

Research Profile:

Frédéric Calon, Professor

Research Project:

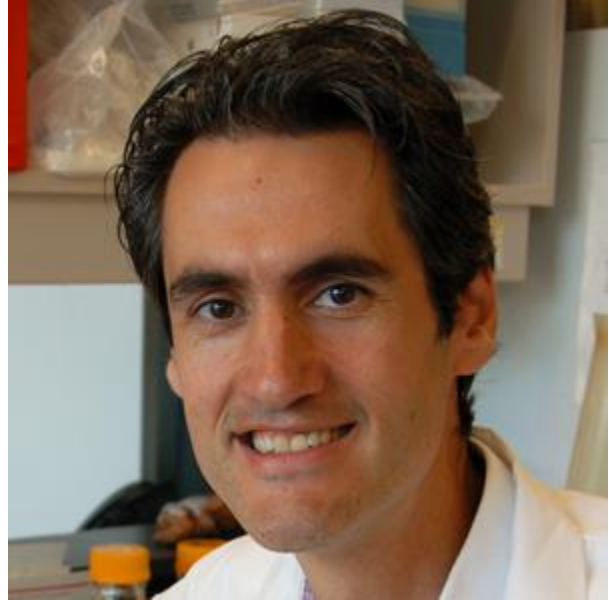
Clinicopathological investigations of the substantia nigra in Parkinson's disease

Project Grant:

\$45,000, partially funded by Parkinson Society British Columbia (\$20,000) and the Quebec Research Fund for Parkinson's through the Parkinson Canada Research Program

Project Description:

Researchers who study Parkinson's disease have long known that dopamine-producing cells in a region of the brain called the substantia nigra are central to the reason people develop this degenerative illness.



When dopamine-producing cells die, their death affects the body's ability to control movement. Some people also have other symptoms, including a decline in their judgment and reasoning ability, freezing in place, and other walking difficulties that lead some researchers to suspect the diagnosis of Parkinson's is actually being applied to a group of different, though related, conditions.

At Laval University, Professor Frédéric Calon thinks it's time to take another look at the substantia nigra.

Much of the research used to develop treatments for Parkinson's, such as levodopa medication, was based on studies of tissue samples collected 50 years ago.

Using current knowledge about the role of genes and proteins in contributing to Parkinson's disease, Calon will correlate samples of brain tissue from people who had Parkinson's with the case studies that described the symptoms of their illnesses.

"What's surprising is there have not been that many studies focused on the substantia nigra of people who died with Parkinson's disease," says Calon. "We think that looking directly in the brain...can help develop new treatments."

Calon hopes to find structural changes in the substantia nigra that will point to differences in the subtypes of Parkinson's.

"Based on what we learn, perhaps we can develop new treatments or new ways to prevent the progression of the disease," he says.

Calon, a biochemist and a pharmacist, thinks he may find differences in the substantia nigra of people who had gait problems, such as freezing episodes, compared to the substantia nigra of people who experienced more stiffness, and tremor, for example.

Calon's work is possible because of a collection of brain samples, known as a brain safety deposit that Drs. Ali and Alex Rajput have collected alongside histories of their patients in Saskatchewan. "It's really a pan-Canadian collaboration," Calon says.

Calon, who works closely with the Parkinson's community in Quebec, is motivated by the experiences of the people with Parkinson's he meets.

"I have confidence that it's possible to improve the treatment of Parkinson's disease," he says.