

## Radiotherapy

This information is about radiotherapy.

Any words that are underlined are explained in the word list at the end. The word list also includes the pronunciation of the words in English.

Many people with cancer will have radiotherapy as part of their treatment.

There are different types of radiotherapy. We explain the main types in this information. Ask your doctor to explain which type of radiotherapy you are having so you can read the right parts of this information.

Some people will also need other treatments, such as chemotherapy or surgery. The doctors at the hospital will talk to you about your treatment. We also have information in [language] about these treatments.

If you have any questions about this information, ask your doctor or nurse at the hospital where you are having treatment.

You can also call Macmillan Cancer Support on freephone **0808 808 00 00**, Monday to Friday, 9am to 8pm. We have interpreters, so you can speak to us in your own language. When you call us, please tell us in English which language you need (say "xxxxx").

There is more cancer information in [language] at [macmillan.org.uk/translations](https://www.macmillan.org.uk/translations)

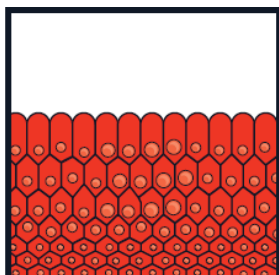
## **This information is about:**

- What is cancer?
- What is radiotherapy?
- Why is radiotherapy given?
- Your radiotherapy team
- Understanding your treatment
- Where is radiotherapy given?
- Planning your treatment
- Types of radiotherapy
- Side effects of radiotherapy
- Long-term side effects
- How Macmillan can help
- Word list
- More information in [language]
- References and thanks

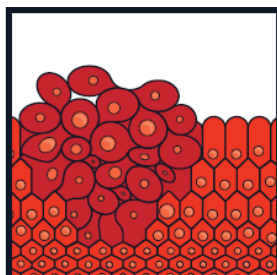
## What is cancer?

Cancer starts in our body's cells. Cells are the tiny building blocks that make up the organs and tissues of our body. Usually, these cells split to make new cells in a controlled way. This is how our bodies grow, heal and repair. Sometimes, this goes wrong and the cell becomes abnormal. The abnormal cell keeps splitting and making more and more abnormal cells. These cells form a lump called a tumour.

**Normal cells**



**Cells forming a tumour**



Not all lumps are cancer. A lump that is not cancer is called benign. It cannot spread to anywhere else in the body. A lump that is cancer is called malignant. It can grow into other areas of the body.

Cancer cells sometimes break away from the first cancer and travel through the blood or lymphatic system to other parts of the body. Cancer cells that spread and develop into a tumour somewhere else in the body are called a secondary cancer.

You cannot catch cancer from someone else.

## What is radiotherapy?

Radiotherapy uses strong x-rays to destroy cancer cells. It can damage normal cells too but they usually recover after treatment finishes.

## Why is radiotherapy given?

### **To cure the cancer**

Radiotherapy can be given to cure some types of cancer. It may be given on its own. Or it may be given before or after surgery. Before surgery it may make the tumour smaller. After surgery, it can help kill any cancer cells left behind. Sometimes chemotherapy is given at the same time as radiotherapy.

### **To help with cancer symptoms**

When cancer cannot be cured, radiotherapy may be given to help with symptoms. This is called palliative radiotherapy.

## Your radiotherapy team

### Clinical oncologist

This is a doctor who treats cancer with radiotherapy. They help plan your treatment. You may see them during your treatment so they can check how you are feeling. You can also ask to see them between appointments.

### Radiographers

The team of radiographers help plan your treatments and work the radiotherapy machines. They also give you advice about any side effects or worries that you may have.

### Clinical nurse specialists

They are nurses who are experts in the type of cancer you have. You can talk to them about any concerns you have. They can give you support and information during and after your treatment. They can also help you manage any side effects.

## Understanding your treatment

Before you have treatment, your doctor, nurse or pharmacist will explain:

- why you need it
- how often you will have it
- the possible side effects
- how you may feel after the treatment.

No treatment should be given unless you understand why you are having it and how you may feel. You will be asked to sign a form to show that you agree to the treatment and understand its possible side effects. This is called a consent form.

It is a good idea to take someone with you who speaks [language] and English. Sometimes the hospital can provide an interpreter for you. They usually need to arrange this in advance. So if you need an interpreter, tell the hospital before the appointment.

## Where is radiotherapy given?

Radiotherapy is given in hospital. You usually have your treatment as a day patient. This means you can go home after the treatment and you don't need to stay overnight. With some types of radiotherapy, you may need to stay in hospital for a few days.

If you are unwell or also having chemotherapy, you may need to stay in hospital.

## Planning your treatment

Radiotherapy is planned carefully for each person. This is to make sure the treatment works well and causes as few side effects as possible. You may need to visit the hospital a few times for planning before your treatment can start. Your radiotherapy team will tell you what to expect.

### Scans

You will need to have one or more scan before you start treatment. This helps your team decide how much radiotherapy you need. It also helps them plan exactly where to give the radiotherapy.

Before a scan, you may be asked to remove some clothing and put on a gown. Someone from the team may also give you a drink or injection. This helps get a clear picture from the scan.



### **Moulds and masks**

You may need a mould or mask for your treatment. If you need one, your radiotherapy team will make it for you. A mould or mask helps you stay still and in the correct position. Moulds are for a leg, arm, or other body part. Masks are for the head or neck.

A mould or mask is made of a plastic mesh. It fits tightly but it should not be uncomfortable. You only wear it for short periods of time. You would wear it

- when your treatment is being planned
- when you have your treatment.

You can breathe normally while you are wearing a mould or mask.



### **Marks on the skin**

Someone from your radiotherapy team may make small, permanent marks on your skin. The marks show exactly where to give the radiotherapy. The marks are made in the same way as a tattoo. Tell the radiographer if you have any worries about having marks on your skin.

### **Fertility**

Radiotherapy can affect your ability to get pregnant or make someone pregnant. Many people find this difficult to deal with. If you are worried about this, talk to your doctor or nurse before treatment starts. They can tell you what to expect and about ways to protect your fertility. Speaking to a counsellor or religious leader may also be helpful.

## Contraception

Your doctor may advise you not to become pregnant or make someone pregnant during some treatments. This is because radiotherapy may harm a developing baby. It is important to use contraception during and for a few months after radiotherapy. You can talk to your doctor or nurse if you are worried about this.

## Types of radiotherapy

There are different types of radiotherapy:

- **External radiotherapy** – given from outside the body by a radiotherapy machine.
- **Internal radiotherapy** – when a radioactive material is put into your body. There are two types of internal radiotherapy: brachytherapy and radioisotope therapy.

Ask your doctor to explain which type you are having, so you can read the right parts of this information.

### External beam radiotherapy

This is when radiotherapy is given from outside the body using a radiotherapy machine. Most people have treatment each day from Monday to Friday. Then they have a rest with no treatment at the weekend. Some hospitals give treatment at the weekends too, with a rest during the week instead.

How many treatments you have will depend on the type and size of the cancer. It can take from one to seven weeks to have all the treatment you need.

Treatment only takes a few minutes each day but you may need to wait for your treatment if the hospital is busy. It can help to do something while you wait, like read or listen to music.

Before your first treatment, the radiotherapy team will explain what will happen. They may ask you to take off some clothes and wear a gown. It is normal to feel worried about having treatment. But it usually gets easier as you get to know your radiotherapy team and what happens.

It may take a little while to get you in the correct position for treatment. You will need to lie very still. The radiographers will dim the lights. Then they will leave the room while the treatment happens. Having radiotherapy does not hurt and the radiotherapy machine does not usually touch you.

The radiographers will watch you from the next room, either through a window or on a screen. No one else will be able to see you. If you have any problems you can raise your hand or ring an alarm to let them know.

The machine may move around your body to give the treatment from different directions. Once the treatment is over, the radiographers will come back into the room and help you down from the machine.

This treatment will not make you radioactive. It is safe for you to be with other people, including children, after your treatment.

### **External beam radiotherapy**



### **Brachytherapy**

This is a type of internal radiotherapy. A radioactive implant is placed in your body near the cancer. You may be asleep under a general anaesthetic when it is put in. Or you may have painkiller injections.

During your treatment you stay in hospital. You are usually alone in the treatment room for some time while the radiotherapy is given. This is to protect others from the treatment. Tell your team if you are worried about this so they can help. They will explain how long your treatment will take.



As soon as the implant is removed from your body, you are not radioactive.

For some types of brachytherapy, the implants are not removed. It is safe for you to be around most other people. Your team may ask you to avoid close contact with children or pregnant women. They will tell you how long you need to do this. They will explain this and anything else you need to know.

Your team will give you printed information about your treatment. It is important to carry this with you all the time.

Brachytherapy is often used to treat cancer of the prostate, cervix, vulva and womb. It may also be used to treat other types of cancer. It can be used on its own or with external beam radiotherapy.

### **Radioisotope therapy**

This is a type of internal radiotherapy. You have a radioactive liquid:

- by mouth as a drink or capsules
- as an injection into a vein.

Cancer cells take in the liquid more than normal cells do. This destroys the cancer cells.

After treatment your body fluids are slightly radioactive. This will gradually return to normal. Your team will give you instructions about using the toilet and cleaning up any spillages safely. They may ask you to avoid close contact with children or pregnant women. They will tell you how long you need to do this.

If they tell you that you must stay in hospital, you may be asked to stay alone in your room all the time. Tell your team if you are worried about this so they can help. They will explain how long your treatment will take.

Radioisotope therapy is often used to treat thyroid cancer. It may also be used to treat some types of cancer that have spread to the bone.

### **Side effects of radiotherapy**

Radiotherapy affects everyone differently. Some people have very few side effects while others have more. We describe the most common side effects here. It is unlikely that you will get all of these.

Before your treatment, your radiotherapy team will talk to you about which side effects you may get. Ask them any questions you may have. Tell your team if you have any side effects during treatment. They can give you advice or medicines to help. If you feel unwell when you are at home, call the hospital.

### **Tiredness**

You may feel very tired during treatment and for weeks or months after it finishes. Travelling to hospital each day can make tiredness worse. If you are tired, allow yourself time to rest. Plan your day so that you don't do too much.

It is important to do some exercise each day if you can. A short walk may give you more energy.

### **Feeling sick**

Treatment can make you feel sick, and sometimes be sick. This is more common if you have treatment near the tummy (abdomen). Your treatment team can give you a medicine to stop you feeling sick.

### **Eating and drinking**

Sometimes you may not want to eat. If this happens, try having regular small snacks rather than large meals. If you are having problems with eating it is important to tell your radiotherapy team. They will give you advice. If you need extra energy or protein in your diet, you can take food supplements.

### **Looking after your skin**

The skin in the area that is treated may get:

- red
- darker
- sore or itchy.

If you have skin changes like these, tell your radiotherapy team straight away. They can give you advice and treatments.

Here are some tips that may help:

- wear loose-fitting clothes made from natural fibres, such as cotton
- wash your skin gently with mild, unperfumed soap and water and gently pat it dry
- do not rub the skin
- do not wet shave
- do not use hair-removing creams or products, including wax
- ask your radiotherapy team if you can use moisturisers or deodorants on the skin
- protect the skin from the sun.

### **Hair loss**

You only lose hair from the area of your body where you have treatment. If you have treatment to your head, you may lose some hair from your head. If you have treatment to your breast, the hair under your arm might fall out. Some people feel upset about losing hair. If you are worried about it, talking to your doctor or nurse can help.

### **Changes in your blood**

Sometimes radiotherapy can lower the number of blood cells in your blood. Your radiotherapy team may arrange blood tests for you to check the number of blood cells you have. Some people need medicine or sometimes a blood transfusion if the level of certain types of blood cells is too low.

Always tell your team if you have bruising or bleeding and you do not know why. This includes:

- nosebleeds
- bleeding gums
- tiny red or purple spots on the skin that may look like a rash.

You should also contact your radiotherapy team straight away if:

- your temperature goes over 37.5°C (99.5°F)
- you suddenly feel unwell, even with a normal temperature
- you have symptoms of an infection – this can include feeling shaky, a sore throat, a cough, diarrhoea or needing to pass urine a lot.

### **Diarrhoea**

It is common to have loose stools (poo) or diarrhoea if you have treatment near your tummy (abdomen) or pelvis. You may need to use the toilet more often than usual. This can make you feel tired and weak. It is important to drink plenty of fluids. Tell the staff at the hospital if you have diarrhoea or tummy (abdominal) pain. They can give you tablets to help.

### **Problems with passing urine**

Treatment near the bladder can make you pass urine (pee) more often than usual. Drinking more fluids may help. Tell the doctor or nurse straight away if

- it hurts when you pass urine
- you cannot wait when you need to pass urine
- you have blood in your urine.

Radiotherapy for prostate or penis cancer sometimes makes it difficult to pass urine. If this happens, you may need to have a thin tube put into your bladder to drain the urine. The nurses at the hospital will show you how to look after the tube. A nurse can also visit you at home to help you.

## Sore mouth

If you have treatment to your head or neck, your mouth may get sore. This may make swallowing difficult. It is important to look after your mouth during treatment. Your team will show you how to do this. It can help to avoid:

- smoking
- drinking alcohol spicy food
- very hot food.

It is important to tell the doctor or nurse if your mouth feels sore or you have mouth ulcers. They can give you mouthwashes and painkillers to help. If it becomes difficult to swallow your doctor can prescribe medicines to help.

## Long-term side effects

Most side effects only last for a short time. Some may last for a few weeks after your treatment has finished. Sometimes, side effects can last longer than this. Occasionally, they can last for the rest of your life. Your doctor will talk to you about this before you have your treatment. It is important that you understand that some side effects may be permanent.

## How Macmillan can help you

Macmillan is here to help you and your family. You can get support from:

- **The Macmillan Support Line (0808 808 00 00).** We have interpreters, so you can speak to us in your language. Just tell us, in English, the language you want to use. We can answer medical questions, give you information about financial support, or talk to you about your feelings. The phone line is open Monday to Friday, 9am to 8pm.
- **The Macmillan website ([macmillan.org.uk](http://macmillan.org.uk)).** Our site has lots of English information about cancer and living with cancer. There is more information in other languages at [macmillan.org.uk/translations](http://macmillan.org.uk/translations)
- **Information and support services.** At an information and support service, you can talk to a cancer support specialist and get written information. Find your nearest centre at [macmillan.org.uk/informationcentres](http://macmillan.org.uk/informationcentres) or call us. Your hospital might have a centre.
- **Local support groups** – At a support group you can talk to other people affected by cancer. Find a group near you at [macmillan.org.uk/supportgroups](http://macmillan.org.uk/supportgroups) or call us.
- **Macmillan Online Community** – You can also talk to other people affected by cancer online at [macmillan.org.uk/community](http://macmillan.org.uk/community)

## Word list

Word (target language)	In English	How to say in English (transliteration of English word)	Meaning
	Benign		A lump in the body that is not cancer and cannot spread to anywhere else in the body.
	Cells		The tiny building blocks that make up the organs and tissues of our body.
	Cervix		The cervix is the opening at the bottom of your <u>womb</u> . It is inside a woman's body at the top of the <u>vagina</u> .
	Chemotherapy		A cancer treatment that uses drugs to kill cancer cells.
	Contraception		Drugs or devices that prevent pregnancy.
	Cured		When there are no cancer cells left in the body.
	Diarrhoea		When you have soft or watery poo. You might need the toilet more than usual or very urgently. You may also have tummy pain.
	Lymphatic system		A network of vessels and glands throughout the body that helps to fight infection.
	Malignant		A lump in the body that is cancer and can spread around the body.
	Prostate		The prostate is a small gland inside a man's body. It is near the bladder.
	Radioactive		If something is radioactive, it means it releases radiation.

	Scan		When doctors take a picture of the inside of your body.
	Side effects		Unwanted effects of cancer treatment. For example, hair loss, feeling sick or tiredness. Most side effects go away after treatment finishes.
	Surgery		Having an operation.
	Tumour		A tumour is a group of cells that are growing in an abnormal way. The abnormal cells keep multiplying and form a lump.
	Vagina		The vagina is a passageway inside a woman's body. The entrance to the vagina is between your legs. At the top of the vagina is the <u>cervix</u> , which then leads to the <u>womb</u> .
	Womb		The womb is a round organ inside a woman's body in the lower tummy area. It is where a baby grows if you are pregnant.

## More information in [language]

We have information in [language] about these topics:

<p><b>Types of cancer</b></p> <ul style="list-style-type: none"><li>• Breast cancer</li><li>• Large bowel cancer</li><li>• Lung cancer</li><li>• Prostate cancer</li></ul> <p><b>Treatments</b></p> <ul style="list-style-type: none"><li>• Chemotherapy</li><li>• Radiotherapy</li><li>• Surgery</li></ul>	<p><b>Coping with cancer</b></p> <ul style="list-style-type: none"><li>• If you're diagnosed with cancer – A quick guide</li><li>• Claiming benefits</li><li>• Eating problems and cancer</li><li>• End of life</li><li>• Financial support – benefits</li><li>• Financial support – help with costs</li><li>• Healthy eating</li><li>• Tiredness (fatigue) and cancer</li><li>• Side effects of cancer treatment</li><li>• What you can do to help yourself</li></ul>
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To see this information, go to [macmillan.org.uk/translations](http://macmillan.org.uk/translations)

### Speak to us in [language]

You can call Macmillan free on **0808 808 00 00** and speak to us in [language] through an interpreter. You can talk to us about your worries and medical questions. Just say [language] in English when you call (say “xxxxx”).

We are open Monday to Friday, 9am to 8pm.

## References and thanks

This information has been written and edited by Macmillan Cancer Support's Cancer Information Development team. It has been translated into [language] by a translation company.

The information included is based on the Macmillan booklet **Understanding radiotherapy**. We can send you a copy, but the full booklet is only available in English.

This information has been reviewed by relevant experts and approved by our Chief Medical Editor, Dr Tim Iveson, Consultant Medical Oncologist and Macmillan Chief Medical Editor.

Thanks also to the people affected by cancer who reviewed this information.

All our information is based on the best evidence available. For more information about the sources we use, please contact us at **cancerinformationteam@macmillan.org.uk**

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We make every effort to ensure that the information we provide is accurate but it should not be relied upon to reflect the current state of medical research, which is constantly changing. If you are concerned about your health, you should consult your doctor. Macmillan cannot accept liability for any loss or damage resulting from any inaccuracy in this information or third-party information such as information on websites to which we link.

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