Leksell Gamma Knife® Perfexion™ was awarded Best in KLAS Award Medical Equipment & Infrastructure in 2011, 2012, 2013, 2014.
KLAS is a research firm on a global mission to improve healthcare delivery by enabling providers to be heard and to be counted. Working with thousands of healthcare executives and clinicians, KLAS gathers data on software, services, medical equipment, and infrastructure systems to deliver timely reports, trends, and statistical overviews.

Treatments by indication 1991 - 2013 worldwide

- Malignant Tumors: 44%
- Benign Tumors: 36%
- Vascular Disorders: 12%
- Functional Disorders: 7%
- Other Disorders: 0%

Leksell Gamma Knife Society 2013
68-100% sites reporting

Gamma Knife® Radiosurgery
Facts in Short

Why Gamma Knife Radiosurgery?
- Designed specifically for cranial indications
- Unparalleled clinical track record
- Unrivalled accuracy and selectivity
- Cost effective and operationally efficient

For more information please visit www.elekta.com/perfexion
**Why Leksell Gamma Knife®?**

Inspired to develop an effective yet gentler alternative to open surgery, Professor Lars Leksell conceived the idea of emulating the surgical precision of a scalpel with simultaneously delivered multiple beams of radiation. Leksell developed the Gamma Knife as a dedicated tool, able to deliver a highly accurate therapeutic dose of radiation to the brain with little or no harm to the patient, and it has become the gold standard of stereotactic radiosurgery (SRS). Over forty years, thousands of studies, and several evolutions later, Leksell Gamma Knife® Perfexion™ is capable of treating the most challenging intracranial targets faster and more efficiently than ever before. The benchmark upon which all other SRS options are measured, Leksell Gamma Knife Perfexion defines excellence in brain radiosurgery.

**Latest Technology**

Since 1968, there have been four new generations of Gamma Knife systems introduced by Elekta, as well as software and hardware upgrades. The latest model is Leksell Gamma Knife Perfexion. The Gamma Knife concept is constantly developing and expanding its clinical capabilities and operational efficiency.

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**Growing Need for Gamma Knife®**

More than 800,000 patients have been treated through 2013 with Gamma Knife radiosurgery. The growth is illustrated in the graph. (1)

The reason for this growth is:

1. **Proven clinical results** – more than 2,500 publications documenting the results have meant increased adoption as an alternative and adjunct to conventional treatments.

2. **The appeal as a one day non-invasive treatment.** Patients and caregivers appreciate the fact that the patient can usually receive treatment in a single day and return to normal lifestyle the day after treatment.

3. **Increased growth in indications due to aging population, ubiquitous imaging, longer survival resulting from effective systemic therapies.**

4. **Imaging is getting better** – MRI is widespread, and 95% of Gamma Knife procedures are based on MRI. Thus, as MRI gets better, so does Gamma Knife radiosurgery. The Gamma Knife is increasingly utilized and also in a more refined manner.

5. **Gamma Knife radiosurgery is a cost effective treatment alternative in an era of increasingly constrained resources.**
810,000 patients treated through 2013 worldwide

Cumulative Number of Patients Treated in thousands

Source: Leksell Gamma Knife® Society 2013
68-100% of sites reporting

Graph 1

Largest clinical evidence base
The clinical results of Gamma Knife® radiosurgery are very well documented. There are more than 2,500 peer reviewed papers on Gamma Knife radiosurgery. Graph 2 shows the number of published papers documenting treatments of 30 or more patients for Leksell Gamma Knife® and other radiosurgery technologies. As illustrated, the Gamma Knife evidence base is superior to other radiosurgery technologies.

Graph 2

Source: Elekta Database with information from PubMed.
Includes AVMs, Meningiomas, Metastatic Tumors, Trigeminal Neuralgia, Vestibular Schwannoma, Pituitary Adenomas, Glioma and Essential Tremor.
Note: Papers for CyberKnife include some SRT patients. "Adapted linacs" also include brand name linacs

Highest Accuracy - 0.15mm
Leksell Gamma Knife® Perfexion™ combines a patented collimator design with a unique patient positioning system to precisely wrap dose around the most complex shapes while limiting dose to surrounding tissue and critical structures. Dose delivered by each individual beam falls from 80% to 20% in about 1mm, creating a penumbra that dramatically illustrates how Leksell Gamma Knife Perfexion is able to deliver highly selective treatments (Graph 3). The average accuracy of Leksell Gamma Knife® is 0.15mm during its lifetime.∗

∗ Based on measurements of 189 individual systems

Leksell GammaPlan® is an efficient and clinician friendly planning system for multiple and critical targets.
Leksell Gamma Knife® Perfexion™

Treats brain disorders with a high dose of radiation delivered with surgical precision.

With the treatment planning software, Leksell GammaPlan®, the shape and amount of radiation is determined.

The patient can communicate via video camera and an intercom at all times. The treatment time varies between 20 minutes and several hours depending on the complexity of the treatment and age of cobalt.

Graph 3. Leksell Gamma Knife has the steepest dose fall off rate of all radiosurgery devices which means lower residual dose to healthy tissue.


Graph 4. Leksell Gamma Knife has the market’s best radiation protection for patients and staff.


1 **Radiation unit**

Ionizing gamma radiation is emitted from 192 cobalt-60 sources and the beams converge on a precise selected area of the brain. The accuracy is guaranteed to 0.5mm.

Leksell Gamma Knife Perfexion is fully automated. The radiation unit is housed inside of the machine itself. The radiation beams are shaped exactly around the tumor. Several tumors can be treated in one session. The system is efficiently shielded from radiation leakage reducing treatment room building requirements.

2 **A stereotactic frame**

is attached to the patients head and interlocked to the Gamma Knife unit. This ensures maximum precision.