Probability of Breast Cancer in American Women

Key Points

- The National Cancer Institute, a component of the National Institutes of Health, estimates that, based on current rates, 12.2 percent of women born today will be diagnosed with breast cancer at some time in their lives (see Question 1).
- Because rates of breast cancer increase with age, estimates of risk at specific ages are more meaningful than estimates of lifetime risk (see Question 2).
- 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 (see Question 2).

1. What is the average American woman's risk of developing breast cancer?

The National Cancer Institute's (NCI) Surveillance, Epidemiology, and End Results (SEER) Program has published its *SEER Cancer Statistics Review 1975–2007* (1). This report estimates that, based on current rates, 12.2 percent of women born in the United States today will develop breast cancer at some time in their lives. This estimate is based on breast cancer statistics for the years 2005 through 2007.

This estimate means that, if the current rate stays the same, women born now have an average risk of 12.2 percent (often expressed as "1 in 8") of being diagnosed with breast cancer at some time in their lives. On the other hand, the chance that they will never have breast cancer is 87.8 percent (expressed as "7 in 8").

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").

The last five annual SEER reports show these estimates of lifetime risk:

- 13.2 percent for 2000 through 2002 ("1 in 7.58," often expressed as "1 in 8")
- 12.7 percent for 2001 through 2003 ("1 in 7.87," often expressed as "1 in 8")
- 12.3 percent for 2002 through 2004 ("1 in 8.13," often expressed as "1 in 8")
- 12.0 percent for 2003 through 2005 ("1 in 8.33," often expressed as "1 in 8")
- 12.1 percent for 2004 through 2006 ("1 in 8.26," often expressed as "1 in 8")

SEER statisticians expect some variability from year to year. Slight changes, such as the one reported this year, may be explained by a variety of factors, including minor changes in risk factor levels in the population, slight changes in screening rates, or just random variability inherent in the data.

2. What is the average American woman's risk of being diagnosed with breast cancer at different ages?

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). These 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 through age 39 . . . . . 0.43 percent (often expressed as "1 in 233")
- from age 40 through age 49 . . . . . 1.45 percent (often expressed as "1 in 69")
- from age 50 through age 59 . . . . . 2.38 percent (often expressed as "1 in 42")
- from age 60 through age 69 . . . . . 3.45 percent (often expressed as "1 in 29")

These probabilities are averages for the whole population. An individual woman's breast cancer risk may be higher or lower, depending on a number 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://www.cancer.gov/bcrisktool/ 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 Reference

1. Altekruse SF, Kosary CL, Krapcho M, et al. *SEER Cancer Statistics Review, 1975–2007.* Bethesda, MD: National Cancer Institute, 2010.

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Related NCI materials and Web pages:

- National Cancer Institute Fact Sheet 3.62, *BRCA1 and BRCA2: Cancer Risk and Genetic Testing* (http://www.cancer.gov/cancertopics/factsheet/Risk/BRCA)
- National Cancer Institute Fact Sheet 4.18, *Breast Cancer Prevention Studies* (http://www.cancer.gov/cancertopics/factsheet/Prevention/breast-cancer)
- National Cancer Institute Fact Sheet 5.28, *Mammograms* (http://www.cancer.gov/cancertopics/factsheet/Detection/mammograms)
- *Understanding Breast Changes: A Health Guide for Women* (http://www.cancer.gov/cancertopics/screening/understanding-breast-changes)
- *What You Need To Know About™ Breast Cancer* (http://www.cancer.gov/cancertopics/wyntk/breast)

How can we help?

We offer comprehensive research-based information for patients and their families, health professionals, cancer researchers, advocates, and the public.

- ***Call*** NCI's Cancer Information Service at 1–800–4–CANCER (1–800–422–6237)
- ***Visit*** us at http://www.cancer.gov or http://www.cancer.gov/espanol
- ***Chat*** using LiveHelp, NCI's instant messaging service, at http://www.cancer.gov/livehelp
- ***E-mail*** us at cancergovstaff@mail.nih.gov
- ***Order*** publications at http://www.cancer.gov/publications or by calling 1–800–4–CANCER
- ***Get help*** with quitting smoking at 1–877–44U–QUIT (1–877–448–7848)

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