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Singapore scientists discover new way to treat dementia

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Scientists from Singapore's Nanyang Technological University (NTU) have found a new way to treat dementia by sending electrical impulses to specific areas of the brain to enhance the growth of new brain cells, the university said in a press release on Monday.

The new treatment, known as deep brain stimulation, is a therapeutic procedure that is already used in some parts of the world to treat various neurological conditions such as tremors or dystonia.

NTU scientists have discovered that deep brain stimulation could also be used to enhance the growth of brain cells which mitigates the harmful effects of dementia-related conditions and improves short and long-term memory.

Their research has shown that new brain cells, or neurons, can be formed by stimulating the front part of the brain which is involved in memory retention using minute amounts of electricity.

"The increase in brain cells reduces anxiety and depression, and promotes improved learning, and boosts overall memory formation and retention," it said.

The research was conducted using middle-aged rats, where electrodes which sends out minute micro-electrical impulses were implanted in the brains. The rats underwent a few memory tests before and after stimulation, and displayed positive results in memory retention, even after 24 hours.

"Extensive studies have shown that rats' brains and memory systems are very similar to humans," said Assistant Professor Ajai Vyas from NTU's School of Biological Sciences. "The findings from the research clearly show the potential of enhancing the growth of brain cells using deep brain stimulation."

NTU said the research findings open new opportunities for developing novel treatment solutions for patients suffering from memory loss due to dementia-related conditions such as Alzheimer's and even Parkinson's disease.

"Around 60 percent of patients do not respond to regular anti-depressant treatments and our research opens new doors for more effective treatment options," Ajai said.

Lee Wei Lim, an associate professor at Sunway University, Malaysia, who worked on the research project while he was a research fellow at NTU, said that deep brain stimulation brings multiple benefits.

"Memory loss in older people is not only a serious and widespread problem, but signifies a key symptom of dementia. At least one in 10 people aged 60 and above in Singapore suffer from dementia and this breakthrough could pave the way towards improved treatments for patients."

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