

Stereotactic Radiosurgery - Frameless

This handout tells you what to expect before, during and after frameless stereotactic radiosurgery. While reading it, highlight any parts that do not make sense to you. Make a list of any questions you may have. Bring this handout with you when you come for your clinic visit or your treatment. Your doctor or nurse will go over it with you.

Frameless Stereotactic Radiosurgery

Frameless stereotactic radiosurgery is used to treat many types of lesions or tumors in the brain, such as:

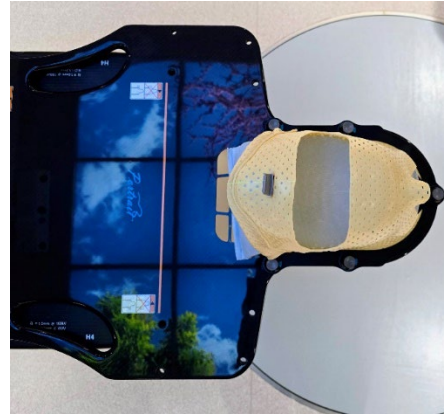
- Brain tumors
- Meningiomas
- Vestibular schwannomas
- Arteriovenous malformations (AVM)

High doses of radiation are given to a small area in your brain. In most cases, it is done in one treatment. The radiation can be given to the targeted area while the normal brain tissue around it gets only a small dose of radiation. Because this treatment is so precise, a special mask is created to keep your head perfectly still.

Planning for Treatment

CT Simulation

A few days before stereotactic radiosurgery, you will have a CT simulation. During this procedure, the frameless mask will be created. The mask is a warm plastic material that is formed to the shape of your head. As it cools, it hardens to that shape. You will wear the mask for treatment delivery. The mask is tight but should not be painful, as the goal is to immobilize your head in the exact same position.



If you are claustrophobic, please let your doctor or nurse know before the procedure.

After the mask is formed, you will have a CT scan. This will help pinpoint the exact place and size of the treatment area. It is also used for treatment planning.

After the CT, you will go home while the doctors (radiation oncologists and neurosurgeons), medical physicists, and radiation dosimetrists make your treatment plan. This process often takes several days.

If you have never had a CT scan, please let the nurse know. You will be given a handout that describes it in detail.

Planning MRI

If your last MRI was performed more than two weeks before treatment, or was performed at an outside facility, you may first have a new planning MRI scan. This MRI will be used to plan your radiation treatment. It will feel the same as any other MRIs you may have had. If you've never had an MRI, please let your nurse know. You will be given a handout that describes it in detail.

Before your MRI, let the doctor or nurse know if you have:

- Brain aneurysm clips
- Implanted pumps
- Chemotherapy ports
- Neurostimulators
- A pacemaker
- An artificial heart valve
- A defibrillator
- Eye or ear implants
- Stents, coils or filters
- Allergies to IV contrast dye, shellfish or iodine
- Claustrophobia (fear of being in enclosed spaces)

Medicines

If you have diabetes and are taking oral medicines or insulin, please let your nurse or doctor know. These medicines may need to be stopped or adjusted for the treatment.

Diet

You will be able to eat and drink **after** the CT scan. Please drink **extra fluids** the day of the treatment (try to drink an extra 1-2 quarts of fluid). This will flush the dye from your system.

The Day of the Treatment

Transportation

You can drive yourself to and from treatment if you do not need medicines for claustrophobia and have no other driving restrictions. Many patients do find it helpful to have a family member or friend with them for treatment and to drive them home. Expect to be at the hospital for 1-3 hours the day of your treatment.

Treatment

You will lie on the treatment table with the mask attached to the treatment table. The treatment machine rotates around your head as the radiation is given. This is called an arc. The length of the treatment will vary. It depends on the number of arcs you receive.

Radiation treatments are a lot like having x-rays. You will not be able to see, feel, or hear the radiation. There is no pain with the treatment. If you are in pain for other reasons, such as back pain or discomfort from the head mask, please let the doctor or nurse know.

Your doctors, nurse, therapist who operates the treatment machine, and the physicist(s) who did the treatment planning, will be present during your treatment.

Once you are in place on the treatment table, all staff must leave the room while the machine is on. You will be watched on a television screen. You will be able to talk with the staff through a speaker. You can also wave your hand as a signal that you need help right away. If this happens, the treatment will be stopped, and the staff will come into the room to help you.

Risks

Your doctor will talk with you about the short and long-term risks of this treatment. The risks vary from patient to patient. They depend on your diagnosis, the size and location of the lesion, underlying health problems, the dose of radiation used, and the amount of normal tissue treated. Most of the time, there are few immediate side effects.

Short-Term Risks

- Brain swelling, which is treated with steroids (most common)
- Nausea, which is controlled with medicine (rare)
- Seizures, which can also be controlled with medicines (very rare)
- Very little hair loss for most people

Long-Term Risks

There is some concern that, in a very few patients, long-term side effects could occur. Although serious, these side effects are quite rare.

At worst, these side effects could include:

- Damage of normal brain tissue leading to the loss of some brain function, causing:
 - Vision changes
 - Speech changes
 - Paralysis
- Severe brain swelling which may require long-term steroid use

After the Treatment

Radiation

After treatment, you are not radioactive and are safe to be around other people.

Pain and Fatigue

You may feel a little tired for a day or two. You can be as active as you wish.

You should not have any pain or discomfort from wearing the mask after the treatment. The treatment itself should not cause pain. Please let your doctor know if you have any of these symptoms.

Medicines

After treatment, you can resume your prescribed medicines unless told otherwise by your doctor or care team.

When to Call

Call the clinic if you notice:

- Increasing or severe headaches that are not relieved by Tylenol®
- Headaches that occur daily or several times a day, even if relieved by Tylenol®
- Headaches with nausea and vomiting
- Nausea or vomiting
- Numbness or tingling
- Clumsiness or trouble moving a hand or leg
- Vision, hearing or speech changes or problems
- Trouble with balance, walking or dizziness
- New onset of confusion
- New seizures or worsening seizures

Who to Call

Radiotherapy Clinic

608-263-8500 or 1-800-323-8942

After hours, your call will transfer to the operator. **Ask for the radiotherapy doctor on call.** Give your name and phone number with area code. The doctor will call you back.

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 3/2025. University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#8407