



Radiotherapy to the lung

A guide for patients and their carers



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Christie website

For more information about The Christie and our services, please visit **www.christie.nhs.uk** or visit the cancer information centres at Withington, Oldham or Salford.

Introduction

This booklet is to tell you about external beam radiotherapy to the lung. The Christie is a specialised centre for radiotherapy and patients come for treatments that are not always available at general hospitals. This treatment may be offered at the radiotherapy departments at The Christie at Withington, The Christie at Salford Royal or The Christie at Oldham.

If you are having radiotherapy as an inpatient, please bring this booklet with you. You may have heard about radiotherapy from people you know or from the patients at The Christie. Remember that their information may not apply to you.

What is radiotherapy?

Radiotherapy uses exact, carefully measured doses of radiation to treat diseases. It is often given in small doses over a specified period of days or weeks, but may be given in a single treatment.

"I felt very apprehensive about going to The Christie but I needn't have worried. Everyone was very helpful and friendly."

External beam radiotherapy can be delivered in many different ways using high energy radiation beams. These can either be photons, electrons or protons. Photons and electrons are delivered from a machine called a linear accelerator whilst protons are delivered from a machine called a cyclotron.



Please note:

Mobile phones can interfere with the treatment equipment. Please look out for signs letting you know if it is safe to use your mobile phone. If you do have one with you, you may need to turn it off.

“The staff were very helpful and pleasant. They explained things to me in a way that I could understand, answered all my questions and put me at ease.”

The Christie NHS Foundation Trust now provides a proton beam therapy (PBT) service. However, it is not appropriate to treat all kinds of cancers with proton beam therapy. This will be decided by your oncologist and discussed with you.

The radiographers treating you are highly trained professionals. They will be able to answer any questions or concerns you may have.

How does radiotherapy work?

Our bodies are made up of cells and all cells are able to divide. If radiation hits a cell that is dividing it will be damaged. Cancer cells are much less able than normal cells to repair the damage, so more of the cancer cells will be destroyed.

When will radiotherapy begin?

The specialist doctor who is in charge of your treatment is called a clinical oncologist. A team of doctors, radiographers and nurses will care for you and a named consultant will be responsible for your treatment.

In choosing your treatment, your clinical oncologist at The Christie has carefully considered the nature of your illness and your particular needs with regard to your treatment plan.

During your initial radiotherapy planning appointment, the radiographers will be able to tell you exactly when you will start your treatment. As everybody's treatment varies the amount of time needed to plan the treatment varies. You may have between 1 and 33 treatments. These are usually given on consecutive weekdays.

Agreeing to treatment

Consent to treatment

The doctors, nurses and radiographers will give you some written information to support what they have said about your treatment. At the time your treatment is being planned, you will have a further opportunity to discuss anything that you do not understand or any anxieties you may have.

We will ask you to sign a consent form agreeing to accept the treatment that you are being offered. The basis of the agreement is that you have had The Christie's written description of the proposed treatment and that you have been given an opportunity to discuss any concerns. You are entitled to request a second opinion from another doctor who specialises in treating this cancer. You can ask your own consultant or your GP to refer you.

Your consent may be withdrawn at any time before or during treatment. Should you decide to withdraw your consent then a member of your treating team will discuss the possible consequences with you.

Radiation can be harmful to the unborn child. It is important to let the radiographers know if you have missed a period, or suspect that you might be pregnant before you are exposed to any radiation.

What are the benefits of treatment?

Radiotherapy works by damaging cancer cells while causing as little damage as possible to normal cells. The benefits of having radiotherapy for lung cancer are to try to shrink the cancer with the aim of improving or preventing symptoms from it, and delaying further growth of the tumour.

Occasionally radiotherapy will destroy the cancer. The aim of treatment will be different for each person and your doctor will have discussed this with you.

Are there any alternatives to this treatment?

There are alternative treatments available including surgery and chemotherapy. Not all of these options are suitable for everybody but all possibilities will be discussed with you by your doctor. Your doctor will have also discussed with you what would happen if you had no treatment.

Planning the treatment

To help with the planning of your treatment, you will have a CT scan.



The scans which are undertaken to plan your radiotherapy are solely aimed to give enough information to plan the radiotherapy accurately. These scans are not diagnostic and therefore do not give sufficient information to assess the status of your cancer or any other abnormalities.

Further information about the planning process is in the leaflet 'Information about your radiotherapy planning CT scan'.

During your planning session the radiographers will draw some marks on your chest with a skin pen. These marks do wash off and so some permanent marks, like tiny black freckles, will need to be made. These will help the radiographers set you up in the correct position for treatment every day.

What happens during treatment?

On the day of your first treatment, you will come to the radiotherapy department. If you are an inpatient, radiotherapy care assistant may collect you from your ward and escort you to the department. On the treatment unit you will meet a radiotherapy support worker. They help patients plan their appointments for the treatment. The radiographers will have the details of your treatment which the doctor has carefully planned. They will explain to you exactly what will happen. The Christie is a training centre, so you may meet students in the radiotherapy department who may be involved in the delivery of your treatment. If you have any objections let the radiographers know.



The radiographers will discuss the treatment and how to minimise side effects. They will also check whether you are still happy to go ahead with your treatment. This is the ideal opportunity to ask any questions you may have.

You may have been identified as suitable for an antibiotic against a specific chest infection, in which case this may start at the beginning of your radiotherapy. If you are receiving a longer course of radiotherapy you will be sent for a weekly blood test for your medical team to review. The antibiotic might be added in during the radiotherapy treatment if the medical team reviewing you feel that you need it.

The radiographers will take you into the treatment room and ask you to remove your upper clothes so that they can see the marks made during treatment planning. They will

help you on to the treatment bed. The radiographers will then adjust the bed and your position so that you are in the correct position for the treatment.

They will try to make you as comfortable as possible as you will be asked to keep still for the duration of the treatment.

“There is no feeling at all whilst having the treatment and altogether it only takes a few minutes.”

The radiotherapy machines are quite large and you may find them a little frightening to begin with, but there is no need to worry – the treatment is painless. Although the machines may come quite close to you, they will not

actually touch you. Each session may take about 15 minutes but the actual treatment only lasts a few minutes.

The radiographers operate the machines from outside the room. When all the adjustments have been made and you are in exactly the right position, the radiographers will make sure you are all right and then leave the room to switch the machine on. There is nothing to feel and nothing to see. The machines make a buzzing noise when they are giving treatment.

During your treatment the radiographers will need to take images of the area you are having treated. This will be done at the same time as your treatment and you probably will not notice that the images have been taken. Some machines have the ability to complete a scan of the treatment area. **These images are purely to check that you are in the correct position and not to check how the tumour is responding to treatment.**

Please do not feel abandoned. A closed circuit television on the control desk gives the radiographers a clear view of you and they will be watching you all the time. If you feel you need to cough or sneeze the radiographers will tell you

beforehand how to let them know this. They will switch off the machine and come in immediately.

Once your treatment has finished they will help you off the bed and arrange your next visit. You are then able to return home or to your ward.

It is very important that you do not miss treatment days as this may make your treatment less effective. If you feel you are unable to attend for any reason please telephone the staff on your treatment machine to discuss the problem with a radiographer. The phone number is on your treatment card.

Some questions you may have

Will it hurt?

No. You will feel no pain at all.

Will I lose my hair?

You will not lose any hair on your head. However, you may lose some hair in the area being treated during and after treatment although this usually starts to grow back some time after treatment is finished.

Is it safe?

Radiation used in medical treatment is given in controlled, carefully measured doses. The aim is to include all tissues that could possibly contain cancer cells while minimising the dose to the normal tissue.

Will I be radioactive?

No. Patients treated by X-rays do not become radioactive. The radiation does not stay in your body after treatment, so you cannot do anyone else any harm. It is safe for you to mix with other people including children and pregnant women and to have visitors if you are on the wards.

*I already have problems with my general health.
Will radiotherapy treatment make them worse?*

Not usually. The treatment may make you feel more tired than normal. Please tell your treatment team about any existing medical conditions and continue with any medication you may be taking. Ask your Christie doctor if you are worried about any other health problems.

Can I come for treatment at any time of the day?

If you are having treatment as an **outpatient**, the radiographers will give you an appointment time for the first treatment when you attend for your planning session. After that you can arrange with your treating team the time that suits you and the machine. Please try and be as flexible as possible and give priority to your treatment sessions over other general appointments. The time you prefer may not be available at the start of your treatment because of the large numbers of patients on the unit. If you need a specific time, please give the radiographers at least 48 hours notice. The time we give you may vary half an hour either way each day due to emergencies. You may be given your appointment times for the whole of your treatment on your first visit or alternatively appointment times will be given on each visit for the following day.

Once a week, you will meet your consultant or one of their team. You do not need an appointment for this. We will take you to the clinic before or after your radiotherapy.

We will give you a morning or afternoon appointment to fit in with your consultant's clinic.

If you are an **inpatient**, the treating team will send a care assistant for you when they have a free slot. If you are going away for the weekend, please let the staff know and they will do their best to treat you before lunch.

Will I be treated as an outpatient or an inpatient?

You will usually have your treatment as an outpatient. Some people continue to work during part of their treatment. However, after daily travel and treatment, you may feel tired and need to rest.

Your doctor will have discussed with you the need for travelling daily for your treatment as an outpatient. However, if you become unwell during your treatment we will usually admit you as an inpatient to support you through your radiotherapy. You will not have to stay in bed so bring suitable day wear such as tops and skirts or trousers. Treatment usually takes up only a small part of the day and, if you are well enough, you may be able to go out – check with the ward staff first.

What happens if I need transport to and from the hospital?

Many patients are able to bring themselves or can ask a friend or relative to help them out. If you think you may need ambulance transport, please discuss this with a radiotherapy support worker or radiographer on your first visit to the radiotherapy department. Transport can be arranged subject to eligibility criteria based on medical need. There also needs to be a medical need for you to bring an escort on hospital transport. There can be delays for some time either side of your appointment because of the high demand for transport. Please take this into account when you are deciding whether to use transport or not.

Hospital transport is provided by North West Ambulance Service and West Midlands Ambulance Service. Contact the transport liaison office at The Christie directly on **0161 446 8114** or **8143** for advice and bookings. Patients attending The Christie at Salford can contact **0161 918 7800** and patients attending The Christie at Oldham can contact **0161 918 7700** for advice about transport.

Can I expect any side effects?

Many people who are having radiotherapy to their lungs have little or no side effects. Side effects from radiotherapy vary between people and are dependent on which part of your body is being treated and the number of treatments you have. People who have had similar treatments can often have different side effects.

Early side effects

If you develop early side effects of the treatment, they tend to appear half way through your treatment. These normally continue after the treatment has finished but they should gradually fade 4 to 6 weeks after. This can vary according to the individual.

Tiredness

Tiredness is one of the most common side effects of cancer treatment. Some people describe feelings of extreme fatigue, although some continue to work and carry out busy lives as normal.

Difficulty in swallowing

Some patients may develop discomfort when swallowing. You may feel as if you have a lump in your throat when you swallow. Your Christie doctor can prescribe medicines to help alleviate this symptom.

Cough

You may have an increase in your cough and sputum which may contain a small amount of blood. Don't worry, this is normal. Coughs can sometimes worsen when your treatment has finished. This is also normal. If you are worried about this please let the radiographers and your Christie doctor know.

Coughing up blood

A small amount of blood in the phlegm can sometimes be expected, and your doctor or your specialist lung nurse can advise you what to do. However, if your tumour is located close to blood vessels, there is a risk of coughing up fresh blood which rarely could be life-threatening. If you are considered to be at higher risk of this side effect then your doctor will discuss this with you in more detail. If you are concerned you should ring The Christie Hotline on **0161 446 3658**.

Shortness of breath

Radiotherapy can make you feel more breathless because of inflammation in the lungs. Please let your radiographer and Christie doctor know. You may be prescribed some medication for this. In rare circumstances, this may need urgent assessment and could become life-threatening without any treatment. If you are concerned ring The Christie Hotline on **0161 446 3658**.

Skin reactions

The extent of a skin reaction will vary for each person. You may notice that your skin in the area being treated becomes more sensitive. Occasionally the area can become slightly pink, feel tighter than usual and warm to the touch. This is rare for people having treatment to the lung but can sometimes occur.

Late side effects

It is possible for some types of reaction to occur months or years after the treatment has finished, although this is less common these days because of recent improvements in treatment. Your doctor at The Christie will discuss any possible late effects with you if they are at all likely to occur.

Difficulty in swallowing

If you experience swallowing difficulties months after completing your treatment you may need further investigations as sometimes radiotherapy causes narrowing of the gullet. A minor procedure to stretch the gullet or, very rarely, surgery may be needed. This does not mean that your cancer has come back.

Breathlessness or cough

Radiotherapy may leave the lungs with some scarring (fibrosis). This can mean that your lung doesn't work quite as well as it did before, and you may notice an increase in breathlessness or a cough. If this happens, make an appointment to see your GP or Christie doctor. It may be possible to learn breathing exercises or use medicine to reduce your breathlessness, but the breathing deterioration can be irreversible.

Bone weakness

Rarely, radiotherapy can make some of the ribs more brittle. After a severe cough or mild trauma this can result in chest pain and/or a minor rib fracture.

Spinal cord damage

In extremely rare cases, radiotherapy may lead to injury to the spinal cord which can cause permanent difficulties in walking and loss of sensation in the lower body. Every effort is made to carefully plan your treatment so as to avoid this.

What you can do to help

Tiredness

- Try to maintain a normal sleeping routine and don't feel that you must do everything that you normally do. Ask your family and friends for help. It is a good rule of thumb to listen to what your body is telling you, and if you feel tired then rest.

- For people in good general health, it may be beneficial to do some gentle exercise such as walking. There is a booklet 'Be Active, Stay Active' which contains a simple exercise programme which you may find helpful. Please ask your nurse or radiographer for a copy or visit the cancer information centre.

Skin care

- Wash the treated skin gently with warm water using your normal shower or bath products. If preferred, you can wash with an aqueous cream but this has not been shown to reduce the chance of skin reactions occurring. If your skin becomes irritated after using a product, it is advisable to stop using that product for the time being. Pat the skin dry with a soft towel.
- You can continue to moisturise your skin while you are having radiotherapy treatment applying the moisturiser that you normally use. You do not need to change from this unless you find that your normal moisturiser starts to irritate your skin. Your treatment team may advise you to start moisturising the skin that is included within the treatment area. If they do, we recommend that you avoid products containing 'sodium lauryl sulfate' as this can irritate the skin. Your team can let you know about products that do not have this ingredient. If you have any questions or concerns, please ask a member of your radiographer team for further advice.

During treatment

- If your skin becomes blistered or broken during treatment, please stop using moisturising cream or lotion in that area.
- Wear something loose and comfortable. Cotton is best next to the treated skin – better than man-made material.

- If your skin blisters or becomes broken during or in the days after completing radiotherapy treatment, you may need to have a small dressing placed over this area to help with the healing process.
- Keep the area of skin that has been treated away from direct heat, such as sunlamps, hair-dryers and direct sunlight. Take extra care of your skin during treatment and as long as the reaction lasts. The skin in the treated area may always be more sensitive, so you will need to take care in the sun, even after your treatment has finished. You can use high protection sun cream on the treated area when the side effects have settled.

There is more skin care advice in the leaflet 'Skin care during and after your radiotherapy'. Please ask the radiographers for a copy.

Nutritional advice

- It is very important to keep your weight stable before and during the treatment. Try to eat small frequent meals or snacks throughout the day. Ask the radiotherapy or nursing staff for a copy of 'Eating – help yourself' which has detailed information about coping with problems such as difficulty in swallowing, nausea and lack of appetite.
- Make sure you drink plenty of fluids.
- Try to avoid very hot food and drinks – let hot drinks cool slightly before drinking and avoid spicy foods. Cool drinks and ice-cream can be soothing.
- Some people may need foods which are easier to chew during and after treatment. Ask for a copy of the 'Eating a regular, easy to chew diet' booklet.
- You may need nutritional supplement drinks if you are losing weight or you are not eating very well.

Please speak to the radiographers, nurses or Christie doctor if you feel you are losing weight. Ask for a copy of the 'Nutritional products' booklet for ideas. Nutritional supplement drinks are available on prescription from your doctor.

After treatment ends

After your treatment has ended, continue to follow the skin care and any other advice you have been given during your treatment until you feel your side effects from the radiotherapy have settled. This is usually 4 to 6 weeks after your treatment has finished.

After you have finished your treatment, we will tell you about the arrangements for your first follow-up visit at an outpatient clinic.

You will see your consultant clinical oncologist, medical oncologist or chest physician for a review about 6 weeks after radiotherapy. We need to check that any side effects that you may have developed during or just after the radiotherapy have settled.

Some people return to The Christie for their follow-up visits. Other people return to a hospital near their home. It may be possible to choose the arrangement that suits you and your family.

If you have any problems before you are due for your follow-up appointment you can ask your GP for advice or contact your nurse specialist from your local hospital, the lung cancer specialist nurses or radiotherapists who treated you at The Christie. If you were an inpatient you could also ring your ward at The Christie and speak to a senior nurse. If you have any problems after your first outpatient visit, contact your GP straight away rather than wait for your next appointment.

Prescriptions

Prescriptions from The Christie pharmacy are free for NHS patients. You will need an exemption certificate to get free prescriptions from a community pharmacy. These are available from The Christie Pharmacy, the cancer information centre and your GP.

Benefits and finance

You may have had to stop work and had a reduction in your income. You may be able to get benefits or other financial help. You may be entitled to Personal Independence Payments but new claims cannot be made for Disability Living Allowance.

People over 65 may be able to claim Attendance Allowance.

Your carer could get Carer's Allowance if you have substantial caring needs. Find out more:

- To get a claim pack for Attendance Allowance, call **0345 605 6055** and for Personal Independence Payment (PIP) call **0800 917 2222**.
- Carer's Allowance, call the Carer's Allowance Unit on **0345 608 4321**.
- For benefits advice, contact Maggie's centre on **0161 641 4848** or email **manchester@maggiescentres.org**. The Christie at Oldham has a benefits advice session on Thursday afternoons phone **0161 918 7745**.
- Contact your local social services department for help with equipment and adaptations, or for an assessment of care needs. Visit **www.gov.uk** for further information.
- Macmillan Cancer Support can give advice on helping with the cost of cancer on **0800 808 0000** or **www.macmillan.org.uk**.

Car parking

The Christie at Oldham and Salford has designated areas for patient parking with code entry for radiotherapy patients.

For parking at the Withington site, please check the website www.christie.nhs.uk or ask at the information centre for a copy of the leaflet 'Travel and car parking for patients and patient's visitors to The Christie'.

Further information

Macmillan Cancer Support

This is a national cancer information charity which runs a cancer information service. The cancer support service freephone number is **0808 808 0000** (9am–8pm, Monday to Friday). If you are hard of hearing, use the textphone **0808 808 0121**.

If you are a non-English speaker, interpreters are available. You can ask to speak to specially trained cancer nurses who can give you information on all aspects of cancer and its treatment.

They also publish booklets which are free to patients, their families and carers. You can get a copy by ringing the freephone number above or by going on their website: www.macmillan.org.uk

Booklets available include:

- Individual booklets on specific cancers such as lung cancer
- Information on cancer treatments, such as 'Understanding radiotherapy' and 'Understanding chemotherapy'.

- Booklets on living with cancer – some of these are listed below:
 - Talking about your cancer
 - Talking to children and teenagers when an adult has cancer
 - Cancer and complementary therapies
 - Travel and cancer
 - Coping with fatigue

The cancer information centres have the full range of booklets available free to patients and their relatives or carers.

Roy Castle Lung Foundation

Freephone 0333 323 7200 or www.roycastle.org.uk

Marie Curie Cancer Care

Freephone 0800 090 2309

Maggie's centres

The centres provide a full programme of practical and emotional support including psychological support, benefits advice, nutrition and headcare workshops, relaxation and stress management.

Maggie's Manchester

Call 0161 641 4848 or email manchester@maggiescentres.org

Maggie's Oldham

Call 0161 989 0550 or email oldham@maggiescentres.org

Cancer information in your language

If English is not your first language, you can speak to a nurse at Cancer Research UK through a qualified interpreter. The service is free and over 170 languages are available on 0808 800 4040.

You can also view all patient information on The Christie website in many languages by using the BrowseAloud function.

Christie information

The Christie produces a range of patient information booklets and films. Some of these are listed below:

■ Radiotherapy

Available as a booklet and as a film to watch on The Christie website.

■ Eating – help yourself

This booklet gives advice on coping with eating problems when you don't feel well and when you are receiving treatment.

■ Nutritional products

Describes all the special nutritional products available to help people when eating is difficult.

■ Eating a regular, easy to chew diet

Patients who are experiencing pain on swallowing or difficulty eating a normal textured diet.

■ Where to get help: services for people with cancer

Discusses sources of help when you have cancer, where to go for financial help, and lists cancer support groups.

■ Be Active, Stay Active: a guide for exercising during and after treatment for cancer

A booklet with a simple exercise programme you can follow. There is also more information about coping with fatigue and the benefits of exercise. A short film can be viewed on The Christie website.

The booklets are free to patients coming to The Christie. If you would like a copy, please ask the ward staff. If you are an outpatient please ask your nurse, doctor or radiographer.

Student training

The Christie is a training centre for postgraduate and undergraduate trainees so you may meet students in all areas of the hospital. We train doctors, nurses, radiographers and other therapists in the treatment and care of cancer patients. Placements at The Christie are an important part of student training, so by allowing them to assist in your care, you will be making a valuable contribution to student education.

Students are always supervised by fully qualified staff. However, you have the right to decide if students can take part in your care. If you prefer them not to, please tell the doctor, nurse, radiographer or other therapist in charge as soon as possible. You have a right to do this and your treatment will not be affected in any way. We also try to respect the concerns of patients in relation to the gender of their doctor and other health professionals.

If you need information in a different format, such as easy read, large print, BSL, braille, email, SMS text or other communication support, please tell your ward or clinic nurse.

We try to ensure that all our information given to patients is accurate, balanced and based on the most up-to-date scientific evidence.

If you would like to have details about the sources used please contact patient.information@christie.nhs.uk

Contacts

Contacts via your consultant's secretary

Dr Neil Bayman	0161 446 3337
Dr Clara Chan	0161 918 7442
Dr David Cobben	0161 918 7442
Dr Joanna Coote	0161 918 7442
Dr Corinne Faivre-Finn	0161 446 8200
Dr Maggie Harris	0161 446 3302
Dr Andrew Hudson	0161 446 8200
Dr Laura Pemberton	0161 918 7442
Dr Ahmed Salem	0161 446 3337
Dr Hamid Sheikh	0161 446 3223
Dr David Woolf	0161 446 3336

Nurse clinician

Emma Halkyard 0161 918 7473

Nurse specialists 0161 918 2595

Layla Bostock

Marie Eaton

Jackie Fenemore

Delyth McEntee

Hilary Neal

For queries about radiotherapy appointments

Radiotherapy department 0161 446 3485

The Christie at Oldham 0161 918 7700

The Christie at Salford 0161 918 7800

Contact The Christie Hotline for
urgent support and specialist advice

The Christie Hotline: 0161 446 3658

Open 24 hours a day, 7 days a week

Visit the Cancer Information Centre

The Christie at Withington **0161 446 8100**

The Christie at Oldham **0161 918 7745**

The Christie at Salford **0161 918 7804**

Open Monday to Friday, 10am – 4pm.

Opening times can vary, please ring to check
before making a special journey.

The Christie NHS Foundation Trust

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www.christie.nhs.uk

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