

## Having SABR treatment to your liver/abdomen

### What is SABR?

SABR stands for **S**tereotactic **A**blative **B**ody **R**adiotherapy. It is also known as SBRT (**S**tereotactic **B**ody **R**adio**T**herapy). Stereotactic radiotherapy is an effective way of giving more accurate radiotherapy over fewer treatment sessions, to increase the chances of controlling the tumour. Numerous x-ray beams of high energy are used to deliver a high dose of radiation from outside the body to the tumour, while avoiding the surrounding normal tissues as much as possible. It provides an increased chance of tumour control compared to a course of standard radiotherapy alone.

In some people the cancer stays the same size and becomes dormant, and in others it may shrink. It can be delivered on either a linear accelerator (linac), the CyberKnife or on the MR Linac, depending on which the radiotherapy team think is the best suited to your cancer. The choice is made on a number of different factors, and involves your clinical oncologist, physicists and radiographers at our weekly multi-disciplinary meeting (MDT).

### What are the advantages of this type of treatment?

- Tumours can be treated effectively without surgery (non-invasively)
- Treatment is given with pinpoint accuracy
- Treatment is carried out as an outpatient procedure.

CyberKnife and MR Linac treatments tend to be much longer than treatments on a linac, so tracking movement of the area for treatment is vital throughout the period of time you are lying on the couch. Cyberknife is a sophisticated robotic radiotherapy system which can deliver very small beams of radiation directed to any part of the body. It uses a robotic arm, which will rotate around you as you lie comfortably on the treatment couch. The MR Linac is an MRI scanner combined with a linac. The MRI section is used to image the area of the body that will receive treatment and the linac delivers the radiation treatment.

### Is CyberKnife or MR Linac for me?

The CyberKnife system is used to treat tumours anywhere in the body including the brain, spine, bony areas, lung, liver, other abdominal sites and the prostate. The MR Linac is used to treat a wide range of tumours around the body. However, these systems are not suitable for all tumours and your doctor will discuss whether your case is suitable. Treatments delivered on a linac are much shorter in duration, but are preceded by two 'mini-CT' scans carried out on the treatment couch which will assess the area we are targeting. This gives us a very clear picture of the area for treatment. Treatment will then be delivered as the linac rotates around you.



This information sheet explains what you can expect from this treatment. Your doctor should have explained how the treatment is given and how many hospital visits you will need to make. We will give you all your future appointments when you attend your CT scans. Your doctor should also have explained the side effects that you may experience during and after your treatment and any alternative treatments that may be available when you signed your consent for radiotherapy. If you need any further information about this, please let us know.

### **Planning your radiotherapy treatment (pre-treatment)**

For most, but not all CyberKnife treatments, fiducial markers will need to be implanted in or around your tumour. These are small grains of gold which guide the robot to accurately locate the position of your tumour. These markers are inserted under ultrasound or CT guidance and may need local anaesthetic. Please see The Royal Marsden leaflet *Having fiducial markers inserted into your liver or abdomen* for further information. These will not be necessary for treatments on a linac or MR Linac.

At least one week after marker placement, a radiotherapy CT (computerised tomography) planning scan is carried out as part of the preparation for radiotherapy. The CT scan will be done while you lie in the treatment position so we can design the radiotherapy according to your individual needs. Please see the factsheet *Having radiotherapy CT planning* for further information and to check what time you need to arrive before your scheduled appointment so that we can explain the scan and make any other preparations needed.

The treatment will be planned specifically for you, to make sure that the cancer is accurately targeted with the least amount of normal tissues included. The CT planning session will usually take about 30-60 minutes. Some patients may also have an MRI or PET scan in order to assist with the radiotherapy planning process. You will be informed of this scan appointment if necessary. For most patients we will need to use a contrast injection (dye) with the scan, so a second scan will be done in the same session. For these scans you will be asked to hold your breath when you are breathing out (exhale breath hold) for about 15–20 seconds. We will also do a scan which is taken while you continue to breathe normally.

For scans and treatment on CyberKnife, you will be asked to wear a close fitting vest or t-shirt (which will be supplied) which the radiographers will attach sensors to. These sensors allow the CyberKnife to follow your breathing pattern. You may also be asked to wear a large belt around your abdomen which compresses your abdomen, to try and reduce the amount of motion from your breathing. Together with the information from the position of the markers inserted in your abdomen, the robot can track your tumour during treatment.

For treatment on the MR Linac you may be asked to wear a large belt (that we will provide) for similar reasons. If you are having treatment on a linac then the treatment is quicker, and any motion in the treatment area is accounted for in a different manner.

### **Radiotherapy treatment**

You will need to report to the receptionist in the Radiotherapy Department every day when you arrive. The receptionist will let the radiographers working on your machine know that you have arrived. On your first visit the radiographers will set aside some time to talk you through the treatment and answer any extra questions you may have, so please arrive at least 20 minutes before your treatment time on that day. You will be given radiotherapy treatment on a variety of schedules, sometimes daily, sometimes alternate days, so please check your appointment list to confirm your dates and times. We aim to treat every patient within 30 minutes of their



appointment time and we expect to inform you if your treatment is delayed by more than 30 minutes. Treatment is not usually given on bank holidays, although sometimes special arrangements are made.

At each visit, the radiographers will take you into the treatment room and position you on the treatment couch as you were for the planning scan. The radiographers will explain what they need to do or ask you to make small movements in order to line up laser lights in the treatment room. When they are happy with the position, the staff will leave the room to take images before they deliver the treatment. They will be able to see you on a closed-circuit television screen and they can talk to you through an intercom system. If you have any problems, they will advise you to call out or raise your hand for attention and they will come in to help you. The rooms can have background music playing to help you feel more comfortable if you would like.

The radiotherapy machine will move around you into different positions but it will not touch you and although you can hear a buzzing noise when the treatment is being delivered, you will not be able to feel anything happening. It is important that you stay as still as possible during the treatment and breathe normally. The length of each treatment appointment is dependent on each individual patient's treatment plan and will be confirmed on the first day. If there is anything else we can do to make your treatment more manageable, please let us know.

If you are having CyberKnife at Chelsea, please report to the CyberKnife reception area. The CyberKnife treatment unit is situated in the theatre suite and we do not have any changing facilities nearby. The closest changing facilities are in the CyberKnife reception area so we may ask you to put a dressing gown on to walk the short distance from the changing room to the unit. CyberKnife radiotherapy treatment is not a surgical process; it just happens to be situated in a room within the theatre suite. CyberKnife and MR Linac treatments typically take between 45 and 90 minutes, while linac based treatments are usually 20–30 minutes.

**Side effects during treatment will depend on the precise area of the body being treated but may include:**

Possible side effect	Advice
Nausea and vomiting	This can happen just a few hours after treatment or at any time during the treatment course. Your doctor will prescribe anti-sickness medication if this is anticipated.
Diarrhoea	You may experience this if the treatment is to your lower abdomen. Radiotherapy can affect your bowel habits, and you may experience diarrhoea. We can prescribe medication to help control this. (If you develop problems at the weekend you can take loperamide {Imodium} which can be bought from any chemist).
Tiredness (fatigue)	This is common and can often be made worse by having to travel to hospital for each treatment. Take rest when necessary.
Skin soreness	Unlike conventional radiotherapy treatments, skin dryness is experienced by very few patients. You can moisturise the skin in the treatment area using your own moisturiser, or a simple unperfumed moisturising cream. Currently there is no evidence that any one cream has benefits over any others, but some people prefer to use products with fewer chemicals, so you may wish to look for a product that is SLS free (sodium laurel sulphate).



These side effects may be minimised by drinking plenty of fluids and keeping your body well hydrated. Please tell the radiographers if you experience any of these side effects or have any new symptoms. They can make sure that you receive the support and any medication you may need.

We recommend that you continue all your usual activities, as you are able. You may prefer to eat smaller meals more frequently and we suggest that you avoid rich, spicy and greasy foods. Side effects that have occurred as a result of radiotherapy may take several weeks to completely settle after the radiotherapy has been completed.

### **Skin care during treatment**

- During your treatment you can continue to wash the area being treated
- Showering is ideal and we recommend that you continue to use your own products, such as shampoo and shower gel
- Dab yourself dry with a soft towel and avoid rubbing the treatment area
- If you enjoy swimming you can continue. Your costume or the chlorinated water may cause further irritation to your skin, so shower thoroughly afterwards.
- It is important to protect the treated area from exposure to the sun, during and after treatment by covering the area with clothing or using sunblock.

If you feel the side effects you are experiencing are more than anticipated, please contact your medical team for advice.

### **Additional information**

At the end of treatment we will give you an appointment for a follow up clinic approximately four weeks from the end of treatment. A doctor will see you to review the effects of the treatment. During this appointment the medical team will discuss with you the next steps, such as future imaging and blood tests, which are generally carried out about three months after treatment.

If you are unsure about anything, please discuss it with the radiographers treating you. You can also call the hospital once your treatment is finished if you need advice.

### **Contact details**

Radiotherapy Key Worker: \_\_\_\_\_

Radiotherapy Department Sutton: 020 8915 6020

Radiotherapy Department Chelsea: 020 7808 2540

CyberKnife Chelsea Reception: 020 7811 8467

The Royal Marsden Help Centre can provide further general information and support. Call in or phone (Freephone): 080 0783 7176

Alternatively, please call:

**The Royal Marsden Macmillan Hotline:** 020 8915 6899  
(available 24 hours a day, 7 days a week)

