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Singapore finds new way to clear brain waste linked to Alzheimer's disease

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Found a ‘metabolic switch’ in the brain’s immune cells that could be targeted as a treatment for Alzheimer’s disease

A newly discovered “energy switch” in the immune cells of the brain may lead to the development of drugs for Alzheimer’s disease, the most common form of dementia.

Nanyang Technological University, Singapore (NTU Singapore) scientists discovered that after blocking and turning off this “switch”, brain immune cells called microglia were able to remove toxic proteins that can build up and lead to Alzheimer’s disease.

Microglia tend to be damaged in people with the disease, which makes them less capable of clearing cellular toxic waste. To restore the clean-up function, the scientists “switched off” their inefficient metabolism by preventing a key enzyme from attaching to energy-generating parts of the immune cells.

The findings from lab experiments set the stage for developing drugs that can specifically target metabolism in brain immune cells in order to treat Alzheimer’s disease, which contributes to 60 to 70 per cent of all dementia cases globally.

The World Health Organisation estimates that 78 million people worldwide will have dementia by 2030. Such drugs are of high interest in healthcare. While there are ways to treat the symptoms of Alzheimer’s disease, there are currently no definitive cures for the condition, which tends to affect the elderly and impairs people’s ability to think.