

A Guide for Patients:
***Preparing for Your
Gamma Knife Treatment***



CJW Medical Center
Neuroscience & Gamma Knife Center
at Johnston-Willis

The Gamma Knife® is much more than just another technology for treating brain disorders. It opens up lifesaving treatment options for patients who were previously considered untreatable, including those with inoperable brain tumors and other abnormalities.

CJW is the first hospital in Richmond, and one of only two in Virginia, to have a Gamma Knife. This leading-edge technology is primarily used to treat brain tumors and other brain disorders, vascular malformations, facial pain and other neurological disorders. It offers a safe and effective treatment for more than 30,000 patients every year, and it is simple, painless and straightforward.

A Gamma Knife is not a knife in the traditional sense of the word because the physician does not use a scalpel and does not make any incision. Instead, precisely focused beams of radiation are directed to the treatment area in the brain, minimizing the effects on the surrounding healthy tissue. Because general anesthesia is not needed during a Gamma Knife procedure, recovery is relatively quick and painless. Most patients are able to resume normal activities in 24 to 48 hours.



The Neuroscience and Gamma Knife Center at CJW Medical Center

In addition to the Gamma Knife, the Neuroscience and Gamma Knife Center at Johnston-Willis has two dedicated neuro operating suites, a 21-bed neuro care unit, and a six-bed neuro intensive care unit. CJW provides highly specialized neuro diagnostic services. These tools make it possible for our physicians to diagnose problems and plan treatments more effectively.

Our diagnostic tools include positron emission tomography (PET) scanning, magnetic resonance imaging (MRI), computerized tomography (CT) scanning, digital angiography and more. Our treatment options include stereotactic surgery, radiosurgery, radiotherapy and chemotherapy.

Our Neuroscience Center treats brain tumors, stroke, trigeminal neuralgia, spasticity and other neurological conditions.

With more than 30 affiliated physicians, we treat more neuroscience patients than any other non-academic facility in the Richmond area. During Gamma Knife treatment, you will work with the neurosurgeon and an interdisciplinary team of specialists, which may include neurosurgeons, radiation oncologists, neuroradiologists and neuroscience nurses.



The Advantages of Gamma Knife Surgery

- With no incision, the risks of infection, hemorrhage and adverse reactions to anesthesia are minimal. Most patients receive only local anesthesia and a mild sedative.
- Surrounding tissue is spared from unnecessary radiation.
- Gamma Knife surgery is often more cost-effective because recovery time is reduced. Most patients leave the hospital on the same day as the treatment. Medicare and most insurance companies cover this treatment.
- Patients experience little, if any, discomfort during and after this minimally invasive procedure.



The Treatment Process

You will meet with your neurosurgeon before your treatment to discuss the procedure. Gamma Knife surgery does not require cutting or shaving your hair, but see the pre-treatment list that follows to find out how you need to prepare for the procedure.

The first step of the treatment process is attaching a lightweight stereotactic headframe.



It prevents your head from moving so that precise images can be made, and the radiation can be delivered accurately. You will be administered local anesthesia before the headframe is attached to minimize any discomfort.

Before starting treatment with the Gamma Knife, physicians will take images of your brain to determine the exact size, shape and position of the target. They will use sophisticated dose-planning software to develop a precise treatment plan that addresses your specific condition.

After the treatment plan is complete, the stereotactic headframe is attached to the Gamma Knife unit. A remote-controlled positioning system will move you into position, and then 201 beams of radiation are delivered to the target. The treatment is silent and totally painless, and often you will be able to listen to music during the treatment.

The duration of the treatment depends on the size and shape of treatment targets, but the actual procedure generally takes less than an hour. During treatment, the medical team continually monitors your vital signs and stays in contact with you through an audio and video connection.

After the treatment is complete, the headframe will be removed. Some patients may have a mild headache or minor swelling where the headframe was attached, but most report no problems. Your doctor will decide whether you need to stay overnight for observation or if you can go home immediately. You should be able to return to your normal routines in a day or so.

The effects of your treatment will occur over time. Radiation treatments are designed to stop the growth of tumors or lesions, which means that the effect will happen over a period of weeks or months. Your doctor will stay in contact with you to assess your progress, which may include follow-up MRI, CT or angiography images.



The Gamma Knife: Preparation and Treatment

Pre-Treatment

One Week Before

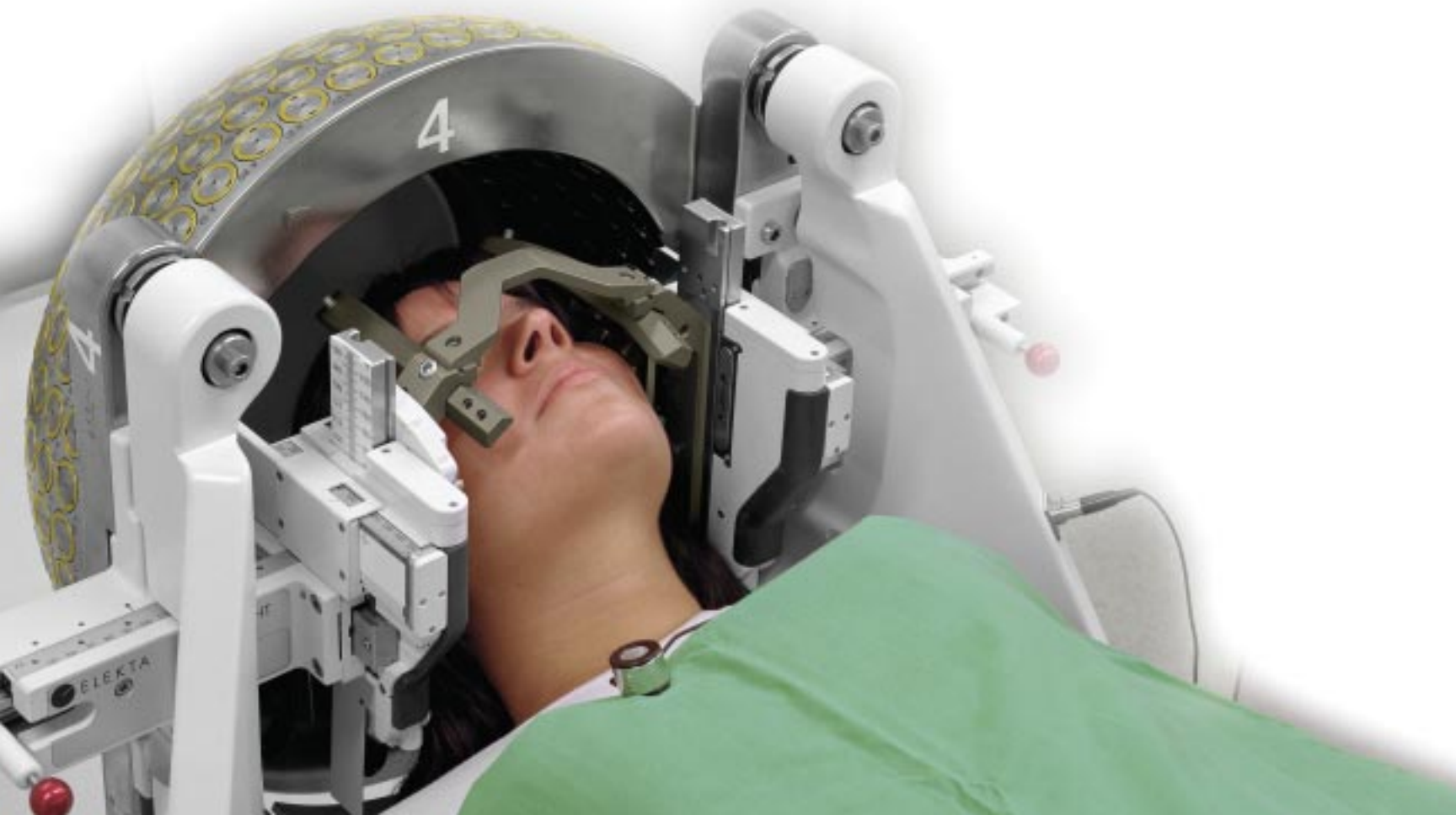
- Meet with your neurosurgeon, radiation oncologist or nurse.
- Have any necessary lab work completed.
- Get answers to any questions you may have.

The Night Before

- Do not eat or drink anything after midnight.
- Wash your hair with your regular shampoo.
- Do not use conditioner on your hair.
- If you need pain medication, take it with a sip of water. and tell your nurse when you arrive.

The Morning of Treatment

- Take your regular medications with a sip of water.
- If your medications irritate your stomach, you may eat a cracker.
- Do not wear makeup, hairspray, gel or mousse.
- Do not wear jewelry or a watch.
- Wear comfortable clothes with no metal closures, zippers or fasteners.
- Bring your insurance cards and photo identification.
- Bring any recent MRIs, if necessary.
- You may bring a CD to play during treatment.



At CJW Medical Center

Upon Arrival

- You will be asked to empty your bladder.
- You will need to remove eyeglasses, contact lenses and dentures.
- We advise you not to bring valuables with you. If you brought valuables, though, you should give them to a family member, friend or hospital security, and a locker is available for your other belongings.

Stereotactic Frame Application

- You will receive a mild sedative to help you relax.
- Your blood pressure, heart rate and breathing will be monitored.
- A local-anesthetic cream will be applied to your head, and additional anesthetic will be injected where the frame will be attached.
- The frame will be positioned. It is held in place with small pins.
- A clear plastic helmet is placed on your head to measure where the gamma ray will focus.

Imaging Studies

- A nurse will accompany you to the imaging suite to have the imaging study ordered by your doctor.

Treatment Planning

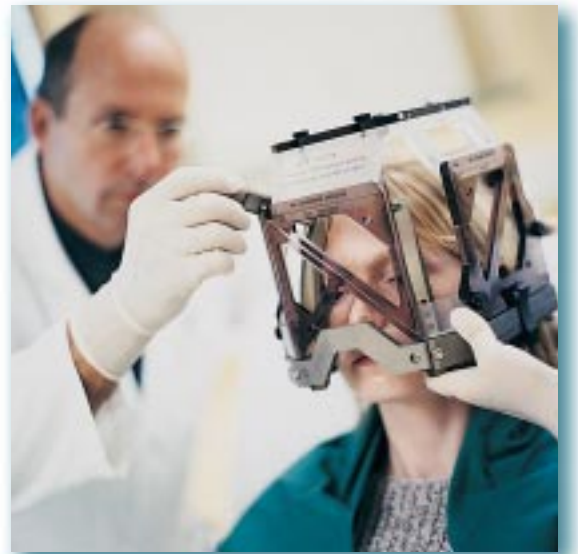
- The Gamma Knife team will plan your specific treatment during the next one to two hours.
- You will wait in your room in the Gamma Knife Suite, where you can sleep, watch TV or listen to music.

Gamma Knife Treatment

- The Gamma Knife helmet will be attached to the stereotactic headframe.
- The Gamma Knife team will make sure you are comfortable before they leave the room.
- There will be a speaker near your ear and you will be able to talk with the treatment team throughout the procedure.
- A video camera will enable the treatment team to observe you during treatment.
- You can listen to your own CD.
- Treatment time varies, but it generally takes 20 to 60 minutes.

Post-Treatment

- You will return to your room in the Gamma Knife suite.
- The stereotactic headframe will be removed and Band-Aids will be put over the pin sites.
- A nurse will wrap your head in gauze, which should stay in place for about two hours.
- You may experience headache or nausea for a few hours after the procedure, but your nurse may be able to give you medication to relieve the symptoms.
- You will receive fluids and a light snack.



Post-Operative Instructions

Although recovery from a Gamma Knife procedure is relatively quick and pain-free, here are some instructions to make your recovery go smoothly. If you have any questions after your discharge, please do not hesitate to contact your neurosurgeon at any time. During regular business hours (Monday – Friday, 9 – 5), you can also call the Neuroscience and Gamma Knife Center at 804-327-8765.

Pin Sites

- You may remove the Band-Aids the day after your procedure.
- You may gently wash your hair the day after your procedure. You may notice blood-tinged water, which is from dried blood in your hair.
- Clean the pin sites twice a day with half-strength hydrogen peroxide.
- Apply antibiotic ointment twice a day to the pin sites until they have healed.
- Avoid hairspray, mousse, gels, hair color, permanents, or anything else that might cause irritation until the pin sites have completely healed.
- The pin sites should heal in seven to ten days.
- You may experience temporary tingling or numbness around the pin sites.



Swelling

- Swelling above your eyes may occur within 48 hours of surgery, and it is probably related to the local anesthetic used to numb your forehead.
- You may apply a cool compress to the swollen area.
- Swelling should decrease in three to four days.

Activities

- You may resume all of your normal activities within 48 hours if you feel well (unless your doctor has instructed you otherwise).
- You may resume your regular diet.
- You may resume your routine medications.





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