

Study exposes cognitive effects of Parkinson's disease

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Researchers at Queen's University have found that people with Parkinson's disease can perform automated tasks better than people without the disease, but have significant difficulty switching from easy to hard tasks. The findings are a step towards understanding the aspects of the illness that affect the brain's ability to function on a cognitive level.

"We often think of [Parkinson's disease](#) as being a disorder of motor function," says Douglas Munoz, director of the Queen's Centre for Neuroscience Studies and a Canada Research Chair in Neuroscience. "But the issue is that the same circuit can affect more cognitive functions like planning and decision- making."

The researchers conducted an experiment using a sample of Parkinson's patients and a control group. When asked to look at a light when it came on, people with Parkinson's responded with greater accuracy than people without the disease. But when asked to change that behavior - to look away from the light, for instance - Parkinson's patients struggled. Even when asked to simply prepare to change their behaviour, people with the disease found it incredibly difficult to adjust their plans.

PhD student Ian Cameron, lead author of the study, says the findings are significant because they highlight how biased Parkinson's patients are towards performing an automated response. It also suggests that medications currently prescribed to treat the symptoms of the disease that affect motor functioning could further upset a patient's cognitive

balance.

Mr. Cameron is now conducting [functional brain imaging](#) in Parkinson's patients to determine which parts of the brain are affected by medications currently used to treat the symptoms of the disease.

The findings were recently published in *Neuropsychologia*, an international interdisciplinary journal of cognitive and behavioural neuroscience.

Provided by Queen's University

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