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## Parkinson's job tests 'promising'

Scientists trying to find a way to beat Parkinson's disease are reporting promising tests of a vaccine in mice.



Abnormal proteins clump together in the brain in some dementias

The vaccine targets the abnormal proteins that clump together in the nerve cells of people with Parkinson's and Alzheimer's disease.

Mice given the vaccine produced antibodies to fight these proteins, the University of California team found.

They told Neuron it might be feasible to inject these antibodies into humans to treat the diseases.

### Abnormal clumps

This would give a person immediate immunity rather than the technique used in the experiment, which required the mice to produce their own antibodies to fight the disease.

The scientists believe this would be safer and avoid potential side-effects.

Lead researcher Professor Eliezer Masliah explained: "We would not want to actively immunise humans in this way by triggering antibody development because one could create harmful inflammation.

"However, it might be feasible to inject antibodies directly, as if the patient were creating his or her own."

People with Parkinson's disease, Alzheimer's disease and another form of dementia called Lewy body disease, have abnormal accumulations of the protein alpha-synuclein in their brain, which are thought to contribute to the disease.

**“ If the claims made can be reproduced by other researchers without problem then this would indeed be fascinating news ”**  
Professor Manuel Graeber, Professor of Neuropathology at Imperial College London

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Alpha-synuclein is normally present in the brain but when it builds up it can block normal signalling between brain cells.

Professor Masliah's team looked at whether they could reverse the build-up of alpha synuclein in mice bred to have Parkinson's disease.

He said: "We found that the antibodies produced by the vaccinated mice recognised and reduced only the abnormal form of alpha-synuclein. "

This is because normal alpha-synuclein lives within cells where antibodies can't reach, whereas abnormal alpha-synuclein clumps sit on the surface of the cell, he explained.

Professor Manuel Graeber, professor of neuropathology at Imperial College London, said: "If the claims made can be reproduced by other researchers without problem then this would indeed be fascinating news."

But he warned that it was not yet known whether removing Lewy bodies which contain the abnormal protein would be a good or bad thing for human patients.

"So the suggested treatment could backfire and this possibility must be looked at very carefully," he said.

Dr Kieran Breen, of the Parkinson's Disease Society, said: "This is the first time that such an approach, using a vaccination technique, has been taken for the condition.

"However, the results are unlikely to have a significant impact until we gain further information on the early changes that occur in the brain as Parkinson's progresses."

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