

Number of Breast Cancer Cases in the US

Breast cancer is the most common cancer among women, excluding cancers of the skin. More than 2.5 million women are living with the disease.ⁱ

The American Cancer Society (ACS) predicted that in 2010, an estimated 207,090 women would be diagnosed with invasive breast cancer, a cancer which has invaded nearby cells.ⁱⁱ

The ACS also estimated that an additional 54,010 women would be diagnosed with non-invasive breast cancer, or carcinoma in situ – breast cancers in which the abnormal cells are confined to lobules (LCIS) or milk ducts (DCIS) only. Eighty-five percent of non-invasive breast cancers will be diagnosed as DCIS. DCIS may be a precursor to breast cancer, but because the cells have not spread the prognosis is positive – some proportion of the women will never develop breast cancer.ⁱⁱⁱ

A new breast cancer case is diagnosed every 2 minutes.^{iv}

Men develop breast cancer too. In 2010, an estimated 1,970 new cases were expected among men.^v

New cases of breast cancer fell during the decade of 1998 – 2007 (-1.7%) and the rates for breast cancer fatalities fell during the two decades of 1990-2007 (-2.2%).^{vi} However, although breast cancer incidence and mortality has decreased, the number of child cancers and birth defects has increased.^{vii}

Breast Cancer Risk

Women in the US have a 1 in 8 chance of developing breast cancer during their lifetime.

This means that if every woman lived to age 85, 1 out of 8 in the US would be diagnosed with breast cancer – a lifetime risk that was 1 in 14 in 1980.^{viii}

Mammography screening initiated in the 80's accounted for much of the increase in breast cancer diagnosis at that time, however increases among women under 43 and over 65 cannot be completely accounted for by earlier detection.

Known breast cancer risk factors include family history (which only accounts for 10% of cases), early menstruation or late menopause, late first child birth or no childbirth, hormone replacement, alcohol consumption and ionizing radiation. These risks, however, only account for 30-50% of the disease, leaving us with a lot we have yet to understand about breast cancer.^{ix} Despite decades of intensive research, the biology and causes of breast cancer remain unexplained.^x

The Environment

The use of chemicals in the United States is rising 3.3% every year.^{xi}

Of the estimated 100,000 chemicals in commercial use in the US today, more than 90% have never been tested for human health effects. Approximately 2,300 new chemicals are submitted to the US Environmental Protection Agency each year for approval.^{xii}

Non-industrialized countries have lower breast cancer incidence rates than industrialized countries. Migrant women from countries with low incidence rates who move to industrialized nations soon acquire the higher breast cancer risk of the new country.^{xiii}

Race & Ethnicity

Morbidity and mortality rates of breast cancer differ by race and ethnicity.^{xiv} Asian American/Pacific Islander and American Indian/Alaska Native women have the lowest incidence and mortality rates of all.

Although breast cancer rates are highest among Caucasian women, their mortality rates are lower than among African American women.^{xv}

Although the incidence of breast cancer among Hispanic women is overall 27% lower than in Caucasian women, they are 20% more likely to die from the disease when diagnosed at a similar age and stage.^{xvi}

Poorer survival rates among African American and Hispanic women may be attributed to later stage at diagnosis and less access to timely and appropriate treatment.^{xvii} Researchers have been studying biological, environmental, and socioeconomic factors, but the underlying causes of this disparity remain unexplained.^{xviii}

Poverty & Income

For most cancers, risk is inversely related to socioeconomic status. Compared with 8% of whites, 24% of African Americans live below the federal poverty threshold.^{xix} In addition, 21% of African Americans lack health insurance compared to 11% of whites.^{xx} These differences may be tied to the racial disparities in breast cancer morbidity.

Low-income breast cancer patients have 5-year relative survival rates that are 9% lower than higher-income patients. For example, low-income African American women are 3 times more likely than higher-income African American women to be diagnosed with advanced disease.^{xxi}

Mammography

Mammograms do not prevent breast cancer. They detect tumors, but they do not prevent you from getting tumors. Mammograms can miss more than 25% of all breast cancers^{xxii} - known as "false negatives". Additionally, "false positive" results can occur when a mammogram finds something in the breast that, on biopsy,

proves not to be cancer. As many as 75% of all post-mammogram biopsy results turn out to be benign lesions.^{xxiii}

Mammography is not as effective in detecting breast cancer in younger, pre-menopausal women. Their breast tissue tends to be denser than that of post-menopausal women and makes their mammography results more difficult to read.^{xxiv}

ⁱ Altekruse, SF. et al. (eds). *SEER Cancer Statistics Review, 1975-2007*, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2007/, based on Nov 2009 SEER data submission, posted to the SEER website in 2010, <http://www.seer.cancer.gov/statfacts/html/breast.html>.

ⁱⁱ Cancer Facts & Figures, 2010. American Cancer Society.

ⁱⁱⁱ Ibid.

^{iv} The following calculations were used for this statistic and include cases of carcinoma in situ: 365 days x 24 hours/day x 60minutes/hour = 525,600 minutes/year

525,600 minutes/year ÷ 263,070 cases/year = 1.99 minutes/case

^v Cancer Facts & Figures, 2010. American Cancer Society.

^{vi} Altekruse, SF. et al. (eds). *SEER Cancer Statistics Review, 1975-2007*, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2007/, based on Nov 2009 SEER data submission, posted to the SEER website in 2010, <http://www.seer.cancer.gov/statfacts/html/breast.html>.

^{vii} "Reducing Environmental Risk Factors: What we can do now", Presidents Cancer Panel Report, 2008-2009. Available at <http://deainfo.nci.nih.gov/advisory/pcp/annualReports/index.htm>

^{viii} Ibid.

^{ix} "California Breast Cancer Research Program - SRI - Reports - Identifying Gaps." *California Breast Cancer Research Program (CBCRP)*. Ed. Julia Brody et al.

<http://www.cbcrp.org/sri/reports/identifyingGaps/index.php>

^x Kopans, Daniel B. *Breast Imaging*. Baltimore, MD: Lippincott Williams & Wilkins, 2007.

^{xi} Steingraber, S. *Living Downstream: an Ecologist's Personal Investigation of Cancer and the Environment*. Cambridge, MA: Da Capo, 2010.

^{xii} Zeeman, M.G. 1995. "EPA's Framework for Ecological Effects Assessment." *Screening and Testing Chemicals in Commerce*. U.S. Congress, Office of Technology Assessment. Washington, D.C. OTA-BP-ENV-166.

^{xiii} John, E. M. "Migration History, Acculturation, and Breast Cancer Risk in Hispanic Women." *Cancer Epidemiology Biomarkers & Prevention* 14.12 (2005): 2905-913.

^{xiv} Cancer Facts & Figures, 2009. Cancer Facts & Figures for Hispanics/Latinos, 2009-2011. Cancer Facts & Figures for African Americans, 2009-2010. American Cancer Society.

^{xv} Cancer Facts & Figures for African Americans, 2009-2010. American Cancer Society.

^{xvi} Cancer Facts & Figures for Hispanics/Latinos, 2009-2011. American Cancer Society.

^{xvii} Cancer Facts & Figures for African Americans, 2009-2010. American Cancer Society.

^{xviii} Menashe, I. et al. "Underlying Causes of the Black-White Racial Disparity in Breast Cancer Mortality: A Population-Based Analysis." *JNCI Journal of the National Cancer Institute* 101.14 (2009): 993-1000.

^{xix} Cancer Facts & Figures for African Americans, 2009-2010. American Cancer Society.

^{xx} Ibid.

^{xxi} Breast Cancer Facts and Figures 2009-2010. American Cancer Society.

^{xxii} Yankaskas B et al., "Association of recall rates with sensitivity and positive predictive values of screening mammography," *American Journal of Roentgen Ray Society*, 2001 Sep; 177[3]:543-9.; Poplack, S. et al., "Mammography in 53,803 Women from the New Hampshire Mammography Network," *Radiology*, 2000 Dec; 217:832-840.

^{xxiii} Institute of Medicine/National Resource Council, *Mammography and Beyond*, National Academy Press: Washington DC. 2001; pg. 39.

^{xxiv} Love, S., *Dr. Susan Love's Breast Book* (3rd Ed.), Perseus Publishing: MA. 2005.