

Gamma Knife Center at Sacred Heart Medical Center Fact Sheet

What is Gamma Knife?

It's not actually a knife. Gamma Knife is a very precise and effective instrument that uses radiation to treat abnormalities the brain. Because the procedure uses radiation, it is often referred to as radiosurgery.

What is the equipment used for?

Gamma Knife is used for treating targets in the brain such as benign and malignant brain tumors, blood vessel abnormalities in the brain and functional disorders.

How does Gamma Knife work?

Doctors program a computer to focus 201 beams of radiation directly, and very precisely, on the target in the brain without affecting healthy tissue. Individually, each radiation beam is too weak to damage the normal tissue it crosses on the way to the target. But when focused precisely on that target, where all the beams intersect, the combined radiation is sufficient to treat the target area. The radiation does not remove the lesion or tumor, but it distorts the DNA of the tumor cells, so they lose their ability to reproduce.

What technology or treatment does Gamma Knife replace?

Gamma Knife surgery is an alternative (or can be a complement to) for traditional open brain surgery. Gamma Knife surgery provides lower complication rates than open surgery: treatment is much shorter (one, partial-day session) and is painless. Only the head frame used during the procedure causes minor discomfort.

Is the Gamma Knife proven technology?

The first Gamma Knife, installed in 1968, assisted in the treatment of hundreds of patients. The technology has been refined and improved over the years benefiting more than 350,000 patients worldwide. Sacred Heart is one of 200 centers around the world using this high-tech neurosurgical tool.

What types of physicians use Gamma Knife?

The procedure is normally performed by a neurosurgeon (brain surgeon), radiation oncologist (cancer specialist) and a medical physicist. Physician representatives from every neurosurgery group in the community are on the Gamma Knife Center team. This collaborative approach to new technology and patient care is one of the unique and exciting features of the program.

Who decided that our community needed Gamma Knife?

The area's neurosurgeons and radiation oncologists first identified a growing number of patients from throughout the region who would benefit from Gamma Knife and approached Sacred Heart's administration about purchasing one. Sacred Heart then applied its standard "ethical discernment" process to weigh the benefit to patients and families against the substantial cost of purchasing and operating Gamma Knife and determined that the number of patients who would benefit from this procedure outweighed the cost.

What patients will benefit from the Gamma Knife?

Patients will come from all over the Pacific Northwest to visit Sacred Heart for their Gamma Knife procedure.

Where will the Gamma Knife Center be located?

The new Gamma Knife Center is located at Sacred Heart Medical Center in Eugene, near the Alder Street entrance. The Center is a part of the new Oregon Neurosciences Institute, which also includes the Oregon Rehabilitation Center, the Stroke Center, and the Sleep Disorders Center. The Institute will not move to the RiverBend campus; it will be permanently housed on the Hilyard campus of the hospital.

Where else is Gamma Knife located?

One Portland-area hospital has Gamma Knife. Sacred Heart's Gamma Knife is the only one between Portland and Sacramento.

When will the Gamma Knife Center be open for patients?

Once installed, the Gamma Knife requires extensive equipment preparation and testing. We anticipate that the first patient will be treated in October 2006.

What is the radiation risk of Gamma Knife treatment?

The dose of the radiation is extremely focused to the target in the brain and the dose outside the target is very low.