

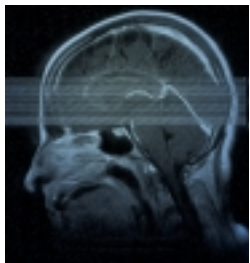
## Gamma Knife Center



NORTHWEST HOSPITAL  
& MEDICAL CENTER



## A safe, non-invasive, bloodless alternative



to brain surgery was introduced by Northwest Hospital Gamma Knife Center to the Pacific Northwest in 1993. This non-invasive procedure has given new hope to patients with brain tumors and other problems in the brain that were once thought to be inoperable.

. . . it takes care of the cancer; it's safer; there's only one night in the hospital; and the side effects are few.



Kathy Pope, 51

treated for brain tumors

At first, I had a seizure-like symptom. The doctors found a tumor in my brain, but that was not the original site of the cancer. It started out as lung cancer, metastasized, and then moved to my head.

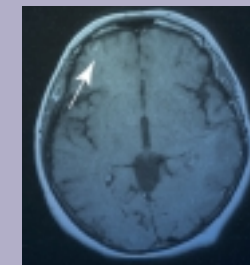
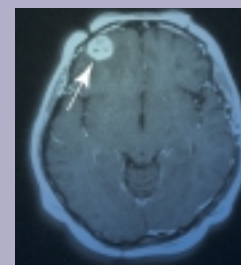
Doctors removed the top one-third of my right lung. And, one doctor suggested that I have whole-brain radiation. That scared me to death. Then, a radiation oncologist at Northwest Hospital thought I might benefit from Gamma Knife treatment.

I've had three tumors in my head. The last tumor in the brain was surgically removed and I was given a chemotherapy implant, a common treatment for recurring tumors.

I've had three open-brain surgeries. And, within the past two years, I've had four Gamma Knife procedures. I like the Gamma Knife—it's not invasive; it takes care of the cancer; it's safer; there's only one night in the hospital; and the side effects are few.

I got an MRI about three months ago and there was no cancer. We are especially happy at how things are going!

If it had not been for Dr. Young and his staff, I wouldn't be alive today.



Left: MRI scan shows the tumor before treatment.  
Right: A scan three months later shows significant tumor shrinkage.

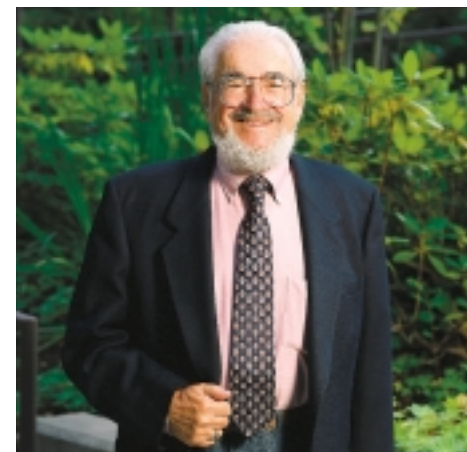


## A Revolution in Neurosurgery

The Gamma Knife is a remarkable tool that allows neurosurgeons to operate on abnormal areas of the brain without making an incision. Using a technique called stereotactic radiosurgery, the Gamma Knife is designed to precisely target and destroy abnormalities within the skull using highly focused gamma radiation. Patients experience minimal pain and, in most cases, can resume regular activities the day after treatment.

Gamma Knife treatment is not experimental. The Gamma Knife has been in use for over 30 years, and has been used successfully to treat more than 100,000 patients worldwide. It is one of the most advanced techniques in the treatment of disorders affecting the brain and its adjacent structures. It's not surprising that the Gamma Knife is regarded as the "gold standard" for stereotactic radiosurgery.

It worked beyond my wildest dream!  
The whole thing seems like science fiction.



Gene Schneider, 81  
treated for tremor

I think I inherited the tremor. My father had difficulties with a right-hand tremor. I noticed my tremor for the first time in the 1980s.

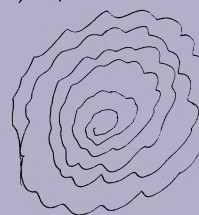
My wife has arthritis. So I have done all the cooking. One day I was cooking something and tried to taste it. My hand was shaking so badly that I couldn't hold the spoon steady and I burned my chest and belly! It got to a point where I couldn't really write my name.

My hand presented a serious problem. I went to a neurologist. He thought I'd be a good candidate for the Gamma Knife. I trusted him. Four or five years ago, I had the Gamma Knife treatment.

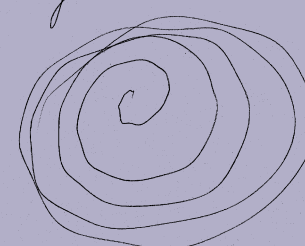
I've had fantastic results. I'm just amazed. It took me two to four months before the tremors went away completely. One day I just started writing something and it was better than normal—really steady. And, cooking was no longer a problem.

I can't believe it. It worked beyond my wildest dream!  
The whole thing seems like science fiction! It's been fantastic.

*Gene Schneider*  
10/11/95



*Gene Schneider*  
May 7 1996



Left: Patient's signature and spiral drawing before treatment for tremor.

Right: Signature and drawing reveal significant improvement six months after treatment.

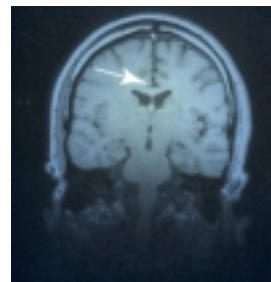
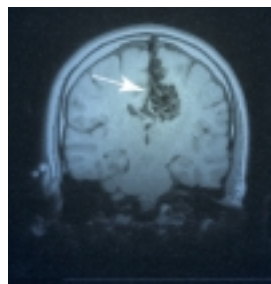


## How does the Gamma Knife work?

Over 1,000 patients have been treated at Northwest Hospital Gamma Knife Center, and our Medical Director, Ronald F. Young, M.D., is one of the foremost experts in Gamma Knife radiosurgery in the world.

The Gamma Knife uses ionizing radiation (gamma rays) produced by 201 cobalt-60 sources to target and destroy a tumor, a blood vessel abnormality such as an arteriovenous malformation (AVM) within or adjacent to brain tissue, or to treat the symptoms of Parkinson's disease and trigeminal neuralgia (an excruciatingly painful facial condition) with extreme accuracy. Since each individual gamma ray is of relatively weak intensity, the normal brain tissue surrounding the abnormality is protected as the full dose of radiation is focused only at the point where all 201 beams converge. This explains why side effects are rare and usually temporary. Since the procedure is non-invasive, or "bloodless", the risks of post-operative complications, such as infection and hemorrhage, are eliminated.

Treatment with the Gamma Knife is accomplished by a multidisciplinary team consisting of a neurosurgeon, a radiation oncologist, and a radiation physicist. The referring physician is an active partner in the treatment process, and patients accepted for Gamma Knife treatment remain in their primary physician's care. Providing regular reports on patient status, the Gamma Knife team maintains ongoing communication with referring physicians through evaluation, treatment, follow-up, and outcome studies.



Top: MRI scan shows the patient's AVM before treatment. (An AVM is a cluster of abnormal blood vessels that rob blood flow from normal blood vessels in the brain.)  
Bottom: Three years after treatment the AVM is gone.

... it was a more pinpoint treatment. ... It's been six years since my treatment and the AVM is totally gone.



Rich McGuire, 40

treated for arteriovenous malformation (AVM)

In 1987, I had really bad headaches. I went to a local emergency room. They did a CAT scan and told me I had a sinus infection and put me on antibiotics. They also said, "Oh, by the way, you have an AVM [arteriovenous malformation]." I was told that when I was a fetus, blood vessels were forming a mile a minute. As I grew older, they got tangled up a bit and grew into a mass!

Initially, I blew the diagnosis off. But then, I thought about my kids. I have a 12-year-old son and a 10-year-old daughter. I was young, healthy, and a lot stronger than a lot of AVM patients. Fortunately, my AVM had never bled. It may have never bled. But, I thought of my kids. I figured that the older I got, the greater the chances of bleeding which might have led to paralysis or death. So, I thought, maybe I should have this looked at.

I did my research. I talked to two neurosurgeons and two neurologists. One neurosurgeon said, "Rich, I can cut it out for you." I said, "I don't think so!"

My neurologist suggested that I check out the Gamma Knife Center. Of my options, the Gamma Knife seemed the best because it was a more pinpoint treatment—with low radiation to surrounding tissue and high radiation to the AVM. Northwest Hospital was also closer to home and I felt comfortable there.

After the Gamma Knife surgery, it took three years to be completely cleared. It's been six years since my treatment and the AVM is totally gone.

I'm a success story. I was lucky!



One treatment and  
all the pain went away!  
I would have gone to  
the end of the world  
for this!



John DeMuri, 86

treated for trigeminal neuralgia

I had pain on the left side of my face. It was a sharp, blinding pain. I couldn't brush my teeth, comb my hair, or chew food on the left side of my mouth. The pain was so unbearable that I almost had blackouts sometimes.

At first, I went to my dentist. He said my teeth were fine. I took medication for the pain, but my system eventually became immune to the medicines. For seven years, I never knew when the pain was going to hit.

It was really scary.

Finally, I went to a neurologist who diagnosed me with trigeminal neuralgia. It was my fifth cranial nerve. Doctors could have isolated the nerve ending by doing open-skull microsurgery. But, my neurologist advised against that because he didn't think I would make it through the surgery without severe side effects—like paralysis. He arranged for me to talk with Dr. Young in Seattle. I flew up from La Palma, California specifically for the Gamma Knife procedure.

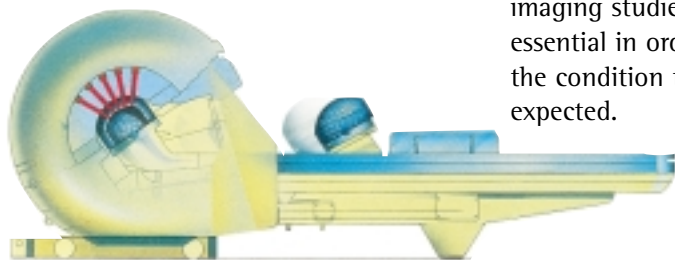
The day of the treatment, they put this metal thing on my head. I only had one treatment that lasted about 37 minutes. You don't feel anything. I was hospitalized over night. Then, I was told that I could resume all of my normal activities. One treatment and all the pain went away.

I'm a believer! I would have gone to the end of the world for this!

## Risks and Advantages

The advantages associated with Gamma Knife treatment are numerous. Unlike traditional neurosurgery, prolonged hospitalization is avoided and the effects of a general anesthetic are eliminated. Patients unable to undergo brain surgery because of their underlying medical condition can undergo Gamma Knife surgery with minimal risk. Costs are usually a fraction of the cost of traditional open surgery, and are even more favorable when the cost of dealing with immediate post-operative complications is considered. Since the Gamma Knife does not result in immediate destruction of an arteriovenous malformation (AVM) or brain tumor, follow-up evaluations and imaging studies at regular intervals are essential in order to determine whether the condition treated is responding as expected.

Northwest Hospital's Gamma Knife was the first in the Pacific Northwest.





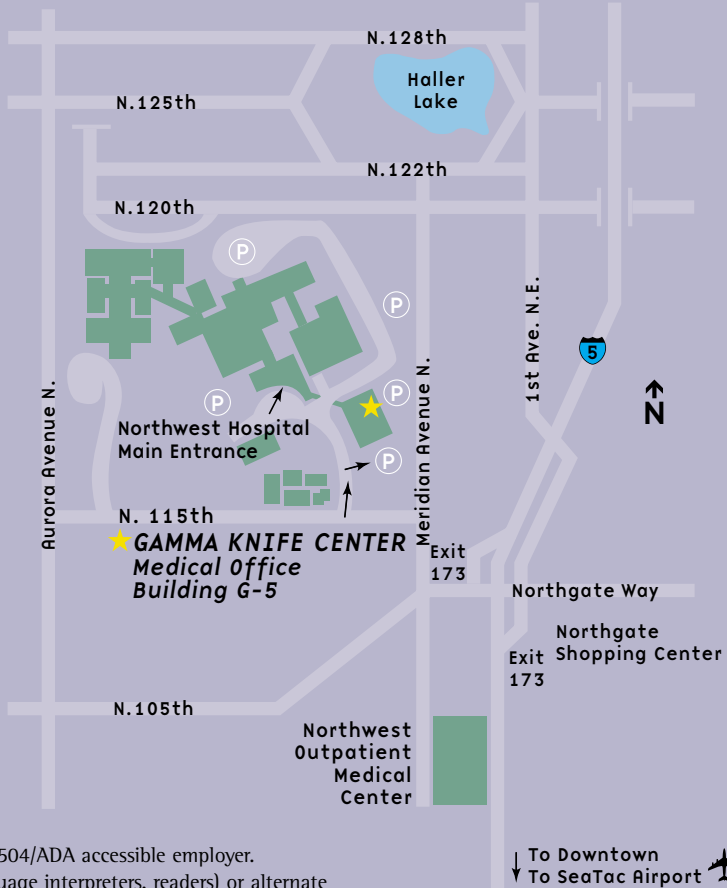
## For More Information

### Questions?

We welcome your questions about Gamma Knife surgery. Please feel free to call the Gamma Knife Center at (206) 368-1626 or (800) 695-0654, or visit our website at [www.nwhgammaknife.com](http://www.nwhgammaknife.com)

The Gamma Knife staff is available to answer your questions weekdays between 8:00 a.m. and 4:30 p.m.

We are located in the Medical Office Building on the Northwest Hospital campus. Parking is available adjacent to the Gamma Knife Center.



Northwest Hospital is a 504/ADA accessible employer. Auxiliary aids (sign language interpreters, readers) or alternate formats of written materials will be made available to persons with disabilities upon request.

To find out more about the services offered at Northwest Hospital, please check our website at [www.nwhospital.org](http://www.nwhospital.org).