

Breast Cancer - Hereditary Factors

Most cases of breast cancer occur 'by chance' - even where there is a family history of the disease. However, breast cancer does occur more often than usual in some families because of their genetic make-up. If you are concerned that your risk of developing breast cancer is higher than usual because of your family history, then see your doctor for assessment. An option if you have an increased risk is to have mammography at an earlier age than normal, and more often than usual.

Some facts about breast cancer

- In the UK about 1 in 9 women develop breast cancer before the age of 85.
- Most women (8 in 9 women) do not develop breast cancer before the age of 85.
- The biggest 'risk factor' for developing breast cancer is increasing age. About 4 in 5 cases first develop in women over the age of 50.
- Of women who do develop breast cancer, most do not have a family history of the disease. However, some women do come from families where breast cancer occurs more often than usual (see below).
- If breast cancer is detected in an early stage, there is a good chance of a cure. Mammography (x-ray of the breast) is a test that can detect breast cancer at an early stage.

Breast cancer, genes and family history

The cause of breast cancer is probably a combination of factors. These include lifestyle factors, environmental factors, hormone factors, and probably other unknown factors. Your genetic make-up is another factor which is known to be involved.

Several 'faulty' genes have been identified which are particularly associated breast cancer. These include the BRCA1 gene, the BRCA2 gene, and the TP53 gene. If you carry one or more of these genes you have an increased risk of developing breast cancer (and certain other cancers such as ovarian cancer). Also, the cancer tends to develop at an earlier age than usual. These faulty genes are just the main ones so far identified which are related to breast cancer. There are probably others which cause a smaller increased risk which have not yet been identified. Note: not all women with these faulty genes will develop breast cancer. It is just that the risk is increased.

About 1 in 20 women are likely to carry a faulty gene that gives them a higher risk than the general population of developing breast cancer. This may vary from a moderate increase in risk to a high risk. You inherit half of your genes from your mother and half of your genes from your father. So, if you carry a faulty gene there is a 50:50 chance that you will pass it on to each child that you have. Because of these faulty genes, breast cancer does occur more often than usual in some families. This is sometimes called 'familial breast cancer' or 'hereditary breast cancer'.

Assessing your risk

As breast cancer is common, many of us will have a relative who has been diagnosed with breast cancer. This is not usually due to any of the 'faulty genes' mentioned above, but is more often 'by chance'. Most women with a family history of breast cancer do not have a greatly increased risk of developing breast cancer compared to the normal risk of the general population. However, some women are at greater risk than usual.

In general, your risk becomes greater:

- The more blood relatives you have who have been diagnosed with breast cancer.
- The closer the blood relationship to you of the person with breast cancer.
- The younger your relatives were when they were first diagnosed with breast cancer.

Especially if they were under the age of 50.

- If a relative had breast cancer which affected both breasts.
- If a male relative developed breast cancer.
- If both breast and ovarian cancer run in the family.
- If certain other uncommon cancers have developed in family members. For example: ovarian cancer, a sarcoma under the age of 45, a glioma, or childhood adrenal cancer.
- If you come from certain ethnic backgrounds. For example, the Ashkenazi Jewish community have a higher incidence of genes which increase the risk of breast cancer.

What should I do if I am concerned?

If you are concerned about a history of breast cancer in your family you should see your GP. He or she will want to take a family history. Therefore, before seeing your GP, try to get as much detail about who in your family has been diagnosed with breast cancer (or other cancers), at what age they were diagnosed, and their exact blood relationship to you.

Your GP will wish to know any relevant details about first and second degree relatives (from your father's side as well as from your mother's side).

- First degree relatives are - mother, father, daughters, sons, sisters, or brothers.
- Second degree relatives are - grandparents, grandchildren, aunts, uncles, nieces, nephews, half-sisters and half-brothers.

On the basis of the family history, it is usually possible for your GP to assess your risk as either near normal, moderate, or high. If your risk is moderate or high then, if you wish, you may be referred to a specialist for further assessment and counselling. If you are under the age of 40, referral may not be appropriate until you are 40 if your increased risk is not very high.

For details of the factors used to assess the risk, see the website of the National Institute of Clinical Excellence (details at the end of the leaflet). They have produced national guidelines which doctors can refer to when assessing the risk of breast cancer for individual women.

If your risk is assessed as normal or near normal

Most women have a normal or near normal risk of developing breast cancer. (That is about a 1 in 9 chance of developing breast cancer before the age of 85 - most commonly after the age of 50.) If your risk is normal or near normal you should still consider the 'usual' advice to women. That is:

- **Be 'breast aware'**. Get to know how your breasts normally look and feel, and report any changes promptly to a doctor.
- **Go for routine breast screening**. All women in the UK aged between 50 and 70 are invited to have a routine mammography every three years. Mammography is an x-ray test that aims to detect breast cancer at an early stage when treatment is most likely to be curative.
- **Consider altering other factors** which may affect your risk of breast cancer.
 - If you are past the menopause and are overweight or obese, losing some weight will reduce your risk.
 - Regular exercise reduces the risk.
 - If you drink a lot of alcohol the risk is increased. Cutting back to sensible drinking is best if this applies to you.
 - There is a slightly increased risk of developing breast cancer if you use the combined oral contraceptive pill or HRT (hormone replacement therapy). If you use these you may wish to consider other options.
 - If you have children, women who breast feed have a reduced risk of developing breast cancer compared to those who bottle feed.
- **See your GP if there is a change in your family history**. For example, if a close family member develops cancer of the breast or ovary after your risk of breast cancer has previously been assessed. This may mean that your risk has changed.

If your risk is assessed as moderate or high

You will be offered a referral to see a specialist. He or she will make a detailed assessment of your risk on the basis of family history.

If your risk is confirmed as moderately high

You are likely to be offered mammography screening to commence at the age of 40 (rather than the usual age of 50). Also, mammography is likely to be every year rather than the usual three yearly.

If your risk is high

You are likely to be offered genetic testing and counselling. This may involve tests to see if you carry one or more of the faulty genes mentioned above. Depending on the outcome of the tests and assessment of the risk, some women are offered regular mammography screening from an early age.

For a very small number of women, whose risk is very high, surgery to remove the breasts and/or ovaries before cancer develops may be an option. This is not an option which is taken lightly and is only done after full risk assessment and counselling.

Further help and information

Breast Cancer Care

Kiln House, 210 New King Road, London, SW6 4NZ

Helpline: 0808 800 6000 Web: www.breastcancercare.org.uk

The leading provider of breast cancer information and support across the UK.

National Hereditary Breast Cancer Helpline

Tel: 01629 813000

Supplies information to women concerned about their risk of breast cancer because of family history.

CancerBACUP

3 Bath Place, Rivington Street, London, EC2A 3JR

Tel: 0808 800 1234 Web: www.cancerbacup.org.uk

Provides information and support to anyone affected by cancer.

Cancer Research UK

Their website www.cancerhelp.org.uk provides facts about cancer.

National Institute of Clinical Excellence (NICE)

Produce guidelines for doctors which include one called [Familial breast cancer](#). This guidance is on assessing a woman's risk of having a type of breast cancer that runs in families and on caring for women who are at risk of familial breast cancer.

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