TumorNext-\textit{HRD}

A TEST FOR OVARIAN CANCER PATIENTS TO IDENTIFY HEREDITARY AND TUMOR-SPECIFIC MUTATIONS

Because knowing can mean personalized treatment and management
**Germline vs. Tumor Testing**

TumorNext-HRD looks for mutations in your tumor (also referred to as somatic testing) and inherited (germline) mutations in your blood.

It is important to understand the key differences between germline and tumor genetic tests; each can provide very different information about your health and your family.

**WHAT’S THE DIFFERENCE?**

<table>
<thead>
<tr>
<th>WHAT IS TESTED?</th>
<th>INHERITANCE</th>
<th>RISKS</th>
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<tbody>
<tr>
<td><strong>INHERITED (GERMLINE)</strong></td>
<td>Blood or saliva</td>
<td>Can be inherited and passed on to family members</td>
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<tr>
<td></td>
<td>Genes that are identical in all cells of your body</td>
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<tr>
<td><strong>TUMOR (SOMATIC)</strong></td>
<td>Your tumor tissue for cancer-specific changes</td>
<td>Not inherited and only present in your tumor cells. Cannot be passed to family members</td>
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By testing normal tissue (blood or saliva) and tumor tissue, we can detect both types of mutations to give you and your healthcare provider more information about how to best care for you and your family.
Some of the genes in our body help to fix errors in our DNA in a process called homologous recombination. When one of these genes has a mutation, this process may not work well, which can lead to the development of cancer. These mutations cause something called **homologous recombination deficiency or HRD.**

**TUMORNEXT-HRD**

For patients with ovarian cancer
Looks for inherited genetic mutations and tumor mutations with one test

**GERMLINE (INHERITED)**
Learning if you have an **inherited mutation** can help you understand the cause of your ovarian cancer, and future cancer risks for you and your family.
Results could also impact your recommended treatment and cancer screening options.

**TUMOR (SOMATIC)**
Learning if you have a **mutation in certain genes in your tumor** may help your doctor guide treatment recommendations.

**WHAT ARE PARP INHIBITORS?**

PARP inhibitors can sometimes be used to treat ovarian cancer. This may be referred to as targeted treatment because it targets unique traits of a tumor to selectively kill cancer cells. Before a PARP inhibitor is prescribed, germline and tumor genetic testing are often used to find the right patients for this drug to be effective.
Know the Basics: Inherited Mutations and Hereditary Cancer

TYPES OF CANCER

SPORADIC CANCER

Happens by chance in one or two related family members, typically at older ages

HEREDITARY CANCER

A clustering of cancer in a family due to inherited gene changes (germline mutations), which can be passed from parent to child

ABOUT HEREDITARY CANCER

Many people have a family history of cancer, but only 10-25% of ovarian cancer is hereditary.

People who have these gene mutations are born with them – they do not develop over time.

Learning if you have an inherited (germline) mutation can help you know more about your cancer risks.

People with a higher chance of developing cancer may need screening, that starts at younger ages, and/or occurs more often.
YOUR GENES CARRY A STORY THAT IS UNIQUE TO YOU AND MAKES YOU WHO YOU ARE. GENETIC TESTING CAN HELP YOU BETTER UNDERSTAND YOUR RISKS FOR CANCER.

Genetic testing for hereditary ovarian cancer can include a varying number of genes, including BRCA1/2, that are linked to an increased lifetime risk for ovarian, breast and/or other cancers. Based on your results, your healthcare provider may discuss more specific cancer risks for you and your family.

Hereditary Breast and Ovarian Cancer Lifetime Risks (%)

- General population
- Germline (inherited) mutations in BRCA1 or BRCA2

Breast: 45-87%
Ovarian: 12%
Male Breast: 11-40%
Breast: 0.1%
Prostate: >6%
Prostate: 5.8%
Prostate: 15%
Prostate: increased
Pancreatic: 1.5
Melanoma: 2.5
Melanoma: increased

* Risk to 60-69 years old and up to 65 years old, respectively
** Risk for BRCA2 only

Your healthcare provider has determined that the best test for you is:

- TumorNext-HRD
- TumorNext-BRCA
- OvaNext
- Other: ____________________________

VISIT OUR WEBSITE

For more information about TumorNext-HRD, visit our website.
ambrygen.com
What are the Benefits of TumorNext-\textit{HRD}?

\textbf{BENEFITS OF BOTH GERMLINE AND TUMOR TESTING:}

Your doctor may discuss the possibility of \textit{personalized treatment options} based on your genetic test results, including targeted drug therapies such as PARP inhibitors.

\textbf{BENEFITS OF GERMLINE GENETIC TESTING:}

Your healthcare provider can adjust your \textit{cancer screening plan} (such as age of initial screening, type, and frequency) based on your genetic test results.

- Examples of cancer screening are mammograms or breast MRI

Your healthcare provider may discuss possible cancer \textit{prevention options}, such as preventive surgery to reduce the risk for certain cancers.

- Examples are prophylactic mastectomy (removing one or both breasts before a cancer occurs)
Men and women have the same chance to inherit a mutation, but their chance to develop cancer may be different.

Typically genetic testing is recommended for adults, but it is important to discuss genetic testing for children under age 18 with your healthcare provider to determine if it may be helpful.
Possible Genetic Test Results

A GERMLINE (INHERITED) MUTATION LINKED TO AN INCREASED RISK FOR CANCER WAS FOUND IN ONE OF THE GENES TESTED

Personalized treatment may be available to you based on your genetic test results. Tailored cancer screening or preventive options may also be recommended.

Genetic testing for certain family members may be recommended.

SOMATIC (TUMOR) MUTATION WAS FOUND IN ONE OF THE GENES TESTED

Targeted treatment options may be available to you. If only a somatic (tumor) mutation is found, then cancer risk(s) and additional management recommendations for you and your family members may be based on personal and family history.

NO GENETIC CHANGES WERE FOUND IN ANY OF THE GENES TESTED

Cancer risk(s) and management recommendations are based on personal and family history.

VARIANT OF UNKNOWN SIGNIFICANCE (VUS)

At least one genetic change was found, but it is unclear if this change causes an increased risk for cancer or not.

Cancer risk(s) and treatment recommendations are based on personal and family history.

For negative or VUS results, talk to your healthcare provider to determine if relatives would benefit from any additional genetic testing.

It is possible to have a combination of positive and VUS results, since multiple genes are tested.
Resources For You

Ambry’s Patient Education Website
ambrygen.com/patient

American Cancer Society
cancer.org

American Society of Clinical Oncology
cancer.net

Foundation for Women’s Cancer
foundationforwomenscancer.org

Genetic Information Nondiscrimination Act
ginahelp.org

National Cancer Institute
cancer.gov

National Ovarian Cancer Coalition
ovarian.org

FIND A GENETIC COUNSELOR

National Society of Genetic Counselors
nsgc.org

Canadian Association of Genetic Counsellors
cagc-accg.ca
1 **HOW IS GENETIC TESTING PERFORMED AND HOW LONG DOES IT TAKE?**

Germline testing is done using a blood or saliva sample, which is collected using a special kit that is shipped overnight to Ambry (all coordinated by your healthcare provider). A sample of your ovarian tumor will also be needed for the tumor testing, and Ambry will request that this be sent by the Pathology department at your hospital. Once both samples are received, the genetic testing will be completed. The time to complete the testing may depend on how quickly Ambry receives your tumor sample. After we receive the required samples, it will take 21-28 days for the results to be sent to your healthcare provider.

2 **WHAT WILL HAPPEN WHEN MY RESULTS ARE READY?**

Your healthcare provider will receive your results; they will not be sent directly to you. Every healthcare provider may have a different method and time frame to contact you to discuss your results, so it is important to discuss this process with them. Based on your test results, your healthcare provider will discuss any next steps.

3 **WILL MY GENETIC TEST RESULTS AFFECT MY INSURANCE COVERAGE?**

In the U.S., the Genetic Information Nondiscrimination Act (2008) prohibits discrimination by health insurance companies and employers, based on genetic information. Depending on where you live in the world, you may have different (or fewer) laws in this area. Visit ginahelp.org to learn more.
4 SHOULD I TELL MY FAMILY MEMBERS ABOUT MY GENETIC TEST RESULTS?

It is important to share your results with your family members as they may provide additional information about their cancer risks and management options. Your healthcare provider may be able to guide you on finding the best way to inform family members.

5 WILL GENETIC TESTING BE COVERED BY MY INSURANCE?

Many insurance plans cover germline genetic testing and Ambry is contracted with the majority of U.S. health plans. Your out-of-pocket cost may vary based on your individual plan; therefore, we offer personalized verification of insurance coverage and financial options for your genetic testing. A team of dedicated specialists is available to help you get access to the genetic testing you need and answer any questions you have about our payment options. Call or email our Billing department at +1.949.900.5795 or billing@ambrygen.com with any questions.

6 WHAT IS AN EXPLANATION OF BENEFITS (EOB)?

Your insurance company sends you an EOB to explain any services paid on your behalf. You can contact us directly to speak with a Billing specialist with any questions or concerns about your EOB. Some genetic tests take weeks to process in order to receive the best results. In addition, insurance companies can take several weeks or even a couple of months to process claims.

STILL HAVE QUESTIONS?

Talk to your doctor or visit our website: ambrygen.com
Finding Answers.