



A patient guide to receiving radiotherapy to the arms or legs

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This leaflet is for people who have been recommended to receive radiotherapy to an arm or leg. It will highlight the important details that you will have already discussed with your doctor. This leaflet is intended to be a guide as details and side effects of treatment will vary from one patient to another.

What is radiotherapy?

Radiotherapy uses high energy X-rays. The aim of radiotherapy is to slow down or stop tumour growth. Radiotherapy is similar to having a scan, it is painless, and you will not see or feel anything. You do have to lie still for a few minutes.

Radiotherapy treatment is sometimes called external beam radiotherapy and is carried out either on a linear accelerator or a tomotherapy machine.

Treatment is normally given in short daily treatment sessions, Monday to Friday. The number of treatment sessions you will be having will depend on your condition. Your doctor will discuss this with you in more detail.

Unfortunately, some healthy cells within the treated area can also be affected, resulting in some side effects. The side effects will be discussed at a later point in this leaflet.

The treatment will not make you radioactive so it is safe to be around children and other people after your treatment.

We are a teaching hospital and have student radiographers in the department everyday who are supervised by qualified staff. Your radiotherapy is delivered by radiographers, both male and female.

Why do I need radiotherapy?

Radiotherapy can be used as the main treatment for cancer or it can be used after surgery to target smaller cancer cells that may have been left behind after surgery.

What are the benefits of radiotherapy?

For most patients the benefit of radiotherapy will be to potentially cure or improve the control or the symptoms of your cancer. Your doctor will discuss this with you in more detail at your first appointment in clinic.

Are there any alternative treatments to radiotherapy?

Cancer may also be treated with surgery and/or chemotherapy. It may be that you receive a combination of these treatments and your doctor will discuss your options with you.

What will happen if I do not have treatment?

If you choose not to have radiotherapy, your symptoms could get worse and the cancer may grow or come back. Please discuss this with your doctor.

Pacemakers

It is important that you inform your doctor or a radiographer if you have a pacemaker. Radiation may affect your pacemaker so pacing checks will need to be organised through your treatment.

Pregnancy

It is extremely important that you are not pregnant or become pregnant during your course of radiotherapy. Even a small amount of radiation may harm an unborn foetus (baby) so it is very important to let the radiographers know at once if you think there is even a small possibility that you may be pregnant before being exposed to any radiation on the CT scanner or treatment machine.

What happens before my radiotherapy begins?

Radiotherapy treatment needs to be carefully planned. You will be sent an appointment letter to attend Radiotherapy, the Cancer Centre, Queen Elizabeth Hospital Birmingham for a computed tomography scan (CT scan) to help plan your radiotherapy treatment.

This CT enables your radiotherapy treatment to be planned and the scan needs to be carried out regardless of any other scans you may have had recently.

Depending on the area to be treated some patients may also attend the mould room for a special mould to be made which will help us to accurately position you for treatment each day and help you keep still during treatment .

This planning visit will take approximately 60 minutes.

For those patients who require a mould to be made for treatment, the process involves warming a sheet of plastic so that it softens and becomes flexible.

The plastic is then gently draped over your arm/leg and moulded to you. The mould then needs to stay in position for about ten minutes whilst it hardens and sets.

The plastic is warm and feels like having a warm flannel over your skin. The mould needs to be a close fit, but it should not be uncomfortable.

You may also lie on a special cushion known as a vac-bag which helps to ensure you are in comfortable, still and reproducible position each day for treatment. It is like a giant bean bag that, when all the air is drawn out of it, forms a secure hold around the area to be treated.

You will be asked to remove any items of clothing in the area to be treated and the radiographers will ask you to lie down and fit your mould and/or vac-bag if applicable. Pen marks will be drawn on your skin which will help the radiographers in the CT scanner plan your radiotherapy treatment.

After the CT scan the radiographers will ask permission to make three to four tiny permanent dots, called tattoos, which are the size of a small

freckle. The tattoos do not indicate where you need treatment or the position of the tumour but are used to ensure you lie in the correct position each day.

The pen marks can then be washed off when you return home.

If you decide that you really do not want these tattoos, please discuss other alternatives available with the radiographers at the time of the CT scan.

Once your scan procedure is complete you will be given an appointment for your first radiotherapy treatment and shown where to find your allocated treatment room. There will be a time delay between your CT planning scan and the start of your radiotherapy treatment because your treatment now needs to be planned and this can be a complex process involving your doctor and a team of other professionals.

The working hours of the radiotherapy department are between 08:00–18:00. If you have a need for a certain appointment time on a specific day it is best to ask at the earliest available opportunity once you have started radiotherapy to avoid disappointment. It may not always be possible to accommodate all patient requests as we are a very busy department, with approximately 250–300 patients on treatment each day.

If you require hospital transport for your radiotherapy treatment please discuss this with the radiographers at CT.

What happens when I arrive for my first treatment appointment?

Your treatment will be carried out on a tomotherapy machine or a machine called a linear accelerator. These are located on the ground floor of the Radiotherapy Department.



Linear accelerator



Tomotherapy machine

On your first day of treatment you can go directly to your allocated treatment room. If you are unsure where it is, please ask at the Radiotherapy Department reception desk or any member of staff. Place your appointment card in the box outside the room so that the radiographers know that you have arrived and then take a seat in the waiting area.

When it is time for your treatment, a radiographer will come to talk to you and explain the treatment procedure to you. This also gives you an opportunity to ask any further questions you may have regarding the treatment, side effects and appointment times.

When you enter the treatment room you will be asked to remove the same clothing as you did at your CT planning scan and lie down in the same position using the mould or vac-bag that was made if applicable.

It is important that there is no clothing covering the treatment area so that the radiographers can see your tattoos and to ensure they can fit the mould or vac-bag accurately if one has been made for you.

The treatment couch will be moved closer to the radiotherapy treatment machine. They will then move you to line up your tattoos and get you into the correct position for treatment and put some pen marks on your

skin. The marks do not indicate where you are having treatment but are used to check your position during treatment and monitor if you have moved.

When you are in the correct position, the treatment machine will move around you but does not touch you at any point during your treatment. The radiographers will inform you when they are leaving the room to commence treatment and you will hear an alarm sound, which is part of the safety procedure. The radiographers will operate the machine from the control area and they can see you at all times. If you need assistance just raise your hand. For your own safety, please do not try to get off the bed as it is raised up off the floor.

For some treatments, the radiographers may move the machine around you to perform a quick scan of the treatment area before treating you. This allows us to look at more pictures to ensure you are in the correct position. These pictures cannot be used to assess your response to radiotherapy. If this scan is part of your procedure it will be explained to you at your first treatment.

When the machine switches on you may hear some noises, such as buzzing and bleeping. This is normal and they are the noises that the machine makes whilst delivering the treatment. When the treatment has finished please remain in position until the radiographers enter the treatment room and tell you that everything is finished. This is for your safety. Your first treatment appointment normally takes around 20 minutes.

What happens at my other treatment appointments?

After your first treatment, the appointments are normally quicker because on the first day additional checks and measurements are performed. When you arrive please put your appointment card in the box outside your treatment room. Appointments usually take around 15–20 minutes.

CCTV monitors

The treatment rooms are monitored during your preparation for treatment, positioning and treatment delivery by television cameras. This is part of ensuring the accuracy of your treatment and your safety and wellbeing in the rooms at all times. We assure you that the camera image feed is live and it is not possible to make a recording.

The images are viewable on screens situated in the machine control areas. The control areas are only accessible by authorised radiotherapy staff, some who may not be directly involved with your care at that time. If you have any concerns about your privacy or dignity that you have not already discussed then please do not hesitate to highlight your concerns during the information discussion with the radiographers at your first treatment appointment.

Is there anything that I need to do whilst receiving my radiotherapy treatment course?

Whilst receiving radiotherapy treatment it is important to make sure that you keep hydrated and drink plenty of fluids, especially if you are also receiving chemotherapy as it helps to reduce toxins that build up in your system. It is also recommended that you eat a nutritionally well-balanced diet.

If you are diabetic please ensure you bring your insulin and some food each time you attend in case there are any delays.

We also recommend you bring any medication you are required to take regularly e.g. steroids, anti-epileptic drugs or painkillers.

Will I see a doctor during my treatment course?

During the course of your treatment you will be monitored by your treatment radiographers and you will be seen by your doctor or one of their team. The treatment radiographers will let you know when this is. Please be aware that your treatment appointment time will be made to coincide with the doctors' clinic so that you do not have to make two

visits in one day.

Please make sure you tell your doctor or their team of any side effects or problems that you may be having. If you need any repeat medication that you have been given from your consultant you should mention this during your clinic appointment. A list of current medications may be useful to bring to this clinic consultation.

Are there any side effects?

When you were consented for your radiotherapy your doctor will have explained the potential side effects.

The most common side effects often occur during the course of radiotherapy treatment and may continue for a few weeks after treatment has finished. Side effects which occur six months or longer after treatment has finished are called long-term side effects. If you have any questions about side effects, please ask any member of the treatment team.

What are the possible early (acute) side effects?

These side effects are usually mild and normally start to occur approximately two weeks into the treatment and be at their worst at completion of radiotherapy. They should gradually improve in the weeks after your radiotherapy has finished and should have settled by the time you attend your post radiotherapy follow-up appointment. Please read on for more detail.

Skin: Radiation can irritate the skin in the area being treated and this is a common side effect when treating limbs. After around two weeks you will notice the skin becoming red and sore.

As the treatment progresses the skin may start to break down. The radiographers will advise you on how to take care of your skin during treatment.

Do not put any creams or medications on unless told to do so by a member of staff as some ingredients can make the skin worse.

The radiographers can provide appropriate creams, dressings or organise pain relief if necessary. Do let them know if you are starting to feel sore.

Swelling: You may notice some swelling in the area being treated and this is quite normal. Radiotherapy can lead to inflammation of the tissues, but this should settle down after treatment.

Stiffness: This is a common reaction to treatment especially if a knee or elbow joint is in the area being treated due to swelling caused by the radiotherapy.

Hair loss: The radiotherapy will make hair stop growing in the area of treatment only. This is normal and the hair should come back when you have finished treatment but it does not always come back the same, it may be thinner.

Tiredness: Radiotherapy can make you feel tired. This can be partly because of the travelling involved in attending the hospital every day, as well as treatment. This may continue for a few weeks after you have finished your treatment.

What are the possible late side effects?

These may occur months or years after finishing your course of radiotherapy. With the improvements in radiotherapy planning and treatment techniques, these are much more unlikely.

Skin changes: Radiotherapy can alter the cosmetic look and/or the feel of the skin due to a loss of elasticity in the skin and surrounding area. Regular stretching exercises and use of a moisturiser can help with this.

Tiredness/lethargy: Even if you have not had any tiredness during your radiotherapy, after treatment has finished there may be a period of time

when you feel particularly sleepy, or that you feel you do not have the energy to do anything. This can last for 6 weeks or longer. This duration of tiredness can cause people to worry as it does not seem to settle down but this is quite a normal reaction to the treatment. It will settle down.

Stiffness in the joint: This can carry on after radiotherapy, especially if a knee or elbow joint is in the area being treated. Again, stretching exercises can help to keep the joint more mobile.

Lymphoedema: There is a chance that the limb receiving treatment will suffer from a swelling called lymphoedema. This is due to a build-up of fluid in the lymphatic vessels. This fluid normally flows freely through the vessels but radiotherapy can interrupt this flow, especially if you have had surgery as part of your treatment. If your doctor is concerned that you are at risk from this, they will refer you to a lymphoedema specialist team to help manage the swelling.

Fractures: In the years following radiotherapy there is a small chance that any bone in the area that received radiotherapy will be weakened and at more risk of a fracture (break).

Radiation-induced tumours: Radiotherapy can cause cancer and there is a very small risk of a secondary cancer developing in the area that has been treated. However, because the risk of this happening is so small, the benefit of your radiotherapy treatment far outweighs this risk. Your doctor will discuss this with you.

Skin care during your radiotherapy

During your radiotherapy and for a while afterwards, you may develop a skin reaction in the area being treated. You may notice the following symptoms:

- Your skin gradually becoming pinker or darker, depending on your skin colour
- The skin may feel dry or tight, and sore
- A rash may also appear and feel itchy

- Sometimes the skin may blister or peel. If this happens you will be given further help as you may need dressings

A skin reaction may appear at any time but usually begins around 10 days after starting treatment.

What can affect my skin reaction?

- Having treatment to areas where there are skin folds can make your skin reaction worse. This includes the groin, buttocks or armpit because they can be warm, moist and rub together causing friction
- Having chemotherapy alongside radiotherapy can make your skin reaction worse
- Smoking can make your skin reaction worse – if you need help to stop please ask for advice
- A skin reaction is more likely if you are overweight due to more skin folds

Your treatment team will talk to you about your usual daily skin care routine. They will let you know if any changes are advised. Please talk to them about any worries you have.

How can I help myself?

It may not be possible to stop a skin reaction but by following the advice below may make you feel more comfortable. This only applies to the skin in the area being treated:

- Wash the skin gently with soap and water and gently pat dry
- Wear loose fitting, natural fibre clothing next to the skin. For example, a cotton t-shirt
- Avoid rubbing the area
- Avoid hair removal in the area being treated (shaving, waxing or hair removal creams)
- Avoid sticky tape on the area (such as Elastoplast™ or Micropore™)
- Use a moisturiser sparingly – gently smooth it on and apply in the direction of hair growth. Please stop using it if it irritates your skin and talk to your treatment team. If you are choosing a new moisturiser, one that is sodium lauryl sulphate-free is recommended

- If your skin breaks/blisters, you should stop using moisturiser. Your treatment team will advise you further
- You may swim if your skin is not broken. Shower after swimming to wash off the chlorine and apply your moisturiser. Please stop swimming if it irritates your skin
- Avoid sun exposure and protect the area from direct sunlight. You should cover up with clothing
- Your treatment team will let you know if this advice changes during treatment

After your treatment has finished, your skin will continue to be more sensitive. Your reaction may worsen in the next 10–14 days before starting to improve. Most patients find their skin has healed around 4 weeks after treatment finishes. If the skin has broken, healing may take longer than this.

Be careful in the sun for at least a year after you have finished treatment. Keep the area you had treated covered with clothing or use a sunscreen with a minimum UVB sun protection factor (SPF) of 50 and UVA protection, as your skin will be more sensitive.

Who do I contact if I have any questions or concerns?

All our staff are here to make sure your treatment goes as smoothly as possible and to support you through this difficult period. If you have any questions about your treatment or side effects, please do not hesitate to ask your doctor or any of the radiographers for advice.

For non-urgent advice and support on side effects during treatment please call the Review Radiographers on **0121 371 3553**.
Monday–Friday, 08:00–17:00

During your treatment and for up to six weeks after treatment finishes if you need urgent advice due to side effects or are feeling unwell, please contact the oncology hotline on **07789 651543**.

In the event that your call is not answered, please leave a message stating your name, hospital number, contact number and a short message.

What do I need to do when I have finished my treatment?

Once you have completed your treatment, the acute side effects may continue for a few weeks even though you are no longer receiving treatment. Continue with the advice that was given to you during your radiotherapy until the side effects stop. If you are unsure of what to do, please ask a radiographer or your doctor before you finish your treatment.

You will be seen by your doctor when you have completed your treatment and this will be 6–12 weeks after the end of your treatment. If you do not receive an appointment in the post within this time then please contact the secretary of your consultant who will be able to check this for you.

Your follow-up appointments will continue for months/years after your radiotherapy course has finished. During these appointments it is important that you mention any side effects or problems that have occurred since completing your treatment. This enables your medical team to help manage any late side effects.

Travelling to your treatment appointments

By train

University Station is the closest train station to the hospital and is only a 5–10 minute walk away. There is also a shuttle bus running from the train station to the Cancer Centre, for those patients who have difficulty walking.

By car

Car parking in Car Park D is free for patients attending for daily radiotherapy treatment. Car Park D is located directly opposite the doors to the Cancer Centre. The postcode for your satellite navigation device is B15 2GW.

If you do drive, please bring in the ticket you have taken to access the car park and the radiographers will exchange this for a prepaid one so you may exit the car park without charge.

Hospital transport

Hospital transport is available for patients who are not well enough to travel by their own means. If you use hospital transport it can mean spending many hours away from home and traveling long distances (you will be collected/returned on a schedule) therefore we recommend you use other forms of transport if you can.

To make a transport booking please call: Patient Transport Services on **0800 035 6511**, Monday to Friday, 08:00 to 18:00.

Bromley Wing

Alternatively you may arrange to stay in the Bromley Wing at the Queen Elizabeth Hospital. It is comfortable accommodation with meals from Monday–Friday for people who are able to look after themselves. Outside treatment times you are free to entertain yourself, have visitors or go out.

Accommodation here is free and can be arranged by contacting the Bromley Wing on **0121 371 4506**

You may also find these organisations helpful:

Macmillan: **www.macmillan.org.uk**

Tel: **0808 8080000**

Radiotherapy contact numbers

Patrick Room – Cancer Centre, Queen Elizabeth Hospital

Information and support for people with cancer and their families.

Tel: **0121 371 3537/9**

Oncology hotline

For urgent medical problems out-of-hours when attending for treatment and up to six weeks after radiotherapy or chemotherapy has finished. Tel: **07789 651543**

Review radiographers

Information and support for patients having radiotherapy treatment.
Tel: **0121 371 3553** (Monday to Friday, 08:00–17:00)

Radiotherapy treatment rooms – direct telephone numbers

Room 1:	0121 371 5703
Room 2:	0121 371 5076
Room 4:	0121 371 5090 (tomotherapy)
Room 5:	0121 371 5085
Room 6:	0121 371 5098 (tomotherapy)
Room 7:	0121 371 5084
Room 10:	0121 371 5079
Room 11:	0121 371 5080

If you require this information in another format, such as a different language, large print, braille or audio version please ask a member of staff or email **patientexperience@uhb.nhs.uk**.

Radiotherapy

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