

Understanding

# Breast Cancer

Professor Mike Dixon

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### IMPORTANT NOTICE

This book is intended not as a substitute for personal medical advice but as a supplement to that advice for the patient who wishes to understand more about his or her condition.

Before taking any form of treatment  
YOU SHOULD ALWAYS CONSULT YOUR MEDICAL  
PRACTITIONER

In particular (without limit) you should note that advances in medical science occur rapidly and some of the information about drugs and treatment contained in this booklet may very soon be out of date.

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He originally started work in the NHS as a porter in Sheffield where he worked for 15 months before starting medical school. He also spent two three-month periods as a nursing auxiliary. It is his undoubted expertise combined with his down-to-earth, straightforward approach that makes him the ideal person to answer your questions about breast cancer.

# Introduction

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## **How common is breast cancer?**

Breast cancer is the most common type of cancer among women. Each year there are approximately 41,000 new cases in the UK and over one million worldwide.

Although breast cancer is much more common in women, it can also affect men and in the UK approximately 300 men every year develop breast cancer. One in nine women will develop breast cancer at some time in her life.

This booklet covers possible causes, screening and symptoms of breast cancer, and how it is diagnosed and treated. It also contains important information to help women cope with the disease.

Much research continues into the causes of breast cancer, as well as new ways to prevent, diagnose and treat it. As a result men and women diagnosed now with breast cancer have a much higher chance of living and surviving it.

## **How do breasts grow and change?**

Breasts start to develop a few weeks after the embryo is formed in the womb. At about six months of

pregnancy, some cells grow inwards and these cells develop to form what will be the baby's nipples and milk ducts. By the time the baby is born the basic breast structure is in place.

In most girls, breasts start to develop between the ages of nine and eleven years but this process can begin earlier or later. Even when fully developed, the breasts at this stage are not capable of producing milk. It is also common for boys to get some breast development during puberty. This can be embarrassing but is usually only temporary and in over 80 per cent disappears within a year or two.

During pregnancy a woman's breasts increase in size and approximately double in weight as milk-producing cells multiply and the system of ducts expands. The nipples get darker in colour during pregnancy and the blood vessels under the skin of the breast become more prominent. All these changes take place as a result of the various hormones that are produced during pregnancy and most of these changes are only temporary.

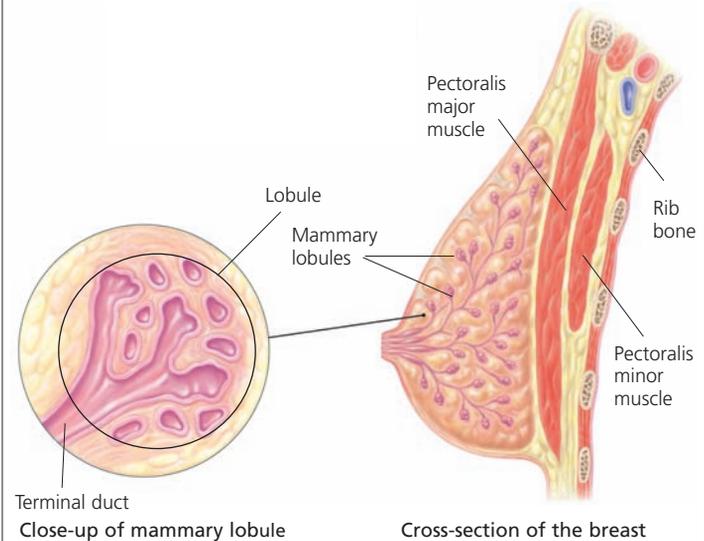
### What is a breast made of?

The easiest way to understand how the inside of the breast is arranged is by comparing it with an upturned tree. The leaves of the breast 'tree' are known as lobules. They produce milk, which drains along the branches of the breast tree forming a network of small ducts. These in turn drain into 12 or 15 large ducts, which empty on to the surface of the nipple. The nipple is equivalent to the bush's trunk.

As with a tree, the breast's branching network of ducts is irregular and complicated and not arranged symmetrically into segments as, for example, is found in an orange.

### Anatomy of the female breast

The breast can be visualised as an upside-down tree. The leaves of the tree are the lobules and the trunk the nipple.



The breast also contains blood and lymph vessels. The lymph vessels carry clear fluid called lymph from the breast tissue to lymph nodes close to the breast. The nodes that drain most of the lymph from the breast are in the area under the arm and are called the axillary nodes. A small amount of lymph does drain inward to lymph nodes underneath the breastbone.

Lymph nodes are important in the body's defence systems, and are involved with dealing with bacteria, cancer cells or other harmful substances. Cancer cells that enter lymph channels can pass to draining lymph nodes where some of the cells grow and result in lymph node enlargement.

The space between the branches of the breast tree is made up of fat and this gives the breast a soft feel. Women's breasts are rarely the same size as each other and breasts can feel different at different times of the monthly menstrual cycle, often swelling and becoming tender in the week before a period. As a woman gets older the amount of breast tissue in the breast reduces and is replaced by fat so the breasts become softer.

### What is breast cancer?

Many cells in the human body are growing at any one time but their growth is very carefully controlled so that the number of cells produced matches the number of cells that are dying. A cancer develops when cells grow or divide at a faster rate than normal but escape from the normal mechanisms that control cell growth.

This results in the development of a cancerous lump (primary tumour), which if untreated gets bigger and bigger, as the cells continue to divide and so multiply.

Lumps are common in the breast and there are many causes for breast lumps other than breast cancer. Only about one in eight lumps is cancer (malignant growth) and the rest are not serious or life threatening and do not spread to other areas of the body. These are known as benign lumps. The most common treatment for a cancer in the breast is surgery to remove the cancer.

If the lump continues to grow, some of the cells may develop the ability to move away from the lump to other parts of the body, where they grow to form secondary tumours. This is called spread or metastasis of a cancer.

The cancer cells can spread if they enter the lymph channels, through which they travel to other lymph

### How a tumour forms

A cancerous tumour begins as a single cell. If it is not destroyed by the body's immune system, it will double into two cells, which in turn divide into four and so on.



nodes where they can continue to grow and result in enlarged lymph glands which may be felt, for instance, as a lump under the arm.

If cancer is present in the lymph nodes this can be treated by surgery to remove the affected nodes or by radiotherapy, which is effective at destroying cancer cells.

Cells can also get into blood vessels and cells that get into the bloodstream can result in the development of new lumps (metastases) in different areas of the body.

If cancer cells start to grow in an important area such as the lungs, liver or brain, or if cells grow in bones, they can cause a range of different symptoms and problems as they disrupt normal function of that organ.

Treatment for cancer that has spread usually includes some form of drug treatment that treats the cancer wherever it is in the body. Radiotherapy can be combined with the drug treatment to treat areas where the cancer cells are growing.

**KEY POINTS**

- Most lumps in the breast are not serious
- Cancer is the uncontrolled overgrowth of a group of cells
- Another term for cancer is a malignant tumour
- Cells from a malignant tumour, if left untreated, may continue to grow and eventually invade and spread to damage other tissues
- As a cancer grows, some cancer cells may break away from the cancer and enter the bloodstream or the lymphatic system; this results in cancer cells spreading from the original cancer (the primary tumour) to form new cancers or secondary tumours in other organs – called metastases
- Cancer cells that get into the lymphatic system can sometimes be felt as lumps under the arm in the lymph glands
- Even if a cancer has spread, it can be treated

# Who develops breast cancer?

## How likely am I to get breast cancer?

No one knows why some people develop breast cancer and others do not. What is clear is that injuries such as bumping, bruising or touching the breast do not cause cancer. It is also not possible to catch cancer from a person who has it.

Many factors play a part in determining who develops breast cancer and it is not simple to try to work out any individual's personal level of risk. Most women have little or no control over most of the important risk factors for breast cancer. Research has shown that certain risk factors make it more likely that some women will develop breast cancer than others.

A risk factor is something that increases a person's chance of developing a disease. Experts have identified the factors that seem to make it more likely that a woman will develop breast cancer. However, even if you have lots of risk factors you will not necessarily get breast cancer and, even if you have no risk factors, you may still be unfortunate enough to develop it.

## Risk factors

### Female sex

Being female is a definite risk factor for developing breast cancer because over 99 per cent of all breast cancers develop in women. Breast cancer in men is very rare and fewer than 1 in 200 of all breast cancers develops in men. There are about 300 new breast cancers in men per year in the UK compared with 41,000 in women.

### Age

Breast cancer risk increases as you get older. Older women are at the greatest risk – breast cancer is uncommon under the age of 40 years. More than 80 per cent of all breast cancers develop in women over the age of 50 and 40 per cent of women with breast cancer are aged 70 or older.

### An estimate of the risk of developing breast cancer by age

Age group	No. of women who get breast cancer up to this age
To age 25	1 in 15,000 women
To age 30	1 in 1,900 women
To age 40	1 in 200 women
To age 50	1 in 50 women
To age 60	1 in 23 women
To age 70	1 in 15 women
To age 80	1 in 11 women
To age 85	1 in 10 women
Lifetime risk (all ages)	1 in 9 women

## Family history

Fewer than one in ten (ten per cent) women who develop breast cancer do so because they have inherited some kind of genetic abnormality that makes them more susceptible to develop this condition.

### Women with inherited risk

Everyone has two copies of every gene – you inherit one copy of each gene from your mother and one from your father. Even if your mother has had breast cancer and is carrying an abnormal gene only one of the two copies of the gene is abnormal and the other copy works normally.

That means that every child of a mother with an abnormal gene has a 50% (1 in 2) chance of inheriting the normal gene and a 50% (1 in 2) chance of inheriting the abnormal gene.

So even if your mother is carrying a genetic abnormality there is no certainty that you will have it.

Women who are at increased risk of breast cancer because there is likely to be an abnormal gene running in their family are identified because:

- There are several members in the family who have had breast cancer
- Relatives have developed breast cancer while under the age of 50 years; the earlier in life this happens, the greater the risk that cancer has developed because of an inherited abnormality
- Relatives have had cancer affecting both breasts or relatives have had certain other cancers while young, particularly cancer of the ovaries (in women), and colon and prostate (in men).

There are various ways of identifying women with this kind of risk and these are given in the boxes. In a small number of women it is possible to perform a gene test to identify if they have an abnormal gene that makes them more likely to develop a breast cancer.

### Familial breast cancer

#### Criteria for identifying women at substantial increased risk

The following categories identify women who have three or more times the population risk of developing breast cancer and who would benefit from regular screening from a young age. A woman who has:

- one first-degree relative with bilateral breast cancer or breast and ovarian cancer **or**
- one first-degree relative with breast cancer diagnosed under the age of 40 years or one first-degree male relative with breast cancer diagnosed at any age **or**
- two first- or second-degree relatives with breast cancer diagnosed under the age of 60 years or ovarian cancer at any age on the same side of the family **or**
- three first- or second-degree relatives with breast and ovarian cancer on the same side of the family.

A first-degree female relative is a mother, sister or daughter.

A first-degree male relative is a father, brother or son.

A second-degree female relative is a grandmother, granddaughter, aunt or niece.

### Familial breast cancer (contd)

#### Criteria for identifying women at very high risk in whom gene testing may be appropriate

- Families with four or more relatives affected with either breast or ovarian cancer in three generations and one alive affected individual.

There is a network of family history clinics throughout the UK who look after women identified on the basis of their family history as being at increased risk.

They offer breast screening, starting at a much younger age than the general population screening which starts at age 50. Screening is not only by mammography but in known gene carriers may include magnetic resonance imaging (MRI) performed every year.

These family history clinics have access to genetic testing and can refer women to hospital for consideration of surgery if considered appropriate for women carrying a faulty breast cancer gene.

#### Previous treatment for breast cancer

Women who develop cancer in one breast are more likely than the general population to develop a cancer in their other breast. Each year between 4 and 6 of every 1,000 women who have a cancer in one breast will develop cancer in their opposite breast.

It is for this reason that such women should have lifelong breast screening with regular breast X-rays (mammograms). Hormonal drugs that are used to treat breast cancer reduce the risk of developing another breast cancer by about 50 per cent.

## Benign breast conditions

Most types of benign (non-cancerous) breast problems do not significantly increase the risk of developing breast cancer. This includes cysts and common lumps in younger women (fibroadenomas).

Some women who have had a non-cancerous condition where there is an overgrowth (hyperplasia) of their breast cells which are different from normal cells (atypical), called atypical hyperplasia, are at increased risk of developing breast cancer.

This condition is usually diagnosed after biopsy of a lump or removal of an area of abnormality found on a mammogram during breast screening. Women with this condition need regular check-ups.

## Reproductive and menstrual history

The older a woman is when she has her first child the greater her chance of developing breast cancer. Having children while young (under 20) protects against breast cancer. A woman having her first child when she is over the age of 34 years is at a greater risk of developing breast cancer later in life than a woman who has never had a child.

Women who have their first menstrual period at an early age (below the age of 12 years) or go through the menopause late (after the age of 55 years) are at a slightly increased risk of developing breast cancer.

## Taking the contraceptive pill

There is a very slightly increased risk of a woman developing breast cancer while she is taking the oral contraceptive pill. However, as the overall risk of breast cancer developing in young women is small, the extra risk associated with taking the pill is exceedingly small

and not clinically important. Any risk associated with pill usage is short-lived and disappears quickly after stopping the pill.

## Taking hormone replacement therapy

Women who take hormone replacement therapy (HRT), particularly if they take a combination of oestrogen and progestogen, have an increased chance of developing breast cancer.

The risk of developing breast cancer is greater the longer a woman takes the HRT. The risks associated with the use of oestrogen-only HRT are much less than those associated with combined oestrogen and progestogen preparations.

Although HRT is effective at controlling menopausal symptoms such as hot flushes and night sweats, and protects against osteoporosis (thinning of the bones), there are some concerns that it increases the risk of strokes and blood clots as well as breast cancer.

HRT can be taken to improve menopausal symptoms such as hot flushes, vaginal dryness and loss of concentration, but should be given in the smallest effective dose for the shortest duration (two to three years).

One problem with HRT is that when women stop it menopausal symptoms usually come back. This suggests that you cannot prevent menopausal symptoms with HRT; all you do is postpone these symptoms until you are older.

## Tibolone as an alternative to oestrogen with progestogen

Tibolone is an interesting drug that has been used for women to control menopausal symptoms. It is a type

of 'HRT' that does not contain oestrogen. It mimics the actions of oestrogen, improving menopausal symptoms and protecting the bones.

However, tibolone can be taken only by women who are truly postmenopausal, that is women who have had no menstrual bleeding for at least a year.

Studies looking at the relationship between tibolone and breast cancer have been conflicting. In theory, tibolone should not increase the risk of breast cancer and it should be much safer than combinations of oestrogen and progestogen. One study has, however, shown an increased risk of breast cancer in women taking tibolone whereas another study did not. At present therefore it is not yet clear whether tibolone does not increase the risk of breast cancer similar to other forms of HRT.

A recent study has shown that, when given to women with breast cancer who have severe menopausal symptoms, tibolone, similar to other forms of HRT, increases the chances of the cancer returning.

### Taking HRT long term

Women who want to continue to use HRT long term and have had a hysterectomy can take oestrogen alone because this increases the risk of breast cancer less than combined HRT.

For women who still have their uterus, a combination of oestrogen alone with progestogen delivered locally to the lining of the uterus through a Mirena coil may be a safer option than continuing on combined continuous oestrogen and progestogen for more than two to three years.

### How does the risk factor change with HRT use?

There is an extra risk of getting breast cancer with each year of taking HRT. These risks add up, particularly with combined oestrogen and progestogen, amounting to a doubling of risk after five years of use. This risk seems to be independent of the dose of oestrogen used, type of oestrogen and mode of delivery (oral or skin patches). The same is true for progestogen.

It is not clear whether progestogen-only HRT increases the risk of breast cancer. Vaginal oestrogen does not seem to increase the risk.

### Is HRT worth the increased risk of breast cancer?

The decision whether to take HRT is an individual one between you and your doctor, based on the pros and cons for each individual woman. There are other options for controlling menopausal symptoms and treating osteoporosis other than taking HRT.

For a fuller discussion of HRT see the Family Doctor Book *Understanding the Menopause & HRT*.

### Breast-feeding

Breast-feeding a child results in a slight reduction in the chances of developing breast cancer. The highest benefit is from breast-feeding at a young age and the best protection is in women who breast-feed for long periods of time.

### Physical activity

There is some evidence that regular exercise reduces the risk of developing breast cancer. It appears that women gain most benefit if they exercise regularly, three or four times a week, over many years.

### Being overweight

Being seriously overweight when you are older (postmenopausal) increases breast cancer risk. You are considered to be overweight if you are more than 1.5 times the average weight for your height.

There is also a link between breast cancer and eating a diet that is high in fat, but no one yet knows how this is connected. There is no evidence that dairy products increase the risk of developing breast cancer or that avoiding dairy products reduces the risk of developing breast cancer.

### Ethnicity

Breast cancer occurs more often in white women than in women of Latin, Asian or African origin.

### Country of birth

The proportion of women affected by breast cancer varies between different countries. The highest incidence is in women born in North America or northern Europe. There is a lower risk of breast cancer in women who are born in Asia or Africa.

What is interesting is that women born in Asia or Africa who move to America and adopt a western lifestyle, including a western diet, show, over a 20-year period, the same risk of breast cancer as women born in America.

These observations explain why it is believed that the major reasons for women developing breast cancer are environmental, that is related to where women live and what they eat rather than related to inherited risk from faulty genes.

### Previous radiotherapy to the chest

Women who have had radiotherapy to the chest, including the breasts, before the age of 30 are at some increased risk of breast cancer. This includes women treated with radiotherapy for Hodgkin's lymphoma.

Studies show that the younger a woman is when she receives radiation treatment, the greater the risk of breast cancer development later in life. Regular screening starting at a young age is available for women with Hodgkin's lymphoma who have been treated with radiotherapy.

### Drinking alcohol and smoking

Some studies have shown a link between drinking alcohol and the risk of developing breast cancer. Women who drink alcohol regularly have a higher risk of developing breast cancer than those who drink no alcohol or drink in moderation.

The relationship between smoking and breast cancer is not clear. Overall there does not appear to be any direct evidence that smoking increases the risk of breast cancer, but it does of course increase the risk of many other cancers and also increases the risk of some benign breast conditions, particularly infection in the area behind the nipple.

Some studies have shown that there may be an increased risk of developing breast cancer at a young age in women who smoke. There are also some data showing that women who are exposed to passive smoking, because their partner smokes, are also at a slightly increased risk of developing breast cancer.

## Genes that cause breast cancer

Every individual is different. We are all a mix of our parents. Half the genes in our bodies are inherited from our mother and half from our father.

Some individuals inherit an abnormal gene from their mother or father that puts them at increased risk of developing certain diseases. No one yet knows how many genes are associated with an increased risk of breast cancer but five major genes have been identified so far.

- About five per cent of all breast cancers develop in women because they have inherited an abnormal gene from either their mother or their father.
- About one in three of the inherited cases of breast cancer is thought to result from an abnormality in the gene called *BRCA-1*.
- Another third of inherited breast cancers are related to another gene called *BRCA-2*.
- Another three genes and a number of other undiscovered genes are responsible for the remainder.

### *BRCA-1* and *BRCA-2* genes

Women who inherit a faulty *BRCA-1* or *BRCA-2* gene have an increased lifetime risk not only of breast cancer but also of ovarian and possibly colon (large bowel) cancer.

Men who carry a faulty *BRCA-2* gene are also at higher risk of developing breast cancer. These men are also at risk of getting prostate cancer.

Testing for faulty *BRCA-1* and *BRCA-2* genes is possible but it takes two months to get a result and

the testing can fail to detect some individuals with significant gene changes if the test does not check the whole of the gene.

Before women can be offered a test it is necessary to show that someone in their family who has had a breast cancer has an abnormal gene. Women who come from such affected families may then be given the opportunity to find out if they are carrying an abnormal gene and are at increased risk.

Women who are shown on testing to have an abnormal gene have between a 60 per cent and an 85 per cent chance of developing breast cancer at some time in their life. Such women also have a higher risk of developing ovarian cancer.

It is important to realise that if you are carrying a faulty breast cancer gene it does not necessarily mean that you will get breast cancer. This is because everybody has two copies of the same gene, so if one is faulty then, provided that the other one continues to work normally, cancer will not develop. More often than not, however, at some point the other gene stops working and then cancer develops.

In women who carry a faulty *BRCA-1* or *BRCA-2* gene the breast cancers that do develop tend to occur at a young age. It is estimated that about 1 in 800 women carries a faulty *BRCA-1* gene. There is a higher incidence of faulty genes in certain groups of women, for example, Ashkenazi Jewish women have a much higher risk of having a faulty *BRCA-1* or *BRCA-2* gene and so not surprisingly they have a much higher incidence of breast and ovarian cancer than other women of a similar age.

### **p53 gene**

Other genes associated with breast cancer include the *p53* gene which, if faulty, results in women developing breast cancer early. In these women, breast cancer is often bilateral (affects both breasts).

A faulty *p53* gene is responsible for the Li–Fraumeni syndrome. In this syndrome there are usually cases of breast cancer in the family and also a history of tumours of bone often affecting children.

It is thought that the *p53* gene is a gene that controls the growth of cells. When it is faulty there is not enough control so cells overgrow and cancer can develop. Although other faulty genes have been identified, they are much less common.

### **Reducing risk from faulty genes**

If a woman is tested and found to be carrying an abnormal gene she may wish to have regular tests to diagnose a cancer early if one develops. This would mean having regular intensive breast screening starting at an early age.

For a woman with a strong family history of breast cancer or where gene tests suggest that she is carrying an abnormal gene, other options are surgery to remove all breast tissue or taking part in prevention studies to try to prevent breast cancer development.

### **Prevention of breast cancer**

Oestrogen is an important factor in breast cancer development. By interfering with the action of oestrogen it should be possible to reduce the number of women who develop breast cancer. Oestrogen works by binding to receptors on the surface of breast cells.

Two groups of drugs have been studied:

1. Drugs such as tamoxifen and raloxifene work by binding to the oestrogen receptor and blocking these receptors, so the oestrogen that the body produces cannot get to the breast cells.
2. Drugs called aromatase inhibitors work by stopping the body producing oestrogen, but these drugs are effective only in women whose ovaries are no longer working, that is postmenopausal women.

### **Tamoxifen**

Tamoxifen can reduce the occurrence of breast cancer by almost a half when given to women at increased risk. But only hormone-sensitive – known as oestrogen receptor-positive – cancers are prevented. There are, however, significant problems with tamoxifen in that it causes unpleasant and sometimes serious side effects.

To date none of the trials has shown that women who took tamoxifen lived longer. Women in the tamoxifen prevention trials who seemed to benefit most included those with atypical hyperplasia (see page 209) and those with a type of change in the breast called lobular carcinoma *in situ* or lobular neoplasia (see page 73).

Despite the success of tamoxifen in reducing the number of women who developed breast cancer, the overall message from the UK tamoxifen study was that the benefits are balanced by the risks. Based on this conclusion tamoxifen is not in routine use as a preventive agent in the UK but can be given to individuals after a detailed discussion of the pros and cons of its benefits and risks.

## Newer drugs

### Raloxifene

Raloxifene is a tamoxifen-like drug with potentially less serious side effects. In American studies it has been shown to be as effective as tamoxifen at preventing breast cancer.

Raloxifene is not used routinely for breast cancer prevention in the UK. It is, however, used in postmenopausal women to treat osteoporosis under the trade name Evista.

### Aromatase inhibitors

#### Anastrozole

Studies comparing the aromatase inhibitor anastrozole and tamoxifen in women with breast cancer have shown that anastrozole is up to twice as effective as tamoxifen at preventing the development of new breast cancers in postmenopausal women. A current study compares anastrozole with tamoxifen in women at increased risk of breast cancer.

#### Letrozole and exemestane

Both letrozole and exemestane are more effective than tamoxifen at preventing new cancers in women treated for breast cancer. Prevention studies with these drugs are under way.

## What should I do if I think I am at increased risk?

For a woman who believes that she is at increased risk of breast cancer the first step is to get a referral to a family history or high-risk clinic so that her individual risk can be calculated. If she is confirmed to be at significant increased risk then the following are the options:

- Regular breast checks usually with yearly mammograms and, in very high-risk women, MRI.
- Entering the new UK prevention study if she is eligible – the study is only for postmenopausal women.
- Having surgery to remove all the breast tissue. This involves some type of mastectomy on both sides. It can be combined with breast reconstruction and may or may not involve removal of the nipple. This type of surgery should be carried out by a specialist breast surgeon with or without the help of a plastic surgeon. Removal of the breasts reduces the risk of breast cancer by over 90 per cent.
- Women who are at very high risk of breast cancer because they have inherited a faulty *BRCA-1* or

### How can you best reduce your risk of developing breast cancer?

- Eat a healthy diet including regular fresh fruit and vegetables – no dietary supplements such as vitamins are necessary and no supplements have been shown to be of value
- Take regular exercise
- Drink alcohol in moderation
- Be breast aware and report any changes to your GP
- Try to keep your weight within the recommended range for your height
- Don't smoke

*BRCA-2* gene are also at increased risk of ovarian cancer. Removal of the ovaries in these women not only reduces their risk of developing ovarian cancer, but also reduces their risk of developing breast cancer by half.

About half of the studies that have looked at the relationship of breast cancer and the amount of fat in a woman's diet have shown that the more fat in the diet the higher the risk of getting breast cancer. The other half, however, have not shown any clear link between a high-fat diet and breast cancer.

The current view is that it is better for your overall health to have a diet that is not high in fat so, from a general health point of view, high-fat diets are not good for you. There is some evidence that if you eat certain types of oily fish it might be beneficial.

Eating fresh fruit and vegetables is beneficial because they contain the vitamins A, C, D and E, which are known as antioxidants. They are effective at neutralising some of the substances in the environment that we think might cause cancer. Taking extra vitamins is not, however, beneficial and not recommended.

There is no convincing evidence that dairy products increase your risk of breast cancer or that avoiding dairy products will significantly decrease your risk. There is more concern about the possibility of harmful effects of soy than there is evidence of its benefits. Replacing dairy milk with soy milk is therefore not recommended unless there are medical or personal reasons for choosing soy milk.

## KEY POINTS

- Risk factors for breast cancer include female sex, increasing age and a strong family history of breast cancer
- Taking HRT, particularly combined oestrogen and progesterone for long periods, increases the risk of breast cancer
- There is little that one can do about most risk factors for breast cancer but it is worthwhile eating a healthy diet, taking regular exercise and avoiding HRT if possible
- No drugs are recommended to reduce the risk of breast cancer in the general population
- In a few women with a greatly increased risk of breast cancer due to abnormal genes, action can be taken to reduce their risk