

Stereotactic radiosurgery for the treatment of brain metastases

Your doctor has recommended that you have stereotactic radiosurgery for one or more tumours in your brain, called metastases. This factsheet provides information about the treatment and its benefits and potential side effects. If there is anything you are not clear about, please speak to a doctor or nurse involved with your treatment.

What is a metastasis?

A metastasis is a tumour formed from cancer cells that have travelled through the blood stream from a tumour in another part of the body. Usually, the site of the main tumour is already known. Sometimes a metastasis in the brain causes problems before a tumour elsewhere has been identified. A metastasis is often referred to as a secondary.

How are brain metastases treated?

Brain metastases can be treated by stereotactic radiosurgery, whole brain radiotherapy, surgery or, a combination of these treatments. The Royal Marsden specialises in radiotherapy and is one of the leading hospitals for treatment with stereotactic radiosurgery.

What is stereotactic radiosurgery?

Stereotactic radiosurgery is a highly accurate way of giving localised radiation treatment to the brain. Radiation is directed at the tumour from many different angles. To achieve accuracy, a special immobilisation shell is worn which helps to keep your head still.

Stereotactic radiosurgery can be given in a number of doses over one, three or five days. This will be decided by the team treating you, according to the size and location of the brain metastases.

What will the preparation for treatment with radiosurgery involve?

Immobilisation shell and computed tomography (CT) scan

We will create an immobilisation shell that you wear during treatment. This is made in the CT scanner before your scan, and is not painful or uncomfortable. Occasionally we may make the shell in a separate room (Mould Room). The shell is put on during treatment to make sure that you lie in the same position each time you have treatment. You will have a CT scan whilst wearing this shell so that we have an image of you in the exact position you will be in for treatment. We use this scan to assist in the planning of your treatment.



Magnetic Resonance Imaging (MRI)

You will also have a special 3D MRI scan of the brain to give us a detailed view of the metastases. This scan is performed using an injection of contrast (gadolinium) and helps us to plan your treatment.

What will happen during radiosurgery?

The treatment will usually be given over the course of one, three, or five days, however during the planning process this may change. If this is the case, we will call you and let you know. Having radiotherapy is painless and it is safe to eat or drink before treatment and immediately afterwards. You should be fit to travel home afterwards, but we advise that you have an escort with you. Anyone who has brain metastases should not drive a car, so you will need someone to take you home.

Steroids

To minimise the risk of side effects, we will prescribe a corticosteroid regime (generally dexamethasone) tailored specifically to your needs.

What are the possible benefits of treatment?

The aim of the treatment is to shrink the metastases and stop them from growing. This should result in the disappearance or improvement in the symptoms you have been experiencing. The metastases may completely disappear after radiosurgery and there is a reasonable chance that they will not grow back again.

In some cases, **new** metastases may still appear in the future and further radiosurgery may be a treatment option again.

What are the expected side effects of treatment?

Please see the table on the next page.



Possible side effect	Advice
Fatigue	This is usually mild but may last for a week or two after treatment. Take rest where necessary and drink plenty of fluids to keep your body well hydrated.
Headaches, nausea or sickness	You have been prescribed steroids to minimise the risk of this happening. Please contact your key worker within working hours or call The Royal Marsden Macmillan Hotline (24 hours) for further support.
Seizures	Seizures caused by radiosurgery are rare. If this is anticipated, you will be prescribed anti-seizure medication. The chances of this are less than 5% (5 in 100 people).
Skin soreness	Most patients do not experience a skin reaction in the area being treated, however some may develop a tender scalp after the treatment. The severity of the reaction varies from person to person. You can moisturise the skin over your forehead and face using your own moisturiser, or a mild un-perfumed 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 in, so you may wish to look for a product that is SLS free (sodium laurel sulphate).
Hair loss	You may lose some hair in the area being treated with radiotherapy, although this will be minimal. This will happen after a few weeks and is usually temporary. Avoid using a hairdryer or heated rollers. Do not use hair spray, colouring agents, or perming solutions. These can be used after your course of treatment is finished and after any possible skin reaction received has resolved.

Late side effects

Occasionally, radiosurgery may cause some damage to the area of the brain where the metastasis was lying. In most cases, the chance of any late side effects occurring is less than 5% (5 in 100 people). Your individual risk of late side effects will be discussed with you and will be included on your consent form. The type of late side effects that occur can vary depending on the area being treated and can occur six to 18 months after treatment.

Seizures

Damage to the nerves surrounding the metastasis may result in abnormal electrical activity within these nerves.

Stroke

The blood vessels around the metastasis may become weakened and can increase the chance of bleeding within the brain.



Radiation necrosis

Damage to the healthy brain around the metastasis can cause localised swelling and be irreversible. The symptoms of radiation necrosis can be similar to your original symptoms, and may also include headaches, nausea, fatigue, and dizziness. This can often be treated effectively with steroids, and rarely requires surgery.

What will happen to me after radiosurgery?

We will arrange a telephone appointment for you one to two weeks after treatment. This will be with the Neuro Specialist Consultant team that you saw or spoke with prior to the treatment. Following this, you will not need to attend the neuro-oncology clinic again as the original team caring for you will now lead on your care.

Additional information

Transport

Hospital transport can be arranged for patients meeting certain criteria. Please contact the transport department on 0207 811 8180 for further information.

Contact details

The Royal Marsden Macmillan Hotline:

020 8915 6899

(available 24 hours a day, 7 days a week)

For further contact details – please see our separate contact sheet

