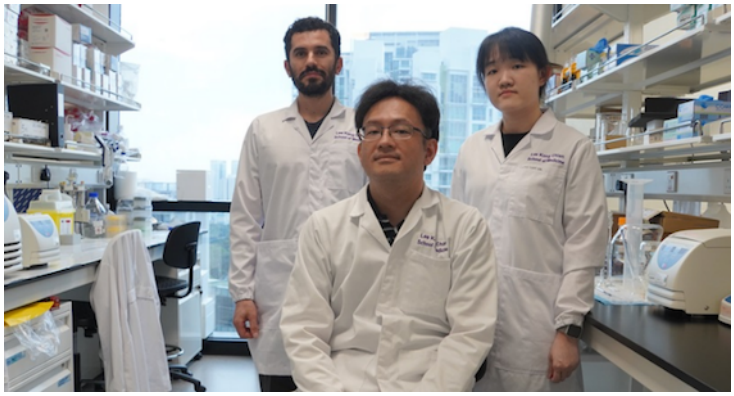
BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Singapore paves way for therapies to maintain mental well-being of ageing individual

January 22, 2024 | News

Ageing alters brain cells' ability to maintain memory: Singapore study



A team of scientists from Nanyang Technological University, Singapore (NTU Singapore) has demonstrated that communication among memory-coding neurons i.e. nerve cells in the brain responsible for maintaining working memory is disrupted with ageing and that this can begin in middle age.

Findings from the study provide new insights into the ageing process of the human mind, and pave the way for therapies to maintain the mental well-being of an ageing individual.

Scientists have long studied the impact of ageing on the brain’s executive functions, such as poorer self-control and working memory. While it is well established that memory can worsen as people age, it has not been clear what changes occur at the individual brain neuron level to cause this, until now.

Previous studies used nerve cells from dead subjects, but the Lee Kong Chian School of Medicine (LKCMedicine) team measured the real-time activity of individual nerve cells in live mice. To make these measurements, the team adopted a recently unveiled optical imaging technique that allowed them to understand the function of each neuron by measuring its neural activity in the context of working memory.

The findings suggest that strengthening the weakened connections between the nerve cells, such as through memory training activities, could help delay the deterioration of people’s working memories as they age.

The next steps for this project are to investigate more brain-wide neural changes that occur during middle age to understand how proactive interventions may enhance communication among different brain areas.