

A Patient Education Guide for Gamma Knife Stereotactic Radiosurgery



UHN

Patient Education
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University Health Network
Toronto General Hospital Toronto Western Hospital Princess Margaret Hospital

You are scheduled for Gamma Knife treatment:

On _____ at _____ a.m.

Please come to the:

Medical Imaging Reception
3rd Floor, East Wing Room 448
Toronto Western Hospital 399 Bathurst St, Toronto, ON

To get to Medical Imaging at TWH take the East Elevators to the 3rd Floor. When the doors open, you are in Medical Imaging.

Please bring your:

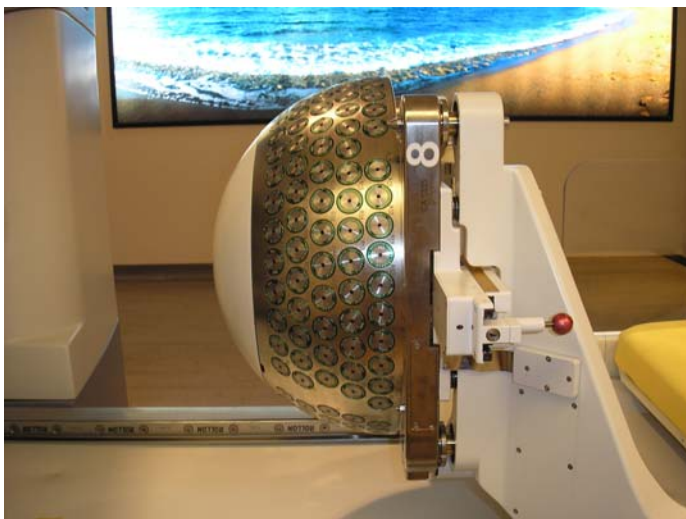
- Hospital blue card
- Ontario Health card

Have a seat in the waiting room.

A Nurse or Radiation Therapist will meet with you and prepare you for the procedure.

What is the Gamma Knife®?

The Gamma Knife® is a treatment for certain diseases in the brain. Very precise beams of radiation are used to treat the affected area of your brain (**the target**). At the target, the concentrated radiation treats the tumor or abnormality. Because the beams are precisely pinpointed on the target, damage from radiation to surrounding brain tissue is expected to be small.



There are 4 steps to Gamma Knife® treatment.

1. Putting on the frame
2. Imaging – CT, MRI or Angiography
3. Treatment planning
4. Treatment

1. Putting on the headframe

What is a headframe?

The stereotactic head frame is an important part of Gamma Knife® Surgery. The head frame allows the doctor to accurately pinpoint the target in your brain.

The frame stays on your head for the entire procedure. We use it to keep you in a stable position during imaging and treatment.

A Neurosurgeon and Radiation Therapist will attach the lightweight frame to your head with four pins. Local anesthetic will be applied where the pins are to be attached, 2 on your forehead and 2 in the back of your head. You may feel pressure as the pins are tightened. This usually lasts 5-10 minutes.



2. Imaging – CT, MRI or Angiography

After your frame is in place, we will take pictures or images of your head. We will image your head and brain to determine the exact size, shape and position of the target in your brain. To obtain these images, we will use MRI, CT or angiography. We will take you to the imaging area by wheelchair.

During the time that we are taking images, we will put a transparent box over your head. This will give us measurement points on the images for planning your treatment

After we take all the images that we need, we will take this box off and you will go back to the Medical Imaging Day Unit.



3. Treatment Planning

To develop your treatment plan we use the images from your MRI, CT or angiography. Your treatment planning team includes a:

- Neurosurgeon
- Radiation Oncologist
- Medical Physicist

We will transfer your images to a specially designed computer. From here, your health care team decides which area to treat, how much radiation to give, and how they will target the radiation to treat the area.

The treatment-planning step can take one to several hours depending on the size and shape of the area you need to have treated.

While we are planning your treatment you:

- will stay in the Medical Imaging Day Unit.
- can eat, drink and rest. We will serve you a light lunch
- can use the washroom
- **may not** walk around the Unit

Please Note:

On the day that you come for Gamma Knife® treatment, there may be other patients having the same treatment. The order that we treat patients depends on several factors. For example, you may have your imaging step before another patient but have your Treatment step after that same patient. We appreciate your cooperation with this process.

4. Treatment – what can I expect?

When your treatment plan is complete, the team checks it for precision and safety. Then we take you to the Gamma Knife® Centre for your treatment.

During treatment, you will not feel anything. The radiation treatment is painless.

Treatment can take several hours to complete. Be prepared for at least 1 hour of treatment and sometimes up to 3 or more hours.

For your treatment, the Radiation Therapist will be present at all times. They will help you get settled in the machine and make you comfortable. The Radiation Therapist will leave the treatment room while you receive your treatment. To keep in touch and keep you safe and secure, you will have a microphone near your head to communicate. We also have three cameras in the room and we can see all the time.

During your treatment you may have multiple trips in and out of the Gamma Knife® machine. For most patients, the couch (the surface where you will lie) will automatically move you into the next position. In some cases, the Radiation Therapists will come back into the room and adjust the position of your headframe. During the treatment you can listen to music and you can bring your own CD.

How should I prepare for my treatment?

- Do not eat or drink after midnight.
- Do not wear make-up.
- Do not bring any jewelry, hair clips, cards with magnetic strips, watches, or accessories with metal. These interfere with the MRI.
- Do take your regular morning medications with sips of water the morning of your treatment.
- Bring the medications that you need to take during the day in their original containers.



- Plan to spend most of the day at the hospital. The planning and treatment times vary for each patient. **Please note:** You will be cared for in our **Medical Imaging Day Unit**.
- Have a family member or adult friend come with you and stay at the hospital during your treatment. They must drive you home after your treatment.
- Bring something to read, crafts or other items to help you pass the time.
- Bring your favorite cassette tape or CD to use during your treatment. We provide a CD or tape player.

What will happen on the treatment day?

You will have all 4 steps of the Gamma Knife® treatment on the same day.

What can I expect after my treatment?

After your treatment, you will go back to the Medical Imaging Day Unit.

- The Neurosurgeon or Radiation Oncologist will remove your head frame.
- We will put bandages on the pin sites of your forehead. Do not get the pin areas wet for the next 48 hours.
- You may get a headache or minor swelling where the frame was attached.
- You may have some bleeding in the areas where the pins were placed.
- We will monitor you for 1 hour after we remove your head frame. Then you may go home.
- Please note: If you had an angiogram, you need to lay flat for
- 4 hours following the angiogram.

When you go home, you may resume normal activities, as you feel able.

What are the Potential Side Effects?

Your doctor or therapist will explain the short and long term side effects of Gamma Knife® treatment and how to cope with them. Each patient may experience different side effects. The most common side effects and how to manage them are listed below.

Tiredness is a common side effect of radiation therapy.

- The day of your treatment will be a long day and can be very tiring.
- You should pace your activities and rest as needed.
- A well balanced diet and lots of fluids can be helpful.

Headaches, many patients get headaches from wearing the frame.

- As needed, you may take Tylenol/Advil or a prescription pain reliever from your doctor as needed.



Nausea & Vomiting may occur, but it is uncommon.

- If you have nausea and vomiting, we will give you medication
- Tell your healthcare provider if you have an upset stomach.

Swelling, you may notice swelling around your eyes. The local anesthetic can cause this. This will get better in a few days.

- You can apply a cool compress to your eyes to ease the swelling.

Questions and Concerns

You can call us with any questions or concerns you may have.

For Monday to Friday: 8:30 a.m. - 4:30 p.m., call:
The Radiosurgery Centre at Toronto Western Hospital (416) 603-5445

For evenings, weekends and holidays, call:
The Toronto Western Hospital at (416) 340-3155
and ask for the neurosurgeon on-call

or

The Princess Margaret Hospital at (416) 946-2000
and ask for the radiation oncologist on-call

What about Follow-up visits?

Before you leave, we will give you an appointment to see your doctor for follow-up. Your follow-up appointment may include MRI

Your Radiation Therapist will call you the day after your treatment to find out how you are feeling.

Gamma Knife® Stereotactic Radiosurgery Treatment Team

The highly specialized Gamma Knife ® treatment team works together to develop a treatment plan that is best for you. Your team includes:

- Medical Physicists
- Neurologist
- Neurosurgeon
- Nurse
- Radiation Oncologist
- Radiation Therapists
- Radiologist



