NEWS RELEASE

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NTU Singapore launches research centre to study dementia in Asians

To better understand how dementia develops in Asians and to advance new strategies that will one day help to predict and delay the progression of the disease, **Nanyang Technological University, Singapore (NTU Singapore)** today launched the **Dementia Research Centre (Singapore)**.

The research centre at NTU Singapore's **Lee Kong Chian School of Medicine** (LKCMedicine) will work with hospitals here to recruit 1,500 patients with mild cognitive impairment – the earliest stage of dementia – to shed light on 'Asian dementia' and capture the changes in the brain before dementia sets in.

Aside from this five-year longitudinal study, the research centre will also work with NTU's computer scientists and mechanical engineers to develop artificial intelligence-powered diagnostic solutions, such as using magnetic resonance imaging (MRI) scans to help clinicians accurately predict or assess dementia progression.

Worldwide, around 55 million people have dementia. This number is expected to more than double by 2050 as the proportion of older people in the population increases[1].

Studies have found that the condition affects western and Asian populations differently. Asian patients with dementia are more likely to have lesions in the brain's white matter, which connects and supports the cells in the brain. Patients with moderate to severe white matter lesions are known to deteriorate much faster.

The research centre was launched today at an event by its Guest-of-Honour **Associate Professor Kenneth Mak, Director of Medical Services at Ministry of Health Singapore**.

NTU President Professor Subra Suresh said: "The Dementia Research Centre (Singapore) promises to offer us new avenues for developing a better understanding of neurodegenerative diseases. The research from this Centre will also point to potential pathways to ensure a healthier ageing population, and benefit NTU's efforts

[1] *Dementia fact sheet, World Health Organisation, 2 Sep 2021*

in shaping the future of medicine, continuing to improve medical education, and transforming healthcare.

“Besides working closely with local healthcare institutions, the Centre will also foster collaborations among scientists from many disciplines at NTU and our partner institutions to develop innovative solutions for dementia. This is very much aligned with the NTU 2025 strategic plan – to address Singapore’s national priorities and some of humanity’s grand challenges through strong interdisciplinary collaborations.”

Professor Joseph Sung, Dean of NTU LKCMedicine and NTU’s Senior Vice President (Health & Life Sciences) said: “NTU’s initiative to advance research into dementia is very timely as the global population continue to age. Given that most of existing dementia literature is built on the western population, it is worthwhile for the University, led by its medical school, to focus on how dementia affects the Asian population and develop strategies that are tailored for this group. These findings could contribute to the national healthcare policy on dementia and the health economics of dementia.

“By working closely with healthcare institutions in Singapore, as well as with experts from other disciplines within NTU, the Dementia Research Centre (Singapore) can serve as a platform where clinicians and scientists from different fields can come together to find solutions to address dementia.”

NTU LKCMedicine Vice-Dean of Research Professor Lim Kah Leong, himself a neuroscientist who in 2020 led a multi-institutional team to secure a $10 million grant to delve into regenerative medicine for Parkinson’s disease, is confident the opening of the Centre will amplify the medical school’s research in neurodegenerative diseases.

Focusing on early detection

Dementia is a syndrome, usually of a chronic or progressive nature, caused by a variety of brain illnesses that affect memory, thinking, behaviour and ability to perform everyday activities.

While the pathologies underlying dementia can begin decades before the symptoms emerge, the early stage of the condition, called mild cognitive impairment, is often overlooked because the onset is gradual. Common signs at this stage include forgetfulness, losing track of time, and becoming lost in familiar places.

The research centre is headed by its **Director, NTU LKCMedicine’s Associate Professor of Neuroscience Nagaendran Kandiah**. The team is advised by a panel of renowned neuroscientists from Canada, Australia, and the UK.

Assoc Prof Kandiah said: “The challenge with treating dementia is that if it is not picked up early, you miss the boat. Once you lose brain cells, there is nothing we can do to reverse that. What we do know now is that there are certain mechanisms that could take place in the brain as early as 30 years before someone develops dementia.”

Assoc Prof Kandiah, who is also a clinician scientist with the National Medical Research Council, added: “For patients with mild cognitive impairment, the risk of developing dementia increases by 10 to 15 per cent every year. This is why we are focusing on mild cognitive impairment – to allow for early detection and intervention.”

To this end, the research centre has embarked on the **Biomarker and Cognitive Impairment Study (BioCIS)**, a five-year longitudinal study to look at what is happening to the brain at the very earliest stages of dementia and even before brain changes set in.

Participants will go through a comprehensive cognitive assessment, which includes brain MRI scans, a neuropsychological assessment, and blood sample collection to measure markers in blood that are associated with cognition. These participants will be followed up over a five-year period to identify changes in cognition and health status.

A combination of these tests and the blood biomarkers, digital biomarkers and neuroimaging markers can help researchers detect early brain changes and determine whether the person is at risk of developing dementia.

The 1,500 Singapore participants the study aims to recruit will be aged between 30 and 95 years old. The research centre is partnering hospitals here, including the Institute of Mental Health and Khoo Teck Puat Hospital, to recruit patients with mild cognitive impairment.

Members of the public who are keen to find out if they are at risk of developing dementia can do a simple online self-assessment and use the risk calculator on the research centre’s website (www.drcs.sg). Those who meet the criteria for the study will be invited to participate in the study.

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About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Humanities, Arts, & Social Sciences, and Graduate colleges. It also has a medical school, the Lee Kong Chian School of Medicine, established jointly with Imperial College London.

NTU is also home to world-class autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Ranked amongst the world's top universities by QS, NTU has also been named the world's top young university since 2014. The University's main campus is frequently listed among the Top 15 most beautiful university campuses in the world and has 57 Green Mark-certified (equivalent to LEED-certified) buildings, of which 95% are certified Green Mark Platinum. Apart from its main campus, NTU also has a campus in Novena, Singapore's healthcare district.

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

For more information, visit www.ntu.edu.sg.