

Where to Go for More Information

- American Cancer Society, 800-277-2345, www.cancer.org
- FORCE (Facing Our Risk of Cancer Empowered), www.facingourrisk.org
- National Cancer Institute Cancer Information Service, 800-4-CANCER, cis.nci.nih.gov
- National Breast Cancer Coalition, 202-295-7477, www.natlbcc.org
- North Carolina Breast Cancer Resource Directory, 800-514-4860, bcresourcedirectory.org
- UNC-Chapel Hill Cancer Genetics Clinic, 919- 843-8724, cancer.med.unc.edu/patient/programs/cancer-genetics.asp (for genetic counseling)

The Community Outreach and Education Program of the UNC-Chapel Hill Center for Environmental Health and Susceptibility produced this fact sheet with a grant from the National Institute of Environmental Health Sciences (NIEHS), P30ES10126. This fact sheet accompanies a workshop, Breast Cancer, Genes, and the Environment.

For more information about the workshop, please call (919) 966-9799 or email kgray@unc.edu.

www.sph.unc.edu/cehs

Breast Cancer Fact Sheet

Each year, close to 40,000 women in the U.S. die from breast cancer and 200,000 new cases are diagnosed. Breast cancer is primarily a disease of older women. Over two-thirds of women diagnosed with breast cancer are 55 years and older.



This fact sheet looks at the risk factors for developing breast cancer, including environmental risk factors, and options for reducing risks. While over 90 percent of American women have at least one risk factor for breast cancer, fewer than 13 percent will develop the disease by age 85.

Personal Risk Factors

Estrogen-Related Risk Factors

Most well established risks for breast cancer are linked to a woman's lifetime exposure to estrogen. Estrogen is a naturally occurring hormone important for sexual development and child bearing. However, too much estrogen raises the risk for breast cancer. The following factors increase a woman's exposure to estrogen and raise her risk for getting breast cancer.

- Menstruating before age 12.
- Menopause after age 55.
- Hormone replacement therapy for more than 5 years.
- First pregnancy after age 30 or no pregnancies.
- Breastfeeding for less than 12 months (total for all children).

The following factors also increase a woman's risk for breast cancer:

- Being over 55.
- A previous diagnosis of breast cancer.
- Family history of breast cancer.
- Certain breast diseases, including atypical hyperplasia or lobular carcinoma in situ.
- Dense breast tissue.

Family History

Research consistently has shown that women with a family history of breast cancer are at increased risk for breast cancer themselves. This risk may be due to shared genetic makeup, but may also be due to shared lifestyle choices and exposure to similar environmental risks. In short, having a family history of breast cancer does not necessarily mean your family carries the known breast cancer genes. In fact, most women with a family history of breast cancer do not have such genes. Additionally, women without an apparent family history of breast cancer may have one of the known breast cancer genes.

Genetic Risks

Research suggests that only 5-10 percent of all cases of breast cancer are caused by inherited genetic mutations (or alterations). Scientists have found that mutations in two genes, called BRCA 1 and BRCA2, can cause breast and ovarian cancer. However, scientists now believe that mutations in these two genes account for only half of hereditary breast cancers.



Environmental Risk Factors

Lifestyle Risk and Preventive Actions

What we eat and drink and how active we are play a role in breast cancer. Research has shown that the following lifestyle choices increase a woman's risk for breast cancer:

- Consuming one or more glasses of alcohol a day
- A sedentary lifestyle
- Being overweight (especially after menopause)

By contrast, the following factors have been shown to be protective against breast cancer.

- A diet high in fruit and vegetables
- Regular exercise

Exposure to Environmental Toxins

Controversy exists about the role of environmental toxins and breast cancer. Scientists agree that exposure to high doses of radiation before 30 years of age, such as being treated for Hodgkin's disease, places women at increased risk for breast cancer. Possible, but controversial, environmental risks for breast cancer include:

- passive smoking (second-hand smoke).
- PAHs (polycyclic aromatic hydrocarbons) produced by the burning of coal, oil, gas, garbage or other organic substances.
- certain organochlorine compounds, such as the polychlorinated biphenyls (PCBs) formerly used in consumer and industrial electronics.

Research has shown that human exposure to electromagnetic fields and DDT/DDE, a now-banned but previously widely used pesticide, are not associated with increased risk for breast cancer.