



JOINT NEWS RELEASE

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NTU Singapore spin-off launches AI-powered tool for early dementia screening with Osler Group

Nanyang Technological University, Singapore (NTU Singapore) spin-off company **Gray Matter Solutions** is partnering with **Osler Group**, a premium health and wellness organisation in Singapore, to offer a new screening tool that detects mild cognitive impairment (MCI) – the early stage before dementia – efficiently and affordably using Artificial Intelligence (AI).

People in the early stages of dementia may experience mild memory lapses or struggle with complex tasks and decision-making, but these symptoms are often subtle and do not significantly disrupt daily life, making early detection very challenging.

Traditionally, the gold standard for diagnosing MCI involves neuropsychological evaluations and imaging diagnostics such as Magnetic Resonance Imaging (MRI), which can cost over a thousand dollars and require several hours.

In contrast, this new AI-powered screening tool named **ReCOGNAlze**, which was developed at **NTU's Lee Kong Chian School of Medicine (LKCMedicine)**, uses neuroscientific games to identify early signs of cognitive impairment in just 15 minutes.

The AI-powered tool comprises four specially designed games covering clinically relevant cognitive and behavioural domains, developed from over 125,000 hours of research at LKCMedicine's **Dementia Research Centre (Singapore)**.

Earlier clinical trials demonstrated that ReCOGNAlze can achieve nearly 90 per cent accuracy in detecting MCI.

These games, which assess various brain functions, are powered by a proprietary algorithm. The screening tool is expected to have global relevance, particularly in Asia

where an estimated 250 million people with chronic vascular diseases such as hypertension, commonly known as high blood pressure, are at risk of developing MCI.

Currently around the world, 10 to 15 per cent of MCI patients progress to dementia each year, underscoring the need for early detection and intervention.

ReCOGnAlze was developed by **Associate Professor Nagaendran Kandiah, Director of the Dementia Research Centre (Singapore)**, and his team at LKCMedicine, after three years of research and development.

“Our AI-powered screening tool provides a scalable and cost-effective way to detect MCI, allowing timely medical interventions that can significantly improve quality of life. In developed countries like Singapore, where an ageing population faces growing dementia risks, such tools are crucial for early diagnosis and personalised care,” said Assoc Prof Kandiah.

The technology is now licensed to Gray Matter Solutions, which Assoc Prof Kandiah co-founded with his researcher and NTU alumnus **Mr Mohammed Adnan Azam**.

Supported by the **NTU Innovation and Entrepreneurship** initiative, the spin-off aims to transform dementia care with its AI-powered solutions.

In a new partnership with Osler Group, the tablet-based games will be on free trial for the next three months for patients at Osler Health clinics, as part of their holistic health assessment.

Gray Matter Solutions Co-founder Mohammed Adnan Azam said, “We are delighted to work with Osler Group who shares our goal of achieving personalised healthcare. We aim to further improve our AI-powered screening tool that will not only enable early detection and intervention of mild cognitive impairment, but also assist doctors in tracking their patients’ brain health and monitoring the effectiveness of medical interventions.”

Dr Clarice Chia Woodworth, Founding Director of Osler Group and Chief Strategy Officer of Osler Health said, “The integration of Gray Matter Solutions’ AI-powered screening tool enhances our commitment to personalised and holistic medical screenings. Aligned with our ethos of ethical and tailored healthcare, it empowers our patients with cutting-edge, evidence-based science -- placing them at the forefront of personalised medicine.”

Dr Foong Tsin Uin, Founding Director of Osler Group and Chief Medical Officer at Osler Health comments, “As a future-led healthcare company, we are excited to adopt new technologies into our medical practice. Future technological innovation is going to keep transforming healthcare and Osler Health is excited to be part of that change”.

AI tool backed by clinical studies

In Singapore, an estimated 86,000 people were living with dementia as of 2021, a number projected to rise to over 150,000 by 2030 ¹due to the rapidly ageing population. Globally, more than 55 million people are affected by dementia, with nearly 10 million new cases diagnosed annually, according to the World Health Organisation².

While Alzheimer’s disease is more prevalent in the West, dementia in Asia is often driven by vascular changes in the brain, such as silent strokes.

As a result, early detection in Asian populations requires measuring more than just memory.

Clinical research conducted by LKCMedicine has shown how dementia manifests differently in Asian populations compared to Western countries.

While playing the four games, the research participants were asked to do a variety of tasks, ranging from matching directions where a plane is flying to memorising and matching a grocery list and paying bills with the correct notes and coins.

Validated against biomarkers and neuroimaging in 230 participants from the *Biomarkers and Cognition Study, Singapore (BIOCIS)*³, the tool achieved 89 per cent accuracy in detecting MCI

This collaboration between NTU spin-off Gray Matter Solutions and Osler Group represents the first step towards an effective and affordable method for early detection of dementia.

Professor Louis Phee, NTU Vice President (Innovation and Entrepreneurship), added: “This partnership between NTU spin-off Gray Matter Solutions and Osler Group exemplifies NTU Singapore’s commitment to driving impactful innovation that delivers tangible benefits to society.”

“By supporting disruptive technologies like this AI-powered screening tool, we empower our scientists and start-ups to transform their ideas into market-ready products that address pressing challenges, such as improving healthcare outcomes in ageing populations.

“We will provide mentorship and guidance throughout the development process, from prototyping to devising viable market strategies, while connecting them with investors and an ecosystem of like-minded innovators and thinkers.”

Moving forward, Gray Matter Solutions will also seek to expand its range of products and services, such as catering to mass public screenings at community events and to partner health organisations in Singapore and overseas.

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Notes to Editor:

*Paper titled: [“Biomarkers and Cognition Study, Singapore \(BIOCIS\): Protocol, Study Design, and Preliminary Findings”](#), published in *The Journal of Prevention of Alzheimer’s Disease*, Springer Nature, 21 May 2024.*

Poster titled [“Development and Validation of the ReCOGnAlze App for Detection of Mild Cognitive Impairment \(MCI\) and Vascular MCI Using Digital Gamified Assessments”](#), presented at the Asian Society Against Dementia 2024, 15 Aug 2024.

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About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 35,000 undergraduate and postgraduate students in the Business, Computing & Data Science, Engineering, Humanities, Arts, & Social Sciences, Medicine, Science, and Graduate colleges.

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

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.

Ranked amongst the world's top universities, the University's main campus is also frequently listed among the world's most beautiful. Known for its sustainability, NTU has achieved 100% Green Mark Platinum certification for all its eligible building projects. Apart from its main campus, NTU also has a medical campus in Novena, Singapore's healthcare district.

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

About Osler Group

Osler Group is a boutique healthcare and wellness business founded in Singapore in 2020 by two doctors, Dr Clarice Chia Woodworth and Dr Foong Tsin Uin. They aim to bridge the gap between modern medicine and holistic wellness, offering a comprehensive approach that prioritises prevention, healthy living and long-term well-being.

The Osler journey began in 2020 with the launch of *Osler Health*, their first boutique primary healthcare clinic at Raffles Hotel Arcade, where they focused on providing evidence-based family medicine with a personalised touch. Their vision was simple: to create a healthcare experience that truly puts the patient at the centre, offering not just treatment but a pathway to long-term health and wellness. The success of the first clinic and the growing demand for its services led to the opening of their second clinic at the Star Vista in 2021.

As *Osler Health* continued to grow, the founders recognised the need for a more holistic approach to health - one that not only treats illnesses but also actively promotes well-being and longevity. This insight inspired them to expand their offerings beyond the clinic walls. In response to the rapidly changing healthcare landscape, and with a commitment to delivering premium health and wellness services, they launched *Osler Wellness* which offers holistic health supplements expanding soon to a medical curated range, and health retreats grounded in medical science.

Committed to bringing world-class medical and wellness care to Singapore, Osler Group has built a reputation for exceptional personalised health care.

For more information on healthcare clinics, visit www.osler-health.com

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