Hereditary Breast and Ovarian Cancer Syndrome *(BRCA1/BRCA2)*

Review your new NGS-based result.
Your DNA has been retested using next-generation sequencing technology (NGS), which is more comprehensive than the technology that produced your first set of results.

01 **Your result**

Lynn, this test did not find any of the DNA differences it looked for linked to hereditary breast and ovarian cancer (HBOC)[1] syndrome.

02 **Key takeaways**

- Unlike other DNA tests that may only look for a small number of DNA differences, your test uses more comprehensive technology called next-generation sequencing (NGS) that can look for a much greater number of DNA differences. So if there is a difference in your DNA linked to HBOC syndrome, NGS has a much better chance of finding it.
- While having a DNA difference linked to HBOC syndrome can increase the chances of some cancers, most cases of cancer are not caused by inherited DNA differences.[2,3] You could also develop cancer for reasons other than HBOC syndrome.[4,5]
- If you have a family history of certain cancers, you may have a higher chance of developing those cancers.[6,7]
- Keep in mind that this test cannot rule out having a DNA difference linked to HBOC syndrome.
- **If you only do one thing, do this:** Fill out your family health history, and share it with a healthcare provider to try to better understand your cancer risk.

  Fill out your family health history

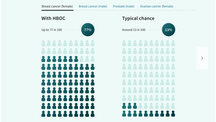
03 **What this means for you**

This test did not find any of the DNA differences it looked for, but other factors may affect your chances of developing cancer.

HBOC syndrome is an inherited condition that increases the chances of certain cancers, especially breast and ovarian cancer.[1,8] It can also raise the chances of some other cancers such as pancreatic cancer and melanoma, as well as prostate cancer in males.[9,10]

This test analyzed the *BRCA1* and *BRCA2* genes for DNA differences that are linked to HBOC syndrome. But there are certain types of DNA differences this test did not look for, so you still have a small chance of having HBOC syndrome. That chance would be higher if HBOC syndrome runs in your family.[11]

Typical chance of developing various cancers



It's also important to note that most cases of cancer are not caused by inherited DNA differences.[2,3] Females without an inherited cancer condition still have around a 13% chance of developing breast cancer, for instance.[12] Males without an inherited condition still have around a 12% chance of developing prostate cancer.[13] It's important to talk with a healthcare provider about recommended cancer screenings.

Age, ethnicity, family health history, and other factors you can't control can all affect your chances of developing cancer.[14,15] But other factors that might make a difference are completely within your control, like eating a healthy diet and not smoking.[16,17] More ideas on how to lower your chances of developing cancer are included in *What you can do*.

> It's important to talk with a healthcare provider about recommended cancer screenings.

04 **What is HBOC syndrome?**

HBOC syndrome is the most common inherited cause of breast and ovarian cancer.

In the U.S., around 1 in 200 people have a DNA difference linked to HBOC syndrome.[18]

While breast and ovarian cancer are the most likely, other cancers are also linked to HBOC syndrome in both males and females.[19,20]

> HBOC syndrome is caused by DNA differences in one of two genes — *BRCA1* and *BRCA2* — that help control cell growth.

The chances of developing these cancers depend on a number of factors. For instance, a family history of breast cancer can make it more likely you would develop breast cancer.[21] The particular gene that has the DNA difference is another factor that affects the chances of developing different types of cancer.[22,23]

Cancer can happen when cells start growing out of control. HBOC syndrome is caused by DNA differences in one of two genes — *BRCA1* and *BRCA2* — that help control cell growth.[24] DNA differences can cause those genes to not work properly.

Ethnicity

HBOC syndrome is more common in people of certain ethnicities. About 1 in 40 people of Ashkenazi Jewish descent have HBOC syndrome, for example.[25] This is because there are three DNA differences that are linked to HBOC syndrome that are more common in people of Ashkenazi Jewish descent. These DNA differences are called "founder mutations."

05 **What you can do**

There are actions you can take to try to understand or lower your chances of developing cancer.

Get screened.
Catching cancers like breast and ovarian cancer early is critical for improving your chances of treating them.[26,27] Many cancers, including breast cancer, can be caught early with regular screenings.[28] Talk with a healthcare provider about when and how often you should be screened.

Don't smoke.
Smoking causes about a third of all cancer deaths in the U.S.[29]

Maintain a healthy weight.
Being overweight or obese is linked to about 1 in 12 cancers in the U.S.[30]

Stay active.
Getting enough exercise and increasing your physical activity may help to reduce the chances of cancer for some people, in part by controlling their weight.[31]

Talk to your family.
You may want to find out if a close family member, like your biological parents, brothers, or sisters have had cancer. If so, you may have an increased chance of also developing that type of cancer.[32]

Remember to consult with a healthcare provider before making any health, treatment, lifestyle, or dietary changes.

06 **Limitations**

This test cannot definitively rule out having HBOC syndrome.

This test used next-generation sequencing technology. This technology can detect the majority of the DNA differences in the *BRCA1* and *BRCA2* genes that scientific research has found are linked to HBOC syndrome. But the number of DNA differences your test looked for may vary. There are also certain types of DNA differences this test does not look for. It's possible you could have a DNA difference linked to HBOC syndrome that this test did not find.

Although your DNA doesn't change, your result may be updated as more is learned about which DNA differences and genes are linked to HBOC syndrome.

There are other genes this test did not look at that may contain a DNA difference that is linked to inherited cancer risk.

Read more about limitations

Incorrect results can happen, although they are rare. They might be due to a technical problem at the laboratory, you or a family member accidentally mixing up your samples, or other issues.

This test was developed and performed by our laboratory partner. For further technical details on the limitations of this test, download your physician report.

AncestryHealth™ includes laboratory tests developed and performed by an Independent CLIA-certified laboratory partner, and with oversight from PMINHealth, the independent clinician network of board-certified physicians and genetic counselors that provided clinical oversight for your test. The test results are not diagnostic and do not determine your overall chance of developing a medical condition. The test has not been cleared or approved by the U.S. Food and Drug Administration, has limited clinical validation, and its impact on health is PMINHealth. **You should consult a healthcare provider before taking any action, including before making any treatment, dietary, or lifestyle changes.**

07 **If you only do one thing, do this:**

Fill out your family health history and share it with a healthcare provider to try to better understand your cancer risk.

If you have a personal or family history of cancer, a healthcare provider may recommend additional genetic testing or cancer screening for you.

Fill out your family health history

What else can you do?

Ask a question

AncestryHealth™ has partnered with PMINHealth, the independent clinician network of board-certified physicians and genetic counselors that provided clinical oversight for your test. If you still have questions about your test or your result, you can submit a question to a PMINHealth genetic counselor below.

Ask a genetic counselor a question

provided by AncestryHealth

08 **Resources**

Learn more | FAQ | References

Learn more about your result

- What should I do next?
- Is there anything I can do to lower the chances of having a child with CF?
- If I have no family history of CF, is it still possible my children could have CF?
- Should I tell a healthcare provider about my result?
- Should I tell my partner and/or family about my result?
- How likely are my relatives to also be carriers of CF?
- How likely is my child to have CF?
- If I already have one child with CF, does that mean my other children won't have CF?
- Does this mean my current children could have CF?
- How accurate is this test?
- Will the information I input into the AncestryHealth™ family health history tool change the result in my health report?

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