BRCAssure® *Comprehensive*

Variant of uncertain significance in *BRCA2*

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 a variant of uncertain significance (VUS) was found in *BRCA2*.

What does your test result mean?

Your test result is positive for a variant of uncertain significance (VUS) in the *BRCA2* gene, meaning that a change was found that makes it different from normal. However, not enough is known about this gene change to determine if it increases your risk for getting cancer.[1] This may be because it is the first time the gene change has been seen or it might not be clear if this type of change in the gene will affect how the gene functions.[1] Therefore, a VUS result for *BRCA* testing does not tell you if you are at a higher risk of getting breast or ovarian or another cancer; and, a VUS should not be used for clinical decision-making, although additional cancer monitoring may be considered. There may be a pathogenic (disease-causing) variant within a gene other than *BRCA1/BRCA2* that explains the cancer in your family or you may have a familial predisposition due to shared inherited, environmental, or lifestyle factors.[2]

It is important to discuss your family history with your doctor or genetic health care provider to decide if testing any of your family members for this VUS would be beneficial. Scientists would look to see if the same people in your family that have cancer also have the VUS or if they are negative. When many families have testing like this, it can help to provide the evidence needed to decide if a VUS is disease-causing (pathogenic) or not disease-causing (benign). Over time, when enough information is learned, it may be possible to update a VUS to a negative result or a positive result.

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What actions are recommended based on these test results?

Unfortunately, a VUS result does not provide you or your doctor with any guidance on assessing your individual risk for cancer or how to reduce your risk for getting cancer. Your cancer risk with a VUS test result should be managed based on symptoms and using your family history to guide enhanced screening.[2]

It is important for you to stay in contact with your genetic health care provider and doctor, as the classification of your VUS may change over time.[2] Your doctor's suggestions for cancer screenings and managing your health may be different than standard recommendations, depending on your family or personal history of cancer.

You should work with your doctor or genetic health care provider to guide you in deciding what steps to take to manage your health based on your cancer risk.

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 College of Obstetricians and Gynecologists* (ACOG) website: www.acog.org/patients and *American College of Obstetricians and Gynecologists*; *ACOG Committee on Practice Bulletins*–Gynecology; *ACOG Committee on Genetics*; *Society of Gynecologic Oncologists. ACOG Practice Bulletin No. 103*: Hereditary breast and ovarian cancer syndrome. *Obstetrics and Gynecology.* 2009;113(4):957-966.
- *Facing Our Risk of Cancer Empowered* (FORCE) website: www.facingourrisk.org
- *National Cancer Institute* website: www.cancer.gov

REFERENCES

1. *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.
2. Genetic/familial high-risk assessment: breast and ovarian. *NCCN Guidelines Version 2*. 2017. Available at: http://www.nccn.org/professionals/ physician_gls/pdf/ genetics_screening.pdf. Accessed May 31, 2017.

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