

# Pathophysiology of Parkinson's disease

<https://neurodegenerationresearch.eu/survey/pathophysiology-of-parkinsons-disease/>

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### Country

Canada

## Title of project or programme

Pathophysiology of Parkinson's disease

## Source of funding information

CIHR

## Total sum awarded (Euro)

€ 595,124

## Start date of award

01/10/2014

## Total duration of award in years

5.0

## The project/programme is most relevant to:

Parkinson's disease & PD-related disorders

## Keywords

### Research Abstract

Parkinson's disease (PD) is one of the commonest neurodegenerative diseases and is due to dysfunction of parts the brain known as the basal ganglia. Advances in the understanding of the connections of the basal ganglia have led to new treatment of PD such as deep brain stimulation (DBS). However, the functions of the basal ganglia, how PD affects the brain and how DBS leads to improvement in PD remain poorly understood. In the first experiment, we will determine how the part of the brain that directly mediates movement, known as the motor cortex, is affected in PD. In the second experiment, we will examine how movement affects the

activities of the basal ganglia by direct recording of electrical activities from DBS electrodes implanted in the basal ganglia in PD patients. We will determine if the basal ganglia works by oscillating at different speeds and if DBS works by changing this oscillation. In the third experiment, we will determine how stimulation of the basal ganglia changes the surface of the brain known as the cortex by detailed analysis of electrical brain rhythms. How DBS affect the ability of the brain to adapt to changes will be examined in the fourth experiment. These experiments will result in much greater understanding of the functions of the basal ganglia, how the basal ganglia are abnormal in PD and how DBS works. This will advance our knowledge of PD, and may lead to improved treatment for PD patients.

### **Lay Summary**

**Further information available at:**

#### **Types:**

Investments > €500k

#### **Member States:**

Canada

#### **Diseases:**

Parkinson's disease & PD-related disorders

#### **Years:**

2016

#### **Database Categories:**

N/A

#### **Database Tags:**

N/A