

Research targets early symptoms of Parkinson's

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University of Adelaide neuroscience researchers are investigating markers for potential earlier diagnosis and treatment of Parkinson's disease.

The researchers are studying the molecular basis of non-[motor symptoms](#) of Parkinson's disease, rather than the better-known clinical symptoms of impaired movement. These "non-motor" symptoms include [cognitive impairment](#), depression and anxiety – and they can appear several years before the emergence of motor symptoms.

"Parkinson's disease is an irreversible, progressive neurological disorder that affects one in every 350 Australians and is expected to increase substantially as the population ages," says Dr Lyndsey Collins-Praino, lecturer in the School of Medical Sciences, speaking during national Parkinson's Month.

"Studies suggest that non-motor symptoms may pre-date motor symptoms by several years, which means that they could serve as an early clue to Parkinson's disease, allowing us to detect and treat the disease earlier and more effectively.

"Recently, with the tragic announcement that Robin Williams was suffering from Parkinson's disease, the non-motor symptoms have gained increasing public awareness.

"But despite growing recognition of non-motor symptoms in Parkinson's,

and evidence that they may be even more important indicators of the future quality of life for patients, they are still poorly understood, and treatment options are limited."

Research to date at the University of Adelaide and elsewhere is building evidence that inflammation within the brain plays a key role in the mechanisms underlying the emergence of non-motor [symptoms](#), particularly cognitive impairment.

Dr Collins-Praino's team aims to study one inflammatory marker known as ICAM1 and its relationship to cognitive function, symptom severity and the extent of neuron (nerve cell) loss in both human Parkinson's patients and laboratory models.

Recently, Dr Collins-Praino and colleagues at Columbia University in the US demonstrated that elevated ICAM1 levels were associated with reduced brain pathology in Alzheimer's disease, another neurodegenerative disease associated with cognitive impairment.

"It's possible that, rather than being harmful to neurons, ICAM1 might actually protect against neuronal death," says Dr Collins-Praino.

"We hope that this work may lead to the identification of new drug development targets, which could ultimately lead to improved treatment of Parkinson's disease."

Provided by University of Adelaide

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