Report to the nation
breast cancer
2012
Report to the nation – breast cancer 2012
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Breast cancer


About Cancer Australia

Cancer Australia was established by the Australian Government in 2006 to provide national leadership in cancer control to improve outcomes for Australians affected by cancer, and their families and carers. Cancer Australia works to reduce the impact of cancer and improve the wellbeing of those diagnosed with cancer through improvements in both the quality of care people receive and their quality of life after diagnosis.

Breast cancer: did you know?

- In 2008, more than 13,500 women were diagnosed with breast cancer, making this the most commonly diagnosed cancer among women in Australia.
- Approximately 14,600 Australian women will be diagnosed with invasive breast cancer in 2012.
- One in eight Australian women will be diagnosed with breast cancer by the age of 85.
- In 2007, breast cancer was the 2nd most common cause of cancer death in Australian women.
- Survival from breast cancer in Australia is improving, with 89 out of every 100 women diagnosed with invasive breast cancer surviving five or more years beyond diagnosis.
- Breast cancer is the most common cancer affecting Aboriginal and Torres Strait Islander women.

All data including the data presented in graphs are from the Australian Institute of Health and Welfare and Cancer Australia report Breast Cancer in Australia: an overview, unless otherwise specified.
What is breast cancer?

Breasts are made up of lobules and ducts surrounded by fatty and connective tissue. Breast cancer occurs when cells in the ducts or lobules grow abnormally and multiply. The abnormal cells form growths called cancers. Non-invasive breast cancer is when the cancer cells have remained in the ducts or lobules of the breast and have not spread. Invasive breast cancer is when the cancer cells have spread beyond the ducts or lobules into the surrounding tissue.
There are different types of breast cancer

Ductal carcinoma in situ (DCIS)

Ductal carcinoma in situ (DCIS) is a non-invasive breast cancer that is contained within the ducts of the breast.

- Over 1,700 women were diagnosed with DCIS in Australia in 2008.
- The incidence rate* of DCIS in Australia is highest among women aged 50-69 years.
- Women diagnosed with DCIS are about four times more likely to develop a subsequent invasive breast cancer compared with other women of similar age in Australia.²
- Women diagnosed with DCIS have about an 11% chance of being diagnosed with a subsequent invasive breast cancer within 10 years of their DCIS diagnosis.²

* "Incidence" refers to the actual number of new cancer cases. However, the total number of people in the population may change over time (e.g. from year to year), so to compare changes in the number of new cancer cases over time we calculate the "incidence rate". The "incidence rate" is calculated by taking the number of new cancer cases diagnosed and dividing it by the number of people in the population who could develop this cancer during a particular period. Similarly, the actual number of deaths (mortality) can also be shown as a "mortality rate". Incidence and mortality rates shown in this document are "age-standardised" which means that the age distribution of the population is also considered. Therefore, any differences we see in these rates are not due to differences in the age distributions of the populations being compared.
Early breast cancer

Early breast cancer is invasive cancer that is contained in the breast (localised) and may or may not have spread to the lymph nodes in the breast or armpit (regional spread). Women with early breast cancer have no detectable spread of cancer to other organs in the body. National data from 1997-2006 suggests that around half of breast cancer cases are diagnosed when the breast cancer is still localised. The five-year relative survival† for women diagnosed with localised breast cancer in Australia was 97% in the period 1997-2006. This means 97 out of 100 women diagnosed with localised breast cancer survived five or more years following their breast cancer diagnosis.

Secondary breast cancer

Sometimes breast cancer cells travel in the bloodstream or lymphatic system and form cancers in other parts of the body. This is called secondary breast cancer (also known as metastatic or advanced breast cancer). The most common places that breast cancer spreads to are the bones, liver, lungs and brain.

The proportion of breast cancers that are diagnosed when the breast cancer has spread outside the breast to distant organs has recently been estimated to be around 7%. NSW data suggests that the 5-year relative survival for women diagnosed with secondary breast cancer in Australia is around 40%.

Risk factors for breast cancer*

A risk factor is any factor associated with an increased likelihood of a person developing a health disorder or health condition, such as breast cancer. There are different types of risk factors, some of which can be modified and some that cannot. While the cause of breast cancer is not fully understood, it is known that people with certain risk factors are more likely than others to develop this disease.

Having a risk factor does not mean a person will develop breast cancer. Many people have at least one risk factor but will never develop the disease, while others with breast cancer may have had no known risk factors. Also, even if a person with breast cancer has a risk factor, it is often hard to know how much that risk factor contributed to the cancer.

Key risk factors6

Having certain risk factors is associated with an increased chance of developing breast cancer but does not mean that an individual will definitely develop breast cancer. Some of the risk factors for breast cancer are beyond an individual’s control but there are some lifestyle factors that can be modified.

- Gender: being a woman is the strongest risk factor for breast cancer.
- Age: increasing age is one of the strongest risk factors for breast cancer.
- Affluence: breast cancer occurs more frequently in affluent and western populations.

† Relative survival compares the survival of a group of women with breast cancer to the expected survival of similar-aged women in the general population.

• Family history of breast cancer: family history is important on either side of the family. The risk of breast cancer increases with the closeness of the relative diagnosed with breast cancer (i.e. first degree, second degree\(^\ddagger\)), the number of relatives on the same side of the family diagnosed and if relatives are diagnosed at a young age.

• Breast conditions: women diagnosed with invasive breast cancer have an increased risk of developing another breast cancer. Women diagnosed with certain pre-invasive breast conditions including DCIS and lobular carcinoma in situ (LCIS) have an increased risk of developing invasive breast cancer. Dense breast tissue on mammography is also emerging as a strong risk factor for breast cancer.

• Alcohol consumption: alcohol consumption increases risk of breast cancer with each additional drink per day.

• Being overweight or obese: for postmenopausal women being overweight or obese increases risk of breast cancer.

**Key protective factors\(^6\)**

While it is not known how to prevent breast cancer, there are some factors that may reduce the risk of breast cancer.

• Childbirth: earlier age at first birth (giving birth before age 30).

• Parity: the number of full term pregnancies.

• Breastfeeding: breastfeeding for at least 12 months in total (may relate to more than one child).

• Physical activity: exercising for two or more hours per week.

**Invasive breast cancer in women**

The following information about breast cancer relates to invasive breast cancers in women. As such it does not include secondary breast cancers (cancer which has spread to the breast from another site) or benign breast tumours (non-invasive breast cancers, such as DCIS).

**Incidence**

• More than 13,500 women were diagnosed with breast cancer in Australia in 2008, making it the most common cancer among Australian women.

• Around 14,600 women are expected to be diagnosed with breast cancer in Australia in 2012.

• On average, it is expected that 40 women will be diagnosed with breast cancer each day in Australia in 2012.

\(^\ddagger\) First degree relatives are parents, children or siblings, and second degree relatives are aunts, uncles, grandparents, grandchildren, nieces, nephews, or half-siblings.
Has the incidence of breast cancer changed over time?

Between 1982 to 2008 in Australia:

- The incidence rate of breast cancer increased for women in all age groups, except for those aged under 40 years.
- Since 2000 there has been a decline in breast cancer incidence rate in women aged 70 years and over.

Incidence of breast cancer in Australian women, by age at diagnosis, 1982 to 2008
Does breast cancer incidence in women vary by age group?

Increasing age is one of the strongest risk factors for developing breast cancer.

- In 2008, more than half of breast cancers in Australian females were diagnosed in those aged 50-69 years, while one in four were diagnosed in those aged 70 years and over and just under one in four were diagnosed in those aged under 50 years.
- Breast cancer can occur in younger women, with around 800 women under 40 years of age being diagnosed in 2008 in Australia.

Does breast cancer incidence in women vary in different groups?

Between 2004 and 2008:

- Around 30% of Australian women diagnosed with breast cancer lived outside a major city.
- Women living in Major cities and Inner regional areas at the time of breast cancer diagnosis had a significantly higher incidence rate of breast cancer compared with those living in Outer regional, Remote and very remote areas.
- Australian women living in the highest socioeconomic status areas (group 5) had a significantly higher incidence rate of breast cancer compared with women living in lower socioeconomic status areas (group 1).
- Aboriginal and Torres Strait Islander women had a significantly lower incidence of breast cancer than non-Indigenous women. However, breast cancer was the most common cancer diagnosed among Aboriginal and Torres Strait Islander women.

**Remoteness area**

- Major cities
- Inner regional
- Outer regional
- Remote and very remote

**Socioeconomic status**

- 1 (lowest)
- 2
- 3
- 4
- 5 (highest)

**Indigenous status**

- Indigenous
- Non Indigenous
Mortality

In 2007 in Australia:

- Breast cancer was the 2nd most common cause of cancer death in Australian women.
- Around 2,700 women died from breast cancer, an average of 7 deaths per day.
- Breast cancer accounted for one in every 25 deaths in Australian women from any cause.
- The average age of death from breast cancer was 68 years.

Five most common types of cancer death in Australian women, 2007

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>3000</td>
</tr>
<tr>
<td>Breast</td>
<td>2500</td>
</tr>
<tr>
<td>Bowel</td>
<td>2000</td>
</tr>
<tr>
<td>Total lymphoid cancers</td>
<td>1500</td>
</tr>
<tr>
<td>Unknown primary site</td>
<td>1000</td>
</tr>
</tbody>
</table>
Has mortality from breast cancer changed over time?

Despite increasing incidence, the breast cancer mortality rate fell by 29% between 1994 and 2007.

Rates of incidence and mortality from breast cancer in Australian women, 1982-2007

![Graph showing rates of incidence and mortality from breast cancer in Australian women, 1982-2007.]

Does breast cancer mortality vary by age group?

As age increases, so does breast cancer mortality.

- In 2007, 13% of deaths from breast cancer in females occurred in those aged less than 50, 40% occurred in those aged 50–69 years and 47% occurred in those aged 70 years and over.

Does breast cancer mortality vary in different groups of women?

In Australia in the period 2003-2007:

- The breast cancer mortality rate varied by remoteness, with women living in Inner regional and Outer regional areas having higher mortality rates than women living in Major cities.
- There was no consistent relationship between socioeconomic status and breast cancer mortality.
- The breast cancer mortality rate in Aboriginal and Torres Strait Islander women was roughly equivalent to the rate in non-Indigenous women.

**Remoteness area**

- Major cities
- Inner regional
- Outer regional
- Remote and very remote

**Socioeconomic status**

- 1 (lowest)
- 2
- 3
- 4
- 5 (highest)

**Indigenous status**

- Indigenous
- Non Indigenous
Survival

Relative survival compares the survival of a group of people diagnosed with cancer to the expected survival of similarly aged people in the general population. Survival rates provide information on the likelihood that a woman will still be alive at a specified point in time (such as five years) following a diagnosis of breast cancer.

- Between 2006-2010, 89 out of every 100 Australian women with breast cancer survived five or more years following their breast cancer diagnosis.

**Five-year relative survival for Australian women with breast cancer**

<table>
<thead>
<tr>
<th></th>
<th>1982-1987</th>
<th>2006-2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Report to the nation – breast cancer
Has breast cancer survival changed over time?

- Women diagnosed with breast cancer are surviving significantly longer than ever before.
- The five-year survival from breast cancer has increased from 72% (1982-1987) to 89% (2006-2010).

Does breast cancer survival vary by age group?

- Five-year survival from breast cancer is higher in those aged 40-49 and 60-69 years, and lower in women aged under 40 years and 70 years and over at diagnosis.

Does breast cancer survival vary in different groups of women?

In Australia between 2006-2010:

- Women living in Remote and very remote areas had lower five-year relative survival than women living in all other areas.
- Five-year relative survival increased slightly as socioeconomic status improved.
- Aboriginal and Torres Strait Islander women had a significantly lower five-year crude survival⁵ than non-Indigenous women.

⁵ Crude survival is the proportion of women alive at a specified point in time (e.g. five years) after a diagnosis of breast cancer.
Five-year survival from breast cancer in Australian women, by group, 2006–2010 **

** Graphs for remoteness and socioeconomic status show relative survival and the graph for indigenous status shows crude survival.
Burden of disease

One way to measure how much of an impact a disease has on a population is to use burden of disease. Burden of disease combines information about people who die earlier than would be expected (the number of years of life lost due to disease) and the number of healthy years of life lost due to disability or injury from the disease.

In 2012 in Australia:

- Breast cancer is expected to be the leading cause of disease burden due to cancer in women.
- Breast cancer is expected to account for 24% of female burden of disease due to cancer and 4% of all female burden of disease.
- Most of the burden of disease from breast cancer is due to premature death.

Estimated leading cancer causes of burden of disease in Australian women, 2012

- Breast cancer
- Lung cancer
- Bowel cancer

Hospitalisations

In 2009-10 in Australia:

- Breast cancer was responsible for more than 1 in 4 cancer-related hospitalisations and 1 in 33 hospitalisations for all causes in women.
- The number of female hospitalisations for breast cancer increased by 71% between 2000–01 and 2009–10, which was mostly due to an increase in the number of same-day hospitalisations.
- 83% of female hospitalisations for breast cancer were classified as same-day.
- 62% of all breast cancer-related hospitalisations were undertaken in private hospitals.
Expenditure

- In the 2004–05 financial year, the health expenditure on breast cancer for females was estimated to be $331 million.

- 36% of this expenditure was on screening mammography services through the BreastScreen Australia Program ($118 million), 28% on hospital admitted patient services ($92 million), 21% on out-of-hospital medical expenses ($68 million) and 16% on prescription pharmaceuticals ($53 million).

- Between 2000–01 and 2004–05, the total health expenditure on breast cancer grew by 32% from $252 million to $331 million.

Early detection of breast cancer

Breast awareness

Women of all ages, irrespective of whether they attend for regular screening mammograms, are encouraged to be aware of any new or unusual breast changes and to report these promptly to their GP. The “triple test” is the recommended approach to the investigation of breast symptoms. Finding breast cancer early increases the chance of surviving the disease.7 Women diagnosed with smaller tumours have had considerably higher survival than women diagnosed with larger tumours.7 The five-year relative survival for women with small tumours at diagnosis (≤10mm) is around 98% compared with 73% for women with large tumours (≥30mm).8

Five-year relative survival by size of cancer for Australian women diagnosed in 1997
Screening mammography

Screening mammograms are for women who do not have any symptoms or breast changes. BreastScreen Australia is a joint program of the Australian Government and state and territory governments that aims to reduce morbidity and mortality from breast cancer. This is achieved through organised breast cancer screening to detect cases of unsuspected breast cancer in asymptomatic women, enabling intervention at an early stage. The target age group is women aged 50–69 years.

Evidence of the benefit of screening mammography is strongest for women aged 50-69 years. There is evidence that screening mammography is less effective for women aged 40-49 years. Screening becomes more effective as women move through their forties. Mammographic screening is not effective for women under 40 years.

- Over 1.7 million women participated in BreastScreen Australia in the 2009-2010 2 year period.
- In 2009, more than half of breast cancers detected in women attending their first screen and nearly two thirds of the breast cancers detected in women attending their 2nd or subsequent screens were small in diameter (≤15mm).10

Breast cancer in men

Since men also have breast tissue, they can develop breast cancer. However, breast cancer is uncommon in men and accounts for less than 1% of all breast cancer cases. This is because the male breast ducts are less developed than female breast ducts and the male breast cells are not constantly exposed to the tumour-promoting effects of female hormones.


- One hundred and thirteen Australian men were diagnosed with invasive breast cancer in 2008.
- Breast cancer is uncommon in men and accounts for less than 1% of all breast cancer cases in Australia.

Cancer Australia’s breast cancer initiatives

Cancer Australia will continue to work to improve cancer control in breast cancer through:

- **Leadership in health service delivery and clinical best practice** - by promoting clinical best practice to health professionals and the development of new approaches to the delivery of care and reviewing and updating clinical practice guidance materials to ensure that women in Australia diagnosed with breast cancer receive evidence-based care.

- **Promoting national data reporting** - through promoting a nationally consistent approach to data collection and providing comprehensive statistical overviews of cancer.

- **Improving community access to cancer information** - through evidence-based information to help women with breast cancer make informed decisions about their treatment and care.
Breast cancer research and clinical trials

Breast Cancer research in Australia is funded by a number of government and non-government organisations. Some of the support provided to breast cancer research and clinical trials in Australia is listed below.

Cancer Australia

Cancer Australia provides support for a range of breast cancer research and clinical trials activities:

- Cancer Australia has developed the Priority-driven Collaborative Cancer Research Scheme (PdCCRS) to support research that reduces the impact of cancer on the community. Through the 2007-2011 rounds of the PdCCRS, a total of 35 project grants have been awarded in breast cancer research. These grants have a total value of $14.4 million and have been funded or co-funded by Cancer Australia, and its PdCCRS funding partners, including the National Breast Cancer Foundation, beyondblue: the national depression and anxiety initiative, Cancer Council Australia and Cure Cancer Australia Foundation

- Cancer Australia also supports clinical trials in breast cancer through its Support for Cancer Clinical Trials program. This program provides funding to Australia's Multisite, Collaborative National Cancer Clinical Trials Groups, including the Australia and New Zealand Breast Cancer Trials group (ANZBCTG). Cancer Australia funds ANZBCTG to increase participation in clinical trials by people affected by breast cancer, increase the number of breast cancer clinical trials conducted in Australia and increase the number of clinical sites actively participating in breast cancer clinical trials

- Australian Cancer Trials is a national website developed by Cancer Australia, in partnership with the University of Sydney, the Australian New Zealand Clinical Trials Registry. The website provides easy access to information about cancer clinical trials, enabling consumers to make informed decisions about participating in clinical trials. Australian Cancer Trials lists breast cancer clinical trials available in Australia; further details of specific trials can be found at: www.australiancancertrials.gov.au.

National Health and Medical Research Council (NHMRC)

The National Health and Medical Research Council (NHMRC) is Australia's peak body for supporting health and medical research; for developing health advice for the Australian community, health professionals and governments; and for providing advice on ethical behaviour in healthcare and in the conduct of health and medical research. Between 2007 and 2011, the NHMRC provided over $90 million supporting 228 grants in breast cancer.

National Breast Cancer Foundation (NBCF)

Since its inception in 1994, Nation Breast Cancer Foundation (NBCF) has allocated more than $81 million across the spectrum of breast cancer research, including genetics and basic biology, early detection, treatment and psychosocial/survivorship.

35 projects received funding from NBCF in 2011 including: understanding the role of the immune system in breast cancer susceptibility, identification of cells of origin in breast cancer, physical well-being for women with metastatic breast cancer and new methods for growing tissue for breast reconstruction post mastectomy.
References


