



Understanding Radiotherapy

A guide for people with cancer,
their families and friends

A large yellow shape occupies the bottom half of the page. On its right side, there is a purple circle containing the word "Treatment". A thin orange line extends from the bottom of the purple circle, curves to the left, and ends in a telephone handset icon.

Treatment

Cancer Council Helpline

13 11 20

Understanding Radiotherapy

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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 Australia

Cancer Council Australia is the nation's peak non-government cancer control organisation. Together with the eight state and territory Cancer Councils, it coordinates a network of cancer support groups, services and programs to help improve the quality of life of people living with cancer, their families and carers. This booklet is funded through the generosity of the people of Australia. To make a donation and help us beat cancer, visit Cancer Council's website at www.cancer.org.au or call your local Cancer Council.



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Introduction

This booklet has been prepared to help you understand more about radiotherapy, one of the main treatments for cancer.

Radiotherapy is also known as radiation therapy.

Understanding Radiotherapy may help you cope better with any side effects and assist you to make decisions about your treatment.

The information in this booklet is for adults having radiotherapy, although much of the information will also be relevant for children having radiotherapy. Talk to your doctor for specific information pertaining to children.

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.

If you're reading this booklet for someone who doesn't understand English, let them know that the Cancer Council Helpline **13 11 20** can arrange telephone support in different languages.



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What is cancer?

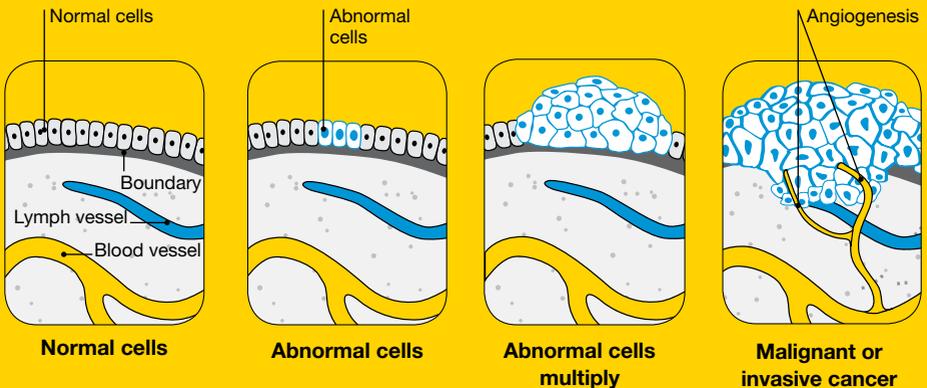
Cancer is a disease of the cells, which are the body's basic building blocks. The body constantly makes new cells to help us grow, replace worn-out tissue and heal injuries. Normally, cells multiply and die in an orderly way.

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, bowel cancer that has spread to the liver is called metastatic bowel cancer, even though the person may be experiencing symptoms caused by problems in the liver.

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





How cancer is treated

Your treatment will depend on several factors, including the type of cancer you have, where it began and whether it has spread to other parts of your body. It will also depend on your general health and your preference.

Treatments for cancer include:

- **surgery** – aims to remove the cancer from your body
- **radiotherapy** – uses radiation to kill or damage cancer cells in the body
- **chemotherapy** – uses drugs to destroy cancer cells or to make them sensitive to radiation
- **immunotherapy** – uses antibodies or vaccines to help the body's immune system fight cancer cells
- **hormone therapy** – uses drugs to reduce or block the effect of natural hormones that cause some cancer cells to grow.

Many cancers can be treated using these methods, either alone or in combination. When a cure is unlikely, chemotherapy, radiotherapy or other treatments can relieve symptoms, help you feel as comfortable as possible and may allow you to live longer. This is called palliative treatment.



Key questions

Q: What is radiotherapy?

A: Radiotherapy uses radiation, such as x-rays, gamma rays, electron beams or protons, to kill or damage cancer cells and stop them from growing and multiplying. It is a localised treatment, which means it generally only affects the part of the body where the radiation is directed.

Q: How does radiotherapy work?

A: Radiotherapy damages cancer cells in the region being treated. Although the radiation can also damage normal cells, they can usually repair themselves. During this repair process, you may experience some side effects, depending on the part of your body being treated.

Q: Why have radiotherapy?

A: Many people diagnosed with cancer will have radiotherapy as part of their treatment. Research shows that at least one in two people recently diagnosed with cancer would benefit from radiotherapy[†] (see reference in inside front cover).

It can be used for several reasons:

Cure – Radiotherapy given with the aim of curing the cancer on its own or combined with other treatments, such as surgery or chemotherapy. This may be called curative treatment.

Control – Radiotherapy used to control the cancer by making it smaller or stopping it from spreading.

Help other treatments – Radiotherapy is used before (neoadjuvant) or after (adjuvant) other treatments. The aim is to make the main treatment more effective.

Symptom relief (palliative treatment) – Radiotherapy is often able to relieve symptoms, such as pain or bleeding, to help you to feel as well as possible.

Q: How is radiotherapy given?

A: It can be given in two ways:

External radiotherapy – You will lie on a treatment table underneath a machine, which aims radiation beams towards your body. The machine remains outside of your body and doesn't come into contact with you. Radiation beams are directed towards the cancer and surrounding tissues where the cancer may have spread.

Internal radiotherapy – A radiation source is put inside the body on or near the cancer. This includes brachytherapy, where a temporary or permanent radiation source is put inside the body on or near the cancer, or radioisotope treatment, where a radioactive isotope is given as a capsule.

Depending on the type and size of the cancer, and where it is in your body, you may have one or both types of radiotherapy. The different types of radiotherapy are described in more detail in the following chapters.

Q: Where will I have treatment?

A: Radiotherapy is delivered by specially trained staff called radiation therapists.

It uses large medical equipment that takes up a lot of space, so treatment is usually given in large hospitals or private clinics, in dedicated rooms.

Radiotherapy departments are run in different ways, so procedures may vary slightly. While the information in this booklet will apply in most cases, you may find things are done a little differently at the place where you're being treated.

Travelling to treatment

While treatment schedules can vary for individuals, most people have radiotherapy on an outpatient basis. This means they do not stay in hospital, but travel to the radiotherapy department for each session.

If you are driving to the treatment centre, you may find you feel tired after a few weeks of treatment. At this stage, you may want to arrange for

a family member or friend to drive you to treatment.

If you have to travel a long way each day to treatment, you may be able to get some financial assistance towards the cost of accommodation or travel. To check your eligibility or to apply, speak to the hospital social worker or radiotherapy department receptionist, or call Cancer Council Helpline **13 11 20**.

Q: How do I know the treatment has worked?

A: In the weeks and months following your course of treatment, you will talk with your doctor, be examined and have some tests or scans. This will show if the cancer has responded or gone away.

Cancer cells begin to die during a course of radiotherapy and this may continue for weeks or months after treatment ends. For this reason, the health professionals treating you can't give you progress updates on how radiotherapy is going throughout the course of your treatment. However, they can adjust the dose and help you manage any side effects.

It may be some time after radiotherapy finishes before the full benefit is confirmed. Follow-up tests will be done periodically to see if the cancer has regrown or recurred.

If radiotherapy is given as palliative treatment, the relief of symptoms will tell you if the treatment has worked. This may take a few days or a few weeks.

Q: Which health professionals might I see?

A: Some health professionals who care for people having radiotherapy are listed in the table opposite. You will also see other health professionals who specialise in diagnosing and treating the type of cancer you have.

Health professional	Role
radiation oncologist	a specialist doctor who prescribes and coordinates the course of radiation treatment and advises about side effects
radiation therapist	plans and delivers radiation treatment
radiation oncology nurses	help you manage emotional and physical problems, such as side effects that you may experience during treatment
radiation physicist	ensures that the machines are running correctly in order to deliver treatment accurately and safely
dietitian	recommends an eating plan to follow while you are in treatment and recovery
social worker, physiotherapist, clinical psychologist and occupational therapist	advise you on support services and help you get back to your usual activities
pastoral carer	helps with any religious or spiritual concerns



Key points

- Radiotherapy uses radiation to kill or damage cancer cells and stop them from growing and multiplying.
- Treatment also affects normal cells, but they are better able to repair themselves.
- Radiotherapy is used to treat cancer, slow its growth or relieve symptoms.
- You may have treatment in hospital or at a clinic. Most people have outpatient treatment – this means they come to each treatment session without staying in hospital.
- Radiotherapy can be given by a variety of machines and devices, depending on which part of the body is affected, and the type and stage of the tumour. The two main types are external and internal (brachytherapy or radioisotope) radiotherapy.
- Most patients will only have one type of radiotherapy.
- The effects of treatment add up over time. The doctor will know if treatment has worked after the treatment sessions are done, and the full benefit of treatment may be seen in the weeks following treatment.
- You will be treated by a team of health professionals, including a radiation oncologist, a radiation therapist and radiation oncology nurses. They will work together to ensure you receive the best possible care.

External radiotherapy

During external radiotherapy, high-energy x-rays are directed at the cancer site from a machine outside the body. You will lie on a treatment table (sometimes called a treatment couch) under a machine which directs radiation beams towards the body.

Different types of machines may be used – they each vary slightly in how they look and work. The machine used will depend on the part of your body being treated and why radiotherapy is being given. Some types of machines are better at treating cancer near the skin; others are better for cancers deeper in the body.

Often external radiotherapy is given using a machine called a linear accelerator (see illustration on page 14). Several specialised types of external radiotherapy may be used to treat certain cancers. This may include:

- three-dimensional conformal radiation therapy (3D-CRT)
- intensity modulated radiation therapy (IMRT)
- volumetric modulated arc therapy (VMAT)
- image guided radiation therapy (IGRT).

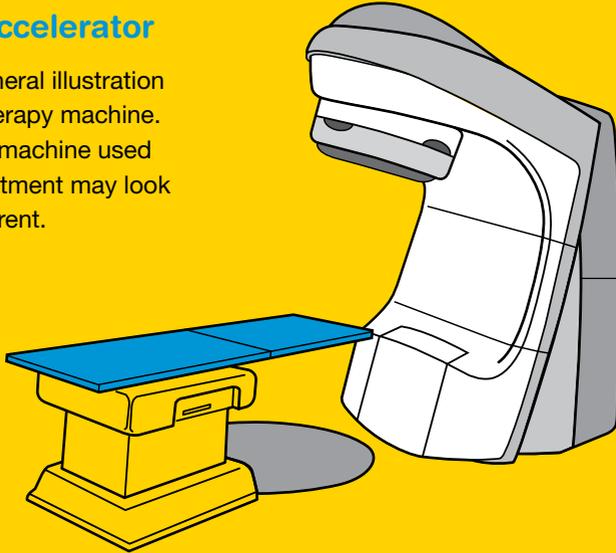
Many of these techniques allow the radiation beams to be delivered from several different directions. This more accurately targets the cancer and limits higher radiation doses to surrounding normal tissues, which reduces side effects.

Stopping smoking during and after treatment can make the treatment more effective. Call Quitline **13 78 48** for support.



Linear accelerator

This is a general illustration of a radiotherapy machine. The type of machine used for your treatment may look slightly different.



How long is a course of treatment?

A course of treatment refers to the number of radiotherapy treatments you receive. A course varies between people, depending on the total dose required to treat the cancer, its location and the reason for treatment.

In general, higher doses are given for curative treatment, and they are usually given over a longer period of time.

The total dose is usually divided into smaller doses called fractions. Most people have radiotherapy from Monday to Friday for 6–8 weeks. Weekend rest breaks allow the normal

cells to recover. Some people have only one or a few treatments. Occasionally, two treatments per day may be recommended.

Each dose of radiation causes a little more damage to cancer cells, so it's important to go to all your scheduled sessions to get the full effect of treatment (i.e. enough radiation to eventually kill the cancer cells or relieve symptoms).

Planning treatment

Before you start treatment, it needs to be planned to ensure that enough radiation reaches the cancer, but does as little damage as possible to the surrounding healthy tissues and organs. The medical team will check if any equipment is required to keep you in a stable, comfortable position every time you receive treatment.

Planning consists of several steps, which may occur over a few appointments:

Examination – Your radiation oncologist will examine you and may request further x-rays or scans to find out more about the cancer. They will then decide which part of your body to treat, how much radiation to use (the dose) and the number of treatments you will have.

Planning appointment – This may take up to two hours, but the actual treatment sessions will be much shorter (sometimes only a few minutes). You may want to take someone else to this appointment to keep you company, ask questions and take notes.

Simulation – You will be asked to lie still on a table while the radiation therapist takes measurements of your body. This is done using a CT (computerised tomography) scanner, or less commonly, an x-ray machine called a simulator. The machine takes pictures from different angles to build up a three-dimensional picture of the body. You may also have other types of scans.

The scans help your radiation oncologist see how much cancer is in your body and prescribe the dose. Measurements and scan information are fed into a computer that helps the radiation therapist plan your treatment precisely, according to instructions from the radiation oncologist.



During the simulation, you will lie in exactly the same position as when you have your treatment.

Moulds and casts – You may need a stabilisation device to help keep a part of your body still during treatment sessions. This helps ensure that radiation is directed at the same place each time, and protects normal, healthy organs and tissues.

For example, if you need radiotherapy to your head or neck, you will wear a plastic mask called a shell or cast, and markings can be made on the shell rather than your skin (see opposite). You will be able to hear, speak and breathe while wearing the shell, but it may feel strange and claustrophobic at first. Tell the staff if you feel worried or anxious, as they may be able to help you cope.

Skin markings – To ensure you are positioned in the same way for each treatment session, 2–3 very small permanent ink marks (tattoos) may be marked on your skin. These tattoos are less than the size of a freckle and can't be easily seen.

Sometimes temporary marks are made on the skin. Ask the radiation therapist if you can wash off the ink (texta) or if you need to keep it until your full course of treatment is finished. The ink will gradually fade, but it can be redrawn periodically during the course of your radiotherapy treatment.

Having treatment

You may be asked to change into a hospital gown before you are taken into the treatment room. The treatment itself takes only a few minutes, but each session may last 10–20 minutes because of the time it takes to set up the equipment and put you into position.

The room will be in semi-darkness while this is done, so the radiation therapists can easily see the lasers and align them to the tattoos/marks. If a stabilisation device was made for you (such as a mask), it will be used during treatment.

You will be given instructions about what to wear or what to avoid using during radiotherapy. Your medical team may also give you specific direction (e.g. to have a full or empty bladder) for your planning and treatment appointments.



The shielding inside the radiotherapy machine, called a multileaf collimator, allows the machine to change the shape of the radiation beams. This protects healthy tissue by limiting treatment exposure to these parts of the body. An extra piece of rubber-like material or a wax block may also be placed on the skin. This makes sure that the skin gets the correct dose of radiation.

Before treatment begins, the therapists may need to take x-rays to ensure you are in the correct position. They may move the treatment couch you are lying on or physically move your body.

Once you are in the correct position, the radiation therapist will go into a nearby room to operate the machine. You will be alone in the treatment room, but you can talk to the radiation therapist over an intercom, and they will watch you on a television screen. If you can't speak – for example, because you're wearing a mask – you can raise your arm to signal to the staff. You can often listen to music while you are having radiotherapy to help you relax.

You can breathe normally during treatment, but you need to stay very still while the machine is working. This ensures that the treatment is accurate.

“ I had to wear a mask during treatment. I found this uncomfortable but the staff gave me meditation exercises to relax me, which helped. ” Karen

If treatment is needed from different angles, the radiation therapist will move the machine several times. This is often done from outside the treatment room.

It is important that you remain still while the machine is being rotated around the treatment table. The radiation therapist will tell you when it is okay to move. If you feel uncomfortable, tell the therapist – they can switch off the machine and start treatment again when you're ready.

You may hear the term EPID. This means electronic portal imaging device. The EPID receives pictures of the radiation beam as it passes through your body. It helps to ensure your treatment is being given accurately – it is not used to see if the tumour is changing. Sometimes after the image is taken, you will feel the treatment table move a little to ensure your alignment is correct.

Fear of radiotherapy

The machines used for radiotherapy are large and kept in an isolated room. This may be confronting or frightening, especially when you have treatment for the first time. Some people feel more at ease as they get to know the staff and procedures at the treatment centre.

If you are afraid of confined spaces (claustrophobic), let the technician or nurses know so they can help you.

It might help to have reading material or activities to pass the time and keep your mind occupied while you are waiting for treatment.



Page's story

When I was diagnosed with stage 2 breast cancer, I had surgery to remove my left breast, followed by some chemotherapy. During a break from chemotherapy, I received radiotherapy.

The radiotherapy sessions were scheduled daily, Monday to Friday, for six weeks. When I first went in for the planning appointment, it was confronting. I had to open my gown so I was naked from the waist up, and the technicians measured my body and lined up the machine. I felt a bit exposed.

I had little dot tattoos on my chest to help line up the machine in the same place every time. When they did the tattoos, they felt painful, like a bull ant bite. I don't know how anyone manages to get a large tattoo!

My sessions were scheduled early, at 8am. Once the machine

was set up, it didn't take very long, but driving there and waiting took an hour in total.

You have to lie still during treatment, which can be difficult. I was allowed to bring a music CD and listen to it during treatment. This helped me relax. I'd been taking a yoga class, so I thought about my teacher's voice to help me keep still.

My main side effect was red and painful breast scar tissue. It was like it got a little more sunburnt every day, and it added up over time. The nurses showed me how to use cream and dressings on it, and to protect it if I wore a bra. The redness did go away.

I was also tired, but I think some of this was emotional. It wasn't too bad and I was able to continue working part time, two days per week, throughout the course of radiotherapy.

Will radiotherapy be painful?

Radiotherapy is painless. During treatment you will usually not see or feel anything, but you may hear the machine buzzing.

You may find that while lying on the treatment table you have pain due to the cancer. Or, you may feel uncomfortable because of the position you are in. Some people who have treatment to the head report seeing flashing lights or smelling unusual scents. This is common, but it's generally not harmful.

If you feel ill or uncomfortable at any time, tell the radiation therapist. Treatment can be paused if necessary.

Will I be radioactive?

No. External radiotherapy does not make you radioactive because the radiation doesn't stay in your body during or after treatment.

It is safe for you to be with children, family and friends, and women who are pregnant or might be pregnant.



Key points

- In external radiotherapy, high-energy x-rays are directed at the cancer from a machine outside the body.
- This type of radiotherapy doesn't hurt, doesn't make you radioactive and can't be seen or felt.
- The length of your treatment varies depending on the location, type and stage of the cancer. Most treatments take 6–8 weeks, with treatment given daily, Monday to Friday.
- Before treatment begins, the team will determine the precise region to be treated using a CT scanner or x-ray simulator. Other scans may also be needed. Planning will help the radiation oncologist work out the dose, and help the radiation therapist to plan the treatment using a computer.
- Most treatment sessions last 10–20 minutes, but you will only have radiotherapy for 1–5 minutes. Most of the time is taken getting you into position.
- Your radiation therapist will put small marks (dots of coloured ink or tattoos) on your skin. These markers assist in positioning the treatment beams.
- Some people need a stabilisation device (such as a mask) to keep them still. This will be determined at the planning appointment.
- During treatment you will lie on a table called a treatment couch. Your radiation therapist will be in the next room to control the machine. They will be able to see you and talk with you through a speaker, and pause treatment if needed.



Internal radiotherapy

Internal radiotherapy is only used for certain types of cancer, such as prostate cancer, some types of gynaecological cancer, thyroid cancer and cancer affecting the liver. It delivers a high dose of radiation close to the tumour, directly affecting the cancer while limiting the dose to the surrounding tissues. This is given in different ways:

- **Brachytherapy** – The radioactive sources are placed in the body, close to, or inside the cancer. This is called an implant. The type of implant used depends on the type of cancer you have, and may include seeds, needles, wires, capsules or other devices.
- **Radioisotope therapy** – This uses radioactive liquid that is taken by mouth as a capsule or given by injection.

Your doctor may recommend internal radiotherapy alone or in combination with external radiotherapy.

Brachytherapy

How is the implant placed in the body?

An applicator may be used to hold the implant against the tumour. Applicators come in different shapes and sizes, and can contain different radioactive materials. The applicator itself isn't radioactive.

You might need to stay in hospital or have day surgery to have the applicator inserted. The doctor will use an x-ray or ultrasound scanner to guide it into position. You can have pain relief to make you more comfortable during this procedure. Afterwards, a machine is used to pass the radioactive sources into the applicator.



Internal radiotherapy may only be available at some hospitals, and the procedures can vary between hospitals. If this treatment is recommended, the staff will give you more information.

How long will it be in place?

There are many different types of implants – some deliver low doses of radiation; others deliver high doses. They can be temporary or permanent.

- **Temporary implants** – These may be in place for 1–6 days before being taken out. You will stay in hospital during this time. In other cases, the implant delivers radiation over a few minutes during several sessions.
- **Permanent implants** – Seeds or pellets about the size of a grain of rice are left in place permanently to gradually decay. Over a period of weeks or months the radiation level drops, but the seeds remain in place with no lasting effect.

Will the implant be painful?

You should not have any severe pain or feel ill during implant therapy. If your implant is being held in place by an applicator, it may be uncomfortable, but your doctor can prescribe medicine to relax you and relieve any pain.

Once the applicator is removed, you may be sore or sensitive in the treated area for some time. In some cases, your doctor might suggest that you limit physical and sexual activity for a while.

Will I be radioactive?

While the radioactive applicator is in place, some radiation may pass outside your body. For this reason, hospitals take several safety precautions to avoid unnecessary exposure to staff or your family and friends while the implant is in place. The hospital staff will explain any restrictions to you before you start treatment. These may include the following requirements:

- You may be alone, or in a room away from the main ward.
- Hospital staff will only stay in the room for short periods of time, and visitors may be restricted while the implant is in place – children under 18 or pregnant women are not usually allowed to enter the room.
- You can use an intercom to talk with hospital staff and visitors.
- Once the temporary implant is removed, you are not radioactive and there is no risk to others.

If you have a permanent implant, you will be radioactive for a short while and may need to stay in an isolated room for a few days. You may have temporary restrictions placed on your activities such as being around small children or pregnant women.

tips

- Take in reading material and other items to keep you occupied while you're alone in the room. You may also be able to watch television or listen to the radio.
- Let the staff know if you feel anxious in confined spaces (claustrophobic), as they may be able to give you medication to ease this feeling.

Radioisotope therapy

This uses radioactive material that is taken by mouth as a capsule or given by injection.

Different radioisotopes are used to treat different cancers. The most common radioisotope treatment is radioactive iodine, which is used to treat thyroid cancer. Other types may be used to treat liver cancer and non-Hodgkin lymphoma.

Radioisotope therapy requires a short hospital stay. During this time you will be in an isolation room while you are temporarily radioactive. The radioactive iodine taken up by the thyroid cells becomes less radioactive each day. Any iodine not taken up by the thyroid cells is passed out of the body in urine, sweat or faeces.

The amount of radiation that is in your body is measured regularly during your hospital stay. Once the radiation level in your body reaches a safe level, you will be able to go home.

There may be some special precautions or care that you need to take for a short while after you are home. Talk to your radiation oncologist or nurse about what to bring to hospital, and about any special care that may be required after discharge.

Treating secondary bone cancer

Radioisotopes can be used to treat secondary bone cancer. The radioisotope is injected into a vein and circulates to the area of the cancer in the bone. This is a simple procedure and a hospital stay is usually not needed.

Selective internal radiotherapy treatment (SIRT)

SIRT is a way of delivering high doses of internal radiotherapy to treat tumours in the liver.

SIRT uses tiny pellets called microspheres, which contain a radioactive substance. The pellets are injected into a thin tube called a catheter, which is inserted into the main artery that supplies blood to the liver (hepatic artery).

Radiation from the microspheres damages the tumours' blood supply. The tumours can't get the

nutrients they need and shrink. This process is sometimes called radioembolisation.

Each pellet gives out radiation to a small area. This means normal liver cells should only receive a small amount of radiation, which should reduce the side effects you experience.

The pellets deliver radiotherapy continuously for 10–14 days. After they have stopped working, the pellets remain in the body permanently, but they don't cause any problems.



Key points

- Brachytherapy uses radiation to destroy cancer cells and shrink tumours.
- The radiation source, which looks like seeds, ribbons or wires, is put into your body through or around the tumour.
- How long the radiation source is left in place varies, depending on the strength of the source and the dose required. Some stay in place for minutes, hours or days. If you have a permanent implant, it will not be taken out. You may need to stay in hospital in an isolated room.
- Brachytherapy uses low-dose and high-dose radiation sources.
- Once the brachytherapy implant is removed, there will be no radiation left in the body.
- Radioisotope therapy uses radioactive material that is taken as a capsule or given as an injection.
- The most frequently used radioisotope treatment is radioactive iodine, which is taken as a capsule. This treatment requires a short stay in hospital, usually in a special isolation room. You will be able to go home as soon as the radiation levels in your body drop to a safe level.
- Radioisotopes may also be used to treat secondary bone cancer. They are injected into a vein and circulate to the area in the bone where there is cancer.
- Selective internal radiotherapy treatment (SIRT) uses tiny beads to deliver high-dose internal radiotherapy, usually in the liver.



Managing side effects

Radiotherapy is an effective treatment for many cancers, but it can cause side effects. People react quite differently to radiotherapy, and some people may have no side effects. There are many factors that impact the type and severity of side effects, so it's not unusual if your side effects are different to someone else having treatment.

Side effects vary depending on the part of the body being treated. Reactions can also change from one period of radiotherapy to the next. Before treatment begins, talk to your radiation oncologist about the possible side effects from the treatment.

During your course of treatment, tell your radiation oncologist, radiation therapist or nurse of any side effects you notice. These can usually be controlled with the right care and medicine.

Most side effects go away in time. Other less common side effects may be permanent, and some may not start until after treatment has finished.

If you have severe side effects, the doctor may change the treatment or prescribe a break in your course of treatment. However, this may not be possible if your doctor thinks pausing the treatment could affect how well it's working. Check with your doctor.

tip

Always ask your radiation oncologist before using any medicines, home remedies or creams to ease side effects. Some of these remedies can affect how radiotherapy works in your body.

Fatigue

During radiotherapy, your body uses a lot of energy dealing with the effects of radiation on normal cells. Tiredness usually builds up slowly during the course of treatment, particularly towards the end, and may last for a few months after treatment finishes.

Many people find that they cannot do as much, but others are able to continue their usual activities.

tips

- Do fewer things if you feel tired and spread out daily activities.
- Rest or take naps during the day if you can.
- Let family and friends help with shopping, child-care, housework and driving.
- Take a few weeks off work during or after your radiotherapy, or reduce your hours. You may be able to work at home – discuss your situation with your employer.
- Do light exercise, such as walking, and/or keep up with your normal exercise routine. Regular exercise may boost energy levels and make you feel less tired. Talk to your health care team about suitable activities for you.
- Limit caffeinated drinks like tea, coffee and soft drinks. While they may boost your energy, caffeine can make you feel jittery and irritable. It can also cause insomnia and dehydration.
- Avoid or limit alcohol.
- Eat a healthy, well-balanced diet, and don't skip meals.
- Smoking reduces your energy. If you smoke, talk to your doctor or call Quitline **13 78 48** and ask about stopping.

Appetite loss

Good nutrition during radiotherapy treatment helps you remain as well as possible and get the most from your treatment. You may be advised to maintain adequate nutrition to complement how well the radiotherapy is working.

Some people lose interest in food during radiotherapy. This can depend on where on the body the radiotherapy is targeted.

tips

- Eat smaller amounts as often as possible.
- Try to eat extra on days when you have an appetite.
- Ask a dietitian for advice on the best eating plan during treatment and recovery.
- If you don't feel like eating solid foods, try enriching your drinks with powdered milk, yoghurt, eggs, honey, or weight-gain supplements. Sip water regularly to avoid becoming dehydrated.
- If you're advised to try a nutritional supplement, try using them alone or with other foods. Do not use any supplements or medicines without getting your treating doctor's advice. Some supplements could interfere with treatment.
- Sometimes cooking smells can put you off eating. It may help if someone else prepares your food, if possible, or you could consider heating precooked meals.
- If you have radiotherapy to the head and neck area, chewing or swallowing might be difficult or painful. See page 37 for suggestions.

Skin problems

Radiotherapy may make skin in the treatment area dry and itchy. Your skin may peel and look red, sunburnt or tanned. You may need dressings and creams to assist healing and make you more comfortable. Some of the radiation passes through your body and out the other side, so the skin in that part of your body may also be mildly affected. These reactions fade with time.

tips

- Follow skin care instructions as soon as treatment starts, even if you haven't noticed any skin reactions.
- Ask staff before using any soap, deodorant, perfume, talcum powder, creams, cosmetics, medicines or other products on the treatment area. If needed, you may be prescribed a moisturiser.
- Wear loose soft clothing, such as cotton. Avoid tight-fitting clothes, belts or close-fitting collars over the treatment area.
- Tell your doctor about changes to your skin, e.g. cracks or blisters, moist areas, rashes, infections or peeling.
- Choose loose, old clothes that you can throw out if the dye or ink marks rub off on them.
- Stay out of the sun and cover your skin before going outside. Talk to your doctor about using sunscreen – it's not recommended on sensitive, inflamed or broken skin.
- Let the dye outlines wear off gradually. Don't scrub your skin to try to remove the marks.
- Don't use razors, hot-water bottles, heat packs, wheat bags or ice packs on the treatment area. Bathe or shower in lukewarm water – hot water can damage your sensitive skin. Pat skin dry with a soft towel.

Hair loss

If you have hair in the area being treated (e.g. scalp, face or body), you may lose some or all of it during radiotherapy. Your hair will usually grow back a few months after the treatment has finished. Sometimes hair loss is permanent.

In general, you will only lose hair in the treated area. However, when tumours on the face are treated, hair on the back of the head may be lost due to small amounts of radiation passing through the head and out the other side.

tips

- Wear a wig, toupee, hat, scarf or turban. Do whatever feels comfortable and gives you the most confidence.
- If you plan to wear a wig, choose it early in your therapy so you can match it to the colour and style of your own hair. Cancer Council Helpline, your doctor or nurse may be able to help you find a wig.
- Protect your head against sunburn and the cold if you plan to leave it bare.
- Expect the hair that grows back to be different, perhaps thinner or curly where it was once straight. After a large dose of radiotherapy, the new growth may be patchy for a while.
- Ask your hairdresser to make your remaining hair look as good as possible. Your hairdresser may be able to try a new style. In time, your hair will probably return to its normal condition.
- Contact Look Good...Feel Better. This program teaches techniques to help restore appearance and self-image during treatment. For more details see www.lgfb.org.au or call **1800 650 960**.

Nausea

If you have radiotherapy to your stomach region, you may get an upset stomach. This problem will usually get better when your treatment session is over. However, some people feel queasy for a few hours after external radiotherapy.

For more information, talk to your doctor or nurse or call Cancer Council Helpline 13 11 20 for information on eating well.

tips

- Have a bland snack, such as toast and apple juice, before treatment.
- Sip on water and other fluids throughout the day to prevent dehydration.
- Nibble dry biscuits.
- Ask your doctor if a prescription for anti-nausea medication would help you.
- Take anti-nausea medication before, during or after treatment, as prescribed by your doctor.
- Tell your doctor if medicine doesn't help – it may take some time to find medication that works for you.
- Contact your doctor if you still feel nauseated after a few days, or are vomiting for more than 24 hours.

“ At first I couldn't think about eating without thinking about throwing up. Drinking ginger beer helped control the nausea. ” *Simon*

Diarrhoea

If you have radiotherapy to your stomach, lower abdomen or pelvis, you may get diarrhoea. This can occur because the radiation irritates the lining of the bowel or stomach. Symptoms include frequent loose, watery bowel movements, abdominal cramps, and feeling an urgency to go to the toilet. It often begins in the third or fourth week of treatment, and continues for about 3–4 weeks.

If you are having pelvic treatment, the therapists may advise you to fill your bladder before each treatment session. This expands your bladder and pushes your bowels higher up into the abdomen, away from the radiation. Make sure you follow these instructions to minimise any reactions.

tips

- Check with your treatment team before taking any home remedies. You may be prescribed medication to relieve diarrhoea.
- Avoid high-fibre and spicy foods, e.g. wholegrains, nuts, legumes, and hot curries.
- Drink lots of clear liquids as soon as diarrhoea starts, or when you feel it is going to start, to avoid dehydration. Try apple juice, peach nectar, weak tea and clear broth.
- If you feel ill, eat or drink as well as you can so your body gets the energy and nutrients it needs.
- Slowly reintroduce fresh fruits and vegetables and wholegrain breads and pasta after the diarrhoea has cleared up.
- Contact your doctor immediately if you have blood in your faeces or if you have more than 5–6 bowel movements in 24 hours.

Mouth problems

Radiotherapy is often used to treat cancer in the mouth, throat, neck or upper chest region. Depending on the area treated, radiotherapy may affect your mouth and teeth. This can make eating and swallowing difficult, and affect your sense of taste.

Dental problems

Radiotherapy to the mouth may increase the chance of tooth decay or other problems in the long term. Future dental work can be more difficult due to problems with healing. You will need to have regular, ongoing dental check-ups after treatment is finished.

If you're seeing a dental specialist, ask if they can liaise with your usual dentist about any work you need carried out before treatment. They can also give you detailed instructions about caring for your mouth and teeth, to help prevent tooth decay and to deal with problems such as mouth sores.

Side effects

After several weeks of treatment, your mouth or throat may become dry and sore, and your voice may become hoarse. This will gradually improve after treatment is completed, but may take several weeks or even months.

You may also have thick phlegm in your throat, or a lump-like feeling that makes it hard to swallow.

Food may also taste different. Recovery of normal taste can sometimes take a long time after treatment is completed.

- If possible, have a dental check-up before treatment begins with a dentist who specialises in radiotherapy's effect on the teeth.
- Go to the website www.health.gov.au/dental to see if you are eligible to receive dental services under Medicare.
- Keep your mouth wet by sucking on ice chips and sipping cool drinks. Carry a water bottle with you.
- Avoid tobacco and alcohol, which will dry your mouth out even more.
- Try to have more liquids or soft food if chewing and swallowing are painful.
- If your sense of taste changes during radiotherapy, try different ways of preparing food. For example, add lemon juice to meat and vegetables, marinate foods or add spices.
- If eating is uncomfortable or difficult, talk to your doctor. If you are in pain, you can ask for pain-relief medication, which may help you eat well and feel better.
- Ask your doctor or nurse for information about artificial saliva to moisten your mouth.
- Rinse your mouth regularly using a non-alcoholic mouthwash recommended by your doctor or dentist. Some people rinse their mouth with saltwater. This is a natural disinfectant. You can make this mouthwash at home by dissolving $\frac{1}{4}$ teaspoon of salt into 1 cup of warm water.
- Talk to a dietitian, who can suggest nourishing foods that will not hurt your mouth.
- Ask for a referral to a speech pathologist if you have difficulty swallowing.
- If you lose too much weight, you may need extra feeding through a tube that goes into your stomach. Your doctor can discuss this with you.

Sexual intercourse and radiotherapy to the pelvic region

Radiotherapy to the pelvic area can make sexual intercourse uncomfortable. You may notice a change in your sexual desire (libido). This is common and may only be short term. Radiotherapy can make you feel too tired or nauseated to want to be intimate. Some people may also feel less sexually attractive to their partner because of changes to their body. Talking to your partner about your concerns may help.

Effects on women – Radiotherapy may cause the vagina to feel dry, itchy or burning. Treatment may also make vaginal tissue shrink and stiffen, making sex painful. Your doctor or nurse may suggest you use vaginal lubricant or an instrument to expand the

Using contraception

Your doctor may talk to you about using contraception during or after radiotherapy. See also *Fertility issues*, page 40.

Women having radiotherapy or whose partners are having radiotherapy are usually advised not to become pregnant.

During treatment – Although radiotherapy can affect fertility, it is still possible for a woman to become pregnant while having treatment. A man receiving radiotherapy could still make his partner pregnant.

In a woman, radiotherapy to the pelvic area may affect either her eggs (ova) before conception or her unborn child. Radiotherapy to an area close to a man's testicles may cause him to produce abnormal sperm.

vagina (dilator), or to have regular intercourse. Vaginal changes are usually not permanent, but for some women, they are longer lasting or permanent. Talk to your health care team for information and support.

Some women stop having their periods during treatment and may experience menopause. The signs of menopause include hot flushes, dry skin and vaginal dryness.

Effects on men – Men may have problems getting and maintaining erections, and ejaculation may be painful for a few weeks after treatment.

If pregnancy is possible, you and your partner will be strongly advised to use contraception or abstain from sex during radiotherapy. If you or your partner becomes pregnant, talk to your doctor as soon as possible.

After treatment – It may be recommended you use a barrier method of contraception

(such as a condom or a female condom) for a certain period of time. This is to prevent the risk of infection if you have any sores that are healing.

Talk to your doctor for more information about using contraception. Your health care team can also give you advice if you are planning on starting a family after cancer treatment.

Fertility issues

Having radiotherapy near your reproductive organs could affect your ability to have children naturally (fertility).

Effects on women – Radiotherapy to the pelvic area can cause periods to become irregular or stop for a short time. For some women their periods stop permanently (menopause). Talk to your doctor about ways to relieve the symptoms of menopause.

Effects on men – Radiotherapy to an area that includes the testicles may reduce sperm production temporarily. You may feel the sensations of orgasm, but ejaculate little or no semen. This is called a dry orgasm. Usually, semen production returns to normal after a few months, but for some men, infertility is permanent.

If you want to father a child, you may wish to have sperm stored before your treatment starts. This may allow your partner to conceive through artificial insemination later. Discuss this with your doctor.

For more information about these issues, call Cancer Council Helpline 13 11 20 for a free copy of *Sexuality, Intimacy and Cancer*.

tip

Speak to your doctor about the effects on fertility before you start radiotherapy treatment.



Key points

- The side effects you have depend on the type and dose of radiotherapy you receive, and the part of your body being treated.
- Talk to your health care team about any of the symptoms you experience – they may suggest ways to manage them.
- Fatigue is a common problem. Try to plan activities around your energy levels, and talk to family and friends about ways they can help you.
- If your skin is red or sore, avoid using perfumes or talcum powder. Keep the skin moisturised by using only the creams recommended by your nurse. Protect your skin when going out in the sun.
- Some people find the marks on their skin rub off on clothing. Wear loose, old clothes during treatment. Soft cotton fabrics are best.
- People may lose hair in the area where they have radiotherapy.
- Radiotherapy can affect your appetite. This will depend on where you have radiotherapy.
- Nausea and diarrhoea can occur if you have treatment to the stomach or pelvic area. Follow instructions given by your treatment team, and drink lots of fluids each day to prevent dehydration. Prescription medication can also help.
- Visit a dentist before treatment begins and let them know you will be having radiotherapy.
- Sexuality issues following treatment are common. Your fertility may also be affected. It's advised that you don't get pregnant while having radiotherapy. You will need to use birth control or avoid having sexual intercourse.



Making treatment decisions

Sometimes it is difficult to decide on the type of treatment to have. You may feel that everything is happening too fast. 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. You might want to discuss your options with your doctor, friends and family, so you can take into account your personal values.

You have the right to accept or refuse any treatment offered. Some people with 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.

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 48 for a list of suggested questions. If you have several questions, you may want to talk to a nurse or ask the office manager or receptionist 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. Alternatively, you may decide you would prefer to be treated by the doctor who provided the second opinion.

Taking part in a clinical trial

Your doctor 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 what is called 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.

To help you decide whether or not to participate, you can talk to your specialist or the clinical trials nurse, or get a second opinion. If you decide to take part, you have the right to withdraw from the trial at any time. For more information, call the Helpline or visit www.australiancancertrials.gov.au.



Cancer Council services

Cancer Council offers a range of services to support people affected by cancer, their families and friends.

Cancer Council Helpline 13 11 20 – This is many people's first point of contact if they have a cancer-related question. Trained professionals will answer any questions you have about your situation. For more information, see the inside back cover.

Practical help – Your local Cancer Council can help you access services or offer advice to manage the practical impact of a cancer diagnosis. This may include access to transport and accommodation or legal and financial support. Call 13 11 20 to find out what is available in your state or territory.

Support services – You might find it helpful to share your experiences with other people affected by cancer. For some people, this means joining a support group. Others prefer to talk to a trained volunteer who has had a similar cancer experience.

Cancer Council can link you with others by phone, in person or online at www.cancerconnections.com.au. Call us to find out what services are available in your area.

Life after cancer – It's natural to feel a bit lost after finishing treatment. You might notice every ache or pain and worry that the cancer is coming back.

Cancer Council can provide support and information to people adjusting to life after cancer – call the Helpline for details.

Printed, online and audiovisual resources – In addition to this resource, there is a wide variety of free information available about cancer-related topics. Cancer Council produces easy-to-read booklets and fact sheets on more than 20 types of cancer, treatment, emotional issues and recovery.

Cancer Council publications are developed in consultation with health professionals and consumers. Content is reviewed regularly, according to best practice guidelines for health information.

Related publications

You might also find the following free Cancer Council publications and audiovisual resources useful:*

- *Understanding Chemotherapy*
- *Emotions and Cancer*
- *Nutrition and Cancer*
- *Talking to Kids about Cancer*
- *Understanding Clinical Trials and Research*
- *Complementary Therapies* booklet, *Relaxation and Meditation* CDs
- *Cancer, Work and You*
- *Caring for Someone with Cancer*
- *Sexuality, Intimacy and Cancer*
- *Living with Advanced Cancer*
- *Understanding Palliative Care*
- *When Cancer Changes Your Financial Plans*
- *Living Well After Cancer*

Call the Helpline on **13 11 20** for copies, or download them from your local Cancer Council website.

** May not be available in all states and territories.*



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

“ It was very hard work, but I found that caring for my mother at home was one of the best things I could have done for her in her greatest time of need. ” Janice



Useful websites

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

Australian

Cancer Council Australia.....	www.cancer.org.au
Cancer Australia.....	canceraustralia.gov.au
Cancer Connections.....	www.cancerconnections.com.au
Carers Australia.....	www.carersaustralia.com.au
Department of Health.....	www.health.gov.au
Healthinsite.....	www.healthinsite.gov.au

International

Macmillan Cancer Support.....	www.macmillan.org.uk
American Cancer Society.....	www.cancer.org
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.

- Why do I need radiotherapy?
- What do you expect the radiotherapy to do to the cancer?
- What kind of radiotherapy treatment will I have?
- Will it be my only treatment or will I have other treatments too?
- What side effects should I expect? Will they be long- or short-term side effects?
- How long will treatment take (each treatment individually and the series of treatments overall)?
- Where will I have the treatment? Do I have the radiotherapy treatment as an inpatient or outpatient?
- Will I be radioactive? Will it affect my partner?
- Is it safe to have sex if I'm having radiotherapy treatment?
- Will treatment interact with any other medication or vitamins I am taking?
- When will we know whether the radiotherapy treatment has been successful?
- How much will treatment cost?
- Will the cost of my treatment be covered by health insurance?
- If needed, can I get help with travel expenses or accommodation?



Glossary

abdomen

The part of the body between the chest and hips, which contains the stomach, liver, bowel, bladder and kidneys.

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.

angiogenesis

The formation of new blood vessels. This enables tumours to develop their own blood supply, which helps them survive and grow.

applicator

A tool that is used to insert a radiation source into the body for brachytherapy.

benign

Not cancerous or malignant. Depending on the area, a benign tumour can cause localised problems.

brachytherapy

A type of internal radiotherapy treatment in which radioactive material is sealed in needles or seeds and implanted into or near cancerous cells.

cancer

Uncontrolled growth of cells that may result in abnormal blood cells or grow into a lump called a tumour. These cells may spread throughout the lymphatic system or bloodstream to form secondary or metastatic tumours.

cells

The basic building blocks of the body. A human is made of billions of

cells, which are adapted for different functions.

chemotherapy

The use of 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. It can be used to plan radiotherapy treatment.

external beam radiotherapy

A type of radiotherapy delivered to the cancer from outside the body.

fertility

The ability to conceive a child.

fraction

The individual, usually once daily, dose of radiation that makes up part of a course of radiotherapy treatment.

genes

The microscopic units that determine how the body's cells grow and behave. Genes are found in every cell of the body and are inherited from both parents.

hormone treatment

A treatment that blocks the body's natural hormones, which sometimes help cancer cells grow. Also called hormone therapy.

immunotherapy

The prevention or treatment of disease using substances that change the

immune system's response. Also called biological therapy.

intensity modulated radiation therapy (IMRT)

A type of external radiotherapy in which the radiation beams are aimed from several directions, while the intensity (strength) is controlled by computers. This helps to reduce some side effects.

internal radiotherapy

Brachytherapy or radioisotope therapy.

linear accelerator

A machine used in external radiotherapy to treat cancer.

lymph nodes

Small, bean-shaped glands that form part of the lymphatic system.

lymphatic system

A network of tissues, capillaries, vessels, ducts and nodes that removes excess fluid from tissues, absorbs fatty acids and transports fat, and produces immune cells.

malignant

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

metastasis

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

multileaf collimators

Moveable pieces of metal built into the head of radiotherapy machines to shield normal tissue and organs from the radiation beam.

oncologist

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

palliative treatment

Medical treatment for people with advanced cancer to help them manage pain and other physical and emotional symptoms of cancer.

radiation

Energy in the form of waves or particles, including gamma rays, x-rays and ultraviolet (UV) rays. This energy is harmful to cells and is used in radiotherapy to destroy cancer cells.

radioisotope treatment

The use of radioactive liquid that is taken by mouth as a capsule or given by injection.

radiotherapy

The use of radiation, usually x-rays, or gamma rays, to kill cancer cells or damage them so they cannot continue to grow and multiply.

selective internal radiation therapy

A type of internal radiotherapy used to treat liver tumours. Also called SIRT.

simulator

A diagnostic x-ray machine that is used to ensure the correct alignment of the treatment beam with the tumour.

surgery

An operation by a surgeon to remove a part of the body affected by cancer.

symptoms

Changes in the body that a patient feels or sees, which are caused by

an illness or treatment, e.g. pain, tiredness, rash or a stomach-ache. These help the doctor work out what is wrong.

three-dimensional conformal radiation therapy (3D-CRT)

A type of external radiotherapy that uses a computer to shape the radiation beams to the shape of the tumour. This delivers high doses of radiation to the tumour while sparing the normal tissues as much as possible. Beams are usually delivered from several different directions.

tissue

A collection of cells that make up a part of the body.

tumour

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

Can't find what you're looking for?

For more cancer-related words, visit www.cancercouncil.com.au/words or www.cancervic.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 a range of 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 Helpline 13 11 20

Cancer Council Helpline is a telephone information service provided throughout Australia for people affected by cancer.

For the cost of a local call (except from mobiles), you, your family, carers or friends can talk confidentially with oncology health professionals about any concerns you may have. Helpline consultants can send you information and put you in touch with services in your area. They can also assist with practical and emotional support.

You can call Cancer Council Helpline 13 11 20 from anywhere in Australia, Monday to Friday. If calling outside business hours, you can leave a message and your call will be returned the next business day.

Visit your state or territory Cancer Council website

Cancer Council ACT
www.actcancer.org

Cancer Council SA
www.cancersa.org.au

Cancer Council Northern Territory
www.cancercouncilnt.com.au

Cancer Council Tasmania
www.cancertas.org.au

Cancer Council NSW
www.cancerCouncil.com.au

Cancer Council Victoria
www.cancervic.org.au

Cancer Council Queensland
www.cancerqld.org.au

Cancer Council Western Australia
www.cancerwa.asn.au

For support and information on cancer and cancer-related issues, call Cancer Council Helpline. This is a confidential service.



Cancer Council
Helpline
13 11 20