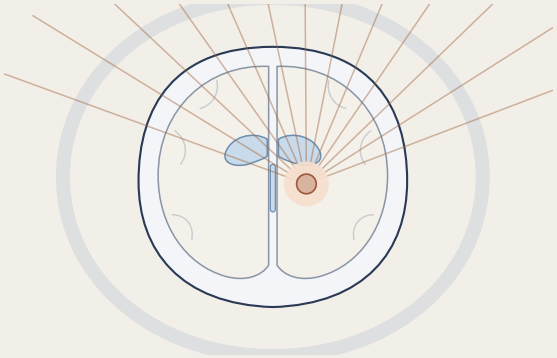
Professor Jason John Labuschagne
PAEDIATRIC AND ADULT NEUROSURGEON

ADULT NEUROSURGERY

Gamma Knife Stereotactic Radiosurgery

Patient information and consent



This booklet explains Gamma Knife radiosurgery, a precise, single-day radiation treatment for selected conditions of the brain. It is planned and delivered by Professor Labuschagne together with a radiation oncologist and a medical physicist. Please read it with your family, write down your questions and bring it to your consultation. You will be asked to sign the consent section only once you understand the proposed treatment and are satisfied that your questions have been answered.

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PATIENT DETAILS OR HOSPITAL LABEL

Patient name

Date of birth

ID / file no.

Procedure date

Version 1.0 · October 2026

Netcare Unitas Hospital
Room 403, Centurion

Nelson Mandela Children's Hospital
Private Suites, First Floor, 6 Jubilee Road, Parktown North

012 664 6026
HPCSA MP 0530077

01 General information

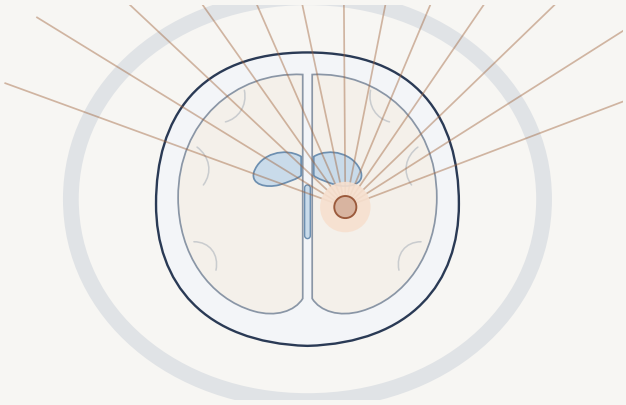
What is Gamma Knife radiosurgery?

Despite its name, the Gamma Knife does not involve any cutting. It focuses many beams of gamma radiation, each too weak to harm the brain on its own, so that they meet precisely on the target. Where the beams converge, a high dose is delivered, while the surrounding brain receives very little. Treatment is usually given in a single session.

It is used for small to medium-sized lesions such as brain metastases, meningiomas, vestibular schwannomas (acoustic neuromas), pituitary tumours, arteriovenous malformations (AVMs) and trigeminal neuralgia.

What does radiosurgery achieve?

Radiosurgery does not remove the lesion. It aims to stop it growing; tumours often shrink slowly over months to years. AVMs close gradually over one to three years, during which the risk of bleeding remains. Pain relief for trigeminal neuralgia usually takes weeks to months.



Many low-intensity beams meet at a single point, delivering a high dose to the target while sparing the surrounding brain.

02 Alternatives to radiosurgery

- **Open surgery**, which removes the lesion immediately and provides tissue for diagnosis.
- **Fractionated radiotherapy**, given in smaller daily doses over several weeks.
- **Observation** with regular scans.
- **Medication or other treatments**, depending on the condition being treated.

03 What to expect on the day of treatment

- **Arrival.** You are admitted on the morning of treatment. Take your usual medication unless told otherwise. A light breakfast is usually allowed.
- **Head frame or mask.** Depending on the system, either a lightweight frame is attached to the head with four pins under local anaesthetic, or a custom-moulded mask is made. The frame feels tight but is not painful once in place.
- **Imaging.** An MRI, and sometimes a CT or angiogram, is performed with the frame or mask on.
- **Planning.** Professor Labuschagne, the radiation oncologist and the physicist design a treatment plan, which can take an hour or more.

- **Treatment.** You lie on the couch with your head positioned in the machine. Treatment is silent and painless and lasts from about thirty minutes to a few hours. You can talk to the team through an intercom.
- **Afterwards.** The frame is removed and small dressings placed on the pin sites. Most patients go home the same day.

04 Risks and side effects

Radiosurgery is generally very well tolerated. Side effects depend on the size and position of the target and the dose. Professor Labuschagne will discuss the risks that apply to your condition.

Common

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- Mild headache, nausea or tiredness on the day.
- Discomfort, small bruises or minor bleeding at the pin sites.
- Temporary patchy hair loss, if the target is near the skull.

Less common

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- **Swelling around the treated area** weeks to months later, causing headache, seizures or a return of symptoms, usually treated with steroids.
- Seizures, especially if you have had them before.
- **Radiation effect (necrosis)**, an area of damaged tissue appearing months to years later, which may need steroids, other medication or occasionally surgery.
- Treatment does not control the lesion, and further treatment is needed.

Rare but serious

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- Injury to nearby nerves, such as hearing loss, facial numbness or weakness, or vision loss, depending on the location.
- Bleeding from an AVM before it has closed.
- A new tumour caused by radiation, many years later. This is very rare.

05 After treatment: what is normal

- You can usually resume normal activities the next day.
- Pin sites heal within a few days; you may wash your hair after 24 to 48 hours.
- A short course of steroids is sometimes given.

06 Recovery and follow-up

- **Follow-up.** An MRI is usually performed six to twelve months after treatment, and then at regular intervals.
- **Effects are gradual.** Changes on the scan may take months to years, and temporary enlargement can occur before shrinkage.

- **Driving** depends on the condition treated and any seizures; please ask.

07 When to contact the rooms

Please contact the rooms, or go to the nearest emergency department, if you notice:

- Increasing headache not relieved by your usual pain relief
- Increasing drowsiness or confusion
- A seizure (fit), or a fainting spell
- New or worsening weakness, numbness or difficulty walking
- New difficulty speaking or understanding
- New problems with vision
- Persistent nausea or vomiting
- Redness, swelling or discharge at a pin site

IN AN EMERGENCY

If you have a seizure that does not stop, a sudden severe headache, collapse, chest pain or difficulty breathing, call an ambulance or go to the nearest emergency department immediately. Tell the staff about your recent operation and ask them to contact Professor Labuschagne.

THE ROOMS · OFFICE HOURS

012 664 6026

Elective appointments and queries, office hours, for both Netcare Unitas Hospital and Nelson Mandela Children's Hospital

AFTER HOURS

After hours, call the hospital switchboard and ask for Professor Labuschagne: Netcare Unitas Hospital 012 677 8000 · Nelson Mandela Children's Hospital 010 133 0600

Emergency services: Netcare 911 · 082 911 | National ambulance · 10177

NETCARE UNITAS HOSPITAL

Room 403, Netcare Unitas Hospital
866 Clifton Avenue, Lyttelton, Centurion

NELSON MANDELA CHILDREN'S HOSPITAL

Private Suites, First Floor
6 Jubilee Road, Parktown North, Johannesburg

08 Consent

Informed consent is a conversation, not simply a signature. The National Health Act 61 of 2003 and the ethical guidelines of the Health Professions Council of South Africa (HPCSA) give every patient the right to be told, in a language they understand, about their condition, the treatment options available, the benefits, risks, costs and consequences of each, and the right to refuse treatment. You may withdraw your consent at any time before the operation.

If you are unable to give consent yourself, the National Health Act (section 7) allows consent to be given by a person you have authorised in writing or, failing that, by your spouse or partner, parent, grandparent, adult child or sibling, in that order.

THE PROCEDURE

Procedure: Gamma Knife stereotactic radiosurgery (with radiation oncology and medical physics) Side / site: _____

Condition, in my own words: _____

SPECIFIC PERMISSIONS

Anonymised images or treatment plans may be used for teaching and research (optional) ☐ Yes ☐ No

Questions I have discussed

Please write down any questions you asked and any particular concerns that were discussed.

My acknowledgement

Please tick each statement.

- ☐ I have read this document, or it has been read to me, and I understand it.
- ☐ Professor Labuschagne has explained my condition, the proposed procedure, its expected benefits, and the alternatives, including the option of no treatment.
- ☐ The risks and possible complications, including those particular to me, have been explained in language I understand.
- ☐ I have had the opportunity to ask questions and raise concerns, and these have been answered to my satisfaction.
- ☐ I understand that no guarantee has been given about the outcome, and that the procedure may not improve, and could worsen, the condition.
- ☐ I understand that if an unexpected finding or a life-threatening event occurs during the procedure, the surgeon may carry out further treatment that is necessary to protect life or prevent serious harm.
- ☐ I understand that the anaesthetic will be explained by the anaesthetist, who will obtain consent for it separately.
- ☐ I understand that my medical scheme may not cover the full cost of treatment, that I am responsible for any shortfall, that separate accounts will be rendered by the hospital and the anaesthetist, and that a quotation is available on request.
- ☐ On the basis of the above, I request that I undergo the procedure described.

PATIENT

Full name _____ ID number _____

Signature _____ Date and time _____

If the patient is unable to consent: person consenting on the patient's behalf (National Health Act, section 7)

Full name _____ Relationship _____

Signature _____ Date and time _____

SURGEON'S STATEMENT

I have explained the patient's condition, the need for treatment, the proposed procedure and its expected benefits, the material risks including those specific to this patient, the reasonable alternatives including no treatment, and the likely consequences if those risks occur. I have offered the opportunity to ask questions and have answered them as fully as possible.

Surgeon Professor Jason John Labuschagne HPCSA no. MP 0530077

Signature _____ Date and time _____

INTERPRETER (IF USED)

I have accurately interpreted the contents of this document and the discussion between the doctor and the patient.

Full name _____ Language _____

Signature _____ Date _____

WITNESS

Full name _____ Capacity _____

Signature _____ Date _____

A copy of this signed document will be kept in the medical record and a copy offered to the patient. Personal information is processed in accordance with the Protection of Personal Information Act 4 of 2013. · Professor Jason John Labuschagne · HPCSA MP 0530077 · Version 1.0 · October 2026