What is a genome?

Our genome is all of our genes (exons and introns). This is different from our exome, which is only the pieces of DNA (exons) that are put together to make proteins. While they do not directly make proteins, introns do contain instructions that help exons work.
What is Genome Sequencing?

Genome Sequencing is a test to read and check the spelling of the genome. Genome sequencing is the most complete genetic test available.

How is Genome Sequencing done?

Your blood sample is sent to our laboratory.

Our lab takes your DNA from your sample.

We use special tools to read your genome and compare it to our database. We look for typos in the “spelling” of your DNA, also known as genetic variants.

Our experts review the variants to see if they may change the way the protein works in your body and if the change may be the cause of your symptoms or features.
How will I get the results?

Your healthcare provider who ordered your testing will receive your genome sequencing results. If you took a rapid genome sequencing test, your provider will be given your verbal test results 7 days* after all samples are received at our lab and a written report that explains your full results, about 2 weeks* all samples are received at our lab. If you took a standard genome sequencing test, a complete written report will be sent to your provider about 6-12 weeks* after the start of testing.

What type of results can I expect?

There are three types of results from genome sequencing. Your test report may contain a table with one or more of the three types listed below:

Pathogenic or Likely Pathogenic Variant

A change in DNA that is very likely to cause your features and symptoms. This is the most straightforward result. It can be used to test other family members to see their chance of having the disease or having a child with the disease.

Variant of Uncertain Significance (VUS)

A change in a gene, but we are not sure if it is the cause of your symptoms/features. More information is needed to know if the variant is the cause of your symptoms. We may suggest testing other family members to help figure out the meaning of the result.

Negative

We did not find variants that explain your symptoms in any part of your genome that we tested. This does not mean that you do not have a genetic condition. It is still possible that there is a genetic variant not found by this test. Your doctor or genetic counselor may discuss more testing now or in the future.

*Reporting times are typical, but could be extended in situations outside GeneDx’s reasonable control.
Is other genetic information included in the report?

The American College of Medical Genetics and Genomics (ACMG) recommends that we report any secondary findings found on genome sequencing. Secondary findings are not related to your current symptoms, but may give useful health information. For example, the lab may find a genetic change that increases the risk for cancer or increases the risk of a heart condition. This secondary information may be used by both you and your family. All secondary findings will be included in your report, unless you check the opt-out checkbox on the consent form.

Can Genome Sequencing find all possible genetic causes of disease?

Genome sequencing does not find all possible causes of genetic disease. Some types of variants cannot be found by this test. Other types of testing may be needed. Please speak with your doctor about the best testing options for you and your family.

Why does GeneDx need to test other family members?

When doing genome sequencing, it is best to compare the patient’s DNA with two or more related family members to form a “trio”. Biological parents of the patient are best because they give us the most information.

Trio testing greatly improves the chance of finding the variant causing the symptoms. It also decreases the chance of finding a VUS. If the biological parents are not available and there are no other people in the family with the same symptoms, please have your healthcare provider contact GeneDx to see which family members are best to include.
If you are testing multiple people in a “trio”, why is there only one report?

The samples from the other family members are only used to compare to the patient’s DNA. Testing that includes a report for other family members can be ordered, for an additional fee.

Should I have genetic counseling when getting this test?

Meeting with a genetic counselor can be very helpful both before and after genetic testing. A genetic counselor can help you and your family understand the benefits and limitations of the test, so you can decide if genome sequencing is the best test for you and/or your family. You can find a genetic counselor near you through The National Society of Genetic Counselors (www.nsgc.org). MyGeneTeam, LLC, a GeneDx preferred partner, offers genetic counseling by phone or online video-conferencing. Get more information about MyGeneTeam at www.mygeneteam.com.

Does GeneDx test family members?

Yes, we offer targeted testing for family members of those found to have a pathogenic or likely pathogenic variant at GeneDx. There is a fee for each family member tested, but it is much less than the cost of additional genome sequencing tests for each family member. Targeted testing can also be used for prenatal testing. For more information, please contact one of our genetic counselors at zebras@genedx.com, 1-888-729-1206.

Should I repeat genome testing in the future?

If your testing did not find a clear answer for your medical condition, your healthcare provider may suggest doing the test again in a few years. As research finds new genes and causes for genetic diseases, future genome testing may show a result that was not known at the time of your first testing.
Will insurance cover this test?

Genome sequencing is not currently offered through insurance billing. The test is available as self-pay or may be billed to the hospital ordering the test for the patient. GeneDx offers a no-interest payment plan. For more information, please contact our Benefits Team at benefits@genedx.com or 1-844-241-1233.

Can health insurers or employers discriminate based on genetic test results?

No, the Genetic Information Nondiscrimination Act of 2008, also referred to as GINA, is a federal law that protects Americans from discrimination by health insurance companies and employers based on their genetic information. However, this law does not cover life insurance, disability insurance, or long-term care insurance. For more information, please visit www.genome.gov/10002328.

Where can I find more information?

More information is available at the following websites:

- National Society of Genetic Counselors, an organization that can help you find a counselor near you: www.nsgc.org
- MyGeneTeam: www.mygeneteam.com
The GeneDx Difference

GeneDx was founded in 2000 by two scientists from the National Institutes of Health (NIH) to address the needs of patients diagnosed with rare disorders and the clinicians treating these conditions. Today, our team of experts includes well over a hundred genetic counselors and MD/PhD scientists with extensive clinical experience and peer-reviewed publications. Our unparalleled experience with exome and genome sequencing combined with one of the largest proprietary sequence databases of affected and unaffected individuals in the world, enable us to uncover more answers for you and your family.