



FREQUENTLY ASKED QUESTIONS

FAQ509

WOMEN'S HEALTH

Multigene Panel Testing for Cancer

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What is cancer?

Normal cells in the body grow, divide, and are replaced on a routine basis. Sometimes, cells divide abnormally and begin to grow out of control. These cells may form growths or tumors. Tumors can be benign (not cancer) or malignant (cancer). Benign tumors do not spread to other body tissues. Cancer tumors can invade and destroy nearby healthy tissues, bones, and organs. Cancer cells also can spread to other parts of the body and form new cancerous areas.

What causes cancer?

Cancer is caused by many different factors. A few types of cancer are caused by changes in **genes** that can be passed from parent to child. Changes in genes are called **mutations**. Certain gene mutations are associated with family cancer syndromes.

What are family cancer syndromes?

Family cancer syndromes are genetic conditions that increase the risk of certain types of cancer. They also are called hereditary or inherited cancer syndromes. Common family cancer syndromes include **hereditary breast and ovarian cancer (HBOC) syndrome**, **Lynch syndrome**, **Li–Fraumeni syndrome**, **Cowden syndrome**, and **Peutz–Jeghers syndrome**.

What is genetic testing for cancer?

Genetic testing for cancer looks for mutations in certain genes that are known to be linked to cancer. The results can help determine your risk of developing a disease like cancer or passing on a genetic disorder.

What is multigene panel testing?

Multigene panel testing is a type of genetic testing that looks for mutations in several genes at once. This is different from single-gene testing, which looks for a mutation in a specific gene. Single-gene testing is often used when there is already a known gene mutation in a family. For example, testing for *BRCA* mutations only looks for changes in ***BRCA1* and *BRCA2*** genes.

Who should have genetic testing?

You may consider genetic testing if your personal or family history shows that you have an increased risk of cancer. Your **obstetrician–gynecologist (ob-gyn)** or other health care professional may ask you these and other questions:

- Have you or any family members been diagnosed with cancer?
- If yes, which family members were diagnosed, with what types of cancer, and at what ages?
- Were you or any of your family members born with birth defects?
- Are you of Eastern or Central European Jewish ancestry?

Depending on your answers, your ob-gyn or other health care professional may suggest that you talk about genetic testing with a **genetic counselor** or a physician who is an expert in genetics. You can choose to have genetic testing, or you can choose not to. Before you decide, you should have genetic counseling.

What is genetic counseling?

In genetic counseling, you will talk with a genetic counselor or physician expert about the following:

- Your risk of getting a hereditary type of cancer
- Who in your family could potentially get tested
- How testing is done
- What the test results may mean
- What you may do depending on the results

How is genetic testing done?

Genetic testing typically is done from a blood sample or saliva sample.

When is multigene panel testing recommended?

Multigene panel testing may be useful if you

- are at risk of a family cancer syndrome that has more than one gene associated with it
- have a personal or family history of cancer and single-gene testing has not found a mutation, or the result is uncertain

What are the benefits of multigene panel testing?

Multigene panel testing looks at multiple genes with one test. If a gene mutation is found, multigene panel testing may

- give you a better understanding of your cancer risk than single-gene testing
- help your health care team decide what cancer screenings you might need beyond routine screenings
- help you think about what you can do to prevent cancer

What are the risks of multigene panel testing?

The risks of multigene panel testing may include the following:

- Results can be complicated to interpret.
- Testing may find gene mutations that show a moderate or uncertain risk of cancer.
- It may be hard to know what you should do with your test results.

You should talk with a genetic counselor or physician expert before and after genetic testing to learn what the results mean.

If I have a gene mutation, should I tell my family?

Having a gene mutation means you can pass the mutation to your children. Your siblings also may have the gene mutation. Although you do not have to tell your family members, sharing the information could be life-saving for them. With this information, your family members can decide whether to be tested and get cancer screenings at an early age.

How can I prevent cancer if I test positive for a gene mutation?

If you test positive for a gene mutation, you can discuss cancer screening and prevention options with your ob-gyn, genetic counselor, or other health care professional. It may be helpful to have earlier or more frequent cancer screening tests, which can find cancer at an early and more curable stage. Risk reduction steps like medication, surgery, and lifestyle changes also may be recommended.

I'm concerned about discrimination based on genetic testing results. What should I know?

Many people are concerned about possible employment discrimination or denial of insurance coverage based on genetic testing results. The Genetic Information Nondiscrimination Act of 2008 (GINA) makes it illegal for health insurers to require genetic testing results or use results to make decisions about coverage, rates, or preexisting conditions. GINA also makes it illegal for employers to discriminate against employees or applicants because of genetic information. GINA does not apply to life insurance, long-term care insurance, or disability insurance.

What should I know about direct-to-consumer genetic tests?

Direct-to-consumer (or at-home) genetic tests are sold over the internet. You do not need a doctor's order to get one. The American College of Obstetricians and Gynecologists discourages use of direct-to-consumer genetic tests because the results may be misleading. For example, one commercial test for *BRCA* mutations only looks for three mutations, even though there are more than 500 *BRCA* mutations linked to cancer. The test results could cause unnecessary fear, or a false sense that you are not at risk. You should see a health care professional if you want a genetic test.

Glossary

BRCA1 and BRCA2: Genes that keep cells from growing too rapidly. Changes in these genes have been linked to an increased risk of breast cancer and ovarian cancer.

Cowden Syndrome: A genetic condition that increases a person's risk of cancer of the breast, thyroid, uterus, colon, kidney, and skin.

Genes: Segments of DNA that contain instructions for the development of a person's physical traits and control of the processes in the body. The gene is the basic unit of heredity and can be passed from parent to child.

Genetic Counselor: A health care professional with special training in genetics who can provide expert advice about genetic disorders and prenatal testing.

Hereditary Breast and Ovarian Cancer (HBOC) Syndrome: A genetic condition that increases a person's risk of cancer of the breast, ovary, prostate, pancreas, and skin (melanoma).

Li-Fraumeni Syndrome: A genetic condition that increases a person's risk of cancer of the breast, bones, soft tissue, brain, and outer layer of the adrenal glands.

Lynch Syndrome: A genetic condition that increases a person's risk of cancer of the colon, rectum, ovary, uterus, pancreas, and bile duct.

Multigene Panel Testing: A type of genetic test that can look for mutations in multiple genes at once.

Mutations: Changes in genes that can be passed from parent to child.

Obstetrician–Gynecologist (Ob-Gyn): A doctor with special training and education in women's health.

Peutz–Jeghers Syndrome: A genetic condition that increases a person's risk of cancer of the stomach, intestines, pancreas, cervix, ovary, and breast.

If you have further questions, contact your obstetrician–gynecologist.

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