

# FEMALE BREAST CANCER IN CALIFORNIA, 2005



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Breast Cancer is the Most Common  
Cancer in California Women, and  
the Second Leading Cause of  
Cancer Death.

Each Year, More Than 25,000 California  
Women Develop Breast Cancer, and More  
Than 4,000 California Women Die From It.



## MESSAGE FROM THE CALIFORNIA CANCER REGISTRY

**This report summarizes information contained in “Breast Cancer in California, 2003”, a special report published in 2004 by the California Cancer Registry (CCR). The information in “Breast Cancer in California, 2003” is based upon cases diagnosed in California women from 1988-1999, and provides a detailed look at breast cancer in the state.**

**Among women, breast cancer is the most commonly diagnosed cancer and the second most common cause of cancer death. The encouraging news is that the risk of dying from breast cancer has lessened, and the probability of long-term survival after diagnosis has increased. More and more women are having mammograms, and most cancers are now diagnosed at an early stage when treatments work best. Treatments have improved and better options are available to women affected by the disease.**

**These encouraging developments, however, have not been shared equally among all women. Minority and low-income women are less likely to be diagnosed at early stage, receive effective treatment and to survive the disease. We must ensure that all women in California benefit from early detection and have access to high quality treatment for breast cancer.**

**It is our hope that this summary booklet will be useful to a wide variety of readers, including policy makers, health care providers, advocates, breast cancer patients and survivors and anyone else in the general public who wants to learn more about breast cancer among California women. The CCR is strongly committed to the search for causes and cures for all cancers, and will continue to serve as both a foundation for research and as an invaluable tool for monitoring the occurrence of cancers in California.**

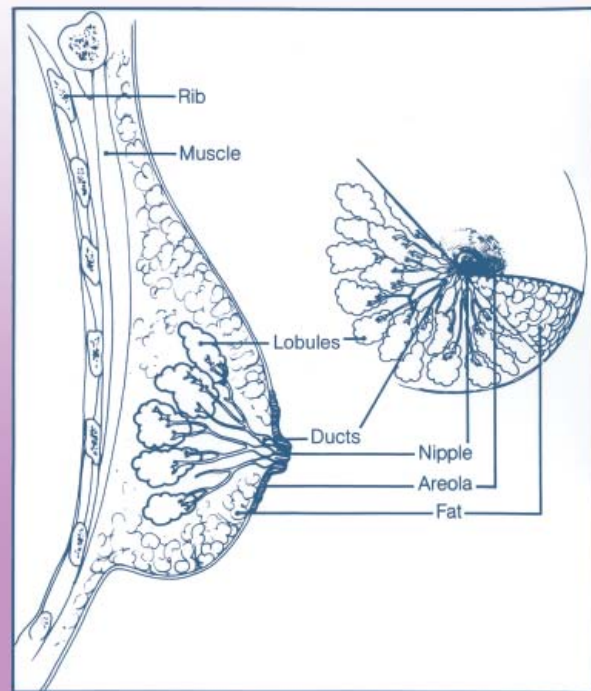
# BREAST CANCER: AN OVERVIEW

Breast cancer is the uncontrolled growth and spread of abnormal cells in the breast. The female breast is made up of 15-20 separate milk-producing glands (called lobules), which are connected to the nipple by small tubes (called ducts) and surrounded by fat and supportive connective tissue. Most breast cancers start in the ducts.

A breast cancer that is confined to the duct or lobule where it began is called an “*in situ*” cancer. These cancers are usually too small for a woman or her doctor to feel and are most commonly found by screening mammography. Nearly all cancers detected at this stage can be cured.

A breast cancer that has begun to spread beyond the duct or lobule into neighboring tissue is called an “invasive” (or infiltrating) cancer. These cancers are categorized into stages according to how far they have spread. **Local** stage means the cancer is confined to the breast; **regional** stage means the cancer has spread beyond the breast into the surrounding tissue or to nearby lymph nodes; and **distant** stage means the cancer has metastasized (spread) to other organs such as the lung or the liver. Treatment for breast cancer is less likely to work once the cancer has spread beyond the breast.

## Breast Lobules and Ducts





# CAUSES AND RISK FACTORS FOR BREAST CANCER

The reasons why breast cancer occurs in a particular woman are not well understood. We do know, however, about some factors that increase a woman's chance of getting the disease. Some of these factors can be controlled and others cannot be changed. Women with risk factors do not always develop breast cancer. Most often, women who get breast cancer have **no** known risk factors.

Some of the things that **increase** a woman's chances of getting breast cancer include:

**AGE:** The majority of breast cancer cases occur in women over the age of 50.

**RACE:** White women get breast cancer more often than women of other races.

**FAMILY HISTORY:** Women who have a mother or sister with breast cancer have a greater risk of getting the disease than women with no family history.

**MENSTRUAL HISTORY:** Women who start having menstrual periods early (before age 12) or reach menopause late (after age 55) are more likely to get breast cancer.

**PREGNANCY HISTORY:** Women who have never had a baby, or who have their first baby after age 30 have a greater risk of getting breast cancer.

**HORMONE REPLACEMENT AND BIRTH CONTROL PILLS:** Hormone replacement therapy after menopause increases the risk of breast cancer. Use of birth control pills also may cause a slight increase in risk.

**BODY WEIGHT:** After menopause, heavier women have a greater risk of developing breast cancer. Before menopause, thinner women have a somewhat greater risk.

**ALCOHOL:** Having two or more alcoholic drinks daily increases risk.

**EXERCISE:** Lack of regular exercise increases breast cancer risk.



# BREAST CANCER AMONG WOMEN OF DIFFERENT RACE AND ETHNIC GROUPS IN CALIFORNIA

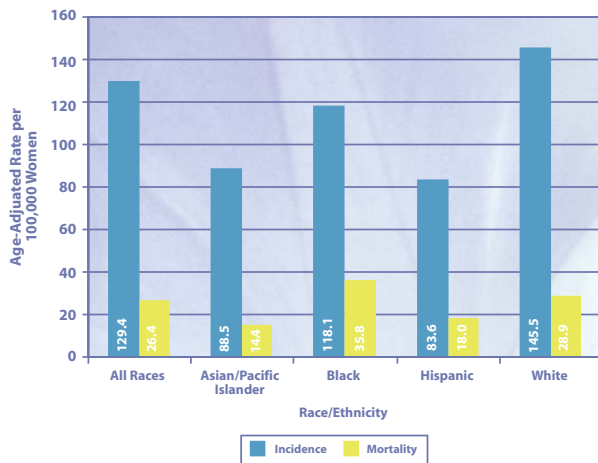
Breast cancer is the most commonly diagnosed cancer among California women of all races and ethnic groups. However, the risk of getting breast cancer is higher for some race or ethnic groups than others. Non-Hispanic white women have the highest rates, followed by black women.

Breast cancer **incidence rates** describe the number of new breast cancer cases diagnosed each year for every 100,000 women.

Breast cancer **mortality rates** describe the number of breast cancer deaths each year for every 100,000 women.

**Incidence and mortality rates for different ethnic groups are age-adjusted.** This means that the rates are calculated as if all ethnic groups in California had the same age distribution. This is important because older women are more likely to get breast cancer than younger women. Adjusting for age means that differences in breast cancer rates won't be due to one group having more or less older women than another group.

**Figure 1**  
Invasive Breast Cancer Incidence Rates and Breast Cancer Mortality Rates by Race/Ethnicity, California, 1995-1999



Prepared by the California Department of Health Services, Cancer Surveillance Section.

Asian/Pacific Islander and Hispanic women have lower rates. Although white women have the highest rate of new cases, black women have the highest breast cancer death rate.



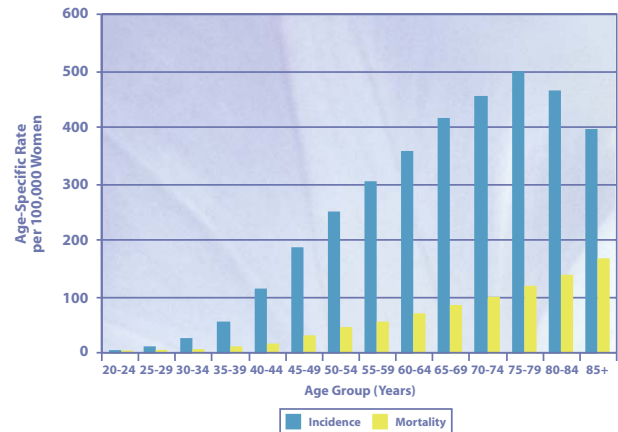


# BREAST CANCER AMONG WOMEN OF DIFFERENT AGES IN CALIFORNIA

Most breast cancers occur among women over the age of 50. From 1995-1999 less than six percent of all breast cancer cases in California occurred in women under the age of 40; nearly 49 percent occurred among women aged 50-64; and 45 percent occurred in women aged 65 and older.

The graph shows that as women get older, invasive breast cancer rates rise rapidly. Women age 75-79 have the highest rate of any age group. Breast cancer mortality rates also increase with age.

**Figure 2**  
Age-Specific Rates of Invasive Breast Cancer and Breast Cancer Mortality, California, 1995-1999



Prepared by the California Department of Health Services, Cancer Surveillance Section.



# SOCIOECONOMIC STATUS AND BREAST CANCER IN CALIFORNIA



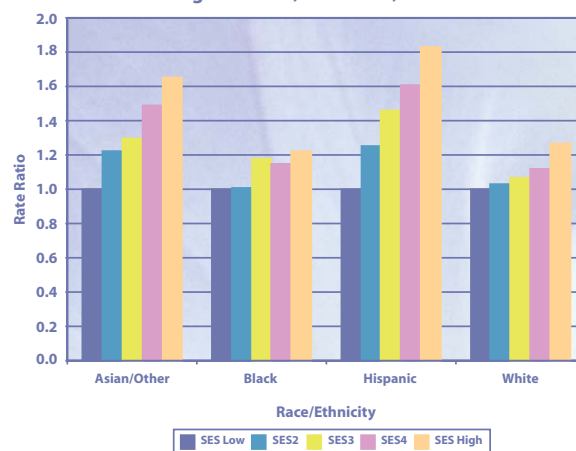
Women who have higher incomes and more years of education get breast cancer more often than other women. We don't know for certain why this happens. Women who are wealthier and more educated often have fewer children and have them at a later age than low-income women. These factors may explain some of the difference in breast cancer rates. Also, because higher income women usually have better access to medical care, a doctor may be more likely to find and report their breast cancers.

California women with breast cancer diagnosed between 1988 and 1992 were divided into five categories of socioeconomic status (SES). These categories were based upon the average income, education level and type of jobs held by residents in their neighborhoods as reported by the 1990 United States (U.S.) census\*. The poorest neighborhoods are classified as SES1, while the richest neighborhoods are classified as SES5.

The graph shows that regardless of race or ethnicity, women who live in the wealthiest neighborhoods (SES5) have the highest breast cancer rates. However, SES makes a bigger difference for some groups than others. Hispanic and Asian/Pacific Islander women in the wealthiest neighborhoods are about 60 percent more likely to get breast cancer than their counterparts in the poorest neighborhoods. In contrast, black and white women in the richest neighborhoods were about 20 percent more likely to get breast cancer than their counterparts in the poorest neighborhoods.

\* (1990 Census information was used because U.S. census data from the year 2000 was not yet available when "Breast Cancer in California, 2003" was written.)

**Figure 3**  
Race-Specific Breast Cancer Rate Ratio,<sup>1</sup> Women 15 Years of Age or Older, California, 1988-1992



<sup>1</sup> Reference category is the lowest socioeconomic quintile (SES low). Based on age-adjusted incidence rates.  
Prepared by the California Department of Health Services, Cancer Surveillance Section.

# BREAST CANCER INCIDENCE AND MORTALITY TRENDS IN CALIFORNIA

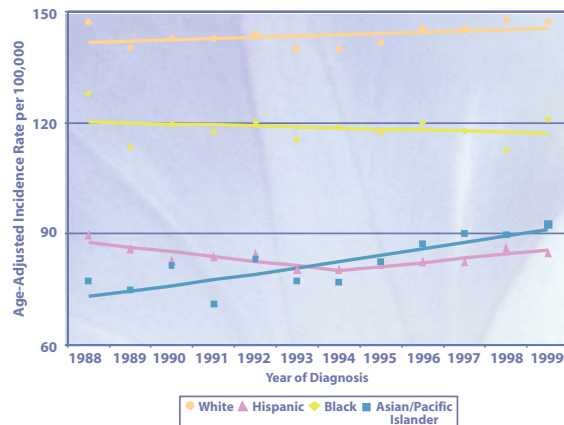
## INCIDENCE TRENDS

Overall, rates of invasive breast cancer in California have been stable between 1988 and 1999. There are more cases of breast cancer each year, but that is because the population has grown. The graph shows that during this time breast cancer rates were highest for white women, intermediate for black women, and lowest for Hispanic and Asian/Pacific Islander women. Rates for white, black and Hispanic women did not increase over the period. In contrast, rates among Asian/Pacific Islander women did increase between 1988 and 1999. The reasons for this are not clear, but it could be partly due to a later increase in mammography use compared to other groups.

## TRENDS IN BREAST CANCER DEATHS

Since 1970, the death rate for breast cancer among California women has fallen by 26 percent, from 33.8 deaths for every 100,000 women in 1970 to 24.5 deaths per 100,000 women in 1999. However, the death rate has dropped more for some California women than for others. Among white women, death rates have decreased by 24 percent. Among Hispanic women, who get breast cancer much less often than white women, there has been a five percent decrease in breast cancer death rates. Black women also get breast cancer less often than white women, but their breast cancer death rates are higher and there has been no decrease in their breast cancer death rate. Asian/Pacific Islander had the lowest breast cancer death rates. However, their breast cancer death rate increased by 78 percent over the period.

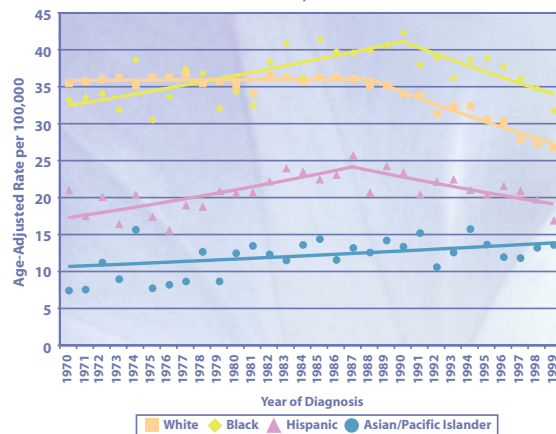
**Figure 4**  
Trends in Invasive Female Breast Cancer Age-Adjusted (2000 U.S. Population) Incidence Rates by Race/Ethnicity,<sup>1</sup> California, 1988-1999



<sup>1</sup> Race/ethnicity categories are mutually exclusive. Persons of Hispanic ethnicity may be of any race. Source: California Cancer Registry (August 2002)

Prepared by the California Department of Health Services, Cancer Surveillance Section.

**Figure 5**  
Trends in Female Breast Cancer Age-Adjusted (2000 U.S. Population) Mortality Rates by Race/Ethnicity,<sup>1</sup> California, 1970-1999



<sup>1</sup> Race/ethnicity categories are mutually exclusive. Persons of Hispanic ethnicity may be of any race. Source: California Cancer Registry (August 2002)

Prepared by the California Department of Health Services, Cancer Surveillance Section.





# RISK OF DEVELOPING BREAST CANCER



Based upon CCR data collected from 1995-1999, we expect overall that one out of every eight newborn girls in California will develop breast cancer in her lifetime. Although this lifetime risk statistic is striking, it is important to remember that it applies only to newborn girls and not to adult women. It is true that as a woman gets older, her risk of getting breast cancer in the next five years increases. However, her lifetime risk decreases for every year that she is alive and does not get breast cancer. The table below shows the risk of developing breast cancer in the next 5, 10 or 20 years based upon a woman's current age and her race/ethnicity. These predictions only apply to women who have never had breast cancer.

Chance That A California Woman With No Prior History of Breast Cancer Will be Diagnosed With Invasive Breast Cancer					
Current Age	All Races	Asian/Pacific Islander	Black	Hispanic	White
<b>IN THE NEXT 5 YEARS</b>					
30	1 in 883	1 in 929	1 in 604	1 in 1035	1 in 845
40	1 in 189	1 in 182	1 in 184	1 in 235	1 in 175
50	1 in 84	1 in 99	1 in 89	1 in 128	1 in 73
60	1 in 59	1 in 86	1 in 66	1 in 87	1 in 50
70	1 in 46	1 in 89	1 in 63	1 in 76	1 in 40
<b>IN THE NEXT 10 YEARS</b>					
30	1 in 271	1 in 270	1 in 219	1 in 328	1 in 253
40	1 in 71	1 in 74	1 in 73	1 in 94	1 in 64
50	1 in 38	1 in 46	1 in 42	1 in 58	1 in 33
60	1 in 28	1 in 44	1 in 33	1 in 43	1 in 24
70	1 in 24	1 in 47	1 in 31	1 in 38	1 in 21
<b>IN THE NEXT 20 YEARS</b>					
30	1 in 57	1 in 59	1 in 56	1 in 74	1 in 51
40	1 in 25	1 in 29	1 in 28	1 in 36	1 in 22
50	1 in 17	1 in 23	1 in 20	1 in 25	1 in 14
60	1 in 14	1 in 24	1 in 18	1 in 22	1 in 12
70	(UNAVAILABLE BECAUSE ESTIMATES STOP AT AGE 85)				

Prepared by the California Department of Health Services, Cancer Surveillance Section.

# USE OF MAMMOGRAPHY BY CALIFORNIA WOMEN

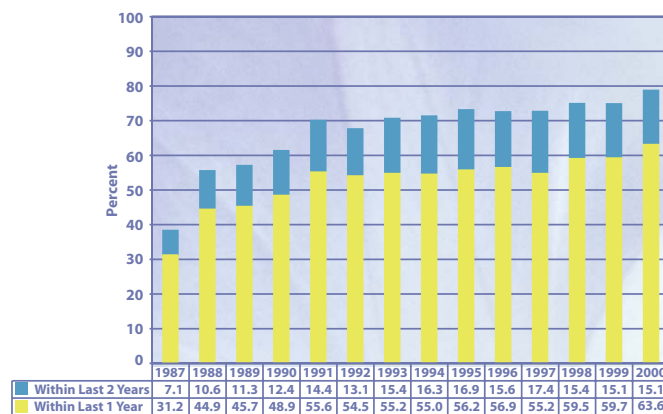


A mammogram is a special type of x-ray used to find breast cancers that are too small for a woman or her doctor to feel. Screening mammography among women with no breast symptoms leads to earlier diagnosis and reduces breast cancer mortality. Mammography is also used to diagnose women with breast

symptoms or to check women who have a history of breast cancer. These charts only include women who had mammograms to screen for cancer. They do not include women who had mammograms because of a lump that was found or for checking after having breast cancer in the past.

Over the past decade, the number of California women who are having screening mammograms has increased. The graph below shows that in 1987 38 percent of all women aged 40 and over reported having a screening mammogram during the previous two years. By 2000, the percentage was up to 79 percent. The goal of the American Cancer Society is that by 2008, 90 percent of women age 40 and older will be having a yearly mammogram.

**Figure 6**  
Women Aged 40 and Over Who Reported Having a Mammogram, California, 1987 - 2000



*Prepared by the California Department of Health Services, Cancer Surveillance Section.*

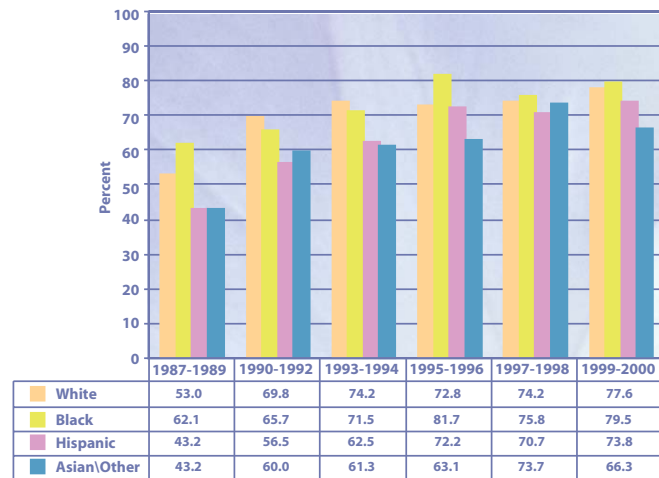
# USE OF MAMMOGRAPHY BY CALIFORNIA WOMEN (CONT.)

Mammography screening has increased among women of every race and ethnic background, but differences between groups remain. Black and non-Hispanic white women reported having mammograms more frequently than Hispanic and Asian/Pacific Islander women.



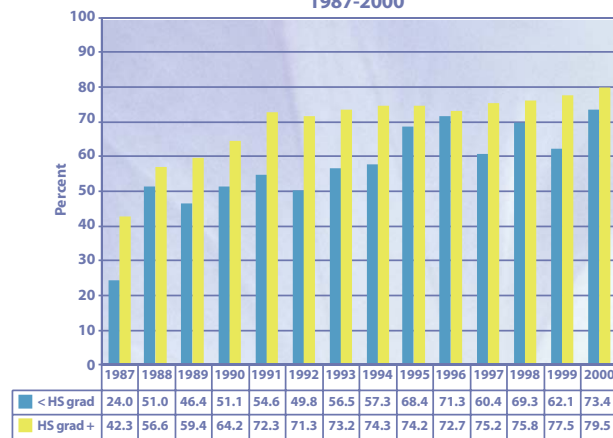
Women with more years of education were also more likely to report having mammograms in every time period. However, in recent years mammography screening use among women with less education has been catching up to the use among women with more education.

**Figure 7**  
Women Age 40+ Who Reported Having a Mammogram During the Last Two Years by Race/Ethnicity, California, 1987-2000



Prepared by the California Department of Health Services, Cancer Surveillance Section.

**Figure 8**  
Women Age 40+ Who Reported Having a Mammogram in the Last Two Years by Educational Attainment, California, 1987-2000



Prepared by the California Department of Health Services, Cancer Surveillance Section.



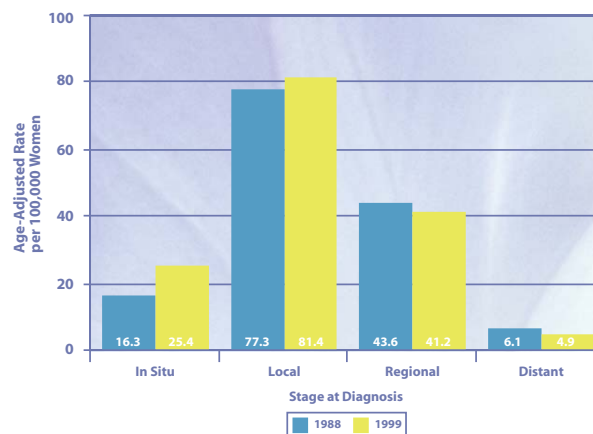
# STAGE AT CANCER DIAGNOSIS

Breast cancer treatment is most effective when tumors are detected at early stage, before they have spread beyond the breast. From 1988 through 1999, rates of early stage breast cancers (*in situ* and local stage) have increased, while late-stage disease (regional and distant) rates have decreased overall.

Some women are more likely than others to have breast cancer detected early. Among white women in California, nearly 69 percent of all breast cancers are detected at early stage, and among Asian/Pacific Islander women nearly 66 percent are detected at early stage. In contrast, less than 59 percent of cancers are detected at early stage among black and Hispanic women.

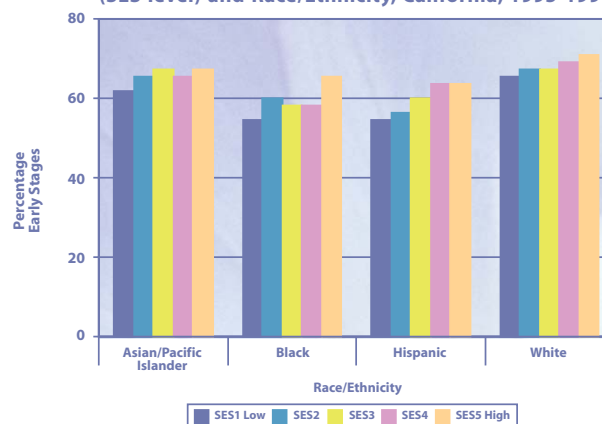
Women who live in more affluent communities are more likely to have breast cancers detected early than women who live in poorer neighborhoods, regardless of race or ethnic group. However, the gap between wealthy and poor women is greatest among black and Hispanic women.

**Figure 9**  
Age-Adjusted Female Breast Cancer Incidence Rates by Stage, California, 1988 and 1999



Prepared by the California Department of Health Services, Cancer Surveillance Section.

**Figure 10**  
Percentage of Breast Cancers Diagnosed at Early Stage (In Situ or Localized Tumors) by Socioeconomic Status (SES level) and Race/Ethnicity, California, 1995-1999



Prepared by the California Department of Health Services, Cancer Surveillance Section.

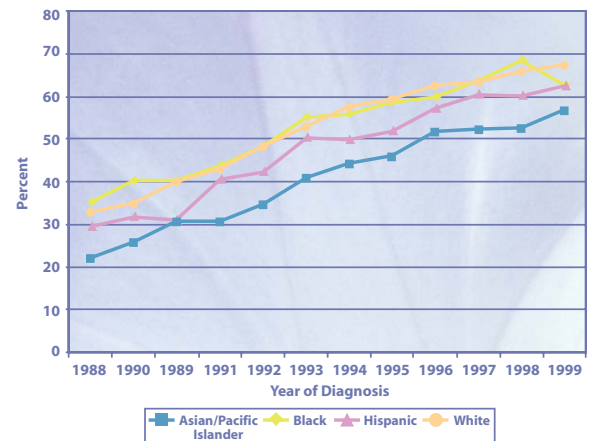
# SURGICAL TREATMENT OF BREAST CANCER IN CALIFORNIA

Most women with breast cancer have some kind of surgery. In the past, mastectomy (removal of the entire breast) was the most common surgery. Now, women with early stage disease can usually be treated with breast conserving surgery (BCS) in which only the tumor and nearby surrounding tissue are removed. In California, the number of women with breast cancer who had BCS instead of a mastectomy has increased. In 1988, one-third of women with early stage breast cancer had BCS. By 1999, nearly two-thirds of women with early stage disease had BCS.

Although BCS use has increased among all women, some women are more likely to have it than others. A greater percentage of white and black women are treated with BCS compared to Hispanic and Asian/Pacific Islander women. In addition, women with higher education and incomes are more often treated with BCS than mastectomy.

For each woman, there may be clinical and personal reasons why mastectomy would be the preferred choice. BCS typically is followed by up to six weeks of daily radiation therapy to destroy any cancer cells that might be in the remaining breast tissue. Some women may be unable to attend daily therapy due to family, transportation or work factors and choose to have a mastectomy instead, and some women may prefer not to undergo radiation therapy for other reasons and choose mastectomy. It is also possible that some women have a mastectomy because the option of BCS hasn't been fully presented to them.

**Figure 11**  
Breast-Conserving Surgery in Women with Stage 0 – IIa<sup>1</sup> Breast Cancer, by Race/Ethnicity<sup>2</sup> and Year of Diagnosis, California, 1988-1999



<sup>1</sup> Stage 0: *in situ* tumors; stage I: tumors up to 2 cm without lymph node involvement; stage IIa: tumors up to 2 cm with positive lymph nodes or tumors up to 5 cm, regardless of nodal status.  
<sup>2</sup> Race/ethnicity categories are mutually exclusive. Persons of Hispanic ethnicity may be of any race.  
 Prepared by the California Department of Health Services, Cancer Surveillance Section.

# BREAST CANCER SURVIVAL

The probability of surviving breast cancer is quite good. On average, 86 percent of women diagnosed with breast cancer are alive after five years, and 76 percent live at least ten years after diagnosis.

Women who have breast cancer diagnosed at early stage have better chances of surviving the disease. Based upon information from the San Francisco Bay Area on women diagnosed with invasive breast cancer between 1988 and 1992:

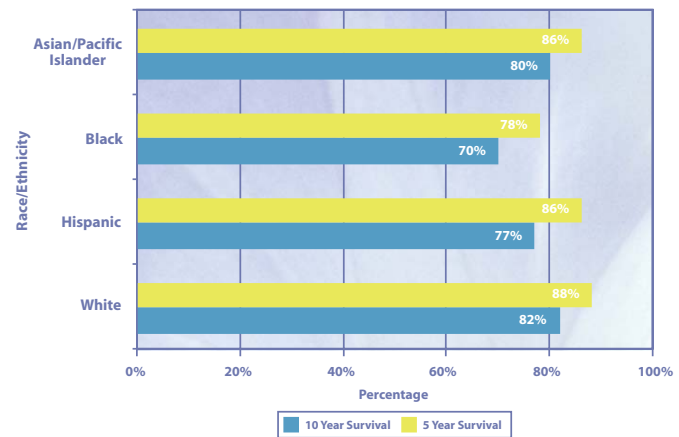
- ◇ A woman diagnosed at local stage (before the disease has spread beyond the breast) has a 97 percent probability of surviving five years, and a 95 percent probability of surviving ten years.
- ◇ If she is diagnosed at a more advanced stage (a tumor larger than 2" that has spread to nearby lymph nodes or a tumor of any size that has invaded into nearby tissue), she has a 50 percent probability of surviving five years, and a 44 percent probability of surviving ten years.
- ◇ If she is diagnosed at the most advanced stage (tumor has spread to distant organs such as the lungs, bones or liver), she has a 26 percent probability of surviving five years and only a 16 percent probability of surviving ten years.



## OTHER FACTORS INFLUENCE THE CHANCES OF SURVIVING BREAST CANCER. THESE ARE:

- ◇ **Age:** Although young women under the age of 35 years do not get breast cancer often, when they do get it they are less likely to survive than older women. Women under age 35 who do develop cancer have a 72 percent probability of surviving five years, and a 63 percent probability of surviving ten years. After age 35, the probability of surviving five years is over 85 percent, and the probability of surviving ten years is about 80 percent.
- ◇ **Socioeconomic Status (SES):** Overall, women who live in wealthier neighborhoods have an 87 percent probability of surviving five years after diagnosis, and an 81 percent chance of surviving ten years. Women who live in poor neighborhoods have an 82 percent chance of surviving five years, and a 71 percent chance of surviving ten years. This is mostly likely because women in poor neighborhoods are more often diagnosed at later stage and less likely to have access to medical care after diagnosis.
- ◇ **Race and Ethnicity:** Black women have a lower probability of surviving breast cancer than women of any other race/ethnic group (see figure 12). Black women are more likely to live in poor neighborhoods, which may explain some of this difference. However, even when black women are compared with women of other races who have similar income, education levels and stage at diagnosis, their survival probability is still lower than that of other women. More research will be needed to fully explain the reasons for these differences in breast cancer survival.

Figure 12  
Five and Ten Year Survival Probabilities for Women Diagnosed with Invasive Breast Cancer in the San Francisco Bay Area, 1988-1992



Prepared by the California Department of Health Services, Cancer Surveillance Section.

## FOR MORE INFORMATION ON BREAST CANCER:

Please visit the following web sites for more information on breast cancer:

### **California Department of Health Services Cancer Detection Section**

<http://www.dhs.ca.gov/cancerdetection/default.htm>

### **California Breast Cancer Research Program**

[www.cbcrp.org](http://www.cbcrp.org)

### **American Cancer Society**

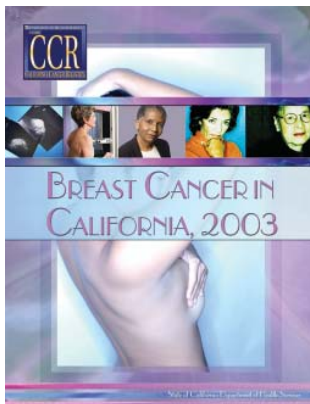
[www.cancer.org](http://www.cancer.org)

### **Center for Disease Control and Prevention Cancer Prevention and Control**

<http://www.cdc.gov/cancer/index.htm>

### **National Cancer Institute**

[www.nci.nih.gov](http://www.nci.nih.gov)



### **California Cancer Registry**

**Breast Cancer 2003** report is available at  
<http://www.ccrca.org/Publications.html>



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