Information for patients receiving Stereotactic Radiotherapy

This leaflet is for people who will have stereotactic radiotherapy, either as a single treatment (Stereotactic Radiosurgery) or a course of between 2 and 25 treatments (Stereotactic Radiotherapy).

Stereotactic Radiosurgery is used as an alternative to neurosurgery and aims to eliminate the abnormal tissue.

Stereotactic Radiotherapy is just a more accurate way of giving conventional radiotherapy. It sometimes means we need to give fewer treatments.

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, and where to get help and support.

We treat each patient as an individual and the effects of treatment may vary from one patient to another. Your doctor, radiographer and clinical nurse specialist will explain your treatment in detail and ask you to sign a form consenting to treatment. It is important that you understand your stereotactic treatment and effects. 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 and sometimes others such as a neurosurgeon, a radiologist or other doctors from your base hospital. This means there is a great deal of expertise and experience advising on the best possible treatment for you. 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.

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

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 stop them from growing or cause them to die.

Stereotactic Radiotherapy is a very accurate way of giving X-ray treatment to small areas of the brain and allows us to use very small beams of high energy X-rays to treat the tumour. It also means that we can direct the radiotherapy very accurately so as to increase the chances of controlling your tumour whilst at the same time avoid giving treatment to healthy tissue. In this way we reduce the chance of possible side effects from the treatment. To make sure your treatment position is exactly right each time we treat you, it is very important that we keep you very still and supported whilst you are having your treatment.
You will need to wear a close fitting treatment mask as shown in
the photograph below. This mask is individually made to fit you and
needs to be worn at each stage of your planning and treatment.

Photograph courtesy of BrainLab

Planning of your stereotactic radiotherapy is a complex process
which involves several stages and visits to the department.
This will include visits to:

• The Mould Room – where your mask is constructed.
• The CT Simulator- the first stage of planning for your treatment.
• Pre-verification – final checking of your treatment plan.
• Radiotherapy Treatment Room L – where you will have your
treatment.

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

If you have a beard or moustache we may ask you to shave it
off before you attend, as they can interfere with the mask
making process.
How is the mask made?
Our mould Room technicians will make your mask. Before beginning they will explain everything in detail. They will ask you to remove your outer clothing in the neck and upper chest area and then they will help you to lie flat on a treatment couch. A neck rest is used to support your head. We will use warm plastic to take an impression of the back of your head. A second piece of plastic is used to take the impression of the front of your head, from your forehead to your upper lip. The plastic sheet is full of small holes, so you will be able to breathe normally.

The technicians will then secure the plastic sheets to the head rest on the couch so you will hear some popping noises. Once it is fixed you should not be able to move your head. We may ask you to rest your upper teeth (or gum) against a plastic covered block called a mouth bite. The mouth bite does not go very far into your mouth and should not make you ‘gag’ but it can be a little uncomfortable.

Will having the mask made be uncomfortable?
The plastic is warm as it goes on and it will be allowed to cool. This is not uncomfortable and most people find it quite soothing. As the plastic sheet cools it ‘shrinks’ a little and you will feel it become quite tight. This is intentional and though it may feel a little uncomfortable and restricting, you should not experience any pain.

Once the treatment mask has been made you can go home.
CT Simulator Visit

After the mask is made, the next step is usually planning your treatment on the CT Simulator. This is an x-ray scan taken with you lying on a couch in the position necessary for your treatment. Your radiographers will explain everything in detail at the start.

- You will wear your mask during the scan to keep you in the correct position. Your radiographers will fit your mask and then attach a ‘Localiser’ box over it. It is opaque and you will not be able to see through it. This box will cover the whole of your head although it won’t touch you. The planning computer uses this localiser box to calculate where your tumour is.

- If you were fitted with a mouth bite you will have it in place during your scan. You will be able to move your lower jaw, so you will still be able to swallow.

- For this scan, most people will need an injection of contrast (dye) to help show up the tumour more clearly. This will be done just before your radiographers finalise your planning position.

Contrast Injection

Your doctor or radiographer will put a small needle (cannula) into a vein, usually on the back of your hand. 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 contrast (dye) through this plastic tube. It may feel a little cold but you should not feel any discomfort. The injection itself may be given by a machine which is simply done for convenience.

Some people can have an allergic reaction to the contrast. This is rare but we will be ask some questions before beginning to ensure it is unlikely to happen to you. Your doctor and 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 finalise your treatment position and leave the room to begin the scan. Scanning usually takes around five minutes and during this time the radiographers will watch you on closed circuit TV.
MRI scan
You will visit the MRI scanner at the Beatson. This scanner is situated near the mould room on level 0 and your scan will last about 15 minutes. The radiographers will position you lying on your back. You don’t have to wear you treatment shell for this scan. However, you will have another contrast injection for this scan. The 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 although some patients find the scanner noisy. The radiographers working on the scanner may play some music for you.

At the same appointment, you will meet with your Clinical Oncologist and Specialist Radiographer. They will discuss your treatment with you and answer any questions that you may have. They will also ask you to sign a treatment consent form. This allows us to progress with your treatment.

Once the CT and MRI scans are complete the cannula will be removed 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 other organs are avoided as much as possible. Our physics team will enter all the information from your CT scan into a planning computer and design your individual treatment plan. The final plan will use several x-ray beams to deliver treatment to the lesion.

Pre-verification
You will visit the treatment room you will be attending for your radiotherapy at this visit. You will be lying in the position in which you will have your treatment and you will be wearing your mask. The radiographers will take a set of images (x-rays) which are used to check that your treatment is exactly as the doctor has planned. For patients having one treatment, the pre-verification appointment will take place on your treatment day. Your images will be assessed by the specialist radiographer and then you will receive your treatment.
For patients having more than one treatment
You will not receive any radiotherapy treatment at the pre-verification session. Any changes to your set-up are made by your doctor or radiographer before you come for your next appointment.

When will I start my treatment?
Treatment normally starts one to two weeks after the 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 risk of swelling of the area that has been treated. To prevent this we normally recommend that you take medication called Dexamethasone in the morning and evening on the day of your treatment. This is a strong steroid that prevents swelling of this kind. We can give you the medication when you come in for your third appointment.
If you are having more than one treatment we may also recommend steroids. This is not always necessary however, particularly if the region we are treating is very small or the X ray dose each day is small.
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 you treatment some people can experience some light headedness. For this reason it is not recommended that you drive home after the treatment. We should also remind you that many patients with brain tumours are not allowed to drive. If you are in any doubt about your position with respect to driving please ask the radiographer or the doctor.
Your Treatment

• You will have treatment on a linear accelerator which is a type of x-ray machine. The staff operating these machines are called therapy radiographers. They will position you just as you were in simulator.

• The radiographers will dim the lights in the room for a few minutes to allow them to position you. They will use the Localiser box and reference points to give your treatment accurately. The box will be removed before the treatment begins.

• The radiographers have to leave the room while the machine is on. An alarm will sound as they leave the treatment room. You will also hear a buzzing noise as the machine is switched on.

• The radiographers will closely monitor you on closed circuit TV while your treatment is being given.

The treatment should take around 30 minutes. It is painless and you will feel no differently afterwards. Please check with the radiographers if you have any questions or problems.

Effects of Treatment

How will I feel after the treatment?

• You may feel tired for a day or two, but often people feel nothing.

• 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.

• Loss of hair is a problem common to nearly all radiotherapy treatments to the head. The extent of hair loss varies from person to person. It may not happen at all. We advise you to discuss this with your doctor.

We would advise you to take time off work during and maybe after the treatment. Once again just how it affects you should be discussed with your doctor.
Follow Up
You will be seen in the outpatient’s clinic at the Beatson West of Scotland Cancer Centre, 4 weeks after completion of treatment.

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 Brian Clark

Specialist Radiographer
Aoife Williamson    Tel: 0141 301 7431

Clinical Nurse Specialist
Mairi MacKinnon    Tel: 0141 301 7602

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:

Macmillan Information Support Radiographer and Counsellor
Tel: 0141 301 7423

Information and Support Radiographer
Tel: 0141 301 7427

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

For Urgent Calls Tel: 0141 301 7990
Radiotherapy Advice Line
Tel: 0141 301 7432

The Centre has a Radiotherapy Advice Line available for patients who have completed treatment. It is an answer phone service which is checked at intervals. Please leave a message with your contact details and brief description of your concern and our radiographers will call you back. It is not essential but it can help if you also leave your Beatson Hospital Number or date of birth as it allows us to find you in our radiotherapy system.

Please note this is not an emergency service

We have an Information Centre on Level 1 where you can find further information and signposting to other services.
Tel: 0141 301 7390

Counselling and Clinical Psychology

This leaflet deals with the physical aspects of your treatment, but your emotional well being 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
Tel: 0808 808 0000
www.macmillan.org.uk
Providing practical, medical, emotional and financial advice for those affected by cancer.

Maggie’s Gartnavel Tel: 0141 357 2269

Maggie’s Centre, Wishaw General Hospital Tel: 01698 358392
Maggie’s Centre provides a comprehensive cancer support programme for people and their families affected by cancer.
Cancer Support Scotland (Tak Tent) within the Calman Cancer Support 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.

Macmillan Benefits Team (within the Beatson). Tel: 0141 301 7374
Provides free and confidential advice for people affected by cancer and their carers.

Brain Tumour Action. Tel: 0131 466 3116
Provides information, support and a befriending service.

Epilepsy Scotland. Tel: 0808 800 2200
Provides information and advice. www.epilepsyscotland.org.uk

Beatson Cancer Centre – if you want to find out more about our Centre please visit www.beatson.scot.nhs.uk

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