Understanding biomarker testing:
how it can impact your ovarian cancer experience

Biomarker testing, including genetic tests, are used in gynaecologic oncology, including ovarian cancer, to help your healthcare team better understand how the cancer may behave, and to identify treatment options that are most likely to work for an individual and their specific cancer. It is estimated that approximately 1 in 4 ovarian cancers are caused by a genetic change. This guide provides clear, practical information so you can feel confident and prepared when talking with your care team about biomarker testing options and what's right for you.

"Testing is extremely valuable. If there are patients that have a cancer and have a genetic mutation, they may be eligible for certain therapeutics based on their genetic predisposition."

- Dr Amina Ahmed, gynaecologic oncologist and director, RUSH MD Anderson Cancer Center

What we know

Feeling overwhelmed by information? You are not alone. Our multi-national survey* of 818 individuals with gynaecologic cancer revealed:

9 of 10
people want to know more about testing options to inform their treatment

34%
of people did not have genetic testing, even though 64% had a family history of gynaecologic cancer

74%
of those who had genetic testing wish their healthcare provider explained the results more clearly

Different types of cancers often need different types of biomarker testing. Understanding what tests may be most important for you can help you get the right information.

About testing

Why does testing matter?
Knowing your biomarker status can help you and your healthcare team understand your prognosis and identify the treatment approach that may be right for you. Genetic testing is the most common type of biomarker testing in ovarian cancer and may provide information that could help determine your risk for developing certain cancers. Genomic testing and tumour testing are less common in ovarian cancer but can help determine how your specific cancer will act, progress and respond to certain treatments.

* GSK Your Cancer Is Our Challenge (YCIOC) Survey, conducted online by The Harris Poll in March-May 2024. Available at: https://www.gsk.com/en-gb/behind-the-science-magazine/gynaecologic-cancer-survey-treatment-access/. Last accessed: November 2025.

GSK
Material provided by GSK
Material was developed in collaboration with advisory committee consisting of patients, advocates and healthcare providers.

About testing (continued)

Common types of biomarker testing: what's the difference?

Genetic testing
sometimes called "germline" testing

- **What it looks for:** changes in specific genes that might increase your risk of certain cancers. Gene changes can either be inherited (run in your family), or can develop during your lifetime.
- **When it's done:** can be done anytime — before, during, or after diagnosis — often to assess risk if you have a family history of cancer.
- **How it's done:** typically a blood or saliva sample.

Genomic testing*
sometimes called "somatic" testing

- **What it looks for:** changes within your cancer cells' DNA to help personalise treatment.
- **When it's done:** after a cancer diagnosis.
- **How it's done:** often on the tumour itself, via biopsy or surgery.

*Genomic testing in ovarian cancer is not considered standard of practice in all countries.

Tumour testing

- **What it looks for:** presence or absence of specific proteins/ biomarkers that can help predict cancer behaviour or potential response to treatments to help determine which treatment is best for you.
- **When it's done:** during or after diagnosis.
- **How it's done:** often a tissue sample from the tumour.

What is a biomarker?
In cancer care, biomarkers are specific characteristics found in cells, such as proteins or DNA, which can help your doctor understand your cancer risks and recommend treatment options. Like many other cancers, ovarian cancer has biomarkers that can be identified through testing.

Common ovarian cancer biomarkers:

Certain genetic biomarkers can impact the risk of developing ovarian cancer and inform treatments you may be able to receive. In ovarian cancer, BRCA and HRD are important biomarkers to test for.

BRCA

- Normally, BRCA genes protect against cancer. Mutations can cause them to malfunction. Testing can assess this risk but does not definitively predict cancer. Genetic testing for BRCA mutations is done via blood or saliva.

Homologous recombination deficiency (HRD)

- HRD means your DNA repair system isn't working properly. If a tumour is HRD-positive, cancer cells struggle to repair themselves, which can help improve treatment response. Genomic HRD testing is done via biopsy or tumour sample.

Other, less common ovarian cancer biomarkers to test for include:

- Folate receptor-alpha (FR-alpha): testing can show if your cancer is more likely to respond to certain treatments based on levels of the FR-alpha protein on the cancer cells.
- MSI: people might have their tumour tested for high levels of gene changes called microsatellite instability (MSI). Changes in MSI genes are often seen in people with Lynch syndrome.
- NTRK: some people might be tested for changes in one of the NTRK genes. Cells with these gene changes can lead to abnormal cell growth and cancer.
- CA-125: testing can measure the amount of the protein cancer antigen 125 (CA-125) in the blood to screen for ovarian cancer for people at high risk, monitor treatment and check for recurrence.

Questions you may wish to ask your care team

Understanding the testing process

- [ ] Will there be biomarker testing on the biopsy for my cancer diagnosis? If not, when will biomarker testing take place?
- [ ] What specific tests do you recommend? Will the testing provide me with other health-related information beyond how it applies to ovarian cancer?
- [ ] How will this testing inform my treatment plan?
- [ ] Will there be any costs for me associated with the tests you feel are important?
- [ ] Are there any financial assistance programmes I can explore?
- [ ] How will the tests be conducted? How long will it take to get the results?
- [ ] Will I need additional biopsies if further testing is required?
- [ ] What support is available to me and my family before and after receiving my test results? (e.g., genetic counselling, mental health counselling, referral to social worker, and/or support groups.)

Understanding your test results

- [ ] What do my test results mean?
  - [ ] Can you explain which results helped to determine my diagnosis?
  - [ ] Can you explain which results are important for understanding how my cancer may behave and what treatment options may be best?
- [ ] What do the test results indicate about my prognosis or the likelihood of my cancer responding to certain treatments?
- [ ] How do my test results impact my treatment plan?
- [ ] What is genetic counselling? Is this something I should consider, given my results? If yes, could you refer me to a genetic counsellor?
- [ ] Are there any additional tests, specialists I should see or ongoing surveillance that we should consider?
- [ ] Should anyone else in my family be tested, based on my test results?
- [ ] Given my results, are there symptoms I should look out for?
- [ ] Do my results increase my risk for any other types of cancer?

Things to consider for your next appointment:

When navigating decisions about your ovarian cancer, it's important to ask the right questions to help you feel informed. To feel prepared for your appointment with your doctor, consider doing the following:

Print out this discussion guide or download it to your phone. During your appointment, refer to the questions above to help guide your conversation with your doctor about testing.

Add other questions you may have to the notes section.

Bring a family member or close friend to the appointment to help you take notes and feel supported.

Notes

My questions

My test results

My next steps

For more information, please visit **yourcancerourchallenge.com**

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