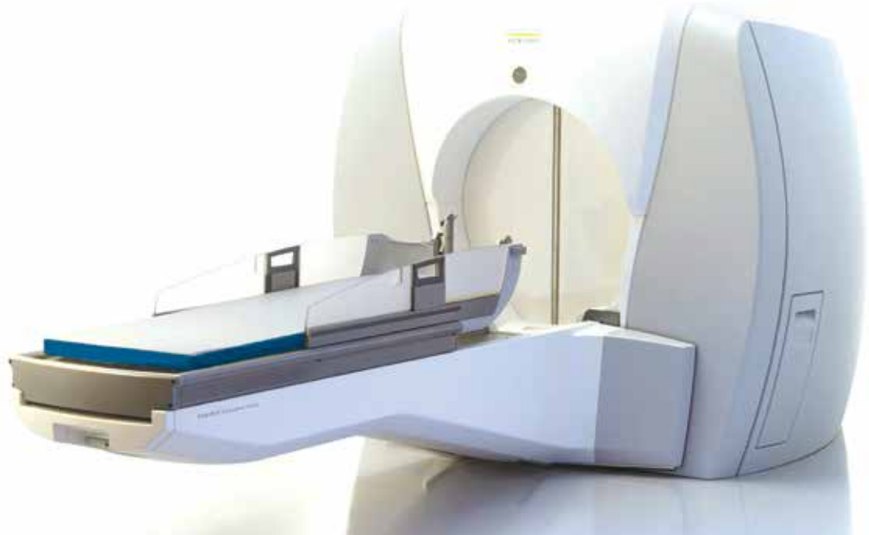




Australia's First **Gamma Knife** at Macquarie University Hospital

MACQUARIE UNIVERSITY
Hospital



Introduction to the Gamma Knife

Macquarie University Hospital own Australia's only Gamma Knife. Gamma Knife surgery has revolutionised the management of brain tumours and many other brain conditions that may have previously required invasive surgery. The focused concentration of gamma rays to a targeted area in the brain can be performed with the utmost surgical precision.

Having this technology available in Australia means patients no longer have to travel overseas to access this potentially life-saving treatment. They can now be treated without surgery and can go home from hospital only a few hours after having this procedure.

Macquarie University Hospital has established Australia's first stereotactic radiosurgery program using the sophisticated technology of the Leksell Gamma Knife Perfexion system. This innovative approach to cranial disease and neurological treatments is consistent with our commitment to improved patient access and outcomes when faced with the need for specialised treatment.

About Macquarie University Hospital

Macquarie University Hospital is Australia's first and only private hospital on a university campus. The hospital is committed to delivering a positive patient experience and superior clinical outcomes through the best available care and the latest technologies.

The 183 bed state-of-the-art hospital offers a comprehensive range of services and specialist areas, with links to the Macquarie University Clinic and the Australian School of Advanced Medicine (ASAM). This network means that patients benefit from the collaboration of specialists and researchers who bring their collective knowledge and skills to their work.

Patients also benefit from the convenience of traveling to one location for all their treatment. This integrated medical community is supported by the latest technology, much of it unavailable anywhere else in the country:

- the first Cyclotron and Radiopharmacy in a private hospital
- the first Gamma Knife in Australia
- comprehensive clustered services
- digital operating theatres with intra-operative imaging
- shared electronic medical records, wireless network, RFI and VOIP communications.

About Genesis Cancer Care

Genesis Cancer Care will assist in the provision of Gamma Knife services on behalf of Macquarie University Hospital.

Genesis Care is a national network of comprehensive cancer centres across Australia. As a leader in cancer service provision Genesis Care is committed to improving outcomes and access for patients. Separately, Genesis Care also provides comprehensive cardiovascular treatment services Australiawide. The organisation is expanding its presence nationally, having six comprehensive cancer centres and developing a further four centres in locations where patient access to quality care is currently very limited. Comprising of a team of doctors, healthcare and management professionals working together, Genesis Care embraces an innovative spirit that encourages advancements in patient care.

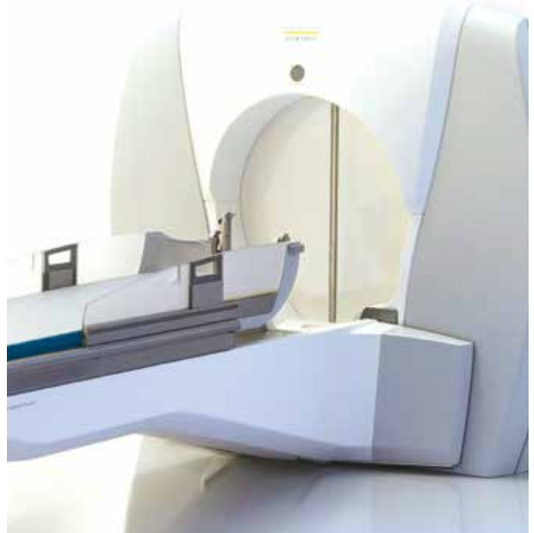
About Macquarie Neurosurgery

The Macquarie University Neurosurgery Unit is one of the largest academic neurosurgery groups in Australia.

The unit has subspecialty interests in vascular neurosurgery, spinal surgery, tumour surgery, radiosurgery, and paediatric neurosurgery. Vascular neurosurgery is a major focus of the group, both clinically and in the laboratory. We have extensive experience in the management of arteriovenous malformations (AVMs), aneurysms, and occlusive diseases such as carotid artery stenosis and moyamoya disease. We work closely with interventional neuroradiologists at Macquarie University Hospital. Members of our group lead the management of intracranial lesions using the Gamma Knife. Conditions that can be treated using this technology include arteriovenous malformations (AVMs), certain intracranial tumours, and trigeminal neuralgia.

Gamma Knife

The Gamma Knife is a specialised treatment machine designed to provide stereotactic surgery to a highly defined target within the brain. Working together your neurosurgeon and your radiation oncologist identify the target and develop a plan to deliver an extremely accurate dose of radiation while reducing exposure to sensitive healthy tissue.



What to expect - treatment process

Step 1: Before the treatment

Before you have treatment your doctor will explain the entire process to you and answer any questions you may have. Gamma Knife "Surgery" does not require any cutting or shaving of your hair. The nurse will contact you prior to treatment to discuss any further questions or concerns.

Step 2: Fitting of the head frame

An essential component to the Gamma Knife treatment procedure is the use of a specialised precision head frame. The head frame performs two important functions. Firstly it allows the doctors to very precisely and accurately pinpoint the target or area requiring treatment. Secondly by wearing the frame during treatment it ensures you remain completely still throughout the procedure. The head frame is attached to your head via four pins using local anaesthetic.

What to expect - treatment process

Step 3: Target localisation

Once the head frame has been fitted a series of tests will be performed, this includes imaging techniques such as MRI, CT or angiography. This is to determine the exact size and location of the target area.

Step 4: Treatment planning

This step is performed without the patient. The information gained from the imaging in step 3 is used by your doctors with the assistance of highly trained Medical Physicists and Radiation Therapists to develop an accurate and customised treatment plan. Every plan is unique and tailored to the specific requirements of each patient.

Step 5: Gamma Knife treatment

Once the treatment plan has been completed by the team of professionals your treatment can begin. With your head frame attached you will be positioned on the treatment couch. The procedure is completely painless and you will remain awake throughout the procedure with the treatment team monitoring you the whole time. The length of the treatment will vary from patient to patient and depends on the size and shape of the target area. The treatment time may only be as long as a few minutes or up to an hour.

Step 6: After Treatment

Following treatment, the head frame and pins will be removed. Generally you will feel no effects of the treatment; however some patients may experience a mild headache or minor swelling from where the frame was attached.

Step 7: Follow up

An appointment will be made for you to see your doctor after your treatment. The effectiveness of your Gamma Knife treatment will be evaluated over time. The radiation treatment is designed to stop the growth of tumours or dysfunctional tissue, therefore it may take weeks or even months before the full benefit of the treatment may be realised. It may be necessary to have follow up imaging such as MRI or CT to assess your progress over time.

Our Team

Dr John Fuller graduated from UNSW, and then undertook his early postgraduate years at Prince of Wales. His neurosurgical training was completed at Prince of Wales and Prince Alfred hospitals Sydney. Dr Fuller has been practicing in Canberra since obtaining his fellowship in neurosurgery, managing all aspects of cerebral, spinal and peripheral nerve surgery. He has a particular interest in neuro-oncology and spinal surgery. Dr Fuller is the lead neurosurgical specialist for the Gamma Knife Program at Macquarie University Hospital.

Dr Michael Izard ADM (MBBS, FRANZCR, M. Medical Humanities) graduated from The Middlesex Hospital in London and obtained his Fellowship of the Australian and New Zealand College of Radiologists in Sydney. Dr Izard is the lead Radiation Oncologist for the Gamma Knife Program at Macquarie University Hospital. He is a Clinical Associate Professor at the University of Sydney, and other than neuro-oncology his interests include prostate and breast cancers, with a particular interest in brachytherapy.

Dr Annie Ho graduated from the University of Sydney in 1998. She underwent specialty training in radiation oncology in the Royal North Shore Hospital and St George Hospital in Sydney and was awarded the Fellowship of the Royal Australian and New Zealand College of Radiologists (RANZCR) in September 2005. Dr Ho is a member of RANZCR, ABS, Trans-Tasman Radiation Oncology Group (TROG) and Australian and New Zealand Breast Cancer Trial Group (ANZ BCT). As well as the management of brain tumours her interests include gastro-intestinal, lung and prostate cancers.

Mr Michael Grace (B. Med. Phys (Hons), AMACPSEM) began his Medical Physics career at The University of Wollongong and has been a Medical Physicist since 1998. Following his graduation, Michael has worked both clinically and commercially. Michael achieved his accreditation with the ACPSEM (Australasian College of Physical Scientists and Engineers in Medicine) in 2005, and is published in both national and international journals. Michael has been appointed as the Medical Physics site supervisor at the Macquarie University Hospital Radiotherapy Unit and is the lead Medical Physicist for the Gamma Knife Unit.

Our Team

Mrs Melissa Winkler (BAppScMRT) graduated from the University Of Sydney, NSW, as a Radiation Therapist in 1995 and since then has worked both nationally and internationally in both public and private sectors. She has held senior and clinical educator roles in Radiation Oncology. Mrs Winkler joined the team at Macquarie University Hospital in August 2011 and holds the position of Level 3 Radiation Therapist, Gamma Knife Specialist.

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