BRCAssure® *Comprehensive*

Negative for *BRCA1/BRCA2* variants

Following hereditary cancer screening, patients often have many questions. This guide can help you better understand your test results and possible courses of action.

Your BRCAssure test result

Recently, a sample of your blood was tested for the presence of changes (variants, which are also referred to as mutations if they are associated with genetic disease) in the *BRCA1* and *BRCA2* (breast cancer 1 and 2) genes. Certain variants in these genes are linked to an increased risk of breast cancer in both women and men, ovarian cancer, and other cancers. These variants can be passed down through a family, so the cancers they cause tend to occur in several members of the same family—a condition known as hereditary breast and ovarian cancer syndrome (HBOC).

After discussing your personal/family history and genetic testing options with you, your health care provider ordered the BRCAssure *Comprehensive* test. This test looks for all known cancer-related variants in the *BRCA1* and *BRCA2* genes. It was ordered because your personal and/or family medical history shows that you may be at high risk for HBOC.

Your BRCAssure *Comprehensive* test result shows that no pathogenic variants were found (negative result) in the *BRCA1* and *BRCA2* genes.

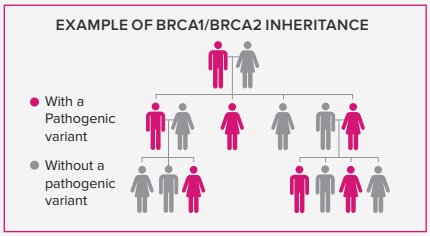
RISK OF CANCER IN INDIVIDUALS WITH A *BRCA1* OR *BRCA2* PATHOGENIC VARIANT[1**]

Cancer Type	General Population (no variant)	Individuals with *BRCA1* Variant	Individuals with *BRCA2* Variant
Breast	12%	46%-87%	38%-84%
Ovarian	1-2%	39%-63%	16.5%-27%
Male Breast	0.1%	1.2%	Up to 8.9%
Prostate	6% through age 69	8.6% by age 65	15% by age 65; 20% lifetime
Pancreatic	0.5%	1%-3%	2%-7%

** Adapted from Petrucelli, N et al. *BRCA1*- and *BRCA2*-Associated Hereditary breast and Ovarian Cancer. *Gene Reviews*

What does your test result mean?

Your negative BRCAssure *Comprehensive* result means that your chance of carrying a *BRCA1/BRCA2* pathogenic variant is greatly reduced, but not completely eliminated. Therefore, the possibility that you are carrying a cancer-linked gene variant that would increase your risk to develop breast or ovarian cancer cannot be completely ruled out. [2,3] This is because:



- You may be carrying a *BRCA1/BRCA2* gene variant that researchers have not yet linked to cancer.
- A mutation in a gene other than *BRCA1/BRCA2* may explain the cancer seen in your family.
- The BRCAssure test does not detect all variants in the *BRCA1* and *BRCA2* genes. Although uncommon, it is possible you are carrying a pathogenic variant that the test was not able to detect.

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What actions are recommended based on these test results?

Even though your BRCAssure *Comprehensive* result was negative (no pathogenic variants found), your personal and/or family history may still indicate that you are at increased risk for breast and ovarian cancer and you may require more routine screening for breast and other cancers. You may still have a higher risk for cancer than the general population due to a pathogenic variant within a gene other than *BRCA1/BRCA2*[3] or because of a familial predisposition due to shared inherited, environmental, or lifestyle factors. It is not unusual for some cancer(s) to "run in the family" even when no known genetic cause has been identified.[4]

Your doctor or genetic health care provider will guide you in deciding what steps to take to manage your health based on your family history, genetic test results and your cancer risk. If your personal or family history is suggestive for another hereditary cancer, additional testing using a multi-gene panel may be considered.[4]

You may also wish to talk to your doctor or genetic health care provider about how to discuss your test result with close blood relatives. Also, it is important that you update your doctor on any changes to your family's cancer history. This will help your doctor to manage your health appropriately.

Genetic Counseling

Genetic counselors translate and communicate genetic information into practical, understandable terms. They can help you understand the implications of your test results, and support you in making thoughtful genetic health care decisions for you and your family. If you would like to further understand your test results, please speak with your doctor or genetic healthcare provider about genetic counseling or visit **www.integratedgenetics.com.**

ADDITIONAL RESOURCES

- *American Cancer Society* website: www.cancer.org
- *American Congress of Obstetricians and Gynecologists (ACOG) website: www.acog.org/patients*
- *Facing Our Risk of Cancer Empowered* (FORCE) website: www.facingourrisk.org
- *National Cancer Institute* website: www.cancer.gov

REFERENCES

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3. *National Institutes of Health*. *BRCA1* and *BRCA2*: cancer risk and genetic testing. *National Cancer Institute* website. Available at http://www.cancer.gov/about-cancer/causes-prevention/genetics/brca-fact-sheet. Accessed May 22, 2017.
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