

Radiotherapy department

# A guide for patients receiving radiotherapy on the MR-linac

## Introduction

Your doctor has discussed with you the opportunity to have your radiotherapy treatment on a new treatment unit known as the MR-linac (magnetic resonance linear accelerator). The Christie is one of the first hospitals internationally to use this technology. The machine combines a normal radiotherapy unit with an MRI scanner. You may have had MRI (magnetic resonance imaging) scans before at the hospital.

This machine will allow us to see the treatment area more clearly and adapt the treatment to improve accuracy.

## What are the differences in treatment on the MR-linac compared to a standard machine?

The treatment you will receive will be the same as on a standard radiotherapy machine (linear accelerator or 'linac'). However, we will be using MRI scans before and during your treatment. In contrast to standard images taken during radiotherapy, these MRI scans do not involve giving any additional radiation dose.

Some people are not able to undergo an MRI scan, including those with pacemakers, metal heart valves, some implants, aneurysm clips in the brain or people who have had metal fragments in their eyes.

When you attend for a radiotherapy planning session the MR-linac radiographers will ask you some questions and ensure that you are safe to have a scan. There are usually no special preparations required. You may eat and drink normally unless you have been told otherwise. When you come for your planning appointment you are advised to wear clothing without metal fastenings. You can wear glasses, but will need to take these off during the scan.

You will be carefully screened at the beginning of treatment, and again before each visit, to ensure that you are safe to enter the MR-linac treatment room and have a scan. If you have any questions regarding safety or if anything has changed during your course of treatment in your eligibility for an MRI scan, please discuss these with your doctor and radiographers.

## What happens during treatment on the MR-linac?

The machine looks very similar to a standard MRI scanner. You will be asked to change into hospital clothing before treatment and will be shown where you can leave your belongings.

In the treatment room the radiographers will position you correctly for radiotherapy and then leave the room in order to operate the machine from outside. You will be holding an emergency call button and



can speak to the radiographers at all times on the intercom. Staff will be able to closely monitor you at all times during the session on CCTV.

The scanner produces a range of loud noises during the scan; you will be provided with earplugs and headphones and will be able to listen to music.

The scans and treatment are painless and only last a few minutes. It may be necessary to repeat the scans a number of times; treatment sessions can last up to an hour each day.

## What happens if I decide I no longer want treatment on the MR-linac?

The treatment received will be no different to treatment on a standard treatment machine. If at any point you decide you no longer want to have treatment on the MR-linac your treatment can be transferred to another machine in the department, providing there is availability. This may also be necessary if there is a routine machine service or breakdown.

## Are there any different side effects from treatment on the MR-linac compared to a standard linac?

The radiotherapy side effects are no different for treatment on the MR-linac when compared to treatment on a standard radiotherapy machine. There are no anticipated side effects from the MRI scan itself, however very occasionally people do experience a metallic taste, tingling in hands and feet and an increase in body temperature. In addition it is possible that you may receive an injection. Please consult the radiotherapy booklet provided by your doctor for information regarding specific side effects of your radiotherapy treatment. During the course of your radiotherapy treatment and follow-up, your medical team will monitor you closely.

## Contact information

If you have any questions or problems regarding treatment on the MR-linac please call: **0161 446 3485** and ask to speak to the MR-linac team.

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**

For information and advice visit the cancer information centres at Withington, Oldham or Salford. Opening times can vary, please check before making a special journey.

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

