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Hereditary Breast and Ovarian Cancer

Hereditary cancer

Some people inherit a tendency to get cancer. This happens when a parent passes on an altered gene to his or her child. For example, a parent passes on an altered *BRCA1* or *BRCA2* gene to a child. Daughters will have an increased risk for getting cancer of the breast and ovary. Sons have an increased risk for getting prostate cancer. And both have an increased risk for cancer of the pancreas and melanoma. All these people with an altered *BRCA* gene have hereditary breast and ovarian cancer (HBOC) syndrome.

Changes in other genes can cause HBOC syndrome too. But changes in the *BRCA1* and *BRCA2* genes are more common than changes in the other genes.

Who's at risk for HBOC syndrome?

People at risk usually have close relatives with one or more of these cancers. But it's not quite that simple. There are many people who have close relatives with one of these cancers but don't have HBOC syndrome. So experts have developed a list of things that help identify those at risk. Risk factors include:

- Breast cancer before the age of 50
- 2 separate (primary) breast cancers at any age
- Triple negative (ER, PR, and HER2 negative) breast cancer
- Ovarian cancer at any age
- Male breast cancer
- A strong family history of breast and/or ovarian cancer
- A blood relative with a *BRCA1* or *BRCA2* mutation
- Ashkenazi Jewish ancestry

What if a person is at risk for HBOC syndrome?

People at risk can talk with a doctor or genetic counselor. Together they can figure out if the person meets the criteria for *BRCA* mutation testing. Quest Diagnostics has created a quiz that can help. It's available at BRCAvantage.com/take-the-quiz/. There is a quiz for women and one for men. Patients who answer "yes" to any of the questions meet the criteria for testing.

HBOC syndrome and cancer risk[1-5]

	Risk of Cancer		
Cancer	With *BRCA1* Mutation	With *BRCA2* Mutation	Without *BRCA* Mutation
Women			
Breast cancer[a]	55–65%	45–47%	9%
Ovarian cancer[a]	39%	11–17%	1%
2nd breast cancer[b]	83%	62%	15%
Men			
Breast cancer[a]	1%	7%	0.06%

[a] Risk of developing cancer by age 70.
[b] Lifetime risk of developing a second breast cancer.

If a person meets the criteria, the next step is to decide whether to be tested. Genetic counselors can help. Also, Quest Diagnostics has written a Patient Support Guide that can help. It includes facts about HBOC syndrome and mutation testing. It can be accessed online at BRCAvantage.com/patient-resources/. Alternatively, doctors can order copies at BRCAvantage.com/order-guide/.

If a person decides to be tested, his/her doctor can order the BRCAvantage™ test from Quest Diagnostics. The test looks for mutations in the *BRCA1* and *BRCA2* genes. If the test result is positive, the patient has HBOC syndrome.

What if a person has HBOC syndrome?

People with HBOC syndrome are at increased risk of getting certain cancers. These include cancer of the breast, ovary, fallopian tube, peritoneum, prostate, and pancreas. Risk of melanoma is also increased.

But this doesn't mean the person will actually get cancer. Not everyone with HBOC syndrome gets cancer. And there are things the person can do to help stay healthy. Options include:

- Increased cancer screening
- Surgery
- Medicines (chemoprevention)

Expert genetic counselors and doctors can talk to the person about these things. Together, they can decide what is best. The important thing is that the person knows he/she is at risk and is taking steps to stay healthy.

What about other family members?

Blood relatives of a person with HBOC syndrome may have the syndrome too. Their risk varies based on their relationship to the person.

These relatives are eligible for testing. They should learn more about it and decide if they want to be tested. If they test positive, they can take steps to guard their health.

References

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