

Breast cancer is unfortunately a common disease. About 1 in every 9 women in the UK will be diagnosed with breast cancer at some time in their lives. But it's important to remember that more women than ever before are surviving breast cancer due to better awareness, screening and improved treatments. What can make a difference to your chances of developing breast cancer in the first place? This series of fact sheets aims to give you some information about what is known about breast cancer risk factors.

Is there a link between deodorants or antiperspirants and breast cancer?

Stories claiming that using deodorants or antiperspirants increases the risk of breast cancer have been circulating on the internet and by email for several years. This issue also gets a lot of press coverage from time to time. Since these claims began to circulate some studies have looked at the possible link between deodorants/antiperspirants and breast cancer. But there is still no good scientific evidence that a link exists.

What is the difference between deodorants and antiperspirants?

Antiperspirants work by closing, clogging or blocking the pores that release perspiration. Deodorants, on the other hand, do not stop perspiration. Instead, they work by neutralising the smell of perspiration.

Why do some people think there might be a link between deodorants or antiperspirants and breast cancer?

There have been two theories behind the possible link between deodorants and/or antiperspirants and breast cancer. Many of the articles in the press and on the internet propose that toxins are removed from the body in the form of perspiration. The articles claim that, by preventing perspiration, antiperspirants stop the body from getting rid of toxins from under the arms. According to the reports, these toxins accumulate near the breast and can cause breast cells to become cancerous. However, perspiration is not one of the major ways that the body eliminates toxins – the liver and

This fact sheet forms part of a series on breast cancer risk factors. Further risk factor fact sheets can be accessed online at www.breakthrough.org.uk or by calling the Breakthrough Information Line on freephone 08080 100 200. Healthcare professionals can order multiple copies free of charge via the website or information line.

Breakthrough Breast Cancer is the leading charity committed to fighting breast cancer through research and education and has established the UK's first dedicated breast cancer research centre. Breakthrough campaigns for policies that support breast cancer research and a pioneering approach to breast cancer services in the UK.

The information in this factsheet is based on up-to-date research evidence and aims to give the best information available. All information was checked by appropriate experts and people affected by breast cancer. We advise readers with concerns about breast cancer to discuss them with a health professional. A full reference list is available on request from Breakthrough Breast Cancer, 3rd Floor, Weston House, 246 High Holborn, London WC1V 7EX.

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kidneys play a far more important role. The main function of perspiration is to help your body to cool down.

Other reports have also claimed that both antiperspirants and deodorants contain toxic chemicals that can be absorbed through the skin or enter the body through nicks caused by shaving, thus causing breast cancer. However, there is no evidence that chemicals are absorbed by this route. Nor is there any clear evidence that chemicals in deodorants or antiperspirants are actually toxic or that they cause breast cancer.

Has any scientific research found that deodorants or antiperspirants are associated with breast cancer?

Two studies have suggested that deodorants and antiperspirants may increase the risk of breast cancer. However, experts agree that the evidence provided by these studies is inconclusive.

One study, published in 2003 in the *European Journal of Cancer Prevention*, interviewed 437 women with breast cancer about their past and present use of deodorants. The study reported that women who applied deodorant at least twice a week and shaved their armpits at least three times a week developed breast cancer almost 15 years younger than women who did neither. Neither shaving nor applying a deodorant alone was linked with a younger age of diagnosis of the disease. However, the way this study was carried out has been heavily criticised by experts. Particularly because it did not include women who didn't have breast cancer and relied on women remembering how often they used deodorant and shaved their armpits in the past.

The second study, published in 2004 in the *Journal of Applied Toxicology*, looked at synthetic chemicals called parabens. Parabens are used in a wide range of cosmetic products, including some deodorants, although over 90% of deodorants are paraben-free. The researchers looked at 20 human breast tumour samples and found that parabens were present in 18 of them. They concluded that these results suggested that parabens in deodorants could be absorbed through the skin and increase the risk of breast cancer. Again, many experts have raised concerns about the conclusions of this study. For example, the study was very small, it did not look at the level of parabens in breast tissue of women without breast cancer, nor did it

establish that the parabens actually came from deodorants or that they were absorbed through the armpits. At the moment, all the study has shown is that the body can absorb parabens and that these chemicals are found in some breast cancer tissue. It **does not** show that parabens can increase the risk of or cause breast cancer.

Has any research suggested that deodorants or antiperspirants are not associated with breast cancer?

Yes. The largest study to date to investigate this issue examined the deodorant or antiperspirant use and underarm shaving habits of 813 women with breast cancer and 793 women with no history of the disease. The study found no evidence of a link between using deodorants or antiperspirants - alone or together with underarm shaving - and breast cancer risk. The study was published in 2002 in the *Journal of the National Cancer Institute*.

What does Breakthrough think?

Breast cancer is complex, and we do not believe that there is any one single factor that is responsible for causing the disease. A large number of scientific studies have investigated breast cancer risk factors, however there is no reliable evidence to suggest that the use of deodorants or antiperspirants are two of them.

Current scientific evidence suggests that deodorant or antiperspirant use does not increase the risk of or cause breast cancer. However, women attending a mammography screening appointment should know that deodorant or talc containing aluminium might show up on an x-ray and give an inaccurate reading, so it is best to avoid these products if you are going for a mammogram.

Breast cancer is an extremely complex disease and very little is known about the risks. Breakthrough is supporting the Breakthrough Generations Study, which will investigate the causes of breast cancer and in particular gain information on causes that might be preventable. Launched in 2004, this will be the largest, longest-running study of its kind. It will include over 100,000 women from across the UK, and will continue to give information for the next 40 or 50 years. It is likely that a complex interplay of factors contribute to breast cancer. By examining the effects of genetic, environmental, behavioural and hormonal factors, we hope that the study will pinpoint the causes of breast cancer and how we can prevent this disease in the future.