

# Gamma Knife® Surgery



## What is Gamma Knife® Surgery?

Gamma Knife® Surgery is a well-established method to treat targets in the brain. Leksell Gamma Knife® is not a knife in the normal sense of the word. The doctor makes no incisions in the head. Instead, very precisely focused beams of radiation are directed to the treatment area in the brain. The shape and dose of the radiation is optimized to hit only the target, without damaging surrounding healthy tissue. Every year around 30,000 people worldwide, undergo Gamma Knife® Surgery. The treatment procedure is simple, more or less painless and straightforward.



## 1. The stereotactic frame

A lightweight metal frame is attached to your head. The frame ensures that the radiation beams can be exactly located and directed with precision to the target. A mild local anaesthetic is applied in the skin in your forehead.



## 2. Imaging

Magnetic resonance imaging (MRI) or computed tomography (CT) or angiography is required to determine the exact size, shape and position of the target in the brain. A coordinate box is placed on the head frame during the procedure.



## 3. Treatment planning

Once your images have been taken, you can rest while your physician develops a treatment plan. The treatment plan is done in a specially designed software and computer and calculates how the treatment should be performed. This usually takes a couple of hours. Meanwhile you can rest.



## 4. Treatment

You are awake during the procedure. When the treatment begins, the couch will move into the dome section of the unit. The treatment is silent and totally painless. It will last a few minutes to more than an hour, depending on your medical condition.



## 5. After the treatment

When the treatment is complete, the head frame will be removed. Some patients might experience a mild ache or minor swelling where the frame was attached, but most reports no problems. In a day or so you should be able to return to your normal routines.



## 6. Follow-up

The effects of the treatment will occur over time. Your doctor will stay in contact with you to assess the progress, which may include follow-up MRI, CT or angiography images. Always consult your doctor if you have any questions.