



Looking at My Genes:

WHAT CAN THEY TELL ME ABOUT MY MENTAL HEALTH?

Overview

Mental disorders are health conditions that affect how a person thinks, feels, and acts. These disorders can impact a person's life in significant ways, including how he or she copes with life, earns a living, and relates to others.

“Why did this happen?” That is a common question that patients and their families have following a psychotic episode, suicide attempt, or the diagnosis of any serious mental disorder.

Research conducted and funded by the National Institute of Mental Health (NIMH) has found that many mental disorders are caused by a combination of biological, environmental, psychological, and genetic factors. In fact, a growing body of research has found that certain genes and gene variations are associated with mental disorders. **So what is the best way to “look at your genes” and determine your own personal risk?**



Your Family Health History

Your family history is one of your best clues about your risk of developing mental disorders and many other common illnesses. Certain mental illnesses tend to run in families, and having a close relative with a mental disorder could mean you are at a higher risk.

If a family member has a mental disorder, it does not necessarily mean you will develop one. Many other factors also play a role. But knowing your family mental health history can help you determine whether you are at a higher risk for certain disorders, help your doctor recommend actions for reducing your risk, and enable both you and your doctor to look for early warning signs.

To gain a better understanding of your family health history, it may help to:

Talk to Your Blood Relatives

The first step in creating a family health history is to talk to your blood relatives. The most helpful information comes from “first-degree” relatives—parents, brothers and sisters, and children. Information from “second-degree” relatives, such as nieces, nephews, half-brothers, half-sisters, grandparents, aunts, and uncles, can also be helpful.



Don't worry if you cannot get complete information on every relative. Some people may not want to talk. Others may be unable to remember information accurately. That's okay. Whatever information you can collect will be helpful.

Keep a Record

Free print and online tools can help you create a family health history. One tool is “**My Family Health Portrait**” (<https://familyhistory.hhs.gov/>) from the U.S. Surgeon General. It helps organize your family health history information. The following instructions describe how to use the print and online versions of this tool.

You can download and print out “My Family Health Portrait” and use it to record information about your family's health. Once you fill in the information, you can keep it for your records, share the completed form with your doctor or health care provider, or share it with family members. Learn more at <https://familyhistory.hhs.gov/>.

PLEASE NOTE: The Surgeon General's “My Family Health Portrait” tool does NOT keep a government record of the information you fill in. Your health information is NOT available to anyone else, but you. The tool only provides the software for organizing your information. After you fill in your information, the completed form is available only to you for downloading. After that, it's up to you whether you want to share the information with other family members or provide it to your health care provider.

As a family grows or family members are diagnosed with health conditions, new or updated information can be added. It may take a little time and effort, but this lasting legacy can improve the health of your family for generations to come.



Talk to a Mental Health Professional

If you have mental illness in your family, you may want to consult with a mental health professional who can help you understand risk factors and preventive factors. The NIMH Help for Mental Illness webpage (www.nimh.nih.gov/findhelp) provides a number of resources for finding immediate help, locating a health care provider or treatment, and participating in clinical trials.

Your Genes

Genes are segments of DNA found in every cell and are passed down from parents to children at conception. Some diseases—such as sickle cell anemia or cystic fibrosis—are caused by genetic mutation(s), or a permanent change in one or more specific genes.

In other diseases, including many brain disorders, gene variants play a role in increasing or decreasing a person's risk of developing a disease or condition. Research is advancing our understanding of the role of genetics in mental health. Although there are common genetic variants associated with rare disorders like **Fragile X** or **Rett syndrome**, no gene variants can predict with certainty that a person will develop a mental disorder. In most cases, even the genetic variant with the most supporting research raise a person's risk by only very small amounts. Knowing that you have one of these gene variants won't tell you nearly as much about your risk as your family history can.

Genetic Testing Versus Genome Scans

Traditional Genetic Testing

Doctors order traditional genetic testing for people they think are at high risk of one of the rare diseases for which specific genes are known to be the cause. The results enable patients and their doctors to make informed health care decisions together.

There are many different types of genetic tests. Genetic tests can help to:

- ▶ Identify gene changes that may increase the risk of developing a disease
- ▶ Diagnose disease
- ▶ Identify gene changes that are implicated in an already diagnosed disease
- ▶ Determine the severity of a disease
- ▶ Guide doctors in deciding on the best medicine or treatment to use for certain individuals
- ▶ Screen newborn babies for certain treatable conditions

Currently, genetic testing cannot accurately predict your risk of developing a mental health disorder. If a disease runs in your family, your health care professional can tell you if it's the kind of illness that can be detected through genetic testing. Your health care professional can help you make decisions about whether to be tested and can help you understand test results and their implications.

Genome Scans

Genome scans are different from traditional genetic testing. For a fee, anyone can mail a saliva sample to companies that sell the scan—without a prescription or a health care provider's advice. Advertisements say that the company then can provide information about a person's risks of developing specific diseases, based on gene variations.

But here's one thing genome scans have in common with genetic testing: **It's too early for genome scans to give people a complete picture of their risk of mental illnesses or to be used to diagnose a disorder.** Although research is underway, scientists don't yet know all of the gene variations that contribute to mental illnesses, and those that are known, so far, raise the risk by very small amounts.

You can learn about the various types of genetics tests and genetic counseling by visiting the National Human Genome Research Institute website (www.genome.gov).



What About Genetic Testing or Genome Scans? Can They Help Predict My Risk of Developing a Mental Disorder?

The short answer to this question is no—not yet.

One day, genetic research may make it possible to provide a more complete picture of a person's risk of getting a particular mental disorder or to diagnose it, based on his or her genes. For example, **recent NIMH-funded research** has identified five major mental disorders—autism, attention deficit hyperactivity disorder, bipolar disease, schizophrenia, and major depression—that can share common genetic components. Studies have also found that specific gene variants are associated with a higher risk of certain disorders, such as **autism spectrum disorder** or **schizophrenia**.

Although recent studies have begun to identify the genetic markers associated with certain mental disorders and may eventually lead to better screening and more personalized treatment, it is still too early to use genetic tests or genome scans to accurately diagnose or treat mental illness.



NIMH Research on Genetics

NIMH, a part of the National Institutes of Health (NIH), funds and conducts research to help answer important scientific questions about mental illnesses. Through research, NIMH works to determine what is promising, what helps and why, what doesn't work, and what is safe.

For example, NIMH's Office of Genomics Research Coordination and the Human Genetics Branch are currently studying and promoting research on the human genetic variations that contribute to the risk for mood and anxiety disorders such as bipolar disorder and panic disorder, so that better ways to diagnosis and treat these disorders can be developed. For example, in a **genome-wide study**, a group of scientists identified a stretch of chromosome that is associated with how a person with bipolar disorder responds to a mood-stabilizing medication called lithium. These scientists found that certain genetic traits helped predict how well patients with bipolar disorder would respond to the medication. Findings like these will be important steps towards better screening and personalized treatment. You can learn more about ongoing research efforts by visiting the NIMH website at www.nimh.nih.gov (search term: Genetics).

What Is Clinical Research?

Clinical research is medical research that involves people like you. Clinical trials are research studies that look at new ways to prevent, detect, or treat diseases and conditions. During clinical trials, treatments might be new drugs or new combinations of drugs, new surgical procedures or devices, or new ways to use existing treatments. The goal of clinical trials is to determine if a new test or treatment works and is safe. Although individual participants may benefit from being part of a clinical trial, participants should be aware that the primary purpose of a clinical trial is

to gain new scientific knowledge so that others may be better helped in the future.

Why Participate in Clinical Trials?

People volunteer to participate in scientific studies that ultimately may uncover better ways to treat, prevent, diagnose, and understand diseases like depression. Clinical research includes trials that test new treatments and therapies as well as long-term natural history studies, which provide valuable information about how disease and health progresses. Research opportunities for **healthy volunteers** are also available. Healthy volunteers play a critical role in our studies. Decisions about whether to apply for a clinical trial and which ones are best for you should be made in collaboration with your licensed health professional.



Clinical Trials at NIMH/NIH

Researchers at the National Institute of Health's (NIH) campus conduct research on numerous areas of study, including genetics. The studies take place at the NIH Clinical Center in Bethesda, Maryland, and require regular visits. After the initial phone interview, you will come to an appointment at the clinic and meet with a clinician. For more information, visit www.nimh.nih.gov/joinastudy or call 301-496-9576.

How Do I Find a Clinical Trial Near Me?

If you don't live near NIH but are interested in finding a clinical trial, visit www.clinicaltrials.gov. This is a searchable registry and results database of federally and privately supported clinical trials conducted in the United States and around the world. ClinicalTrials.gov gives you information about a trial's purpose, who may participate, locations, and phone numbers for more details. This information should be used in conjunction with advice from health professionals.

Finding Help

Mental Health Treatment Program Locator

The Substance Abuse and Mental Health Services Administration (SAMHSA) provides this online resource for locating mental health treatment facilities and programs. The Mental Health Treatment Locator section of the Behavioral Health Treatment Services Locator lists facilities providing mental health services to persons with mental illness. Find a facility in your state at <https://findtreatment.samhsa.gov/>. For additional resources, visit www.nimh.nih.gov/findhelp.

Questions to Ask Your Doctor

Asking questions and providing information to your doctor or health care provider can improve your care. Talking with your doctor builds trust and leads to better results, quality, safety, and satisfaction. Visit the Agency for Healthcare Research and Quality (AHRQ) website for tips at www.ahrq.gov/patients-consumers.

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For More Information

For information about how genes affect your risk for developing a disease or a disorder, visit:

National Institute of Mental Health (NIMH)
<https://www.nimh.nih.gov>

**Centers for Disease Control and Prevention:
Family Health History**
[https://www.cdc.gov/genomics/famhistory/
index.htm](https://www.cdc.gov/genomics/famhistory/index.htm)

National Human Genome Research Institute
www.genome.gov/health

MedlinePlus: Genetic Disorders
<https://medlineplus.gov/geneticdisorders.html>

MedlinePlus (National Library of Medicine)
<https://medlineplus.gov>
(En Espanol: <https://medlineplus.gov/spanish>)

For information on clinical trials, visit:
ClinicalTrials.gov: <https://www.clinicaltrials.gov>
(En Espanol: <https://salud.nih.gov/investigacion-clinica/>)



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