

UCLH  
NHS Foundation Trust



# Patient Guide to Radiosurgery for Brain Metastases

at The Queen Square Radiosurgery Centre



# Radiosurgery for Brain Metastases



This booklet provides brief information about radiosurgery for Brain Metastases and we hope you will find it useful.

Further information is also available on our websites and from charities who can provide you with support. Please refer to the back of this booklet for more details.

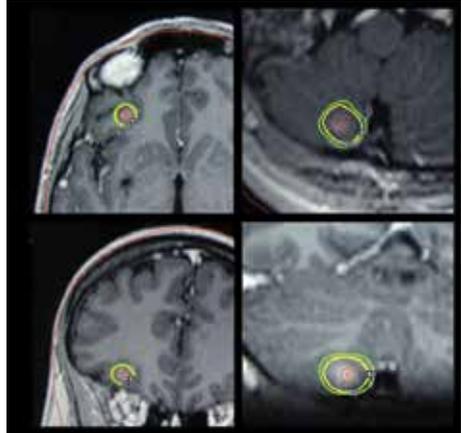
We encourage you to read the information in this booklet before attending your outpatients appointment. This will help you to raise any questions you may have.



# What are Brain Metastases?

In some forms of cancer the disease can spread from the original site of the tumour.

The place in which the cancer first starts is known as the primary site and this tumour is referred to as the primary tumour. Cells are able to break away from the primary tumour and be carried in the blood. These are then deposited in another area of the body where they grow and form another tumour.



These tumours are known as secondary tumours or metastases. Secondary tumours may be described as being solitary i.e. one only, or multiple where there are two or more.

The most common types of cancers that can spread to the brain originate in the lung, breast, colon and kidney.

Malignant melanoma, an aggressive form of skin cancer can also be included in this list.

The symptoms you have been experiencing will depend upon which area of the brain is affected by the secondary tumour.

You may have many different emotions including anxiety and fear. These are all normal reactions and are part of the process that many people go through in trying to come to terms with their condition.

# What are the treatment options for Brain Metastases?

There are several treatment options, any of which may be appropriate for individual patients. They may include one or more of the possible options:

## Surgery

This involves an operation under general anaesthetic and up to ten days or more can be spent in hospital. Surgical removal may be possible and may have been discussed with you already. The risks of this surgery will be explained to you and will depend on the precise position of your tumour.

## Steroid Therapy

Steroid Therapy can sometimes be used as part of the management of brain metastases. Steroids reduce inflammation which can provide temporary relief from symptoms associated with swelling.

## Conventional Radiotherapy

Treatments are carried out daily and can take up to 20 minutes per appointment. Patients commute daily for radiotherapy which may take place Monday to Friday over several days or weeks.

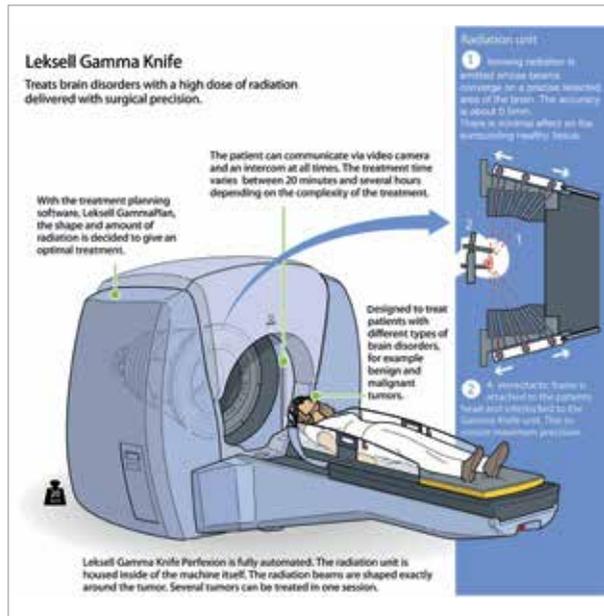
## Stereotactic Radiosurgery

This is another form of treatment with radiation, where the radiation dose is given in one single session, on one day, as an outpatient. The term 'stereotactic' refers to accurate location in space. This will be discussed further in this information leaflet.

# Treatment with Gamma Knife Radiosurgery

The use of Gamma Knife Radiosurgery is a well-established method of treating selected tumours or lesions in the brain.

This is not a knife in the conventional sense and the treatment does not involve anything being cut.



## How does the Gamma Knife work?

The Gamma Knife works by focussing beams of gamma radiation and has the ability to treat a defined target area with minimal effect on surrounding tissue. Gamma Knife surgery is used exclusively for the brain, head and neck.

Because of its highly focussed nature, radiosurgery is generally effective at controlling the local disease being treated. However, because it is so focal it will not cure you of any cancer elsewhere in the body. In practice it is what is going on at other sites in the body that will determine how well you do. You will have had staging examinations to assess this and we can only offer radiosurgery to patients in whom the disease elsewhere in the body is controlled or controllable.

# What are the steps before treatment?

If you have been referred for Gamma Knife radiosurgery your case will be reviewed by our specialist multi-disciplinary team (MDT). This includes neurosurgeons, neuro-oncologists, neuroradiologists, medical physicists and radiographers who will determine if Gamma Knife Radiosurgery is a suitable treatment for you.

You will then be invited within one week of the MDT review to an outpatient appointment with a consultant and to attend a pre-assessment clinic led by radiographers.

You may have had some of your questions answered by your referring Consultant. You may also have had information from other sources (your GP, the internet, other patients etc) which may need to be put into context. Indeed you may have had contact with our office and received some answers from our staff.

We must seek your consent for any procedure or treatment beforehand. We will explain the risks, benefits and alternatives where relevant before asking for your consent. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to ask for more information.

You will be shown around where treatment will be undertaken and meet with one of the medical staff, who will take your history, check you for general medical problems and determine any specific requirements to ensure that the treatment day goes smoothly. We may also require blood tests in preparation for treatment day.

We would then plan your admission for treatment within a maximum of two weeks of your providing consent.

# Things to consider:

## Before your appointment

- Write down two or three of your most important questions.
- List or bring all your medicines and pills – including vitamins and supplements.
- Ask for an interpreter or communication support if needed.
- Ask a friend or family member to come with you, if you like.

## During your appointment

- Don't be afraid to ask if you don't understand.
- If you don't understand any words, ask for them to be written down and explained.
- Write things down, or ask a family member or friend to take notes.

## Before you leave your appointment

Check that:

- You've covered everything on your list
- You've understood what will happen next
- You know who to contact with any concerns or questions

## Risks of Gamma Knife Radiosurgery

As with every procedure, there are some risks associated with Gamma Knife Radiosurgery. In order to make an informed decision and give your consent, you need to be aware of the possible side effects of this procedure and that you will be exposed to radiation. The consultant will talk to you about the potential risks and side effects of Gamma Knife Radiosurgery for your individual circumstances at your outpatient appointment.

# What will happen on treatment day?

You are welcome to have somebody to accompany you all day if this would make you feel more comfortable.

Typically patients are admitted on the morning of treatment, however some, dependent on clinical needs, may be admitted the evening before and this will be discussed with you at your outpatient appointment.

We need to target the area to be treated precisely. To guide us, we use a lightweight metal head frame that allows us to accurately pinpoint the target to be treated in your brain. It also prevents your head from moving during imaging and treatment procedures. For some patients, according to clinical needs the frame may be replaced by a mask<sup>1</sup>.

The frame fitting involves a small degree of discomfort, but most patients tolerate it remarkably well. The application of the head frame requires four small injections to administer local anaesthetic (similar to having a dental treatment) in order to numb the sites where the 4 pins are to be used to secure the frame.

The whole procedure takes about 5 - 10 minutes during which you may experience some minor discomfort from the wearing of the head frame but will quickly get used to this. You will have the frame attached until treatment is completed, as all measurements are taken from this reference.

You will then be taken to the MRI scanner to have images taken. Once your scan is complete, you will be taken to the Gamma Knife centre where you can have light refreshments and a rest.

***<sup>1</sup>If a mask is being used the treatment day remains the same as described but reference to frame fitting/removal is not relevant. Further information on treatment using a mask will be provided at your outpatient appointment.***

During your rest time, the medical physicist and a consultant neuroradiologist uses a specially designed computer system to calculate a precise and accurate treatment plan based upon your scans.



This treatment plan is unique to you as every patient's plan is individually designed to address the specific medical condition. Once complete, your Consultant reviews and accepts this plan and prescribes your treatment.

The treatment is similar to having a scan, and you will be lying down with your head frame supported to ensure that you are sufficiently still. During the treatment you will be awake and be able to communicate with the treatment team through an audio and video connection. If necessary, breaks can be introduced into the treatment process to ensure your comfort whilst you are treated.



Following treatment we will remove the frame, clean the points where it was attached and allow you time to recover. You may feel tired or even have a headache that afternoon as a result of the frame application and the long and busy day. Typically you will be discharged home the same day but some patients do stay on a ward and

are discharged the next morning. The treatment day remains the same as described but reference to frame fitting/removal is not relevant. Further information on treatment using a mask will be provided at your outpatient appointment.

We will follow up on your progress working with the consultant who referred you to us. This will be discussed and explained to you following your treatment and your consultant will inform you about when he/she would like to see you again. They will also write to your GP, giving them details of your treatment and after care.

# Your questions answered

**Q:** What will I feel during the treatment?

**A:** The frame, which at this point will still be attached to your head, will be positioned and fixed within the Gamma Knife. For you the treatment will be similar to having another scan. You will lie on a couch, you can listen to music and will feel no pain. Claustrophobic patients may find the confined space difficult, but it is less confined than the MRI scanner. You can talk to the radiographers at any time through the intercom system.

**Q:** Are there any side effects and complications?

**A:** Side effects can vary greatly between individuals. The rare complications of the radiation treatment are usually delayed and the consultant will discuss these with you in more detail when you are seen in clinic. From the procedure itself apart from the effects of the local anaesthetic used for the frame application most patients will have no immediate side effects. You may have a headache by the end of the treatment day, mainly due to the frame and some nausea may occur during the first 48 hours. Rarely, some patients may feel tired for a few days or may experience temporary mild discomfort or numbness at the pins fixation sites.

**Q:** How will I feel after treatment?

**A:** Radiosurgery does not leave you “radioactive” in any way. Your treatment poses no risk to children or pregnant women. Over the next few days you may feel tired and you may feel some discomfort in the areas where the frame was fitted. Mild painkillers may be taken if you experience this.

**Q:** After treatment what should or shouldn't I do?

- Do not scratch the scabs over the pin sites as they act as a barrier to infection and should fall off in a few days. Also, for the same reason you should refrain from washing your hair for the next 3-4 days

- Do not use any types of creams or lotions on the pin sites
- Do take mild painkiller for headache or soreness
- Do contact your GP if you find the pin sites becoming more painful, red or swollen
- Do contact us if you have any concern or unanswered questions

**Q:** Will I lose my hair?

**A:** The treatment does not usually cause any hair loss. Local hair loss may occur with superficially located targets. This will usually grow back within 3 months.

**Q:** When can I resume my normal routine?

**A:** As soon as you feel well enough. This can be the next day after treatment or you can wait a few days.

**Q:** When can I go back to work?

**A:** The same as above applies to returning to work, although most people choose to take a few days rest before going back.

**Q:** Will I be able to drive immediately after my treatment?

**A:** Patients with single metastases will not be allowed to drive a car or motorcycle for one year and those with multiple metastases for two years. For driving a bus or lorry there is a permanent ban. You must inform the DVLA of your condition and further information can be found at <https://www.gov.uk/brain-tumour-and-driving>

**Q:** Can a mask be used instead of a frame?

**A:** For only some patients according to clinical needs and suitability. Most treatments continue to be undertaken using the frame.

If you have any queries or problems please contact us. Details are on the inside back cover.

# Patient feedback

Your complete satisfaction is very important to us and we kindly ask all patients to provide feedback via a questionnaire sent a few days after treatment.

Sometimes, we may not meet your expectations and if there is something we need to improve, please tell us. If we cannot resolve your issue immediately then you can make a formal complaint and a leaflet explaining how is available at the centre and further information is available on our website.

We ensure complaints are investigated fully and learn from them to avoid re-occurrence.

## **For further information you can:**

Refer to our website: [www.queenssquaregammaknife.co.uk](http://www.queenssquaregammaknife.co.uk)

Other sources of useful information and support can be found at [www.macmillan.org.uk](http://www.macmillan.org.uk) (Helpline 0808 808 000) and [www.brainstrust.org.uk/](http://www.brainstrust.org.uk/)

The Queen Square Radiosurgery Centre  
The National Hospital for Neurology and Neurosurgery  
Queen Square, London WC1N 3BG

Tel: 020 3448 4077  
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email: [uclh.infogkqs@nhs.net](mailto:uclh.infogkqs@nhs.net)  
[www.queensquaregammaknife.co.uk](http://www.queensquaregammaknife.co.uk)

**DIRECTIONS:**

By Rail: Euston, King's Cross and St Pancras are all only about 15 minutes walk from the hospital.

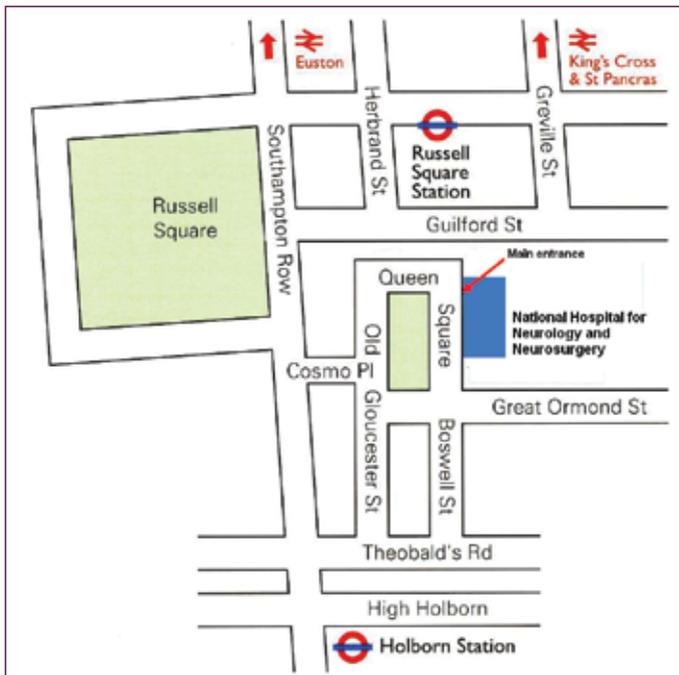
By Bus: Southampton Row - no's 59, 68, 91, 168, 188, 501

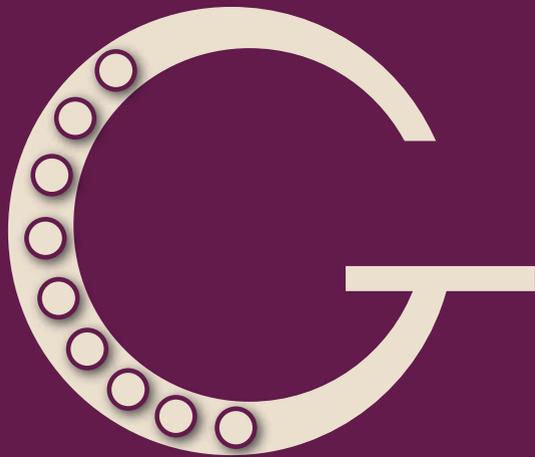
Theobalds Road - no's 19, 38, 55, 243

High Holborn / New Oxford Street - no's 8, 25, 242, 501, 521

By Tube - Nearest tube stations:

Russell Square (Piccadilly Line), Holborn (Central and Piccadilly Lines). Both within walking distance





[www.queensquaregammaknife.co.uk](http://www.queensquaregammaknife.co.uk)