

Breast Cancer Risk in American Women

Key Points

- Based on current breast cancer incidence rates, experts estimate that about one out of every eight women born today will be diagnosed with breast cancer at some time during her life.
- The strongest risk factor for breast cancer is age. A woman's risk of developing this disease increases as she gets older.
- Other factors can also increase a woman's risk of developing breast cancer, including inherited changes in certain genes, a personal or family history of breast cancer, having dense breasts, beginning to menstruate before age 12, starting menopause after age 55, having a first full-term pregnancy after age 30, never having been pregnant, obesity after menopause, and alcohol use.

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

Based on current incidence rates, 12.4 percent of women born in the United States today will develop breast cancer at some time during their lives (1). This estimate, from the most recent *SEER Cancer Statistics Review* (a report published annually by the National Cancer Institute's [NCI] Surveillance, Epidemiology, and End Results [SEER] Program), is based on breast cancer statistics for the years 2007 through 2009.

This estimate means that, if the current incidence rate stays the same, a woman born today has about a 1 in 8 chance of being diagnosed with breast cancer at some time during her life. On the other hand, the chance that she will never have breast cancer is 87.6 percent, or about 7 in 8.

In the 1970s, the lifetime risk of being diagnosed with breast cancer in the United States was just under 10 percent (or about 1 in 10).

The last five annual SEER reports show the following estimates of lifetime risk of breast cancer, all very close to a lifetime risk of 1 in 8:

- 12.7 percent for 2001 through 2003
- 12.3 percent for 2002 through 2004
- 12.0 percent for 2003 through 2005
- 12.1 percent for 2004 through 2006
- 12.4 percent for 2005 through 2007

SEER statisticians expect some variability from year to year. Slight changes, such as the ones observed over the last 5 years, may be explained by a variety of factors, including minor changes in risk factor levels in the population, slight changes in breast cancer 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?

Many women are more interested in the risk of being diagnosed with breast cancer at specific ages or over specific time periods than in the risk of being diagnosed at some point during their lifetime. Estimates by decade of life are also less affected by changes in incidence and mortality rates than



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longer-term estimates. The SEER report estimates the risk of developing breast cancer in 10-year age intervals (1). According to the current report, the risk that a woman will be diagnosed with breast cancer during the next 10 years, starting at the following ages, is as follows:

- Age 30 0.44 percent (or 1 in 227)
- Age 40 1.47 percent (or 1 in 68)
- Age 50 2.38 percent (or 1 in 42)
- Age 60 3.56 percent (or 1 in 28)
- Age 70 3.82 percent (or 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 number of known factors (see Question 3) and on factors that are not yet fully understood. To calculate an individual woman's estimated risk, health professionals can use the Breast Cancer Risk Assessment Tool at <http://www.cancer.gov/bcrisktool/>.

For more information about risk of breast cancer at specific ages and for specific time periods, see http://seer.cancer.gov/csr/1975_2009_pops09/results_single/sect_04_table.18.pdf (Table 4.18).

3. What factors increase a woman's risk of breast cancer?

The strongest risk factor for breast cancer is age. A woman's risk of developing this disease increases as she gets older. The risk of breast cancer, however, is not the same for all women in a given age group. Research has shown that women with the following risk factors have an increased chance of developing breast cancer.

- **Genetic alterations (changes):** Inherited changes in certain genes (including *BRCA1*, *BRCA2*, and others) increase the risk of breast cancer. These changes are estimated to account for no more than about 10 percent of all breast cancers. However, women who carry changes in these genes have a much higher risk of breast cancer than women who do not carry these changes.
- **Mammographic breast density:** The glandular (milk-producing) and connective tissue of the breast are mammographically dense—that is, they appear white on a mammogram. In contrast, fatty tissue of the breast is not mammographically dense and appears dark. Women who have a high percentage of breast tissue that appears dense on a mammogram have a higher risk of breast cancer than women of similar age who have little or no dense breast tissue. In general, younger women have denser breasts than older women. As a woman ages, the amount of glandular tissue normally decreases and the amount of fatty tissue increases. Abnormalities, such as tumors, in dense breasts can be more difficult to detect on a mammogram because tumors often also appear white.
- **Family history:** A woman's chance of developing breast cancer increases if her mother, sister, and/or daughter have been diagnosed with the disease, especially if they were diagnosed before age 50. Having a close male blood relative with breast cancer also increases a woman's risk of developing the disease.
- **Personal history of breast cancer:** Women who have had breast cancer are more likely to develop a second breast cancer.
- **Certain breast changes found on biopsy:** Looking at breast tissue under a microscope allows doctors to determine whether a suspicious finding (one detected by a mammogram, for example) represents cancer or another type of breast change. Most breast changes turn out not to be cancer, but some may increase the risk of developing breast cancer. Changes that are associated with an increased risk of breast cancer include atypical hyperplasia (a noncancerous condition in which cells have abnormal features and are increased in number), lobular carcinoma in situ (LCIS) (abnormal cells are found in the lobules of the breast), and ductal carcinoma in situ (DCIS; abnormal cells are found in the lining of breast ducts). Because some cases of DCIS will eventually become cancer, this type of breast change is actively treated. Women with atypical hyperplasia or LCIS are usually monitored carefully and not actively treated. In addition, women who have had two or more breast biopsies for other noncancerous conditions also have an increased risk of developing breast cancer. This increased risk is due to the conditions that led to the biopsies and not to the biopsy procedures themselves.
- **Radiation therapy:** Women who had radiation therapy to the chest (including the breasts) before age 30 have an increased risk of developing breast cancer throughout their lives. This includes women treated for

Hodgkin lymphoma. Studies show that the younger a woman was when she received treatment, the higher her risk of developing breast cancer later in life.

- **Alcohol:** Studies indicate that the more alcohol a woman drinks, the greater her risk of breast cancer.
- **Reproductive and menstrual history:** Women who had their first menstrual period before age 12 or who went through menopause after age 55 have an increased risk of developing breast cancer. Women who had their first full-term pregnancy after age 30 or who have never had a full-term pregnancy are also at increased risk of breast cancer.
- **Long-term use of menopausal hormone therapy:** Women who used combined estrogen and progestin menopausal hormone therapy for more than 5 years have an increased chance of developing breast cancer.
- **DES (diethylstilbestrol):** The drug DES was given to some pregnant women in the United States between 1940 and 1971 to prevent miscarriage. Women who took DES during pregnancy have a slightly increased risk of breast cancer. Women who were exposed to DES in utero—that is, whose mothers took DES while they were pregnant—may have a slightly increased risk of breast cancer after age 40.
- **Body weight:** Studies have found that among postmenopausal women who have not used menopausal hormone therapy, the chance of getting breast cancer is higher in women who are overweight or obese than in women of a healthy weight.
- **Physical activity level:** Women who are physically inactive throughout life may have an increased risk of breast cancer.
- **Race:** In the United States, breast cancer is diagnosed more often in white women than in African American/black, Hispanic/Latina, Asian/Pacific Islander, or American Indian/Alaska Native women.

Selected Reference

1. Howlader N, Noone AM, Krapcho M, et. al. (eds). *SEER Cancer Statistics Review, 1975–2009 (Vintage 2009 Populations)*, National Cancer Institute. Bethesda, MD, 2012. Retrieved September 7, 2012, from: http://seer.cancer.gov/csr/1975_2009_pops09/.

Related Resources

- *BRCA1 and BRCA2: Cancer Risk and Genetic Testing* (<http://www.cancer.gov/cancertopics/factsheet/Risk/BRCA>)
- *Diethylstilbestrol (DES) and Cancer* (<http://www.cancer.gov/cancertopics/factsheet/Risk/DES>)
- *Mammograms* (<http://www.cancer.gov/cancertopics/factsheet/Detection/mammograms>)
- *Reproductive History and Breast Cancer Risk* (<http://www.cancer.gov/cancertopics/factsheet/Risk/reproductive-history>)
- *Understanding Breast Changes: A Health Guide for Women* (<http://www.cancer.gov/cancertopics/screening/understanding-breast-changes>)

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