Cystic Fibrosis

Cystic fibrosis is a rare genetic disorder characterized by impaired lung and digestive function. A person must have two variants in the CFTR gene in order to have this condition.

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

You could pass this variant on to your children.

1 variant detected
in the CFTR gene

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.

Intended Uses

- Tests for multiple variants in the CFTR gene.
- To identify carrier status for cystic fibrosis.

Limitations

- Does not test for all possible variants for the condition.
- Does not report if someone has two copies of a tested variant.

Important Ethnicities

- This test is most relevant for people of European, Hispanic/Latino, and Ashkenazi Jewish descent.

You are a carrier.

You could pass this variant on to your children.

We detected one variant for cystic fibrosis.

People with only one variant are not expected to have cystic fibrosis.

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. Your relatives may also wish to consider testing if they plan to have children.
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]

Share your results with your family.

[Share your report]

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

[Print report]

Learn more about this condition and connect with support groups.

[Learn more]

Cystic fibrosis is caused by variants in the CFTR gene.

The CFTR gene contains instructions for making a protein called cystic fibrosis transmembrane conductance regulator. This protein helps control the salt and water balance of certain organs by allowing chloride ions to pass in and out of cells. Certain variants in the CFTR gene disrupt this function, causing the lungs, pancreas, and other organs to produce abnormally thick mucus. This mucus can clog the respiratory tract, leading to signs and symptoms of cystic fibrosis.

[Read more at Genetics Home Reference]
You have one variant detected by this test.

<table>
<thead>
<tr>
<th>Marker Tested</th>
<th>Your Genotype*</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>G542X</td>
<td>T</td>
<td>Biological explanation</td>
</tr>
<tr>
<td>Gene: CFTR</td>
<td>Typical copy from one of your parents</td>
<td>Typical vs. variant DNA sequence(s)</td>
</tr>
<tr>
<td>Marker: h40002300</td>
<td>Variant copy from your other parent</td>
<td>Percent of 23andMe customers with variant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>References [5] [ClinVar]</td>
</tr>
</tbody>
</table>

*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 Test for Cystic Fibrosis is indicated for the detection of 28 variants in the CFTR gene. This test is intended to be used to determine carrier status for cystic fibrosis in adults, but cannot determine if a person has two copies of a tested variant. The test is most relevant for people of Ashkenazi Jewish, European, and Hispanic/Latino descent.

Special Considerations
- Symptoms of cystic fibrosis may vary depending on the variants involved.
- ACMG recommends carrier testing for cystic fibrosis for people of all ethnicities considering having children. This test includes 21 of the 23 variants recommended for testing by ACMG.

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: 95% [3, 5]
- European: 89% [3, 5]
- Hispanic/Latino: 73% [3, 5]
- African American: 65% [3, 5]
- Asian: 55% [3, 5]

Analytical Performance
Accuracy was determined by comparing results from this test with results from sequencing for 1,514 samples with known variant status. 1,514 out of 1,514 genotype results were correct. About 1 in 610 samples may receive a Not Determined result for one or more variants included in this test. This can be caused by random test error or unexpected DNA sequences that interfere with the test. It can also be caused by having two copies of a variant tested.

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. 510(k): Illumina MiSeq Dx Cystic Fibrosis Clinical Sequencing Assay.