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Test for early Parkinson's

Brain scientists believe they may have found a way to detect the earliest signs that a patient is developing Parkinson's disease.

They hope that finding will help identify targets for future drugs to tackle the cause of the disease.

The research, carried out at Imperial College London, centres around a type of immune cell called a microglial cell.

These are part of the body's method of fighting off infections within the brain and central nervous system.

When activated, they cause inflammation, which scientists already believe is linked to the cell death which causes Parkinson's.

Scientists are trying to find out whether the cells are the underlying cause of Parkinson's, or simply accelerate the disease.

Radioactive injection

Researchers think that if they could measure the level of activation of microglial cells, they could both confirm whether they are the "villain" - and perhaps in future use it as a test to confirm the presence of the disease in patients with the most subtle symptoms.

The Imperial team engineered a mildly radioactive chemical called a "tracer", which has the ability to bind to active and inflamed microglial cells.

They injected this into the brain of 60 patients already showing the outward signs of early Parkinsonism.



The injection may highlight potential problems

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“ **By detecting it in the early stages of the disease we hope to be able to give patients suitable treatments that will delay its development** ”

Professor David Brooks, Imperial College

Their progress of the tracer was then monitored using a brain scanner.

Their results confirmed that it was possible to track microglial cell activity in this way, and the trial is now being extended so that the same patients can be scanned again to see if the changing scans correlate with changing physical symptoms.

Detecting the disease before symptoms appear would be impractical, however - it would involve carrying out highly expensive scans on hundreds of thousands of people.

Step forward

Parkinson's Disease is caused by the death of cells in the brain which produce the chemical dopamine.

This chemical helps the brain produce smooth muscular movements, and its absence can lead to gradually worsening tremor in the hands and arms, stiffness and slow movement.

Drug treatments can alleviate these symptoms, but there is currently no cure.

Professor David Brooks, who led the research, said: "We are very pleased with our results.

"Inflammation in the brain may be causing this already debilitating condition to worsen at a quicker rate than it would otherwise.

"By detecting it in the early stages of the disease we hope to be able to give patients suitable treatments that will delay its development.

"We hope that it would even allow some of the damaged cells to produce the much needed dopamine again - which would really help the patient."

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