

Fatty acids clue to Alzheimer's

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Controlling the level of a fatty acid in the brain could help treat Alzheimer's disease, an American study has suggested.

Tests on mice showed that reducing excess levels of the acid lessened animals' memory problems and behavioural changes.

Writing in *Nature Neuroscience*, the team said fatty acid levels could be controlled through diet or drugs.

A UK Alzheimer's expert called the work "robust and exciting".

There are currently 700,000 people living with dementia in the UK, but that number is forecast to double within a generation.

Over-stimulation

Scientists from Gladstone Institute of Neurological Disease and the University of California looked at fatty acids in the brains of normal mice and compared them with those in mice genetically engineered to have an Alzheimer's-like condition.

They identified raised levels of a fatty acid called arachidonic acid [AA, is an omega-6 fatty acid] in the brains of the Alzheimer's mice. Its release is controlled by the PLA2 enzyme.

The scientists again used genetic engineering to lower PLA2 levels in the animals, and found that even a partial reduction halted memory deterioration and other impairments.

Dr Rene Sanchez-Mejia, who worked on the study, said: "The most striking change we discovered in the Alzheimer's mice was an increase in arachidonic acid and related metabolites [products] in the hippocampus, a memory centre that is affected early and severely by Alzheimer's disease."

He suggested too much arachidonic acid might over-stimulate brain cells, and that lowering levels allowed them to function normally.

Dr Lennart Mucke, who led the research, added: "In general, fatty acid levels can be regulated by diet or drugs."

"Our results have important therapeutic implications because they suggest that inhibition of PLA2 activity might help prevent neurological impairments in Alzheimer's disease."

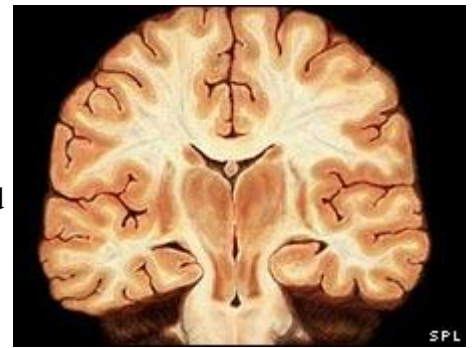
"But a lot more work needs to be done before this novel therapeutic strategy can be tested on humans."

'Cautious optimism'

Rebecca Wood, chief executive of the UK's Alzheimer's Research Trust, said: "This research on mice suggests a connection between fatty acids and the abnormal brain activity that exists in Alzheimer's disease. This is cause for cautious optimism, as fatty acid levels can be controlled to some extent by diet and drugs."

"However, it is not yet clear if these findings are applicable to humans, and a lot more research is needed before any human trials can be conducted."

Professor Clive Ballard, director of Research at the Alzheimer's Society, said the work was "robust and exciting". He added: "This is a novel and potentially exciting area of research, but it is still at a very early stage. "Much more research is needed to see if fatty acids could lead to a treatment for those living with the devastating effects of Alzheimer's disease."



Scientists want to know more about the brain changes that lead to Alzheimer's

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Rebecca Wood, Alzheimer's Research Trust