

2. When only a tumour BRCA mutation is found after both the tumour and germline BRCA tests were done

If your test results find only a tumour BRCA mutation, your doctor will use the information to guide decisions about your cancer treatment. Your ovarian cancer may benefit from treatment with a drug called a PARP inhibitor.

It is very unlikely that there will be health implications for your biological (blood) male and female relatives.

3. When only a tumour BRCA mutation is found and no germline BRCA test has been done

If your test results find only a tumour BRCA mutation and you did not do a germline BRCA test, your doctor will use the information to guide decisions about your cancer treatment. Your ovarian cancer may benefit from treatment with a drug called a PARP inhibitor.

If no germline BRCA test has been done:

- this means your ovarian cancer may have been caused by a germline BRCA mutation
- we cannot comment on the health implications for your biological (blood) male and female relatives

You should be offered a referral to Cancer Genetics Services as you may still have a hereditary cancer.

4. When a germline BRCA mutation is found

If your test results finds a germline BRCA mutation, your ovarian cancer may benefit from treatment with a drug called a PARP inhibitor.

The germline BRCA test is looking for mutations that can be inherited. If you have a germline BRCA gene mutation, this is likely to have health implications for you and your biological (blood) male and female relatives. Your doctor will recommend that you speak to a specialist in

genetics who can discuss this with you and will offer to refer you to Cancer Genetics Services.

Implications for you: You are at a higher risk of developing other cancers, particularly breast cancer, but also melanoma (skin cancer), pancreatic and other BRCA-related cancers. Under Irish law, your genetic test results cannot be used by companies for insurance, pension, mortgage or employment purposes.

Implications for blood relatives: As germline BRCA mutations are inherited, there are implications for biological (blood) male and female relatives who may also have the BRCA mutation. That is why we ask you to consider sharing your test result with your biological (blood) relatives, both male and female, as they may also have inherited it.

5. When test results are unclear – germline BRCA test and tumour BRCA test

If the test results of either BRCA tests are inconclusive (unclear), this means that a change in the BRCA genes was identified. This change is called a 'variant of uncertain significance - VUS' another name for this is a 'variant of unknown significance'. Your doctor will talk to you about other treatment options for your cancer. Your doctor will recommend that you speak to a specialist in genetics who can discuss this VUS with you and will offer to refer you to Cancer Genetics Services.

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BRCA Test for PARP inhibitor treatment in Patients with Ovarian Cancer

Patient Information Leaflet



About this leaflet

This leaflet tells you about a test, called a BRCA test, that can tell if your ovarian cancer may benefit from treatment with a drug called a PARP inhibitor.

Specifically, this leaflet tells you:

- what BRCA genes are
- what the BRCA test involves and what its results mean for you and your blood relatives

What are BRCA genes?

These are genes that fix damaged cells in your body. Genes are pieces of DNA (hereditary material) that dictate how your body works. BRCA genes refer to BRCA1 and BRCA2.

What is a BRCA mutation (variant)?

A BRCA mutation happens when a BRCA gene has an error. This error is called a mutation. If a BRCA gene has a mutation, this means it can't fix damaged cells. These damaged cells then accumulate and can lead to cancer.

Why is my doctor asking me to have a BRCA test and considering PARP as a treatment?

Your doctor asked you to have a BRCA test as its results can tell them if you would benefit from treatment with a drug called a PARP inhibitor.

PARP is a type of protein that promotes the repair and growth of cancer cells. A PARP inhibitor aims to stop the growth of, or kill tumour (cancer) cells.

In some instances it is now possible to treat patients with ovarian cancer based on the genetic characteristics of their tumour. Targeted therapies like PARP inhibitors stop or kill tumour cells.

If you have a BRCA mutation and your doctor knows this, this can help both of you to make decisions about how best to treat your cancer.

All tests are carried out to the highest international standards. Remember: no test is 100% accurate.

What does the BRCA test involve?

The test involves two parts. You might be asked to have one – or both parts. Whichever option you choose, you will be asked to sign a consent form saying that:

- you agree to have the test
- the test has been discussed with you
- you understand why the test is being done

Let's look at the two parts.

1. Germline BRCA mutation test

A germline BRCA is an inherited mutation. If you and your doctor decide that a germline BRCA mutation test is right for you, your doctor will take a small blood sample and send it to a laboratory.

Your doctor will share the results with you as soon as they are available, typically within 12 weeks of this test.

2. Tumour BRCA mutation test

A tumour BRCA mutation is not an inherited mutation. If you and your doctor decide that a tumour BRCA mutation test is right for you, your doctor will ask you for access to your ovarian cancer tissue samples, which were taken in a

previous biopsy or surgery. These samples are stored in the hospital's laboratory. A sample of your ovarian cancer tissue will be sent from your hospital's laboratory to the laboratory performing the testing.

Your doctor will share the results with you as soon as they are available, typically within 12 weeks.

What do the test results mean?

There are five possible test results.

1. No germline or tumour BRCA mutation found
2. Only a tumour BRCA mutation is found after both the tumour and germline BRCA tests were done
3. Only a tumour BRCA mutation is found and no germline BRCA test was done
4. A germline mutation is found
5. Unclear test results for both tests – germline BRCA test and tumour BRCA test

We list what each of these results could mean for you and their implications, if any, for your blood relatives.

1. When no germline or tumour BRCA mutation is found

If your test results find no germline or tumour BRCA mutation, your doctor will talk with you about other treatment options for your cancer.

If you have a strong family history of cancer, your doctor may still refer you to Cancer Genetics Services. Other genes can increase your risk of cancer, and this service works to prevent and detect cancer early. It can also help with decision-making about treatments for cancer if appropriate.