

# GAMMA KNIFE (SRS) FRAMED RADIATION TREATMENT

## WHAT IS GAMMA KNIFE?

Gamma Knife, also known as stereotactic radiosurgery (SRS) or Gamma Knife radiosurgery, is an outpatient radiation treatment method for brain tumors, central nervous system disorders, and other abnormalities in the brain such as the following:

- Primary Brain Tumors
- Vestibular Schwannoma Acoustic Neuroma
- Meningioma
- Glioblastoma
- Facial Nerve Pain (Trigeminal Neuralgia)
- Brain Metastases
- Arteriovenous Malformation (AVM)
- Pituitary Adenoma
- Essential Tremor

Despite its name, Gamma Knife treatment does not involve surgery. The goal of Gamma Knife treatment is to use radiation to stabilize, shrink, or destroy abnormalities in the brain. Gamma Knife can be utilized if your condition cannot be treated using traditional surgery techniques or if you are unable to undergo surgery. This treatment can also be combined with traditional surgery.

Mary Bird Perkins Cancer Center utilizes the Leksell Gamma Knife® Icon™ (LGKI) which is the most precise Gamma Knife device on the market. This device delivers 192 highly focused beams of radiation to the area of the brain in need of treatment. The surrounding healthy tissue receives only a small percentage of the radiation dose which minimizes the risk for unwanted side effects.

## WHAT HAPPENS BEFORE RECEIVING GAMMA KNIFE TREATMENT?

### “Make Mask” Day and Imaging Scans

Prior to your Framed Gamma Knife treatment date, our Gamma Knife Coordinator will schedule a “Make Mask” Day during which a radiation therapist and a medical physicist will create a customized mask and headrest. This will be followed by an imaging scan (typically, an MRI) which will be used to plan your Gamma Knife treatment based on the exact size, shape, location, and volume of the area in the brain in need of treatment.

#### Step One: Arrival for your “Make Mask” Day

- If you have completed your labs before your “Make Mask” Day, you may check in at Thomas J. Moran Imaging Center which is located on the first floor at Mary Bird Perkins Cancer Center at 4950 Essen Lane, Baton Rouge, LA 70809. You may eat prior to your arrival on your “Make Mask” Day.
- If you are completing labs on your “Make Mask” Day, please arrive at least 45 minutes prior to your “Make Mask” Day appointment. You may complete your labs at Mary Bird Perkins Cancer Center at 4950 Essen Lane, Baton Rouge, LA 70809. After completing your labs, you may check in at Thomas J. Moran Imaging Center which is located on the first floor at Mary Bird Perkins Cancer Center at 4950 Essen Lane, Baton Rouge, LA 70809. Please Note: You may eat prior to completing your labs.

#### Step Two: Creating the Mask

- A member of our staff will escort you from Thomas J. Moran Imaging Center to the Gamma Knife area. Visitors will be asked to remain in the reception area.

- During the mask fitting, you will lie flat on the Gamma Knife table. A sheet of plastic mesh is placed in a warming oven which softens the material of the mask. While the material is soft, it is placed across your face, covering your forehead, eyes, cheeks, and chin. There is a large opening for your nose which will allow you to breathe easily. Once the material is completely cool, it will remain in the unique customized shape of your head. This process takes approximately 15 minutes
- This mask and headrest will be utilized during your MRI on your “Make Mask” Day and during subsequent imaging scans at Mary Bird Perkins Cancer Center. Our staff will store the mask and headrest within our facility for safe-keeping. Please Note: The mask and headrest will not be utilized on your Framed Gamma Knife treatment day.

### **Step Three: Imaging Scans (MRI)**

- It is important that your head is completely still throughout your imaging scan (MRI); therefore, the customized mask and headrest will be secured to the imaging machine (MRI) to ensure that you remain in the correct position throughout the scan. The MRI may take approximately 25 to 30 minutes, and an MRI Technician may insert an IV before the scan for IV contrast.

### **Step Four: After “Make Mask” Day**

- Radiation will not be delivered on your “Make Mask” Day; therefore, our Gamma Knife Coordinator will contact you after your “Make Mask” Day to coordinate your Framed Gamma Knife treatment date with your radiation oncologist and neurosurgeon.

## **HOW DO I PREPARE FOR MY “MAKE MASK” DAY AND IMAGING SCAN (MRI)?**

### **Labs**

- You will need to complete labs within one to two weeks before your “Make Mask” Day. You may eat and drink before completing these labs.
- If you are unable to complete labs within this timeframe, please arrive at least 45 minutes prior to your “Make Mask” Day appointment. You may complete your labs at Mary Bird Perkins Cancer Center at 4950 Essen Lane, Baton Rouge, LA 70809. You may eat and drink prior to your arrival on your “Make Mask” Day.

### **Medications**

- You may take your medications with sips of water (unless directed otherwise) on your “Make Mask” Day.
- Please notify your physician if you will need medication for anxiety and/or pain relief before your “Make Mask” Day.

### **Hair Preparation, Clothing**

- In general, the mask will work to hold you steady during the imaging and treatment but excessive hair between the head and mask can allow for motion during the scan. Patients are strongly encouraged but not required to trim their hair as short as they are comfortable doing prior to your “Make Mask” day.
- Please arrive with clean, dry hair for your “Make Mask” Day. Please do not place any products in the hair or on the face. Your hair will not be shaved. Wear your hair loose and down. Do not use clips, pins or bands.
- Patients should not alter their hair between the mask fitting and treatment.

- Wear slip-on shoes, comfortable pants or shorts, and a loose-fitting shirt and/or jacket. All jewelry should be removed.

### **Visitors, Driver**

- At this time, Mary Bird Perkins Cancer Center is allowing up to two visitors (above the age of 16 years old) per patient.
- If you intend to take medication for anxiety and/or pain relief prior to your appointment, a family member or friend will need to bring you to your appointment and drive you home. They do not necessarily need to stay throughout your appointment, however.

### **Implanted Device**

- Please notify staff if you have an implanted device such as a pacemaker, aneurysm clip, implanted medication pump, implanted nerve stimulator, metal implant, cochlear implant, spine stabilization hardware, and/or any reason that you may not be able to complete an MRI.

## **HOW DO I PREPARE FOR MY FRAMED GAMMA KNIFE TREATMENT DATE?**

### **Eating, Drinking, Medications**

- Do NOT eat or drink anything after midnight the evening before your Framed Gamma Knife treatment date (unless directed otherwise).
- You may take your morning medications with sips of water the morning of your treatment (unless directed otherwise).
- Please notify staff if you are taking anti-coagulants or anti-platelet medications (also known as “blood thinners”) such as aspirin, Aleve (Naproxen), Motrin (Ibuprofen), Warfarin (Coumadin), Plavix (Clopidogrel), Eliquis (Apixaban), Xarelto (Rivaroxaban), or similar medications.

### **Hair Preparation, Clothing**

- Wash your hair and face the night before your Framed Gamma Knife procedure. Please do not place any products in the hair or on the face. Wear your hair loose. Do not use clips, pins or bands. Your head will not be shaved.
- On the day of your Framed Gamma Knife treatment, wear slip-on shoes; comfortable pants or shorts; and a loose-fitting shirt and/or jacket. Do not wear a shirt that must be put on/taken off over your head. All jewelry should be removed.

### **Visitors, Driver**

- At this time, Mary Bird Perkins Cancer Center is allowing up to two visitors (above the age of 16 years old) per patient.
- You will not be allowed to drive on the day of your Framed Gamma Knife treatment. A family member or friend will need to bring you on the day of the procedure and drive you home after treatment. They do not necessarily need to stay throughout the day, however. Visitors are allowed to remain with the patient until treatment begins.

# WHAT HAPPENS ON THE DAY OF MY FRAMED GAMMA KNIFE TREATMENT?

## Step One: Arrival for your Framed Gamma Knife Treatment

- Upon arrival to Mary Bird Perkins Cancer Center for your Framed Gamma Knife treatment, you may check in at Thomas J. Moran Imaging Center which is located on the first floor at Mary Bird Perkins Cancer Center at 4950 Essen Lane, Baton Rouge, LA 70809.
- A Registered Nurse will review your medication list, allergies, and medical history. You will sign the consent for your Gamma Knife treatment and Leksell Head Frame placement. This time also allows for discussion of discharge instructions, nurse assessment, vital signs, IV placement, and administration of medications (such as Ativan and/or Norco) for anxiety and/or pain relief. You may also receive hydration through an IV while awaiting the arrival of your neurosurgeon.

## Step Two: Leksell Head Frame Placement

- On your Framed Gamma Knife treatment date, it is important that your head is completely still throughout your imaging scan (CT Scan for Radiation Treatment Planning) and your Gamma Knife radiation treatment; therefore, a Leksell Head Frame will be applied by your neurosurgeon. This headframe is secured to the imaging machine (CT Scanner) and the Gamma Knife treatment table which ensures that the area in need of treatment is in the correct position.
- For the headframe placement, you will receive four injections of a local anesthetic (such as Lidocaine): one on each side of your forehead and two in the back of your head. These are the areas where specialized pins are placed to secure the head frame. You may feel pressure as your neurosurgeon places the pins, and this usually only lasts a few minutes. After the head frame is positioned, you will complete a CT Scan for Radiation Treatment Planning.

## Step Three: Imaging Scan (CT Scan for Radiation Treatment Planning)

- You will complete a CT Scan for Radiation Treatment Planning (usually with IV Contrast) after your neurosurgeon places the Leksell Head Frame. Your radiation oncologist and neurosurgeon will create your specialized Gamma Knife treatment using the results of this CT Scan and your previous MRI. This planning process may take one to two hours. While awaiting the finalized plan, you may drink and eat snacks such as crackers, chips, etc. You may bring a snack from home, or we can provide you with a light snack. Please note, the Leksell Head Frame will remain in place during this time.

## Step Four: Framed Gamma Knife Treatment

- Once the treatment plan has been finalized, you will be positioned for your Framed Gamma Knife treatment. You will lie flat with the Leksell Head Frame secured to the Gamma Knife table. An X-ray will then be taken which ensures that the area in need of treatment remains in the correct position. Treatment, which may take approximately one to two hours, will begin once correct positioning has been confirmed.
- You may move your arms and legs slowly during treatment; however, if you move your head once positioned on the Gamma Knife table and/or if you wish to take a break during treatment, the treatment will stop. Another X-ray will be performed to confirm positioning before treatment can resume.
- Most patients are awake during treatment. You will not feel, hear, or see the radiation being delivered; however, you may notice that the treatment table moves occasionally to deliver radiation beams from multiple directions.
- Although our staff will not remain in the Gamma Knife room during treatment, you will be under video monitoring and will be able to communicate with our staff via microphone.

## Step Five: Removal of Head Frame and Discharge Home

- Once your Framed Gamma Knife treatment is completed, your radiation oncologist will remove the Leksell Head Frame. The procedure nurse will apply antibiotic ointment to each pin site, obtain vital signs, and remove your IV. You will then be discharged home.

## WHAT HAPPENS AFTER FRAMED GAMMA KNIFE TREATMENT SESSION?

- The radiation delivered during your Gamma Knife treatment does not cause your body to become radioactive; therefore, you do not need to avoid being with others following treatment.
- The results of Gamma Knife treatment occur gradually. Depending on the condition being treated, treatment effects can occur within several months to years. Framed Gamma Knife treatment is, in most cases, completed only one time. Your physician will discuss if further imaging scans and/or follow up appointments are needed following your treatment.
- The procedure nurse will review specific discharge instructions regarding signs and symptoms to monitor following your treatment.
- If you need immediate medical attention, please dial 911 or go to the nearest Emergency Room. All other medical attention outside of Mary Bird Perkins Cancer Center's regular office hours (8AM to 4:30PM, Monday through Friday), will be answered by our telephone answering service at (225) 767 - 0847. A doctor from Mary Bird Perkins Cancer Center will return your call.

## FOR MORE INFORMATION

- Please visit [marybird.org/gki-frame-based/](http://marybird.org/gki-frame-based/)

*Treatment with the Leksell Gamma Knife Icon® is provided in partnership between Mary Bird Perkins Cancer Center and Our Lady of the Lake*