

Who is at increased risk of inherited breast and ovarian cancer?

Women who may be at increased risk are those who have:

- **Either** several close relatives on the same side of the family who have had breast and/or ovarian cancer, with at least one relative diagnosed before age 50.

- **Or** at least one first degree relative (e.g. mother, sister, daughter) who has had breast cancer.

What can you do if you are at increased risk?

Sometimes we can do a blood test to find out if a person has inherited an altered BRCA1 or BRCA2 gene. The test is only possible if we find that somebody in the family who has had breast or ovarian cancer has an altered BRCA1 or BRCA2 gene.

If you are at increased risk of cancer but cannot be tested at present you may be able to have regular screening:

- **Breast screening:** this may involve clinical examination of the breasts and/or mammograms (X-ray of the breasts).

- **Ovarian screening:** this involves a vaginal ultrasound scan and a blood test.

We will be able to give you more information about screening when you attend the Family Cancer Clinic.

For more information:

If you need more advice about any aspect of inherited cancer, you are welcome to contact:

Clinical Genetics Departments
Northern Scotland (main base Aberdeen)
Tel: 01224 552120 Fax: 01224 559390
(Aberdeenshire, Moray, Highland, Western & Northern Isles)

Tayside (main base Dundee)
Tel: 01382 632035 Fax: 01382 645731
(Perth & Kinross, Angus, North East Fife)

South East Scotland (main base Edinburgh)
Tel: 0131 651 1012 Fax: 0131 651 1013
(Borders, Lothian, South West Fife)

West of Scotland (main base Glasgow)
Tel: 0141 201 0808 Fax: 0141 201 0361
(Glasgow, Argyll & Bute, Argyshire, Dumfries & Galloway, Stirling, Lanarkshire, Falkirk)

If you need more advice about cancer and support groups, please contact:

Maggies Centres
www.maggiescentres.org

Maggies Highlands Tel: 01463 706302

Maggies Dundee Tel: 01382 496384

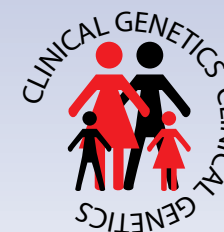
Maggies Edinburgh Tel: 0131 5373131

Maggies Glasgow Tel: 0141 330 3311

Seen in clinic by.....

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Inherited Breast and Ovarian Cancer

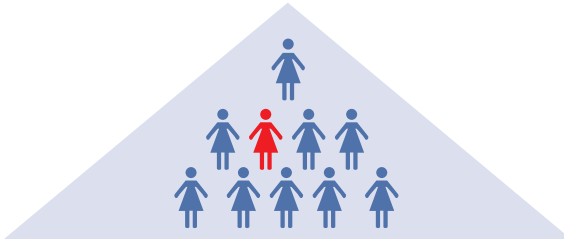


Information for women
attending the
Family Cancer Clinic

How common are breast and ovarian cancer?

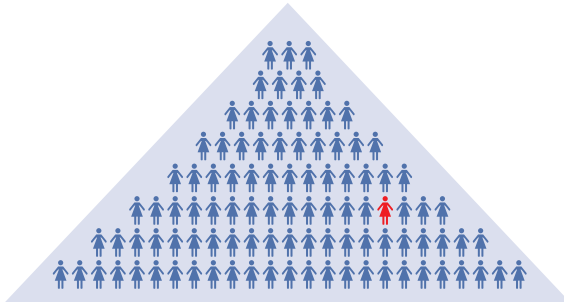
In the UK, breast cancer affects 1 in 10 women during their lifetime. Most of these women are over 60 with the largest number in the 75-79 age group.

Breast Cancer



Ovarian cancer is less common. In the UK, about 1 in 100 women are affected in their lifetime. Most of those women have been through the menopause.

Ovarian Cancer



In most cases cancer is not 'inherited' or 'passed down' through families.

What is 'inherited' breast and ovarian cancer?

In a small number of families, women over several generations have had breast or ovarian cancer.

These women may have inherited a **gene** making them more likely to get breast or ovarian cancer. (This only accounts for around 1 woman in every 20 who gets breast cancer.)

What are genes?

Our genes are the unique set of instructions inside our bodies which makes each of us individual. There are many thousands of different genes, each carrying a different instruction.

As well as determining how we look, our genes control the way each cell or building block of the body works. Specific genes control specific cell types. Some genes are particularly important in controlling the way the cells in the breasts and ovaries grow.

We inherit two copies of each of our genes, one from our mother and one from our father.

Why do some genes increase the risk of cancer?

The instructions in each gene are like a code. Sometimes the code differs from that of a normal gene.

For example:

Imagine the code for a normal gene is;

1-2-3-4-5-6-7-8-9-10-11-12-13

The gene passed down through the family may have a slightly different code;

1-2-3-4-5-6-7-9-9-10-11-12-13

This gene will give slightly different instructions to the cells it controls than a gene with a normal code. We call this an **altered gene**.

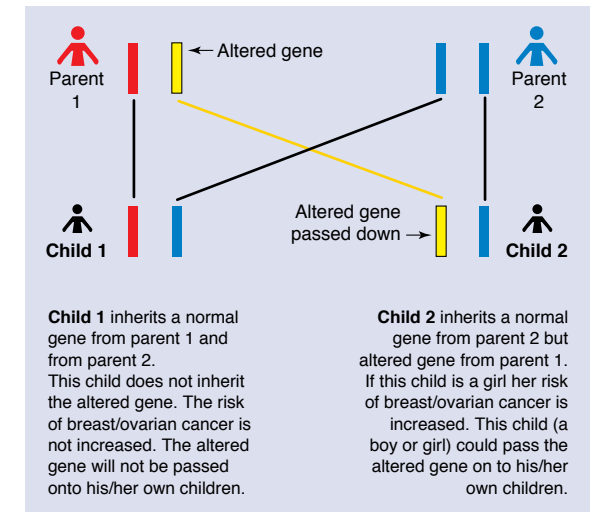
If the altered gene is one that controls the growth of breast and ovarian cells, there may be a higher chance of developing breast or ovarian cancer.

How can an altered gene be inherited?

If one parent (either the mother or the father) has an altered gene, this can be passed down to their children.

Each child has a 50/50 chance of inheriting that parent's altered gene and 50/50 chance of inheriting that parent's normal gene.

For example:



Which genes increase the risk of breast and ovarian cancer?

The two genes which we know are important in breast and ovarian cancer when they are altered in this way are called **BRCA1** and **BRCA2**. There may be other important genes which have not yet been discovered.

A woman who inherits an altered BRCA1 or BRCA2 gene will not always get cancer but her chances of developing breast or ovarian cancer during her lifetime will be increased.