Familial Hyperinsulinism (ABCC8-Related)

ABCC8-related familial hyperinsulinism is a rare genetic disorder. It is characterized by very high levels of insulin production. This leads to episodes of low blood sugar, which can cause low energy, seizures, and brain damage if left untreated. People with ABCC8-related familial hyperinsulinism most often have two variants in the ABCC8 gene.

FHI05, you **have one of the variants** we tested.

You could pass this variant on to your children.

We could not determine your result for one variant. This can be caused by random test error, other factors that interfere with the test, or if you have two copies of a tested variant.

How To Use This Test

This test does not diagnose any health conditions.

Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Review the Carrier Status tutorial
See Scientific Details
See Frequently Asked Questions

Intended Uses

- Tests for **multiple variants** in the ABCC8 gene.
- To identify carrier status for ABCC8-related familial hyperinsulinism.
- Informs individuals with one or two variants in the ABCC8 gene that they may be at risk for developing symptoms of familial hyperinsulinism.

Limitations

- Does **not test** for all possible variants for the condition.
- Does **not report** if someone has two copies of a tested variant.
- Does **not cover** variants in other genes (such as KCNJ11) that are also associated with familial hyperinsulinism.

Important Ethnicities

- This test is most relevant for people of **Ashkenazi Jewish** descent.

You are a carrier.

You could pass this variant on to your children.

We detected one variant for ABCC8-related familial hyperinsulinism.

Most people with only one variant are not expected to have familial hyperinsulinism. However, a small percentage of carriers (less than 1%) may develop a form of hyperinsulinism, typically by early adulthood. See Frequently Asked Questions for more information. We could not determine your result for one of the other tested variants.

Your results may be relevant for you if you're thinking about starting a family.

If you and your partner are both carriers, each child may have a **25% chance** of having this condition. For male carriers, even if your partner is not a carrier, each child may still have a small chance (less than 1%) of having the condition. For female carriers, your children are not expected to be at risk of having the condition unless your partner is also a carrier. Your relatives may also wish to consider testing if they plan to have children.

About Familial Hyperinsulinism

Also known as: Congenital Hyperinsulinism, Persistent Hyperinsulinemic Hypoglycemia of Infancy (PHHI)

When it develops

Symptoms typically develop during infancy or in early childhood.

Ethnicities most affected

This condition is most common in people of Ashkenazi Jewish, central Finnish, and Saudi Arabian descent.

Typical signs and symptoms

- High levels of insulin
- Low blood sugar
- Low energy
- Irritability
- Seizures
- Brain damage

How it's treated

There is currently no known cure. Treatment depends on the severity of the condition. Some people can maintain healthy blood glucose levels through medication or diet. Other people may require surgery to remove part of the pancreas.

Read more at: Genetics Home Reference GeneReviews

Consider talking to a healthcare professional if you are thinking about having children.

If you're starting a family, a genetic counselor can help you and your partner understand if additional testing might be appropriate.

Connect with a GC

If you have other concerns about your results, consult with a healthcare professional.

Print report

See our Frequently Asked Questions for more information.

FAQs

Learn more about this condition and connect with support groups.

Learn more

Familial Hyperinsulinism (ABCC8-Related)

Scientific Details

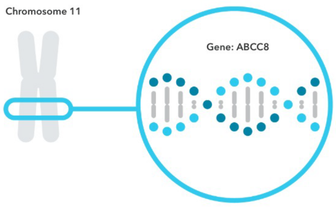
ABCC8-related familial hyperinsulinism is a rare genetic disorder. It is characterized by very high levels of insulin production. This leads to episodes of low blood sugar, which can cause low energy, seizures, and brain damage if left untreated. People with ABCC8-related familial hyperinsulinism most often have two variants in the ABCC8 gene.

ABCC8-related familial hyperinsulinism is caused by variants in the ABCC8 gene.

ABCC8

The ABCC8 gene contains instructions for making a protein called sulfonylurea receptor 1. This protein is found in the pancreas and helps control the amount of insulin that is released into the blood. Certain variants in ABCC8 disrupt this function, resulting in a constant release of insulin and low blood sugar levels.

Read more at Genetics Home Reference



You have one variant detected by this test. Your result for one of the tested variants could not be determined.

Variants Detected | View All Tested Markers

Marker Tested	Genotype*	Additional Information
F1388del **Gene:** ABCC8 **Marker:** rs151344624	**(–)** Variant copy from one of your parents **GAA** Typical copy from your other parent	Biological explanation Typical vs. variant DNA sequence(s) Percent of 23andMe customers with variant References [1, 5, 7] | ClinVar

*This test cannot distinguish which copy you received from which parent. This test also cannot determine whether multiple variants, if detected, were inherited from only one parent or from both parents. This may impact how these variants are passed down.

23andMe always reports genotypes based on the 'positive' strand of the human genome reference sequence (build 37). Other sources sometimes report genotypes using the opposite strand.

Test Details

Indications for Use

The 23andMe PGS Carrier Status Report for Familial Hyperinsulinism (ABCC8-Related) is indicated for the detection of three variants in the ABCC8 gene. This test is intended to be used to determine carrier status for ABCC8-related familial hyperinsulinism in adults, but cannot determine if a person has two copies of a tested variant. This report also describes if a result is associated with personal risk for developing symptoms of ABCC8-related familial hyperinsulinism, but it does not describe a person's overall risk of developing symptoms. This test is most relevant for people of Ashkenazi Jewish descent.

Special Considerations

- Symptoms of familial hyperinsulinism may vary between people with the condition even if they have the same genetic variants.
- There are currently no professional guidelines in the U.S. for carrier testing for this condition. However, ACOG notes that testing for familial hyperinsulinism may be considered for people of Ashkenazi Jewish descent who are considering having children.

Test Performance Summary

Carrier Detection Rate & Relevant Ethnicities

The "carrier detection rate" is an estimate of the percentage of carriers for this condition that would be identified by this test. Carrier detection rate differs by ethnicity and is provided only where sufficient data is available.

Ashkenazi Jewish	97%	[5]
Finnish, particularly from central Finland	41%	[8]

Analytical Performance

Accuracy was determined by comparing results from this test with results from sequencing. Greater than 99% of test results were correct. While unlikely, this test may provide false positive or false negative results. For more details on the analytical performance of this test, refer to the package insert.

Warnings and Limitations

- This test does not cover all variants that could cause this condition.*
- This test does not diagnose any health conditions.
- Positive results in individuals whose ethnicities are not commonly associated with this condition may be incorrect. Individuals in this situation should consider genetic counseling and follow-up testing.
- Share results with your healthcare professional for any medical purposes.
- If you are concerned about your results, consult with a healthcare professional.

See the Package Insert for more details on use and performance of this test.

* Variants not included in this test may be very rare, may not be available on our genotyping platform, or may not pass our testing standards.

References

1. Cartier EA et al. (2001). "Defective trafficking and function of KATP channels caused by a sulfonylurea receptor 1 mutation associated with persistent hyperinsulinemic hypoglycemia of infancy." Proc Natl Acad Sci U S A. 98(5):2882-7.
2. Committee on Genetics. (2017). "Committee Opinion No. 691: Carrier Screening for Genetic Conditions." Obstet Gynecol. 129(3):e41-e55.
3. Dunne MJ et al. (2004). "Hyperinsulinism in infancy: from basic science to clinical disease." Physiol Rev. 84(1):239-75.
4. Glaser B et al. (2003). "Familial Hyperinsulinism." [Updated 2013 Jan 24]
5. Glaser B et al. (2011). "ABCC8 mutation allele frequency in the Ashkenazi Jewish population and risk of focal hyperinsulinemic hypoglycemia." Genet Med. 13(10):891-4.
6. Huopio H et al. (2002). "Acute insulin response tests for the differential diagnosis of congenital hyperinsulinism." J Clin Endocrinol Metab. 87(10):4502-7.
7. Nestorowicz A et al. (1996). "Mutations in the sulonylurea receptor gene are associated with familial hyperinsulinism in Ashkenazi Jews." Hum Mol Genet. 5(11):1813-22.
8. Otonkoski T et al. (1999). "A point mutation inactivating the sulfonylurea receptor causes the severe form of persistent hyperinsulinemic hypoglycemia of infancy in Finland." Diabetes. 48(2):408-15.
9. Thomas PM et al. (1995). "Mutations in the sulfonylurea receptor gene in familial persistent hyperinsulinemic hypoglycemia of infancy." Science. 268(5209):426-9.

Change Log

Your report may occasionally be updated based on new information. This Change Log describes updates and revisions to this report.

Date	Change
[redacted]	Familial Hyperinsulinism (ABCC8-Related) report created.

Familial Hyperinsulinism (ABCC8-Related)

Frequently Asked Questions

ABCC8-related familial hyperinsulinism is a rare genetic disorder. It is characterized by very high levels of insulin production. This leads to episodes of low blood sugar, which can cause low energy, seizures, and brain damage if left untreated. People with ABCC8-related familial hyperinsulinism most often have two variants in the ABCC8 gene.

ABCC8-Related Familial Hyperinsulinism

What does this test do?

This test looks for three genetic variants in the ABCC8 gene that are linked to familial hyperinsulinism.

People with two variants are at risk of developing symptoms of familial hyperinsulinism, and they will most likely pass a variant on to each of their children.

People with one variant may have a small chance of developing a form of hyperinsulinism called focal hyperinsulinism. They may also pass a variant on to their children.

This test does not include all possible genetic variants associated with familial hyperinsulinism.

Is this answer helpful? Yes No

What does this test **not** do?

This test does not diagnose familial hyperinsulinism. Only a healthcare professional can do that.

This test does not include all possible variants in the ABCC8 gene that are linked to familial hyperinsulinism.

This test does not include variants in other genes (such as KCNJ11) that are linked to familial hyperinsulinism.

Is this answer helpful? Yes No

My report says **one variant** was detected. What does this mean?

This means you have one of the genetic variants we tested, and you are a carrier for familial hyperinsulinism. You could pass this variant on to each of your children. If your partner is a carrier for ABCC8-related familial hyperinsulinism, each of your children may have a 25% chance of having this condition.

For males with this result, if your partner is not a carrier, each child may still have a small chance of having a form of hyperinsulinism called focal hyperinsulinism. One study in people of Ashkenazi Jewish descent estimated that the risk is 1 in 540. For females with this result, if your partner is not a carrier, your children are not likely at risk of having the condition.

Most people with your genetic result do not have familial hyperinsulinism. However, a small fraction of people with one variant may develop focal hyperinsulinism, typically by early adulthood. One study in people of Ashkenazi Jewish descent estimated that about 1 in 270 people who inherit a single variant from their father may develop focal hyperinsulinism. People who inherit a single variant from their mother are not expected to develop the condition.

A healthcare professional can answer any questions you may have about your results.

Is this answer helpful? Yes No

My report says a **small percentage** of people with my genetic result may develop a form of hyperinsulinism. What does this mean?

Most people with only one variant do not have familial hyperinsulinism.

However, a small fraction of people with one variant may develop a form of hyperinsulinism called focal hyperinsulinism, which only affects part of the pancreas. One study in people of Ashkenazi Jewish descent estimated that about 1 in 270 people who inherit a single variant from their father may develop focal hyperinsulinism. People who develop symptoms typically do so by early adulthood. People who inherit a single variant from their mother are not expected to develop familial hyperinsulinism.

You can learn more about the inheritance pattern for ABCC8-related familial hyperinsulinism from the following resources:

- Genetics Home Reference
- GeneReviews

If you have questions about your results, a genetic counselor may be able to help. Learn more about genetic counseling.

Is this answer helpful? Yes No

What does it mean if the result for a variant **could not be determined**?

This means we could not tell if you have or do not have the tested genetic variant. This can be caused by random test error, other factors that interfere with the test, or if you have two copies of a tested variant.

Is this answer helpful? Yes No

My report says I have **one variant** linked to familial hyperinsulinism. What are some things I could do?

Based on your genetic result, you could pass a variant on to each of your children. If you're starting a family, a genetic counselor can help you and your partner understand if additional testing might be appropriate.

In addition, a small fraction of people with your result may develop a form of hyperinsulinism called focal hyperinsulinism. Consider talking to a healthcare professional about your result.

You may also want to share your results with your family. Because you share DNA with your relatives, your genetic result could be relevant for your family members.

Is this answer helpful? Yes No

How could my result affect my children?

Because you have one variant, you could pass this variant on to each of your children. If your partner is a carrier for ABCC8-related familial hyperinsulinism, each of your children may have a 25% chance of having this condition.

For males with this result, if your partner is not a carrier, each child may still have a small chance of having the condition. (One study in people of Ashkenazi Jewish descent estimated that the risk is 1 in 540.) For females with this result, if your partner is not a carrier, your children are not likely at risk of having the condition.

You can learn more about the inheritance pattern for ABCC8-related familial hyperinsulinism from the following resources:

- Genetics Home Reference
- GeneReviews

A genetic counselor can help you and your partner understand if additional testing might be appropriate. Learn more about genetic counseling.

Is this answer helpful? Yes No

Have more questions? Check out our Customer Care Help Center.