

Sutter Gamma Knife Radiosurgery Center



Treating the brain without invasive surgery

The Sutter Gamma Knife Radiosurgery Center offers adults and children an innovative, proven technology used in place of conventional brain surgery. The Leksell Gamma Knife® is not a knife at all, it's a sophisticated instrument that pinpoints and delivers precise beams of radiation to tumors and other brain abnormalities.

The Gamma Knife offers a noninvasive alternative to open brain surgery that eliminates the risk of surgical complications. The surgery-free process is exceptionally effective at reducing or eliminating brain tumors, blood vessel abnormalities, functional disorders and other conditions. This precise technology allows doctors to treat previously inoperable lesions within the brain, which are close to nerves, arteries or critical centers, such as the brain stem.

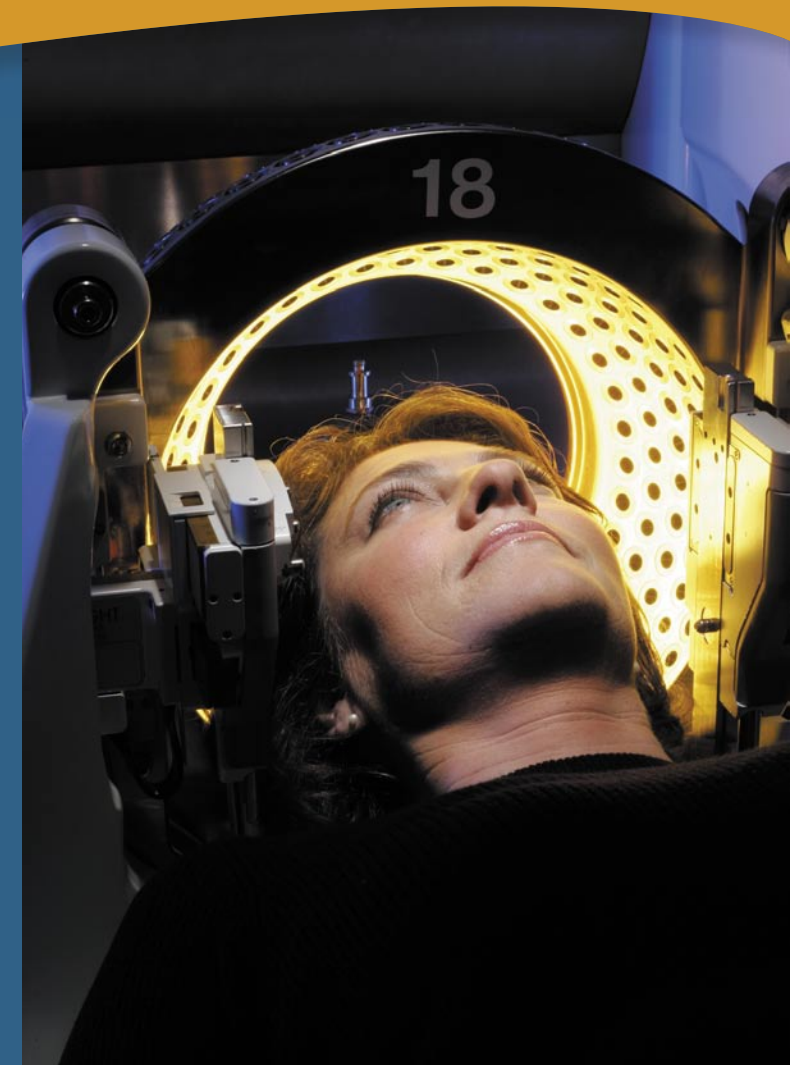
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Sutter Gamma Knife Radiosurgery Center

Sutter Gamma Knife Radiosurgery Center
(located in the Sutter Cancer Center)
2800 L Street
Sacramento, CA 95816

For directions, visit our Web site at suttergammaknife.org or call, toll-free, (888) 287-2270



*Sutter Neuroscience
Institute*

A Sutter Health Affiliate

sutterneuro.org

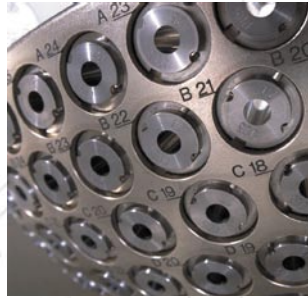


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How Gamma Knife Works

The Gamma Knife is a technologically advanced, 20-ton machine that enables neurosurgeons and radiation oncologists to deliver 201 beams of ionizing gamma rays, precisely targeting the treatment area in the brain. Replacing the need for the combination of conventional brain surgery and radiation treatment, Gamma Knife technology accurately delivers a single high dose of radiation to destroy inaccessible and small-to medium-sized intracranial tumors, while minimizing damage to surrounding normal tissue.



The Procedure

During the procedure, the patient is fitted into a lightweight frame that keeps the head perfectly still so the computer can accurately target the appropriate treatment area. Using complex imaging technology and special computer programs, the Gamma Knife medical team determines exact target locations. A special helmet then focuses tiny radioactive beams from 201 separate points at the target with sub-millimeter precision. Individually, these low-intensity beams are too weak to cause any damage on their way to the target. When they converge on a brain tumor or other target, the combined power alters the target's DNA, stopping its growth and causing cell death. Adult patients remain awake during Gamma Knife treatments and often listen to music and relax. Severely claustrophobic and pediatric patients may receive general anesthesia. This is an outpatient procedure and most patients can go home the same day and resume normal activities the following day.

Conditions treated

The Gamma Knife is used on 40,000 adults and children worldwide each year for conditions such as:

- Malignant brain tumors, including secondary metastatic brain tumors from cancers in other parts of the body
- Benign brain tumors
- Blood vessel malformations, including arteriovenous malformations (AVMs)
- Functional disorders, including trigeminal neuralgia, essential tremor, epilepsy, and Parkinson's disease

Gamma Knife treatment can be used alone or as an additional therapy for patients who have undergone brain surgery, interventional neuroradiology, conventional radiation therapy or chemotherapy.

Sutter Gamma Knife Radiosurgery Center

The Sutter Gamma Knife Radiosurgery Center, located at Sutter Medical Center, Sacramento, was established in 1998 and has treated more than 1,000 adults and children with this lifesaving technology.

Part of the Sutter Neuroscience Institute, the Sutter Gamma Knife Radiosurgery Center offers one of world's most technologically advanced machines for treating patients of all ages. The Leksell Elekta Model C utilizes automatic patient positioning to increase the accuracy of dose delivery, reduce treatment times and decrease side effects.

The program's multidisciplinary team includes neurosurgeons, radiation oncologists, radiation physicists, neuroradiologists, nurses and support staff. These specialists have extensive experience working with Gamma Knife technology.

Find Out More

Our Web site (www.suttergammaknife.org) offers an in-depth look at the Gamma Knife. To contact the center, call (888) 287-2270.

Frequently Asked Questions

Is Gamma Knife treatment effective?

Gamma Knife Radiosurgery Centers worldwide have recorded more than 30 years of detailed treatment follow-up. Their results indicate the Gamma Knife is superior or comparable to traditional neurosurgery, depending on the specific condition treated. In addition, there are no, or very limited, immediate complications of any kind associated with the Gamma Knife procedure.

Is Gamma Knife approved by the FDA?

Yes, the Gamma Knife procedure was approved by the FDA in 1989 and has since been used to treat hundreds of thousands of patients around the world.

How quickly will the treatment work?

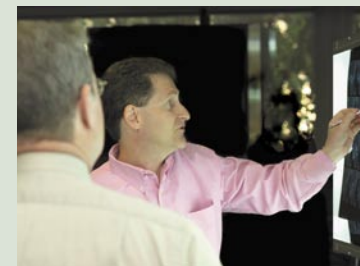
The effect of a Gamma Knife treatment can be seen in weeks to months. In some circumstances, such as with arteriovenous malformations (AVMs), results can take two to three years.

What are the side effects?

There are some long-term risks after Gamma Knife surgery, such as delayed swelling at the treatment site. Infrequent headaches and nausea can occur within 24 hours of treatment. Both are short term, uncommon, and effectively treated if brought to the attention of the doctor or nurse. The side effects are related to the site treated. Your doctor will provide additional information.

What if I am an older patient or have other medical conditions?

Patients of advanced age or in poor medical condition can be at an unacceptably high risk for anesthesia and conventional surgery, making Gamma Knife treatment an ideal solution.



Can the Gamma Knife be used on children?

Yes, Sutter Gamma Knife Radiosurgery Center has extensive experience in treating children. Because the Gamma Knife is pain free and precise, and offers fast recovery times, it is often the treatment of choice for children. Unlike adults, children typically receive general anesthesia to ensure they remain still and comfortable during the procedure.

Is Gamma Knife treatment more or less expensive than traditional surgery?

Gamma Knife technology eliminates lengthy hospital stays and costly medication, and greatly improves recovery time, making the treatment significantly less expensive than traditional surgery. Because of the success rate and the decreased expense, Medicare and most insurance providers authorize the procedure.



How are patients referred to the Sutter Gamma Knife Radiosurgery Center?

Most patients are referred by their doctors, although many patients self refer. Pre-treatment testing may include brain imaging and/or function studies, blood work, along with documentation of the patient's medical history and a physical examination. Prior to Gamma Knife treatment, our multidisciplinary committee meets to review each patient's medical records and diagnostic images. Referring doctors continue to be involved in the patient's follow-up care. Doctors and patients can call (888) 287-2270 toll free to discuss a referral to the Sutter Gamma Knife Radiosurgery Center.