Parkinson Society British Columbia

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Research Profile:
Dr. Catharine Winstanley
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Research Project: New hope to halt compulsive gambling

Project Grant: Parkinson Society British Columbia Pilot Project Grant of $45,000 over 1 year through the Parkinson Canada Research Program

Project Description:
For people with Parkinson's disease, it's usually a tremendous relief to find a drug to treat the tremors, stiffness or the freezing that causes some of them to halt in place.

But for a significant minority of people – up to 20 percent – the class of drugs that is often most effective in controlling these motor symptoms comes with a devastating side effect. These synthetic dopamine drugs, called dopamine agonists, can introduce risky behaviour, including compulsive gambling that may cause people to drain their life-savings or ruin their relationships.

At the University of British Columbia, behavioural neuroscientist Catharine Winstanley uses animal models to investigate the link between a protein called GSK3beta, and the impulse control problems some people develop when taking these drugs.

The risky behaviours often make both doctors and people with Parkinson's reluctant to start the synthetic dopamine drugs.

Although GSK3beta is associated with several psychiatric disorders, so far researchers don't know its precise role in causing them. What they do know is that certain other drugs, including lithium and new lithium derivatives, seem to block GSK3beta, preventing the development of impulse control problems.

Winstanley and her colleagues are testing these drugs, which have already been demonstrated to be safe. They're hoping that giving one of these drugs to people already taking dopamine agonists will prevent them from developing these impulsive behaviours.

If Winstanley is successful, "it would make the experience of being treated with these compounds (dopamine agonists) a lot safer and less worrying for the patients," she says.

People with Parkinson's could take both the synthetic dopamine agonists and the additional

medication, relieving their motor symptoms without jeopardizing their supportive relationships and livelihood.

Currently, the impulse control issues are “the worst outcome for someone who is trying to develop a new medical treatment,” says Winstanley, an associate professor at UBC. “The drug they’ve developed turns out to cause something worse than the disease they were trying to treat.”

The heart-rending effects of compulsive gambling and other impulsive behaviours compelled Winstanley to tackle this research project, she says. She empathizes with people with Parkinson’s, whose hopes are raised by the prospect of taking the dopamine agonist medication, only to have those hopes dashed when the risky behaviours emerge.

“You don’t have to look very far before you find a friend or a relative who is dealing with the fallout from Parkinson’s disease,” says Winstanley. “I just want to do the little bit I can to make that better. This is the area where I think my own research can make a difference.”