Canstat

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Canstat: A digest of facts and figures on cancer

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Trends in Cancer Mortality, Australia 1910–1999

Contents

Anti-Cancer Council of Victoria

Cancer causes the deaths of over 35,000 Australians each year.

Cancer mortality trends are good indicators of the impact of cancer on society and the effect of cancer control programs.

OVERVIEW

Cancer Societies throughout Australia need data with which to guide their strategies for cancer control and to measure their success. However, national cancer incidence data are only available for the period 1982 to 1997[1]. Longer term trends and more recent data are available from mortality statistics. These are unsatisfactory in many respects. The accuracy of death notification is notoriously poor. Only about half of people with cancer die from it and there may be many years between diagnosis and death. Mortality trends are, therefore, not sensitive to short term changes in incidence unless the type of cancer is quickly fatal (eg lung or pancreas). On the other hand, death from cancer is a robust indicator of the impact of the disease on society and, lacking long term secular trends in incidence, is the only available alternative. In some respects mortality data are superior to incidence–they are not as susceptible to diagnostic zeal and registration effort, and they give us the bottom line of the ledger of cancer control.

Cancer is becoming more common in Australia as cardiovascular disease declines and the population ages. In 1999, 35,053 Australians died from cancer which was the leading cause of death ahead of ischaemic heart disease. Cancer is responsible for almost one third of 'premature' mortality as estimated by Years of Potential Life Lost (YPLL). **Figure 1** illustrates the significance of cancer in relation to other causes of premature death.

Cancer mortality trends in Australia have been previously analysed by quinquennia for the periods 1910–79, 1980–84, 1985–89 (with 1990–91) and 1910–94[2-5] and on an annual basis for the period 1979–90[6]. Here we add data from 1995–99 and discuss trends in cancer mortality from 1950 to 1999. The methods used follow those used previously by Holman and Armstrong[2]. Age-standardised and age-specific mortality rates were calculated for all cancer and for each 3-digit rubric of the ninth edition of the International Classification of Diseases.

Trends in the age-standardised cancer mortality rates are illustrated for all cancer in **Figure 2** (page 3) and for over thirty cancers sites separately for males and females in **Figures 3** & **4** (pages 5 & 7).

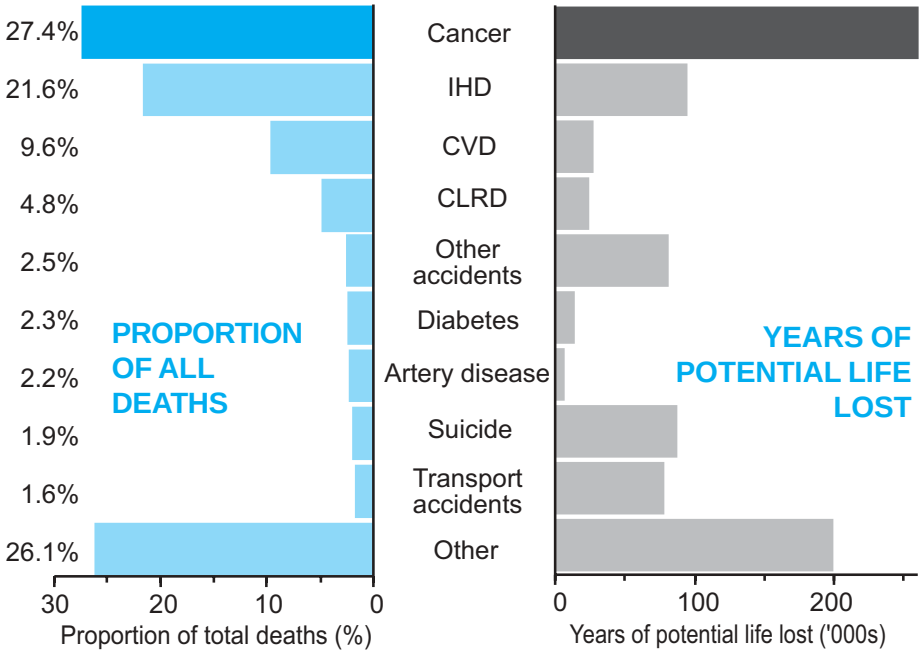


Figure 1:

Leading causes of death. The proportion and years of potential life lost (YPLL) are shown for each cause, Australia 1999.

YPLL measures the extent of "premature" mortality, assumed to be any death between 1 and 75 years. By estimating YPLL it is possible to assess the relative significance of specific causes of premature death.

IHD = Ischaemic heart disease; CVD = Cerebro-vascular disease (stroke); CLRD = Chronic lower respiratory disease (asthma & emphysema); Artery disease (athero-sclerosis and aortic aneurism).

Source: Australian Bureau of Statistics. Causes of Death, Australia. (Cat.No.3303.0)

Mortality trends by cancer site

Graphs showing mortality trends for males and females, Australia 1950–1999

The trends for "all cancers" and for "all cancers except lung cancer" are shown separately in ***Figure 2*** *for men and women. Mortality trends by cancer site are shown in* ***Figures 3*** *&* ***4*** *on pages 5 & 7.*

All cancers: In spite of increasing mortality from lung cancer, overall cancer mortality in women, stable since 1950, decreased slightly over the last decade. The rapid increase and then decrease in male mortality has been shaped by the epidemic of deaths from respiratory cancer caused by cigarette smoking[7].

Lip: Mortality from this cancer has been declining since the 1920s. Its occurrence is closely linked with sun exposure and it is much more common in men than women. Falling mortality is probably related to increased primary prevention and to early detection and treatment.

Mouth: Mortality from oral cancer fell steadily from the high rates seen prior to 1930, though there are now indications of a modest increase. Established risk factors for cancer of the mouth and oral cavity include tobacco and alcohol consumption. Declines in mortality, especially in males, are expected as the smoking epidemic abates.

Salivary gland: Mortality rates for this rare cancer are subject to statistical fluctuation but do not appear to have altered since 1950. Ionising radiation is the only established risk factor.

Pharynx: Cancers of the pharynx have shown, since 1950, annual increases in mortality of 1.4% in men and 0.6% in women. The principal risk factors are tobacco and alcohol and decreases are expected with the trend towards smoking cessation. Cancer of the nasopharynx, which has risen by over 2% annually in both males and females, is more common in people of Asian ethnic background who have a genetic predisposition.

Oesophagus: Mortality from cancer of the oesophagus is slowly rising in both sexes. Established risk factors include tobacco and alcohol consumption.

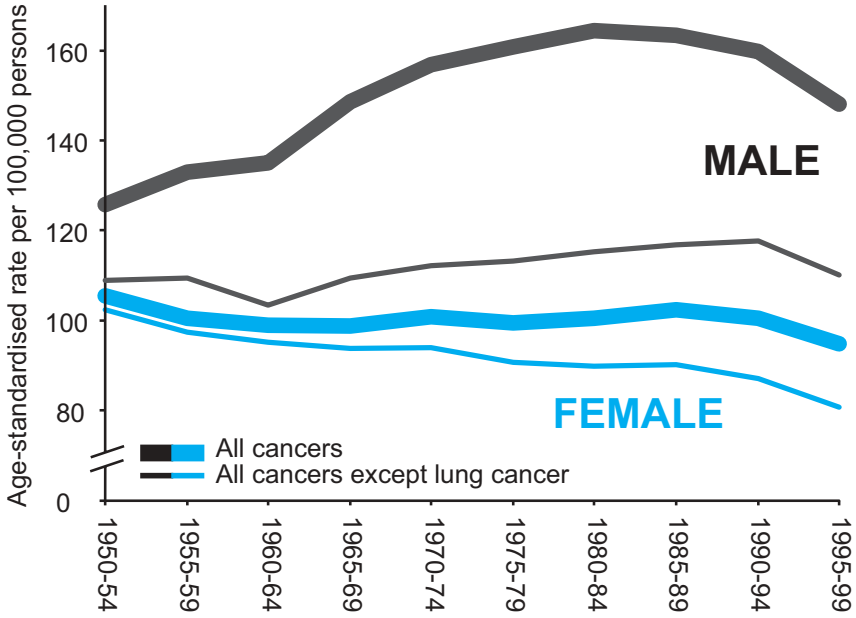
Stomach: Gastric cancer mortality is declining by over 3% annually in both men and women. This is consistent with incidence trends. The cause of stomach cancer is unknown but its decline is thought to be related to increased consumption of fresh fruit and vegetables and the advent of widespread refrigeration since WWII.

Small intestine: These cancers are rare and little is known of their causes.

Colon and rectum: Mortality trends in both the colon and rectum show a steady decrease since 1950 in females and a more recent decline in males. These trends reflect incidence rates and are unlikely to have been influenced by treatment. The causes of bowel cancer are not clearly understood but are considered to be related to diet. The consumption of fresh vegetables and

Figure 2:

Trends in male and female cancer mortality 1950–1999 showing the effect of lung cancer mortality caused by the prevalence of cigarette smoking



fruit is thought to be protective while foods containing saturated fats are thought to be harmful.

Liver: The data in regard to mortality from primary liver cancer are only reliably available from 1965. Since then mortality rates have risen annually by over 3% in both males and females. Liver cancer is related to chronic hepatitis and to a lesser extent to alcoholic cirrhosis. Much of the increase may be occurring in sub-populations that are at heightened risk due to the prevalence of hepatitis.

Gallbladder: Like primary liver cancer, reliable data are only available from 1965. Mortality from gallbladder cancer is declining by about 1% annually. Its causes are unknown.

Pancreas: Mortality from pancreatic cancer increased over most of this century but is now decreasing in males and stabilising in females. The only established risk factor is smoking.

Nasal cavities and sinuses: These cancers are rare and their causes little understood, though some occupational exposures have been implicated eg wood dust exposure from employment in the furniture industry. Mortality is declining in both sexes.

Larynx: Mortality from laryngeal cancer is stable in females and has declined in males from its peak in the late 1970s. Risk factors include alcohol and tobacco consumption and decreases are expected as smoking prevalence continues to decline.

Lung: The lung cancer mortality rate in males reached its peak in the early 1980s and has declined since to levels of 30 years ago. While mortality continues to rise slowly in females, the curve appears to be reaching its plateau. The principal cause of lung cancer is tobacco smoking.

Bone: Mortality from bone cancer is declining by over 2% annually. Its causes are poorly understood, with ionising radiation the only established risk factor.

Soft tissue: Since 1950–54 mortality from soft tissue cancer has increased more than threefold with signs of stabilising since 1980. Increases of over 2% per year are observed in both sexes. Causes are not well established. Herbicide exposures have been suspected but the evidence is equivocal.

Melanoma: Mortality from melanoma rose steadily from 1931 to 1985 with annual rates of increase of 6% in men and 3% in women. Mortality rates in females peaked in about 1985 and have since fallen. They have recently begun to fall in males. On the basis of observed trends in cohorts it can be expected to fall further in coming years[8].

Non-melanocytic skin cancer (NMSC): NMSCs, the most commonly occurring cancer in Australia, are about 80% basal cell carcinomas (BCCs) and 20% squamous cell carcinomas (SCCs). It was estimated that more than 190,000 people were treated for BCC and 80,000 were treated for SCC in Australia in 1995[9]. Mortality from NMSC declined in both men and women prior to the 1950s and has continued to fall in women. It has risen recently in young men, a phenomenon related to the HIV/AIDS epidemic.

Breast: Mortality from breast cancer in women has remained static for many years. There has been a recent small decline. The causes of breast cancer are not fully understood and there are no socially acceptable means of primary prevention. However, screening can be expected to reduce mortality by up to 30%, though such programs may, in the short term, increase incidence rates.

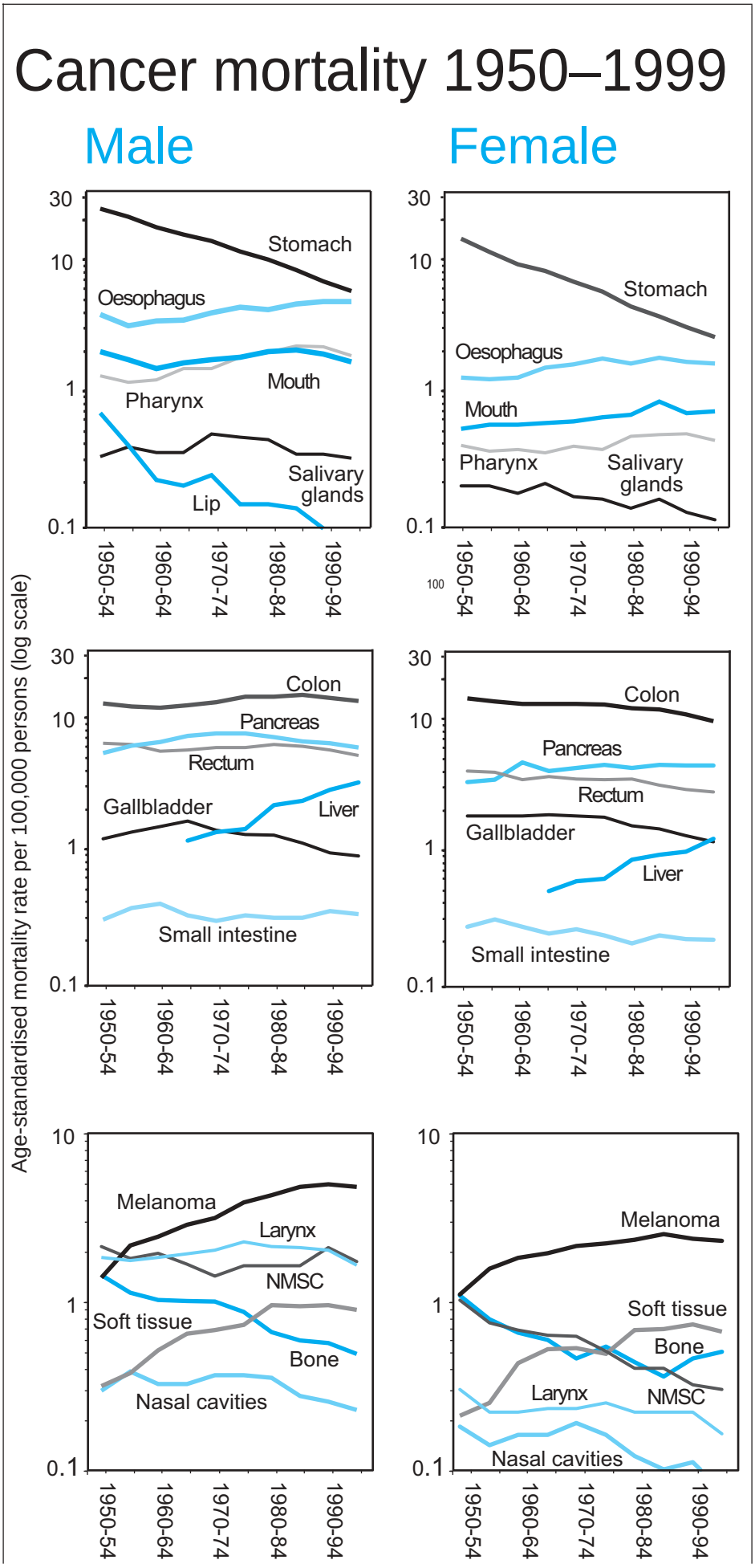
Cervix uteri: Mortality has been falling since the early 1960s when Pap smears were first advocated as a method of early detection. The cause of cervix cancer involves sexually transmitted subtypes of the human papilloma virus with other factors including oral contraceptives, smoking and diet.

Endometrium: Mortality from cancers of the endometrium has been declining steadily by about 3% annually since 1950. The principal cause of this cancer is oestrogens and factors that increase exposures to these hormones.

Ovary: Ovarian cancer mortality has been virtually static since 1950 but recently the trends appear to be falling. Its causes are poorly understood. There are no means of early detection or primary prevention.

Figure 3:

Trends in male and female cancer mortality 1950–1999 for ICD-9 rubrics 140–173



Other female genital organs: These include malignancies of the vaginal tract and vulva. Mortality rates are low and have fallen progressively since WWII. The cause of vulval cancer is thought to be a human papilloma virus but other cofactors may be important. Vaginal cancers have been caused in daughters of mothers given a form of oestrogen (DES) during pregnancy.

Prostate: Prostate cancer mortality has been slowly increasing over most of this century. Between 1990–94 and 1995–99 there was an apparent small decline that is probably due to improved anti-hormonal treatments. It is a disease of older men, and as life expectancy increases and as the population ages prostate cancer is going to be an increasing cause of death. Its causes are poorly understood. Dietary factors such as saturated fat may be important. Risk is increased if there is a family history. There are no proven methods of primary prevention or early detection.

Testis: Testicular cancer mortality has fallen dramatically since the 1950s. This is entirely due to improvements in treatment by radiotherapy and drugs.

Other male genital organs: These cancers are rare and occur mostly in older men. Mortality has halved since 1950. Penile cancers are rare in circumcised men. They are associated with infection by human papilloma virus.

Bladder: Bladder cancer mortality shows recent evidence of decline in males and a slow downward trend in females. As the principal established cause of bladder cancer in Australia is smoking, a decline would be expected as a result of widespread smoking cessation in males.

Kidney: Mortality from kidney cancer has been rising by about 1% annually in both males and females. The causes are poorly understood. Analgesic abuse has been implicated in Australia and especially in females.

Eye: Cancers of the eye are rare and mortality is decreasing. They are mainly retinoblastomas in childhood and melanomas in adults. Falling mortality probably reflects early detection and improved treatment.

Brain & Central Nervous System: These cancers have shown increases of about 1% annually in mortality since 1950. This trend, considered to be due to increased diagnosis particularly in the elderly, has been observed in other countries of similar levels of economic development to Australia. Little is known about the causes of brain cancer. Radiation exposures increase risk and dietary factors eg nitrosamines are suspected.

Thyroid: Thyroid cancer is rare and its mortality fluctuates statistically. It is more common in women in whom mortality rates are falling by around 2% annually. Its causes are poorly understood though radiation is known to increase risk. Female hormones probably play an important role.

Non-Hodgkin's lymphoma (NHL): NHL mortality has more than doubled since 1950 in both sexes with annual increases of around 4% consistent with incidence trends. The causes of NHL are poorly understood. Radiation and certain viral and chemical exposures are suspected to increase risk. Immune suppression also increases risk as observed in people given immune depressing drugs and people with HIV.

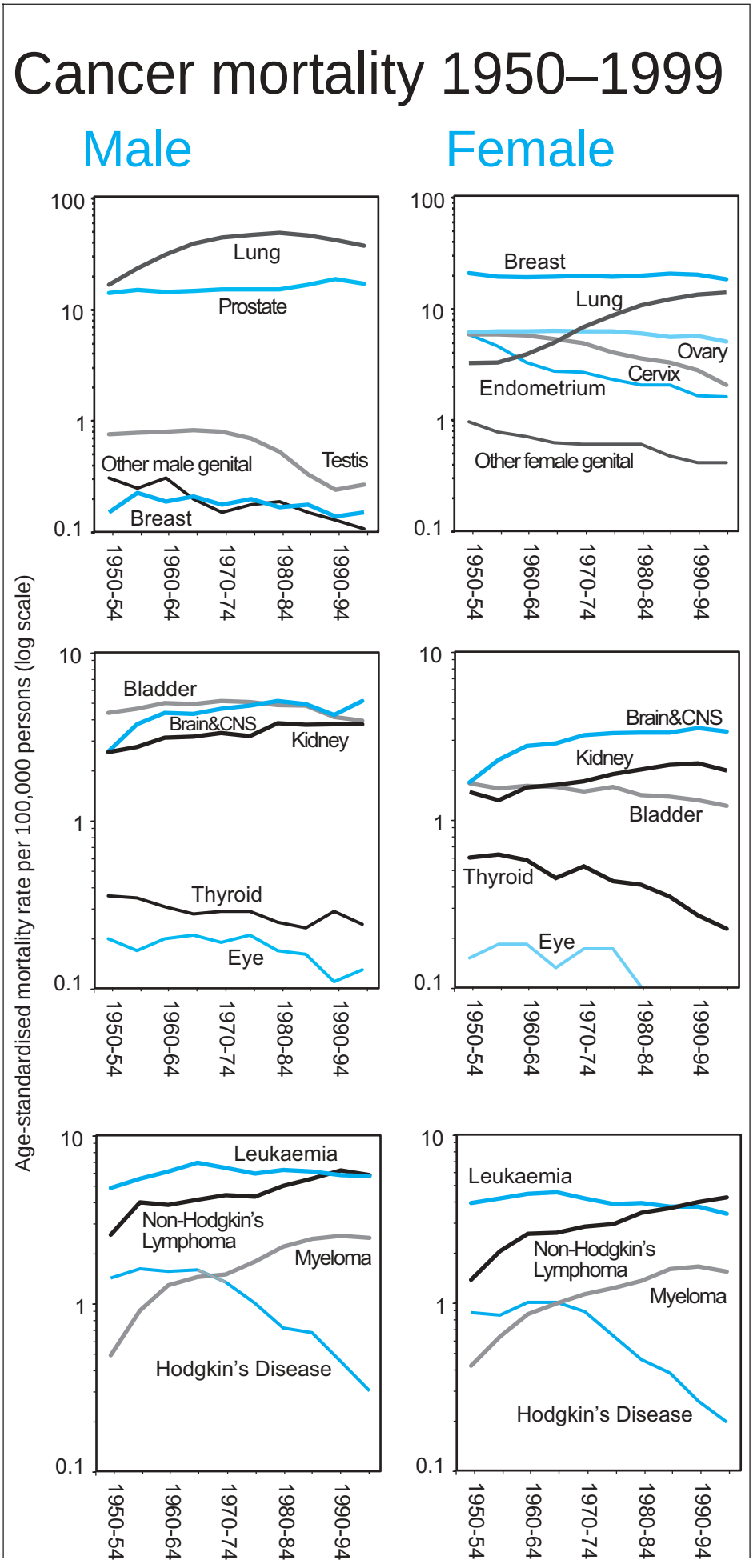
Hodgkin's disease (HD): Unlike NHL, HD mortality has fallen by around 2% annually, and faster since the 1970s due to improved chemo-therapy. Little is known of its cause though an uncommon response to an infectious agent eg Epstein Barr Virus is suspected. Certain chemical and occupational exposures are also being investigated.

Myeloma: Since 1950, myeloma mortality has increased by 11% in males and 7% in females. Recently it has plateaued and in women has begun to fall. The malignancy is age-dependent and has increased as the population has aged, though some of the increase may be due to increased investigation of the elderly. Although radiation is known to increase risk, it is unlikely to account for a large proportion of cases.

Leukaemia: Leukaemia mortality has declined since the end of the 1960s, due largely to advances in chemotherapy. Most of this decrease has been in lymphatic leukaemia, especially its acute form. Myeloid leukaemia mortality has increased, while mortality from other (rare) subtypes has decreased. Apart from chronic lymphocytic leukaemia, all leukaemias are increased after exposure to ionising radiation. Little else is known of their cause.

Figure 4:

Trends in male and female cancer mortality 1950–1999 for ICD-9 rubrics 174–208



Age-specific cancer mortality

The risk of dying from cancer at any age differs by cancer type and by sex. For all cancers taken together, the age-specific mortality rates show an excess in males at all ages except between 30 and 50 years when females are at a slightly elevated risk. Overall the graphs in **Figure 5** show a small risk of cancer death in early life (0–14 years) and a constantly increasing risk from the age of 20.

Epithelial cancers arise from cells that line the body organs and include common cancers of the skin, bowel and lung. These are very rare before the age of 20 but increase dramatically with age. In the semi-logarithmic graphs shown in the figures, the rates for some epithelial cancers describe slopes that are almost straight lines, demonstrating a constant proportional increase with age. This pattern is consistent with a continuing exposure to an exogenous carcinogenic agent acting throughout life.

The graphs for bowel cancer mortality are typical of epithelial cancers. They show a constant increase with increasing age. After the age of 50, when bowel cancer becomes common, the risk for males is greater than that for females. Men are at greater risk of contracting bowel cancer and may also present at a later stage and increase their risk of dying from it.

The graphs for lung cancer mortality are straight in early and middle age but then curve and flatten at older ages. This is characteristic of cancers that have strong cohort effects operating ie where people are at increased or decreased risk at a given age compared with people born at different times. In the case of lung cancer, the elderly are at lower risk compared with the population of mid to late middle age who had greater exposure to tobacco products. The difference between male and female mortality curves also reflects difference in the timing and amount of exposure between men and women.

Cancer deaths specific to women show a variety of different slopes with age. Death rates from breast cancer demonstrate *Clemessen's hook*—a discontinuity around the time of the menopause that separates the steeply rising death rate from age 20 to 50 from the more slowly rising rates after the age of 50.

Of the women's cancers, cancer of the ovary has the earliest onset—starting as a rare occurence in the teenage years and showing a relatively slow increase with age. Mortality from cancers of the cervix and endometrium starts around the same time as breast cancer and the two curves are very close until the time of the menopause when deaths from endometrial cancer continue to increase more strongly than those from cervical cancer. Deaths from "other genital cancers" are mostly from vulval and vaginal malignancies. These are uncommon and extremely rare before the age of 50. Their mortality curve is very similar to deaths from cancer of the penis.

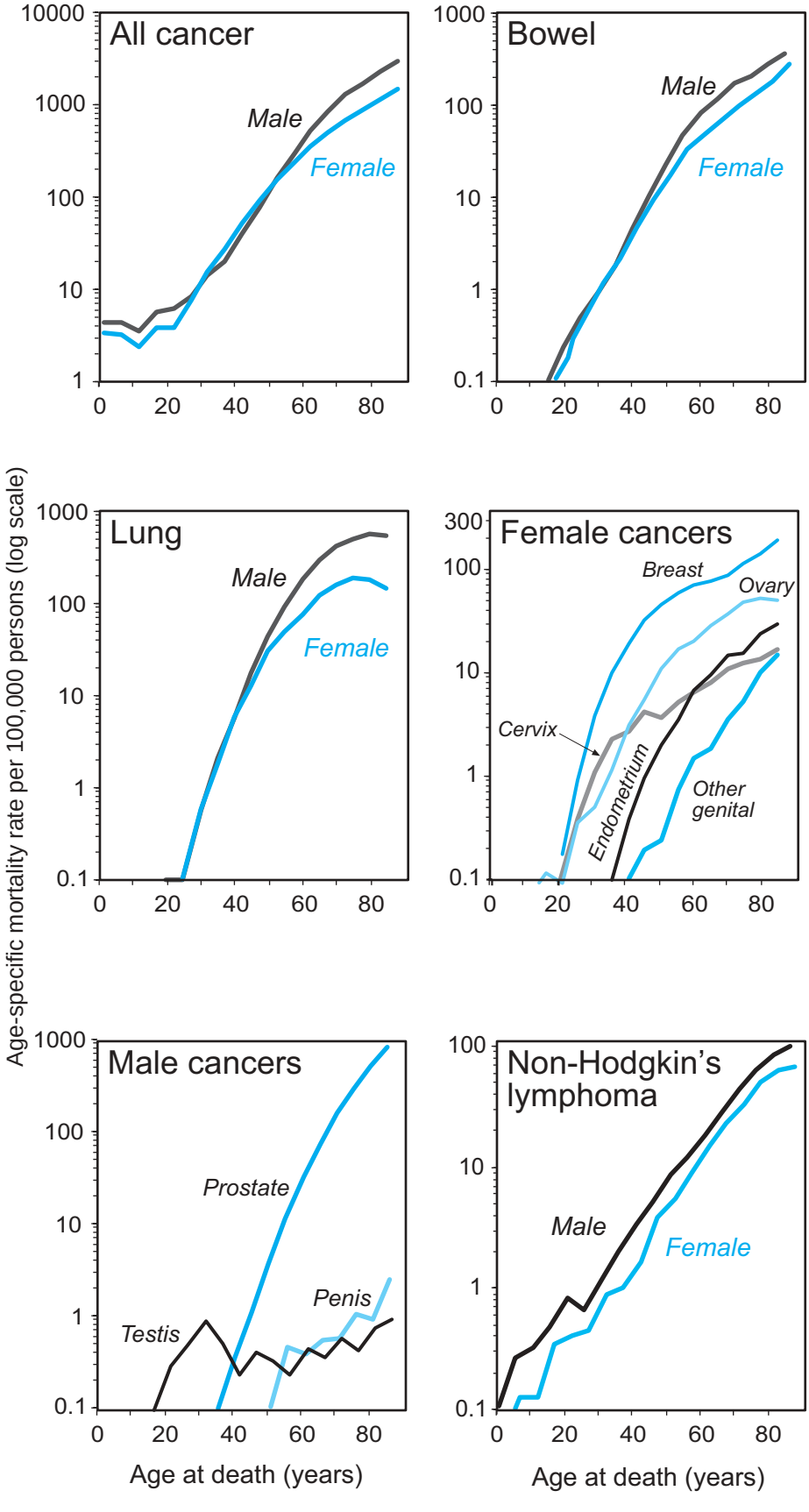
The predominant male cancer is carcinoma of the prostate gland. Prostate cancer is one of the most age-dependent cancers—rare before the age of 50 and increasing quickly with age—again, a pattern consistent with cumulative exposure to a carcinogenic agent (unknown) acting throughout life. Cancer of the testis is comparatively uncommon with a bimodal distribution—a peak in younger men and another in the elderly. Cancer of the penis is extremely rare and is usually only seen in elderly men.

Non-Hodgkin's lymphoma (NHL) is an increasingly common malignancy and cause of death. It increases from early life to old age at a constant proportional rate of increase in both sexes. Males have an excess mortality from NHL at all ages. Its rate of increase with age is not as steep as the slopes for the common epithelial cancers, reflecting possible differences in carcinogenesis.

Figure 5:

Age-specific mortality for selected cancer sites in males and females, 1995–1999.

Age-specific mortality 1995–1999 by sex for selected cancer sites



Age-standardised mortality rates per 100,000 person years in Australian males and females from 1910–14 to 1995–99 according to cancer site

	1910 -1914	1915 -1919	1920 -1924	1925 -1929	1930 -1934	1935 -1939	1940 -1944	1945 -1949	1950 -1954	1955 -1959	1960 -1964	1965 -1969	1970 -1974	1975 -1979	1980 -1984	1985 -1989	1990 -1994	1995 -1999
140-208 All cancer																		
M	109.4	115.2	120.7	119.4	117.9	119.4	118.3	120.3	125.8	132.9	134.9	148.5	156.7	160.8	164.2	163.2	159.7	147.9
F	109.4	108.0	112.9	111.2	107.4	109.3	110.0	107.2	105.5	100.6	98.8	98.6	100.7	99.4	100.5	102.4	100.6	94.8
140 Lip																		
M	2.07	2.40	2.68	2.29	2.11	1.73	1.48	0.99	0.69	0.39	0.21	0.19	0.23	0.14	0.14	0.13	0.09	0.08
F	0.20	0.16	0.21	0.09	0.17	0.14	0.14	0.14	0.08	0.05	0.04	0.02	0.02	0.03	0.03	0.04	0.02	0.01
141,143–145 Mouth																		
M	11.77	11.31	10.58	9.28	6.85	5.98	4.31	3.74	2.03	1.74	1.50	1.66	1.74	1.84	2.01	2.05	1.92	1.65
F	1.36	1.03	1.16	0.95	1.04	0.85	0.89	0.64	0.54	0.57	0.58	0.59	0.60	0.65	0.68	0.86	0.70	0.72
142 Salivary gland																		
M	0.47	0.36	0.43	0.35	0.33	0.34	0.34	0.32	0.32	0.38	0.34	0.34	0.47	0.45	0.43	0.33	0.33	0.31
F	0.05	0.10	0.14	0.20	0.17	0.19	0.17	0.19	0.20	0.20	0.18	0.21	0.17	0.16	0.14	0.16	0.13	0.11
146–149 Pharynx																		
M	2.14	2.18	1.83	1.74	2.35	2.47	1.89	1.84	1.32	1.16	1.22	1.50	1.50	1.81	1.98	2.20	2.16	1.86
F	0.20	0.36	0.27	0.30	0.27	0.39	0.44	0.39	0.41	0.37	0.38	0.36	0.40	0.38	0.47	0.49	0.50	0.44
146 Oropharynx																		
M	*	*	*	*	*	*	*	*	0.41	0.29	0.33	0.49	0.70	0.82	0.84	0.94	0.91	0.76
F	*	*	*	*	*	*	*	*	0.09	0.10	0.10	0.12	0.16	0.15	0.17	0.20	0.24	0.18
147 Nasopharynx																		
M	*	*	*	*	*	*	*	*	0.18	0.19	0.21	0.34	0.29	0.38	0.46	0.42	0.48	0.39
F	*	*	*	*	*	*	*	*	0.06	0.07	0.06	0.06	0.11	0.13	0.14	0.14	0.13	0.14
148 Hypopharynx																		
M	*	*	*	*	*	*	*	*	0.11	0.14	0.17	0.28	0.38	0.43	0.48	0.60	0.57	0.49
F	*	*	*	*	*	*	*	*	0.08	0.04	0.08	0.08	0.09	0.06	0.11	0.10	0.08	0.09
149 Mouth, pharynx unspecified																		
M	*	*	*	*	*	*	*	*	0.61	0.55	0.51	0.50	0.13	0.18	0.20	0.25	0.19	0.21
F	*	*	*	*	*	*	*	*	0.18	0.15	0.14	0.11	0.04	0.05	0.05	0.05	0.05	0.04

Age-standardised mortality rates per 100,000 person years in Australian males and females from 1910–14 to 1995–99 according to cancer site

	1910 -1914	1915 -1919	1920 -1924	1925 -1929	1930 -1934	1935 -1939	1940 -1944	1945 -1949	1950 -1954	1955 -1959	1960 -1964	1965 -1969	1970 -1974	1975 -1979	1980 -1984	1985 -1989	1990 -1994	1995 -1999
150 Oesophagus																		
M	3.50	3.61	4.61	5.11	5.19	5.34	4.79	4.25	3.91	3.19	3.42	3.51	3.99	4.39	4.20	4.61	4.85	4.90
F	0.73	0.94	1.16	1.64	1.66	1.56	1.59	1.38	1.28	1.26	1.27	1.52	1.60	1.78	1.64	1.83	1.69	1.65
151 Stomach																		
M	30.14	31.66	34.02	35.19	34.31	32.24	29.55	27.23	24.68	21.35	17.61	15.53	13.75	11.55	10.02	8.47	6.81	5.79
F	19.31	20.15	20.25	20.72	19.20	17.74	16.95	14.99	13.79	10.99	9.06	7.93	6.76	5.64	4.38	3.68	3.06	2.61
152 Small intestine																		
M	*	*	*	*	*	*	*	*	0.31	0.38	0.41	0.33	0.30	0.33	0.32	0.32	0.36	0.34
F	*	*	*	*	*	*	*	*	0.28	0.32	0.28	0.25	0.27	0.24	0.21	0.24	0.23	0.22
153 Colon																		
M	7.46	9.06	10.78	11.61	14.90	13.40	14.38	13.58	13.15	12.55	12.30	12.79	13.38	14.83	14.70	15.29	14.58	13.73
F	8.89	10.54	12.31	13.45	14.73	15.65	15.39	14.56	14.38	13.65	13.23	13.05	13.22	12.89	12.29	11.99	10.83	9.68
154 Rectum																		
M	3.67	4.79	5.11	5.34	5.37	6.74	6.58	6.62	6.58	6.50	5.82	5.84	6.12	6.12	6.43	6.25	5.87	5.37
F	3.83	3.93	3.92	3.95	3.88	4.41	4.85	4.42	4.08	4.02	3.55	3.74	3.64	3.56	3.60	3.23	3.01	2.89
153&154 Colon & rectum																		
M	11.13	13.58	15.89	16.95	20.27	20.14	20.96	20.20	19.73	19.05	18.12	18.63	19.50	20.95	21.13	21.54	20.45	19.10
F	12.72	14.47	16.23	17.40	18.61	20.06	20.24	18.98	18.46	17.67	16.78	16.79	16.86	16.45	15.89	15.22	13.84	12.57
155–156 Liver & gallbladder																		
M	*	*	*	*	*	*	*	*	1.46	1.72	2.11	2.60	2.86	2.84	3.61	3.60	3.91	4.27
F	*	*	*	*	*	*	*	*	2.25	2.14	2.61	2.57	2.51	2.57	2.51	2.48	2.38	2.50
155 Liver																		
M	*	*	*	*	*	*	*	*	*	*	*	1.21	1.41	1.49	2.27	2.42	2.92	3.34
F	*	*	*	*	*	*	*	*	*	*	*	0.52	0.62	0.64	0.90	0.97	1.03	1.29
156 Gallbladder																		
M	0.80	0.77	0.80	1.02	1.16	0.85	0.98	1.10	*	*	*	1.70	1.46	1.36	1.34	1.18	0.99	0.93
F	1.14	1.54	2.04	2.07	2.07	2.16	1.93	1.88	*	*	*	1.93	1.89	1.86	1.61	1.51	1.35	1.21

Age-standardised mortality rates per 100,000 person years in Australian males and females from 1910–14 to 1995–99 according to cancer site

	1910 -1914	1915 -1919	1920 -1924	1925 -1929	1930 -1934	1935 -1939	1940 -1944	1945 -1949	1950 -1954	1955 -1959	1960 -1964	1965 -1969	1970 -1974	1975 -1979	1980 -1984	1985 -1989	1990 -1994	1995 -1999
157 Pancreas																		
M	1.84	2.19	2.52	2.87	3.90	4.27	4.79	5.05	5.56	6.35	6.76	7.43	7.77	7.84	7.38	6.77	6.52	6.12
F	1.57	1.42	1.80	1.93	2.70	3.52	3.23	3.54	3.40	3.56	4.78	4.15	4.37	4.58	4.39	4.60	4.56	4.56
158 Peritoneum etc																		
M	0.52	0.49	0.38	0.48	0.73	0.58	0.60	0.75	0.56	0.52	0.25	0.21	0.26	0.29	0.24	0.21	0.24	0.22
F	1.04	0.82	0.67	0.70	0.86	0.87	0.58	0.59	0.57	0.47	0.33	0.27	0.24	0.24	0.22	0.16	0.18	0.28
159 Digestive unspecified																		
M	1.96	1.72	1.78	1.16	0.54	0.50	0.42	0.52	0.11	0.18	0.21	0.20	0.14	0.29	0.71	0.99	1.06	1.06
F	2.50	2.55	2.76	1.69	0.75	0.87	0.68	0.83	0.11	0.14	0.21	0.16	0.11	0.25	0.55	0.86	0.70	0.67
160 Nasal cavities etc																		
M	*	*	*	*	*	*	*	*	0.32	0.38	0.33	0.33	0.37	0.37	0.36	0.28	0.26	0.23
F	*	*	*	*	*	*	*	*	0.18	0.14	0.16	0.16	0.19	0.16	0.12	0.10	0.11	0.07
161 Larynx																		
M	1.44	2.01	2.23	2.53	2.67	2.74	2.37	2.04	1.84	1.77	1.85	1.94	2.03	2.27	2.15	2.11	2.05	1.66
F	0.17	0.32	0.32	0.42	0.36	0.42	0.42	0.37	0.30	0.22	0.22	0.23	0.23	0.25	0.22	0.22	0.22	0.16
162–165 Lung etc																		
M	1.71	1.93	2.21	2.42	3.62	4.97	6.66	10.51	16.96	23.61	31.51	39.30	44.48	47.59	49.04	46.36	42.16	37.91
F	1.61	1.76	1.61	1.92	1.97	2.19	2.24	2.80	3.24	3.30	3.88	4.93	6.77	8.68	10.66	12.26	13.46	13.92
170 Bone etc																		
M	*	*	*	1.43	1.41	1.40	1.50	1.34	1.45	1.15	1.04	1.03	1.01	0.88	0.67	0.60	0.58	0.50
F	*	*	*	1.42	1.43	1.47	1.43	1.15	1.02	0.75	0.68	0.63	0.62	0.51	0.40	0.40	0.32	0.30
171 Connective tissue																		
M	*	*	*	*	*	*	*	*	0.30	0.39	0.52	0.65	0.69	0.74	0.96	0.95	0.96	0.90
F	*	*	*	*	*	*	*	*	0.21	0.25	0.43	0.52	0.53	0.49	0.68	0.69	0.73	0.66
172–173 Skin (including melanoma)																		
M	5.05	6.31	5.98	5.49	4.96	4.74	5.19	4.39	3.55	4.01	4.41	4.61	4.62	5.56	6.00	6.49	7.13	6.57
F	3.13	2.88	3.83	3.32	2.77	2.37	2.91	2.45	2.20	2.36	2.47	2.54	2.60	2.78	2.78	2.87	2.84	2.83

Age-standardised mortality rates per 100,000 person years in Australian males and females from 1910–14 to 1995–99 according to cancer site

	1910 -1914	1915 -1919	1920 -1924	1925 -1929	1930 -1934	1935 -1939	1940 -1944	1945 -1949	1950 -1954	1955 -1959	1960 -1964	1965 -1969	1970 -1974	1975 -1979	1980 -1984	1985 -1989	1990 -1994	1995 -1999
172 Melanoma																		
M	*	*	*	*	0.71	0.74	0.84	1.03	1.40	2.17	2.46	2.91	3.18	3.90	4.34	4.83	5.00	4.81
F	*	*	*	*	0.57	0.57	0.79	0.92	1.11	1.57	1.82	1.95	2.14	2.24	2.34	2.51	2.38	2.32
173 Other skin																		
M	*	*	*	*	3.68	3.97	4.00	3.44	2.14	1.83	1.96	1.70	1.44	1.66	1.66	1.65	2.13	1.76
F	*	*	*	*	2.13	2.04	2.31	1.84	1.09	0.79	0.65	0.59	0.46	0.54	0.44	0.36	0.46	0.51
174–175 Breast																		
M	*	*	*	*	0.19	0.20	0.18	0.20	0.15	0.23	0.19	0.21	0.18	0.20	0.17	0.18	0.14	0.15
F	15.50	15.94	17.25	18.57	19.48	20.73	21.59	21.26	20.89	19.57	19.33	19.39	19.91	19.64	19.99	20.75	20.43	18.34
179–182 Uterus																		
F	18.76	17.14	17.53	16.99	15.20	15.23	14.62	13.59	11.72	10.38	9.24	8.24	7.54	6.35	5.60	5.30	4.40	3.66
180 Cervix uteri																		
F	*	*	*	*	*	*	*	*	5.88	5.87	5.82	5.39	4.87	4.04	3.53	3.26	2.75	2.06
179,182 Other uterus																		
F	*	*	*	*	*	*	*	*	5.86	4.57	3.26	2.73	2.67	2.31	2.04	2.05	1.65	1.61
183 Ovary																		
F	1.49	1.72	2.42	3.25	4.67	5.10	4.93	5.73	6.10	6.23	6.27	6.36	6.25	6.27	6.04	5.57	5.64	5.05
184 Other female genital																		
F	0.80	0.85	0.98	0.98	0.82	0.87	1.09	0.98	0.96	0.78	0.71	0.62	0.60	0.60	0.59	0.47	0.41	0.41
185 Prostate																		
M	2.53	3.82	6.08	8.06	10.28	11.72	11.94	12.43	14.20	15.14	14.52	14.80	15.20	15.18	15.31	16.79	18.84	17.10
186 Testis																		
M	0.15	0.26	0.38	0.44	0.43	0.55	0.63	0.65	0.76	0.79	0.81	0.84	0.80	0.71	0.53	0.33	0.24	0.27
187 Penis etc																		
M	0.59	0.47	0.53	0.49	0.56	0.43	0.31	0.25	0.31	0.25	0.31	0.20	0.15	0.18	0.19	0.15	0.13	0.11

Age-standardised mortality rates per 100,000 person years in Australian males and females from 1910–14 to 1995–99 according to cancer site

	1910 -1914	1915 -1919	1920 -1924	1925 -1929	1930 -1934	1935 -1939	1940 -1944	1945 -1949	1950 -1954	1955 -1959	1960 -1964	1965 -1969	1970 -1974	1975 -1979	1980 -1984	1985 -1989	1990 -1994	1995 -1999
188 Bladder																		
M	2.23	2.85	3.19	3.06	3.45	4.04	3.61	4.21	4.37	4.65	5.03	4.97	5.18	5.07	4.91	4.81	4.18	3.98
F	0.75	1.09	1.13	1.36	1.56	1.48	1.52	1.48	1.67	1.54	1.61	1.59	1.50	1.58	1.42	1.38	1.32	1.22
189 Kidney etc																		
M	1.05	1.07	1.33	1.36	1.58	1.89	1.83	2.23	2.56	2.77	3.12	3.16	3.32	3.21	3.83	3.72	3.78	3.75
F	0.72	1.03	0.92	1.16	1.28	1.15	1.17	0.45	1.48	1.32	1.56	1.62	1.71	1.89	2.02	2.15	2.19	2.00
190 Eye																		
M	0.14	0.07	0.17	0.37	0.32	0.23	0.14	0.18	0.20	0.17	0.20	0.21	0.19	0.21	0.17	0.16	0.11	0.13
F	0.13	0.05	0.12	0.17	0.21	0.22	0.19	0.15	0.15	0.18	0.18	0.13	0.17	0.17	0.10	0.09	0.10	0.08
191–192 Nervous system																		
M	0.15	0.21	0.21	0.16	0.43	0.41	0.90	1.35	2.60	3.79	4.37	4.34	4.64	4.86	5.14	4.97	4.26	5.14
F	0.21	0.24	0.26	0.23	0.34	0.34	0.58	0.94	1.69	2.31	2.80	2.90	3.23	3.33	3.38	3.36	3.59	3.42
193 Thyroid																		
M	0.09	0.26	0.12	0.16	0.25	0.28	0.22	0.32	0.36	0.35	0.31	0.28	0.29	0.29	0.25	0.23	0.29	0.24
F	0.41	0.28	0.41	0.51	0.49	0.54	0.58	0.68	0.60	0.62	0.58	0.45	0.53	0.43	0.41	0.35	0.27	0.22
194 Other endocrine																		
M	*	*	*	*	*	*	*	*	0.20	0.27	0.18	0.21	0.22	0.23	0.40	0.33	0.34	0.31
F	*	*	*	*	*	*	*	*	0.20	0.14	0.15	0.17	0.18	0.19	0.29	0.31	0.23	0.23
195–199 Ill-defined																		
M	4.87	3.77	3.33	3.59	2.59	2.76	2.63	3.09	3.02	3.49	3.72	4.68	5.92	6.37	7.55	9.28	9.42	8.77
F	5.94	4.09	4.44	3.32	2.00	2.15	2.29	2.71	2.86	3.19	3.10	3.57	4.52	4.21	5.40	6.23	6.48	6.31
200&202 Non-Hodgkin's lymphoma																		
M	*	*	*	*	*	*	*	*	2.55	4.01	3.85	4.14	4.46	4.33	5.04	5.58	6.25	5.85
F	*	*	*	*	*	*	*	*	1.39	2.07	2.63	2.64	2.90	2.99	3.48	3.72	4.05	4.33
200 Lymphosarcoma etc																		
M	0.47	0.45	0.45	0.92	1.41	1.36	1.53	1.73	2.20	3.56	3.23	3.45	3.57	2.00	1.26	0.68	0.55	0.51
F	0.19	0.14	0.18	0.52	0.63	0.57	0.73	0.94	1.16	1.78	2.26	2.18	2.36	1.45	0.89	0.42	0.38	0.31

Age-standardised mortality rates per 100,000 person years in Australian males and females from 1910–14 to 1995–99 according to cancer site

	1910 -1914	1915 -1919	1920 -1924	1925 -1929	1930 -1934	1935 -1939	1940 -1944	1945 -1949	1950 -1954	1955 -1959	1960 -1964	1965 -1969	1970 -1974	1975 -1979	1980 -1984	1985 -1989	1990 -1994	1995 -1999
201 Hodgkin's disease																		
M	*	*	1.27	1.42	1.28	1.54	1.32	1.33	1.42	1.60	1.54	1.58	1.34	1.00	0.71	0.67	0.45	0.30
F	*	*	0.63	0.70	0.80	0.86	0.86	0.77	0.88	0.85	1.01	1.01	0.89	0.64	0.46	0.38	0.26	0.19
202 Other lymphoid tissue																		
M	*	*	*	*	*	*	*	*	0.35	0.45	0.62	0.69	0.89	2.33	3.78	4.89	5.58	5.34
F	*	*	*	*	*	*	*	*	0.23	0.29	0.37	0.46	0.60	1.54	2.59	3.31	3.65	4.01
203 Myeloma etc																		
M	*	*	*	*	*	*	*	*	0.49	0.90	1.28	1.43	1.50	1.78	2.18	2.44	2.52	2.46
F	*	*	*	*	*	*	*	*	0.42	0.63	0.86	1.00	1.13	1.24	1.36	1.60	1.68	1.54
204–208 Leukaemias																		
M	2.10	2.42	2.14	1.87	2.49	3.12	3.32	4.36	5.05	5.72	6.26	7.11	6.59	6.15	6.43	6.28	6.00	5.89
F	1.50	1.57	1.61	1.69	1.84	2.45	2.87	3.48	3.99	4.26	4.52	4.65	4.25	3.97	4.03	3.82	3.81	3.47
204 Lymphoid leukaemia																		
M	*	*	*	*	*	*	*	*	*	*	*	2.49	2.45	2.12	2.29	2.25	1.95	2.05
F	*	*	*	*	*	*	*	*	*	*	*	1.47	1.57	1.32	1.22	1.19	1.19	1.06
205 Myeloid leukaemia																		
M	*	*	*	*	*	*	*	*	*	*	*	3.14	3.37	3.33	3.45	3.43	3.59	3.57
F	*	*	*	*	*	*	*	*	*	*	*	2.28	2.21	2.25	2.33	2.28	2.45	2.22
206 Monocytic leukaemia																		
M	*	*	*	*	*	*	*	*	*	*	*	0.21	0.22	0.23	0.19	0.14	0.07	0.04
F	*	*	*	*	*	*	*	*	*	*	*	0.17	0.12	0.13	0.15	0.09	0.04	0.05
207–208 Other leukaemia																		
M	*	*	*	*	*	*	*	*	*	*	*	0.54	0.55	0.47	0.51	0.45	0.28	0.23
F	*	*	*	*	*	*	*	*	*	*	*	0.42	0.35	0.27	0.33	0.26	0.15	0.14

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