

Magazine: Back-Issue Article

Breast cancer: risk factors and treatments

Breast cancer is the most commonly occurring female cancer in developed countries but earlier diagnosis and improvements in treatment are resulting in the majority of women surviving the disease. In the United Kingdom, whilst 44,000 women are diagnosed every year, 12,000 die from their breast cancer and this number is likely to fall even further.

At present, knowledge of all the factors that result in the development and growth of breast cancer is incomplete. For many women, the known association of diagnosis of breast cancer and use of HRT creates much fear and is often the main reason why women choose not to take HRT, but other factors have been associated with an increased breast cancer risk including age, family history, benign breast disease, endogenous sex hormone exposure (i.e. exposure to sex hormone produced within the body), exogenous hormone exposure (i.e. exposure to hormones taken in the form of medication), smoking, alcohol, diet and reproductive history.

It is important to realise that although these factors have been identified, their occurrence does not indicate that a woman will definitely develop breast cancer. There are almost certainly other factors that are necessary to interact for breast cancers to develop and grow but knowledge of these is incomplete.

Age

This is the most important risk factor for breast cancer as most cases are diagnosed in women aged over 50 years. A commonly quoted statistic is that breast cancer affects 1 in every 12 women. However, it is important to understand that this figure represents risk over a woman's whole lifetime. In women aged less than 30 years, breast cancer occurs in approximately 1 in 625 women. This increases to 1 in 13 for women by the age of 75 years.

Family history

This refers to the risk of inheriting a gene mutation that can result in the development of breast cancer. Inherited breast cancers are more likely to be diagnosed at a younger age (i.e. less than 40 years), affect both breasts and affect more than one relative within a family. In some families there is clustering of breast with ovarian, endometrial and bowel cancers. If a woman has a single first degree relative (i.e. mother or sister) diagnosed with breast cancer over the age of 50 years it is very unlikely that this places her at an increased risk of breast cancer. For



IT'S A FACT

Almost 81% of breast cancers occur in women over the age of 50.

Nearly 50,000 people are diagnosed with breast cancer in the UK every year.

More than 12,000 people die from breast cancer in the UK each year.

One third of cancer deaths could be prevented if detected and treated early.

World-wide 4000,000 lives could be saved every year.

any woman who has a family history of cancer, discussion with her GP should determine whether this is likely to be significant and therefore whether specialist referral to a breast unit for counselling is necessary.

Benign breast disease

This encompasses a diverse range of conditions of the breast, most of which are not associated with an increased risk of breast cancer. Breast cysts are not associated with any significant risk.

Endogenous hormones

Endogenous hormones are produced naturally within the body. Breast cancer is a disease that predominantly affects women, being 200 times more common than in men. Female sex hormones, in particular those produced by the ovary (e.g. estrogen, progesterone) play an important role in the development of most breast cancers. The evidence for this has largely been drawn from population studies that have revealed an increased risk of breast cancer in women who commence their menstrual periods at a younger age or who develop the menopause at an older age. The earlier a woman has her menopause, the lower her risk of developing breast cancer.

In women who have undergone the menopause, estrogen and progesterone hormones are no longer produced by the ovary. Instead small amounts of estrogen are produced in fat cells by the action of an enzyme called aromatase. Postmenopausal women who are overweight are at an increased risk of breast cancer and this has been attributed to the fact that there is more fat tissue in which this synthesis of estrogen can take place.

Exogenous hormones

Exogenous hormones are those which originate outside the body. These include: the oral contraceptive pill (OCP), also known as birth control.

There does appear to be a very small increase in the risk of developing breast cancer with the use of the OCP. Review of clinical studies suggests that this risk is probably restricted to younger women (i.e. aged less than 35 years) who have used the OCP for longer than 5 years.

This risk is very small. It has been estimated that for every 10,000 women aged between 25 to 29 years who take the OCP for 5 years an extra 5 cases of breast cancer are diagnosed.

Hormone replacement therapy (HRT)

Recent information from clinical trials has shown that combined HRT (i.e. estrogen plus progestogen hormone) is associated with a very small increase in the risk of breast cancer being diagnosed but only if taken long-term (i.e. for more than 5 years after the age of 50). Five years use of HRT probably results in 3 to 4 extra breast cancers per 1000 women who use it. The small increase in risk associated with combined HRT falls after it is stopped and there is no evidence that the risk of dying from breast cancer is increased in women with a history of using it. The risk of breast cancer with combined HRT is less than that associated with being overweight over the age of 50 years or that associated with drinking 2 or more units of alcohol per day. It is not believed that HRT causes breast cells to become a cancer, but that in some women, if taken long enough, combined HRT may promote the growth of cancer cells which are already present. For women who are able to take estrogen only HRT (eg if they have had a hysterectomy),

it seems that there is no increase in risk of diagnosis of breast cancer unless it is taken for a very long time (perhaps 20 years or more).

Women who experience an early or premature menopause should not have concerns about taking HRT at least until the average age of the menopause; their risk of breast cancer in this situation will be the same as if they had produced their own hormones until the normal menopausal age.

Smoking

A 2004 study found that smoking does in fact increase ones risk of breast cancer. Woman who began smoking before the age of 20 and those who started at least five years before their first pregnancy seem to be most at risk. Heavy smoking or smoking over a long period of time also increases the risk. There is no evidence that passive smoking increases ones risk. Also, on a positive note, researchers found no evidence of a significantly higher risk in former smokers.

Alcohol

One study showed that for women with a close blood relative with the disease, daily alcohol consumption appeared to more than double the risk of breast cancer. A more recent study found that 60 percent of breast cancer cases in women worldwide were attributable to alcohol consumption. But the mechanism(s) of alcohol-induced breast cancer are poorly understood.

Diet

Research shows that 10%-70% of cases may be prevented by changing diet. Although it is difficult to determine what foods put you at risk for breast cancer a diet high in fat has been implicated in increasing risk but more research needs to be done. The best course of action is to eat plenty of fruits and vegetable and stay away from foods high in fat or cholesterol, sugar and processed foods. On the bright side, healthy eating is beneficial no matter what.

Reproductive history

Age at menarche

Early age of menarche (onset of period) is associated with an increased risk of breast cancer. Nutrition in early life will strongly influence of the age of menarche.

Birth and breast feeding

Part of the reason that women in developing countries have a higher risk of breast cancer than women in developed countries may be because women in developed countries have fewer children and a limited duration of breast feeding. The younger a woman is when she first gives birth the lower her risk of breast cancer. Also, women who do not breast feed are at greater risk for breast cancer and the longer a woman breast feeds the greater the protection.

Parity

Parity, or having more than one child, is also recognized as reducing the risk of breast cancer. The higher the higher the number of full-term pregnancies the greater the protection a woman has against breast cancer.

Age at menopause

The later a woman goes through menopause the higher her risk. Postmenopausal women have a lower risk of breast cancer than premenopausal women of the same age. This holds true for both natural menopause and surgically induced menopause.

Bodyweight and physical activity

About 8% of breast cancer in the UK may be because of obesity or being overweight. Being overweight and obesity are measured using the BMI (body mass index). A high BMI may even increase the risk of postmenopausal breast cancer. Similarly, physical activity has a preventative effect on breast cancer. This may indirectly affect risk by lowering a women's BMI or it may have a direct effect on hormonal and growth factor levels. Either way, physical activity is a good way of lowering your risk of breast cancer.

Risk factor	Increase in breast cancer risk
Age at onset of periods less than 11 years	1.50 x increase
Age at natural menopause greater than 55 years	2.00 x increase
Postmenopausal obesity	1.60 x increase
Alcohol (more than 2-3 units per day)	1.50 x increase
HRT for more than 5 years after age 50	1.26 x increase

Treatment of breast cancer

If you are diagnosed with breast cancer (either from screening or from finding a change or swelling yourself) there are five main treatments of cancer: surgery, radiotherapy, hormone therapy, chemotherapy and biological treatment. One or a combination of these therapies may be used. There are no set treatments for a specific type of breast cancer, all treatments are chosen on an individual basis and it is important to speak to your doctor about all treatments types and come to an agreement. Some of the factors that are considered when deciding on a treatment are:

- Whether you have had your menopause
- The type of breast cancer you have
- The size of your breast tumour
- The stage of your breast cancer
- The grade of your cancer cell
- The results of test on your cancer cells
- Your general health

Often, treatment for breast cancer may cause the ovaries to stop working, or the ovaries may be removed, either of which can lead to a sudden early menopause. Coping with menopausal symptoms due to an induced menopause as part of treatment of the breast cancer, or due to a naturally occurring menopause at a later stage can be difficult. While HRT is known to be the most effective treatment for menopausal symptoms, the use of HRT after a diagnosis of breast cancer is controversial. Research has given conflicting results on the effect of using HRT after breast cancer, with some showing an increased risk of cancer recurring, and others showing no increase. Many women would understandably be fearful of taking hormones in this situation and so would often be advised to try non-hormonal treatments first, which can be prescribed by a doctor. The use of alternative therapies would not be recommended since there is a lack of evidence on the effect and safety. Alternative techniques such as acupuncture, yoga, and relaxation techniques could be used. If menopausal symptoms such as hot flushes, anxiety, sleep disturbance, joint aches, mood changes etc are not helped by non-hormonal measures and symptoms are significantly affecting quality of life, then the use of HRT can be considered but under the guidance of a specialist menopause clinic.

For menopausal vaginal symptoms of dryness, irritation and discomfort, non-hormonal moisturizers and lubricants can be used. If these prove to be unhelpful, the use of very low dose vaginal estrogen can be considered under medical supervision.

Women often feel that when attending follow up clinics, the focus is, understandably on the breast cancer treatment, ensuring maximal chance of successful treatment, but that the effects of treatment, such as the resulting menopausal symptoms are not viewed seriously. Since many treatment options are available, it is essential that symptoms are reported so that help can be provided.

To gain more information about the effects of treatment for breast cancer, we are currently running a survey at questionnaire-breastcancer2012.php If you have had treatment for breast cancer, please spare a few minutes to complete our online survey. We would like to understand what support you need to help control your menopause symptoms so that we can improve our care to you.

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