

Genetics and Parkinson's Disease: What's the Connection?

What Is a Gene and What Are Genetic Mutations?

Genes are the material of heredity, passed down through generations from parents to children. These inherited bits of DNA determine many of the body's traits — visible features such as eye color as well as invisible ones, like an individual's risk of disease. While we all have the same types of genes, some people have changes in a gene's sequence, which are called genetic mutations.

Are There Genetic Mutations Related to Parkinson's Disease?

Scientists have identified several genetic mutations that are associated with an increased risk of developing Parkinson's disease (PD). Still, only about 10 percent of PD cases are directly related to a genetic mutation, and most mutations associated with PD only raise risk a small amount. In other words, no known mutation carries a 100 percent chance of causing Parkinson's.

How Can Genetics Help Advance Parkinson's Disease Research?

Genes direct cells' activities and the production of proteins, which are the body's worker molecules. But genes also can guide researchers to new understandings of PD and treatments to slow or stop disease progression. Genetic research is like detective work: find a mutation, figure out how it leads to PD, and then develop a therapy to correct or offset that change. Such treatments could potentially slow or stop disease progression in all people with PD, not just those with genetic mutations.

Can I Get Tested for Parkinson's Genetic Mutations?

Genetic testing may be available as part of a research study, or through your doctor's office or an online service. Which genes are tested and the costs will vary. If you are interested in genetic testing, speak with your doctor and a genetic counselor, an expert who can provide guidance on the testing process and help you understand what your results mean for you and your family.

How Can I Help Advance Parkinson's Genetic Research?

No matter whether you have Parkinson's, a family member with PD or a Parkinson's-associated genetic mutation, you can help push breakthroughs in PD genetics forward. Clinical studies need volunteers, both with and without PD, to help researchers learn about the genes linked to Parkinson's, how they interact with other genes and environmental factors to cause disease, and how they could be targeted to treat disease.

How Can I Find Clinical Trials and Studies to Help Advance Parkinson's Genetic Research?

Register for Fox Trial Finder, The Michael J. Fox Foundation's online clinical matching tool and include your genetic information.

Visit www.foxtrialfinder.org to register.

