



Hereditary Breast and Ovarian Cancer

Should I have genetic testing?

Cancer is so common that most people have a history of cancer in the family. Most cancer can be explained by common risk factors like aging, lifestyle choices, and exposures in the environment. However, about 5 to 10% of breast cancers and 20% of ovarian cancers are linked to genetic changes (mutations) in a cancer risk gene.

What are cancer risk genes?

Genes are the instructions in your body that guide growth and development and help control how your body works. There are some genes that help direct cell growth. When one of these genes is not working normally, it raises the chance for cancer to develop. These genes are called cancer risk genes. You have two copies of each cancer risk gene - one copy from each parent. A person with a mutation in a cancer risk gene is more likely to develop cancer. Some cancer risk genes cause a high risk for breast cancer and ovarian cancer. These genes may also include a higher risk for other cancers as well.

How do these genes cause cancer?

Cancer risk genes help fix cells that have genetic damage or remove cells that cannot be fixed. If one of these genes has a mutation and does not work right, then a cell with genetic damage might stay in the body. This can eventually lead to cancer. But not everyone with a mutation in a cancer risk gene develops cancer.

Could I have a mutation?

Mutations in cancer risk genes have been found in families worldwide. There are certain risk factors that help identify who might have a mutation.

You might have a mutation in a cancer risk gene you answer “YES” to any of these statements:

- I have had breast cancer AND ovarian cancer
- I have had breast cancer in both breasts
- I have had ovarian cancer
- I had breast cancer before age 45
- I had breast cancer before age 65 AND my ancestry is Ashkenazi Jewish
- I have had breast cancer AND I have a close relative with breast cancer or ovarian cancer
- I am a man who has had breast cancer
- I have had pancreatic cancer
- I have a strong family history of cancer

What if I do not have any risk factors?

Testing is most useful for individuals who are at high risk. If your personal or family history of cancer does not have high risk factors, then you do not need genetic counseling or testing. However, you should still follow the routine screening recommendations for breast cancer.

What if I have one or more risk factors?

Talk with your medical provider about your concerns. Your provider can review your cancer history and may refer you to a genetic counselor. Genetic counseling is the first step to find out if a mutation in a cancer risk gene runs in your family.

A genetic counselor can help:

- Estimate the chance for developing cancer based on your medical and family history
- Determine if your history suggests a hereditary cancer condition
- Estimate the chance that you may have a mutation in a cancer risk gene
- Guide you through decisions about genetic testing and any results you receive

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How is a mutation identified?

A blood test checks for mutations in many cancer risk genes. Testing is most useful when your personal and family history of cancer shows a pattern of an inherited risk to cancer. It is easier to understand a result when there is a strong pattern of cancer in the family. Not all genetic changes have the same risk for cancer.

What do I need to think about before having genetic testing?

Deciding whether or not to have genetic testing is very personal. One important part of genetic counseling is exploring what a test result could mean for you and your family. There can be complex, and sometimes unexpected, emotional effects. Some results may lead to tough medical decisions. You will want to think carefully about how genetic testing results will help you.

What does it mean if the test is positive?

A positive result means a mutation has been found in one of the cancer risk genes. A person with a mutation has a much higher chance of developing cancer. The lifetime risk of developing breast cancer may be as high as 85% with some mutations. There may be a higher risk of ovarian cancer. Some cancer risk genes also have a higher risk for other cancers, such as male breast cancer, prostate cancer, pancreatic cancer, and melanoma. And any person with a mutation could pass the mutation to their offspring.

What are some of the benefits of testing?

Genetic testing may help explain the cancer history in your family and clarify your cancer risk. When a mutation is found, it can help guide your medical care. Cancer screening is recommended more often and starts at a younger age. There are also surgical options that can lower the lifetime risk of cancer.

What are some of the drawbacks of testing?

When no mutation is found, it may give some people the feeling that their risk for cancer is gone. They may not follow routine screening recommendations. For someone who learns they have a mutation, it can be stressful to deal with the result, especially if no clear plan of action is in place.

Are there ways to lower my risk of breast cancer?

Some risk factors for breast cancer cannot be changed, like biologic sex, age, and your genes. However, choosing a healthy, low-fat diet, getting regular exercise, limiting alcohol, and not smoking may lower your chance of developing cancer in general.

SCREENING FOR BREAST CANCER

All women are at risk for breast cancer. Screening helps find breast cancer early, when it is easier to treat. There are screening steps you can take for yourself, regardless of your family history:

- Breast self-exams, to know the normal look and feel of your breasts
- Breast exam by a doctor or nurse, if you notice any changes
- Regular mammograms.

Mammograms are strongly recommended for all women who are between the ages of 50 to 74. If you are age 40 to 49, talk with your health care provider about when to begin regular mammograms. If you are considered high risk, your provider may suggest that you begin mammograms earlier.

Genetics.kp.org

The information is not intended to diagnose health problems or to take the place of professional medical care. If you have persistent health problems or if you have further questions, please consult your health care provider.

