October 2019 | Patients

Spotlight on Health

Quest Diagnostics™

Hereditary Breast Cancer

Breast cancer is the most common type of cancer in women.[1] Fortunately, treatment options are available that can help save lives. Finding breast cancer before it spreads to other parts of the body is key. Of women who get breast cancer, 90% will live for 5 years or more; 99% if it is found early on.[1] Knowing that some women are more likely to get breast cancer than others (see Sidebar) helps with early detection.[2,3]

Breast cancer can run in families. This is called hereditary breast cancer. Around 1 in 10 breast cancers are hereditary.[3] This newsletter will discuss hereditary breast cancer and how laboratory testing can help find out if you are at risk.

Hereditary Cancer

Our traits, such as hair color and eye color, come from our genes. Genes can have changes called mutations. A gene with a mutation may not work the way it should. Cancer can sometimes happen because a gene has a mutation. If a relative has a gene with a mutation that is related to cancer, there is a higher chance that you might have it too.[2,3]

Hereditary Breast Cancer

Hereditary breast cancer is caused by changes in certain genes. The 2 genes most often associated with breast cancer are called *BRCA1* and *BRCA2*.[3] Women with changes in the *BRCA1* or *BRCA2* genes have a strong chance (45% to 65%) of getting breast cancer.[3-5] Women with changes in these genes also tend to get breast cancer at a younger age and to have cancer in both breasts.[3-5]

You may be at higher risk for hereditary breast cancer if[3-5]

- You or someone in your family had breast cancer before age 50
- You or someone in your family had cancer in both breasts
- You or someone in your family had ovarian cancer
- A man in your family had breast cancer
- More than 1 person in your family had breast cancer
- Your family is of Ashkenazi Jewish ethnicity
- A family member tested positive for a gene change seen in hereditary breast cancer (such as a change in *BRCA1* or *BRCA2*)

Breast cancer in men is rare. But men can also have gene mutations. A man with a *BRCA* mutation is more likely to get breast cancer than a man without a mutation.[6]

Genetic Testing

Looking at genes to see if there are changes that increase the risk for cancer is called genetic testing. Genetic testing for hereditary breast cancer is done with a blood sample. Unfortunately, 4 out of 5 women who may benefit from testing for hereditary breast cancer are not being tested.[7]

Some companies offer testing for changes in genes linked to cancer directly to patients (called direct-to-consumer genetic tests). But the Food and Drug Administration (FDA) recommends that a healthcare provider who knows a lot about cancer genetics (genetic counselors) look at these test results.[8] The FDA also recommends that your healthcare provider confirm them before making treatment decisions.[8]

Breast Cancer Risk Factors for *All* Women

Some of the risk factors for breast cancer that *all* women should be aware of include[2]

- Being over 50 years old
- Beginning your periods before age 12
- Menopause starting after age 55
- Dense breasts
- A cancer that was treated with radiation therapy
- Smoking and excessive alcohol intake
- Not getting enough exercise
- Being overweight
- Having close relatives with certain types of cancer

Having a risk factor does not mean you will get breast cancer. But if you have risk factors, your healthcare provider may recommend more frequent screening tests (for example, mammography).

What You Can Do

Tell your healthcare provider if you have any risk factors for getting breast cancer or hereditary breast cancer. Websites can also help you find out if you are at increased risk for breast cancer. One is the National Cancer Institute (BCRiskTool.Cancer.gov). Quest Diagnostics also has an online quiz that you can take to find out your risk for hereditary breast cancer (QuestVantage.com).

How Your Healthcare Provider Can Help

Your healthcare provider may ask you questions about your medical history. They may also ask if any family members have had cancer. Your healthcare provider may suggest you talk to a genetic counselor.[3-6] A genetic counselor can help you understand your risk of hereditary cancer. If you decide to have genetic testing, they can explain what will be done and what the results mean.

How the Laboratory Can Help

Quest offers the BRCAvantage® Comprehensive Test for the *BRCA1* and *BRCA2* genes. Changes in these genes can increase the chances a person will get breast cancer. Quest also offers testing of other genes related to breast cancer. Tests are also available for other cancers that can run in families.

Quest also has genetic counselors that can help your healthcare providers understand the meaning of your test results. If you want to find a local genetic counselor you can speak to, you can visit the National Society of Genetic Counselors website at FindAGeneticCounselor.com.

Additional Information

For more information about hereditary breast cancer visit QuestVantage.com, or these helpful websites:

- American Cancer Society: Cancer.org/cancer/breast-cancer/risk-and-prevention/breast-cancer-risk-factors-you-cannot-change.html
- Centers for Disease Control and Prevention: CDC.gov/cancer/breast/young_women/bringyourbrave/hereditary_breast_cancer/index.htm
- FORCE: FacingOurRisk.org/index.php
- National Cancer Institute: Cancer.gov/types/breast

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