



Shaping a new era
in intracranial
radiosurgery

Leksell Gamma Knife® Icon™

New possibilities for more **personalized** **treatments**

The current environment presents significant growth potential for advanced brain programs, and Leksell Gamma Knife Icon is designed to meet the demand.





“It’s a new paradigm in SRS with Icon, where we have flexibility in fractionation, workflow, the lowest integral dose, sharp dose gradients—and all with the patient comfortable in a mask.”

Arjun Sahgal, MD, FRCPC

Radiation Oncologist, Odette Cancer Centre
Sunnybrook Health Sciences Centre
Toronto, Canada

The demand for stereotactic intracranial radiosurgery is increasing, propelled by many factors:

- Rise in cases among aging populations
- Higher expectations for quality of life
- Trend toward more personalized treatment strategies

In this environment, advanced brain programs are poised for significant growth, and Leksell Gamma Knife® Icon™ (Icon), the latest generation Gamma Knife system, is designed to meet the demand.

Building on Gamma Knife accuracy and precision, and adding new technology, Icon gives clinicians the option to perform single or fractionated frame-based or frameless treatments, allowing for more individualized delivery—without sacrificing precision and accuracy.



Precision care for the brain

Icon is a truly integrated system, with all components built on the same rigid structure and calibrated to one another. This tight integration ensures precision. It also contributes to an assured uptime standard of 98 percent.*



High therapeutic dose with maximum precision

During Gamma Knife radiosurgery, up to 192 low-intensity radiation beams from cobalt-60 sources converge with high accuracy on the target. At isocenter where the beams merge, radiation dose is concentrated powerfully at the target, while sparing healthy brain tissue.



Online Adaptive DoseControl™

Online Adaptive DoseControl confirms accuracy and ensures precise treatment delivery during every fraction of treatment. Integrated with the control system, it permits clinical decision making during the treatment process.



Stereotactic cone-beam CT

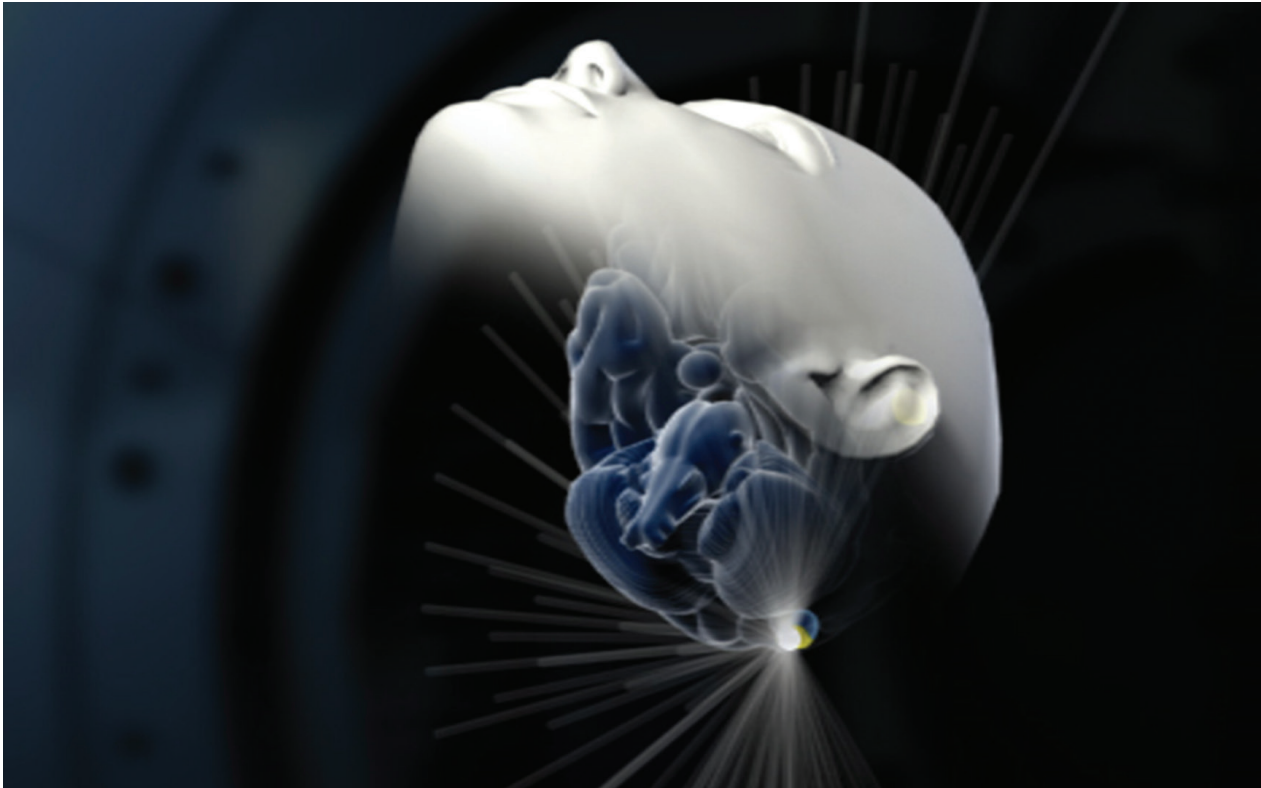
Integrated stereotactic cone-beam CT, calibrated to the robust patient positioning system, determines the stereotactic coordinates.



Real-time motion management

High Definition Motion Management monitors the patient during treatment, with a resolution of 0.15 mm. If the patient moves outside a pre-set limit, beam delivery automatically turns off. This results in the highest possible accuracy for frameless and frame-based treatment.

*With valid service contract

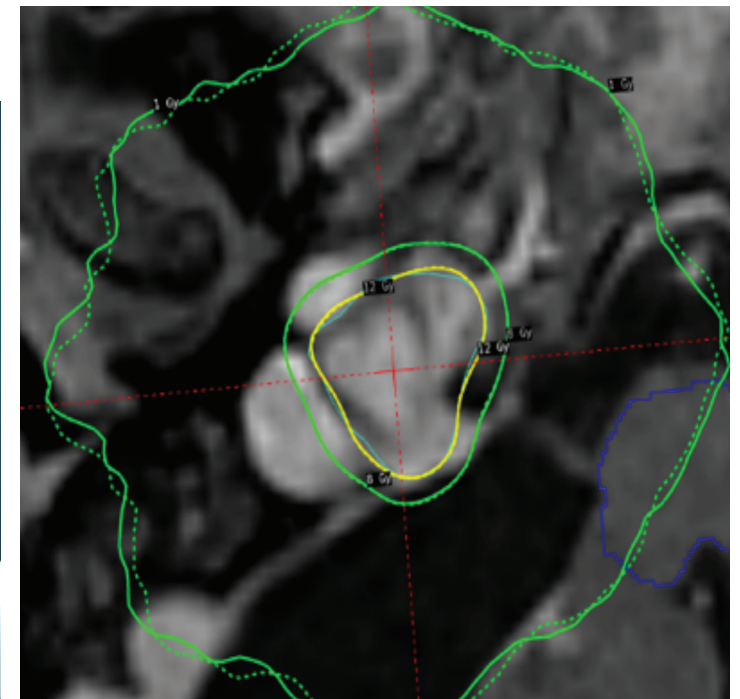


Gamma Knife delivers lower dose to healthy tissue than other systems:

2-4x

lower dose to normal brain

Ma L, Nichol A, Hossain S, et al. Variable dose interplay effects across radiosurgical apparatus in treating multiple brain metastases. Int J CARS. Published online: 20 April 2014. doi: 10.1007/s11548-014-1001-4



Clinical decisions determine the workflow

Icon achieves high accuracy regardless of whether immobilization is frame-based or frameless. This unique capability opens up new paradigms for fractionation, enabling treatment of larger targets and targets close to critical structures.

Clinical and workflow flexibility for intracranial SRS

Icon introduces flexible workflows for:

- Frameless or frame-based procedures
- Single session or fractionated treatment

This is making the exceptional accuracy and precision of Leksell Gamma Knife radiosurgery a possibility for many more types of cases and many more patients.

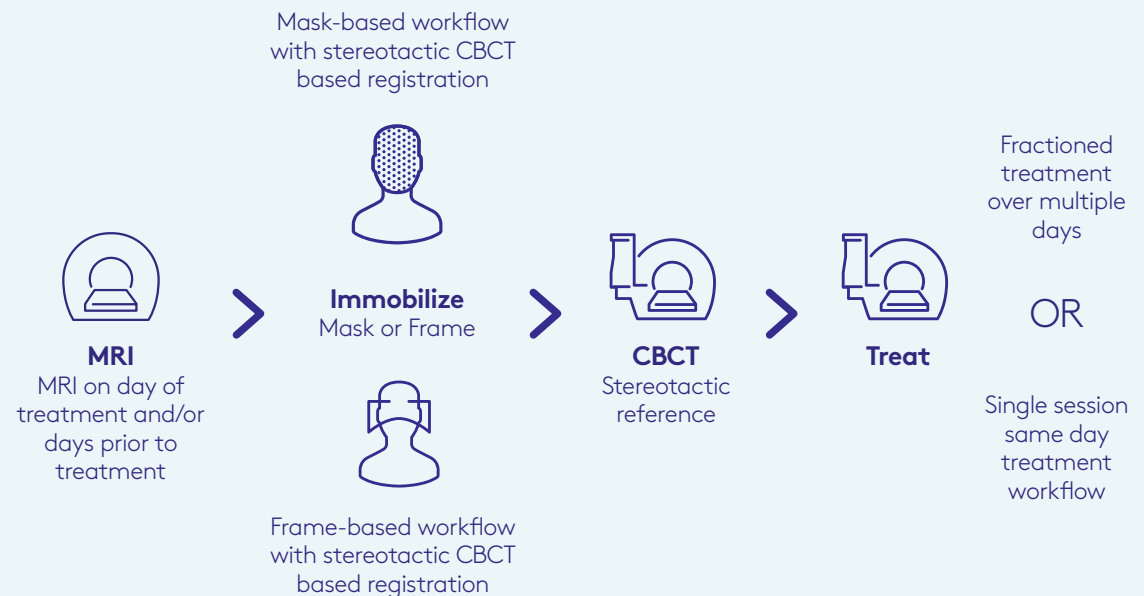
Typical frameless cases

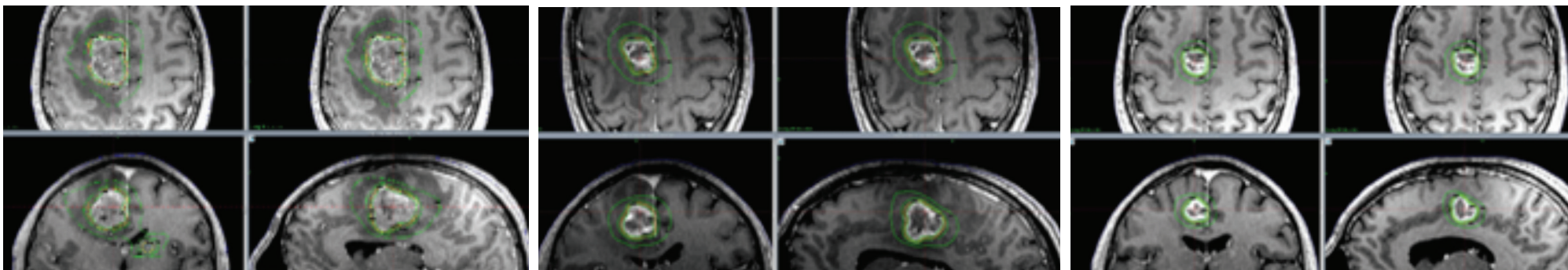
- Hypofractionation of larger volumes
- Ability to treat more complex targets
- Easier re-treatment of patients with brain metastases who present with new or recurring lesions

Treat more patients with improved efficiency

Streamlined Icon workflows contribute to efficient patient throughput. Icon treatment times are often shorter than those of linac-based systems, when considering all steps required from planning and quality assurance to treatment.

Greater freedom for greater opportunity





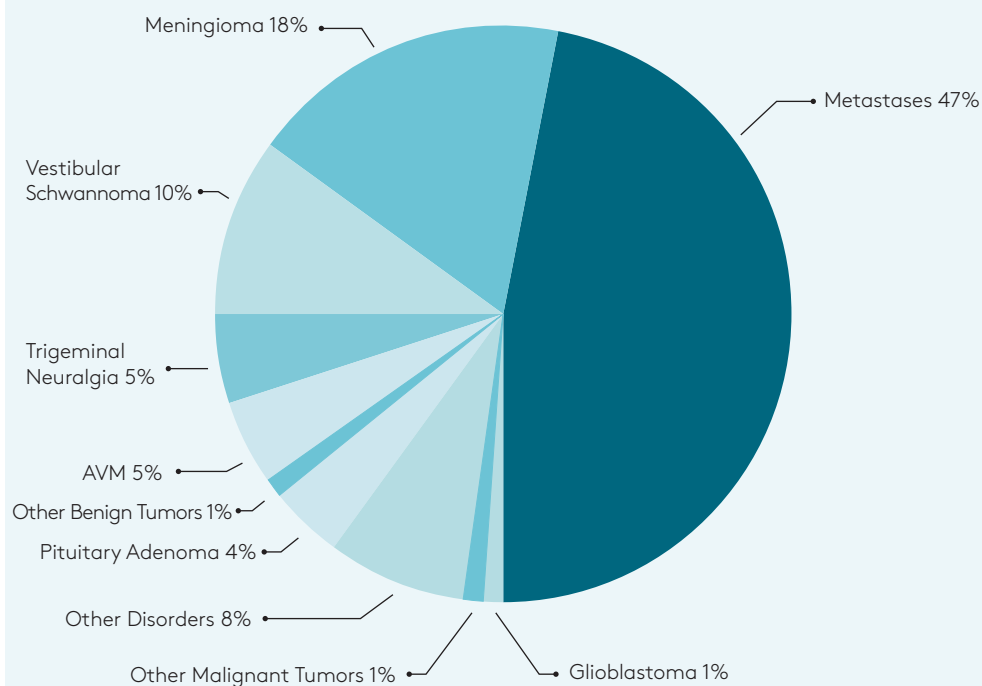
Fraction 1: volume 15.643 cm³

Images courtesy of Bristol Gamma Knife Centre, University Hospitals Bristol

Fraction 2: volume 6.628 cm³; 57.6% reduction at fraction 2

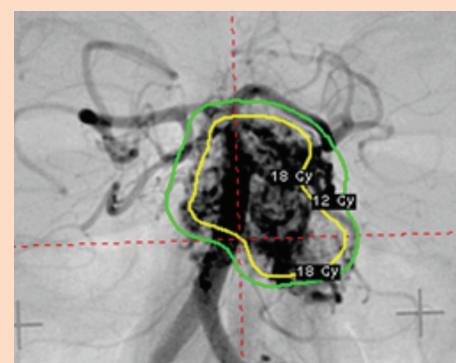
Fraction 3: volume 2.639 cm³; 83.1% reduction at fraction 3

Icon enables intracranial treatments for a broad case mix



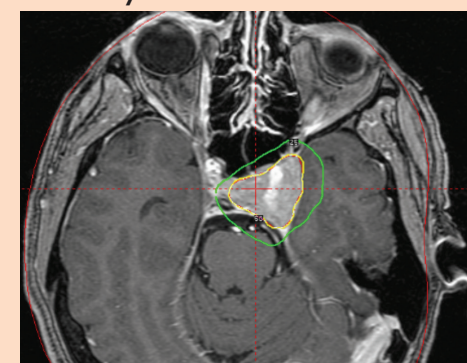
87% of all Leksell Gamma Knife centers submitted 2019 treatment data

Brainstem AVM



45-year-old male, No prior OP, Embol, No hemorrhage, Facial pain

Pituitary adenoma



56-year-old male, Double vision, Prolactin level 1900

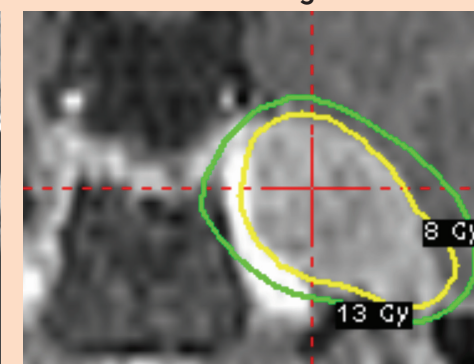
Multiple mets



63-year-old female, Breast cancer, ER(+), PR(-), Her2/neu(+), Bone and lung metastases (+), No prior WBRT

Images courtesy of Cleveland Clinic Foundation, USA

Cavernous sinus meningioma



43-year-old female, No prior surgical resection, Lt. CN 4, 6 palsy, Lt. facial numbness

“Vantage for Leksell Gamma Knife is clearly a step forward in terms of quality of images and reduced MRI acquisition time. Vantage is creating less artefacts and less distortion, which means that we can use MRI sequences that are faster.”

Jean Régis, MD

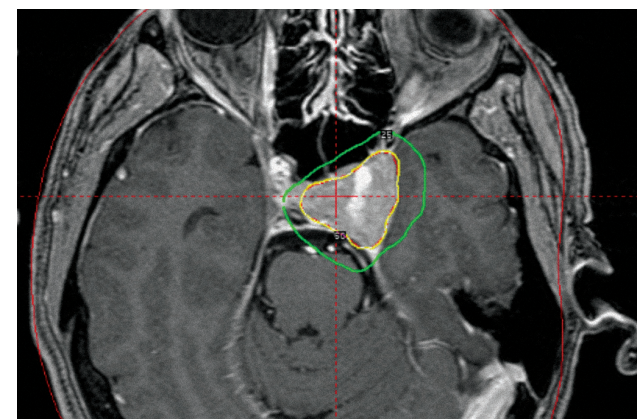
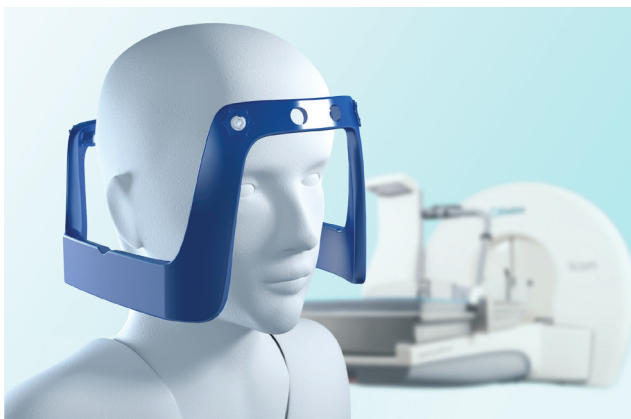
Director Stereotactic, Functional
Neurosurgery and Radiosurgery
Timone University Hospital, Marseille FR



Leksell® Vantage™

Advancing Leksell Gamma Knife Radiosurgery

Leksell Vantage, the latest and most advanced stereotactic headframe system from the pioneers and world leaders in stereotactic headframe systems, has now been specifically adapted for Leksell Gamma Knife radiosurgery.



Powerful Simplicity

Leksell Vantage workflow, from frame application to automatic implementation in Leksell GammaPlan, saves setup time and makes the process smoother and simpler for you and your patient.

- Single piece design for easy assembly and workflow management
- Intuitive and effective workflow, based on clinically proven and trusted technology
- Fast and confident docking onto Leksell Gamma Knife

Patient Comfort

The open face design provides better physical comfort for the patient and reduction in imaging time and overall treatment time. It also encourages patient compliance and a better overall patient experience.

- Facial expressions clearly visible
- Free airways—no interference with nose, eyes and mouth
- Allows easy eating and drinking
- Rapid frame attachment
- Minimized magnetically-induced RF heating
- Added space around shoulders

Accuracy and confidence

The ability to see more detailed brain anatomy for treatment planning inspires confidence in target positioning and overall treatment accuracy.

- Non-metallic materials used in the frame design increase the potential to acquire stereotactic treatment planning images with superior structural information
- Together with a multi-channel neuro head coil, Vantage enables MRI image acquisition up to 50% faster
- Better quality images are also possible with single channel neuro head coil

Planning and QA—elegantly efficient even in complex cases

Optimal plans in your daily clinical practice

Leksell GammaPlan® is a sophisticated treatment planning and management software that is fully integrated with Icon and designed specifically for the needs of the brain. It provides specialized tools that make full use of the advanced technology incorporated into Icon, while providing safe and efficient workflows.

Single and fractionated treatments

Leksell GammaPlan Remote provides flexible and secure access to Leksell GammaPlan from remote locations—anytime, anywhere.

Compatible with Leksell Gamma Knife Lightning, a fully integrated treatment optimizer for intracranial radiosurgery that provides simple and precise treatment planning and accelerated dose delivery.

Continuous evolution of software

Innovation is at the core of Leksell GammaPlan, and innovation remains a key priority. Based on user feedback and new technologies, updates and new add-on platforms are continuously released.

Fast and easy quality assurance

The QA procedure for Leksell Gamma Knife Icon is fast and fully automated. It is integrated into the system with no need for external QA tools (e.g., water phantoms). Special patient-specific QA is not needed.



**System Accuracy QA
as little as**

10 min/day

**Treatment Plan QA
(optional)**

5 min/patient

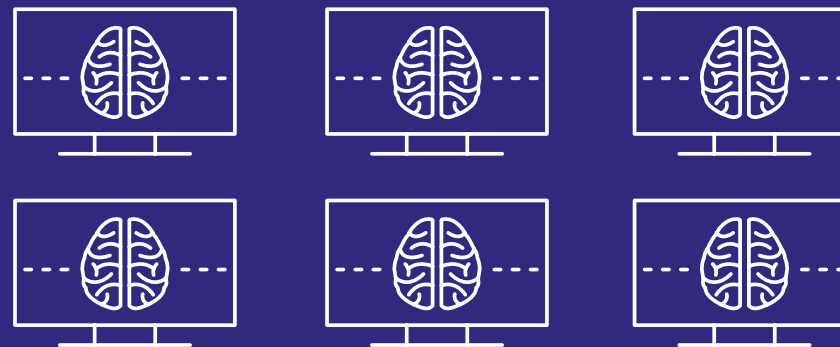
Leksell Gamma Knife[®] Lightning

A simple solution for accelerated radiosurgery

Leksell Gamma Knife Lightning is a new generation of radiosurgery treatment planning that delivers personalized treatment adapted to the individual patient.

It is a revolutionary, fully integrated treatment optimizer for intracranial radiosurgery that provides simple and precise treatment planning and accelerated dose delivery.

Each of your patients is unique—why wouldn't their treatment plans be?



Automated planning

With multiple and simultaneous hard constraints such as dose to target and sparing of organs at risk, you can now develop multiple alternative plans with different priorities and objectives.



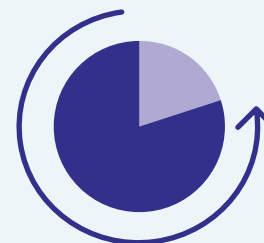
Assured quality



Designed to enable even novice planners to quickly create high quality, conformal treatment plans.

60% of Lightning plans had better gradient index, and 100% had simultaneous higher selectivity and shorter beam-on time.*

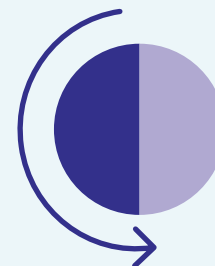
Accelerated workflow



80% or more
planning time
reduction

Experience more power, more flexibility and more freedom to develop just the right plan for your patient. At the same time, the possibility to deliver treatment in a shorter timespan allows you to accelerate your workflow and run your program more efficiently than ever.*

Faster treatments



Up to
50% lower
beam-on time

Lightning helps optimize the operational efficiency of your workflow, enabling significant time and resource savings through increased patient throughput.*

* <https://www.elekta.com/dam/jcr:71565192-bad0-4f35-8bf8-4a300d95e8a8/Medical%20physics%20article.pdf>

"We need Icon to cover all of the patients requiring Gamma Knife treatment. With Icon, we can expand the indications treated with Gamma Knife and treat 10 to 20 percent more patients."

Prof. Jung-II Lee, Neurosurgeon

Samsung Hospital
Seoul, Korea



0.15
mm average
accuracy



<10
minutes QA



98%
guaranteed
uptime*

*With valid service contract



2,800
peer reviewed
journal articles



>1,300,000
patients treated



The top 15 Icon
centers average
700
patients per year



Leksell Gamma Knife Society

Leadership in
stereotactic
radiosurgery

As an Icon user, you become a member of Leksell Gamma Knife Society—a scientific community of more than 1,800 members who share knowledge and drive the development of intracranial SRS. Visit LGKSociety.com for more information.



**Peer-to-peer collaboration
and knowledge sharing**



**Global and multidisciplinary
membership**



Promoting clinical research



**Annual treatment statistics providing
global and regional insights**



**Educational webinars and
resources**

Maximize the use of your system with **Elekta Care™ Service**

Our focus is on you—helping you achieve the highest uptime possible and ensuring you can use your Elekta solution to its full capabilities. Comprehensive service and support provide you with confidence that your Elekta system will be available when you need it to keep patient treatments on schedule. Robust learning programs and training resources enable you to push the boundaries of your clinical capabilities, ensuring clinical excellence every day. Our ongoing partnership is an integral part of your investment, helping you maximize your equipment's lifetime value.

Designed to help you provide the best care possible for your patients, Elekta Care Service is a portfolio of award-winning services that supports you from installation throughout the lifetime of your Elekta solution.



- ⊕ **Confidence in system uptime**
- ⊕ **Excellence in clinical capability**
- ⊕ **Partnership to maximize the lifetime value of your investment**

For almost five decades, Elekta has been a leader in precision radiation medicine.

Our more than 4,000 employees worldwide are committed to ensuring everyone in the world with cancer has access to—and benefits from—more precise, personalized radiotherapy treatments.



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