Exercise as a Tool to Protect Brain Health in Parkinson's Disease

MOVE-BRAIN-PD: A new European project involving the Department of Experimental Neurodegeneration, University Medical Center Göttingen, explores how physical activity supports cognitive function in Parkinson's disease. The project is centrally led by the Fondazione Gemelli IRCCS and Università Cattolica, in Rome.

Göttingen, October 22, 2025 – Around one in four people with Parkinson's disease experience mild cognitive impairment even in the early stages of the condition. In many of these individuals, cognitive symptoms can gradually worsen over time, leading to dementia. While no therapies have yet proven effective in preventing this progression, growing evidence suggests that lifestyle factors — such as regular physical activity, social engagement, and mentally stimulating activities — can significantly influence how the brain ages. In this context, exercise can truly act as a form of medicine for the mind.

The **Department of Experimental Neurodegeneration, led by Prof. Tiago Outeiro,** has announced the launch of **MOVE-BRAIN-PD (Movement Improves Brain Health and Cognition in Parkinson's Disease)**, an international research initiative aimed at understanding how aerobic exercise can enhance cognitive performance and slow cognitive decline in people with Parkinson's disease.

The project is funded through the **ERA4Health Joint Transnational Call for Proposals 2024**, "Modulation of Brain Ageing through Nutrition and Healthy Lifestyle" (NutriBrain), and is coordinated by **Professor Paolo Calabresi**, Director of the Neurology Unit at Fondazione Gemelli IRCCS and Professor of Neurology at the **Università Cattolica del Sacro Cuore**.

An international research network

MOVE-BRAIN-PD brings together a multidisciplinary team of researchers from leading European institutions.

- **Professors Paolo Calabresi** and **Anna Rita Bentivoglio** (Fondazione Gemelli IRCCS – Università Cattolica del Sacro Cuore) coordinate the project and lead the clinical study.
- **Professor Cristian Falup-Pecurariu** (Transilvania University of Brașov, Romania) oversees clinical recruitment.
- **Professor Tiago Outeiro** (University Medical Center Göttingen, Germany) is responsible for molecular analyses, focusing on changes in **alpha-synuclein**, the protein whose toxic accumulation plays a key role in Parkinson's disease.

Project launch

The **kick-off meeting** took place on September 19 at the Fondazione Gemelli IRCCS in Rome, gathering all partners of the consortium, from Italy, Romania, and Germany. The meeting marked the operational start of the research activities and confirmed the strong collaboration between the participating centers.

Study objectives

MOVE-BRAIN-PD aims to evaluate the effects of a **home-based aerobic training program**, remotely monitored, on cognitive functions and motor symptoms in individuals with Parkinson's disease and mild cognitive impairment (PD-MCI). The researchers will also examine biomarkers of inflammation and neurodegeneration, as well as molecular changes in alpha-synuclein, to better understand the biological mechanisms underlying the benefits of physical activity.

In addition, the project will investigate the factors that facilitate or hinder adherence to exercise programs, with the goal of developing **personalized educational strategies** that encourage healthy lifestyle habits within the Parkinson's community.

Participants will train at least twice per week for one year. They will undergo clinical assessments and blood tests to measure biomarkers linked to inflammation and neurodegeneration, providing valuable data on how exercise influences disease progression.

"Demonstrating that people with Parkinson's disease can play an active role in managing their condition by adopting lifestyle changes that help slow or ease symptoms is of great importance", explained Professor Calabresi. "The results of MOVE-BRAIN-PD will involve precise molecular analyses of the effects of exercise, and will inform national recommendations and foster dialogue with institutions, scientific societies, and patient organizations, to promote public awareness strategies, and impact human health", detailed Professor Outeiro.

In summary, **MOVE-BRAIN-PD** represents a unique opportunity toward defining scientifically validated, feasible, and targeted physical activity programs that may help alter the course of Parkinson's disease in real-life settings.

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