



University Hospitals Birmingham
NHS Foundation Trust



Building healthier lives

UHB is a no smoking Trust

This leaflet is for people who have been recommended to receive radiotherapy to the abdomen. 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 patient to patient.

What is radiotherapy?

Radiotherapy uses high energy X-rays in the treatment of cancer. 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 about 15–20 minutes.

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

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 and/or chemotherapy. This is to ensure that smaller cancer cells are also targeted.

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 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 consultant will discuss your options with you.

Pacemakers

It is important that you inform your doctor or a radiographer if you have a pacemaker. Radiation may affect your pacemaker so 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 has to be carefully planned and your first appointment will be for a computed tomography planning scan (CT scan). You will be sent an appointment to attend the CT scanner in Radiotherapy, The Cancer Centre, Queen Elizabeth Hospital Birmingham.

This CT scan of your abdomen 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.

When you arrive for your appointment you will be asked to change into a gown and to remove all your top clothes to the waist. Patients are given a gown to wear during the appointment. It may be easier to wear a skirt or trousers rather than a one piece garment to this appointment.

Some patients will have an injection of dye (contrast) into a vein in the arm or have a drink containing contrast before the CT scan. A radiographer will ask you some questions before giving you any contrast. If you have ever had a reaction to contrast before then please let them know. The contrast is used to make it easier for the doctor to plan your radiotherapy.

The usual position for planning and treatment is lying down flat with the abdomen being exposed. Please let the radiographers know if you cannot manage this position.

Pen marks will be drawn on your skin which will help the radiographers in the CT scanner plan your treatment.

After the scan is complete, the radiographers will ask permission to make three to four tiny permanent dots, called tattoos, which are the size of a small freckle. These 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.

Any pen marks put on the skin by the radiographers during the CT scan can then be washed off when you get home.

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 2–3 weeks delay between your CT planning scan and the start of your radiotherapy treatment because your treatment needs to be planned.

The CT planning appointment will take approximately 40 minutes. The routine hours of the Radiotherapy Department are from 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?



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 reception desk in the Radiotherapy Department or any member of staff.

Place your appointment card in the box outside the treatment room so that the radiographers know that you have arrived.

You will be required to remove your top clothes (above the waist) and change into a gown as you did at your CT planning appointment. The gowns and changing rooms are located in the waiting area.

Once you are changed please take a seat in the waiting room. If you prefer not to change into a gown, please inform the treatment room staff.

When the radiographers are ready to start your treatment they will come to talk to you and explain the procedure. Please feel free to ask any questions that you may have about your treatment, side effects and appointment times.

When you go into the treatment room, you will be asked to lie down on the couch, in the same position you were in the CT scanner. You will be asked to open your gown as it is important that the radiographers can see your tattoos.

The radiographers will then move you closer to the machine and line up your tattoos to ensure you are in the correct position for treatment.

The radiographers will then 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 but it 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 before starting treatment. 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 appointment.

When the machine switches on you may hear some noises, such as buzzing and beeping. 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.

Please collect a gown, remove your top clothes and change into it, as you did on your first appointment. Once changed please have a seat in the waiting room.

Appointments may take around 15 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 1.5 to 2 liters daily, especially if you are also receiving chemotherapy.

It is important to keep your skin clean and maintain good levels of hygiene as this can help reduce skin soreness. If you are diabetic please ensure you bring your insulin and some food each time you attend for treatment, in case there are any delays. We also recommend you bring any medication you are required to take regularly, for example painkillers or anti-sickness medication.

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 doctor's 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 are 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. Below is a table to summarise the acute side effects commonly experienced by patients undergoing radiotherapy. Please read on for more detail.

Acute side effects	
Nausea	Nausea and sickness are common side effects. Please let a member of staff know if you are suffering with this as medications can help and advice can be given.
Diarrhoea	Radiation can irritate the lining of the bowel and may lead to loose and more frequent bowel movements. Speak to a member of staff as dietary changes and/or medication can help.
Skin irritation	Your skin can sometimes become irritated during treatment and may appear slightly pink. This is quite normal but please let a member of the team know.
Tiredness	Treatment can make you tired and can last for a few weeks after you finish.

Nausea and vomiting: When treating the abdomen area, the radiotherapy can irritate parts of your body that help with food digestion, such as your stomach and your intestines. This irritation can make you feel nauseous and sometimes be sick. There are anti-sickness medications that can help, so do tell a member of staff if you experience any feelings of nausea.

Bowels: Depending on exactly where in your abdomen you are receiving treatment, radiotherapy can cause your bowels to become loose which is due to the radiation irritating the lining of your gut. If you experience diarrhoea do tell the radiographers as they can recommend medication to help and offer advice on how to alter your diet to help reduce these problems. You will be encouraged to drink plenty of fluids throughout the day to replace the fluids you lose when you suffer from diarrhoea.

Skin: The radiation can cause the skin to become irritated in the area that is being treated. It may feel itchy or look pink, which is quite normal, and the chances of this happening can be reduced by following the simple instructions covered later in this leaflet under the section below called 'skin care during your radiotherapy'.

Tiredness: Radiotherapy can make you feel tired. This may continue for a few weeks after you have finished your treatment. It is important to allow yourself enough extra time to rest.

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 occur less frequently than in the past.

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 six 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.

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 very small, the benefit of your radiotherapy treatment far outweighs this risk. Your doctor will discuss this with you.

Bowel damage: Sometimes people experience a permanent change in their bowel habits. Your motions may become more frequent or looser. Do let your doctor know as medications can be prescribed to help.

Rarely, small blockages can occur in your bowels. These are caused by the tissue surrounding the bowel sticking together and sometimes surgery is required to correct for this. This is quite rare.

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, such as under the breast or the armpit. This area 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
- 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 this advice you may 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 extremes of temperature, such as heating and cooling pads
- Avoid sticky tape on the area (such as Elastoplast™ or Micropore™)

It may also help to reduce irritation to the treated area if you use a moisturiser sparingly – gently smooth it on and apply in the direction of hair growth. Please stop using 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 use deodorant unless it irritates your skin. Please stop if the skin breaks
- 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. Be careful in the sun for at least a year after you have finished treatment. Use a sunscreen with a minimum UVB sun protection factor (SPF) of 30 and UVA protection as your skin will be more sensitive

- 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 for the next 7–10 days before starting to improve. Most patients find their skin has healed around four weeks after treatment finishes. If the skin has broken, healing may take longer than this.

Who do I contact if I have any questions or concerns whilst on treatment?

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.

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 telephone: **07789 651 543**.

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

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 doctor who will be able to check this for you.

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. You can also talk to your GP or specialist nurse who can advise and arrange for you to see the oncology team

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 only provided if you have a medical need that stops you from using private or public transport. If you need any help/advice please contact: Patient Transport Services on **0800 035 6511** (Monday–Friday 08:00–18:00)

If you use hospital transport it can mean spending many hours away from home and travelling long distances (you will be collected/returned on a schedule) therefore we recommend you use other forms of transport if you can. Please ask a member of staff for details.

Bromley Wing accommodation

Patients who live some distance away can stay at 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 Cancer Support

www.macmillan.org.uk

Tel: **0808 8080000**

Radiotherapy contact numbers

Radiotherapy Review Radiographers

For information and support for patients and their families

Tel: **0121 371 3553**

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**

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

Queen Elizabeth Hospital Birmingham
Mindelsohn Way, Edgbaston
Birmingham, B15 2GW
Telephone: 0121 371 2000
