



## South Australia 2007 figures

	males	females	persons
number of cases	5,088	3,900	8,988
number of deaths	1,965	1,501	3,466
incidence/100,000 (ASR* Aust 2001 population)	589.6	393.4	480.1
mortality/100,000 (ASR* Aust 2001 population)	229.0	138.8	177.1
risk of developing cancer (by age 75 years)	1 in 3	1 in 4	1 in 3

\*ASR – Age Standardised Rate

## Patterns in incidence and mortality

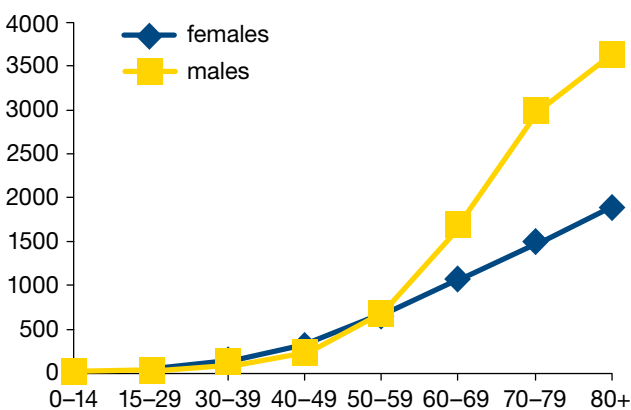
### Age

Cancer incidence increases with age. The incidence of cancer is relatively low among people aged under 50 years but increases steadily to peak among people aged 80 years and over, among both males and females. The increase in incidence with age is more marked among males.

### Gender

Overall males are more likely to develop cancer than females. The incidence of cancer in the age range 30–49 years is higher for females but is surpassed by male cancer incidence from 60 years and onwards.

**Age specific all cancer incidence (annual average rate/100,000, SA 1998–2007)**



### Country of birth

Within South Australia, residents born overseas had a cancer incidence about 8% lower than the Australian born during 1977–2000. Residents born in Asia, Southern Europe, Eastern Europe, and the United Kingdom/Ireland were among those with lower incidence rates.

Cancers contributing to lower rates in overseas born residents included:

- lip cancers and melanomas of the skin—due to lower lifelong sun exposure and darker skin colour
- prostate cancer—potentially due to lower exposure to screening tests (PSA tests) and diets with lower fat content and a high vegetable content
- large-bowel cancers—potentially due to better diets (e.g. more vegetables) and greater exercise levels
- oesophageal, and in some instances, mouth and throat cancers—potentially due to lower alcohol intakes and better diets, and among Asians and Southern Europeans, lower historic levels of tobacco smoking
- female breast cancer—possibly due to histories of earlier child birth among some residents born overseas.

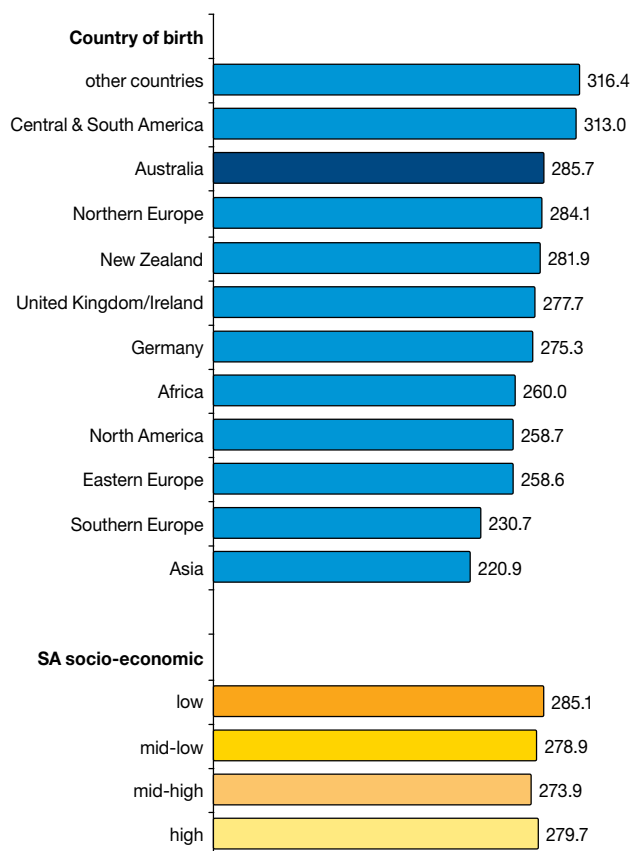
### SES/region

During 1977–2001 the incidence of cancer was higher among SA males residing in low socioeconomic areas, whereas the reverse trend was noted for females. Among males the cancers contributing to higher cancer rates in low SES areas included cancers of the lip, mouth (minus lip), throat, oesophagus, stomach, gallbladder, larynx and lung.

Among females cancers contributing to higher rates in high SES areas included breast, colon and skin cancer (melanoma).

The incidence of cancer in males and females was about 5% higher in Adelaide than in country regions of the state during 1977–2001. Cancers contributing to this elevation included those arising in the stomach, colon, liver, lung, pleura (mesotheliomas), bladder, kidney and thyroid, plus non-Hodgkin lymphomas and multiple myeloma. In contrast, cancers of the lip and pharynx (excluding the nasopharynx) were more common in country regions.

### Cancer incidence by country of birth and SES (annual rate/100,000, SA 1977–2001, ASR world population)



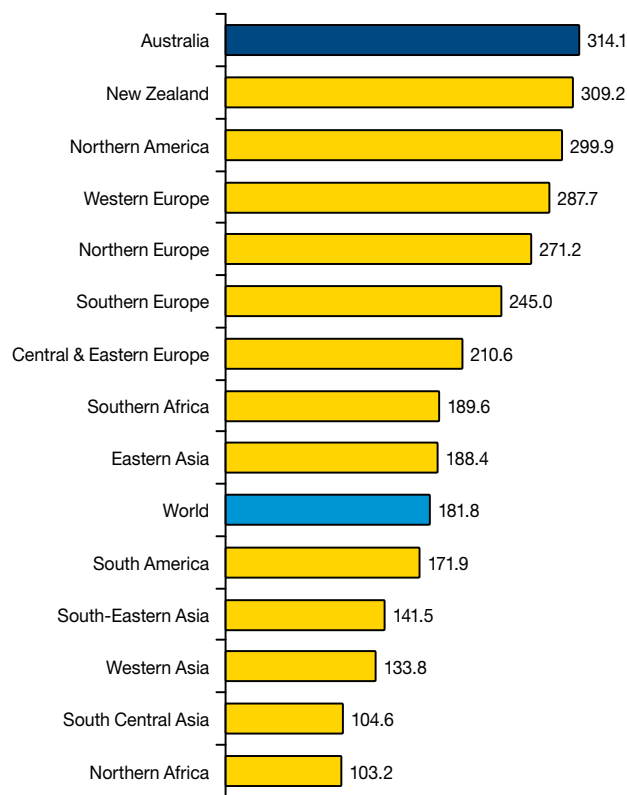
Incidence rates for all cancers collectively did not vary appreciably by region within Adelaide, but differences were evident in the country. Generally regions with comparatively large urban centres, such as Whyalla, Pirie, Lincoln and the Murray Mallee, had incidence rates broadly similar to Adelaide rates, where as relatively low rates applied to the Far North, Barossa, Mount Lofty Ranges and West Coast.

## Global comparisons

Australia had a high estimated cancer incidence in 2008 among the various regions of the world. The high rate is partly due to high rates of melanoma, which are not seen in other regions. In general, incidence rates were highest in economically developed populations predominantly of European extraction. A greater than three fold variation was

apparent by region, which would be largely due to differences in tobacco smoking over past decades, diet, exercise levels, body weight and skin type.

### Cancer incidence rate by regions of the world (rate/100,000 ASR world population, Globocan 2008)

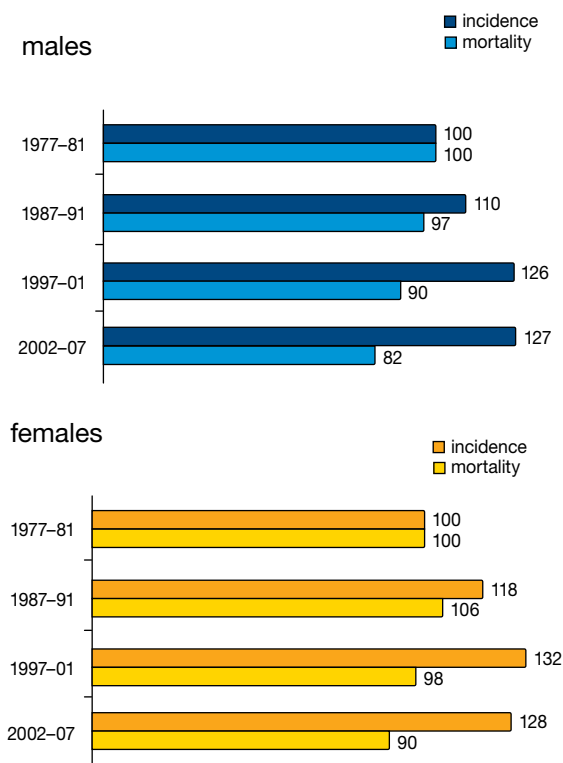


## Trends

Between 1977–81 and 2002–07, the incidence of diagnosed cancers increased by approximately 27% in males and 28% in females. Almost 60% of the increase for males was due to an increased detection of prostate lesions, largely due to increase in prostate specific antigen (PSA) testing. Other increases applied to skin (melanoma) and large bowel (colon/rectum) cancers. Approximately half the increase for females was due to an increased detection of breast cancers, largely resulting from mammography screening, whereas around 80% was a combined effect of an increase for breast, skin (melanoma), large bowel (colon/rectum), and lung cancers.

Between 1977–81 and 2002–07, the mortality rate from cancer has decreased by about 18% in males, mostly due to a decrease for lung cancer and (less so) stomach cancer. Meanwhile, the rate in females has decreased from the mid 1990s by about 10%, with about half this being due to a decline for breast cancer.

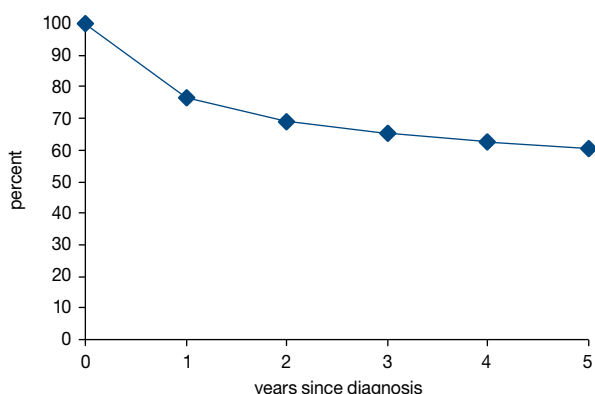
## Trends in all cancer incidence and mortality in SA (rates for 1977–81 set at '100')



## Survival

Approximately 61% of people diagnosed with between 1997 and 2003 survived their cancer for five years or more. This represents an increase in survival over the past two decades, with only 47% of those diagnosed between 1977 and 1981 surviving five years or more. Females have slightly better survival outcomes than males (59% compared with 52%), as do younger people compared with older age groups.

### Survival from cancer, SA 1997–2003



## Risk factors

Research shows that certain risk factors increase the chance that a person will develop cancer. The most common risk factors for cancer are:

- **older age**—most cancers occur in people over the age of 65, though people of all ages, including children, can get cancer
- **tobacco**—using tobacco products or regular exposure to environmental or second-hand smoke increases the risk of cancers of the lung, larynx, mouth, oesophagus, bladder, kidney, throat, stomach, pancreas, cervix and acute myeloid leukaemia
- **ultraviolet radiation (UVR)**—UVR comes from the sun, sunlamps, and tanning booths and causes early aging of the skin and skin damage that can lead to skin cancer
- **poor diet, lack of physical activity, being overweight**—studies suggest that people have diets high in fat and low in fruit and vegetables have an increased risk of cancers of the colon, uterus, and prostate. Lack of physical activity and being overweight are risk factors for cancers of the breast, colon, oesophagus, kidney, and uterus
- **alcohol**—high alcohol consumption increases the risk of cancers of the mouth, throat, oesophagus, larynx, liver, and breast. The risk increases with the amount of alcohol that a person drinks. For most of these cancers, the risk is higher for a drinker who also uses tobacco
- **ionizing radiation**—ionizing radiation can cause cell damage that leads to cancer. Sources of ionising radiation include cosmic rays, radioactive fallout, radon gas, X-rays, and other sources. Medical procedures (e.g. radiotherapy, X-rays) are the most common source of radiation for most people. The risk of cancer from medical procedures is low
- **certain chemicals and other substances**—many studies have shown that exposure to asbestos, benzene, cadmium, nickel, or vinyl chloride in the workplace can cause cancer
- **some viruses and bacteria**—being infected with certain viruses or bacteria may increase the risk of developing cancer
  - *human papillomaviruses* (HPVs): are the main cause of cervical cancer and may be a risk factor for other types of cancer
  - *hepatitis B and C viruses*: liver cancer can develop after many years of infection with hepatitis B or hepatitis C
  - *human immunodeficiency virus* (HIV): HIV is the virus that causes AIDS. People who have HIV infection are at greater risk of cancer, such as lymphoma and a rare cancer called Kaposi's sarcoma
  - *Epstein-Barr virus* (EBV): infection with EBV has been linked to an increased risk of lymphoma
  - *helicobacter pylori*: can cause stomach cancer and lymphoma in the stomach lining

- **certain hormones**—hormone replacement therapy (oestrogen or combined hormone therapies) may increase the risk of breast cancer, heart attack, stroke, or blood clots
- **inherited (genetic) risk**—about 5% of cancers are thought to be due to inherited factors (genetic mutations from the parents) that increase the risk of developing certain types of cancer. Mutations relating to breast and ovarian cancer and to colorectal cancers are well known.

**Data sources:**

- Cancer Registry reports, South Australian Department of Health
- Globocan 2008, IARC.

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