

Focus

Breast Cancer: The Most Common Malignancy in Women

Breast cancer is the most common major cancer that occurs among American women and, after lung cancer, the second greatest cause of female cancer deaths. About 215,000 new breast cancer cases are diagnosed yearly in women (and 1,400 in men). More than 40,000 women and 400 men are expected to die from breast cancer in 2004.

Breast cancer starts in breast tissue as one or more masses of abnormal cells called tumors. As the disease progresses, cells can spread from the tumor through the blood or lymph systems to other parts of the body, where they damage other organs and can form other tumors. Tumors start out as microscopic clumps of cancer cells, but over time they grow, often into lumps large enough to be felt. Breast cancers are diagnosed after they are found either by the woman or a health professional feeling the tumor or by a doctor seeing evidence of cancer on a special x-ray picture called a mammogram. Breast cancer often can be effectively treated, especially if found in the early stages when the tumor is small and the cancer has not spread.

Any woman can get breast cancer, and the majority of women who get the disease have no known risk factors. However, several factors raise breast cancer risk:

- Growing older, especially being over age 60 or having experienced menopause.
- Having had breast cancer in the past.
- Breast cancer in a mother, sister, or daughter, especially before the age of 40, or in other relatives in either the mother's or father's family.

- Genetic changes in certain genes known as BRCA1 and BRCA2; these changes are most often found in families that have many members with breast cancer.
- Age at the birth of a woman's first child; the older she is, the greater her risk of breast cancer.
- Having first menstruation before age 12 or menopause after age 55.
- Never having had children.
- Being obese after menopause or physically inactive throughout life.

Although breast cancer is the most common cancer in women of all ethnic and racial groups, it does not occur equally throughout the population. It occurs most often in whites, who had 140.8 new cases per 100,000 women from 1996 to 2000, compared with 121 new cases among African Americans, 97.9 per 100,000 among Asians and Pacific Islanders, and 89.8 per 100,000 among Latinas. Death rates also vary among population groups, with African Americans suffering 35.9 breast cancer fatalities per 100,000 women from 1996 to 2000, compared with 27.2 per 100,000 for white women, 17.9 per 100,000 for Latinas, 14.9 per 100,000 for American Indians and Alaska Natives, and 12.5 per 100,000 for Asians and Pacific Islanders. Death rates also vary by education, with 20.0 per 100,000 for women with less than a high school diploma, 28.4 deaths per 100,000 high school graduates in 1998, and 22.0 per 100,000 women with at least some college.

In addition to causing death, breast cancer imposes a large burden of suffering on individuals, families, and the nation at large. Total expenditures for breast cancer treatment amounted to \$5.4 billion in 1996, the latest year for which figures are available.

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Still, many women who have had breast cancer and have undergone treatment are now healthy, active, and productive. Treatment consists of surgery, chemotherapy, or radiation therapy, either alone or in combination, and presents a physical and emotional challenge. It can be painful and debilitating, but women often are able to conduct their daily activities during treatment. Short-term side effects may include nausea, fatigue, and hair loss. Long-term effects may include the loss of a breast; swelling of the arm, known as lymphedema; and premature menopause. Some women also fear that loss of a breast will harm their appearance or sexual relationships. Many resources exist to help women deal with the challenges of breast cancer treatment and live healthy and satisfying lives after it is complete.

Opportunities for Preventing Cancer Deaths

In addition to having screening tests for early detection of breast cancers, women should maintain a healthy weight, should not smoke, and should participate in physical activities, which may help prevent breast cancer.

For women at high risk of developing breast cancer, using the drug tamoxifen can reduce the disease by 50 percent. Other important opportunities exist for reducing breast cancer deaths and improving survival rates. In recent years, the breast cancer rate has fallen among white women but has risen among African Americans. Hispanics, whose rate of new breast cancers also has been rising, have survival rates that are worse than whites. These differences in part reflect the fact that a higher percentage of white and African American women regularly get a screening mammogram (i.e., a test performed before an individual shows any signs of having an illness) than do women of other racial and ethnic groups. In addition, a higher percentage of women living above the poverty line regularly receive mammograms than women living below it. When women have regular mammograms, their breast cancers, on average, are diagnosed and treated at earlier and more treatable stages.

The likelihood that a person with breast cancer will survive the disease depends very strongly on the stage the disease has reached when it is diagnosed. The earlier breast cancer is found and treated, the better the chances of survival. For example, 97 percent of women whose breast cancer is found at an early, localized stage are alive 5 years later. Although there is no guarantee that breast cancer will be found at an early stage, regular screening mammograms have been shown to decrease the breast cancer death rate in women over the age of 40. Periodic breast examination by a doctor or nurse and self-examination also can help to identify breast cancer.

On average, mammography can find a cancerous breast lump 1 to 3 years before a woman is able to feel it with her fingers. Research has shown that a mammogram every 1 to 2 years may reduce by 16 percent the chance that a woman over age 40 will die from breast cancer. Mammograms are not usually recommended for younger women, who often have dense breast tissue that makes mammography less accurate. However, women who have not reached age 40 but who have an elevated cancer risk because of genetic changes or family history should consult their physicians about an appropriate screening schedule. Tumors also have been found through breast examinations by healthcare professionals or the woman herself, but these methods have not been proven to reduce the breast cancer death rate.

Mammography cannot detect all breast cancers. The tumor's size, the breast tissue's density, and the physician's level of expertise can influence whether and when a cancer is found. Careful manual examination of the breasts and underarms, both by a healthcare professional and by the woman herself, also can uncover tumors. Mammography, however, is the most powerful screening tool now available. Under the Mammography Quality Standards Act of 1992, all mammography facilities must be certified as meeting Federal quality standards by either the U.S. Food and Drug Administration (FDA) or a state or else be accredited by a professional body approved by FDA.

Key Facts About Breast Cancer

Breast cancer

- Is the second leading cancer killer of American women
- Becomes more common as women age
- Is more common in women who have a family history of breast cancer or certain reproductive or lifestyle factors
- Can occur in women with no apparent risk factors
- Is highly treatable
- Is most effectively detected by regular screening mammograms of women at age 40 or older

The overall breast cancer death rate in the United States has begun to decline, but women in ethnic and racial minority groups receive less screening and have higher death rates than white women.

SPOTLIGHT

Women without adequate health insurance, or any health insurance at all, are most likely to die from breast cancer. Therefore, the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) of the Centers for Disease Control and Prevention (CDC) helps make available mammograms (as well as Pap tests for cervical cancer) that can save lives. Since 1991, nearly 1.75 million women have received more than 4 million exams through NBCCEDP; these exams have identified nearly 15,000 cases of breast cancer. In addition to screening, the program provides diagnostic services for women whose tests show abnormalities. NBCCEDP makes available surgical consultation and other followup as needed. In addition, the program educates the public and health professionals about detection and supports activities that maintain and enhance the quality of services.

The success of NBCCEDP results from the combined efforts of program partners across the nation who have joined with CDC to maintain and improve programs

and facilities that enhance the health of medically underserved women. An effort involving the Bureau of Primary Care of the Health Resources and Services Administration, CDC, and the National Cancer Institute is aiding staff at community health centers serving migrants, the homeless, and others to alter clinical practices in small ways that can produce meaningful results. Health professionals are encouraged to suggest mammograms to women whenever they visit the clinic, not only when it is time for routine examinations. In addition, the CDC Foundation, with the support of the Avon Foundation, has made grants to mobile mammography programs run by eight community organizations. Mammography vans funded through these grants bring screening services to underserved women in isolated areas.

Other grants have helped to provide information and outreach through partners such as Native American

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Men Get Breast Cancer, Too

Each year approximately 1,400 American men are diagnosed with breast cancer, and 400 die from the disease. Breast cancer in men most often is found between the ages of 60 and 70. Changes to the breast, especially lumps that can be felt, may indicate breast cancer. Men experiencing such changes should see their doctor promptly.

Factors that increase a man's risk include the following:

- Exposure to radiation.
- Diseases related to high estrogen levels, including cirrhosis, a liver disease; and Klinefelter's syndrome, a genetic disease.
- Belonging to a family that includes several women who have had breast cancer, especially if they have a mutation of the BRCA2 gene. Genetic risk factors often contribute to male breast cancer.

Survival rates are similar in men and women with breast cancer diagnosed at a similar stage. Because many women receive screening and men generally do not, male breast cancer is often diagnosed at a later and, therefore, deadlier stage.

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tribal officials, church-based programs, and organizations serving senior citizens. In Washington State, the South Puget Intertribal Planning Agency has used such grants to support the work of Native American staffers and tribal health facilities to bring screening to increasing numbers of women in five Native American communities. In California, NBCCEDP funding expanded a statewide breast cancer hotline to respond to speakers of Asian languages. A service of the California Department of Health's Every Woman Counts Program, the hotline added Vietnamese, Korean, and the Mandarin and Cantonese dialects of Chinese to the English and Spanish already available. A publicity campaign in the new languages resulted in a doubling of calls. Another NBCCEDP grantee, the Alabama Breast and Cervical Cancer Early Detection program, provides education to health professionals across the state through satellite videoconferences.

A different, but also important, partnership of Government agencies, service groups, and medical associations sponsors National Breast Cancer

Healthy People 2010 Objective: More Mammograms Will Mean Fewer Breast Cancer Deaths

Raising the proportion of women over age 40 who receive mammograms is a key objective of *Healthy People 2010*. In 1998, 67 percent of women aged 40 or older fulfilled this crucial health need. By 2010, the target is to have 70 percent doing so. Although no racial or ethnic group met the 2010 target in 1998, non-Hispanic whites and African Americans were closest, at 68 percent and 66 percent, respectively. American Indians and Alaska Natives were furthest from it, at 45 percent.

Women with at least some college and those with middle-to-high incomes exceeded the target, at 73 percent. Those women with less education and lower incomes had further to go, with women lacking a high school diploma at 50 percent and those with lower incomes at 53 percent.

Awareness Month every year in October to focus nationwide attention on the need for screening and early detection. Beyond making Americans aware of screening mammograms, the program makes it possible for women to obtain mammograms free or at low cost. National Mammography Day, first proclaimed by President Clinton in 1993 as the third Friday in October, is the culmination of the observance, with hundreds of mammography facilities across the country providing their services at a discount or without charge. More than 680 mammography centers accredited by the American College of Radiology participated in 2002.

RESOURCES

The National Cancer Institute, the nation's primary cancer research agency, maintains a free, comprehensive cancer Web site at www.cancer.gov, with a Spanish version at www.cancer.gov/espanol. Extensive resources on breast cancer for patients, health professionals, and the public are available at www.cancer.gov/cancer_information/cancer_type/breast. These resources include up-to-date information on risk factors, screening and testing, treatment, clinical trials, statistics, and more. Live, personalized help finding information is available online Monday through Friday, from 9 a.m. to 10 p.m., eastern time, at <http://cancer.gov/Common/popUps/livehelp.aspx> or by telephone from 9 a.m. to 4:30 p.m., local time.

The U.S. Food and Drug Administration provides consumer information about mammography and the Mammography Quality Standards Act (MQSA) of 1992 at www.fda.gov/cdrh/mammography/consumers-rev.html. Visitors can search the site by ZIP Code or state for an MQSA-certified mammography facility at www.fda.gov/cdrh/mammography/certified.html.

The National Breast and Cervical Cancer Early Detection Program of the Centers for Disease Control and Prevention provides information on obtaining low-cost or free mammograms at www.cdc.gov/cancer/nbccedp/contacts.htm.

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Numerous private organizations also maintain Web sites on breast cancer that offer a wide range of resources and services.

The American Cancer Society, at www.cancer.org, offers information and resources targeted to cancer patients and their families and friends, cancer survivors, healthcare professionals, and the public, including information on treatment options, decisionmaking, clinical trials, and cancer survivorship; links to support groups and community activities; reports on research; and much more.

Breastcancer.org is a nonprofit organization that provides a variety of resources, including chat rooms and monthly online “Ask the Expert” forums at www.breastcancer.org/cmtly_intro_idx.html.

FORCE (Facing Our Risk of Cancer Empowered), a nonprofit organization for women at elevated hereditary risk for breast and ovarian cancer and their families, provides resources for determining and evaluating hereditary risk at www.facingourrisk.org. A telephone helpline offers information and peer support from 10 a.m. to noon, eastern time, Tuesday through Saturday, and from 7 p.m. to 9 p.m., eastern time, Tuesday through Saturday, at 1-866-824-RISK (7475).

The Inflammatory Breast Cancer Research Foundation provides information and resources concerning this particularly aggressive form of breast cancer at www.ibcresearch.org. Resources include e-mail lists, a newsletter devoted to inflammatory breast cancer (IBC), and information on clinical trials and research on IBC.

The MALEBC online community for male breast cancer has a free discussion list at <http://listserv.acor.org/archives/malebc.html>.

Med Help International at www.medhelp.org provides free, online “Ask the Doctor” forums in which physicians from the Cleveland Clinic Foundation answer questions submitted over the Internet.

The National Breast Cancer Coalition (www.stopbreastcancer.com), a nonprofit advocacy organization, provides a free, downloadable 116-page book titled *Guide to Quality Breast Cancer Care*.

National Breast Cancer Awareness Month, celebrated each October, includes education campaigns and free or discounted mammograms. Information is available at www.nbcam.org.

The National Breast Cancer Foundation at www.nationalbreastcancer.org provides information about breast cancer and mammograms to women in need.

The Susan G. Komen Breast Cancer Foundation, at www.komen.org, provides online message boards for survivors, information on all aspects of breast cancer, information about activities such as the Race for the Cure, and an international network of more than 100 local affiliate organizations.

The Y-ME National Breast Cancer Organization (www.y-me.org), founded by two women with breast cancer, offers a variety of services to patients and their families and friends, including free voice hotlines in English (800-221-2141) and Spanish (312-986-9505), a wig and prosthesis bank, support groups for men and women, educational materials, literature, and more.

In the Literature

Patients’ needs and preferences in routine followup after treatment for breast cancer. Bock GH, Bonnema J, Zwaan RE, Van De Velde CJ, Kievit J, Stiggelbout AM. *British Journal of Cancer* 90(March 2004):1144–1150.

The purpose of the study was to analyze the needs of women who participated in a routine followup program after treatment for primary breast cancer. A cross-sectional survey was conducted using a postal questionnaire among women without any sign of relapse during the routine followup period. The survey found that, when introducing alternative followup schedules, patients’ information needs and preferences should be identified early and incorporated

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into the followup routine care to target resources and maximize the likelihood that positive patient outcomes will result.

The effect of environment on breast cancer risk.

Coyle YM. *Breast Cancer Research and Treatment* 84(April 2004):273–288.

Environmental factors are believed to explain a large proportion of breast cancer incidence. Known risk factors for breast cancer, which are related to the reproductive life of women, and other factors explain only about half of the breast cancer cases in the United States. Although most of the environmental factors discussed in this review have not been convincingly found to influence breast cancer risk, research suggests that environmental exposure, in combination with genetic predisposition, age at exposure, and hormonal milieu, has a cumulative effect on breast cancer risk.

Melatonin and breast cancer: a prospective study.

Travis RC, Allen DS, Fentiman IS, Key TJ. *Journal of the National Cancer Institute* 96(March 2004): 475–482.

Experimental data from animals suggest a protective role for the pineal hormone melatonin in the etiology of breast cancer, but results from the few retrospective case-control studies that examined the association in humans have been inconsistent. To determine whether low levels of endogenous melatonin are associated with an increased risk for developing breast cancer, a prospective nested case-control study among British women was conducted. There were no statistically significant differences observed between women who developed breast cancer and control subjects among premenopausal or postmenopausal women. In conclusion, there was no evidence that the level of melatonin is strongly associated with the risk for breast cancer.

Social context and outcomes for the ageing breast cancer patient: considerations for clinical practitioners.

Ballantyne PJ. *Clinical Nursing* 13, Suppl 1(March 2004):11–21.

Current incidence, prevalence, and survival rates determine that breast cancer is primarily a disease of

older women. This essay provides an extensive review of the literature on the social and psychological factors that influence adjustment to breast cancer and survival from it, the social and health status of older women, and the medical treatment of older breast cancer patients. The paper concludes with the suggestion that clinical practitioners need to be aware of both the resources of and the limitations facing the older breast cancer patient. The paper also provides specific recommendations about the clinical management of this population for nurses and other health professionals.

Obesity and breast cancer: a review of the literature.

Carmichael AR, Bates T. *The Breast* 13(April 2004):85–92.

A woman's build, the risk of breast cancer, and the subsequent prognosis of the cancer seem to be related. All treatment modalities for breast cancer, such as surgery, radiotherapy, chemotherapy, and hormonal treatment, may be adversely affected by the presence of obesity. The overall and disease-free survival is worse in most, but not all, studies of prognosis of obese premenopausal and postmenopausal women with breast cancer.

Breast cancer screening practices among women in the United States, 2000.

Coughlin SS, Uhler RJ, Bobo JK, Caplan L. *Cancer Causes and Control* 15(March 2004):159–170.

Results from recent studies indicate that many women in the United States undergo routine screening for breast cancer, but some groups of women are underscreened. This study examined the breast cancer screening practices of white and black women in the United States. Women with lower incomes, those with less education, and recent immigrants were less likely to be screened. Women who had a usual source of health care and those with health insurance coverage were more likely to be screened. These results underscore the need for continued efforts to ensure that uninsured women and those who are medically underserved have access to cancer-screening services.

Activities

Cook for the Cure was created to give those with a passion for cooking a way to support the Susan G. Komen Breast Cancer Foundation in the fight against breast cancer. To date, the program has raised more than \$1 million for this cause through donation-with-purchase programs, special fundraising events, auctions, and grassroots initiatives. For more information, visit www.cookfortheure.com/default.asp.

The Avon Walk for Breast Cancer has been designed to allow people of all fitness levels to have a safe, challenging, and rewarding experience. The Avon walks are held in cities across the United States from May through October. Visit <http://www.avonwalk.org> for more details on how to become involved.

Just a click on the following site helps fund mammograms for low-income women: www.thebreastcancersite.com/cgi-bin/WebObjects/CTDSites. This site also includes links to donation sponsors and breast cancer information.

Relay For Life is a fun-filled overnight event designed to celebrate survivorship and raise money for American Cancer Society research and programs. During the event, teams of people gather at schools or parks and take turns walking or running laps. Each team tries to keep at least one team member on the track at all times. Relay For Life represents the hope that those lost to cancer will never be forgotten, that those who face cancer will be supported, and that, one day, cancer will be eliminated. See www.cancer.org/docroot/GI/gi_1.asp?sitearea=GI for more information.

Lee National Denim Day is not just about raising funds; it is also about raising awareness. On one Friday in October, millions of people nationwide think about breast cancer when they dress in the morning. By slipping into their favorite jeans and making a \$5 donation to the Susan G. Komen Breast Cancer Foundation, denim-loving Americans can raise millions of dollars in a single day to help find a cure for breast cancer. For more information on how to participate, visit www.denimday.com.

Meetings

40th Annual American Society of Clinical Oncology (ASCO) Meeting. New Orleans, LA. Visit www.asco.org/ac/1,1003,_12-002092,00.asp. **June 5–8, 2004.**

6th Milan Breast Cancer Conference. Milan, Italy. Visit www.breastmilan.com. **June 16–18, 2004.**

Project Lead: A Science Course for Breast Cancer Advocates From Around the World. Madrid, Spain. Visit www.stopbreastcancer.org/bin/index.asp?strid=631&depid=7. **June 20–26, 2004.**

27th Annual San Antonio Breast Cancer Symposium. San Antonio, TX. Visit www.sabcs.org. **December 8–11, 2004.**