



INDUSTRY SUPPORTED CLINICAL TRIALS

NATIONAL NEUROSCIENCE INSTITUTE



*Seeking breakthroughs
for neurological diseases*

ABOUT NNI

The National Neuroscience Institute (NNI), Singapore, is the national specialist centre and regional centre for the care of the brain, spine, nerve and muscle. In addition to providing clinical care, the NNI is the leading neuroscience research facility in Singapore.

SCOPE OF COVERAGE

NNI provides clinical care to patients with a comprehensive range of neurological conditions, providing neurology, neurosurgery and neuroradiology services. Our doctors look after over **70%** of the neurology and neurosurgery patients in Singapore. NNI has two campuses at **Tan Tock Seng Hospital (TTSH)** and **Singapore General Hospital (SGH)**, and also provides specialty services to **Changi General Hospital (CGH)**, **Kho Teck Puat Hospital (KTPH)** and **KK Women's and Children's Hospital (KKWCH)**.



NNI doctors care for over **7000** neurology inpatients and **4000** neurosurgery inpatients annually.

There are over **60,000** neurology attendances, nearly **17,000** neurosurgery attendances, and nearly **500** neuroradiology attendances in our specialist outpatient clinics every year.

RESEARCH

The mission of NNI research is to improve treatment and discover cures for neurological diseases. Participation in clinical trials is a cornerstone of NNI's research foci. NNI has participated in various phase II to IV pharmaceutical drug trials.



• MANPOWER

Our staff have been recognised internationally by leading scientific organisations for their contributions in clinical, research and educational activities. We have the largest pool of neuroscience clinicians in Singapore with **37** neurologists, **25** neurosurgeons and **8** neuroradiologists. In addition, our research platform is supported by over **50** research assistants and fellows who are involved in clinical and basic/translational research at the TTSH and SGH campuses.



INFRASTRUCTURE

The Neuroscience Research Laboratories are fully equipped with laboratory facilities, imaging facilities and stem storage facilities, including a Dextroscope for surgical planning and navigation, a FACSaria Cell Sorting System for high speed sorting and multicolour analysis, and a Specific Pathogen Free (SPF) animal room that houses disease models. Early adoption of very high field strength of 3T MRI and multi-detector CT scanners has allowed our researchers to perform applied clinical research into neurology and neurosurgery together with the state-of-the-art BrainSUITE iMRI which includes the BrainSUITE iCT and Novalis Shaped Beam Radiosurgery system.



COLLABORATIONS

NNI collaborates extensively with various local and overseas universities. Many of our clinical scientists hold adjunct or joint faculty appointments at local universities including Duke-NUS Graduate Medical School and the National University of Singapore (NUS).

The National Neuroscience Research Institute Singapore (NNRIS) established in March 2014, is a joint venture by the NNI and Duke-NUS. NNRIS will integrate research programmes and resources for common use, as well as develop a new research facility for neurobehavioural experiments. The critical mass of talent and resources would also make it a fertile ground for scientific discoveries and medical breakthroughs.

PAST CLINICAL TRIAL EXPERIENCE

NNI conducted a total of **66** trials over the past 10 years with a total of **4,333** patients.

| Neurology | Phase 1 & 2 | Phase 3 & 4 | Total | Number of Patients |
|---------------------------------------|------------------------|------------------------|--------------|---------------------------|
| Ischemic Stroke | 2 | 18 | 34 | 3,904 |
| Alzheimer's Disease & Other Dementia | - | 3 | 4 | 69 |
| Movement Disorders, Parkinson Disease | 2 | 7 | 9 | 69 |
| Multiple Sclerosis | - | 1 | 2 | 5 |
| Neurosurgery | Phase 1 & 2 | Phase 3 & 4 | Total | Number of Patients |
| Surgical Neurotechnology | - | 2 | 4 | 145 |
| Head Injury | 1 | 6 | 8 | 62 |
| Brain Haemorrhage | - | 2 | 3 | 59 |
| Neuro-Oncology | - | 2 | 2 | 20 |

AREAS OF RESEARCH

Ischemic Stroke

Ischemic stroke is the most common neurological condition among inpatients. NNI doctors see over 5,000 stroke patients covering TTSH, SGH, CGH and KTPH. We have a strong team of stroke neurologists and research staff. Our experience in stroke trials is vast and we have been a top recruiting site for many trials.

Alzheimer's Disease & Other Dementia

Alzheimer's disease (AD) is the most common neurodegenerative disease seen in Singapore. NNI has a combined database of over 2,000 patients with dementia, with more than a thousand of them requiring active follow-up. Over the last three years, NNI has been the leading centre for Dementia Clinical Trial recruitment in Singapore.

Parkinson Disease and Movement Disorders

Parkinson disease affects more than four million of people worldwide, and its prevalence continues to rise as the population ages. In recognition of its efforts, the Parkinson Disease and Movement Disorders Centre in NNI has been designated as a National Parkinson Foundation (NPF) Centre of Excellence since 2006, which is awarded by the National Parkinson Foundation to healthcare institutions that excel in Parkinson-related comprehensive care, research and community outreach programmes.

Multiple Sclerosis

Multiple sclerosis (MS) and neuromyelitis optica (NMO) are chronic inflammatory conditions of the central nervous system, often affecting young people, causing significant morbidity. We actively manage around 150 cases of MS (60%) and NMO (40%) in our Neuroimmunology clinic, the largest pool in Singapore.

Brain Haemorrhage

Brain haemorrhages including intracerebral haemorrhage and subarachnoid haemorrhage are relatively more common amongst Asians. In NNI, we treat about 1,000 patients who suffer from brain haemorrhages every year.

Head Injury/Stroke Traumatic Brain Injury

Head injuries account for a sizeable portion of the neurosurgery admissions in NNI and cover all injuries that result in trauma to the skull or brain. In 2014, NNI saw over 800 patients with head injuries. Approximately 5% of the patients suffered from severe head injuries and required hospital care.

Surgical Neurotechnology

The use of medical technology and neuro-navigational imaging to support clinical diagnosis and treatment in neurosurgery is a rapidly developing field and a key focus of research in NNI.

Neuro-Oncology

Every year, NNI sees about 200 patients with brain tumours. Brain tumours are devastating and notoriously difficult to treat due to their highly aggressive and infiltrative nature. The NNI research programme in Neuro-Oncology is focused on developing patient-tailored therapy for malignant gliomas.

Contact Information

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