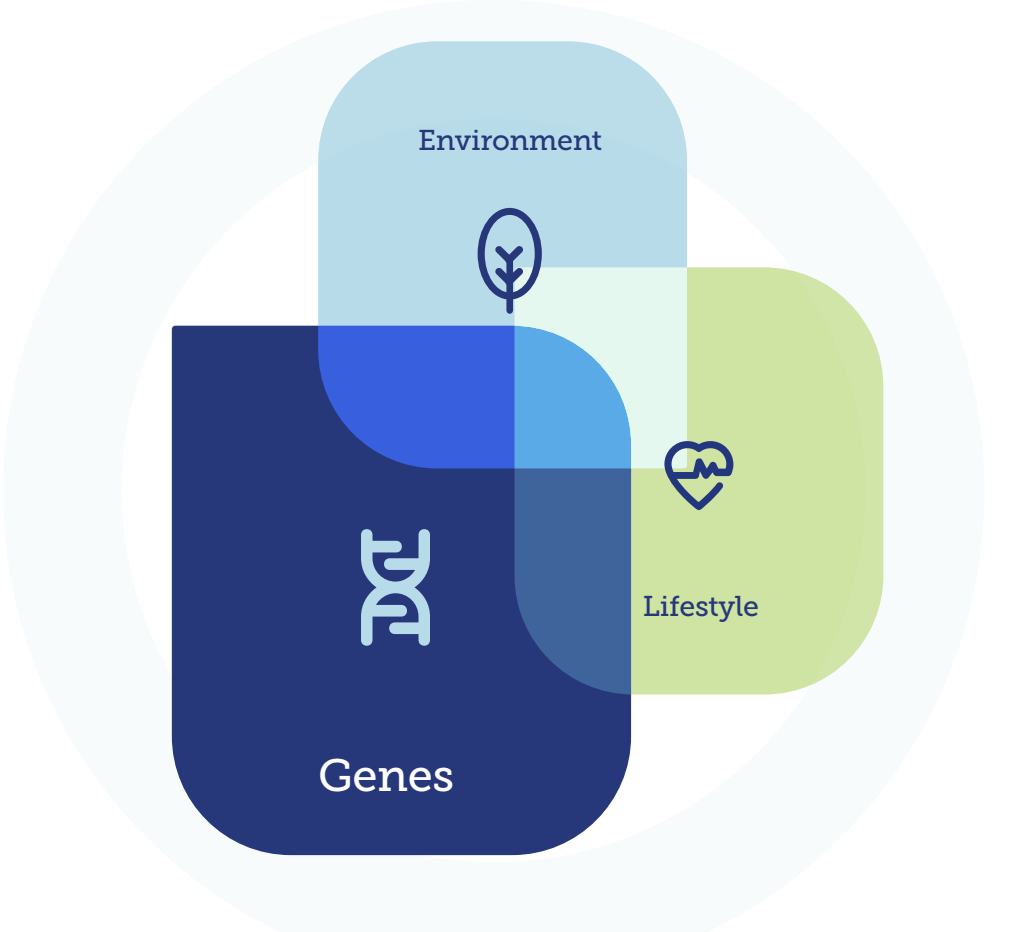
Picture™

PD **Aware**

In Focus

Parkinson's Disease (PD) and Genetics



Parkinson's Disease Overview

Parkinsonism is a broad term that encompasses a set of specific symptoms, similar to those seen in Parkinson's disease (PD). PD is the primary and most common form of parkinsonism and is known to cause slowly progressive movement and balance issues. Common symptoms include a "resting" tremor (typically in the hands), rigid muscles, and slowness of movement. While every individual with PD experiences a loss of dopamine in the brain, specific symptoms vary from person to person.

It is unknown exactly what causes PD, but scientists believe that a combination of genetics (genes), lifestyle, and environmental factors all contribute to disease onset. The extent to which each factor is involved varies and is still being researched.

About Hereditary Parkinson's Disease

01

About 10% of PD is known to be caused by a single gene mutation (or change) in your DNA

02

Genetic testing can **identify** whether you have **an inherited change** in a gene associated with an increased risk of developing PD

03

Learning if your hereditary risk ahead of time can help you prepare for your future

04

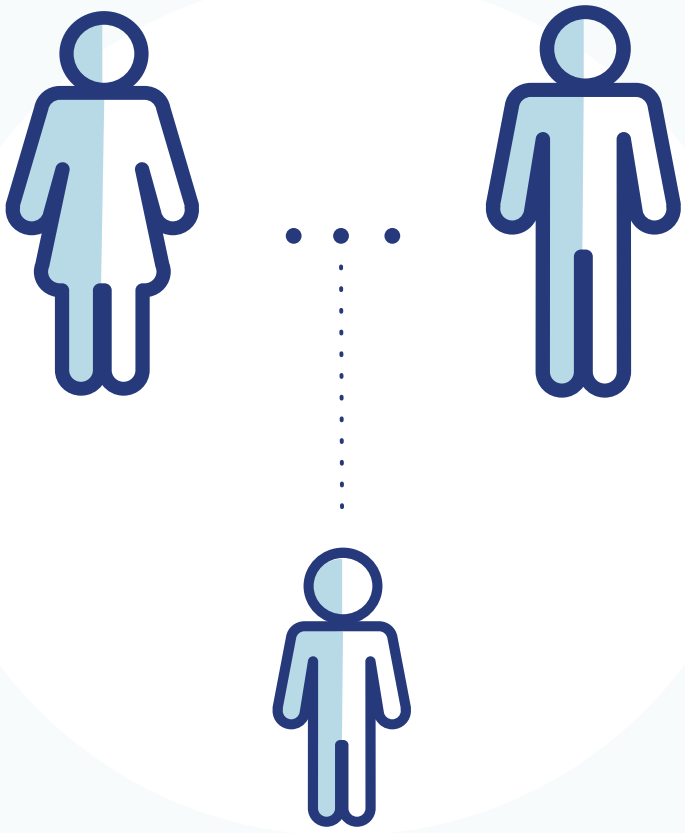
People with certain genetic changes can **be eligible to participate** in gene-based clinical trials

Did you know?

If a person tests positive for a gene mutation that is associated with an increased risk, they **may not** ever develop Parkinson's disease. This could be due to a combination of other genes, environmental factors, or lifestyle changes.

What About My Family?

If you test positive for a DNA change (mutation) in a gene associated with a condition, your close family members (parents, siblings, children) may also inherit the same mutation and be at an increased risk.



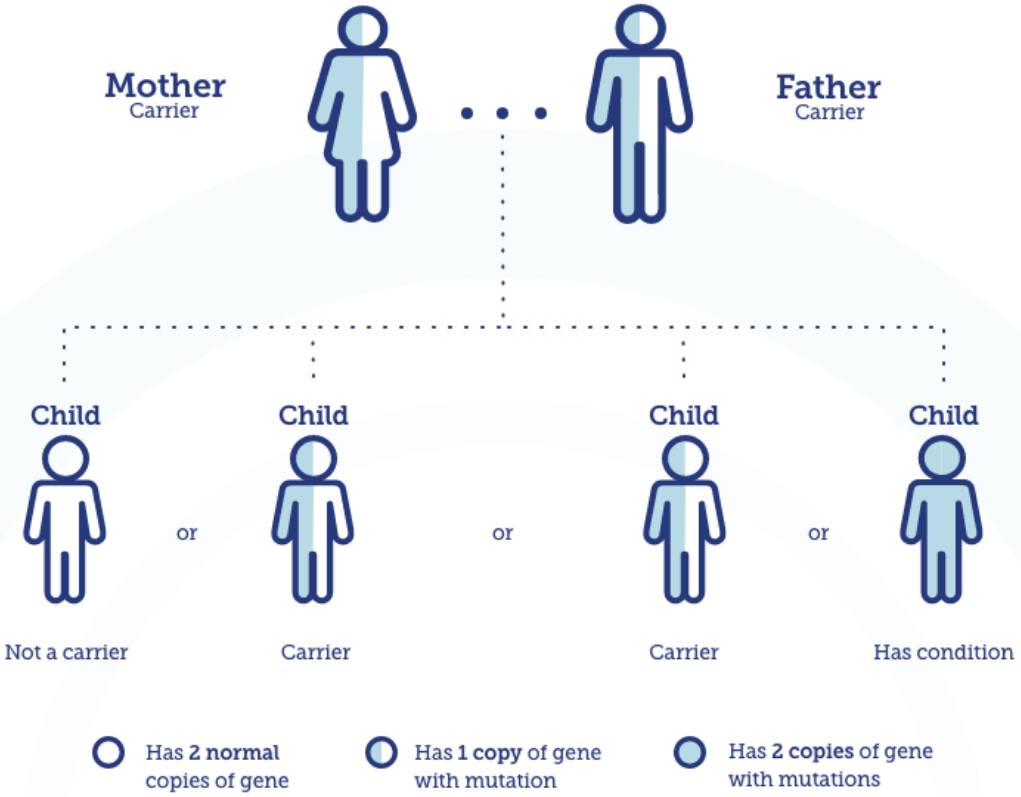
Word to Know

Inheritance is how genes are passed on from generation to generation. You inherit two copies of each gene, one from your mother and one from your father. If a mutation is found in your gene(s), it could have been passed on from one of your parents. The conditions associated with mutations in genes are inherited in two main ways: Autosomal Recessive and Autosomal Dominant.

Autosomal **Recessive** Inheritance

How are genetic conditions passed on?

In this case, one copy of a gene with a mutation is not enough to cause a condition. You must have two of the same genes both with mutations (one on each gene) in order to have an increased risk for the condition.



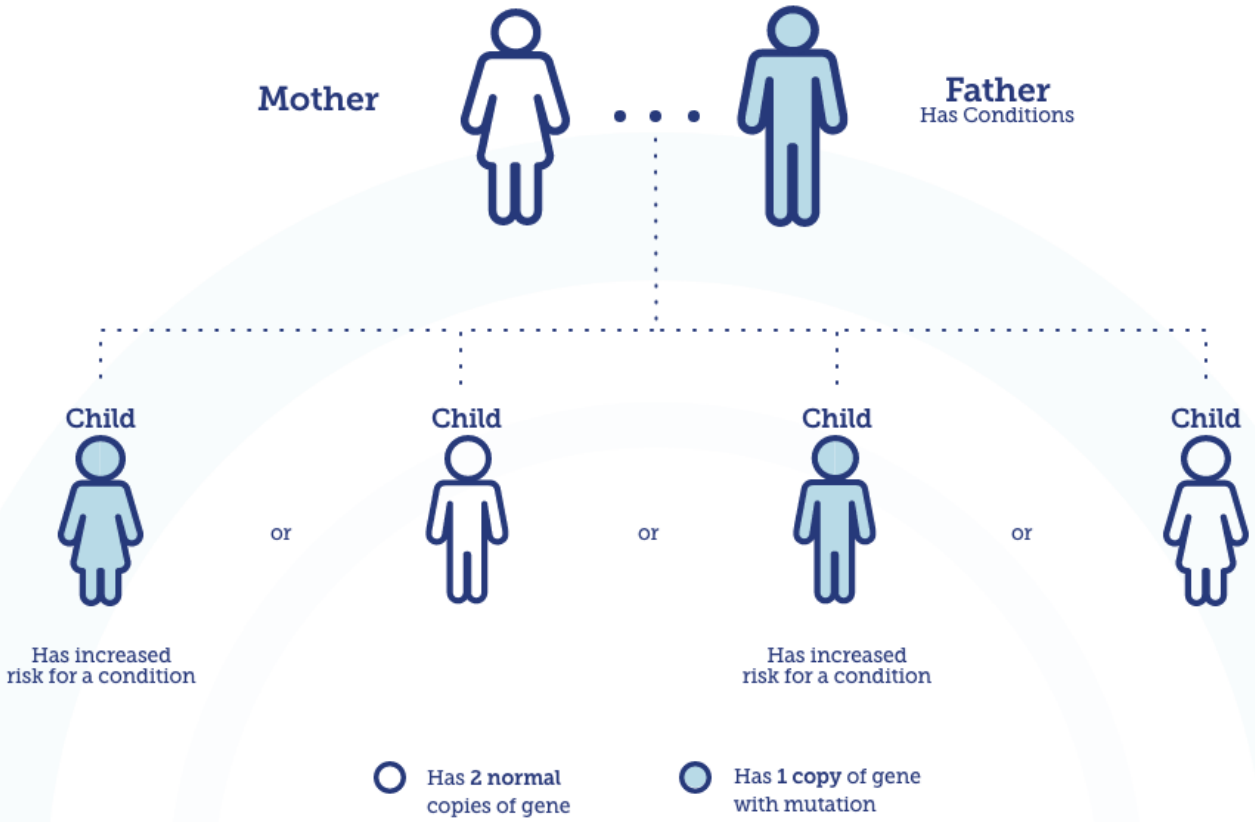
Word to Know

With conditions inherited in the autosomal recessive pattern, someone who has one normal copy of a gene and one copy of a gene with a mutation is called **carrier**. A **carrier** typically does not have symptoms of that specific condition, but if their partner is also a **carrier** of the same condition, they have a 1 in 4 (25%) chance of having a child with that condition.

Autosomal **Dominant** Inheritance

How are genetic conditions passed on?

In this case, one copy of a gene with a mutation is enough to cause an increased risk for a condition. This gene copy could have come from your mother or father, or it could have developed in you just by chance.



Word to Know

Some autosomal dominant genes have incomplete gene **penetrance**; this means that a gene mutation may not cause symptoms of a condition in every person but may instead be associated with an increased risk for that condition.

Frequently Asked Questions

Should I share my test results with my family?

Sharing your results with your family members can be beneficial to their own health and family planning. It is important to note that genetic testing is a personal choice and should never be forced upon anyone, even if you feel it is the best decision. You can speak with a genetic counselor about the best time and way to share this informaiton with your family members. If your relative is interested in testing and would like to know more, they can visit our website at **www.picturegenetics.com/pdaware**.

What does it mean if nothing is found in my genetic testing?

While this test may not find any changes (mutations) in the genes associated with increased risk for the conditions that this test looks at, you and your family members may still be at risk of developing disease, especially if you have a family history. Please follow the recommendations of your healthcare provider based on your personal and family health history.

Can my employer or health insurance company discriminate against me based on my results?

No. The Genetic Information Nondiscrimination Act (GINA) was signed into law in 2008. It protects individuals from discrimination by an employer or a health insurance company based on genetic testing results and genetic information. GINA does not offer protections for disability, long term care, or life insurance. It also does not apply to members of the U.S. military or employees of the federal government, Indian Health Service, or Veterans Health Administration.

Resources

- Picture PD Aware Website - picturegenetics.com/pdaware
- Parkinson's Foundation - Parkinson.org/PDGENEration
- Clinical Trials - clinicaltrials.gov
- Genetic Information Nondiscrimination Act - eeoc.gov/genetic-information-discrimination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