

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.

### What does the HRD test involve?

This test is performed using the same cancer tissue sample as for tumour BRCA testing.

If your tumour is HR deficient your cancer may benefit from treatment with a PARP inhibitor. You should be offered a referral to Cancer Genetics Services as you may have a risk of hereditary cancer. If your HRD test is not successful your doctor will talk with you about other treatment options for your cancer or further testing if required.

### NOTE

Some patient's results may suggest that they do not have a risk of a hereditary cancer. These patients may still be offered a referral to a Cancer Genetics Services if there is a strong family history of cancer.

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# Testing to inform PARP inhibitor cancer treatment Patient Information Leaflet

**Note:** There is information on a number of tests in this leaflet. You may only need one test or a combination of tests depending on your cancer.

## About this leaflet

This leaflet tells you about BRCA and HRD testing which is used to tell if your cancer may benefit from treatment with a PARP inhibitor drug. Specifically, this leaflet tells you:

- about PARP inhibitor treatment
- what BRCA genes are
- about Homologous Recombination Deficiency (HRD)
- what BRCA and HRD testing involves

You could check with your clinician which sections of this leaflet are relevant to your testing.

Tumour	Germline BRCA variant test	Tumour BRCA variant test	HRD test
Breast	X		
Ovarian		X	X
Prostate		X	

## What is a PARP inhibitor (PARPi)?

PARP is a type of protein that promotes the repair and growth of cancer cells.

A PARPi aims to stop the growth of, or kill tumour (cancer) cells.

A test for BRCA or HRD has to be done to see if PARPi treatment is the right treatment option for you.

## 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 variant?

When a BRCA gene has an error, this error is called a variant. Some BRCA gene variants

mean damaged cells can't be fixed. These damaged cells then accumulate and can lead to cancer.

## What is HRD?

Homologous recombination deficiency (HRD) is due to gene variants which may include BRCA or other genes. HRD means that the body may fail to repair damaged cells.

## Why is my doctor asking me to have a BRCA test or a BRCA and HRD test?

Your doctor may ask you to have a BRCA test or a HRD test or a combination of these as their results can tell them if you could benefit from treatment with a drug called a PARP inhibitor.

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 depending on your cancer type.

Let's look at the two parts.

### 1. Tumour BRCA variant test

A tumour BRCA variant is not an inherited variant and may only be present in the tumour. If you and your doctor decide that a tumour BRCA variant test is right for you, your doctor will ask you for access to your 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 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 6 weeks of this test.

If a tumour BRCA pathogenic variant is found and no test for germline BRCA test has been done you should be offered a referral to Cancer Genetics Services as you may still have a hereditary cancer.

If your tumour BRCA variant test is unsuccessful your doctor may recommend you have a germline BRCA variant test.

### 2. Germline BRCA variant test

A germline BRCA variant is a gene variant present in every cell in the body. If you and your doctor decide that a germline BRCA variant test is right for you, 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 testing is being done
- 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 6 weeks of this test.

If you have a germline BRCA pathogenic variant, 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.

If your test results find a BRCA pathogenic variant your cancer may benefit from treatment with a PARP inhibitor. If your test results find no BRCA pathogenic variant your doctor will talk with you about other treatment options for your cancer.

