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## VA research on

# PARKINSON'S DISEASE AND MOVEMENT DISORDERS

*VA researchers are studying the biochemical pathways involved in Parkinson's disease, and are testing a variety of treatment approaches, including medication, surgery, and electrical stimulation. Biomedical and clinical studies are ongoing at many VA sites as well.*

## ABOUT PARKINSON'S DISEASE

• Parkinson's disease (PD) is a disorder of the central nervous system characterized by impairment or death of dopamine-producing cells in the brain. The disease causes a variety of symptoms related to muscle movement, including rigidity, delayed movement, poor balance, and tremors. Non-motor symptoms include sleep disturbances, urinary dysfunction, constipation, swallowing problems, mood disorders, and cognitive deficits.

• The exact cause of PD is unknown. Most researchers agree that the disease is caused by both genetic and environmental factors, and by interactions between the two. There is no cure for PD—however, many effective medications and treatment options are available.

• The [Parkinson's Foundation](#) estimates that PD affects nearly 1 million Americans. People typically develop Parkinson's when they are about 60 years old, although 5% to 10% develop early-onset PD. VA [estimates](#) that 110,000 Veterans have PD.

• In 2010, VA [recognized](#) PD as a presumptive service-connected disorder associated with Agent Orange or other herbicide exposures during military service. Veterans with PD who were exposed to herbicides during their service

may be eligible for disability compensation and health care. In 2021, VA added atypical Parkinsonism to the list of Agent Orange-associated conditions.

## VA RESEARCH ON PARKINSON'S DISEASE

• In 2001, VA created six specialized [centers](#) to provide Veterans state-of-the-art clinical care, known as the Parkinson's Disease Research, Education, and Clinical Centers (PADRECCs).

• The centers also provide comprehensive diagnosis and treatment services for other movement disorders, including essential tremor, restless leg syndrome, dystonia, Lewy body dementia, progressive supranuclear palsy, multiple system atrophy, and corticobasal degeneration.

• In 2020, VA and the Parkinson's Foundation formed a partnership to [improve](#) the health and well-being of Veterans living with PD. The [collaboration](#) is designed to ensure Veterans living with PD have access to the information and resources they need to better manage their health.

• The partnership has three primary goals: to increase access to PD information, resources, and providers; educate Veterans and providers on PD management and best practices; and help Veterans navigate

Parkinson's-related health and social services.

## SELECTED MILESTONES AND MAJOR EVENTS

**2001** – [Created](#) six VA PADRECCs

**2003** – [Initiated](#) a landmark clinical trial to assess the effectiveness of deep brain stimulation (DBS) for PD

**2009** – [Determined](#) that DBS may hold significant benefits for people with PD who no longer respond to medication

**2014** – [Found](#) that walking is a safe and accessible way to improve PD symptoms

**2015** – [Developed](#) a procedure to convert fibroblasts into dopamine neurons

**2017** – [Found](#) that DBS in PD patients gives a slight survival advantage

**2019** – [Found](#) that fatigue in PD patients may be a result of lower diastolic blood pressure

**2020** – [Teamed](#) up with the Parkinson's Foundation to support Veterans living with PD

## RECENT STUDIES: SELECTED HIGHLIGHTS

• **Loneliness is linked to worsening PD symptoms**, according to a VA PADRECC

*(Continued on back)*



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study. In a study of more than 1,500 PD patients, those who were socially isolated were 55% more likely to experience more severe symptoms than those who were not lonely. Participants who reported being most lonely also reported exercising less, were less likely to follow a healthy diet, and experienced a lower quality of life. (*NPJ Parkinson's Disease*, Oct. 8, 2020)

**• People with PD have an overabundance of opportunistic pathogens**, found a study by VA Puget Sound researchers and colleagues. Opportunistic pathogens are microorganisms that do not usually cause harm to healthy hosts, but may be harmful to patients whose immune systems are weakened. The researchers identified 15 types of gut microorganisms associated with PD. The association appeared in three different patterns of co-occurring groups. (*NPJ Parkinson's Disease*, June 12, 2020)

**• Disordered sleep was linked to poorer mental function in PD patients**, found a VA San Diego study. Researchers compared cognitive performance between PD patients with and without rapid eye movement sleep disorder. Those with disordered sleep

had poorer executive functioning and learning performance. They also had poorer neuropsychological functioning across all cognitive domains. Those with sleep disorder also showed poorer medication management skills. (*Journal of the International Neuropsychological Society*, May 7, 2020)

**• Fatigue is associated with lower diastolic blood pressure in PD patients**, according to a study by VA Ann Arbor researchers and colleagues. Fatigue is a common PD symptom. Researchers found that patients with fatigue symptoms had lower mean diastolic blood pressure than those without. The difference was most notable in the morning. Fatigue experienced by PD patients could be a manifestation of low blood pressure. (*Journal of Parkinson's Disease*, July 30, 2019)

**• A nurse-led chronic care model led to improved care for PD patients**, in a VA Greater Los Angeles study. Half of study participants received Care Coordination for Health Promotion and Activities in Parkinson's Disease (CHAPS), and the other half received usual care. The CHAPS group had substantially higher adherence to

quality-of-care indicators, including assessment of symptoms, counseling, and palliative care. (*Neurology*, April 16, 2019)

**• A common ADHD drug may help treat PD**, found a review by Durham VA researchers. Studies showed that taking atomoxetine (sold as Strattera) improved several markers of executive dysfunction in patients with PD, including impulsivity, risk-taking, and global cognition. The drug was generally well tolerated, with some reports of gastrointestinal problems or insomnia. (*Journal of Clinical Psychopharmacology*, December 2018)

**• Traumatic brain injury can increase the risk of PD**, according to a study by San Francisco VA researchers. They looked at the records of nearly 326,000 Veterans, half of whom had sustained a traumatic brain injury. Those who had sustained a TBI had a 56% greater risk of being diagnosed with PD than those without a TBI. (*Neurology*, May 15, 2018)

**For more information on VA research on Parkinson's disease and movement disorders, please visit [www.research.va.gov/topics](http://www.research.va.gov/topics)**

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