

The  
**Transformative**  
Power of

# Hope

Giving Report FY2018

## GET IN TOUCH

Corporate Development Office  
**National Neuroscience Institute**  
11 Jalan Tan Tock Seng  
Singapore 308433  
Email: [CorpDev@nni.com.sg](mailto:CorpDev@nni.com.sg)  
[www.nni.com.sg/giving](http://www.nni.com.sg/giving)

## NOTES OF APPRECIATION

Hear from those who have contributed to NNI

“ I am glad to be able to do my part to help other patients under NNI’s care by raising funds and increasing the awareness of motor neuron disease. ”

- Lily Koh  
Motor Neuron Disease Patient

“ I support NNI in their quest to discover a cure for Parkinson’s disease. Each gift gives patients like me hope for the future, to keep fighting and to stay strong. ”

- David Tan  
Parkinson’s Disease Patient

“ Dementia can strike anyone unexpectedly – rich or poor, strong or weak. If we are able to, we should do our part to help as many as possible to live with dignity. ”

- L.C.  
Dementia Patient

Thank you!

## MESSAGE FROM OUR MEDICAL DIRECTOR

Dear Friends,

At the National Neuroscience Institute (NNI), our vision is to be able to shape neuroscience care for a better tomorrow for patients and their families. We are committed to improving lives through integrated clinical service, research and education. We are grateful for the tremendous support from donors like you who journey with us to make an impact.

Two years ago, we partnered the Echo of Love Society, a volunteer-run group of singing enthusiasts, who organised a fundraising concert in support of NNI patients. The funds raised then helped us obtain a minimally invasive surgical system for patients with stroke and brain tumour. This neurotechnology has greatly improved surgical outcomes with the length of stay in the Intensive Care Unit (ICU) shortened by almost half.

Mr Anindya Mitra is one of the many patients who experienced the life-changing effect of this new technology. Last July, he suffered a haemorrhagic stroke – the deadliest form of stroke with bleeding in the brain. Mr Mitra was unable to speak a single word of the five languages he was fluent in; he could not walk or move the right side of his body. Today, Mr Mitra has regained the ability to speak in all the five languages, and has even picked up a new hobby – making ice cream and frozen yogurt.

In his daughter’s words, his recovery was “amazing”. This would not have been possible without the support and generosity of donors like you. All of us at NNI would like to extend our heartfelt gratitude once more to all of you who have supported us.

Together, we can continue making amazing leaps in neuroscience care, transforming the lives of our patients today and for generations to come.

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Associate Professor Ng Wai Hoe  
Medical Director, NNI



Give, Volunteer, Serve

# IMPACT OF PHILANTHROPY

NNI is committed to transforming care and improving the lives of our patients. Philanthropy enables us to continuously enhance the key thrusts of NNI – patient care, education and research.



## Enhance Patient Care

Your gift brings hope and financial relief to needy patients. Every dollar makes a difference to our patients on their road to recovery, helping them with medication, assistive devices and other healthcare needs.

Mr Asher Seenee, an NNI patient who was diagnosed with myotonic dystrophy, has difficulty walking and writing. *Read his story on page 7 to see how his life has changed.*



## Transform Education

The future lies in the hands of the next generation. Your gift helps to nurture future educators, transforming tomorrow's medicine.

With support from Lee Foundation, the Interprofessional Education and Collaborative Practice (IPECP) was initiated in 2019 to improve the quality of team-based healthcare through collaborative training and care delivery among healthcare professionals.



## Advance Research

At NNI, research is driven by a passion to improve patients' lives. Your gift helps NNI push the frontiers of research to develop innovative treatment options for patients.

Initial findings from a recent research study conducted on the relationship between vitamin deficiency and dementia are promising. *Read more on page 9.*

# HIGHLIGHTS OF FY2018

## Winning the Nation's Highest Award for Scientific Achievement

A team led by Professor Tan Eng King, Deputy Medical Director (Academic Affairs) and Director, Research, NNI received the 2018 President's Science Award for their outstanding breakthrough research in Parkinson's Disease. The team cultivated the world's first live mini human midbrain in the laboratory. This significant development opens doors to countless new possibilities for better drug interventions, which could potentially culminate in the cure of Parkinson's Disease.



## A New Hope for Stroke Patients

In the past, patients brought to the hospital more than six hours after the onset of a stroke had little chance of reversing their condition. Today, thanks to the results of two concluded international trials and advancements in neuroimaging, doctors at NNI may now treat patients outside the optimum treatment window. Previously, the outcome of treatment beyond six hours was relatively unknown as more brain tissues continue to die over time. The publication of these trials has shown that with more advanced imaging, there is still a small group of patients with salvageable brain cells that doctors can help with the existing clot removal techniques.

## Turning the Tide of Dementia

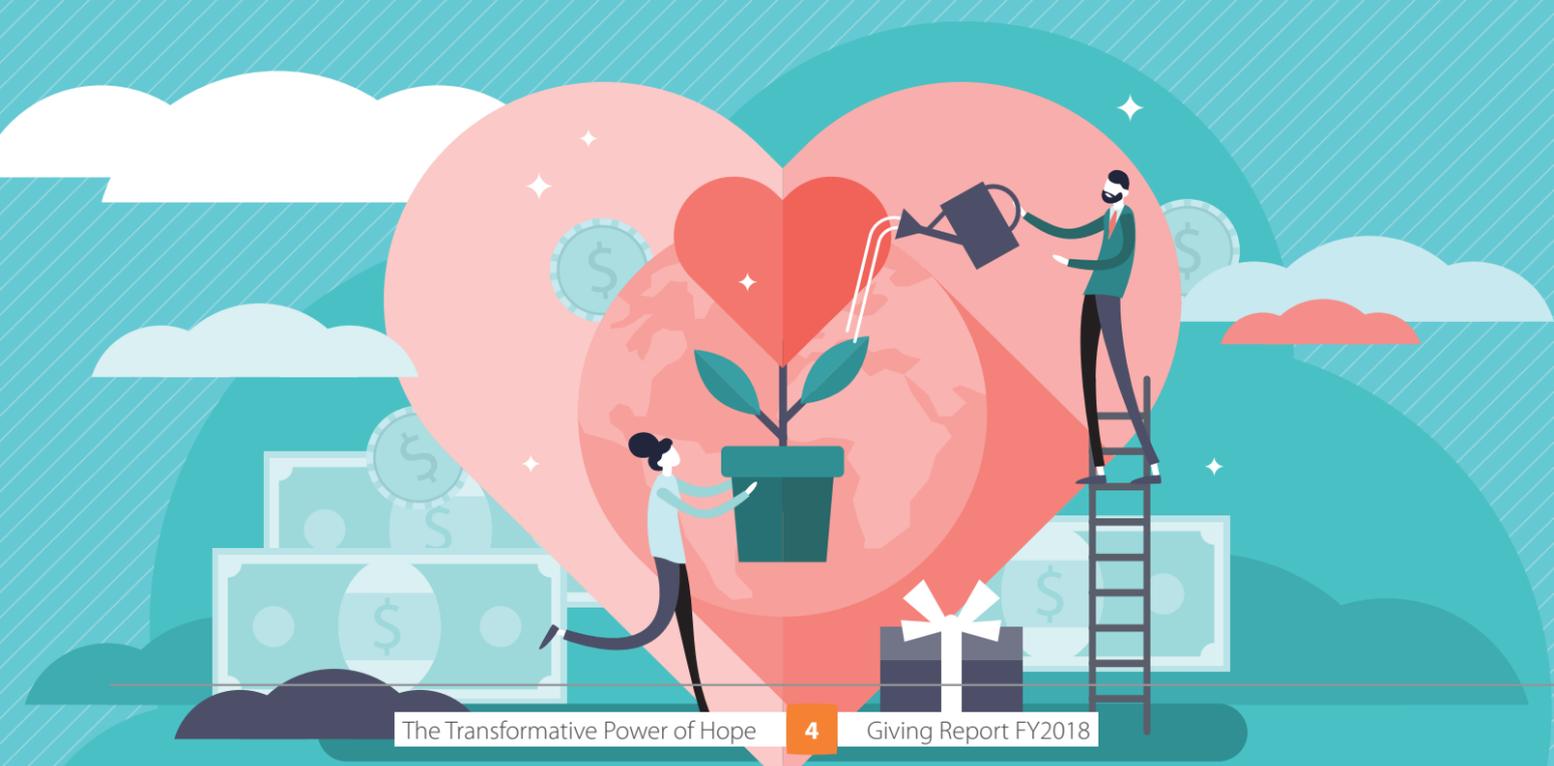
Dementia affects close to 82,000 people in Singapore today and this number is expected to increase to 100,000 by 2030 as the population ages. Associate Professor Nagaendran Kandiah, Senior Consultant of NNI's Department of Neurology and Director of the NNI Dementia Programme, said that the key marker of dementia is the presence of abnormal proteins in the brain called amyloid. This results in the loss of brain cells that regulate memory, calculation and other thinking processes. Up until recently, amyloid levels could only be measured after death during a post-mortem examination.

Breakthrough procedures such as the Amyloid Positron-Emission Tomography (PET) scan can now detect the presence of amyloid in patients suspected of pre-dementia by simply injecting a radiopharmaceutical tracer into the patient's brain. Another breakthrough diagnostic technique is the cerebrospinal fluid testing where a small needle is inserted into the patient's spine to extract spinal fluid for testing.

These two techniques that are now available at NNI have placed NNI on the world map for improved treatment of Alzheimer's disease.



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## NNI FUND (PATIENTS)

FY 2018

 **33**

Patients benefited

**3** 

Assistive devices supported



**\$61,900**

Total gifts received in FY 2018

**177** 

Donors

**145** 

Staff donors

### How the NNI Fund (Patients) Helps

80%



#### Medical Bills

Medication, diagnostic scans, procedures, consultation, laboratory tests and vaccinations

16%



#### Assistive Devices

Communication devices, wheelchairs and ramps

1%



#### Miscellaneous

Consumables such as syringes and wipes

3%



#### Therapy

Physiotherapy and occupational therapy

NNI Fund (Patients) supports patients who are facing financial challenges beyond government funding or assistance schemes, and projects of a charitable nature. This supplementary assistance goes a long way in ensuring that patients have a buffer for loss of income with the onset of a neurological illness.

*The NNI Fund is a part of SingHealth Fund (SHF) – which was incorporated on 2 September 2016 as a Company Limited by Guarantee to manage charity funds for the SingHealth cluster. All donations to the NNI Fund are ring-fenced under the SHF for NNI Fund purposes and will be used in accordance with the donors' intent for neuroscience causes. As an Institution of a Public Character (IPC), SHF is committed to maintaining the highest standards of governance and abiding by the Code of Governance for Charities and IPCs.*

*Eligibility: Outpatients of NNI will be assessed on their eligibility for funding by our medical social workers for bills incurred at NNI. Only Singapore Citizens and Permanent Residents will be considered. Patients who have exhausted all other funding schemes will then be supported by the NNI Fund.*



## NNI FUND (PATIENTS)



You Gave  
**Hope**

As a young boy, Asher's dream was to become a policeman – to fight crime and uphold justice. This dream was crushed when he was diagnosed with myotonic dystrophy at 15. Myotonic dystrophy is a genetic disorder that results in deteriorating muscle function over time.

Due to muscle weakness, Asher cannot hold a pen to write and he is prone to falls. Yet, he persevered and finally made it to University. With assistance from the NNI Fund, Asher can now move around with a motorised wheelchair and has a device with eye tracking technology to communicate. Now at 26, he is working towards his dream of becoming a prison psychologist in the hope of helping inmates rejoin society.

Asher's journey may be fraught with challenges, but the generosity of our donors has propelled him towards achieving his new dream.

# NNI HEALTH RESEARCH ENDOWMENT FUND (HREF)

The NNI Health Research Endowment Fund (HREF) supports neuroscience research to transform patient care. NNI scientists pursue neurological disease research, changing how we understand, prevent, diagnose and ultimately treat these diseases to advance medicine.

As an Institution of Public Character (IPC), NNI HREF is committed to maintaining the highest standards of governance and abiding by the Code of Governance for Charities and IPCs.

*Eligibility: A grant-making committee will evaluate the research projects for the eligibility of this funding.*

## FY 2018

**\$399,800**

Total gifts received in FY 2018

**191**

Donors

**52**

Staff donors

**>200**

Ongoing research projects

# NNI HEALTH RESEARCH ENDOWMENT FUND (HREF)

## Clinical Effects and Pathophysiology of Vitamin Deficiency in Neurocognitive Disorders: The Vitamins, Brain Imaging, and Cognition - Singapore Study (VICSS)

Research led by Associate Professor Nagaendran Kandiah  
Senior Consultant, Neurology, National Neuroscience Institute

Dementia refers to symptoms such as memory loss, impaired judgement, confusion and behavioural changes. It is not part of normal ageing, though the elderly are more likely to suffer from dementia. The rising rate of dementia in Asia makes it crucial to identify ways to prevent it.

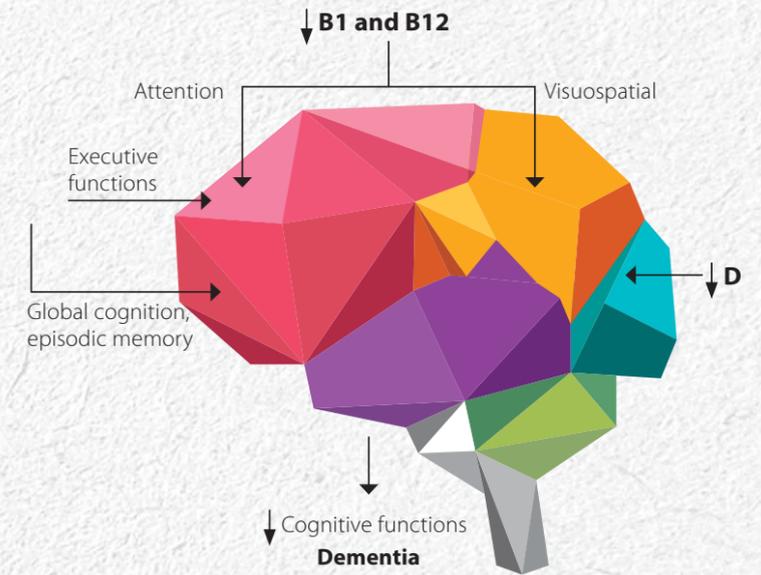
Supported by the NNI HREF, the VICSS aims to prevent dementia by finding links between vitamin deficiency, cognition and vascular disease in the brain for Asians. Images of brain activity and levels of vitamins B1, B12 and D in the blood are collected and analysed from 300 patients to determine the impact on brain function and behavior.

Preliminary findings suggest that there is a large number of participants with low vitamin levels in the sample. 52.6% of participants had low levels of vitamin D, 7.8% had low vitamin B1 and 5.2% had low vitamin B12.

Low levels of vitamins were linked to poor brain function.

Findings from this study indicated that vitamin deficiency could be a contributing cause of dementia. Therefore, adequate intake of vitamins may reduce the risk of dementia.

## VICSS Study - Effects of Deficiency in Vitamins B1, B12 and D



## Food tips! Consider including these foods in your diet to improve memory and brain functions.

- Vitamin D**
- Salmon
  - Herring & sardines
  - Cod liver oil
  - Canned tuna
  - Oysters
  - Shrimp
  - Egg yolks
  - Mushrooms
  - Cow's milk
  - Soy milk
  - Orange juice
  - Oatmeal

- Vitamin B1**
- Pistachios, pecans, cashews, macadamia nuts, sunflower seeds
  - Salmon, tuna, trout
  - Lean pork
  - Green peas
  - Asparagus
  - Brown rice
  - Tofu

- Vitamin B12**
- Clams
  - Liver
  - Mackerel, tuna, salmon, trout
  - Beef - skirt steak
  - Tofu
  - Low-fat milk/ yoghurt
  - Swiss cheese, mozzarella, feta, cottage cheese
  - Eggs

# EVENT HIGHLIGHTS

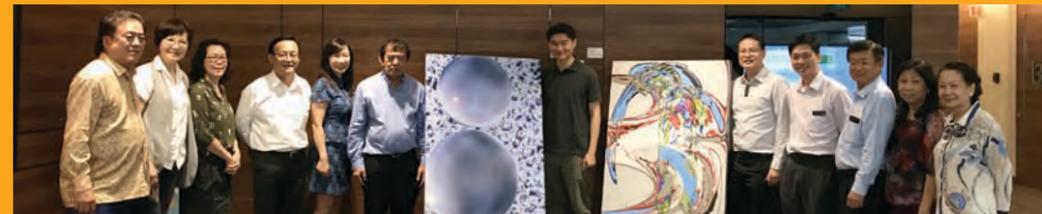
**NNI Care-to-Serve Day at Willing Hearts Soup Kitchen**

**2019**  
12 January



**BrainPath Donor Visit at Operating Theatre (Singapore General Hospital)**

**2018**  
30 July



# EVENT HIGHLIGHTS

**One Heart One Mind Neuro-Awareness Roadshow at Changi Airport Terminal 3**

**2018**  
1 - 9 September



**Festive Carolling at Neuro Wards (Tan Tock Seng Hospital)**

**2018**  
21 November

