

**Research Profile:**

Dr. Michele Matarazzo

**Research Project:**

Topographical analysis of the trajectory of dopaminergic degeneration in symptomatic and pre-manifest Parkinson's

**Project Grant:**

\$100,000 over 2 years funded by Parkinson Society British Columbia through the Parkinson Canada Research Program.

**Project Description:**

Dr. Michele Matarazzo, a neurologist with the Pacific Parkinson's Research Centre at the University of British Columbia, is tackling an old medical challenge with some of the world's most advanced technology.

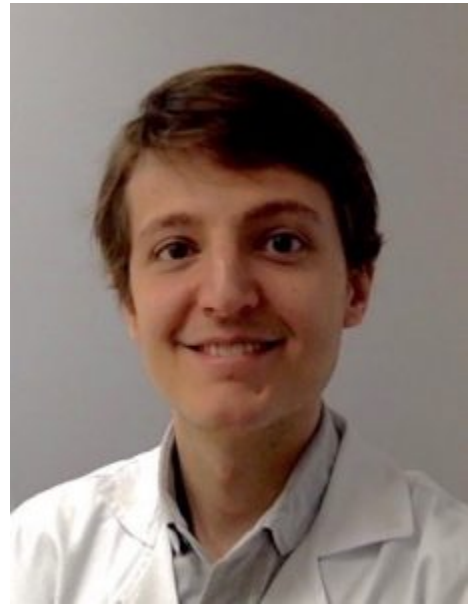
The challenge is to understand a fundamental change in the brains of people with Parkinson's disease as their condition advances. More specifically, the goal is to learn the pattern of dopamine loss in the brain, since dopamine is the molecule controlling the body's ability to move.

Matarazzo is using Positron Emission Tomography (PET), a sophisticated imaging system that takes advantage of signals produced by very small amounts of short-lived radioactive agents called isotopes, which are injected into a patient's body. When tagged to particular tracers that seek out dopamine in the brain, these isotopes reveal the metabolism of dopamine at the molecular level, something that's impossible to see any other way.

This crucial information helps measure the impact Parkinson's disease is having on the brain. Matarazzo wants to track Parkinson's progress even before people experience symptoms, until the disease's more advanced stages over several years.

The fact the Pacific Parkinson's Research Centre already has a database of patients' PET scans taken at diagnosis, then four and eight years later, will make the study easier.

"If you're going to declare war, you have to know your enemy as well as you can," says Matarazzo.



He got to know this particular enemy as a medical resident with a prominent Parkinson's disease research group in Madrid. He encountered a young patient who had spent three years being treated for mental illness with anti-psychotic drugs that had left him completely paralyzed. When Matarazzo examined him more closely, he realized the man might instead have Parkinson's.

"When we saw him at age 36 he couldn't even move," Matarazzo says. "We got rid of the anti-psychotics and gave him levodopa. It was an amazing change: within a few of weeks he went from being wheelchair-bound to running in the hallways. That was an important experience."

Matarazzo has had similarly rewarding experiences throughout his career, which combines laboratory research and clinical work with patients. Research is necessarily slow and demanding, he notes, which is why it's vital to work with patients.

"It keeps you motivated, seeing patients every week," he says. "They give you an idea of what is relevant and what is not relevant. They are the ones who give us the questions we are trying to answer and that makes them the goal of our work."