Genetic Testing for Ovarian Cancer

Genetic testing is offered to anyone with ovarian cancer. Test results may help guide your treatment options and predict the risk for future cancers in you and your family.

Genetics and ovarian cancer

Most ovarian cancer is caused by changes in genes that happen randomly as we age. It does not usually run in families. However, about 1 in 5 people with ovarian cancer have inherited a genetic change that causes a higher risk for cancer.

What test am I being offered?

You are being offered a test to look for *inherited* changes in more than 30 cancer risk genes, including BRCA1 and BRCA2. Testing a panel of genes improves our ability to look for an inherited cause of your cancer. However, the test does not include every possible cancer risk gene. The test includes some genes that are not linked to ovarian cancer and some genes that are not well understood.

Why should I have genetic testing?

Results from genetic testing can sometimes be used to personalize your cancer treatment and surveillance plan. It can also help predict your risk for future cancers. Testing may show that you qualify for certain research trials. When a harmful change is found in a cancer risk gene, testing can be offered to close relatives, such as your children and your siblings. It is your choice to have testing or not have testing. If you need more information to make your decision, see "Additional Resources" at the end of this handout. Your doctor can also refer you to the Genetics Department.

DID YOU KNOW...?

- All cancer is caused by changes to genes in the body.
- Genes are made of DNA and are inherited from our parents.
- Genes are inside each cell of the body and tell the cell what to do.
- There are some genes that protect the breasts and ovaries and other parts of the body from cancer. These are called cancer risk genes.
- BRCA1 and BRCA2 are the best known cancer risk genes, but there are many more cancer risk genes.
- A person is more likely to develop cancer when one of the cancer risk genes is not working correctly.

How is the test done?

This test is usually done by taking a small amount of blood. If you agree to this testing, your doctor will order the test and you would go to a Kaiser Permanente laboratory to get your blood drawn. The sample is sent to a clinical laboratory and the results are returned to your Kaiser Permanente medical team. A sample from your tumor may also be tested at the same time.

What should I expect from the results?

Results take about 2 to 3 weeks. You will be contacted when your results are ready. Your results will be in your Kaiser Permanente electronic medical record, but they are not posted to your KP.org account. This result is confidential and has the same privacy protections as your other medical records.

There are three types of results you could get from the blood test:

Negative: No harmful gene change was found in any of the tested genes. Most people who have testing get a negative result. You will receive a kp.org message (if you are active on kp.org) or letter that explains your result, and continue care with your gynecologic oncologist.

Positive: A harmful gene change was found that causes a higher cancer risk. Your doctors may use this result to make care recommendations. This gene change could also be present in other family members. You will receive a kp.org message (if you are active on kp.org) or letter explaining that you have been referred to the Genetics Department. You can then expect to be contacted to set up a phone or video visit with a genetic counselor to discuss your result. The genetic counselor will review your family medical history and talk about testing for other family members.

Variant of uncertain significance (VUS): A genetic change was found in one of the genes, but we do not know if it causes a risk for cancer. Many variants are harmless changes. Your cancer care will not change if a VUS is found. You will receive a kp.org message(if you are active on kp.org) or letter explaining that you have been referred to the Genetics Department. You can then expect to be contacted to set up a phone or video visit with a genetic counselor to discuss your result.

Results from tumor testing

There may be reasons your doctor orders genetic tests on the tumor itself. Tumor testing helps find out which genes are no longer working in a person's cancer cells. This information is specific to the tumor and may help your doctor personalize your cancer treatment. Tumor test results do not tell you about inherited cancer risk or the cancer risk for family members.

The genes most often connected to a higher risk for ovarian cancer are:

BRCA1 and BRCA2 A harmful change in either of these genes raises the risk for breast cancer, ovarian cancer, and prostate cancer. There is also a higher risk for pancreatic cancer and melanoma.

MLH1, MSH2, MSH6, and PMS2 A harmful change in any one of these genes raises the risk for colon cancer and pancreatic cancer. There is also a higher risk for prostate cancer, uterine cancer, and ovarian cancer.

Additional Resources

Inherited cancer video: genetics.kp.org/cancer

Information sheets on cancer genetics topics (KP Genetics website):
https://mydoctor.kaiserpermanente.org/ncal/specialty/genetics/resources/handouts.jsp#cancer

Cancer Genetics (KP Genetics website):
https://mydoctor.kaiserpermanente.org/ncal/specialty/genetics/general_genetic_services/cancer/index.jsp

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