



The Clatterbridge
Cancer Centre
NHS Foundation Trust



Radiotherapy

A guide for patients and carers

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Your oncologist (cancer doctor) has recommended a course of radiotherapy. The aim of this booklet is to give you information about radiotherapy and describe what to expect when you attend for treatment and afterwards. This booklet also contains information about the services available to help you prepare for your radiotherapy treatment at The Clatterbridge Cancer Centre (CCC).

We also have information booklets for different areas of the body which give a more specific and detailed explanation of what to expect. . You can ask staff at the Centre or visit our website to find these.

The Clatterbridge Cancer Centre Hotline 0800 169 5555

If you are unwell during, or up to 6 weeks, following your cancer treatment, please call The Clatterbridge Cancer Centre Hotline. Your call will be answered by a dedicated nurse advisor. This line is available 24 hours a day, 7 days a week.

What is radiotherapy?

Radiotherapy is a method of treatment that uses carefully calculated and measured doses of radiation. It is normally used to treat cancer (malignant disease), although occasionally it is used to treat non-malignant conditions.

How does radiotherapy work?

Radiotherapy affects all of the cells in the area being treated. It damages them and stops them growing and dividing. Normal cells have the ability to repair themselves from this damage, whilst abnormal (cancer) cells are destroyed. The aim of radiotherapy is to destroy as many abnormal cells as possible whilst causing as little damage as possible to normal cells.

Radiotherapy, like any other form of treatment, has risks and benefits. You may experience side effects, but we can predict the effects and manage them with medicines, other therapies and support. Your oncologist will tell you about your treatment, how it may affect you and any possible late effects. Any risks need to be balanced against your current health needs.

The Society of Radiographers website (www.sor.org) provides an overview of radiotherapy with links to other organisations which provide information (including videos) about radiotherapy.



Radiotherapy treatment is painless, there are two main types of radiotherapy treatments:

- **External beam radiotherapy** is when the radiation is delivered from a machine outside the body
- **Brachytherapy** uses a specialist machine (based at CCC-Liverpool) to deliver radiation into body cavities or tissues

Radiotherapy can be used alone, or in combination with surgery and/or chemotherapy (drug treatment) and is used to:

- Try to cure cancer (radical radiotherapy)
- Control (slow down) the growth of cancer
- Relieve the symptoms of cancer (palliative radiotherapy)

Your oncologist will explain why they have recommended radiotherapy for you, and what you can expect.

Am I radioactive after having radiotherapy?

If you are having external beam radiotherapy and most types of Brachytherapy, you do not become radioactive as a result of treatment, so it is safe to be with anyone, including children and babies. However, a few procedures used in diagnosis and treatment involve tiny doses of radioactive material. When this is the case, you will be told about the safety precautions that you need to take.

Attending the radiotherapy department

If you have any specific needs such as accessibility or language barriers, please contact the department on **0151 556 5746/5523** so that we can try to meet your needs when you attend.

You should eat and drink normally before attending the department, unless you have received information from us indicating otherwise.

If you take medication during the day, please bring it with you to take when required while you are travelling or in the department. This is particularly important if you are using the hospital transport services as you may have to wait some time for your transport home.

If your first appointment is for:

- The 'Mould room', please first read 'Pre-treatment-Mould Room department' section
- 'Ortho-voltage', please first read 'Planning on the treatment machine'



Individuals of childbearing age (12-55 or younger if menstruation is known to have started)

Pregnancy and radiotherapy

If you are aged between 12 and 55 years, we will ask you, before planning and the first treatment session, if you might be pregnant.

This may seem insensitive, but by law, radiographic staff must ask you this question before we use radiation for diagnosis or treatment. These regulations are designed to protect an unborn child.

You will see warning notices ask patients to inform a radiographer before the examination if there is any possibility that they might be pregnant. These notices are displayed in waiting areas, changing cubicles and in the scanning and treatment rooms.

Therapeutic radiographers

Therapeutic radiographers are the main staff group you will come into contact with in the radiotherapy department. They work closely with the oncologists, help design deliver and care for you during your treatment. They will be able to answer many of your questions, discuss side effects and give advice throughout your treatment.

Pre-treatment CT planning

Prior to having radiotherapy, the vast majority of people will first have a scan(s) at either Clatterbridge Cancer Centre – Wirral or Clatterbridge Cancer Centre – Liverpool. These scans are used to:

- Design an individual treatment plan for you
- Calculate the individual dose of radiation and confirm the number of treatments you will receive

We use information from previous procedures, e.g. surgery and/or staging scans (which determine the extent of any disease) in the design of your radiotherapy treatment.

At present, the majority of people have a planning CT scan (using X-rays). The average appointment time for a CT planning procedure is 30 minutes, with the actual scan taking only a few minutes. Increasingly, additional scans are used in the design of the radiotherapy, e.g. MRI or PET/CT scan. If this is the case for you, we often book all the planning scans on the same day. We will send separate appointment letters for each type of planning scan.

You may not have your treatment at the same hospital that you attended for your planning scan, Radiotherapy treatment is provided at our three sites:

Clatterbridge Cancer Centre – Wirral
Clatterbridge Cancer Centre – Liverpool
Clatterbridge Cancer Centre – Aintree



The site you will attend for your treatment will depend on a number of factors and will be discussed with you by the team during your planning appointment.

When you arrive, a radiographer will explain the procedure to you. If you have a family member, carer or friend with you and want them to be included during this discussion, please tell your radiographer. Please do not hesitate to ask questions. Once in the scanner room, you may be asked to remove some of your clothing. We do all we can to respect your privacy and we will cover you up as much as possible and may give you a gown to wear for your planning and treatment sessions.

Preparation prior to the scan and treatment is different depending on the area of the body to be treated. Some people will be asked to drink some fluid, some people will be asked to complete a micro enema, some people will have an injection of a contrast agent (dye) into a vein. Some people can have a mild reaction to contrast agents, for example, a hot flush. If you have an injection as part of the planning, we will ask you to stay in the department for an hour after the injection. If you feel unwell, please return to planning and ask for help. We recommend that you do not drive until at least 1 hour after an injection. The injection is not required for your treatment appointments.

The radiographers will ask you to lie on the scanner bed. They will help you get into a comfortable position and your arms and legs will be supported so that you can stay still during the scan. The

position you lie in on the scanner bed will be the same for your treatment.

During your planning scan, the radiographers will put 2 or 3 small dots on your skin using a felt-tip pen. At the end of scan, we will ask your permission to make these marks permanent by tattooing small dots. We recommend permanent marks, as you can't wash them off. If you choose not to have permanent marks, you need to take care of the marks, especially while washing, to avoid smudging or losing the marks. If this should occur, please tell your radiographers when you arrive for your treatment appointment.

We don't use permanent marks in all cases, for example, we wouldn't use permanent marks if the area to be treated is on the face. The radiographers will talk to you about the use of tattoos etc.

For most people, the skin marks do not overlay the actual area to be treated, but provide points of reference/measurement.

The scan is then sent to the Computer Planning department for processing.



Computer planning department

Radiographers, physicists and dosimetrists process the information gathered during the planning scan(s)/procedure to produce a personal treatment plan for each person. We need to check all the data carefully and, if required, discuss it with your oncologist before we can transfer it to the treatment machine. This process takes time, which is why most people have a gap (from a few days, if your oncologist makes such a request, to (more usual) about 2 weeks) between their planning appointment and their first treatment.

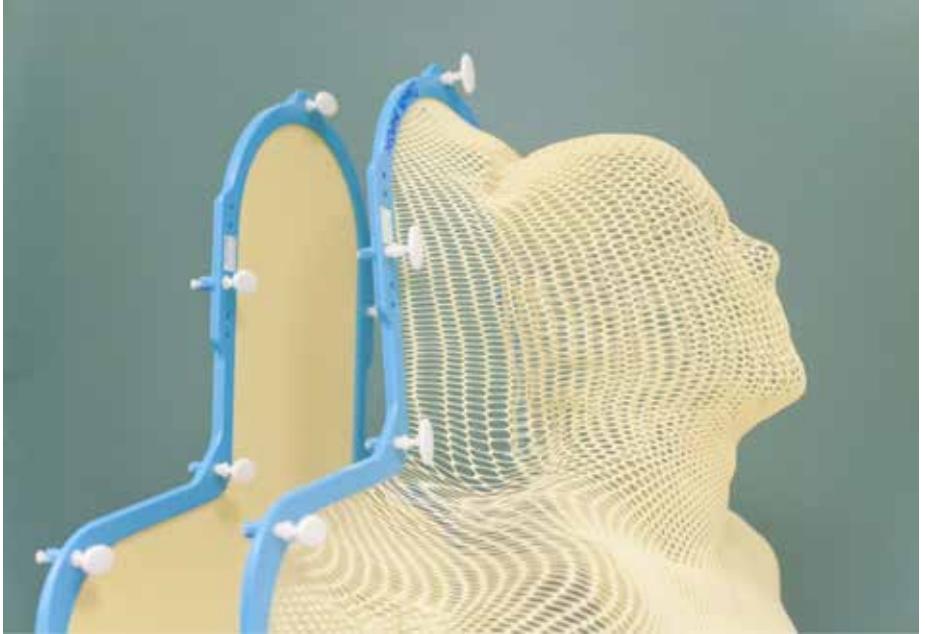
Pre-treatment - the Mould room

When treating an area in the head, face or neck area, we frequently use a device called a 'mask' which helps you to stay still and any reference marks needed for treatment will be drawn on the mask rather than on your skin.

Making a mask

Each mask is individually made to ensure it fits you well and is comfortable. If you have facial hair that is thick or very long, please help us by trimming or thinning it before you attend. This will ensure that the mask is a good fit.

To make the mask, we use a sheet of plastic net attached to a frame that, when heated in warm water, becomes soft and stretchy. We place the warmed net on your face and neck, and gently press it around your features. As it cools over the next few minutes, the net becomes firm and so is ready to use straight away.



The picture above shows the thermoplastic net before and after

Dental assessment before radiotherapy

If you are going to have many weeks of radiotherapy to an area that will include your mouth, it is usual to have your teeth examined. You may need to have dental treatment before you start your radiotherapy. An appointment will be made with a dentist at the Royal Liverpool dental hospital who will assess, treat as required and talk to you about how to take care of your teeth after a course of radiotherapy to help to avoid problems in the future.



Ortho-voltage X-ray treatment to small skin cancers

The majority of people who attend the Ortho-voltage treatment machine are having radiotherapy treatment for small skin cancers. We have a leaflet called 'Radiotherapy for Skin Cancer' which describes what to expect in more detail. At the first appointment, it is usual to have the planning and the first treatment. Your oncologist will examine you, define the area needing treatment, and then draw marks on your skin with a marker pen. We will measure this area to calculate the dose. The first treatment may be the same day, but usually, the following day. Depending upon the type of radiotherapy used, treatment may take several minutes each day, and is painless.

It is usual to take a photograph of the treated area; we will discuss this request with you.

Please don't remove your skin marks while you are attending for radiotherapy, so take care when washing. If the marks do disappear, please let the Therapeutic Radiographer know as soon as you arrive, because your doctor may need to re-mark your treatment area.

Consent for treatment

Your oncologist will discuss with you, when completing the consent form, about your need to have radiotherapy, any risks or side effects and any available alternative treatments. You will then be given a copy of the form, please bring this with you for your first treatment. If you don't understand what has been discussed, please say so before you sign the form.

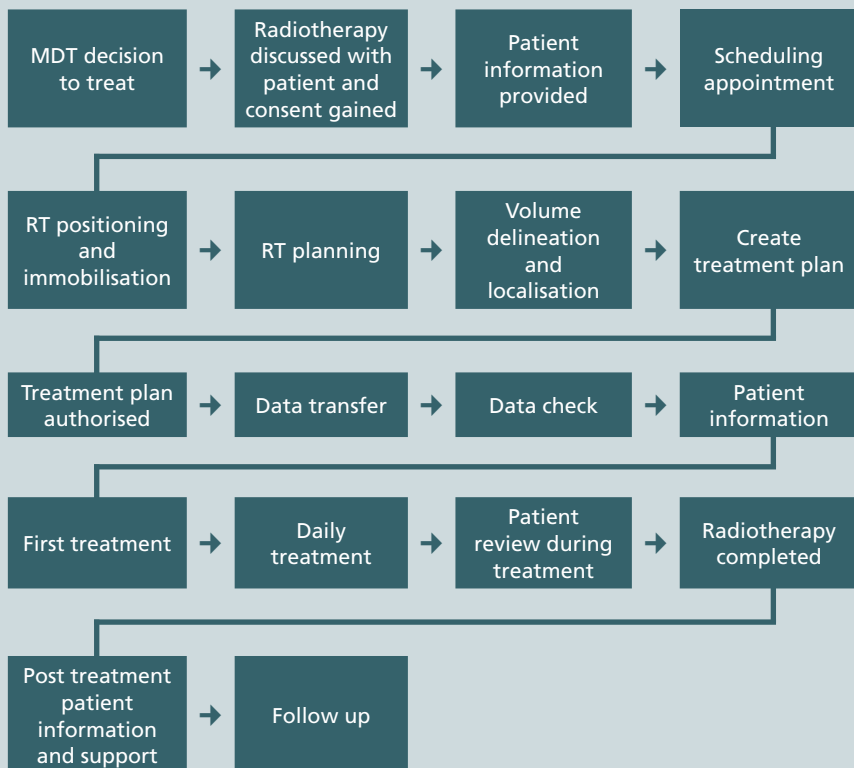
We understand that you may need to ask lots of questions, and sometimes you may need to ask them more than once. Your pre-treatment appointment is a good time to raise any questions.

We have a series of patient information leaflets available from the staff, the Macmillan Cancer Information & Support Centre or our website.

You can still change your mind about having radiotherapy after signing the form. At your first treatment, we will ask you if you are still happy to go ahead with the treatment that has been planned and give you an opportunity to ask any further questions.



Simplified Radiotherapy process



Making treatment appointments

We will discuss when you are likely to start the radiotherapy, at which hospital and give you contact details. A full list of appointments will be given to you either at your planning appointment or on the day of your first treatment.

Please note; we will ask if you **prefer** an appointment in either the morning or afternoon and book appointments into those times **when we are able to do so**. We cannot guarantee specific appointment times. Also, on some days, we may need to arrange your treatment appointment around other appointments, such as chemotherapy/ review clinics. If you are require hospital transport to get you to your appointments you need to advise us when we book your appointments. Your appointment list will say what time you may be picked up from, however these times are a guide, please don't worry if your transport gets you here late. Travelling by hospital transport may mean you are in the department for longer, waiting for your transport home. Please bring any medication you may need and something to eat if you think it will be necessary.

Outpatients: Please bring the appointment list with you when you attend for your treatment sessions, you will need it to gain access to the car park and at the reception desk.

Inpatients: We will phone the ward when it is time for you to attend for your treatment. If you need help to get from the wards to the radiotherapy department, we will provide it. You can bring



visitors with you to the treatment area, but, if space is short, please don't overcrowd the waiting areas.

Machine appointments: Most people attend the hospital for treatment daily, Monday to Friday, although sometimes radiotherapy is given only once or twice a week.

Some people receive 2 treatment sessions on the same day, with a 6 hour gap between the two sessions, as it is important that their radiotherapy is delivered over a specified number of days. If this is the case for you and you come via your own transport, you may, if you wish, make two journeys to the department. If you use hospital transport, we cannot book two journeys, so your therapeutic radiographer will arrange for you to have lunch within the hospital.

What to expect; attending for the radiotherapy

Please ensure you report to the reception desk in the radiotherapy department which, via the computer system, alerts the staff on the treatment units, of your arrival.

What happens in the treatment room?

As you go into the treatment room, the Therapeutic Radiographers will ask you to state your name and date of birth. This confirms that the treatment prescription that we are about to use is yours, and does not belong to someone else with the same name. It may become tiresome for you to do this on every visit, especially when your radiographers recognise you, but it is in place for safety reasons and your co-operation is greatly appreciated.

On your first treatment appointment, we will explain the process to you and tell you if there is anything you need to do before you come into the treatment room. You can ask us any questions at this point. Once in the treatment room, we will use the same equipment that were used during your planning appointment to help you stay still and be comfortable, for example, arm, knee, feet supports or a mask. We will cover you up as much as possible.

The Therapeutic Radiographers will set up the treatment machine using your treatment plan. We dim the lights in the treatment room while getting you into position. This can take a few minutes and the radiographers often need to talk to each other, rather than to you, and often use technical words or abbreviations at this point. Please try to lie still and relax. If you have any questions about the words used, please do not hesitate to ask your radiographers. If you have tattoos, it is usual to mark the skin at the site of the tattoo with pen (due to working in dimmed light). However, you do not need to retain those marks.

When the Therapeutic Radiographers have finished setting you up for treatment, they will leave the room to switch on the treatment machine. When they are outside the room, the radiographers need to confirm the details of your treatment, so it is usual to have a short delay before the treatment machine is turned on. When the treatment is on you will hear a humming or buzzing noise. You will not feel anything during treatment. The treatment machine will move around you during treatment and you will need to stay very still.



The Therapeutic radiographers will be watching you through closed-circuit television. You can raise your hand to attract their attention at any time if you need them to switch off the treatment machine.

Prior to your treatment each day there will be some form of imaging to verify your position on the treatment couch. You may feel the bed position adjust to finalise your position. The average time inside the treatment room is about 15 minutes, but most of this time is taken up by preparing you for treatment, the machine will deliver your treatment for only a few of those minutes.

Eating and drinking

Eating and drinking is an important part of coping with, and recovering from your radiotherapy, so let us know if you are having difficulty. Try to eat well and drink about 2 litres of fluid (3-4 pints) each day. If your illness or the side effects of treatment are making it difficult to eat, discuss this with any of the team caring for you, you may also see a dietician if required. We have a number of leaflets available that can help you plan your meals and offer lots of hints about what to eat.

What are the effects of treatment?

Every person copes with treatment differently. Many factors affect a person's ability to cope. These include:

- Your general health
- The effects of previous treatment, such as surgery



View of treatment machine (the radiation is produced and delivered from part of the circular area of the 'arm' above the bed).



- The number of visits to the department (especially if you are an outpatient)
- Having to arrange your life around your treatment
- Other commitments you may have, such as working or caring for another person
- If you have people in your life who have offered help, and your willingness to accept their support
- The side effects of radiotherapy

The side effects experienced depend on many factors. These include:

- The total dose
- The number of treatments
- The area of the body treated

Some people may experience very few or mild effects, try not to compare yourself to other patients. The physical effects are related to the area being treated and it is also common to feel tired.

Some side effects are temporary and occur while you are attending the department and last for a few weeks after your treatment ends. Other effects may persist for weeks or months. Long-term or permanent effects can occur, but are rare.

We will explain the possible severity and duration of side effects and how to cope with them. We have leaflets that tell you more about side effects specific to the area of the body being treated.

As you go through your treatment, your feelings and your ability to cope may change. Tell us how you are feeling so that we can give you information, support and medicines. If you attend as an outpatient, the team are responsible for your care as well as giving your radiotherapy. They will monitor how you are coping with the effects of treatment. Please tell them how you feel and they will advise you and arrange medicines or refer you to other staff, if necessary. If you are attending as an outpatient but are finding it difficult to cope with the effects of your treatment, we may ask you to come into one of our wards.

What should I do if I feel unwell?

If you feel unwell due to a treatment-related side effect, you should contact **The Clatterbridge Cancer Centre Hotline on 0800 169 5555**.

Review at floor clinic for outpatients

If you attend as an outpatient, the majority of people will see an On-treatment Review Radiographer or a doctor in a session called 'floor clinic'. The floor clinic is held in the radiotherapy department and you will not need an additional visit to the department to attend. The review will be scheduled before or after one of your treatment appointments. The purpose of this clinic is to:

- Monitor the effects of treatment
- Give you information and advice on how to cope
- Review your medicines



Please do not wait for this appointment should you notice any side effects or have any concerns; talk to your treatment radiographers who can also give you medication and advice.

Floor-clinic appointments are pre-booked by the booking office and the dates included on the printed appointment list

You may also see other professionals as needed during your treatment, these may be clinical nurse specialists, speech and language therapists, occupational therapists, physiotherapists and dieticians.

Repeat prescriptions

If you require a repeat prescription for medication taken to help manage your cancer or any treatment-related effects, we can organise this for you. Please request a repeat prescription at a floor clinic appointment, before you run out.

Proof of attending the department

You can use your appointment letters and list as proof of attending the department if you need to claim from private health insurance schemes.

Information for smokers

We recommend you should stop smoking. Use the support services to help you to quit, as evidence shows you are more likely to be successful. Information about smoking cessation services is available from many sources including, our pharmacy (PharmaC) which is located on the ground floor of Clatterbridge Cancer Centre - Wirral, the staff or your GP.

Hair loss

If the skin within a treated area contains hair, radiotherapy can cause changes in the short and long-term. We will discuss with you the risk of temporary or permanent hair loss before you sign your consent form. In the short-term, the hair may thin and fall out. Long-term changes include permanent loss of hair. If the hair does re-grow, there may be a change in its colour and texture.

Coping with loss of hair from your head can be difficult. Many people find having a wig is helpful.

Please ask your radiographer for a copy of our leaflet 'Choosing a Wig' for more information.

HeadStrong Service

The Headstrong service offers free support and practical advice about coping with hair loss from specially trained volunteers. At a Headstrong appointment, you can try on a range of hats, scarves and hairpieces and learn how to tie scarves in a variety of styles. To arrange an appointment, please contact **0151 556 5302**.



What happens after my treatment has finished?

Follow-up

As you near the completion of all your radiotherapy treatment, we will tell you what to expect over the next few weeks and months. An oncologist or specialist nurse will see most people a few months after finishing radiotherapy. The appointment is usually at your local hospital. The details of your follow-up appointment will be discussed with you.

Some people are under the care of another team, for example, those people who are having chemotherapy, so your follow-up appointment may be with that team instead.

Ongoing care

If you are under the care of a district or Macmillan nurse, it would be useful (if you haven't already done so) to contact your nurse to tell them that you have completed your radiotherapy treatment.

New nursing needs

If you have any new nursing needs as a result of your radiotherapy, we will discuss this with you and arrange, with your permission, for someone to visit you.

Medicines

If you need a repeat prescription of any medicines or creams that we have supplied, contact your GP. It may be useful to take details

of the medicine with you. The empty medicines box or bottle will have that information.

GP letter

A few days after your radiotherapy treatment has finished, we will send a short summary to your GP. A formal letter will be sent from your oncologist within a few weeks of your treatment finishing. Meanwhile, if necessary, your GP can contact your oncologist via their secretary, if they require any information.

Information

Health professionals can contact The Clatterbridge Cancer Centre for information about your treatment and how to manage the side effects (see useful contacts, page 32). We can arrange an earlier follow-up appointment, if necessary.

Being active

If you have reduced your levels of activity during your radiotherapy treatments, you should slowly increase your level and length of activity when you feel you can.

Returning to your normal diet

If you changed your diet while receiving radiotherapy treatment, try to return to your normal diet as soon as your symptoms have settled. If you have difficulty returning to your normal diet, discuss this at your follow-up appointment. Meanwhile, if you have any concerns, contact your specialist nurse or GP.



Recovery, information and support

Some people recover quickly but, for others, it can take many months before you feel that you are fully recovered.

If you are feeling low or experience mood swings, it may be useful to talk to your GP or specialist staff in cancer care that have been caring for you who can refer to psychological support services when required.

Some people find it useful to have the support of others who have experience of cancer by attending a local support group. Contact the Macmillan Information & Support Centre for more details. Macmillan provides booklets about coping and living with cancer and treatment side effects free of charge. These can be ordered by telephoning 0808 808 00 00 or by visiting one of the Macmillan Information and Support Centres located in the main entrances of Clatterbridge Cancer Centre - Wirral and Clatterbridge Cancer Centre - Aintree.

Maggie's is a charity providing free cancer support and information to anybody who been affected by cancer. Our Cancer Nurse Specialists, Psychologists and benefits advisors are here to support you during treatment or after your treatment has finished.

The Maggie's Centres allow you to share experiences with others in a similar situation around our kitchen table. We provide courses on survivorship, bereavement, stress management, mindfulness, tai chi, yoga, relaxation or cancer support groups. You do not need an appointment or a referral to access any support from Maggie's, you can just drop in. Our telephone number is **0151 334 4301**.

Alternatively, if you are familiar with using the internet, there are lots of cancer charity websites that have online communities.

Carer support

Caring for someone with cancer is something that most relatives and friends do automatically, but it can be physically, psychologically and financially demanding. Contact staff at the local or national Macmillan Information and Support centres for more information about the help and support that is available to carers.

Useful contacts

Clatterbridge Cancer Centre - Liverpool

65 Pembroke Place, Liverpool, L7 8YA

Tel: 0151 556 5000

www.clatterbridgecc.nhs.uk

Clatterbridge Cancer Centre - Wirral

Clatterbridge Road, Bebington, Wirral, CH63 4JY

Tel: 0151 556 5000

www.clatterbridgecc.nhs.uk

Clatterbridge Cancer Centre - Aintree

Lower Lane, Fazakerley, Liverpool, L9 7AL

Tel: 0151 556 5959

www.clatterbridgecc.nhs.uk



Macmillan Cancer Information & Support Centre at

Clatterbridge Cancer Centre - Wirral, Tel: 0151 556 5570

Clatterbridge Cancer Centre - Aintree, Tel: 0151 556 5959

Nobles Hospital, Isle of Man, Tel: 01624 650 735

Macmillan Cancer Support

Tel: 0800 808 00 00

89 Albert Embankment, London, SE1 7UQ

www.macmillan.org.uk

Maggies Centre -Wirral

Tel: 0151 334 4301

Society of Radiographers

www.sor.org

How we produce our information

All of our leaflets are produced by staff at The Clatterbridge Cancer Centre and this information is not sponsored or influenced in any way. Every effort is made to ensure that the information included in this leaflet is accurate and complete and we hope that it will add to any professional advice you have had. All our leaflets are evidence based where appropriate and they are regularly reviewed and updated. If you are concerned about your health in any way, you should consult your healthcare team.

We rely on a number of sources to gather evidence for our information. All of our information is in line with accepted national or international guidelines where possible. Where no guidelines exist, we rely on other reliable sources such as systematic reviews, published clinical trials data or a consensus review of experts. We also use medical textbooks, journals and government publications.

References for this leaflet can be obtained by telephoning 0151 556 5570

If you need this leaflet in large print, Braille, audio or different language, please call 0151 556 5570.

If you have a comment, concern, compliment or complaint, please call 0151 556 5203.

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Tel: 0151 556 5000

Web: www.clatterbridgecc.nhs.uk

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