

Breast Cancer

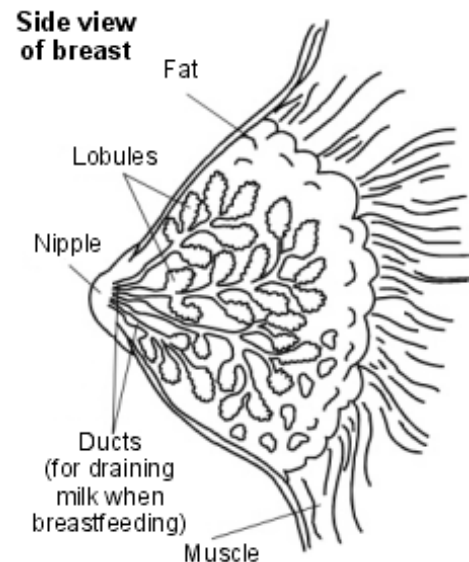
Breast cancer is one of the most common cancers. Most cases occur in women over the age of 50. If you notice any lump or change to your normal breast then see a doctor soon. If breast cancer is diagnosed at an early stage, there is a good chance of a cure. In general, the more advanced the cancer (the more it has grown and spread), the less chance that treatment will be curative. However, treatment can often slow the progress of the cancer.

The breasts

Breast tissue is attached to muscle on the chest wall. A 'tail' of breast tissue extends up into the armpit. Men have a small amount of breast tissue around the nipples. The breasts contain:

- Many lobules which are made up of glandular tissue ('milk glands'). They make milk after pregnancy.
- Ducts. These are channels which take milk from the lobules to the nipple.
- Fatty tissue and supporting connective tissue.
- Blood vessels, lymph channels and nerves (like all other areas of the body).

Many women find that their breasts become more lumpy and tender before periods. Breasts also alter their size and shape with increasing age, pregnancy, and with marked weight changes. What is important is that you get to know your own breasts - how they look and feel - and report any changes promptly to a doctor.



What is cancer?

Cancer is a disease of the cells in the body. The body is made up from millions of tiny cells. There are many different types of cell in the body, and there are many different types of cancer which arise from different types of cell. What all types of cancer have in common is that the cancer cells are abnormal and multiply 'out of control'.

A malignant tumour is a 'lump' or 'growth' of tissue made up from cancer cells which continue to multiply. Malignant tumours invade into nearby tissues and organs which can cause damage.

Malignant tumours may also spread to other parts of the body. This happens if some cells break off from the first (primary) tumour and are carried in the bloodstream or lymph channels to other parts of the body. These small groups of cells may then multiply to form 'secondary' tumours (metastases) in one or more parts of the body. These secondary tumours may then grow, invade and damage nearby tissues, and spread again.

Some cancers are more serious than others, some are more easily treated than others (particularly if diagnosed at an early stage), some have a better outlook (prognosis) than others.

So, cancer is not just one condition. In each case it is important to know exactly what type of cancer has developed, how large it has become, and whether it has spread. This will enable you to get reliable information on treatment options and outlook.

See separate leaflet called 'What is Cancer' for further details about cancer in general.

What is breast cancer?

Breast cancer is one of the most common cancers in the world. More than 30,000 cases are diagnosed in the UK each year. Most cases develop in women over the age of 50 but younger women are sometimes affected. Breast cancer can also develop in men, although this is rare. Breast cancer develops from a cancerous cell which develops in the lining of a duct or lobule in one of the breasts.

There are some 'sub-types' of breast cancer which are important to know as the treatment and prognosis (outlook) vary depending on the exact type of the cancer. The following gives a rough idea of the main sub-types. Your specialist will be able to give you more details as to the exact sub-type of breast cancer that you have.

Invasive or 'in situ'

Most breast cancers are diagnosed when a tumour has grown from within a duct or lobule into the surrounding breast tissue. These are called 'invasive' breast cancers. Invasive breast cancers are also divided into those where cancer cells have invaded into local blood or lymphatic vessels and those that have not.

Some people are diagnosed when the cancerous cells are still totally within a duct or lobule. These are called 'carcinoma in situ' as no cancer cells have grown out from their original site. A carcinoma in situ is easier to treat and has a better outlook than an invasive cancer.

Grade of the cancerous cells

A sample of breast cancer tissue can be looked at under the microscope. By looking at certain features of the cells the cancer can be 'graded'. As a rough guide, the lower the grade, the better the cancer is likely to respond to treatments such as chemotherapy and radiotherapy.

- Grade 1 - the cancer cells tend to be slow growing and less 'aggressive'.
- Grade 2 - is a middle grade.
- Grade 3 - the cancer cells tend to be fast growing and more 'aggressive'.

Hormone responsive or non-hormone responsive

Tests on a sample of breast cancer cells can show if they 'respond' to oestrogen, the main female hormone. Breast cancers are divided into two types:

- Oestrogen responsive breast cancer. The cells are stimulated by oestrogen which encourages the cells to divide and multiply. (Treatment can block the oestrogen - see below.)
- Non-oestrogen responsive.

Stage of the cancer

This does not describe a type of cancer, but describes how much the cancer has grown and whether it has spread (see below). As a general rule, the earlier the stage, the greater the chance of a cure.

What causes breast cancer?

A cancerous tumour starts from one abnormal cell. The exact reason why a cell becomes cancerous is unclear. It is thought that something damages or alters certain genes in the cell. This makes the cell abnormal and multiply 'out of control'. (See separate leaflet called 'What Causes Cancer' for more details.)

Risk factors

Although breast cancer can develop for no apparent reason, there are certain 'risk factors' which increase the chance that breast cancer will develop. These include:

- Ageing. The risk of developing breast cancer roughly doubles for every 10 years of age. Most cases develop in women over the age of 50.
- Where you live. The rate of breast cancer varies between countries. This may reflect genetic or environmental factors.
- Family history. This means close relatives who have or have had breast cancer. In particular, if they were under the age of 50 when diagnosed.
- If you have had a previous breast cancer.
- Being childless, or if you had your first child after the age of thirty.
- Early age of starting periods.
- Having a menopause over the age of 55.
- Taking HRT (hormone replacement therapy). Taking the combined contraceptive pill may increase the risk slightly.
- Having dense breasts.
- A past history of some benign breast diseases.
- Lifestyle factors: taking little exercise, obesity after the menopause, and excess alcohol.

Family history and genetic testing

About 1 in 20 breast cancers are caused by a 'faulty gene' which can be inherited. Breast cancer which is linked to a faulty gene most commonly affects women in their 30s and 40s. If you have a strong family history of breast cancer you may wish to discuss this with your doctor. Genetic testing to see if you have inherited certain 'faulty genes' is possible. Alternatively contact the National Hereditary Breast Cancer Helpline (details at the end of the leaflet).

What are the symptoms of breast cancer?

A breast lump

The usual first symptom is a painless lump in the breast. But note: most breast lumps are not cancerous. Most breast lumps are fluid filled cysts or fibroadenomas (a clumping of glandular tissue) which are benign. However, you should always see a doctor if a lump develops to check it out as the breast lump may be cancerous.

Other symptoms

Other symptoms which may be noticed in the affected breast include:

- Changes in the size or shape of a breast.
- Dimpling or thickening of some of the skin on a part of a breast.
- The nipple becomes inverted (turns in).
- Rarely, a discharge from a nipple occurs (which may be bloodstained).
- A rare type of breast cancer causes a rash around the nipple which can look similar to a small patch of eczema.
- Rarely, pain in a breast. But note, pain is not a usual early symptom. Many women develop painful breasts (mastalgia), and this is not usually caused by cancer.

The first place that breast cancer usually spreads to is the lymph nodes in the armpit (axilla). If this occurs you will develop a swelling or lump in an armpit. If the cancer spreads to other parts of the body (advanced breast cancer), various other symptoms can develop.

How is breast cancer diagnosed?

Initial assessment

If you develop a lump or symptoms which may be breast cancer, a doctor will usually examine your breasts and armpits (axillae) to look for any lumps or other changes. You will normally be referred to a specialist. Sometimes a biopsy of an obvious lump (see below) is arranged, but other tests may be done first such as:

- Mammography. This is a special x-ray of the breast tissue which can detect changes in the density of breast tissue which may indicate a tumour.
- Ultrasound scan of the breast.

Biopsy - to confirm the diagnosis

A biopsy is when a small sample of tissue is removed from a part of the body. The sample is then examined under the microscope to look for abnormal cells. A specialist may take a biopsy with a fine needle which is pushed into the lump and some cells are withdrawn. Sometimes the doctor may be guided as to where to insert the needle with the help of a mammogram or ultrasound scan. Sometimes a small operation is needed to obtain a biopsy sample.

The biopsy sample can confirm or rule out breast cancer. Also the cells from a tumour can be assessed and tested to determine their grade and hormone responsiveness (see above).

Assessing the extent and spread

If you are confirmed to have breast cancer, further tests may be needed to assess if it has spread. For example, blood tests, an ultrasound scan of the liver, chest x-ray, a bone scan, other types of scan, etc. (There are separate leaflets which describe each of these tests in more detail.) This assessment is called 'staging' of the cancer. The aim of staging is to find out:

- How large the tumour has grown.
- Whether the cancer has spread to local lymph nodes in the armpit.
- Whether the cancer has spread to other areas of the body (metastasized).

See separate leaflet called 'Cancer Staging and Grading' for details.

By finding out the stage of the cancer, the grade of the cells, and whether the cancer is hormone responsive, it helps doctors to advise on the best treatment options. It also gives a reasonable indication of outlook (prognosis).

What is the treatment for breast cancer?

Treatment options which may be considered include surgery, chemotherapy, radiotherapy and hormone treatment. Often a combination of two or more of these treatments are used. The treatments used depend on:

- The cancer itself - its size and stage (whether it has spread), the grade of the cancer cells, and whether it is hormone responsive or not, AND
- The women with the cancer - your age, whether you have had your menopause, general health, and personal preferences for treatment.

You should have a full discussion with a specialist who knows your case. They will be able to give the pros and cons, likely success rate, possible side-effects, and other details about the various possible treatment options for your type of cancer.

You should also discuss with your specialist the aims of treatment. For example:

- Treatment aims to cure the cancer in many cases. In particular, the earlier the stage of the cancer, the better the chance of a cure. Because of routine mammography, many women are diagnosed with breast cancer in the early stages and have a good chance of a cure. (Doctors tend to use the word 'remission' rather than the word 'cured'. Remission means there is no evidence of cancer following treatment. If you are 'in remission', you may be cured. However, in some cases a cancer returns months or years later. This is why doctors are sometimes reluctant to use the word cured.)
- Treatment may aim to control the cancer. If a cure is not realistic, with treatment it is often possible to limit the growth or spread of the cancer so it progresses less rapidly. This may keep you free of symptoms for some time.
- Treatment may aim to ease symptoms in some cases. Even if a cure is not possible, treatments may be used to reduce the size of a tumour which may ease symptoms such as pain. If a cancer is advanced then you may require treatments such as nutritional supplements, painkillers, or other techniques to help keep you free of pain or other symptoms.

Surgery

The types of operation which may be considered are:

- Breast-conserving surgery. This is often an option if the tumour is not too big. A 'lumpectomy' is one type of operation where just the tumour and some surrounding breast tissue is removed. A partial mastectomy is another type of operation which removes more breast tissue than a lumpectomy. It is also usual to have radiotherapy following these operations. This aims to kill any cancer cells which may have been left in the breast tissue.
- Removal of the affected breast (mastectomy). This may necessary if there is a large tumour or a tumour in the middle of the breast. It is often possible to have breast reconstruction surgery following a mastectomy. This involves using a breast implant (for example, a silicone implant) and using flaps of skin and muscle to recreate the shape of a breast.

Whatever operation is done it is also usual to remove one or more of the lymph nodes in the armpit, or to have radiotherapy to these lymph nodes. These lymph nodes are where breast cancer usually first spreads to. The lymph nodes which are removed are examined under the microscope to see if they contain any cancer cells. This helps to accurately stage the disease and helps to guide the specialist as to what treatment to advise following surgery.

Radiotherapy

Radiotherapy is a treatment which uses high energy beams of radiation which are focussed on cancerous tissue. This kills cancer cells, or stops cancer cells from multiplying. (There is a separate leaflet which gives more details about radiotherapy.)

For breast cancer, radiotherapy is mainly used in addition to surgery. For example, if you have breast-conserving surgery it is usual to have radiotherapy to the affected breast after the operation. This aims to prevent breast cancer returning in the same breast. When radiotherapy is used in addition to surgery it is called 'adjuvant radiotherapy'.

Chemotherapy

Chemotherapy is a treatment of cancer by using anti-cancer drugs which kill cancer cells, or stop them from multiplying. See separate leaflet called chemotherapy for more details.

When chemotherapy is used in addition to surgery it is known as 'adjuvant chemotherapy'. For example, following surgery you may be given a course of chemotherapy. This aims to kill any cancer cells which may have spread from the main tumour site. Chemotherapy is sometimes given before surgery to shrink a tumour so that surgery may have a better chance of success. Chemotherapy may be used to treat breast cancer which has spread to other areas of the body.

Hormone treatments

Some types of breast cancer are affected by the 'female' hormone oestrogen (and sometimes progesterone). These hormones stimulate the cancer cells to divide and multiply. Most oestrogen and progesterone is made by the ovaries. Treatments which reduce the level of these hormones, or prevent them from working, are commonly used in people with breast cancer. This hormone treatment works best in women with 'hormone responsive' breast cancer, but they sometimes work in cancers classed as non-hormone responsive. Hormone treatments include:

- Oestrogen blockers. Tamoxifen has been available for many years and is widely used. It works by blocking the oestrogen from working on cells. It is usually taken for five years. It is most commonly prescribed to women who have had an operation to remove a breast tumour. A newer drug called Toremifene has a similar action to tamoxifen
- Drugs which stop you from making oestrogen. There are a number of drugs which work by stopping the body from making oestrogen (or progesterone). Even women past the menopause make some oestrogen and can benefit from this type of treatment.
- An alternative which may be considered for women before the menopause is to remove the ovaries (or to destroy them with radiotherapy). This stops oestrogen from being made.

In summary

The treatment plan can vary greatly from case to case and depends on many different factors.

What is the prognosis (outlook)?

The outlook is best in those who are diagnosed when the cancer is still small, and has not spread. Surgical removal of a tumour in an early stage may then give a good chance of cure. The outlook has improved in recent years because of the routine mammography offered to women between the ages of 50 and 70. More breast cancers are being diagnosed and treated at an early stage.

In general, the more advanced the cancer (the more it has spread) then the less chance that treatment will be curative. Factors which influence the outlook include whether the cancer is hormone responsive, and the grade of the cancer cells.

The treatment of cancer is a developing area of medicine. New treatments continue to be developed and the information on outlook above is very general. The specialist who knows your case can give more accurate information about your particular outlook, and how well your type and stage of cancer is likely to respond to treatment.

Screening for breast cancer

Women in the UK aged between 50 and 70 are invited to have a routine mammography every three years. Mammography is a special x-ray test and aims to detect breast cancer at an early stage when treatment is most likely to be curative.

Genetic testing and mammography screening (and preventative treatments in some cases) may also be offered to younger women with a strong family history of breast cancer. See your doctor if you feel this applies to you.

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 including treatment choices.

Other support groups
See [Cancer Support Groups](#) for a list of self help and support groups for cancer patients.

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