

11. Chronic conditions

Asthma

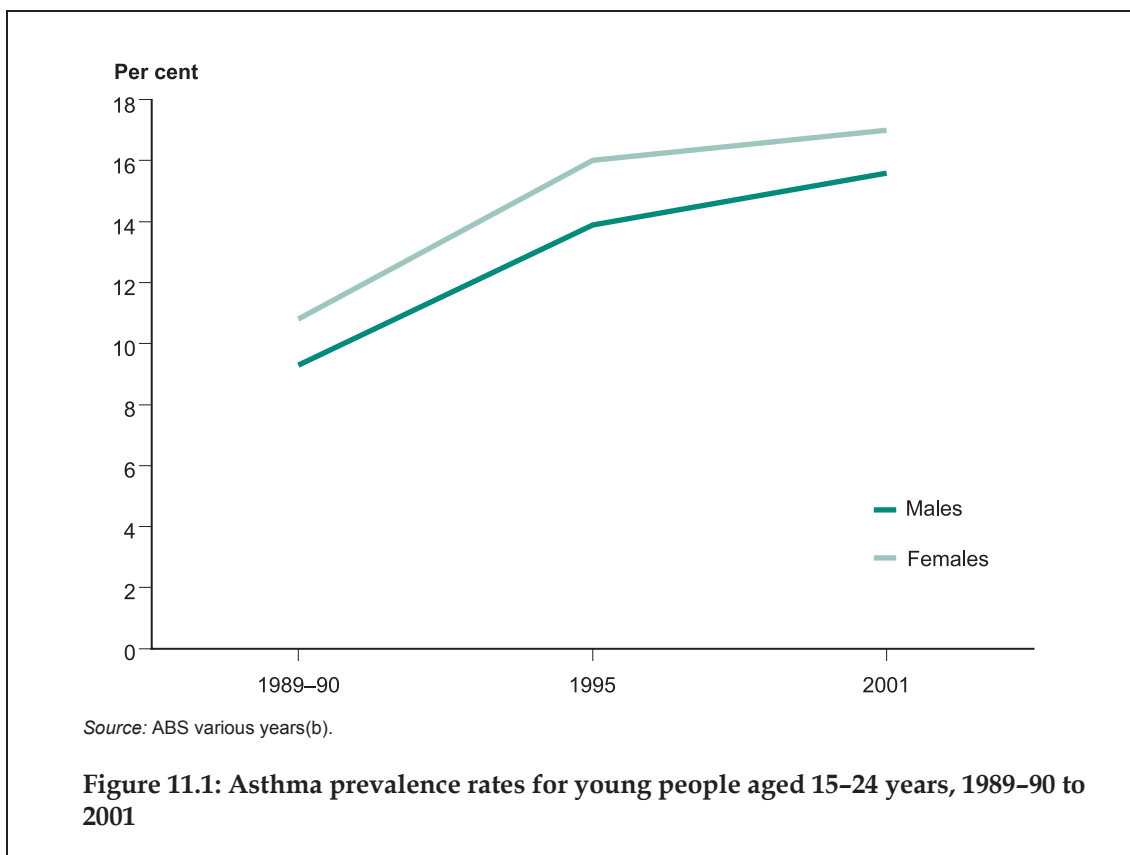
Asthma is a common disease in Australia and is characterised by recurrent episodes of wheeze, shortness of breath and sometimes a cough. Because of the severe impact of asthma on individuals and the growing costs of treating asthma, asthma was endorsed as the sixth National Health Priority Area (NHPA) in 1999.

Asthma is of unknown cause but tends to run in families and is closely linked to allergies. The role of environmental and developmental factors in either causing or protecting against asthma has been the subject of intense interest but, on the available evidence, has not yet been firmly established. Among people with asthma, symptoms may occur spontaneously or in response to one of a wide range of triggers, such as pollen, physical activity, cold weather and tobacco smoke. In the majority of people, asthma can be effectively controlled by a combination of the regular use of medications that reduce the symptoms and avoiding or controlling trigger factors. In some people with severe disease or in those in whom effective disease management has not been implemented, asthma can cause poor quality of life, interfere with work, study or other activities, create a need for urgent medical care including hospitalisation, and even cause premature death (National Asthma Campaign 1998).

It is difficult to quantify the prevalence of asthma in the population because the prevalence can be based on self-reported wheeze, diagnosis by a general practitioner based on symptoms, or a combination of symptoms and lung function tests (Woolcock et al. 2001). Despite difficulties in accurately estimating asthma prevalence, international comparative studies indicate that Australia has one of the highest prevalence rates in the world and that asthma prevalence is on the rise (Robertson et al. 1998; Woolcock et al. 2001). It is estimated that over 2 million people in Australia are affected by asthma (ABS 2002). Of all people with asthma in Australia, just under 20% are young people aged 15–24 years.

This section covers information on asthma prevalence, morbidity and mortality among people aged 12–24 years. Information for this section is derived from three sources: parent-reported prevalence of asthma from the 1989–90, 1995 and 2001 ABS National Health Surveys (NHS), hospitalisation data from the AIHW National Hospital Morbidity Database, and death data from the AIHW Mortality Database.

Prevalence



- Asthma prevalence rates in people aged 15-24 years in Australia have increased between 1989-90 and 2001, from 9% to 16% for males and from 11% to 17% for females. The increase was higher between 1989-90 and 1995 than between 1995 and 2001.
- The sharp increase in asthma rates between 1989-90 and 2001 may be the outcome of increased prevalence, increased awareness of asthma and/or an improvement in the diagnosis of asthma (ABS 1998).
- Females had a consistently higher prevalence rate than males.

Table 11.1: Asthma status of young people aged 12–24 years, 2001 (per cent)

Asthma status	Age (years)		
	12–17	18–24	12–24
Males			
Diagnosed, condition current and long term	16.5	14.8	15.6
Diagnosed, condition not current	16.7	14.1	15.3
Never diagnosed	66.8	71.1	69.1
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Females			
Diagnosed, condition current and long term	15.0	17.3	16.2
Diagnosed, condition not current	13.9	14.0	13.9
Never diagnosed	71.1	68.7	69.8
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Persons			
Diagnosed, condition current and long term	15.7	16.0	15.9
Diagnosed, condition not current	15.3	14.0	14.6
Never diagnosed	68.9	70.0	69.5
Total	100.0	100.0	100.0

Source: ABS NHS 2001, unpublished data

- The majority of young people aged 12–24 years have never been diagnosed with asthma (70%).
- Equal proportions of young people had either been diagnosed with asthma but no longer had symptoms (15%) or had been diagnosed with asthma and continued to have symptoms as a chronic condition (16%).
- The proportions of male and female young people who were currently suffering asthma symptoms were similar among those aged 12–17 and 18–24 years.

Responses to asthma

The 2001 ABS NHS asked young people aged 15–24 years who had asthma how they had responded to their asthma in the 2 weeks before interview (Table 11.2).

Table 11.2: Responses to asthma by young people aged 15–24 years with asthma, 2001

Type of action taken	Per cent
No action taken	40.3
Used prevention and relief medications	36.0
Used relief medications only	18.0
Consulted a doctor	7.2
Days out of role ^(a)	4.8
Used prevention medications only	4.2
Used vitamin/mineral supplements or natural/herbal medications	1.7 ^(b)
Admitted to hospital or visited outpatient clinic/ casualty/emergency/day clinic	1.0 ^(b)
Consulted other health professional	0.9 ^(b)
Total persons with asthma^(c)	100

(a) Days away from work/school/study and other days of reduced activity.

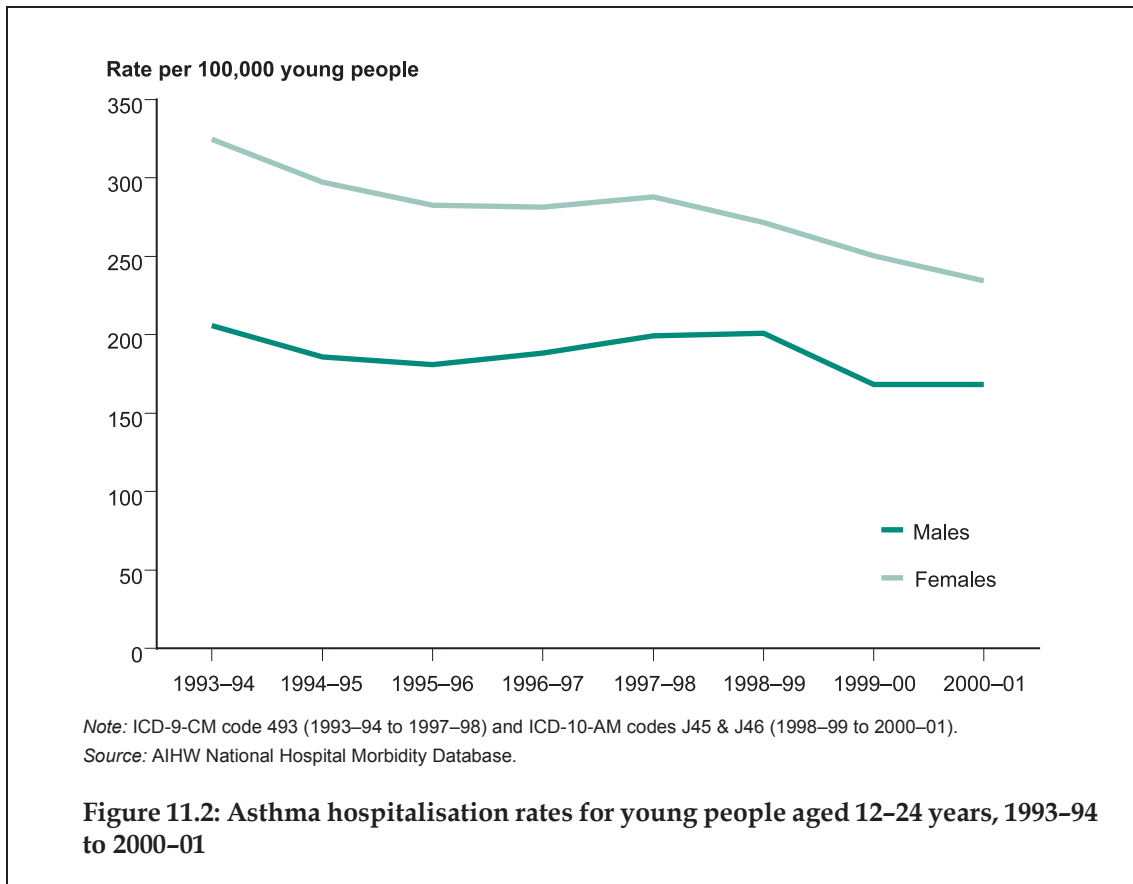
(b) Estimate has a relative standard error of between 25% and 50% and should be used with caution.

(c) Persons may have reported more than one action and therefore components may not add to totals.

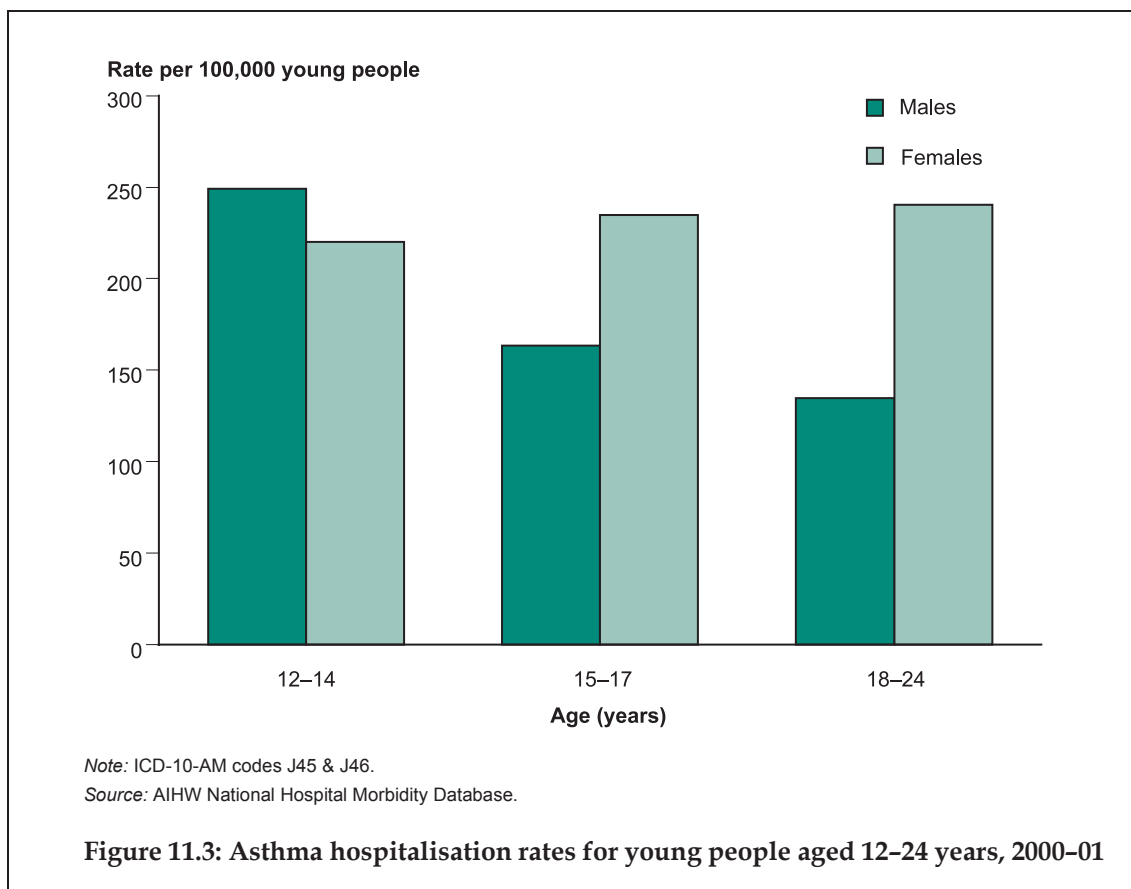
Source: ABS 2002.

- Of young people aged 15–24 years diagnosed with asthma, 40% had taken no action for their asthma in the 2 weeks before interview.
- Pharmaceutical medication had been used by 58% of young people in the previous 2 weeks. Both prevention and relief medications had been used by 36%, relief medications by 18% and prevention medications only by 4%.
- In the 2 weeks before the survey 1%, of young people had been admitted to hospital or visited an outpatient clinic, casualty, emergency or day clinic for asthma symptoms.

Hospitalisations



- The hospitalisation rate for asthma in young people aged 12-24 years decreased between 1993-94 and 2000-01. The rate for males decreased by 18% from 206 to 168 per 100,000, and the rate for females decreased by 28% from 325 to 234 per 100,000.
- Hospitalisation rates were consistently higher for females than for males. In 2000-01 the asthma hospitalisation rate for females was 1.4 times the rate for males.



- In 2000-01, hospitalisation rates for asthma were higher for males aged 12-14 years than for males aged 15-24 years and 18-24 years. In contrast, rates for females were similar in all three age groups
- Rates for females were markedly higher than the rates for males in the age groups 15-17 and 18-24 years.

Deaths

Deaths from asthma in the age group 12-24 years are relatively uncommon. In 2001, there were 17 deaths from asthma of young people aged 12-24 years – 12 were male and 5 were female.

Diabetes

Diabetes mellitus is a group of diseases characterised by high levels of glucose in the blood resulting from defects in insulin secretion, insulin action resistance or both. Insulin is a hormone produced by the pancreas that helps the body to use glucose. High blood sugar levels are known to damage important body organs and cause heart disease, stroke, blindness and neurological problems, and premature death. However, persons with diabetes can take measures to reduce the likelihood of these outcomes.

Type 1 diabetes occurs in children and young adults (and in rare cases older adults), and was previously known as juvenile diabetes. It accounts for approximately 10% of diabetes diagnosed in developed countries. In type 1 diabetes, the body does not produce insulin. Type 1 diabetes is believed to be caused by an autoimmune condition that destroys the pancreatic cells that produce insulin. Type 2 diabetes, which accounts for about 85% to 90% of all diabetes in developed countries, occurs when the pancreas does not produce enough insulin (insulin insufficiency), or when the body cannot use the produced insulin (insulin resistance) – glucose remains in the bloodstream instead of getting into the cells and the pancreas continues to make more and more insulin.

Constant high levels of insulin in the bloodstream can lead to metabolic syndrome X. Metabolic syndrome X is a group of metabolic disorders that include insulin resistance, hypertension, abnormalities of blood clotting, low HDL and high LDL cholesterol levels, high triglyceride levels and abdominal obesity (Hansen et al. 1999). The metabolic abnormalities associated with metabolic syndrome X can lead to cardiovascular disease and premature death. Although the tendency for insulin resistance is inherited, the actual development of metabolic syndrome X (like type 2 diabetes) can be prevented with exercise and weight loss. Weight and physical activity affect the body's ability to use insulin. Insulin resistance is higher among people who are overweight, and increasing exercise levels increases insulin sensitivity and lowers the insulin levels in the bloodstream, reducing the risk of heart disease and stroke.

Young people once suffered only from type 1 diabetes – it remains true that 98% of diabetes in young people is type 1 (Handelsman & Jackson 1999). But type 2 diabetes, which is usually seen only in adults, is increasingly being diagnosed in young people (Ehtisham et al. 2001; Fagot-Campagna et al. 2001). The emergence of type 2 diabetes in young people has been linked to lifestyle factors such as a lack of exercise and obesity (American Diabetes Association 2000). If the current levels of obesity and lack of physical activity continue, the prevalence of type 2 diabetes in Australian young people – especially those of Aboriginal and Torres Strait Islander descent and some migrant groups – can be expected to increase over the next decade.

Information for this section is derived from the National Diabetes Register, ABS NHS surveys, the AIHW National Hospital Morbidity Database and the AIHW Mortality Database.

Incidence and prevalence

National estimates of the prevalence of diabetes based on measured blood glucose levels are available only for adults aged 25 years and over from the Australian Diabetes, Obesity and Lifestyle Study (AusDiab). The proposed Australian Health Measurement Survey will provide data on blood glucose levels among younger people.

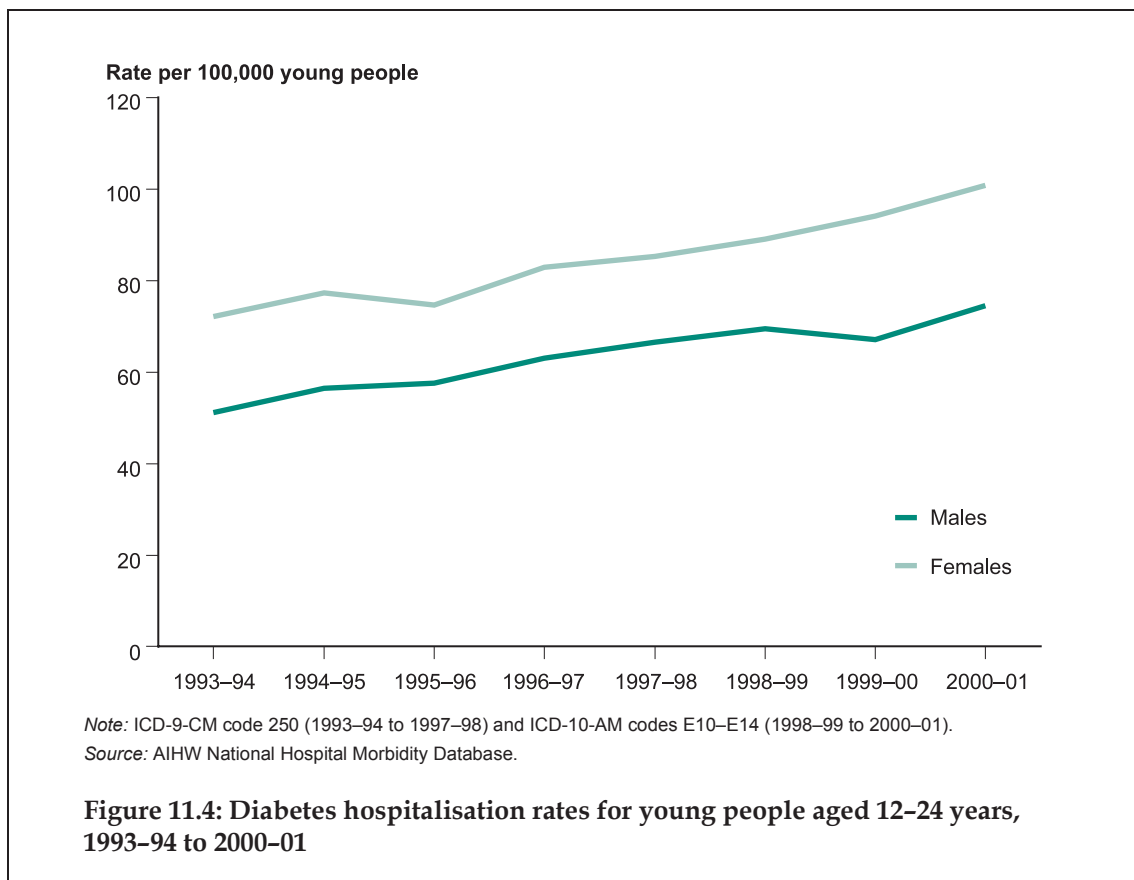
However, data on the incidence of type 1 diabetes are available from the National Diabetes Register. In addition, the ABS NHS provide information on the prevalence of self-reported diabetes.

In 2000, the National Diabetes Register listed 743 children aged 0–14 years with type 1 diabetes, of whom 313 were aged 10–14 years. The incidence rate for young males aged 10–14 years was 24.3 per 100,000, and for young females 22.9 per 100,000.

The prevalence rate for type 1 diabetes in young people aged 15–24 years in 2001 was 0.4%, and for type 2 diabetes it was 0.1%.¹

Hospitalisations

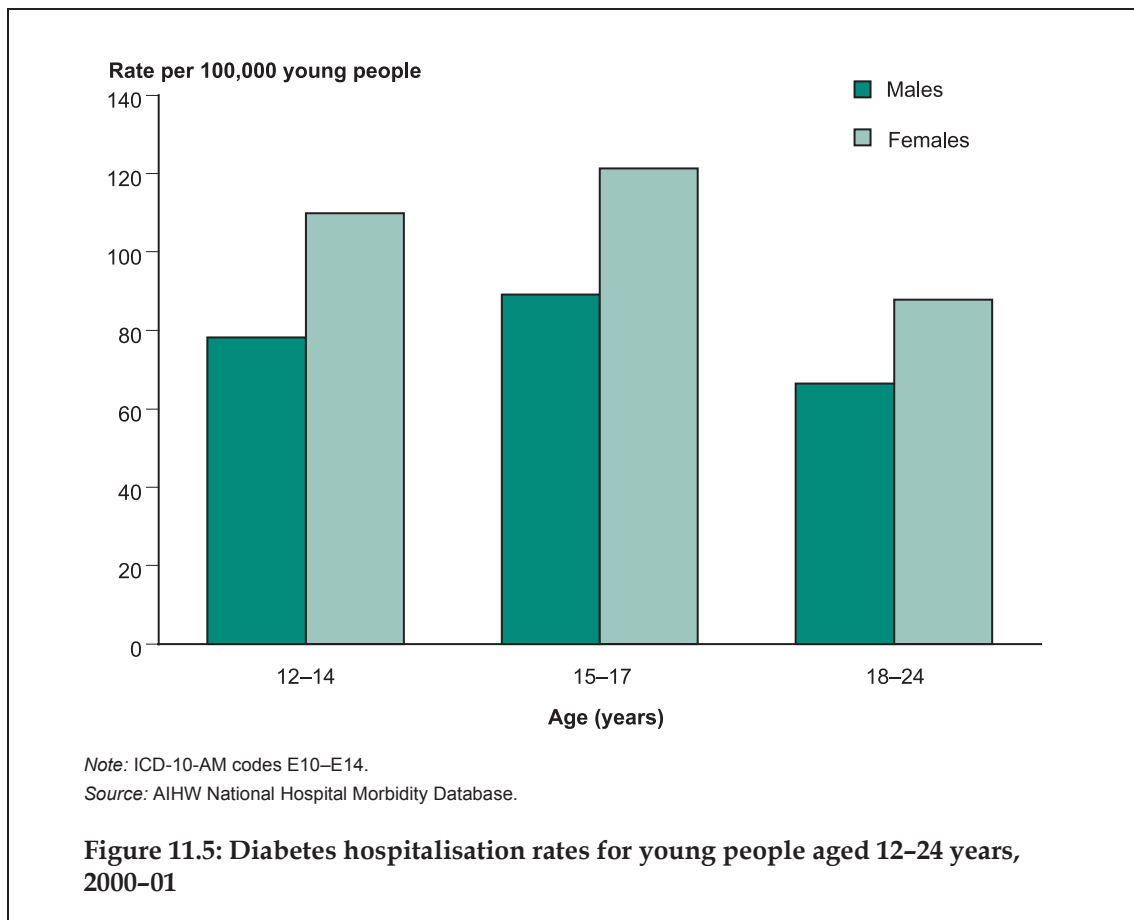
Hospitalisation rates for diabetes in young people have been increasing over the period 1993–94 to 2000–01.



- Hospitalisation rates for both males and females aged 12–24 years increased between 1993–94 and 2000–01, from 51 to 74 per 100,000 males (an increase of 46%), and from 72 to 101 per 100,000 females (an increase of 40%).
- In 2000–01, the hospitalisation rate for females for diabetes was 1.4 times that for males.

Most of the hospitalisations presented in Figure 11.4 were for type 1 diabetes. The self-reported prevalence of type 1 diabetes did not increase in the 1990s, so the increased hospitalisation rate may either reflect an increase in the true prevalence or be due to poor management of the disease.

1. These data have high standard errors and should be read with caution.



- In 2000–01, diabetes hospitalisation rates were highest for those aged 15–17 years and lowest for those aged 18–24 years. Most of the hospitalisations (95%) were for type 1 diabetes.
- Rates were higher for females than males in all age groups and 1.4 times the rates for males overall.

Deaths

Deaths from diabetes in the age group 12–24 years are uncommon. However, diabetes is often a contributor to death from other causes. Diabetes is twice as likely to be regarded as an associated cause of death, rather than the underlying cause (AIHW 2002a).

In 2001, there were 5 deaths of young people with an underlying cause listed as diabetes. All but one of the deaths were of females, and all were of young people aged 15–24 years.

Cancer

Cancer is a group of diseases in which cells become abnormal, grow in an uncontrolled way and spread to other parts of the body in a process known as metastasis. Cancers can develop in most types of cells in the body and are usually classified according to their organ or tissue of origin and histological features. Different types of cancers vary in their signs and symptoms, how fast they grow, how they spread and how they react to different treatments.

Children and young people can get cancer in the same parts of the body as adults, but cancers in adolescents tend to differ from those observed in adults in appearance, site of origin and response to treatment. Melanoma and Hodgkin's disease are the most common cancers among young people.

Cancer in young people remains relatively uncommon. In 1999 in Australia, approximately 900 young people aged 12–24 years were diagnosed with cancer. For every 100,000 young people, only between 20 and 30 develop cancer every year. The cause of most of these cancers remains unknown. Chromosomal and genetic abnormalities explain a small percentage of cancer cases. A number of environmental factors, such as exposure to chemicals, radiation or maternal infection, have also been linked with cancer in adolescence; however, it has proven difficult to substantiate the associations between these factors and cancer in young people (National Cancer Institute 2002). This is partly because cancer in young people is rare, and partly because it is difficult to identify past exposure to possible environmental causes.

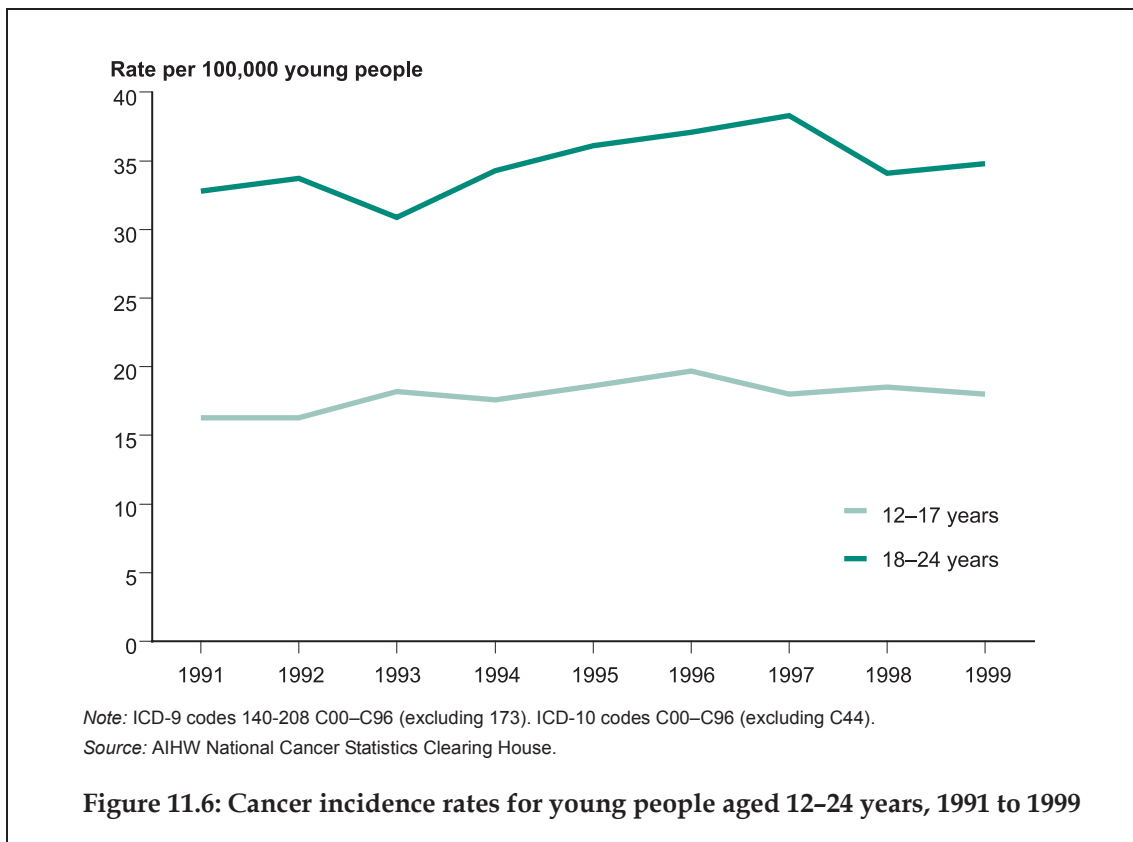
Importantly, however, exposure to some cancer-causing agents during childhood or adolescence is clearly associated with a number of cancers that develop in adulthood. For example, skin cancer (both melanoma and other skin cancers) is strongly linked to exposure to UV radiation (sunshine) during childhood and adolescence (Gies et al. 1998; O'Riordan et al. 1999). Similarly, tobacco smoking during adolescence and early adulthood is strongly linked to lung cancer and cardiovascular disease later in life.

The National Health and Medical Research Council (NHMRC) recommends education programs that target primary prevention behaviours among young people. For example to reduce the incidence of skin cancer, the NHMRC recommends staying out of the sun during the hottest part of the day, wearing protective clothing including hats, and applying sunscreen correctly. Strategies to reduce smoking among children and adolescents include legislation to restrict people younger than 18 years from purchasing tobacco, the implementation of smoke-free areas in workplaces and many public areas, taxes on tobacco products, prohibiting tobacco advertising, the provision of telephone helplines to stop smoking, and subsidies for medication that help people stop smoking.

This section presents a summary of cancers in adolescence and early adulthood and cancer survival rates. Information on cancer incidence is derived from data maintained by the National Cancer Statistics Clearing House (NCSCH) at the AIHW. The NCSCH collects statistics produced by the states and territories cancer registries on the incidence of all cancers, excluding non-melanocytic skin cancer.¹

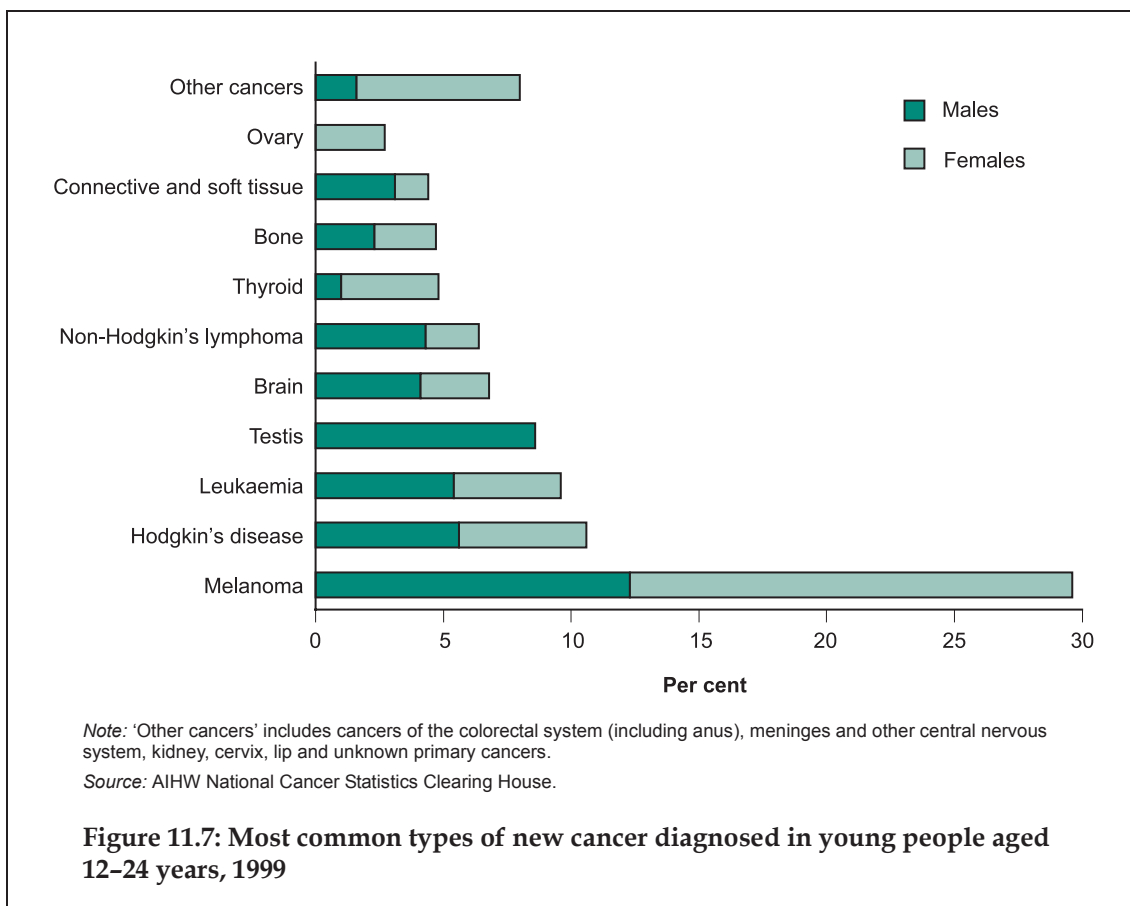
1. Non-melanocytic skin cancers (ICD-9 173) are by far the biggest category of all skin cancers. Because of practical difficulties, many of these are not required to be notified under legislation. This is because many of these cancers are treated in general practice and other non-specialist clinics.

Incidence



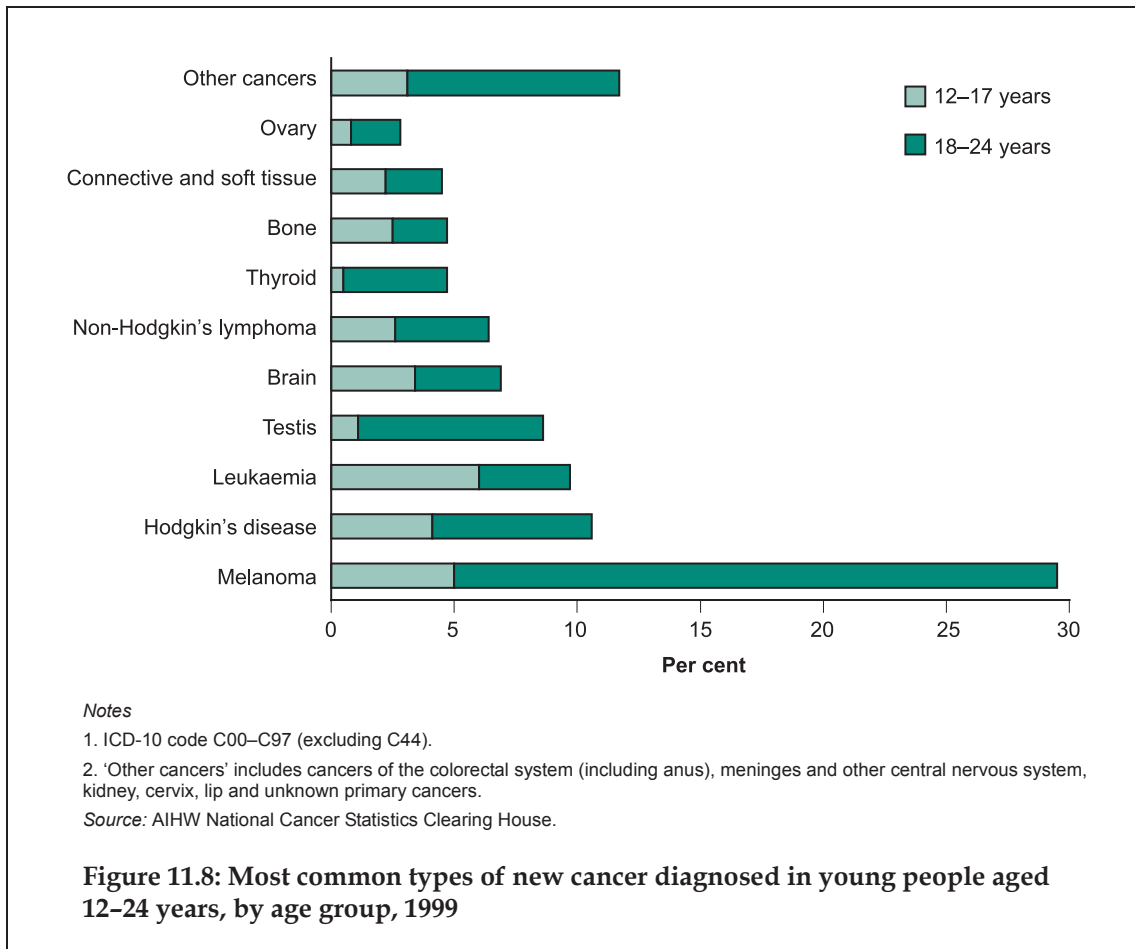
- Between 1991 and 1999, there were 8,476 new cancers diagnosed in young people aged 12-24 years, 52% of which were reported in males.
- Between 1991 and 1999, annual incidence rates ranged from 25.4 to 29.3 per 100,000 young people aged 12-24 years, with the rates being slightly higher for males than females.
- The cancer incidence rate was twice as high for those aged 18-24 years as those aged 12-17 years.

The distribution of the most common types of cancer among males and females aged 12-24 years is shown in Figure 11.7.

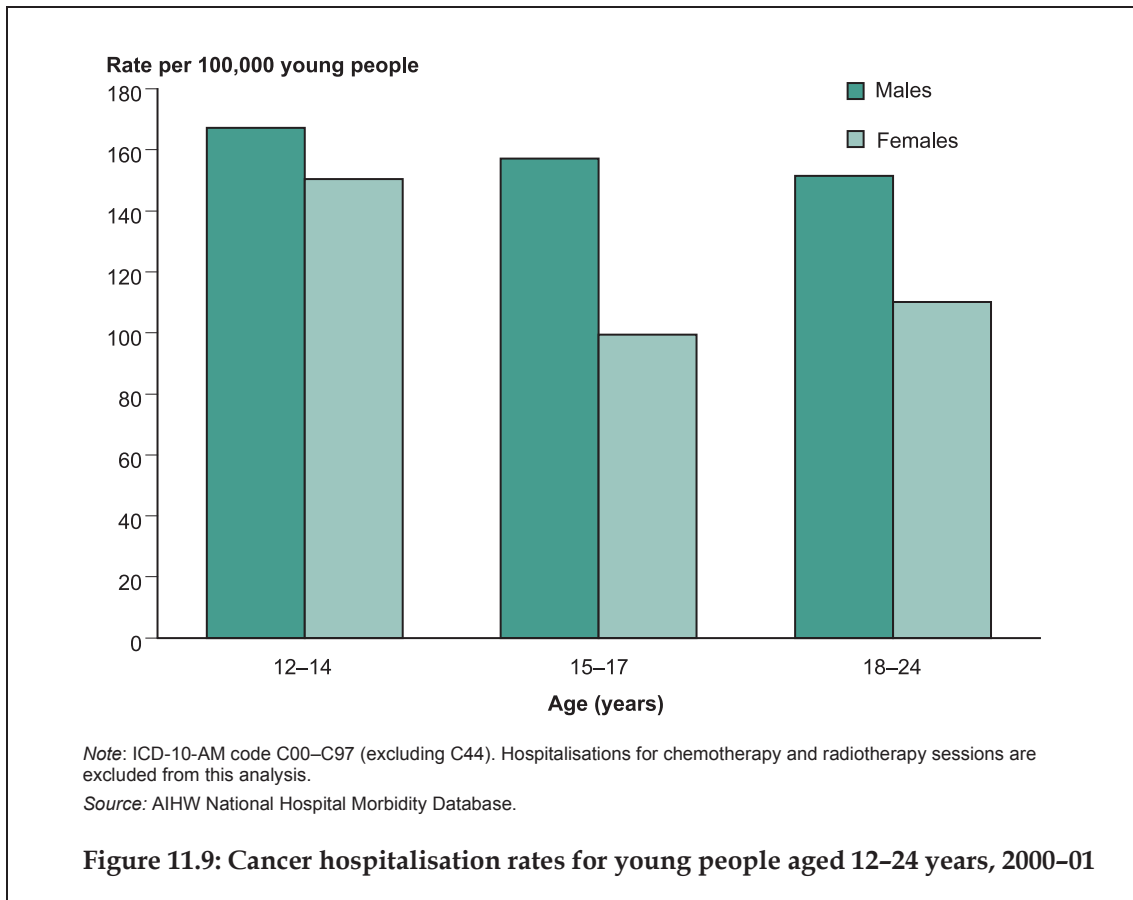


- In 1999, the most common types of cancer among young people aged 12-24 years were melanoma (30% of all cancers diagnosed), Hodgkin's disease (11%), leukaemia (10%), cancer of the testis (9%) and cancer of the brain (7%).
- Melanoma and cancer of the thyroid were more common among females, and cancers of the connective and soft tissues, non-Hodgkin's lymphoma and brain tumours were more common in males.

The distribution of cancer types by age group is shown in Figure 11.8.



- In 1999, there were 921 new cancers diagnosed in young people aged 12–24 years. Over two-thirds of these cancers (633 or 69%) were diagnosed in people age 18–24 years.
- Melanoma (which was the cause of 28% of all new cancers), cancers of the testis, thyroid gland and ovaries occurred more frequently among those aged 18–24 years whereas leukaemia, and bone cancers, occurred more frequently among young people aged 12–17 years.



- In 2000-01, there were 4,870 hospitalisations of young people for cancer. Of these hospitalisations, 26%, 22% and 52% were for young people aged 12-14, 15-17 and 18-24 years respectively. Just over half (58%) were males.
- The hospitalisation rate was higher for males (160 per 100,000) than females (122 per 100,000).
- The hospitalisation rate was slightly higher among those aged 12-14 years than among those 15 years and older.

Cancer survival rate

Medical treatment is often successful if cancer is detected early. The risk of death due to certain cancers can be reduced through intensive monitoring and early detection and treatment. Significant increases in survival rates have been reported for many types of cancers over the last two decades in association with clinical trials and the development of new treatments (National Cancer Institute 2002).

Survival after a diagnosis of cancer can be used to assess the effectiveness of early cancer detection and treatment. Table 11.3 looks at the 5-year relative survival rates for all cancers among young people aged 10-24 years.

Between 1991 and 2001, although the incidence of young people with cancer increased slightly, death rates from cancer declined significantly and survival rates have therefore increased for most cancers affecting young people.

Table 11.3: Number of new cases and 5-year survival rates for all cancers among young people aged 10–24 years, 1982–86 to 1992–97

Sex	Age (years)	1982–86		1987–91		1992–97	
		Number diagnosed with cancer	Relative survival	Number diagnosed with cancer	Relative survival	Number diagnosed with cancer	Relative survival
Males	10–14	381	61.9	380	74.1	535	76.9
	15–19	721	70.7	866	76.9	1,019	78.2
	20–24	1,134	75.4	1,171	82.8	1,640	84.4
	10–24	2,236	71.6	2,417	79.3	3,194	81.2
Females	10–14	284	69.8	338	74.4	440	78.1
	15–19	579	80.0	683	82.8	832	83.4
	20–24	1,096	85.3	1,212	86.7	1,583	87.8
	10–24	1,959	81.5	2,233	83.6	2,855	85.0

Source: AIHW National Cancer Statistics Clearing House.

- Five-year survival rates for all cancers in young people aged 10–24 years increased between 1982–86 and 1992–97, from 77% to 83%.
- The improvement in survival rates was highest for males aged 10–14 and lowest for females aged 20–24 years. However, survival rates were highest (over 85%) for females aged 20–24 over the whole period. Relatively high improvements in survival rates were also experienced for males aged 20–24 years and females aged 10–14 years.

The relative 5-year survival rates between the years 1982–86 and 1992–97 for males and females aged 10–24 years are shown in Table 11.4.

Table 11.4: Relative survival rates for types of cancers affecting young people aged 10–24 years between 1982–87 and 1992–97 (per cent)

Cancer type	Males		Females	
	1982–86	1992–97	1982–86	1992–97
Bone cancer	50.3	55.7	61.6	66.5
Connective and soft tissue	64.2	67.9	69.1	76.0
Malignant melanoma	87.3	96.9	96.5	97.6
Cancer of the testis	88.9	94.4	—	—
Brain	66.4	69.1	60.9	68.6
Ovary	—	—	82.1	85.1
Thyroid	100.7	98.5	97.6	99.7
Non-Hodgkin's lymphoma	64.9	69.9	66.4	71.8
Hodgkin's disease	85.5	95.7	88.6	93.1
Leukaemia	37.5	50.7	43.5	56.6

Note: ICD-9 codes: lip cancer (140) colorectal cancer (153, 154), bone cancer (170), connective and soft tissue (171), malignant melanoma (172), female breast cancer (174), cancer of the cervix (180), cancer of the ovary (183), cancer of the testis (186), kidney (189), brain (191), meninges and other central nervous system (192), thyroid (193), unknown primary (195–199, 165, 159), non-Hodgkin's disease (200, 202), Hodgkin's disease (201), leukaemia (204–208).

Source: AIHW National Cancer Statistics Clearing House.

- In 1997, more than 90% of young people with thyroid cancer, malignant melanoma, cancer of the testis and Hodgkin's disease survived 5 years after their diagnosis with cancer.
- Those with brain cancer, bone cancer or leukaemia had a less than 70% chance of surviving 5 years from their diagnosis.
- Between 1982 and 1997, the greatest increases in survival rates were for young people with leukaemia, bone cancer, connective and soft tissue cancers, and melanomas.

Deaths

In 2001, cancer was the second leading cause of death of young people aged 12–24 years and was responsible for 9% of all deaths in this age group – 144 deaths (4.2 per 100,000 young people). The majority of these deaths were in the age group 18–24 years (63%) and 60% of the deaths were of males.

Cervical cancer and the Pap smear

Cervical cancer is one of the most preventable and curable of all cancers. It is the eighth most common cancer in Australian women and used to be a leading cause of death among women in developed countries. The decline in mortality from cervical cancer has been largely due to the implementation of a national cervical screening program using the Pap smear (Farnsworth & Mitchell 2003). The Pap smear examines cells in the cervix for abnormalities. Early detection and treatment can prevent progression to cervical cancer. It has been estimated that regular screening with the Pap smear can prevent up to 90% of cervical cancer (AHMAC 1991). Zardawi (2002) reported that in New South Wales between 1992 and 1999, the incidence of and mortality from cervical cancer fell by 49% and 67%, respectively.

Each state and territory of Australia has a Pap smear registry. The functions of the registries include reminding women to attend for screening, the follow-up of women with abnormal smears, keeping a record of women's cervical screening histories, assisting laboratories in quality assurance programs, and monitoring participation. The data from these registries are collated and published by AIHW.

The level of participation in cervical screening among women aged 20–24 years is shown in Table 11.5.

Table 11.5: Number and proportion of women aged 20–24 years participating in the National Cervical Screening Program, 1996–97 to 1999–00

	Number	Per cent
1996–97	274,800	49.9
1997–98	274,803	50.6
1998–99	279,874	52.0
1999–00	328,346	49.5

Source: AIHW, various years.

- Around 50% of women aged 20–24 years in Australia participated in the Pap smear cervical screening program. A similar proportion reported that they had a Pap smear – 53% of those aged 18–24 years (ABS NHS 2001, unpublished data).
- The participation rate of young women aged 20–24 years in the Pap smear program ranged from 50% in 1996–97 to 49.5% in 1999–00.
- Although participation rates appear to be low, not all women in this age group are sexually active. Women are advised to start having Pap smears between the ages of 18 and 20 years, or one or two years after first sexual intercourse, whichever is later.

In 1999, there were 7 cases of cervical cancer among women aged 18–24 years, a rate of 0.7 per 100,000. The 5-year relative survival rate from cervical cancer increased from 86% in 1982–86 to 90% in 1992–97.

