
CANCER FACTS

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

Probability of Breast Cancer in American Women

Key Points

- The National Cancer Institute estimates that 13.4 percent of women born today will be diagnosed with breast cancer at some time in their lives.
- Because rates of breast cancer increase with age, estimates of risk at specific ages are more meaningful than estimates of lifetime risk.
- An estimated risk represents the average risk for all women in the United States as a group. This estimate does not indicate the risk for an individual woman because of individual differences in age, family history, reproductive history, race/ethnicity, and other factors.
- Estimated lifetime risk of breast cancer has gone up gradually over the past several decades.

The National Cancer Institute's (NCI) Surveillance, Epidemiology, and End Results (SEER) Program has published its *SEER Cancer Statistics Review 1975–2001* (1). This report estimates that 13.4 percent of women born now in the United States will develop breast cancer at some time in their lives. This estimate is based on cancer statistics for the years 1999 through 2001.

This estimate means that, if the current rate stays the same, women born now have an average risk of 13.4 percent (often expressed as “1 in 7”) of being diagnosed with breast cancer

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at some time in their lives. On the other hand, the chance that they will never have breast cancer is 86.6 percent (expressed as “6 in 7”).

In the 1970s, the lifetime risk of being diagnosed with breast cancer in the United States was just under 10 percent (often expressed as “1 in 10”). Since then, the estimated lifetime risk has risen gradually.

SEER reports are published annually, and statisticians expect some variability from year to year. The last four SEER reports show these estimates of lifetime risk:

- 13.2 percent for 1996 through 1998 (“1 in 7.55,” often expressed as “1 in 8”)
- 13.4 percent for 1997 through 1999 (“1 in 7.45,” often expressed as “1 in 7”)
- 13.5 percent for 1998 through 2000 (“1 in 7.40,” often expressed as “1 in 7”)
- 13.4 percent for 1999 through 2001 (“1 in 7.47,” often expressed as “1 in 7”)

Because of rounding up or down to the nearest whole number, a small change in the actual risk (an increase from “1 in 7.55” to “1 in 7.47”) led to the change from “1 in 8” to “1 in 7.”

This slight increase may be explained by a variety of factors. Experts believe the rise is partly due to better detection tools, which find more cases, and partly to the fact that women are living to an older age, when their risk increases (2). In addition, statistical methods have changed as statisticians work to improve the way they do these calculations. Also, the geographic areas where statistics are collected have expanded, resulting in more complete information. It is also possible that changes over the years in the lifestyle of American women (for example, having their first pregnancy at an older age, having fewer children, and using hormonal therapy to treat symptoms of menopause) may have increased the chance of developing breast cancer.

The estimated probability of being diagnosed with breast cancer for specific age groups and for specific time periods is generally more informative than lifetime probabilities. Estimates

by decade of life are less influenced by changes in life expectancy and incidence rates. The SEER report estimates the risk of developing breast cancer in 10-year age intervals (1). The calculations factor in the proportion of women who live to each age. In other words, they take into account that not all women live to older ages, when breast cancer risk becomes the greatest.

A woman's chance of being diagnosed with breast cancer is:

- from age 30 to age 40 0.44 percent (often expressed as "1 in 227")
- from age 40 to age 50 1.49 percent (often expressed as "1 in 67")
- from age 50 to age 60 2.79 percent (often expressed as "1 in 36")
- from age 60 to age 70 3.38 percent (often expressed as "1 in 26")

These probabilities are averages for the whole population. An individual woman's breast cancer risk may be higher or lower, depending on a variety of factors, including her family history, reproductive history, race/ethnicity, and other factors that are not yet fully understood.

To calculate an individual's estimated risk, see the Breast Cancer Risk Assessment Tool at <http://bcra.nci.nih.gov/brc/q1.htm> on the Internet.

For more information on the subject of lifetime risk of breast cancer, see http://surveillance.cancer.gov/statistics/types/lifetime_risk.html on the Internet.

Selected References

1. Ries LAG, Eisner MP, Kosary CL, et al. (eds). *SEER Cancer Statistics Review, 1975–2001*, National Cancer Institute. Bethesda, MD, 2004 (http://seer.cancer.gov/csr/1975_2001).
2. Feuer EJ, Wun L-M, Boring CC, et al. The lifetime risk of developing breast cancer. *Journal of the National Cancer Institute* 1993; 85:892–897.
3. Miller BA, Kolonel LN, Bernstein L, et al. (eds). *Racial/Ethnic Patterns of Cancer in the United States 1988–1992*, National Cancer Institute. NIH Pub. No. 96–4104. Bethesda, MD, 1996.

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Related Resources

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

- Cancer Facts 3.62, *Genetic Testing for BRCA1 and BRCA2: It's Your Choice*
- Cancer Facts 4.18, *Breast Cancer Prevention Studies*
- Cancer Facts 5.14, *Improving Methods for Breast Cancer Detection and Diagnosis*
- Cancer Facts 5.28, *Screening Mammograms: Questions and Answers*

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://cissecure.nci.nih.gov/livehelp/welcome.asp>

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