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# CANCER FACTS

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National Cancer Institute • National Institutes of Health  
Department of Health and Human Services

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## Antiperspirants/Deodorants and Breast Cancer: Questions and Answers

### Key Points

- There is no conclusive research linking the use of underarm antiperspirants or deodorants and the subsequent development of breast cancer (see Question 1).
- Two research studies of underarm antiperspirants or deodorants and breast cancer have been completed and provide conflicting results (see Question 2).

### 1. Can antiperspirants or deodorants cause breast cancer?

Articles in the press and on the Internet have warned that underarm antiperspirants or deodorants cause breast cancer (1). The reports have suggested that these products contain harmful substances, which can be absorbed through the skin or enter the body through nicks caused by shaving. Some scientists have also proposed that certain ingredients in underarm antiperspirants or deodorants may be related to breast cancer because they are applied frequently to an area next to the breast (2).

However, researchers at the National Cancer Institute (NCI) are not aware of any conclusive evidence linking the use of underarm antiperspirants or deodorants and the subsequent development of breast cancer. The U.S. Food and Drug Administration, which regulates food, cosmetics, medicines, and medical devices, also does not have any evidence or research data that ingredients in underarm antiperspirants or deodorants cause cancer.

### 2. What have scientists learned about the relationship between antiperspirants or deodorants and breast cancer?

In 2002, the results of a study looking for a relationship between breast cancer and underarm antiperspirants/deodorants were reported (3). This study did not show any increased risk for breast cancer in women who reported using an underarm antiperspirant



or deodorant. The results also showed no increased breast cancer risk for women who reported using a blade (nonelectric) razor and an underarm antiperspirant or deodorant, or for women who reported using an underarm antiperspirant or deodorant within 1 hour of shaving with a blade razor. These conclusions were based on interviews with 813 women with breast cancer and 793 women with no history of breast cancer.

A different study examining the frequency of underarm shaving and antiperspirant/deodorant use among 437 breast cancer survivors was released in 2003 (4). This study found that the age of breast cancer diagnosis was significantly lower in women who used these products and shaved their underarms more frequently. Furthermore, women who began both of these underarm hygiene habits before 16 years of age were diagnosed with breast cancer at an earlier age than those who began these habits later. While these results suggest that underarm shaving with the use of antiperspirants/deodorants may be related to breast cancer, it does not demonstrate a conclusive link between these underarm hygiene habits and breast cancer. Additional research is needed to investigate this relationship and other factors that may be involved.

Other research has focused on certain preservatives (parabens) that are used in deodorants and antiperspirants, as well as many cosmetic, food, and pharmaceutical products. Parabens have been shown to mimic the activity of estrogen (a hormone) in the body's cells (5). Because estrogen promotes the growth of breast cancer cells, some scientists have suggested that the use of deodorants or antiperspirants could cause the accumulation of parabens in breast tissues, which may contribute to the development of breast cancer. This hypothesis was supported by a 2004 study that found parabens within 18 of 20 samples of tissue from human breast tumors (6). However, this study did not prove that parabens cause breast tumors (5). The authors of this study did not analyze healthy breast tissue or tissues from other areas of the body, and did not demonstrate that parabens are found only in cancerous breast tissue (6). Furthermore, this research did not identify the source of the parabens, and cannot establish that the accumulation of parabens is due to the use of deodorants or antiperspirants. More research is needed to specifically assess whether the use of deodorants or antiperspirants can cause the accumulation of parabens in breast tissue, and whether these chemicals can promote the development of breast cancer.

### **3. Where can someone get more information on breast cancer risks?**

People who are concerned about their cancer risk are encouraged to talk with their doctor. More information about cancer is available on the NCI's Web site (<http://www.cancer.gov>). Also, U.S. residents may wish to contact the NCI's Cancer Information Service (CIS) (see below) with any remaining questions or concerns about breast cancer.

Inquirers who live outside the United States may wish to contact the International Union Against Cancer (UICC) for information about a resource in their country. The UICC Web site is located at <http://www.uicc.org> on the Internet. Also, some countries have organizations that offer services similar to those of the U.S. Cancer Information Service.

A list of international cancer information services can be found at [http://www.icisg.org/meet\\_memberslist.htm#full](http://www.icisg.org/meet_memberslist.htm#full) on the Internet.

## **Selected References**

1. Jones J. Can rumors cause cancer? *Journal of the National Cancer Institute* 2000; 92(18):1469–1471.
2. Darbre PD. Underarm cosmetics and breast cancer. *Journal of Applied Toxicology* 2003; 23(2):89–95.
3. Mirick DK, Davis S, Thomas DB. Antiperspirant use and the risk of breast cancer. *Journal of the National Cancer Institute* 2002; 94(20):1578–1580.
4. McGrath KG. An earlier age of breast cancer diagnosis related to more frequent use of antiperspirants/deodorants and underarm shaving. *European Journal of Cancer Prevention* 2003; 12(6):479–485.
5. Harvey PW, Everett DJ. Significance of the detection of esters of *p*-hydroxybenzoic acid (parabens) in human breast tumours. *Journal of Applied Toxicology* 2004; 24:1–4.
6. Darbre PD, Aljarrah A, Miller WR, et al. Concentrations of parabens in human breast tumours. *Journal of Applied Toxicology* 2004; 24:5–13.

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## **Related Resources**

### **Publications (available at <http://www.cancer.gov/publications>)**

- Cancer Facts 2.10, *How To Evaluate Health Information on the Internet: Questions and Answers*
- Cancer Facts 6.7, *Cancer: Questions and Answers*
- *What You Need To Know About™ Breast Cancer*

## **National Cancer Institute (NCI) Resources**

### **Cancer Information Service (toll-free)**

Telephone: 1-800-4-CANCER (1-800-422-6237)  
TTY: 1-800-332-8615

### **Online**

NCI's Web site: <http://www.cancer.gov>  
*LiveHelp*, NCI's live online assistance:  
<https://cisssecure.nci.nih.gov/livehelp/welcome.asp>

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