

Breast cancer briefsheet

Breast cancer is the most common cancer in the UK* and the number of women being diagnosed is rising. But our research is bringing a brighter future – more women are surviving the disease than ever before.

Cancer Research UK is the largest single funder of breast cancer research in the UK, and last year we spent over £41 million funding groundbreaking work to help people with the disease. Our scientists are investigating the causes of breast cancer, finding new ways to prevent and detect it, and developing better treatments to save even more lives.

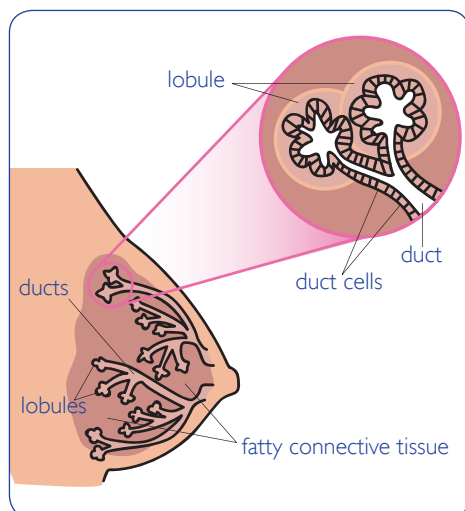
Facts and figures

- Each year more than 47,700 women in the UK are diagnosed with breast cancer.** That's more than five every hour.
- Men can also develop breast cancer, but this is rare, with around 310 cases in the UK each year.
- The disease claims around 12,000 lives every year in the UK. And it is the second most common cause of death from cancer in women after lung cancer.
- The good news is that almost two-thirds of women diagnosed with breast cancer today now survive their disease beyond 20 years.

What is breast cancer?

The breast is made up of millions of cells. Breast cancer develops when one of these cells begins to multiply out of control and forms a tumour. Some cancer cells may then break away and spread to other parts of the body.

The breast consists of fatty tissue and lobules that are connected to the nipples by ducts. Breast cancer usually starts in a cell lining a duct or lobule.



How is breast cancer treated?

Treatment depends on the patient's age, the type and size of the cancer, and how far it has spread. Most people will have surgery, and this may be followed by radiotherapy and/or chemotherapy. Many women will also have hormone therapy using drugs such as tamoxifen or anastrozole. For more information please visit www.cancerhelp.org.uk

Breast screening

Breast screening helps to detect cancers early, when there is a much better chance of successful treatment, and is offered to all women between 50 and 70 in the UK. Older women can request screening through their GP. Breast screening saves lives, which is why it's important to attend when invited.

Our impact

- More women than ever before are surviving breast cancer thanks to our work.
- Our research helped to develop and improve the national breast screening programme, saving thousands of lives.
- Our scientists led the world in finding faulty genes involved in breast cancer, helping doctors to offer tailored advice, screening and treatment.
- We funded clinical trials that proved the benefit of drugs such as tamoxifen and anastrozole, used every day to treat breast cancer. And research at our clinical trials units helped to show that Herceptin can improve survival in a certain type of breast cancer.
- Our scientists played a starring role in the early development of drugs called PARP inhibitors, which could bring benefits for women with breast cancer caused by certain gene faults.

What could affect your risk?

Age

The risk of breast cancer increases as women get older. Around four out of five women diagnosed with the disease are aged 50 or over.

Family history

Breast cancer can run in families. Most women with one or two affected relatives will not develop the disease. But the risk is greater if a woman's mother, sister or daughter developed breast cancer before the age of 40, or if two or more relatives have been affected at any age.

Menstruation and menopause

Women who start their periods at a younger age or have a late menopause have an increased risk.

Hormone replacement therapy (HRT)

HRT increases the risk of breast cancer. The risk increases the longer a woman takes HRT but falls back to normal within five years of stopping the treatment.

The Pill

The contraceptive pill may cause a slight increase in breast cancer risk but this gradually returns to normal once a woman stops taking it.

Obesity

Being overweight after the menopause increases the risk of breast cancer. This is because body fat affects levels of the female hormone oestrogen that can influence the development of the disease.

Physical activity

Women who are physically active have a lower risk of breast cancer than less active women. The more active a woman is, the lower her risk.

Alcohol

Drinking alcohol increases the risk of breast cancer. The more a woman drinks, the greater her risk.

Having children

The more children a woman has, and the younger she is when she has them, the lower her risk of breast cancer.

Breastfeeding

Breastfeeding reduces the risk of breast cancer. The longer a woman breastfeeds her children, the lower her risk.

Together we will beat cancer



Our research into breast cancer

We receive no government funding for our research

Understanding breast cancer

Cancer Research UK scientists are world-leaders in unravelling the causes of breast cancer.

The disease starts when cells with damaged genes begin to grow out of control. Most cases of breast cancer are caused by genetic damage that has built up over a person's lifetime, but some people inherit faulty genes that also increase their risk of the disease.

Investigating breast cancer genes

In the early 1990s, we led the world in tracking down two high-risk breast cancer genes called BRCA1 and BRCA2. Thousands of women with a strong family history of breast cancer now benefit from these discoveries.

Our scientists have shown that people can also inherit genetic changes that give them a slight or moderate increase in their risk of breast cancer. Professors Bruce Ponder, Doug Easton, and Dr Paul Pharoah in Cambridge have discovered many genes involved in breast cancer; and their groundbreaking work could one day allow doctors to create targeted screening programmes for women who are more likely to develop the disease.

Professor Paul Harkin in Belfast is investigating how a faulty BRCA1 gene can affect a person's response to chemotherapy drugs. His work will lead to more personalised treatment for people with breast cancer.

Lifestyle and hormones

A woman's hormone levels vary during her lifetime and play an important part in determining her risk of breast cancer. Professor Valerie Beral in Oxford is leading a unique worldwide study investigating the effects of hormones and childbearing on breast cancer risk. The study is the largest of its kind, involving over one million women. It has shown that women who are using or have recently used hormone replacement therapy have an increased the risk of the disease. Our scientists are also investigating how other lifestyle factors such as diet affect breast cancer risk.

Cancer spread

Most deaths from cancer are caused by the disease spreading, so our scientists are working to understand this process.

Professor Martin Humphries in Manchester is studying the molecular signals that control how breast cancer cells move around the body. And Professor Anne Ridley in London is investigating changes in breast cancer cells that allow them to spread to the lungs and grow into new tumours. Knowledge like this will help to find new ways to stop breast cancer spreading and save many more lives.

Prevention and early diagnosis

Our work uncovering the links between hormones, lifestyle and breast cancer risk is helping to prevent more women from getting the disease.

In London, Professor Jack Cuzick is investigating whether hormone blocking drugs can help to prevent breast cancer in women with an increased risk of the disease. He led a groundbreaking study proving that the drug tamoxifen can protect these women, and is now running a second international clinical trial to find out if another drug, anastrozole, could be even more effective.

Screening

One of our goals is to diagnose cancer earlier, when it's more likely to be treated successfully. Professor Kenneth Young in Guildford is investigating new digital X-ray technology, which could improve breast cancer detection and save even more lives. And Professor Ros Eeles in London is finding out if MRI screening could help to spot breast cancer early in younger women at high risk of the disease.



Jayshree Jhala was diagnosed with breast cancer through screening. *'If I had missed that mammogram I might not be here today. I live every day as if it were the last and tomorrow is a bonus.'*

Improving treatment

Cancer Research UK has helped transform breast cancer treatment over the last few decades, and our scientists are continuing to improve the outlook for women with the disease. We are funding almost 30 breast cancer clinical trials across the UK that are investigating new ways to prevent and treat the disease – studies that will help to save thousands more lives in the future.



Professor Judith Bliss in Sutton is coordinating several important national trials for breast cancer. One is testing a new way of giving radiotherapy after surgery for early breast cancer. Researchers hope the new method will cause less damage to the breast and reduce the long-term side effects of radiotherapy.

Around 15 per cent of breast cancers are 'triple-negative'. They don't respond to commonly-used drugs like tamoxifen and Herceptin, so new treatments are urgently needed. Another trial run by Professor Bliss is testing two different chemotherapy drugs to see which works best for women with this type of breast cancer.

Our scientists are also tackling the challenge of breast cancers that have become resistant to treatment. Drugs such as tamoxifen have brought huge benefits, but over time they can stop working for some women, and the cancer returns. Dr Jason Carroll in Cambridge is investigating how cancers develop resistance, so that we can overcome this problem.

Cancer Research UK-funded scientists have been instrumental in the development of a new generation of cancer drugs called PARP inhibitors. These drugs could be a highly effective way to treat breast cancers caused by faulty BRCA genes, and they are already showing promising results in clinical trials.