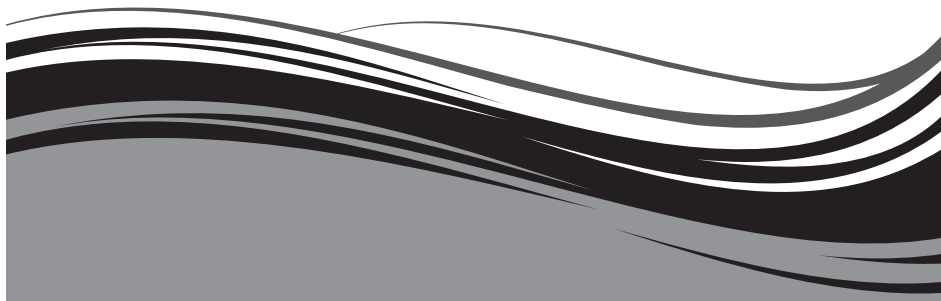


Information for patients receiving

# Stereotactic Radiotherapy

**The Beatson West of Scotland Cancer Centre**  
1053 Great Western Road  
Glasgow G12 0YN



This leaflet is for people who will have stereotactic radiotherapy. The treatment is usually given as a single treatment (Stereotactic Radiosurgery) or rarely a short course of between 2 and 5 treatments (Hypofractionated Stereotactic Radiotherapy).

Stereotactic radiosurgery is used as an alternative to actual surgery for smaller cancers and aims to control or get rid of the abnormal tissue.

**This leaflet describes:**

- The radiotherapy planning and treatment.
- The effects that you may experience during and after treatment.
- How best to cope with these effects.
- Where to get help and support.

We treat each person as an individual and the effects of treatment may vary from one person to another. Your consultant radiographer will explain your treatment in detail. If you need more information or have any questions or problems, please let us know as soon as possible.

## **Our Team Approach to Care**

Before offering you this treatment your case will have been discussed by a number of specialists in the multi-professional team. These will always include your oncologist, consultant radiographer, and sometimes others such as a neurosurgeon, a radiologist or other doctors from your referring hospital. Your scans and history will be used to help assess the position, and the size and shape of the tumour to help decide whether stereotactic radiotherapy is right for you. This means there is a great deal of expertise and experience advising on the best possible treatment for you.

Your consultant oncologist and consultant radiographer will be in overall charge of your care. You will meet other members of the team during your planning and treatment. We all work together to give you the best possible care.

# What is Stereotactic Radiotherapy?

Radiotherapy is the use of x-rays to treat tumours. It works by damaging tumour cells in a way that may cause them to die or stop them from growing.

Stereotactic radiotherapy is a very accurate way of giving x-ray treatment to small areas of the brain. It allows us to use very small beams of high energy x-rays to treat the tumour.

We are able to accurately direct the radiotherapy. This increases the chances of controlling your tumour whilst at the same time avoids giving treatment to healthy tissue. This helps us to reduce the chance of possible side effects from the treatment.

## Preparation for Treatment

Before you begin your treatment we must plan it carefully.

You will need to have a close fitting shell (mask) made. The type of shell you will have is called an encompass shell. You will wear your shell for your planning and treatment.

This is important because:

- It allows your radiographers to give your treatment accurately.
- It helps to support your head and keep it from moving during treatment.

The shell is made in the **Mould Room**.



Picture 1. Encompass shell - Image used with permission from Qfix

## **The Mould Room**

The mould room appointment will last approximately 1 hour. It takes 45 minutes to make the shell. The remaining time is spent explaining what will happen to you and answering any questions you may have.

If you have a beard and/or moustache, you may be advised to shave it off before coming to the mould room. It is important that your skin is smooth before we start to make your shell.

## **How is the mask made?**

The mould room technicians will make your shell. Before beginning they will explain everything in detail. They will help you to lie flat on their couch. There is a firm headrest to support your head. The technician will position hand grips at either side of you. This helps to keep your shoulders in the same position at every visit. When you are comfortable, they will start to make your shell.

The technicians will use a warm, softened sheet of plastic to take an impression of the back of your head. As it starts to cool, it hardens and sets. A second piece of warm material is then placed over your face and clipped into place. There is an opening to ensure your nose and eyes remain uncovered. The technicians will gently smooth the material around your head and face.

The plastic will begin to harden as it cools down. As it cools, it shrinks a little so you will feel it getting a little bit tighter. The shell should feel firm, but not too uncomfortable.

## **Mouth bite**

Your doctor may want you to have a mouth bite with your shell. This is a very small piece of plastic attached to the mask that you bite between your front teeth. Your consultant radiographer will discuss this with you.

## CT Simulator Visit

After the shell is made, the next step is planning your treatment at the CT Simulator. This is an x-ray scan taken with you lying on a couch just as you were in the mould room. You will wear your shell for this scan. Your radiographers will explain everything in detail at the start.



Picture 2. CT Simulator

## Contrast Injection

For this scan, most people will need an injection of contrast (dye) to help show up the tumour(s) more clearly.

Your radiographer will put a small needle (cannula) into a vein, usually in your hand or arm. The needle will be removed and will leave a small tube of plastic in your vein. It will be taped in place and will stay in during the scan. We will then inject the dye through this plastic tube. It may feel a little cold but you should not feel any discomfort.

Some people can have an allergic reaction to the dye.

This is rare but we will ask you some questions before beginning to ensure it is unlikely to happen to you. Your radiographers will keep a close check on you during the injection and scan, so if you feel anything unusual please tell us.

Your radiographers will then put your shell on, finalise your treatment position and leave the room to begin the scan. Scanning usually takes around five minutes.

## MRI scan

You will visit the MRI scanner at the Beatson. This is usually the same day you attend for your CT Simulator. The MRI scan is not a full scan, but limited to the most important views. It is therefore much shorter than usual, lasting only about 15 minutes.

You will have a contrast injection for this scan as well.

Your radiographers will inject the contrast through the plastic tube that was put into your vein at CT. You won't feel anything during the scan. Some patients find the scanner noisy.

The radiographers working on the scanner may play some music for you.



Picture 3- MRI Scanner

At the same appointment, you will usually meet with your consultant radiographer. They will discuss your treatment with you once more and answer any questions that you may still have. If you have not already done so, they will also ask you to sign a treatment consent form.

Once the CT and MRI scans are complete, we will remove the cannula and you can go home.

## **How is my treatment planned?**

Before your course of radiotherapy can begin, we need to produce an individual treatment plan for you. This makes sure that all the area needing treatment is included and that normal brain tissue is avoided as much as possible. Our physics team will use all the information from your CT and MR scans to design your individual treatment plan.

## **When will I start my treatment?**

Treatment normally starts one to two weeks after your CT simulator visit. Sometimes we need to make small changes to your plan. If this is necessary we may have to delay the start of treatment a little, but we will explain this to you.

## **How should I prepare for the treatment?**

When the treatment is given as a single session, there is a small risk of swelling of the area that has been treated. Because of this we normally recommend that you take medication called Dexamethasone on the day of your treatment and for a few days afterwards (many people are already on this drug once diagnosed with tumours in the brain). This is a strong steroid that prevents swelling following your radiotherapy. If you do not already have it, we can give you the medication when you come in for your treatment appointment.

We would like a family member or friend to accompany you for your treatment. Although you are not likely to feel very different after you have had your treatment some people can experience some light headedness. We should of course remind you that most patients with brain tumours are not allowed to drive. If you are in any doubt about your position with respect to driving please ask your consultant radiographer or your doctor.

## Your Treatment

- You will have treatment on a linear accelerator which is a type of x-ray machine. The staff who operate these machines are called therapy radiographers.
- Your radiographers will ensure you are in exactly the same position as you were when you had your planning CT scan. They will make sure you are comfortable and will then put your shell on.
- Your radiographers will dim the lights in the room for a few minutes to position you correctly. You will hear them talking and checking various numbers. You may also be aware of the couch moving slightly. Your radiographers will move the machine round about you, but it won't touch you.
- Your radiographers will leave the room while the treatment machine is on. They are watching you at all times on CCTV.
- Before your treatment begins, your radiographers will do a CT scan of your head to check your treatment position. This can take a few minutes. Once they are happy with your scan, you may feel the couch move slightly. The couch top can tilt and you may be aware of this but please don't panic, it is only a tiny amount and you are perfectly secure on the couch.
- Your radiographers will then start your treatment. You may be aware of the machine moving round about you. It will not touch you. The machine makes a buzzing noise as it delivers the treatment. You won't feel anything.
- The whole session should take around 20 minutes. The vast majority of this time is taken in making sure you are in exactly the right position, to within one millimetre. This is sometimes possible in just a few minutes, but can take a long time; either way, it is the most important part of the whole process, and your radiographers will take as much time as necessary.



Once the set-up is confirmed the actual treatment delivery takes only a couple of minutes. It is painless and you will feel no differently afterwards. Please check with your radiographers if you have any questions or problems.



Picture 4- Linear Accelerator

## Effects of Treatment

### How will I feel after the treatment?

- You may feel tired for a day or two, but often people feel nothing.
- Occasionally your skin may feel hot and itchy, but this should settle down after a week or two.
- There is a slight increased risk of a seizure (or fit) after your treatment, although this is usually only a problem for people who have had seizures in the past. If this happens please contact one of the team.
- Although loss of hair is a problem common to nearly all radiotherapy treatments to the head, the extent of hair loss with radiosurgery is usually negligible. We advise you to discuss this with your doctor or consultant radiographer.
- We would advise you to take time off work during and maybe after the treatment. Once again, how treatment affects you should be discussed with your doctor or consultant radiographer.

## Follow Up

You will be seen in the outpatient's clinic at The Beatson West of Scotland Cancer Centre a week after completion of treatment. Further follow-up will usually be with your normal oncologist at your local centre.

## Our Team

Planning of Stereotactic Radiotherapy is a complex process, which involves several stages and a whole team of people.

Doctors	Dr. Allan James
	Dr Stefan Nowicki

Consultant Radiographer	Aoife Williamson
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## Where can I Get Help?

### Information and Support

All our staff are here to make sure your treatment goes as smoothly as possible and will try to help with any questions or problems you may have. Further specialist help and information is available from:

#### Information and Support Radiographer and Counsellor

 0141 301 7423

#### Information and Support Radiographer

 0141 301 7427

The Centre also has a **Radiotherapy Advice Line** available for patients who have completed treatment. It is an answer phone service. Please leave a message with your name and contact details and we will call you back as soon as possible.

 0141 301 7432

The Cancer Centre also has a **Cancer Treatment Helpline** for urgent calls. This is for patients on or within 6 weeks of treatment who have urgent or severe symptoms such as -

- Shivering or flu-like symptoms.
- Temperature greater than 37.5°C.
- Gum/nose bleeds or unusual bruising.
- Worsening or sudden breathlessness.
- Leg weakness/difficulty walking.
- Severe nausea/vomiting/diarrhoea/constipation.
- Sudden increased or uncontrolled pain.
- Other concerning symptoms associated with your cancer treatment.

The line is available 24 hours for emergencies, although it would be helpful if you called early in the day if this is at all possible.

#### **For Urgent Calls:**

**Beatson 8am-8pm ☎ 0141 301 7990**

**National 8pm-8am ☎ 0800 917 7711**

## **Counselling and Clinical Psychology**

This leaflet deals with the physical aspects of your treatment, but your emotional wellbeing is just as important to us.

Being diagnosed with cancer can be a deeply distressing time for you and those closest to you. Within the department we have a counselling and clinical psychology service that can help with worries and difficulties you might be having. If you think this may be helpful to you, please ask staff to put you in touch.

There are also voluntary organisations providing information and support. These include:

- **Macmillan Cancer Support:** ☎ 0808 808 0000  
🌐 [www.macmillan.org.uk](http://www.macmillan.org.uk)  
Providing practical, medical, emotional and financial advice for those affected by cancer.
- **Maggie's Gartnavel:** ☎ 0141 357 2269
- **Maggie's Lanarkshire, Monklands Hospital:**  
☎ 01236 771199
- **Maggie's Forth Valley:** ☎ 01324 868069  
Maggie's Centre provides a comprehensive cancer support programme for people and their families affected by cancer.  
🌐 [www.maggies.org](http://www.maggies.org)
- **Cancer Support Scotland - The Calman Centre, Gartnavel Complex.** Freephone: ☎ 0800 652 4531  
Provides emotional and practical support on a one-to-one basis and through community based groups. Complementary therapies available. 🌐 [www.cancersupportscotland.org](http://www.cancersupportscotland.org)
- **Macmillan Benefits Team** (within the Beatson)  
☎ 0141 301 7374  
Provides free and confidential advice for people affected by cancer and their carers.
- **Brain Tumour Action:** 24 hour helpline: ☎ 0131 466 3116  
Provides information, support and a befriending service.  
Please call or check online for local support groups:  
🌐 [www.braintumouraction.org.uk](http://www.braintumouraction.org.uk)
- **Epilepsy Scotland:** ☎ 0808 800 2200  
Provides information and advice: 🌐 [www.epilepsyscotland.org.uk](http://www.epilepsyscotland.org.uk)
- **Beatson Cancer Centre** – if you want to find out more about our Centre please visit: 🌐 [www.beatson.scot.nhs.uk](http://www.beatson.scot.nhs.uk)
- **NHS 24** ☎ 111