to send to a lab for testing (sputum cytology).
- Sometimes the doctor may insert a needle into your chest to get a tissue sample. This is called a fine-needle aspiration.
- A bronchoscopy involves a flexible tube being inserted into your nose or mouth and down your trachea to examine your airways.
- Some people have further tests (such as a blood test, PET scan, brain scan, bone scan, mediastinoscopy or thoracotomy).
- The doctors will assign a stage to the cancer based on diagnostic tests. This describes the size of the cancer and whether it has spread.
- Scans and tests can help show if the lung cancer has spread. They can also help your medical team decide on the best treatment plan.
- Your doctor may talk to you about prognosis. This means the expected outcome of the disease. No one can predict the exact course of the illness.
- You will probably see many doctors and health professionals who will work together as a multi-disciplinary team to diagnose and treat the cancer. Check to see if a cancer care coordinator or lung cancer nurse is available for you to see.



Making treatment decisions

Sometimes it is difficult to decide on the type of treatment to have. You may feel that everything is happening too quickly. Check with your doctor how soon your treatment should start, and take as much time as you can before making a decision.

Understanding the disease, the available treatments and possible side effects can help you weigh up the pros and cons of different treatments and make a well-informed decision that's based on your personal values. You may also want to discuss the options with your doctor, friends and family.

You have the right to accept or refuse any treatment offered. Some people with more advanced cancer choose treatment even if it only offers a small benefit for a short period of time. Others want to make sure the benefits outweigh the side effects so that they have the best possible quality of life.

tip

Cancer treatments can affect your fertility permanently or temporarily. If having children is important to you, talk to your doctor before starting treatment. For more information, call **Cancer Council 13 11 20** for a free copy of *Fertility and Cancer*.

Talking with doctors

When your doctor first tells you that you have cancer, you may not remember the details about what you are told. Taking notes or recording the discussion may help. Many people like to have a family member or friend go with them to take part in the discussion, take notes or simply listen.

If you are confused or want clarification, you can ask questions – see page 49 for a list of suggested questions. If you have several questions, you may want to talk to a nurse or ask the office manager if it is possible to book a longer appointment.

A second opinion

You may want to get a second opinion from another specialist to confirm or clarify your doctor's recommendations or reassure you that you have explored all of your options. Specialists are used to people doing this.

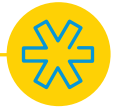
Your doctor can refer you to another specialist and send your initial results to that person. You can get a second opinion even if you have started treatment or still want to be treated by your first doctor. You might decide you would prefer to be treated by the doctor who provided the second opinion.

Taking part in a clinical trial

Your doctor or nurse may suggest you take part in a clinical trial. Doctors run clinical trials to test new or modified treatments and ways of diagnosing disease to see if they are better than current methods. For example, if you join a randomised trial for a new treatment, you will be chosen at random to receive either the best existing treatment or the modified new treatment.

Over the years, trials have improved treatments and led to better outcomes for people diagnosed with cancer. It may be helpful to talk to your specialist or clinical trials nurse, or get a second opinion. If you decide to take part, you can withdraw at any time.

For more information, call **Cancer Council 13 11 20** for a free copy of *Understanding Clinical Trials and Research* or visit www.australiancancertrials.gov.au or www.anzctr.org.au.





Treatment

Treatment for lung cancer will depend on the stage of the cancer, your breathing capacity and ongoing general health.

- **Non-small cell lung cancer** – is usually treated with surgery if possible. Otherwise radiotherapy and/or chemotherapy is used.
- **Small cell lung cancer** – is usually treated with chemotherapy. Radiotherapy to the chest, brain or other sites (known as preventive or prophylactic radiotherapy) may also be recommended as this type of cancer can spread early and surgery is not often used.



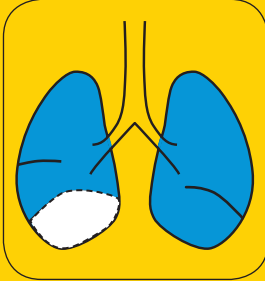
Not smoking is important at all stages of your treatment. See your doctor or call Quitline (**13 QUIT**) for help. If you smoke, your medical team will probably advise you to stop before your surgery.

Surgery

People with early-stage cancer will generally have surgery to remove the tumour. The surgeon will determine if the cancer is confined to your lungs, assess your general wellbeing and fitness as well as your breathing capacity for the potential operation.

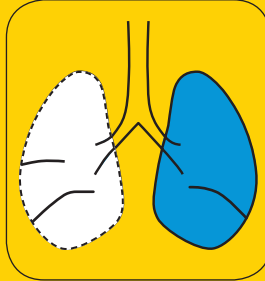
Call Cancer Council 13 11 20 for more information or a copy of the *Understanding Surgery* booklet.

Types of lung surgery



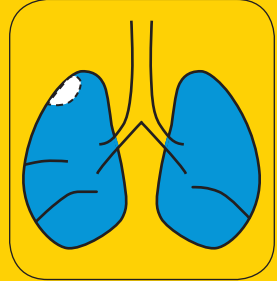
Lobectomy:

a lobe of the lung is removed



Pneumonectomy:

one whole lung is removed



Wedge resection:

only part of the lobe is removed

After surgery

After major lung surgery you may have an intravenous (IV) drip for at least a few days, although you will be able to eat and drink the day after surgery. There may be one or two temporary tubes in your chest to drain fluid and/or air from your chest cavity.

You will have some pain and discomfort after your surgery. Discuss this with your doctor or nurse who can work with you to manage your pain. Good pain relief is important to aid your recovery. If your pain is managed properly, you will be more likely to move around and do your breathing exercises, which will assist your recovery and reduce your risk of developing a chest infection. Pain relief may also help you clear phlegm from your chest.

You will probably go home three to seven days after your surgery. However, the recovery process will take about six weeks and it might take up to three months to feel back to normal. The recovery time depends on the type of surgery and your fitness. Your doctor, nurses and physiotherapist will talk to you about how to manage at home. It is important to continue to exercise once you are home. Walking will improve your fitness, clear your lungs and facilitate a speedy recovery after surgery.

If you undergo video-assisted thoracoscopic surgery (VATS), you are likely to be discharged the next day. VATS is a type of thoracic surgery performed using a small video camera. The camera and operating instruments are inserted through separate holes in the chest wall, known as ports. These small ports allow for a faster recovery from the surgery and reduced risk of infection.

If you have had part of your lung removed, you are likely to experience some breathlessness. If your lung function was poor before surgery, or if you have a whole lung removed (pneumonectomy), you are more likely to feel breathless. Exercising will help to reduce the breathlessness. A referral to pulmonary rehabilitation is advised, especially if a complete lung is removed. This will help improve your breathing and increase your confidence living with one lung.



You will have regular chest x-rays to check your lung or lungs are working properly.

Chemotherapy

Chemotherapy is the use of drugs to kill or slow the growth of cancer cells. The aim of treatment is to destroy cancer cells, and cause the least possible damage to healthy cells.

Chemotherapy is commonly given to people whose cancer is large or has spread outside the lungs. It may be given:

- before surgery, to try to shrink the cancer and make the operation easier
- before radiotherapy or during radiotherapy (chemoradiation), to enhance the effectiveness of the radiotherapy
- after surgery, to reduce the risk of the cancer returning
- as palliative treatment, to reduce symptoms, improve your quality of life or extend your life (see page 38).

Chemotherapy is generally administered into a vein through a drip (intravenously). Chemotherapy is given in cycles, which means you will receive the drugs and then have a rest period of about 21 days before starting a new cycle. The number of treatments you have will depend on the type of lung cancer you have and how well your body is coping with the side effects. You will probably be able to have treatment as an outpatient.

Some types of chemotherapy are given orally in tablet form, and are generally given on a continuous basis.

For more information or to obtain a free copy of *Understanding Chemotherapy*, call Cancer Council 13 11 20 or visit your local Cancer Council website.

Chemotherapy side effects

Chemotherapy can affect the healthy fast-growing cells in your body, such as hair cells or cells lining the mouth and stomach, causing side effects.

Everyone reacts differently to chemotherapy, so the side effects you experience will depend on the drugs you receive. Some people don't experience any side effects, while others have a few.

Side effects are usually temporary, and medication can often help reduce your discomfort. Talk to your doctor about any side effects you have and ways to manage them.

Tiredness – Most people feel tired during chemotherapy, particularly as treatment progresses.

Infections / low white blood cell count – About a week after a treatment session, your white blood cell levels may drop, making you more prone to infections. Sometimes doctors recommend taking antibiotics as a precaution against infection.

If you feel unwell or have a fever higher than 38°C, call your doctor immediately or, if after hours, go to the hospital Emergency department.

Mouth ulcers – Some chemotherapy drugs can cause mouth sores such as ulcers or infections. Contact your doctor if you notice any change in your mouth or throat, such as sores, ulcers or thickened saliva, or if you find it difficult to swallow.

Skin and nail changes – Some chemotherapy drugs can affect your skin. It can darken, peel or become dry and itchy. It is also likely to be more sensitive to the sun, during and after treatment. Some people find their nails

also change and become brittle and dry, develop ridges, or have white lines across them.

Nausea and vomiting –

It is common to feel ill. However, anti-nausea medication can prevent or reduce this. It is available in many forms, including suppositories, oral tablets and wafers that dissolve on the tongue. Tell your medical team if you feel nauseated.

Constipation – Medication taken to prevent nausea and vomiting can cause constipation. Your medical team can give you laxatives for this.

Hair loss – Some chemotherapy drugs cause people to lose their body and head hair, but your hair will grow back once treatment is over.

Neuropathy – Some drugs affect the nerves, causing numbness or tingling in fingers or toes. This is called peripheral neuropathy. It typically improves after treatment is finished.

ringing in the ears –

ringing or buzzing in the ears, known as tinnitus, may occur as a short-term side effect.

Sex and fertility –

Chemotherapy may impact on your desire or ability to have sex. It may also affect sexual organs and functioning in both women and men. This can lead to a temporary or permanent effect on your ability to have children (your fertility). For more information, call **Cancer Council 13 11 20** for free resources on fertility, sexuality and intimacy.

Targeted therapies

These forms of therapy (often referred to as ‘personalised medicine’) target specific mutations within the cancer. Research has discovered that the growth of some lung cancers depends on the presence of specific damaged genes (mutations) in the cancer. These mutations are not inherited or passed on to your children, and some are more common in non-smokers.

A number of drugs have been developed that target and ‘switch off’ these mutations, stopping the growth of the cancer. These therapies have fewer side effects compared with traditional chemotherapy, as their effects are largely restricted to the cancer cells.

Two of the more common mutations for which targeted therapies are available are the EGFR (epidermal growth factor receptor) and ALK (anaplastic lymphoma kinase) mutations.

If your doctor suspects that your cancer may be due to one of these mutations, they will ask the laboratory to analyse the cancer tissue. Identification of specific mutations will guide your doctor in the choice of targeted therapy.

Other examples of targeted therapies include drugs that attack the cancer’s blood supply and starve the cancer (anti-angiogenesis drugs), and drugs that block the signals that make the cancer grow.

You may be asked if you want to participate in a clinical trial to receive a new targeted therapy (see page 24). Talk to your doctor for more information about new drug trials.

Side effects

Side effects will vary depending on the type of targeted therapy you have. Some of the more common side effects include an acne-like rash and diarrhoea. It's important to discuss any side effects with your medical team.

Radiotherapy

Radiotherapy uses high energy rays to damage or kill cancer cells and can be used to treat all types of lung cancer. It can be offered on its own or in conjunction with surgery or chemotherapy. In early stage lung cancer, it aims to kill off the cancer completely. For more advanced cancer, the aim is to shrink the cancer and reduce symptoms.

Radiotherapy can be used:

- to treat an early stage small lung cancer that is in the outer portions of the lung rather than deep inside, if you are unable to have surgery
- after surgery to treat sites where lymph nodes were removed in an attempt to reduce the chances of the cancer coming back
- to treat cancer that has spread to other organs, such as the brain or bones
- as palliative treatment, to reduce symptoms, improve your quality of life or extend your life (see page 38).

Treatment is carefully planned to destroy as many cancer cells as possible while causing the least possible harm to your normal tissue. To plan your treatment, your doctor will take an x-ray, CT or PET scan of the affected area. The radiation oncologist or radiation therapist may mark your skin with a special ink to make sure the radiation is directed at the same place on your body every time you receive treatment. Although the ink is permanent, the mark is very small (the size of a freckle).

During treatment you will lie on a flat table under a machine called a linear accelerator, which directs the x-ray beams at the cancer. Radiotherapy treatment is painless, and the person giving you the treatment will make you as comfortable as possible.

Treatments take only a few minutes, but the initial appointment to see the radiation oncologist and set up the machine may take a few hours. Most people have outpatient treatment sessions at a radiotherapy centre from Monday to Friday for several weeks. Your doctor will advise you on the number of sessions you need.



For more information, call **Cancer Council 13 11 20** for a free copy of *Understanding Radiotherapy*.

Radiotherapy side effects

The side effects from radiotherapy depend on the area of your body being treated and the dose of radiation. People who have radiotherapy to the chest for a primary lung cancer may experience tiredness and a mild reaction on the skin, like sunburn. Some people who have a long course of radiotherapy (several weeks) may have temporary difficulty and pain in swallowing (oesophagitis).

Skin reaction – The skin in the treatment area may become red or irritated. Moisturising cream, such as sorbolene, should be applied to the skin when treatment starts – talk to your medical team about any other products they recommend.

Fatigue – Tiredness can be a major challenge. Plan your activities during the day so you can rest regularly. It may also help to talk to your family, friends or employer about how they can help you.

Scarring – Any radiotherapy to the lungs will cause some scarring to the lungs, which can be seen on x-rays or CT scans after treatment.

Breathlessness – Some people experience temporary shortness of breath for several weeks after the radiotherapy has finished. This usually improves by itself, or may require treatment with cortisone tablets.

Your doctor will check in with you at least once a week to monitor and treat any side effects during the course of your treatment. If you are concerned about any side effects, talk to your health care team.

Ablation

Ablation treatment may be offered if you are unable to have surgery or radiotherapy. Ablation treatment can target and kill cancerous cells without damaging healthy surrounding tissues, as the treatment is delivered directly into the tumour.

Ablation treatments include radiofrequency and microwave ablation. These treatments involve inserting needles or probes into the cancer to destroy the cancer cells using radiofrequency and microwave energies.

These are often outpatient treatments but you may need to stay in hospital overnight for observation. Usually a local anaesthetic is given and a CT scan is used to help insert the needles. You may experience slight discomfort at the needle site.

After the abnormal cells are killed, they shrink and turn to scar tissue over time. It is important to have follow up CT scans to make sure that there is no further growth in the tumour.

Side effects

Side effects for ablation treatments can include lung collapse (pneumothorax) and damage to surrounding tissues.

Thoracentesis (pleural tap)

For some people fluid may build up in the area between the lung and the chest wall (pleural space), which can cause symptoms such as breathlessness, tiredness and pain. A

procedure called thoracentesis (pleural tap) can be performed to relieve these symptoms.

In this procedure your doctor or radiologist will insert a hollow needle between your ribs into the pleural space to drain the fluid. This will take about 30–60 minutes. A pleural tap is usually performed on an outpatient basis under a local anaesthetic. Some of this fluid will be sent to pathology for examination.

Pleurodesis

A procedure called a pleurodesis may be required if the fluid accumulates again after you have had a pleural tap. This is usually done using less invasive key-hole type surgery called video-assisted thoracoscopic surgery (VATS).

In pleurodesis, a thin instrument with a light is inserted, the fluid is drained off and talcum powder is introduced into the pleural space (between the lung and chest wall). The powder will inflame the membranes, which makes them stick together. This closes the space between the pleura, preventing the fluid from coming back. This procedure is generally performed by a thoracic surgeon under a general anaesthetic and requires a hospital stay of two or three days. However, this procedure can be performed by a doctor under local anaesthetic if you are unable to have surgery.

Indwelling pleural drains

An indwelling pleural catheter may be offered to people who are unable to have surgery and experience fluid build-up that is not adequately controlled with pleurodesis.

A specialist inserts the catheter into the pleural space to drain the fluid. This drain is small and can be left in place to be used again if the fluid comes back. The catheter can be managed at home with the help of a community nurse.

Palliative treatment

Palliative treatment seeks to improve quality of life by reducing cancer symptoms without aiming to cure the disease.

Treatment can assist with managing symptoms such as pain and nausea as well as slowing the spread of the cancer and may include radiotherapy, chemotherapy or other medication.

It is commonly assumed that palliative treatment is for people at the end of their life; however it may be beneficial for people at any stage of advanced disease.



For more information or free booklets about palliative care and advanced cancer, call **Cancer Council 13 11 20** or visit your local Cancer Council website.



Key points

- Treatment will depend on the type of cancer, its stage and your general fitness and suitability for the treatment.
- If you are a smoker, you will be assisted to quit smoking before you have surgery.
- If you have surgery, you may have a whole lung, a lobe or a segment of the lung removed.
- Effective pain management, physiotherapy, breathing exercises and being active are all important in the recovery period following surgery. Some people continue rehabilitation when they return home.
- Chemotherapy is the use of drugs to kill or slow the growth of cancer cells. Most chemotherapy drugs can cause side effects such as nausea, fatigue, hair loss and skin rashes.
- Some treatments involve targeted therapies that target specific mutations within the cancer – these drugs may be available in clinical trials and mainstream therapies.
- Radiotherapy uses high energy rays to damage or kill cancer cells and can be used to treat all types of lung cancer. It can be offered on its own or in conjunction with surgery or chemotherapy. It is painless, but may cause skin reactions (like sunburn), scarring to the lungs or shortness of breath.
- Fluid buildup in the pleural space (between the lung and the chest wall) causes breathlessness. This can be controlled and managed by procedures such as thoracentesis or pleurodesis.
- Palliative treatment helps to improve people's quality of life by alleviating symptoms of cancer without trying to cure the disease.



Looking after yourself

Cancer can cause physical and emotional strain. It's important to try to look after your wellbeing as much as possible.

Nutrition – Eating healthy food can help you cope with treatment and side effects. A dietician can help you manage special dietary needs or eating problems, and choose the best foods for your situation. Call Cancer Council 13 11 20 for a free copy of the *Nutrition and Cancer* booklet.

Staying active – Physical activity may help to reduce tiredness, improve circulation and elevate mood. The amount and type of exercise you do depends on what you are used to, how you feel, and your doctor's advice. Cancer Council's *Exercise for People Living with Cancer* booklet provides more information about the benefits of exercise, and outlines simple exercises that you may want to try.

“ Since the operation, I've done breathing exercises. I went to rehab at the local hospital and did exercise bikes. At first I couldn't do the six-minute walk, but I worked up to walk $\frac{3}{4}$ kilometre. ” *Leonie*

Complementary therapies – These therapies are used with conventional medical treatments to increase your sense of control, decrease stress and anxiety, and improve your mood. Examples include massage, relaxation and acupuncture. Let your doctor know about any therapies you are using or thinking about trying.

For more information, call Cancer Council 13 11 20 for a free copy of the *Understanding Complementary Therapies* booklet or visit your local Cancer Council website.



Alternative therapies are used instead of conventional medical treatments. These therapies, such as coffee enemas and magnet therapy, can be harmful.

Relationships with others

Having cancer can affect your relationships with family, friends and colleagues. This may be because cancer is stressful, tiring and upsetting, or as a result of changes to your values, priorities, or outlook on life.

Give yourself time to adjust to what's happening, and do the same for others. People may deal with the cancer in different ways, for example by being overly positive, playing down fears, or keeping a distance. It may be helpful to discuss your feelings with each other.

●● The whole time I was on chemotherapy and radiotherapy, my friend called me every day between 8–9am. She could hear if I was well by my voice. There aren't many friends like that around. ●● *Sally*

Sexuality, intimacy and fertility

Cancer can affect your sexuality in physical and emotional ways. The impact of these changes depends on many factors, such as treatment and side effects, your self-confidence, and if you have a partner. Although sexual intercourse may not always be possible, closeness and sharing can still be part of your relationship.

If you are able to have sex, you may be advised to use certain types of contraception to protect your partner or avoid pregnancy for a certain period of time. Your doctor will talk to you about the precautions to take. They will also tell you if treatment will affect your fertility permanently or temporarily. If having children is important to you, talk to your doctor before starting treatment.



Call **Cancer Council 13 11 20** for free copies of *Sexuality, Intimacy and Cancer*, and *Fertility and Cancer* or download the booklets from your local Cancer Council website.

Life after treatment

For most people, the cancer experience doesn't end on the last day of treatment. Life after cancer treatment can present its own challenges. You may have mixed feelings when treatment ends, and worry if every ache and pain means the cancer is coming back.

Some people say that they feel pressure to return to 'normal life', but they don't want life to return to how it was before cancer.

Take some time to adjust to the physical and emotional changes, and re-establish a new daily routine at your own pace.

Cancer Council 13 11 20 can help you connect with other people who have had cancer, and provide you with information about the emotional and practical aspects of living well after cancer.

Dealing with feelings of sadness

If you have continued feelings of sadness, have trouble getting up in the morning or have lost motivation to do things that previously gave you pleasure, you may be experiencing depression.

This is quite common among people who have had cancer.

Talk to your GP, as counselling or medication – even for a short time – may help. Some

people are able to get a Medicare rebate for sessions with a psychologist. Ask your doctor if you are eligible. Your local Cancer Council may also run a counselling program.

The organisation [beyondblue](http://beyondblue.org.au) has information about coping with depression and anxiety. Go to www.beyondblue.org.au or call **1300 224 636** to order a fact sheet.

Follow-up after treatment

After your treatment, you will need regular check-ups to confirm that the cancer hasn't come back.

Check-ups will become less frequent if you have no further problems. Between follow-up appointments, let your doctor know immediately of any health problems.

What if the cancer returns?

For some people lung cancer does come back after treatment, which is known as a recurrence.

Most lung cancers are more likely to recur in the first five years following diagnosis. This is why it is important to have regular check-ups.

The treatment you have will depend on where the cancer has recurred as well as the stage and grade of the cancer. It may include surgery, radiotherapy, chemotherapy or participation in clinical trials.

Your doctor will discuss your treatment options with you.



Seeking support

Cancer may cause you to experience a range of emotions, such as fear, sadness, anxiety, anger or frustration. It can also cause practical and financial problems.

Practical and financial help

There are many services that can help deal with practical or financial problems caused by the cancer. Benefits, pensions and programs can help pay for prescription medicines, transport costs or utility bills. Home care services, aids and appliances can also be arranged to help make life easier.

Ask the hospital social worker which services are available in your local area and if you are eligible to receive them.

If you need legal or financial advice, you should talk to a qualified professional about your situation. Cancer Council offers free legal and financial services in some states and territories for people who can't afford to pay – call 13 11 20 to ask if you are eligible.

Talk to someone who's been there

Coming into contact with other people who have had similar experiences to you can be beneficial. You may feel supported and relieved to know that others understand what you are going through and that you are not alone.

People often feel they can speak openly and share tips with others who have gone through a similar experience.

You may find that you are comfortable talking about your diagnosis and treatment, relationships with friends and family, and hopes and fears for the future. Some people say they can be even more open and honest in these support settings because they aren't trying to protect their loved ones.

Types of support

There are many ways to connect with others for mutual support and to share information. This includes:

- **face-to-face support groups** – often held in community centres or hospitals
- **telephone support groups** – facilitated by trained counsellors
- **peer support programs** – match you with someone who has had a similar cancer experience, e.g. Cancer Connect
- **online forums** – such as www.cancerconnections.com.au and www.lungcancernetwork.com.au

Talk to your nurse, social worker or Cancer Council 13 11 20 about what is available in your area.

“ My family members don't really understand what it's like to have cancer thrown at you, but in my support group, I don't feel like I have to explain. ” *Sam*



Caring for someone with cancer

You may be reading this booklet because you are caring for someone with cancer. Being a carer can be stressful and cause you much anxiety. Try to look after yourself – give yourself some time out and share your worries and concerns with somebody neutral such as a counsellor or your doctor.

Many cancer support groups and cancer education programs are open to carers, as well as people with cancer. Support groups and programs can offer valuable opportunities to share experiences and ways of coping.

Support services such as Home Help, Meals on Wheels or visiting nurses can help you in your caring role. There are also many groups and organisations that can provide you with information and support, such as Carers Australia, the national body representing carers in Australia. Carers Australia works with the Carers Associations in each of the states and territories. Phone 1800 242 636 or visit www.carersaustralia.com.au for more information and resources.

You can also call Cancer Council 13 11 20 to find out more about carers' services and get a copy of the *Caring for Someone with Cancer* booklet.

Lung Cancer: Understanding, managing, living is a DVD with information for people with lung cancer. Visit www.lungcancernetwork.com.au or call Lung Foundation Australia on **1800 654 301** to request a free copy.





Useful websites

The internet has many useful resources, although not all websites are reliable. The websites listed below are good sources of support and information.

Australian

Cancer Council Australia	www.cancer.org.au
Cancer Australia	www.canceraustralia.gov.au
Carers Australia	www.carersaustralia.com.au
Department of Health	www.health.gov.au
Healthdirect Australia	www.healthdirect.gov.au
beyondblue.....	www.beyondblue.org.au
Quit.....	www.quitnow.gov.au

Lung cancer-specific

Lung Foundation Australia	www.lungfoundation.com.au
Lung Cancer Network Australia	www.lungcancernetwork.com.au
Asbestos Diseases Research Institute ...	www.asbestosresearch.org.au
Asbestos Diseases Foundation of Australia	www.adfa.org.au

International

Macmillan Cancer Support.....	www.macmillan.org.uk
Cancer Research UK.....	www.cancerresearch.org.uk
American Cancer Society.....	www.cancer.org
Mesothelioma Centre	www.asbestos.com
US National Cancer Institute	www.cancer.gov



Question checklist

You may find this checklist helpful when thinking about the questions you want to ask your doctor about your disease and treatment. If your doctor gives you answers that you don't understand, ask for clarification.

- What type of lung cancer do I have?
- How far has the cancer spread? How fast is it growing?
- What treatment do you recommend and why?
- Are there other treatment choices for me? If not, why not?
- What are the risks and possible side effects of each treatment?
- How long will treatment take? Will I have to stay in hospital?
- How much will treatment cost? Can the cost be reduced if I am treated in a public hospital?
- Will I have a lot of pain with the treatment? What will be done about this?
- Are the latest tests and treatments for this type of cancer available in this hospital?
- Are there any clinical trials or research studies I could join?
- How frequently will I need check-ups after treatment?
- Who should I go to for my check-up appointments?
- Are there any complementary therapies that might help me?
- Should I change my diet during or after treatment?
- How will I know if the cancer comes back?



Glossary

ablation

A form of treatment in which needles or probes are inserted into the cancer to destroy the cancer cells by passing microwave or radio waves into the cancer.

adenocarcinoma

A cancer that starts in the glandular tissue of the lungs.

advanced cancer

Cancer that has spread deeply into the surrounding tissues or away from the original site (metastasised) and is less likely to be cured.

alveoli

The tiny air sacs in the lungs, where oxygen enters the blood and carbon dioxide leaves it.

anaesthetic

A drug that stops a person feeling pain during a medical procedure. A local anaesthetic numbs part of the body; a general anaesthetic causes a person to lose consciousness for a period of time.

asbestos

A naturally occurring mineral that forms long, crystallised fibres. Formerly used in manufacturing and building, asbestos use is now banned in Australia because its fibres can cause serious illness.

benign

Not cancerous or malignant. Benign lumps are not able to spread to other parts of the body.

biopsy

The removal of a small sample of tissue from the body, for examination under a microscope, to help diagnose a disease.

bronchi/bronchus

A passage or airway in the respiratory tract that carries air into the lungs.

bronchiole

A small passage that carries air into the outer parts of the lungs.

bronchoscopy

A diagnostic test to examine the lungs and respiratory system.

catheter

A hollow, flexible tube through which fluids or air can be drained or passed into the body.

cells

The basic organisational unit of all living things. A human is made of billions of cells, which are adapted for different functions.

chemoradiation

Treatment that combines chemotherapy with radiotherapy.

chemotherapy

The use of cytotoxic drugs to treat cancer by killing cancer cells or slowing their growth.

CT scan

A computerised tomography scan. This type of scan uses x-rays to create a picture of the body.

diaphragm

A dome-like sheet of muscle that divides the chest cavity from the abdomen and is used in breathing.

emphysema

A non-cancerous condition in which the alveoli of the lungs are enlarged and damaged. It reduces the lung's surface area, causing breathing difficulties.

endobronchial ultrasound

(EBUS) A type of bronchoscopy procedure that allows a doctor to examine the airways (bronchi) and take tissue samples through the airways and windpipe (trachea).

fine-needle aspiration

A biopsy procedure in which a fine needle is inserted into a lump to extract cells.

intravenous (IV)

Inserted into a vein.

lobe

A section of an organ. For example, the left lung has two lobes and the right lung has three lobes.

lobectomy

A surgical operation to remove a lobe of a lung.

lungs

The two spongy organs in the chest cavity, made up of large numbers of tiny air sacs. The lungs are used for respiration (breathing).

lymph nodes

Small, bean-shaped structures that form part of the lymphatic system. Also called lymph glands.

lymphatic system

A network of tissues, capillaries, vessels, ducts and nodes that remove excess fluid from tissues, absorb fatty acids, transport fat and produce immune cells.

malignant

Cancer. Malignant cells can spread (metastasise) and can eventually cause death if they cannot be treated.

mediastinoscopy

A surgical procedure that allows a surgeon to examine the lymph nodes at the centre of the chest and remove a sample, if necessary.

mediastinum

The area in the chest between the lungs. It contains the heart and large blood vessels, the oesophagus, the trachea and many lymph nodes.

mesothelioma

A type of cancer that affects the protective membrane around the internal organs (mesothelium). It often occurs in the membranes of the lungs (pleura).

metastasis

A cancer that has spread from another part of the body. Also known as secondary cancer.

MRI scan

A magnetic resonance imaging scan. A scan that uses magnetism and radio waves to take detailed cross-sectional pictures of the body.

non-small cell lung cancer

One of the two main groups of lung cancers. Includes squamous cell carcinoma, adenocarcinoma and large cell carcinoma.

oesophagitis

Pain in swallowing.

oesophagus

The tube that carries food from the throat into the stomach. Sometimes called the gullet.

oncologist

A doctor who specialises in the study and treatment of cancer.

palliative care

The holistic care of people with life-limiting illness, their families and carers. It aims to improve quality of life by addressing physical, emotional, spiritual, social and practical needs.

parietal layer

The outer layer of the pleura (lungs).

PET scan

A positron emission tomography scan. A specialised imaging test that uses a radioactive glucose solution to identify cancer cells in the body.

pleura

Thin layers of tissue that line the chest wall and cover the lungs.

pleural cavity

The space that lies between the two layers of the pleura (lungs) and normally contains a thin film of fluid.

pleural effusion

An abnormal build-up of fluid in the pleural cavity (outside the lung itself).

pleural tap

See thoracentesis.

pleurodesis

An injection between the layers of the lung tissue (pleura). This injection creates an inflammation that closes the space between the pleura. This prevents accumulation of fluid.

pneumonectomy

A surgical operation to remove a lung.

primary cancer

The original cancer. Cells from the primary cancer may break away and be carried to other parts of the body, where secondary cancers may form.

prognosis

The likely outcome of a person's disease.

radiotherapy

The use of radiation, usually high beam or gamma rays, to kill cancer cells or injure them so they cannot grow and multiply.

resection

Surgical removal of a portion of any part of the body.

respiratory system

The system of the body responsible for breathing.

small cell lung cancer

A type of lung cancer strongly associated with cigarette smoking. It spreads early and causes few initial symptoms.

sputum

Liquid coughed up from the lungs. Also known as phlegm.

sputum cytology test

Examination of sputum under a microscope to look for cancer cells.

squamous cell carcinoma (SCC)

A cancer that arises in the squamous or skin-like cells of the body or in the main airways of the lungs.

staging

Performing tests to determine how far cancer has spread.

thoracentesis

A procedure in which a hollow needle is inserted between the ribs in order to drain excess fluid. Also called a pleural tap.

thoracotomy

A type of surgery. The surgeon opens the chest cavity through a cut on the back to examine, biopsy and/or remove the tumour.

tissue

A collection of cells of similar function that make up an organ or cancer.

trachea

The windpipe. This is the airway that brings air inhaled from the nose and mouth into the lungs.

tumour

A new or abnormal growth of tissue on or in the body. A tumour may be benign or malignant.

video-assisted thoracoscopic surgery (VATS)

A type of thoracic surgery performed using a small video camera which is inserted, along with the operating instruments, through separate holes in the chest wall, known as ports.

visceral layer

The inner layer of the pleura.

wedge resection

Surgery to remove a wedge or part of a lung, but not a complete lobe.

Can't find what you're looking for?

For more information on cancer-related words, visit www.cancercouncil.com.au/words or www.cancervic.org.au/glossary or www.cancersa.org.au/glossary



How you can help

At Cancer Council we're dedicated to improving cancer control. As well as funding millions of dollars in cancer research every year, we advocate for the highest quality care for cancer patients and their families. We create cancer-smart communities by educating people about cancer, its prevention and early detection. We offer many free practical and support services for people and families affected by cancer. All these programs would not be possible without community support, great and small.

Join a Cancer Council event: Join one of our community fundraising events such as Daffodil Day, Australia's Biggest Morning Tea, Relay For Life, Girls Night In and Pink Ribbon Day, or hold your own fundraiser or become a volunteer.

Make a donation: Any gift, large or small, makes a meaningful contribution to our work in supporting people with cancer and their families now and in the future.

Buy Cancer Council sun protection products: Every purchase helps you prevent cancer and contribute financially to our goals.

Help us speak out for a cancer-smart community: We are a leading advocate for cancer prevention and improved patient services. You can help us speak out on important cancer issues and help us improve cancer awareness by living and promoting a cancer-smart lifestyle.

Join a research study: Cancer Council funds and carries out research investigating the causes, management, outcomes and impacts of different cancers. You may be able to join a study.

To find out more about how you, your family and friends can help, please call your local Cancer Council.



Cancer Council 13 11 20

Being diagnosed with cancer can be overwhelming. At Cancer Council, we understand it isn't just about the treatment or prognosis. Having cancer affects the way you live, work and think. It can also affect our most important relationships.

When disruption and change happen in our lives, talking to someone who understands can make a big difference. Cancer Council has been providing information and support to people affected by cancer for over 50 years.

Calling 13 11 20 gives you access to trustworthy information that is relevant to you. Our cancer nurses are available to answer your questions and link you to services in your area, such as transport, accommodation and home help. We can also help with other matters, such as legal and financial advice.

If you are finding it hard to navigate through the health care system, or just need someone to listen to your immediate concerns, call 13 11 20 and find out how we can support you, your family and friends.

Cancer Council services and programs vary in each area.


13 11 20 is charged at a local call rate throughout Australia (except from mobiles).



If you need information in a language other than English, an interpreting service is available. Call 13 14 50.

If you are deaf or have a hearing or speech impairment, the National Relay Service is available.
www.relayservice.gov.au

Produced in collaboration with:



Cancer Council
13 11 20

For information and support on cancer-related issues, call Cancer Council **13 11 20**. This is a confidential service.

Visit your local Cancer Council website

Cancer Council ACT
actcancer.org

Cancer Council NSW
cancercouncil.com.au

Cancer Council NT
nt.cancer.org.au

Cancer Council Queensland
cancerqld.org.au

Cancer Council SA
cancersa.org.au

Cancer Council Tasmania
cancertas.org.au

Cancer Council Victoria
cancervic.org.au

Cancer Council WA
cancerwa.asn.au

Cancer Council Australia
cancer.org.au

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To support Cancer Council, call your local Cancer Council or visit your local website.*