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Australia's YOUNG PEOPLE 2003

Their health and wellbeing

Australia's young people: their health and wellbeing 2003

Australian Institute of Health and Welfare
Canberra

AIHW Cat. No. PHE 50

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ISBN 1 74024 182 7

Suggested citation
AIHW. Australia's young people: their health and wellbeing 2003. AIHW Cat. No. PHE 50. Canberra: AIHW.

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The Australian Institute of Health and Welfare is Australia's national health and welfare statistics and information agency. The Institute's mission is better health and wellbeing for Australians through better health and welfare statistics and information.

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Published by the Australian Institute of Health and Welfare
Printed by Pirion Printing

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Preface

In June 2001 there were 3.5 million young people aged 12–24 years in Australia, constituting approximately 18% of the total population. The proportion of young people in the population has been decreasing over the last few decades and in 2001 was the lowest ever observed. This decrease is largely the result of a decline in fertility that began in the 1970s.

The health, behaviour and attitudes of young people today are crucial to the health of the future Australia. While young people enjoy good health relative to other age groups, they are particularly vulnerable to a number of conditions. Motor vehicle accidents, suicide, mental health and behavioural problems, teenage pregnancy and substance misuse have become risks to many young people. In addition, the health and wellbeing of young Aboriginal and Torres Strait Islander people remains poor, compared with other young people. It is therefore important that we continue to monitor and report on trends in youth health and wellbeing in order to achieve health gains for Australia's young people.

It is now accepted that social and environmental conditions are also important determinants of health and that behaviour and attitudes can impact on health status. In addition to examining health outcomes, this report also describes behaviours and attitudes that affect health status and examines the broader determinants of health and their impact on health status.

Australia's Young People: Their Health and Wellbeing 2003 is the second national report on the health and wellbeing of Australian young people. The report brings together information from a wide range of sources to reveal a national picture of health status and determinants of health of young people. The cooperation of many information providers is gratefully acknowledged.

The structure of Australia's Young People: Their Health and Wellbeing 2003 report closely follows that of the National Health Performance framework. At the centre of the framework is a set of indicators designed to facilitate concise, comprehensive and balanced judgement with regard to changes in health status and determinants of health.

Production of this report was assisted by funding from the Australian Government Department of Health and Ageing.

Richard Madden
Director

Acknowledgments

Many people contributed to this report. Their time and commitment are greatly appreciated.

The following people from the AIHW and AIHW collaborating units refereed various sections of the report: Mark Cooper-Stanbury, Anne Broadbent, Gail Weaving, Susie Kelly, Ros Madden, Joanne Davies and Xinyang Wen (AIHW), James Harrison (AIHW National Injury Surveillance Unit), Helena Britt (AIHW General Practice Statistics and Classification Unit), Kaye Roberts-Thomson (AIHW Dental Research Unit) and Margaret Burgess and Peter McIntyre (National Center for Immunisation Research and Surveillance of Vaccine-Preventable Diseases).

Referees from other organisations were Darren Evans and the Health section at the Australian Bureau of Statistics (ABS), George Patton (Centre for Adolescent Health, University of Melbourne), Di Hetzel (Public Health Information Development Unit, University of Adelaide), Kate Freiberg (Key Centre for Ethics, Law, Justice and Governance, Griffith University), Yin Paradies (Menzies School of Health Research), Michael Booth (School of Paediatrics and Child Health, University of Sydney), Allan Carmichael (Faculty of Health Science, University of Tasmania), and Peter McDonald (Demography and Sociology Program, Australian National University).

Staff from the following units at AIHW provided special data for the report: Cardiovascular Disease and Diabetes Monitoring Unit, Disability Services Unit, Health Monitoring and Development Unit, Health Registers and Cancer Monitoring Unit, Population Health Unit and Population Health Data and Information Services Unit. Staff at AIHW collaborating units — Knute Carter (AIHW Dental Statistics and Research Unit) and Ying Pan (AIHW General Practice Statistics and Classification Unit)— also provided data for the report. Data were also provided by the following organisations: the Centre for Behavioural Research in Cancer, Anti-Cancer Council of Victoria (Vicki White), Health Insurance Commission (Ross Saunders), University of Adelaide (Brian Graetz) and Australian Sports Commission (Ian Ford).

Staff from the Australian Government Department of Health and Ageing also provided valuable comments on different sections of the report. Special thanks go to Audrey Graviou and Eileen Baker for coordinating the responses from the department. Staff from the Department of Family and Community Services and Department of Education, Science and Training are also to be thanked for their comments on Part V of the report.

Thanks are also due to Lauren Di Salvia (AIHW, Media and publishing unit) for doing the graphics for the report, and staff of the AIHW Hospitals and Mental Health Services Unit for advice on hospital data.

We also wish to thank Ching Choi, Helen Moyle, Jenny Hargreaves, Diane Gibson and Richard Madden, who read and provided valuable comments on the entire report.

Summary

Youth is the transition from child to adult. It is a period of great and rapid emotional, physical and intellectual change. Because it is a time of transition, it is also a time when individuals can experience significant fluctuations in health and wellbeing. This report documents the changes in health and wellbeing of young people during their transition from childhood to young adulthood. This report shows that the majority of Australia's youth experience very good mental and physical health.

What does Australia's young population look like?

- At 30 June 2001, there were 3.5 million young people aged 12–24 years—1.8 million males and 1.7 million females. They make up 18% of the total Australian population.
- In 2001, nearly 70% of young people aged 15–24 years lived in major cities, another 19% lived in inner regional areas and around 12% lived in outer regional and remote areas of Australia.
- At 30 June 2001, the number of Aboriginal and Torres Strait Islander young people aged 12–24 years was estimated to be 116,698—about 3% of the total number of young people in Australia.
- The majority of young people (62%) were living with their parents. More males than females were living with their parents. In 2000, 91% of males and 85% of females aged 15–19 years were living at home. The corresponding proportions for those aged 20–24 years were 52% and 39% respectively.
- Around 11% of young people were either married or living in a de facto relationship. Marriage rates for young people under 25 years declined considerably between 1976 and 2000, partly because of an increase in de facto relationships.
- In Australia in 2000 the Year 12 completion rate was about 67%, with a higher proportion of females completing Year 12 (74%) than males (61%).
- Educational attainment is the highest school or post-school educational qualification attained. In 2000, 76 per cent of 19-year-olds had completed year 12 or obtained a post-school qualification and 44 per cent of 24-year-olds had attained a skilled vocational qualification or higher.
- Between 1982 and 2002 the proportion of young people in full-time employment decreased from 40% to 16% for young people aged 15–19 years and from 65% to 50% for young people 20–24 years. Over the same period the proportion of young people in part time employment increased from 12% to 32% for young people aged 15–19 years and from 8% to 23% for those aged 20–24 years. Many young people working part time were also in full-time education.

Most young people in Australia feel they are in good health and have a good quality of life

- In 2001, 76% of young Australians aged between 15–17 years and 59% of those aged between 18–24 years rated their health as 'excellent' or 'very good'.
- Completion of schooling directly influenced self-assessed health; 63% of those who had completed Year 12 rated their health as 'excellent' or 'very good' compared to 44% of those who had completed only Year 9.
- A higher proportion of young people who were employed assessed their health as 'excellent' or 'very good' than those who were unemployed.
- Just over 80% of young people were 'delighted', 'pleased' or 'mostly satisfied' with their quality of life; only 4% saw their lives as 'unsatisfactory', 'unhappy' or 'terrible'.
- A greater proportion of young people who were not satisfied with their quality of life had not completed schooling beyond Year 9.

And death rates declined…

- Of all Australians who died in 2001, only 1% (1,637 deaths) were young people aged 12–24 years. Of these 74% were males and 26% were females. Most of the deaths among young people were of those aged 18–24 years.
- Death rates for both males and females aged 12–24 years declined between 1982 and 2001—by 43% for males (from 120.4 to 68.3 per 100,0000) and 34% for females (from 38.4 to 25.4 per 100,000). The difference in death rates between males and females narrowed from 3:1 to 2.7:1.

Injury is still the main cause of death among young people but deaths due to transport accidents and suicide are decreasing

- Injury and poisoning were the cause of just over 70% of all deaths in people aged 12–24 years in 2001 (1,170 deaths); almost 80% of those who died of these causes were males. The next highest cause of death in young people was cancer (144 deaths), which caused 9% of deaths.
- Of deaths caused by injury and poisoning, 46% (or 534 deaths) were caused by transport accidents and 30% (349 deaths) were suicide. A further 9% (107 deaths) were due to accidental poisoning, some of which were drug overdoses. Only 1% of deaths among young people aged 15–24 in 2001 were recorded as caused by drug dependency. The death rate from drug dependency in young people peaked in 1998 at 9 per 100,000 and fell to around 1 per 100,000 in 2001.
- Transport accident deaths in young people of both sexes decreased by 62% between 1982 and 2001 from 41.0 to 15.4 deaths per 100,000 young people. Between 1982 and 2001, males aged 12–24 years died in transport accidents at 3 to 4 times the rate of females.
- The suicide rate for young people—which had been increasing in Australia—reached a peak in 1997 with a rate of 15.2 deaths per 100,000 young people. From 1997 however, the death rate from suicide decreased to 10.1 deaths per 100,000 young people in 2001.
- Males aged 12–24 years died from suicide at around 4 to 5 times the rate of females. However, females aged 12–24 years were hospitalised for intentional self-harm at twice the rate of males.

What puts young people in hospital?

- Of all hospitalisations in 2000–01, 533,108, or 9%, were of young people aged 12–24 years.
- The most common cause of hospitalisation in young people was pregnancy and childbirth. These were the reason for 19% of all hospitalisations for young people aged 12–24 years. The next most common cause of hospitalisation was injury to young males. Injury to males was 15% of all hospitalisation for young people aged 12–24 years.
- Other common causes for young people to be hospitalised were impacted wisdom teeth and mental and behavioural disorders. Mental disorders were the reason for almost 9% of all hospitalisations for young people aged 12–24 years. Young males and females were hospitalised for mental disorders at approximately equal rates.

Why do young people visit the doctor?

- Respiratory conditions, including colds, asthma and bronchitis were the most frequent cause of young people visiting a general practitioner in 2001–02. Other frequent causes were for contraception and for sporting injuries, tonsillitis and acne.
- During 2001–02, general practitioners prescribed antibiotics to young people in 20 out of every 100 consultations. Other common prescriptions were for neurological problems, asthma and bronchitis medications and contraceptives.

What are the most important infectious diseases in young people in Australia?

- The most common infectious diseases in young people aged 12–24 years in 2001 were pertussis (2,996 notifications), followed by hepatitis C (326 notifications), meningococcal (215 notifications), hepatitis B (161 notifications), rubella (140 notifications) and hepatitis A (101 notifications).
- The infectious diseases that caused the greatest number of hospitalisations among young people in 2000–01 were meningococcal, hepatitis C and hepatitis B.
- Between 1991 and 2001 the greatest increase in notifications was for pertussis, hepatitis C and meningococcal.

The mental health status of Australia's young people

- In 2001, 54% of young people aged 18–24 years, exhibited low levels of psychological distress, as measured by the Kessler 10 scale.
- Less than 3% of males and 6% of females were found to have very high levels of psychological distress. High levels of psychological distress were associated with being unemployed or not completing school beyond Year 9.
- Hospitalisation of young people for mental disorders increased between 1996–97 and 2000–01. Rates were highest for young people aged 18–24 years (1,673 per 100,000 young people) and were over 3 times the rates for young people aged 12–14 years (464 per 100,0000). In 2000–01 there were around 43,500 hospitalisations of young people with mental and behavioural disorders.
- The most common causes of hospitalisation for mental disorders among young people aged 12–24 years were depression (6,264 hospitalisations), schizophrenia (5,514 hospitalisations), reaction to severe stress (4,073 hospitalisations) and eating disorders (3,701 hospitalisations). Most eating disorders hospitalisations were for females and most schizophrenia hospitalisations were for males.

What is the 'teenage' pregnancy rate?

- The birth rate for young women aged 15–19 years declined from 55 per 1,000 in 1971 to 20 per 1,000 in 1988 and has been fairly stable since then.
- However, not all pregnancies lead to a live birth. In South Australia, data from the pregnancy termination register shows that while the number of teenage pregnancies declined in the 1970s and 1980s, abortion as an outcome of teenage pregnancies increased from 21% in 1970–1974 to 54% in 1995–1999.

Sexually transmitted infections (STIs) are on the rise...

- An increasing number of young Australians are being infected with sexually transmitted diseases. The most common STIs among young people were chlamydia and gonorrhoea.
- In 2001, 11,859 Australian young people were reported as being infected with chlamydia. It is believed many chlamydia infections go undetected because symptoms are mild. The rate of notified chlamydia infections increased by more than 3 times between 1991 and 2001 from 98 to 338 cases per 100,000 young people.
- In 2001, a total of 2,213 young Australians were infected with gonorrhoea. The infection rate for gonorrhoea increased 1.5 times between 1991 and 2001 from 47.4 to 71.6 cases per 100,000 young people.
- In 2001, there were 382 infections with syphilis among young people. The rate of infections with syphilis decreased by 56% between 1991 and 2001 from 25 per 100,000 young people to 11 per 100,000.

What are the patterns of drug use among young people and what do they think about them?

- A household survey in 2001 found that among those aged 18–24 years, 56% of males and 59% of females had never smoked. Among young people aged 14–17 years, around 82% had never smoked.
- Twenty per cent of males and 17% of females aged 14–17 years said they were 'regular' drinkers of alcohol. Around 35% of young people in this age group were assessed to be drinking at a level that put them at a high risk of death or injury in the short term. Among young people aged 18–24 years, 57% of males and 42% of females were regular drinkers. In this age group around 64% drank at levels that were risky or high risk for short-term harm.
- Among young people aged 14–17 years, 21% said they had used cannabis, 1% inhalants, 4% amphetamines, 3% ecstasy, 0.5% injecting drugs, and 6% some other illicit drug, in the previous 12 months. In comparison, in 1998 the proportion using cannabis was 31%, and the proportion using ecstasy was 0.8%. Among those aged 18–24 years, 40% of males and 26% of females used cannabis. Use of cannabis in this age group declined significantly between 1998 and 2001 (32% in 2001 compared with 42% in 1998). Amphetamines were used by 13% of young people aged 18–24 years and ecstasy was used by 12%. In 2001, injecting drugs were used by slightly less than 2% of young people aged 18–24 years.
- Young Australians aged 14–24 years think that heroin and cannabis are 'problem' drugs, but that alcohol, amphetamines, cocaine, tobacco and ecstasy are not. The most socially 'acceptable' drugs were thought to be alcohol, tobacco and cannabis.

How do Aboriginal and Torres Strait Islander young people compare with other Australians?

- In 2001 there were an estimated 116,698 Indigenous young people aged 12–24 years in Australia, 26% of the total Indigenous population. The majority of these young people lived in New South Wales or Queensland.
- Indigenous young people had much lower education participation rates than non-Indigenous young people. In 2001, 29% of Indigenous males and 38% of Indigenous females aged 19 years were still at school or had completed Year 12 compared to 68% of other Australian males and 78% of other Australian females.
- In 2001, Aboriginal and Torres Strait Islander young people aged 15–24 years were more likely to be unemployed than other Australian young people—13% compared with 9%. Only about one third of Indigenous young people (34%) were employed compared with more than half of other Australian young people. Around one fifth of Indigenous young people who were employed were in community development employment programs (CDEP).
- The overall death rates for Indigenous people aged 12–24 years were higher than for other young Australians. For young males death rates were 2.4 times higher and for young females they were 2.8 times higher.
- The highest proportion of deaths for Indigenous young people was due to injury and poisoning (70% or 203 deaths between 1999 and 2001). Of all deaths due to injury and poisoning, suicide, transport accidents, assault and poisoning were the major causes of death.

- In 2000–01, there were 23,564 hospitalisations of Aboriginal and Torres Strait Islander young people aged 12–24 years. Hospitalisation rates for Indigenous young people were 1.4 times higher than for other young Australians. The most common reasons for hospitalisation were pregnancy and childbirth, injury and mental and behavioural disorders. Indigenous people, however, are underidentified in hospitalisation statistics and the actual rate of hospitalisation for Indigenous young people are likely to be substantially higher.
- In 2001, more than half of Indigenous young people aged 18–24 who were surveyed were current daily smokers, compared with 28% of other Australian young people. More than one quarter of Indigenous young people drank at levels considered to be high risk over the long term compared with 14% of other Australian young people. Just over 38% used an illicit drug in the last 12 months compared with 32% of other Australian young people.

Part I: Background information

Chapter 1. Introduction and data issues

Chapter 2. Population characteristics

1. Introduction and data issues

Youth is a time of rapid emotional, physical and intellectual change. For young people living in Australia, the transition to adulthood is made even more complex by the economic, structural and social context of Australian society. Young people living in Australia today are members of a diverse population. Their experiences vary according to the type of families they belong to, the social and cultural context in which they have been raised, the educational and employment opportunities they are offered and where they live.

A number of social and economic changes over recent decades have also played a role in shaping the experience of young people today. These include greater participation in the labour force by women, decreasing fertility rates, smaller families, an increase in the divorce rate, more one-parent and blended families and an increasingly multicultural society (Sercombe et. al. 2002, Weston et al. 2001). Other changes that relate directly to young people include greater and longer participation in full time education, a shift from full time permanent employment to temporary, casual and part time employment and the later age of first marriage. Outcomes of these changes include, young people living in the parental home for longer, decreased job security and later family formation.

Understanding the influence of these broader social issues on the health and wellbeing of young people is crucial to formulate appropriate, effective policies and interventions to achieve the best possible health and wellbeing outcomes for young people. This report, the second national statistical report on the health and wellbeing of Australian young people, aims to provide the reader with information about the current health and wellbeing status of young people as well as illustrate the many factors that influence health and wellbeing.

This second report is based on the new National Youth Health Information Framework (Figure 1.1). During 2002, in consultation with the National Child and Youth Health Advisory Group, the previous National Youth Health Information Framework was extensively reviewed and modified to link it to the National Health Performance framework endorsed by the Australian Health Ministers' Advisory Council (AHMAC). A set of 102 indicators with which to measure trends in health status, determinants of health and the use and delivery of services were developed by the Australian Institute of Health and Welfare (AIHW) and were endorsed by the advisory group.

At the core of the information framework is a set of indicators measuring the health and wellbeing of young people. An indicator is a summary statistic, which facilitates concise, comprehensive and balanced judgments about a health condition, a determinant of health or progress towards a healthier society.

The National Health Performance Committee (NHPC) has developed a set of criteria to guide the definition and development of indicators (NHPC 2001: 19). Indicators should:

- be worth measuring— the indicators represent an important and salient aspect of the public's health or the performance of the health system
- be measurable for diverse populations— the indicators are valid and reliable for the general population and diverse populations (i.e. Aboriginal and Torres Strait Islander peoples, rural/urban dwellers, people with different socioeconomic circumstances, etc.)
- be understood by people who need to act— people who need to act on their own behalf or on behalf of others should be able to readily comprehend the indicators and what can be done to improve health

- galvanise action— the indicators are of such a nature that action can be taken at the national, state, local or community level by individuals, organised groups and public and private agencies
- be relevant to policy and practice— actions that can lead to improvement are plausible actions that can alter the course of an indicator when widely applied
- be measurable over time to reflect results of actions— if action is taken, tangible results will be seen indicating improvements in various aspects of the nation's health
- be feasible to collect and report— the information required for the indicator can be obtained at reasonable cost in relation to its value and can be collected, analysed and reported on in an appropriate time frame
- comply with national processes of data definitions.

The National Youth Health Information Framework consists of three broad groups of indicators of youth health: health status and outcomes; risk and protective factors; and services and interventions. Within these three groups, a number of broad subgroups have been identified. Health status has two subgroups: life expectancy and wellbeing; and mortality, morbidity and disability. The risk and protective factors group has five subgroups: environmental factors; socioeconomic factors; community capacity; health behaviours; and person-related factors. The services and interventions group is not divided into any subgroups in the current framework. The areas covered within this group include health programs, health promotion and intervention, health services to individuals, intersectoral services, community services and youth services.

This report presents national data for the indicators of youth health and wellbeing developed within the different subgroups of the National Youth Health Information Framework. Some of the subgroups outlined above have more indicators (and national data to measure these indicators) than others. Many of the indicators reported on here are in the 'mortality, morbidity and disability' subgroup. In addition, the 'risk and protective' group contains information on health-related behaviours and the socioeconomic environment. National indicators for these groups are highly developed, and good-quality national data to measure these indicators have been available for some years. Areas for which there is less than adequate information are the physical environment, cultural and spiritual factors, and wellbeing. Indicators for these areas are in the early stages of development, and even where indicators exist, national data to measure them are not always available.

Where data permit, indicators are presented for young people aged 12–24 years. This population is further subdivided into young people aged 12–14, 15–17 and 18–24 years. The first two groups are often grouped together and thus two age groups, comprising 'older children' (12–17 years) and 'young adults' (18–24 years) are used. Wherever possible, males are distinguished from females. In some parts of the report and where available, education and employment of young people have been linked to health outcome as a proxy measure of socioeconomic status. Information about Aboriginal and Torres Strait Islander young peoples and young people who live in rural and remote locations is presented in separate sections.

Part I of the report provides demographic information about the population of young people aged between 12 and 24 years in Australia. Part II provides an overview of the health and wellbeing of this population. Part III presents information on specific diseases and conditions within the mortality, morbidity and disability sub group such as injuries, mental health, sexual and reproductive health, infectious diseases, chronic diseases and oral health problems. Part IV covers behaviour-related risk and protective factors, such as substance misuse, nutrition, physical activity, overweight and obesity

and sun protection. Part V presents information about socioeconomic factors including the family, relationships and social participation, education, employment and income, housing and homelessness and juvenile justice. Part VI contains information about Aboriginal and Torres Strait Islander young people and young people who live in rural and remote areas. Information on services has been incorporated into the relevant sections throughout the report.

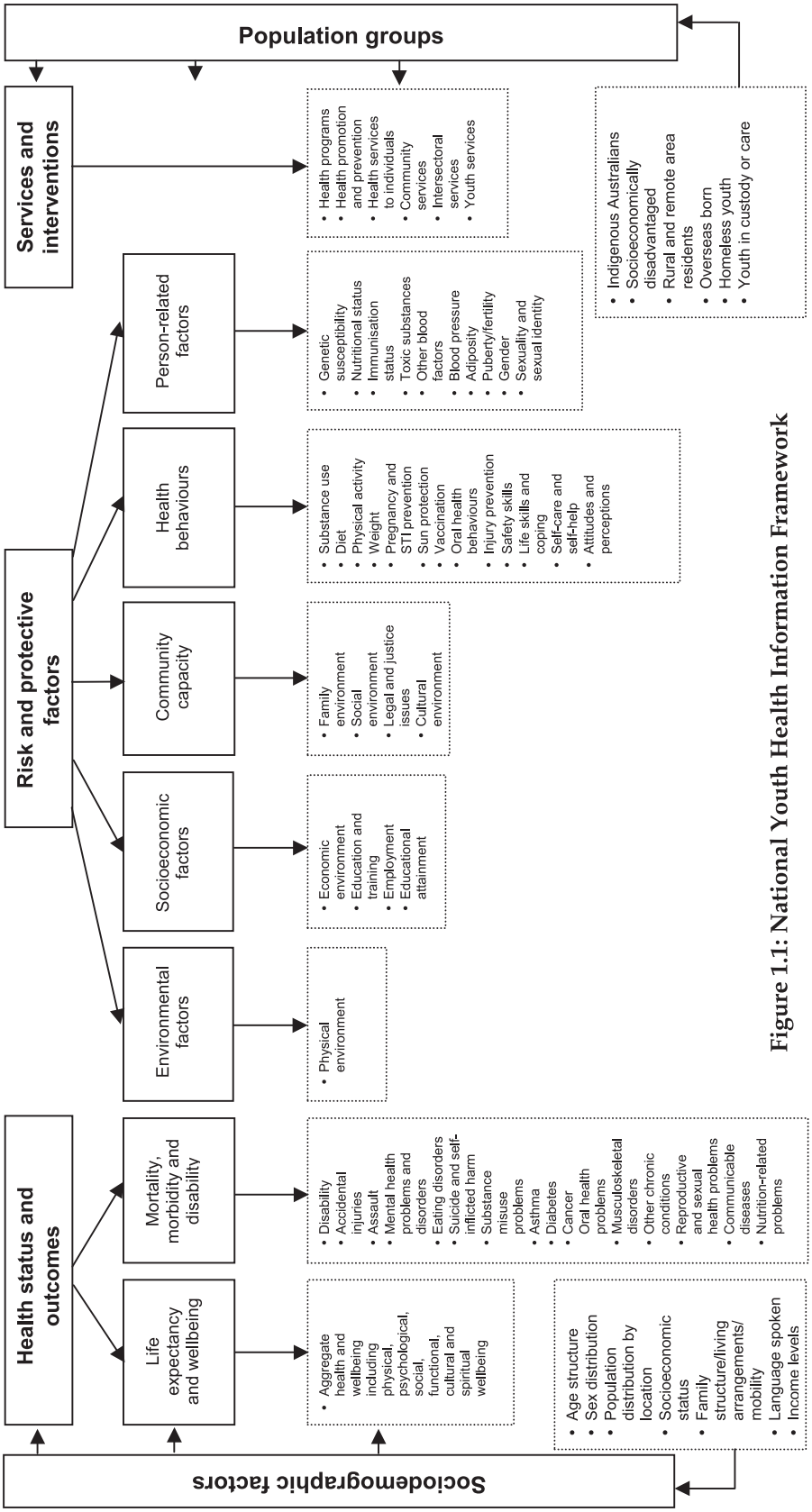


Figure 1.1: National Youth Health Information Framework

Data issues

With any report it is important to be aware of the need for caution in interpreting the findings, because of limitations of the data. Data for this report are derived from administrative collections and sample surveys. This section explores some of the issues readers should be aware of when interpreting the data presented in this report. Some issues relate to data sources, and others relate to population groups.

AIHW Mortality Database

The AIHW Mortality Database was used to extract data on the number and causes of deaths of young people. Death certificates contain information on conditions that initiate the sequence of events which lead to death (underlying causes of death), as well as information on other conditions that contribute to death. Data on causes of death presented in this report refer to the underlying causes of death only.

When extracting causes of death for deaths occurring between 1982 and 1996, the International Classification of Diseases, 9th Revision (ICD-9) is used, and for deaths occurring from 1997 onwards, the 10th Revision (ICD-10) is used.

When extracting causes of death data for particular years, the year in which the death was registered is used rather than the year in which it occurred. Approximately 6% of deaths in a particular calendar year are registered in subsequent years, most being deaths that occurred in December of the preceding year.

AIHW National Hospital Morbidity Database

The AIHW National Hospital Morbidity Database was used to provide information on the reason for hospitalisations of young people. In this report, the term 'specific diagnosis' is used to refer to principal diagnosis, and 'diagnosis groups' are equivalent to blocks within ICD-10-AM chapters. Although other associated diagnoses may also be recorded for each hospital episode, only the principal diagnosis—the diagnosis established to be the problem that was chiefly responsible for the patient's episode of care in hospital—is presented in this report.

Hospital records are for 'separations' and not individuals, and there can be multiple admissions for the same individuals. As only people with serious conditions are admitted to hospital, hospitalisation rates do not reflect the incidence or prevalence of the disease or condition in the population. Hospitalisation numbers can also be affected by admission practices and access.

When extracting hospitalisation data for 1993–94 to 1997–98, the Australian modification of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) was used. For hospitalisations occurring from 1998–99 onwards, the 10th Revision, Australian Modification (ICD-10-AM) was used.

Sample Surveys

In a sample survey, only a part of the total population is approached for information on the topic under study. These data are then 'expanded' or 'weighted' to represent the target population as a whole. The major disadvantages of sample surveys are that data may not be representative of the total population, particularly where the number of respondents is small; and therefore data at a small area level are generally not available. The quality and reliability of survey data are affected by the degree of response to a survey.

Estimates that are based on information from a sample in a population are subject to sampling variability. That is, they may differ from the figures that would have been obtained had the entire population been surveyed. A large sample is more likely than a small sample to produce results that closely resemble those that would be obtained if a census was conducted. This difference between survey results, or estimates and census results can be measured by the standard error.

Aboriginal and Torres Strait Islander young people

The availability and quality of data about Aboriginal and Torres Strait Islander young people are significantly limited by a number of factors.

Firstly, the precision of population estimates, which form the denominator for all Aboriginal and Torres Strait Islander rates, is not high. Estimating the size and composition of the Aboriginal and Torres Strait Islander populations is difficult for a number of reasons. One of the main reasons is the uncertainty about Indigenous population counts from the 5-yearly Australian Bureau of Statistics (ABS) Census of Population and Housing, which provides the basis for estimating the total population. Indigenous status is defined by the person completing the census form, and it is not possible to estimate how this status may change over time. In addition, accurate births and deaths data, required to estimate the natural growth in the Indigenous population between censuses, are not available nationally. These uncertainties affect the comparison of rates from year to year and severely limit the assessment of trends over time.

Secondly, there is underidentification of Aboriginal and Torres Strait Islander peoples in routinely collected data, such as hospitalisations and births and deaths registrations. Therefore, the accuracy of current data is questionable, although significant work on improving the quality of data on the Indigenous population is under way (ABS & AIHW 2003).

As a result, some of the national Aboriginal and Torres Strait Islander statistics are derived from a limited number of jurisdictions. Data on the causes of death among Indigenous people, for example, are drawn from only four jurisdictions (Queensland, Western Australia, South Australia and the Northern Territory). In these jurisdictions the extent to which the identification of Indigenous people occurs is sufficiently high to produce reliable statistics on deaths of Aboriginal and Torres Strait Islander people.

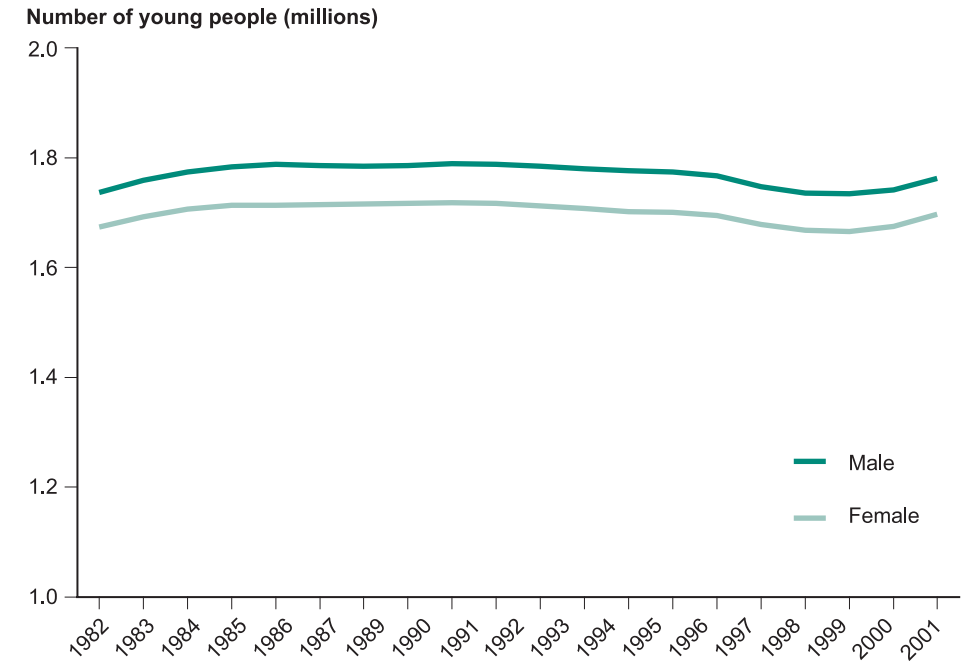
Young people in rural and remote areas

Area of residence is used in this report to compare young people living in rural and remote areas with those living in metropolitan areas. Information about area of residence presented here relates to young people's usual area of residence. The substantially higher proportion of Aboriginal and Torres Strait Islander young people who reside in remote areas and their generally lower health status means that the health status of young people in remote zones is affected by the health of Indigenous young people.

2. Population characteristics

This chapter presents demographic information about young people aged 12–24 years using a number of key measures: the total number of young people, young people as a proportion of the total population, the age structure of the population of young people, young people in the Aboriginal and Torres Strait Islander population, where young people reside, and the country of birth of young people. Many of these factors are related to health differentials and are consequently examined in this report in conjunction with health status.

Number of young people

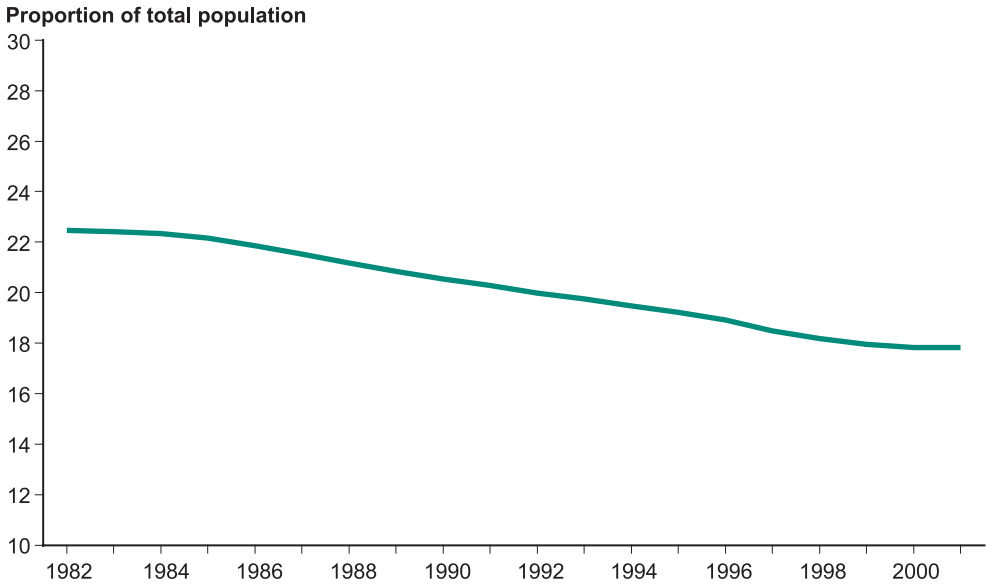


Source: ABS, various years.

Figure 2.1: Australian population of young people aged 12–24 years, 1982 to 2001

- At 30 June 2001, there were 3.5 million young people aged 12–24 years—1.8 million males and 1.7 million females—whose usual residence is Australia.
- During this century, most of the increase in the number of young people occurred between 1950 and 1980. This was a consequence of an increase in the number of children born during the 'baby boom' in the years following the Second World War. The number of young people has been relatively stable over the last two decades.

Proportion of the population

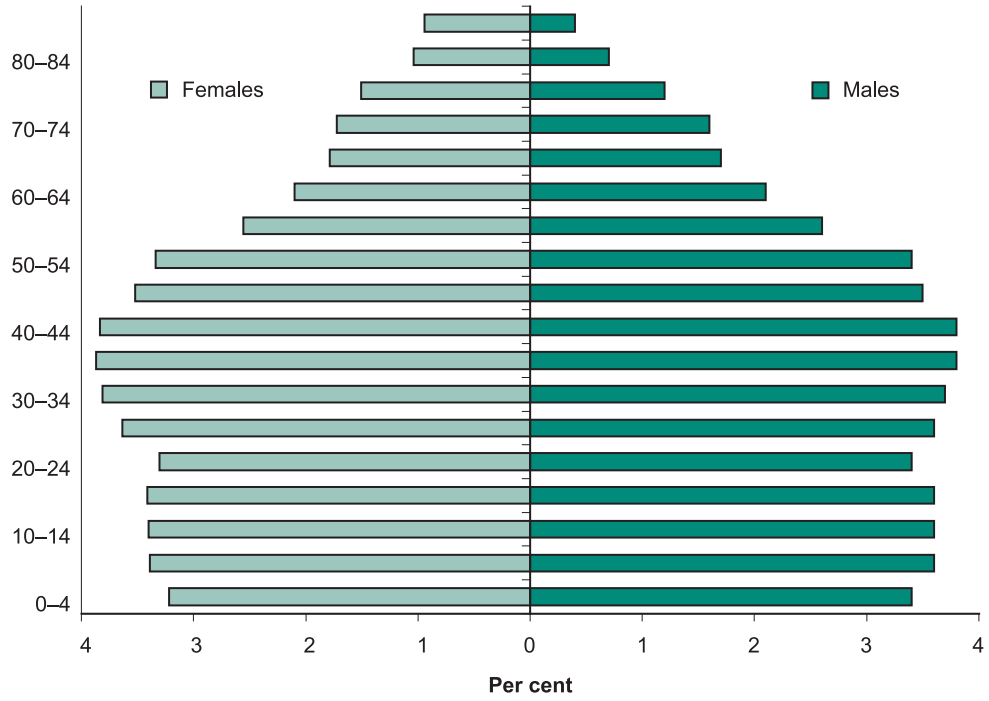


Source: ABS, various years.

Figure 2.2: Young people aged 12–24 years as a proportion of the Australian population, 1982 to 2001

- At 30 June 2001, the total Australian population was 19,413,240, with young people aged 12–24 years (3,459,918) accounting for 18% of this total. This was the lowest percentage of the population ever.
- With declining fertility, the proportion of young people in the total population is projected to decline to 14% by the year 2032 (ABS 2000).

Age and sex structure



Source: ABS 2003a.

Figure 2.3: Australian population by age and sex, 2001

- The population pyramid for the Australian population has a somewhat narrow base, reflecting the decline in fertility in the last 3 decades. The bulge in the middle reflects higher past fertility in the baby-boom years. The somewhat broad apex reflects low mortality rates among older Australians. The Australian population pyramid has also been shaped by net overseas migration. This type of pyramid is characteristic of developed industrialised countries.
- The Australian population has a median age of 35 years, which means that 50% of the population are aged less than 35 years.
- In 2001, the number of young people by single year of age ranged from 269,435 at age 12, to 271,934 at age 18, to 259,103 at age 24.
- Among young people, males are slightly more numerous than females for every age. The ratio of males per 100 females was 105 at age 12, 105 at age 18 and 102 at age 24. This reflects the higher male to female sex ratio at birth, where male births outnumber female births by 5%, and the higher male mortality from injuries between the ages of 18 and 24 years.

Area of residence

State and Territory

Table 2.1: Residence area of Australian young people aged 12–24 years, 2001

State/territory	Population aged 12–24 years	Total population	Percentage of state/territory population aged 12–24	Per cent distribution of Australian population aged 12–24	Per cent distribution of Australian population (all ages)
New South Wales	1,147,846	6,575,217	17.5	33.2	33.9
Victoria	845,751	4,804,726	17.6	24.4	24.7
Queensland	665,124	3,628,946	18.3	19.2	18.7
Western Australia	354,399	1,901,159	18.6	10.2	9.8
South Australia	258,866	1,511,728	17.1	7.5	7.8
Tasmania	82,658	471,795	17.5	2.4	2.4
Australian Capital Territory	64,597	319,317	20.2	1.9	1.6
Northern Territory	40,228	197,768	20.3	1.2	1.0
Australia[(a)]	3,459,918	19,413,240	17.8	100.0	100.0

(a) Australian total includes 'other Australian territories'.

Source: ABS 2003a.

- At 30 June 2001, well over half of Australian young people (58%) lived in the two largest states—New South Wales and Victoria. This reflects the distribution of the total population.
- Within each jurisdiction, the proportion of the population aged 12–24 years varied, and ranged from 17% in South Australia to 20% in the Northern Territory and the Australian Capital Territory.

Rural, remote and metropolitan areas

Different methods have been used over time to describe the rurality of the Australian population. Until recently, the RRMA classification (rural, remote and metropolitan areas) had been used almost exclusively to analyse administrative data collections such as the AIHW Mortality Database and the AIHW National Hospital Morbidity Database. The RRMA classification has seven levels and is based on the size of the local population centre as well as a measure of remoteness (DPIE & DHSH 1994).

More recently, however, the ABS developed the Australian Standard Geographic Classification (ASGC) Remoteness Structure (DHAC & GISCA 1999; ABS 2001), which is used in Table 2.2 below.

Table 2.2: Residence area of Australian young people aged 15–24 years, by ASGC, 2001

	Young people aged 15–24 years	Proportion of total population of young people	Young people as a proportion of total population in this area	Total population in this area
Major cities of Australia	1,834,243	69.1	14.3	12,870,843
Inner regional Australia	510,157	19.2	12.7	4,025,689
Outer regional Australia	244,593	9.2	12.1	2,013,837
Remote Australia	39,055	1.5	12.0	324,329
Very remote Australia	27,108	1.0	15.2	178,542
Total	2,655,157	100.0	13.7	19,413,240

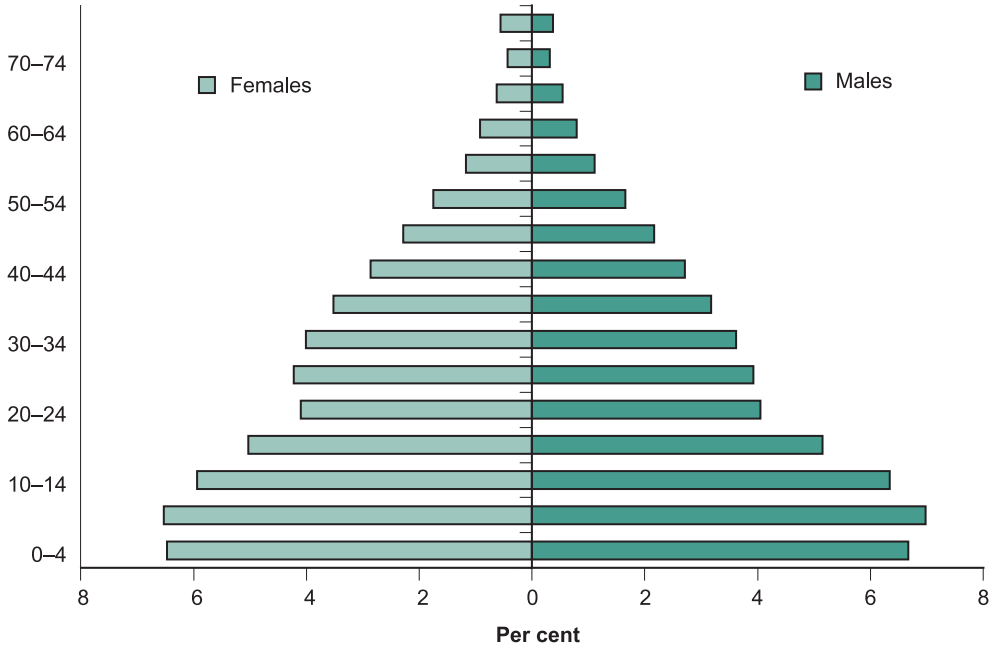
Note: Due to rounding, total may not equal the sum of residence categories.

Source: AIHW population database, derived from ABS Statistical Local Area population estimates.

- In 2001, nearly 70% of young people aged 15–24 years lived in major cities of Australia. Another 19% lived in inner regional areas. Around 12% of young people lived in outer regional and more remote areas of Australia.
- The very remote areas of Australia had a higher proportion of their population aged
- 15–24 years than the less remote areas. This is likely to be partly due to higher proportions of Aboriginal and Torres Strait Islander peoples living in more remote areas (the Indigenous population has a higher proportion of their population aged 12–24 years than the other Australian population (see Table 2.3).

Aboriginal and Torres Strait Islander young people

The age and sex distribution of the Aboriginal and Torres Strait Islander population is shown in Figure 2.4.



Source: ABS 2003a.

Figure 2.4: Aboriginal and Torres Strait Islander population pyramid, 2001

- The population pyramid for Aboriginal and Torres Strait Islander Australians has a broad base and a narrow apex. This reflects the high birth rates and the high mortality rates experienced by this population. The shape of this pyramid is more characteristic of a developing country population than an industrialised country population.
- The Indigenous population has a median age of 20 years, which means that 50% of the population are aged below 20 years. Because of the high mortality throughout life, a much smaller proportion of Indigenous people live past 50 years, compared with other Australians—in 2001, 10% of Indigenous people were aged 50 years or more compared with 29% of other Australians.

Table 2.3: Estimated number of Aboriginal and Torres Strait Islander young people aged 12–24 years as a proportion of the total Australian population, 2001

	Indigenous Australians		Other Australians		Indigenous population as a percentage of total population
Age (years)	Number	Per cent	Number	Per cent	
12–14	32,710	7.1	772,051	4.1	4.1
15–17	29,213	6.4	810,995	4.1	3.6
18–24	54,775	11.9	1,789,387	9.4	3.0
12–24	*116,698*	*25.5*	*3,343,220*	*17.8*	*3.3*
Total population	458,520		18,954,720		2.4

Source: ABS 2003a.

- At 30 June 2001, the number of Aboriginal and Torres Strait Islander young people aged 12–24 years was estimated to be 116,698—about 3% of the total number of young people in Australia.
- Aboriginal and Torres Strait Islander young people made up 26% of the total estimated Indigenous population of 458,520. The proportion of young people in the other Australian population was 18%.
- Of Indigenous young people aged 12–24 years, 47% were aged 18–24 years.

The distribution of Indigenous young people aged 12–24 years in the different states/territories is shown in Table 2.4.

Table 2.4: Distribution of the Indigenous Australian population aged 12–24 years, by state and territory, 2001

State	Indigenous population aged 12–24 years	Proportion of Indigenous population aged 12–24 years	Indigenous population aged 12–24 years as a proportion of youth population of state or territory	Other Australian population aged 12–24 years	Proportion of other Australian population aged 12–24 years	Other Australian population aged 12–24 years as a proportion of total population of state or territory
NSW	33,499	28.7	2.9	1,114,347	33.3	17.1
Vic	6,954	6.0	0.8	838,797	25.1	17.5
Qld	31,685	27.2	4.8	633,439	18.9	17.7
WA	16,966	14.5	4.8	337,433	10.1	18.0
SA	6,536	5.6	2.5	252,330	7.5	16.8
Tas	4,743	4.1	5.7	77,915	2.3	16.8
ACT	1,023	0.9	1.6	63,574	1.9	20.0
NT	15,237	13.1	37.9	24,991	0.7	14.4
Australia	**116,698**	**100.0**	**3.4**	**3,343,220**	**100.0**	**17.4**

Source: ABS 2003a.

- Approximately 56% of the Indigenous population aged 12–24 lived in New South Wales and Queensland (29% and 27%, respectively), compared with 52% of the other Australian population in the same age group (33% and 19% in each state). A further 28% of Indigenous young people lived in Western Australia and the Northern Territory, compared with 11% of other Australian young people.
- In all states and territories except the Northern Territory, Indigenous young people constitute less than 6% of the total youth population. In the Northern Territory, over a third of young people were Indigenous.

Place of birth and language spoken at home

Table 2.5: Birthplace of young people aged 12–24 years, 2001

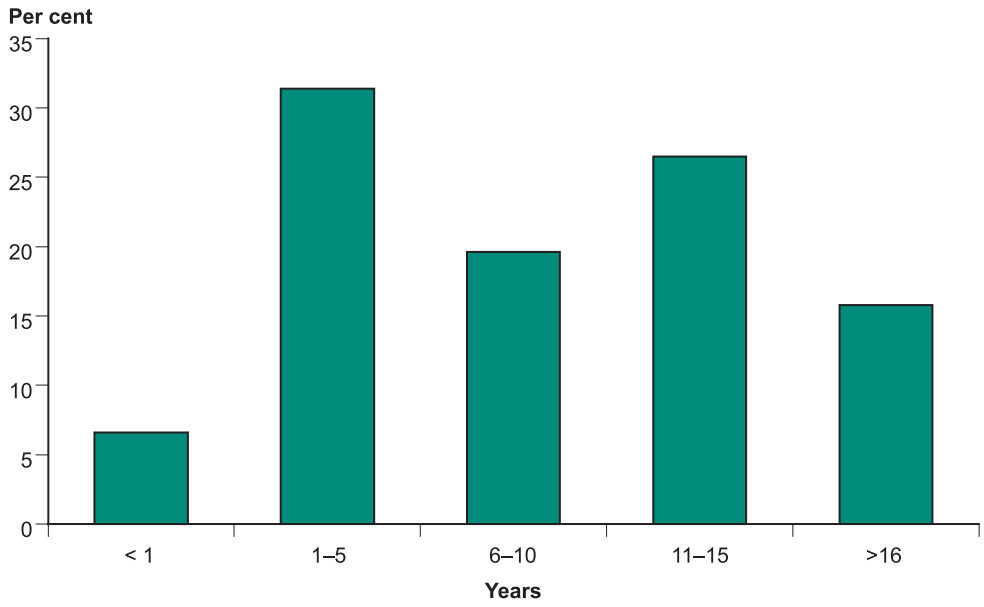
Place of birth	Number	Proportion of young people population
Australia	2,968,315	85.8
South-east Asia	111,032	3.2
New Zealand and Oceania	82,443	2.4
North-west Europe	71,693	2.1
North-east Asia	70,716	2.0
Southern and eastern Europe	40,414	1.2
Southern and central Asia	32,373	0.9
North Africa and the Middle East	29,370	0.8
Americas	27,203	0.8
Sub-Saharan Africa	26,359	0.8
Total	3,459,918	100

Source: ABS 2003b.

- At 30 June 2001, 2.97 million or 86% of all young people resident in Australia were born in Australia.
- Of the 491,603 young people born overseas, the majority were born in Asia (6%) followed by New Zealand and Europe (including the United Kingdom and Ireland).

In 2001, the four main languages spoken at home by young people aged 12–24 were English (84%), Chinese (3%), Arabic (2%) and Vietnamese (1%). The proportion of young people speaking Italian, Greek or German was similar at 1% each. All the remaining languages were spoken by less than 1% of young people.

Length of stay in Australia



Source: ABS 2001 Census of Population and Housing, unpublished data.

Figure 2.5: Length of stay in Australia of young people aged 12–24 years, 2001

- Census data on year of arrival can be used to estimate the length of stay in Australia. In 2001, among young people who arrived in Australia over the last two decades, 38% were recent arrivals: 7% arrived in 2001, and a further 31% arrived between 1996 and 2000, and had been in Australia for a period of less than 5 years.
- Just over a quarter (27%) of young people who were not born in Australia had been in Australia for a period of 11–15 years, and one in five had been in Australia for a period of 6–10 years.

References

ABS (Australian Bureau of Statistics) various years. Australian demographic statistics. Cat. No. 3101.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2000. Population projections 1999 to 2051. ABS Cat. No. 3222.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2001. Outcomes of ABS views on remoteness consultation, Australia. Information paper. ABS Cat. No. 1244.0.00.001. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2003a. Australian demographic statistics. Cat. No. 3101.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2003b. Migration, Australia. Cat. No. 3412.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) & AIHW (Australian Institute of Health and Welfare) 2003. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples. Canberra: ABS.

DPIE (Commonwealth Department of Primary Industries and Energy) & DHSH (Commonwealth Department of Human Services and Health) 1994. Rural, remote and metropolitan areas classification, 1991 Census edition. Canberra: AGPS.

DHAC (Department of Health and Aged Care) & GISCA (National Key Centre for the Social Applications of Geographical Information Systems) 1999. Accessibility/remoteness index of Australia (ARIA). Occasional Papers Series No. 6. Canberra: DHAC.

NHPC (National Health Performance Committee) 2001. National Health Performance Framework report. Brisbane: Queensland Health.

Part II: Health status overview

Chapter 3. Health and wellbeing

Chapter 4. Mortality

Chapter 5. Morbidity

Chapter 6. Disability

3. Health and wellbeing

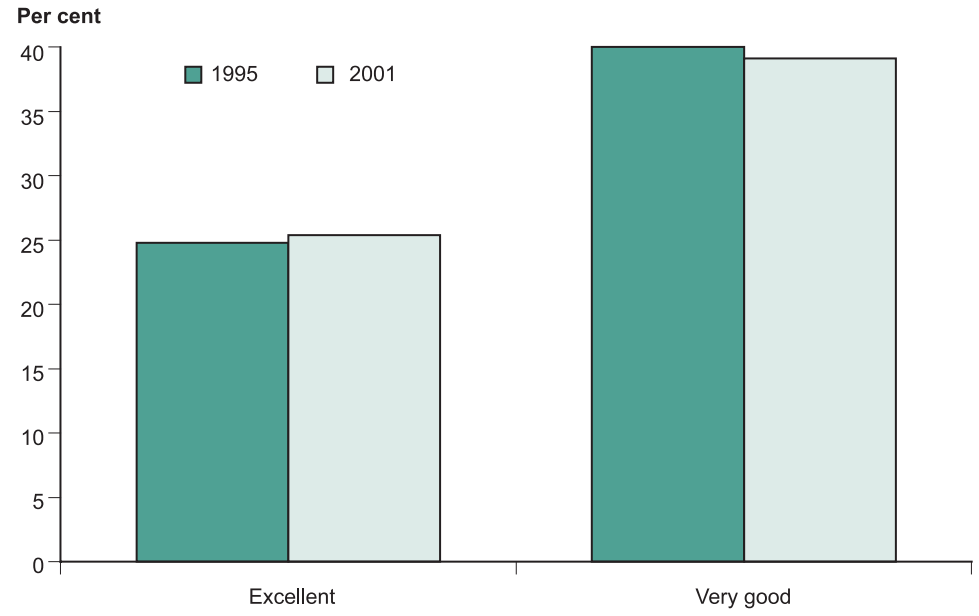
Self-reported health status is often a good indication of the actual health of a person. People's perceptions of their own health have been shown to be good, independent predictors of their future health care use and their long-term survival (Idler & Benyamini 1997). For example, a consistent inverse relationship has been observed between self-reported health status and the number of visits to a doctor in a year, and between perceived physical fitness and death (Miilunpalo et al. 1997).

Although the use of personal assessment of self-assessed health and wellbeing to predict health outcomes among young people has not been formally tested, its usefulness among adults makes it worthwhile to use in this age group.

This chapter provides an overview of the health and wellbeing of young people, using data collected as part of the ABS National Health Survey. Unlike the other chapters in this part of the report, which measure departures from health (such as mortality and morbidity rates), this chapter covers both positive and negative aspects of health, based on young people's own assessment of their health and their quality of life.

Self-assessed health status

This section presents results from the ABS NHS on 'self-assessed health status' which is defined as the 'respondent's perception of their general health' (ABS 1997: 75). The scale used in the 1995 and 2001 surveys asked young people to rate their health on a five-point scale as 'excellent', 'very good', 'good', 'fair' or 'poor'. Results from the 1995 and 2001 surveys are shown in Figure 3.1.

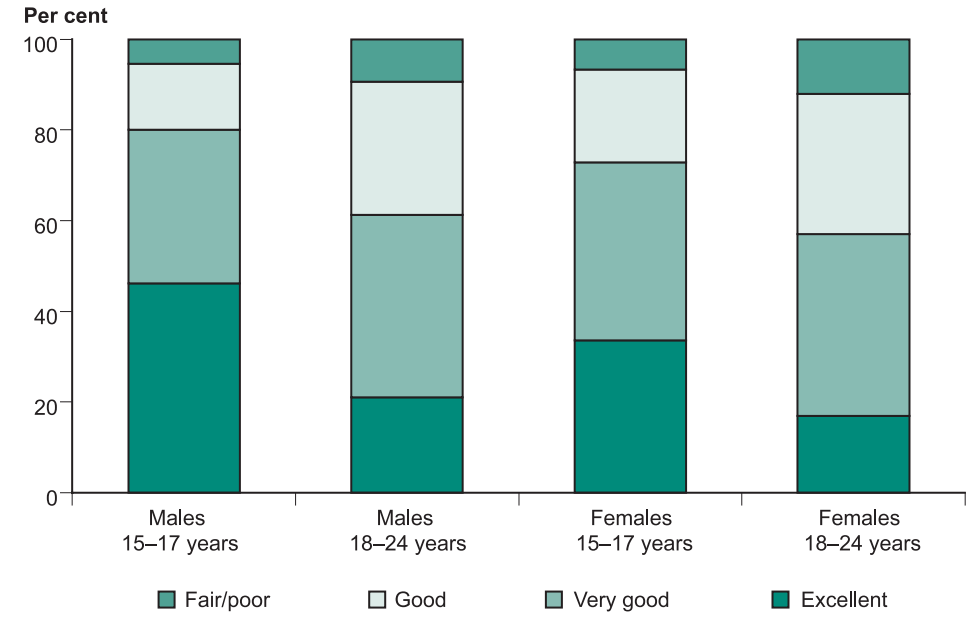


Source: ABS NHS 1995 and 2001, unpublished data.

Figure 3.1: Self-assessed health status of young people aged 15–24 years, 1995 and 2001

- In 2001, about 65% of young Australians aged 15–24 years rated their health as 'excellent' or 'very good'. A further 26% reported that their health was 'good'.
- The remaining 9% reported their health as either 'fair' or 'poor'. These proportions remained almost unchanged between 1995 and 2001 for all young people aged 15–24 years, although there were differences in self-assessed health status by age and sex in both years.

Differences in self-assessed health status by age and sex for 2001 are shown in Figure 3.2.



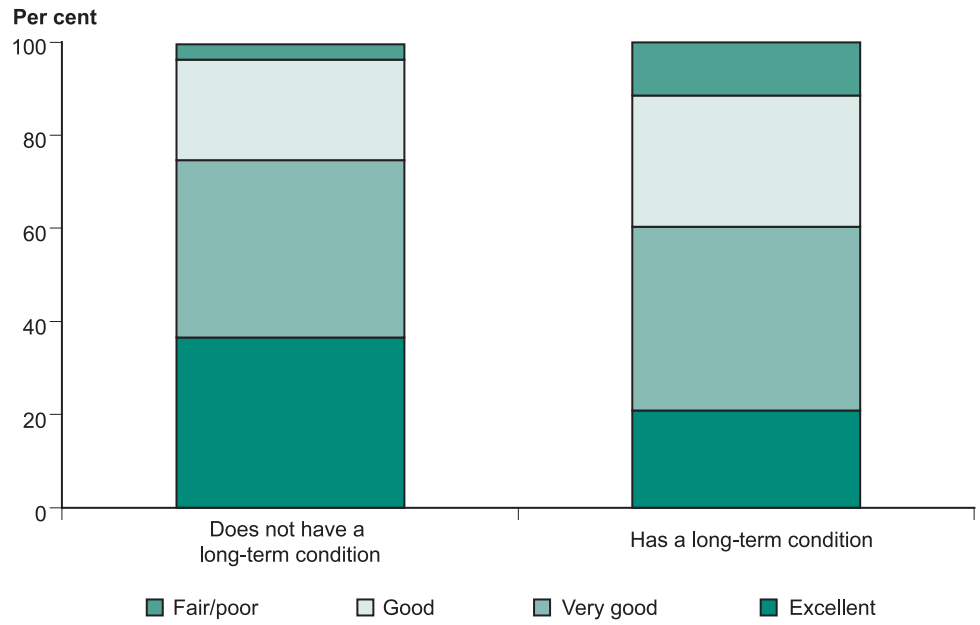
Source: ABS NHS 2001, unpublished data.

Figure 3.2: Self-assessed health status of young people aged 15–24 years, 2001

- There were clear differences in self-assessed health status by age and sex. A higher proportion of those aged 15–17 years reported their health as being 'excellent' or 'very good' than those aged 18–24 years—76% compared with 59%. Just over one in ten (11%) young people aged 18–24 years rated their health as 'fair' or 'poor', compared with 6% of those aged 15–17 years.
- Irrespective of age, a higher proportion of males than females aged 15–24 years reported their health as 'excellent' or 'very good'—67% of males, compared with 62% of females.

Health status and long-term conditions

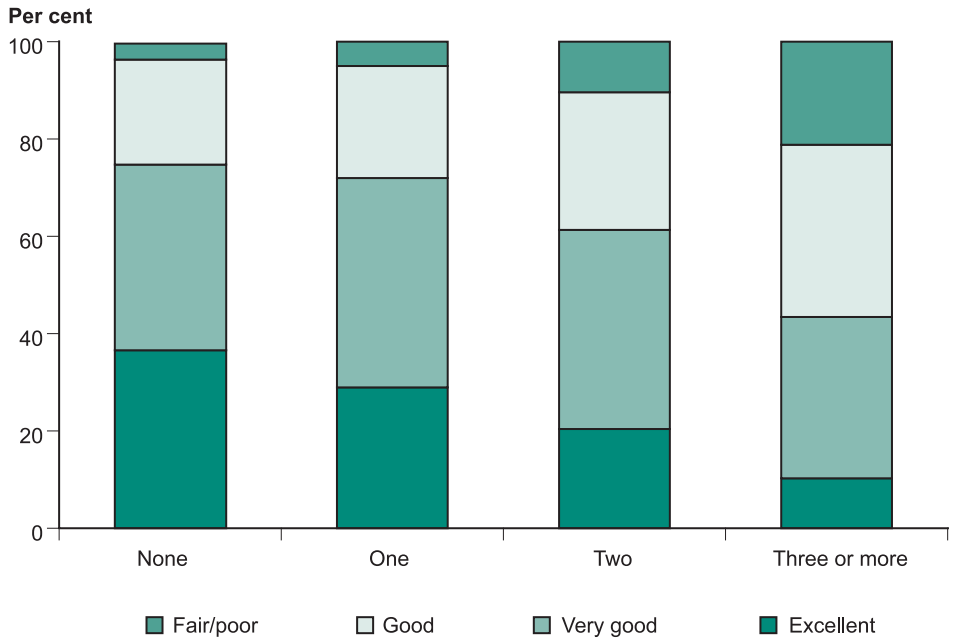
The relationship between reported health status and the presence or absence of a long-term condition—a condition that has lasted or is expected to last for 6 months or more—as reported in the ABS NHS is shown in Figures 3.3 and 3.4.



Source: ABS NHS 2001, unpublished data.

Figure 3.3: Self-assessed health status in young people aged 15–24 years, by the presence or absence of a long-term condition, 2001

- Self-reported health status was affected by the presence or absence of a long-term condition. The proportion of young people aged 15–24 years who rated their health as 'fair' or 'poor' was 3 times as high for those who had a long-term condition (11%) compared with those who did not have any long-term condition (3%).



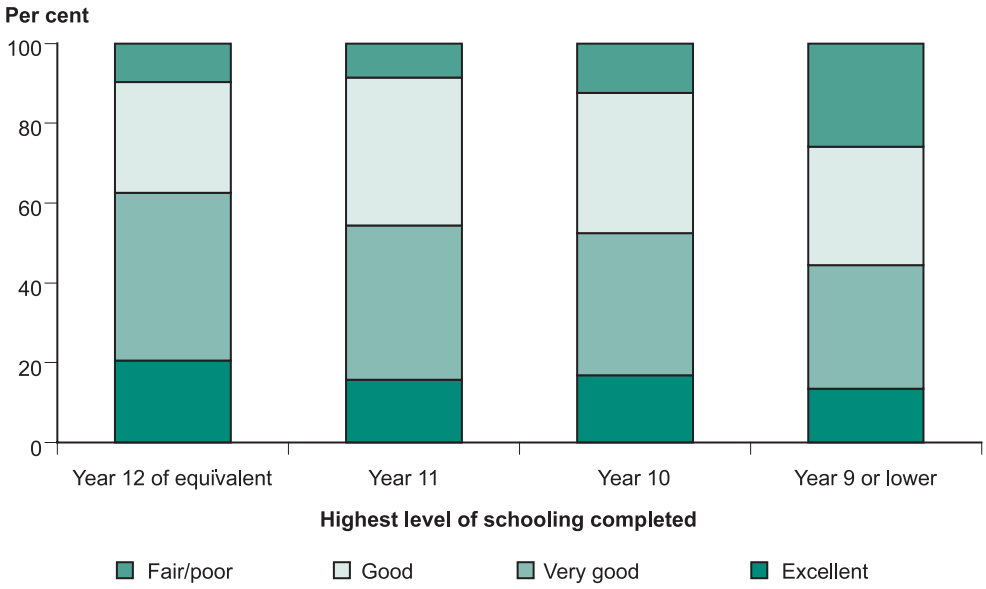
Source: ABS NHS 2001, unpublished data.

Figure 3.4: Self-assessed health status of young people aged 15–24 years, by number of long-term conditions, 2001

- The proportion of young people who rated their health as 'fair' or 'poor' increased with the number of long-term conditions, from 3% of those without any long-term condition, to 21% of those with three long-term conditions or more.

Health status and education

Young people surveyed in the NHS can be divided into four groups according to the highest level of schooling completed: Year 12, Year 11, Year 10 and Year 9 or lower. The association between self-assessed health status and the four educational level groups is shown in Figure 3.5.



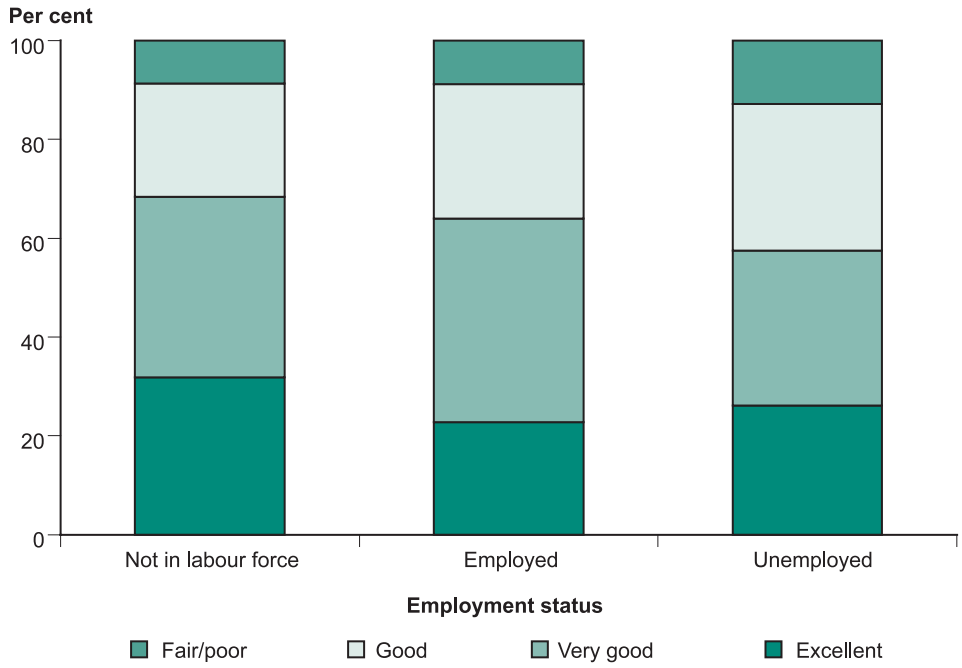
Source: ABS NHS 2001, unpublished data.

Figure 3.5: Self-assessed health status of young people aged 18–24 years, by highest level of schooling completed, 2001

- The proportion of young people who reported their health as 'excellent' or 'very good' was highest among young people who had completed Year 12—63% compared with 54%, 52% and 44% of those who completed Year 11, Year 10 and Year 9 or below, respectively.
- Just over 25% of young people who completed Year 9 or lower reported their health status as 'poor 'or 'fair', compared with less than 10% of those who completed Year 12.

Health status and employment

The association between self-assessed health status and labour force status is shown in Figure 3.6.



Note: Unemployed refers to those who were not employed but who had actively looked for work and were available to start work. Not in the labour force refers to those who were neither employed nor looking for work.

Source: ABS NHS 2001, unpublished data.

Figure 3.6: Self-assessed health status of young people aged 18–24 years, by employment status, 2001

- A higher proportion of young people who were employed rated their health as 'excellent' or 'very good' than those who were unemployed—64%, compared with 58%.
- A higher proportion of young people who were unemployed reported their health as 'poor' or 'fair' than those who were employed—13%, compared with 9%.
- Young people who were not in the labour force rated their health as better than either those who were employed or unemployed.

It is important to note an overlap exists between the education and employment status of young people. Many of those who are not in the labour force are in full-time education, and some of those who are employed are in full-time education.

Health transition

In addition to information on current health status, the ABS NHS collects information on self-perceived changes in health over time—in this case, whether young people perceived their health to have improved or worsened compared to 1 year ago. Results are shown in Table 3.1.

Table 3.1: Current health status among young people aged 15–24 years compared with health status 1 year ago, 2001 (per cent)

	Males			Females			Persons		
Health status	15–17 years	18–24 years	15–24 years	15–17 years	18–24 years	15–24 years	15–17 years	18–24 years	15–24 years
Much better	5.6	11.5	9.7	4.6	11.1	9.1	5.1	11.3	9.4
Somewhat better	11.1	17.5	15.6	12.8	23.2	20.0	11.9	20.3	17.7
About the same	78.8	58.0	64.3	73.8	55.4	61.1	76.3	56.8	62.7
Somewhat worse/much worse	4.5	13.0	10.4	8.8	10.3	9.8	6.6	11.7	10.2
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: ABS NHS 2001, unpublished data.

- Approximately two-thirds (63%) of young people aged 15–24 years reported that their health was 'about the same' as 1 year ago, but more than 25% reported that their health was 'much better' or 'somewhat better'. Around 9% reported that their health was worse than 1 year ago, and 1% reported that it was much worse.
- The perceived health of young people over time became less stable with age. A greater proportion of young people aged 15–17 years than young people aged 18–24 years reported that their health was about the same as the previous year. In the older age group, a higher proportion than in the younger age group thought that their health had either improved, or had deteriorated, since the previous year. Of those aged 18–24 years, 12% reported their health as 'somewhat worse' or 'much worse', compared with 7% of those aged 15–17 years.
- Overall, the proportion of young people aged 15–24 years who reported their health as 'worse' or 'much worse' was similar for both males and females.

Quality of life

In the 2001 ABS NHS, a quality-of-life measure was included for persons aged 18 years and over. The respondents were asked to rate their overall feelings about their life, taking into account what happened in the last year and what they expect to happen in the future. They were asked to rate themselves as 'delighted', 'pleased', 'mostly satisfied', 'mixed', 'mostly dissatisfied', 'unhappy' or 'terrible'. Results are shown in Table 3.2.

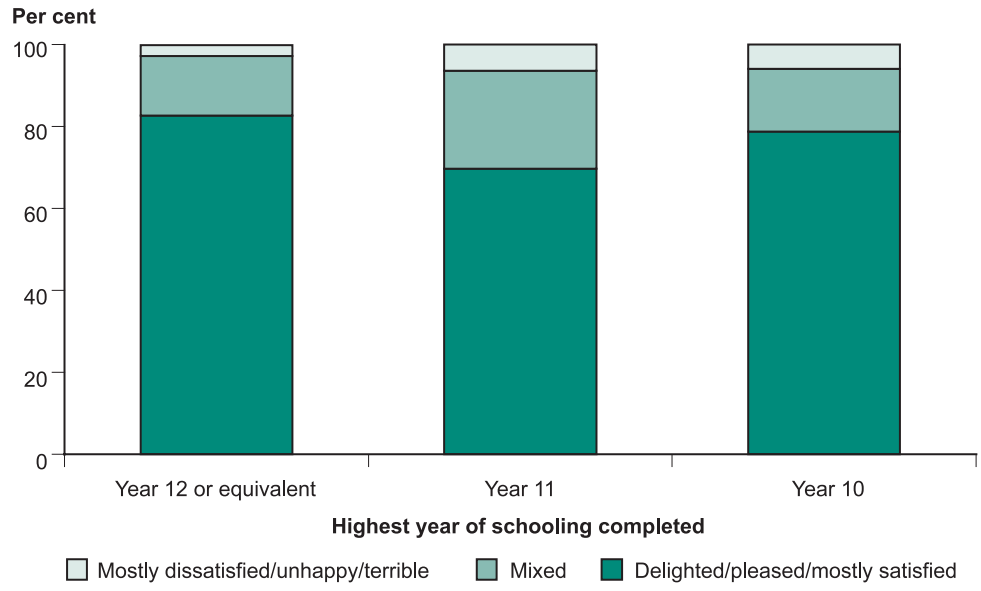
Table 3.2: Reported quality of life among people aged 18–24 years, 2001 (per cent)

Quality of life	Males	Females	Persons
Delighted/pleased/mostly satisfied	83.0	77.4	80.2
Mixed	13.1	18.6	15.8
Mostly dissatisfied/unhappy/terrible	3.9	4.0	3.9
Total	**100**	**100**	**100**

Source: ABS NHS 2001, unpublished data.

- Just over half of young people aged 18–24 years reported that they were 'delighted' or 'pleased' with their lives (52%). A further 28% were 'mostly satisfied' with their lives.
- Almost 16% had mixed feelings about their lives, and a minority (4%) saw their lives as unsatisfactory, unhappy or terrible.
- A higher proportion of males (83%) than females (77%) reported that they were either 'delighted', 'pleased' or 'mostly satisfied' with their lives.
- A slightly higher proportion of females (19%) than males (13%) had mixed feelings about their lives, but about the same proportion of males and females thought their lives were unsatisfactory, unhappy or terrible.

Quality of life and education

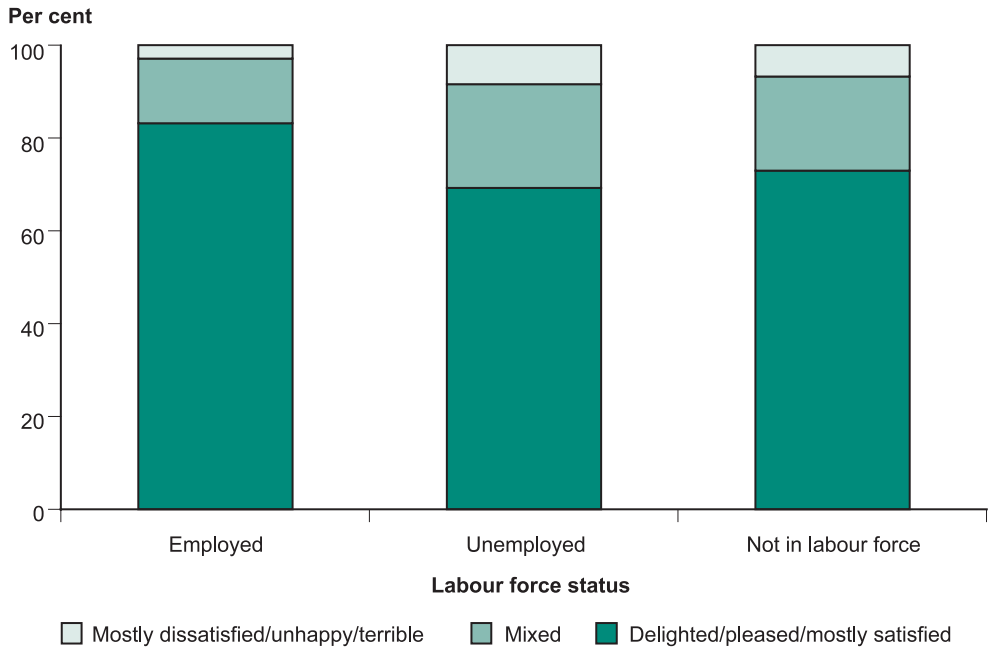


Source: ABS NHS 2001, unpublished data.

Figure 3.7: Reported quality of life among young people aged 18–24 years, by highest year of schooling completed, 2001

- The proportion of young people who were 'delighted', 'pleased' or 'mostly satisfied' with their quality of life was highest among those who had completed Year 12 or equivalent (83%), and lowest among those whose highest year of school completed was Year 11 (70%).
- The proportion of young people whose quality of life measure was 'mostly dissatisfied', 'unhappy' or 'terrible' was highest among those whose highest year of schooling completed was Year 9 or lower (10%), and lowest among those who completed Year 12 or equivalent (3%).

Quality of life and employment



Note: Unemployed refers to those who were not employed but who had actively looked for work and were available to start work. Not in the labour force refers to those who were neither employed nor looking for work.

Source: ABS NHS 2001, unpublished data.

Figure 3.8: Quality of life of young people aged 18–24 years, by labour force status, 2001

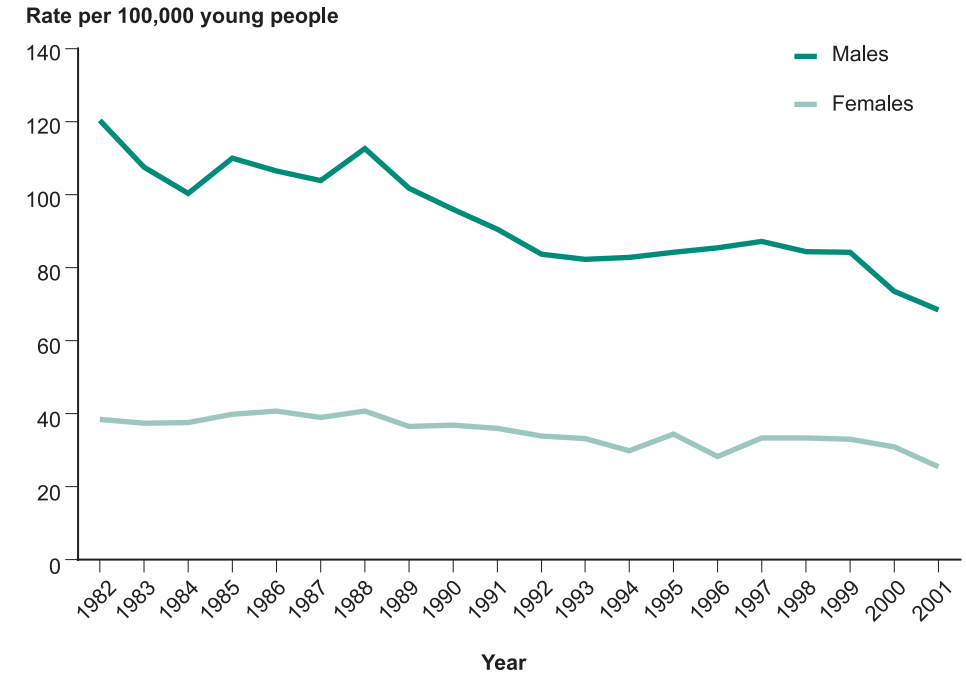
- The highest proportion of young people who were 'delighted', 'pleased' or 'mostly satisfied' with their quality of life was employed (83%), and the lowest proportion was unemployed (69%).
- The highest proportion of young people aged 18–24 years who reported 'mixed' feelings about their quality of life was among the unemployed (22%), followed by those not in the labour force (16%) and employed persons (14%). The proportion of young people whose quality of life measure was 'mostly dissatisfied', 'unhappy' or 'terrible' followed a similar trend, with unemployed persons having the highest rate (8%), followed by those not in the labour force (4%) and employed people (3%).

4. Mortality

Death rates are one of the most widely used measures of health in a population. Identifying the causes of mortality provides a basis for setting priorities for public health action, for providing health services and for research.

This chapter provides an overview of mortality of young people, covering trends in mortality over the last two decades, age-specific death rates and the underlying causes of death by age groups (based on the 9th and 10th Revisions of the International Classification of Diseases and Related Health Problems, ICD-9 and ICD-10). Selected specific causes of death by age group are also covered in this chapter.

Trends in mortality

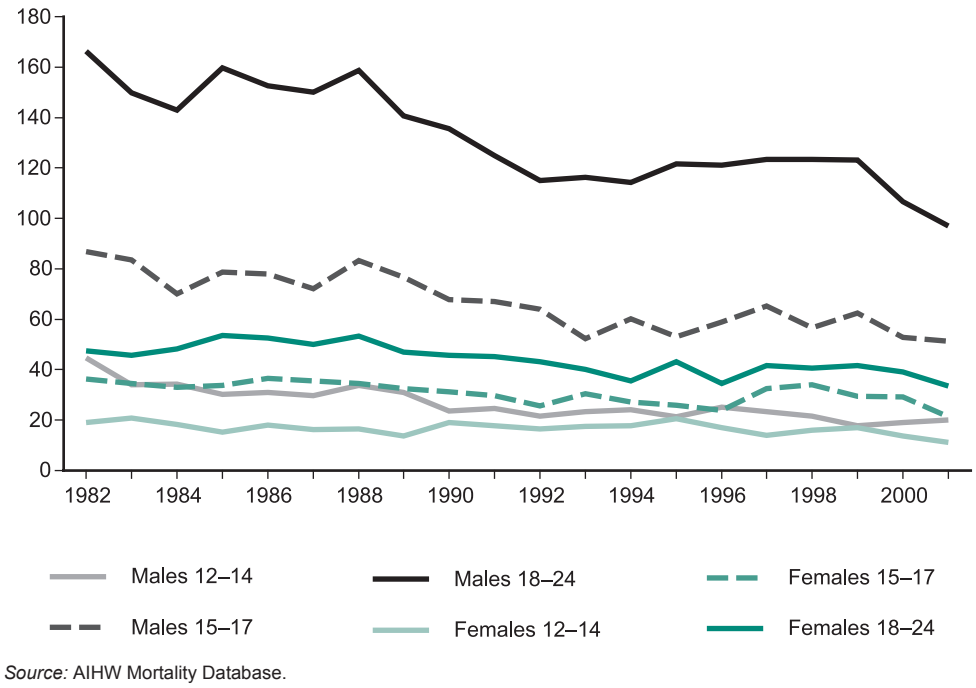


Source: AIHW Mortality Database.

Figure 4.1: Mortality rates for young people aged 12–24 years, 1982 to 2001

- In 2001, there were 1,637 deaths of young people aged 12–24 years, an age-specific death rate of 47 per 100,000. This represented 1% of all deaths in that year. Almost three-quarters of all deaths of persons aged 12–24 years were of males.
- Death rates for both males and females declined between 1982 and 2001. Rates for males declined by 43%, from 120.4 per 100,000 (2,091 deaths) to 68.3 per 100,000 (1,205 deaths). Rates for females declined by 34%, from 38.4 per 100,000 (642 deaths) to 25.4 per 100,000 (432 deaths).
- Because mortality rates for males declined faster than the rates for females, the difference between males and females decreased between 1982 and 2001. In 1982, rates for males were 3.1 times those for females; in 2001, the ratio was 2.7.

Age-specific death rates



Source: AIHW Mortality Database.

Figure 4.2: Mortality rates for young people aged 12–24 years, 1982 to 2001

- Death rates for all age groups (12–14, 15–17 and 18–24 years) declined between 1982 and 2001.
- For males, the greatest decline was for those aged 12–14 years (55%). For those aged 15–17 years and 18–24 years, rates decreased by 41% and 42%, respectively.
- For females, the greatest decline was among those aged 15–17 years (42%). Rates for females aged 12–14 years decreased by 41%, and rates for those aged 18–24 years decreased by 29%.
- Males aged 18–24 years had the highest death rates, followed by males aged 15–17 years.

Causes of deaths of young people aged 12–24 years are presented in Table 4.1.

Causes of death

Table 4.1: Causes of death of young people aged 12–24 years, 2001

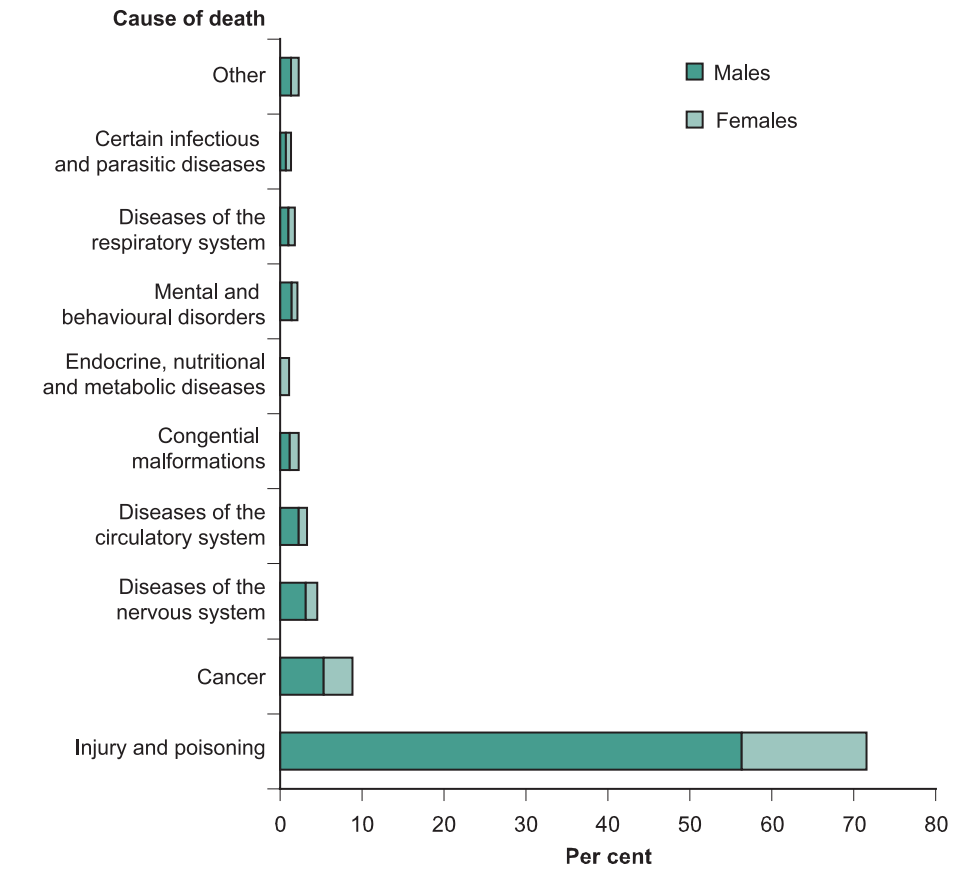
	Number			Rate per 100,000 young people		
Cause of death	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Injury and poisoning	921	249	1,170	52.2	14.7	33.8
Cancer	87	57	144	4.9	3.4	4.2
Diseases of the nervous system	50	23	73	2.8	1.4	2.1
Diseases of the circulatory system	37	16	53	2.1	0.9	1.5
Congenital malformations	20	18	38	1.1	1.1	1.1
Endocrine, nutritional and metabolic diseases	19	18	37	1.1	1.1	1.1
Mental and behavioural disorders	23	11	34	1.3	0.6	1.0
Diseases of the respiratory system	16	13	29	0.9	0.8	0.8
Certain infectious and parasitic diseases	11	10	21	0.6	0.6	0.6
Other[(a)]	21	17	38	1.2	1.0	1.1
Total	**1,205**	**432**	**1,637**	**68.3**	**25.5**	**47.3**

(a) 'Other' includes: diseases of the digestive system, diseases of blood and blood-forming organs and certain disorders involving the immune mechanisms, diseases of the genitourinary system, benign neoplasms, diseases of the musculoskeletal system and connective tissue, diseases of the skin and subcutaneous tissue, certain conditions originating in the perinatal period, and symptoms, signs and abnormal findings not elsewhere classified.

Source: AIHW Mortality Database.

- Among young people aged 12–24 years, injuries and poisoning were the predominant causes of death in 2001—34 per 100,000 (1,170 deaths).
- Cancer was the next most common cause of death (144 deaths, or 4.2 per 100,000).

Causes of deaths of young people aged 12–24 years as a proportion of all deaths among young people are shown in Figure 4.3.



Source: AIHW Mortality Database.

Figure 4.3: Causes of deaths of young people aged 12–24 years, 2001

- Injury and poisoning were responsible for over 70% of deaths in this age group. This category includes suicide (see Chapter 8). Suicide was responsible for 21% of all deaths, with suicide by males representing 17% of all deaths (and 23% of deaths among males).
- Cancer was responsible for 9% of deaths of young people.
- Diseases of the nervous system were responsible for 5% of deaths.

The most frequent specific causes of death for each age group are shown in Table 4.2.

Table 4.2: Most frequent specific causes of death of young people aged 12–17 and 18–24 years, 2001

Age (years)	Cause of death	Number	Rate per 100,000 young people	Proportion of deaths in age group
12–17	Intentional self-harm by hanging, strangulation and suffocation	38	2.4	9.0
	Car passenger injured in collision with fixed or stationary object, traffic accident	24	1.5	5.7
	Pedestrian injured in collision with car, pick-up truck or van, traffic accident	15	0.9	3.5
	Car driver injured in collision with fixed or stationary object, traffic accident	14	0.9	3.3
18–24	Intentional self-harm by hanging, strangulation and suffocation	162	8.8	13.4
	Car driver injured in collision with fixed or stationary object, traffic accident	77	4.2	6.3
	Car passenger injured in collision with fixed or stationary object, traffic accident	41	2.2	3.4
	Accidental poisoning by and exposure to narcotics and hallucinogens, not elsewhere classified	40	2.2	3.3

Note: ICD-10 codes in order of presentation —X70, V47.6, V03.1, V47.5, X70, V47.5, V47.6, and X42.

Source: AIHW Mortality Database.

- For young people in all age groups, intentional self-harm (suicide) by hanging, strangulation and suffocation was the most frequent specific cause of death. Rates for those aged 18–24 were 1.5 times those for young people aged 12–17 years.
- For young people aged 12–17 years, the most frequent causes of death were suicide and car accidents (as passengers, drivers and pedestrians).
- For young people aged 18–24 years, suicide, car driver and passenger accidents, and deaths from accidental poisoning from drugs were the most frequent causes of death.

In 2001, the top four broad causes of deaths of young people aged 12–24 years were the same as those for young people in 1982—injuries and poisoning, cancer, diseases of the nervous system, and diseases of the circulatory system. However, the specific causes of deaths from injury and poisoning were very different.

In 1982, the most frequent specific causes of deaths of young people from injury and poisoning were motor cycle rider injured from collision with another motor vehicle, car driver injured after colliding with other motor vehicles, car driver injured after collision on a public street or highway (e.g. with a guard rail or island) and car passenger injured in collision with other motor vehicle. In 2001, the most frequent specific causes of death of young people from injury were suicide by hanging, strangulation and suffocation, car driver colliding with fixed objects, car passenger involved in collisions with fixed objects, and accidental poisoning by narcotics and hallucinogens.

The change in the rank order of causes of death in the last two decades is because motor vehicle accident deaths have decreased significantly (a reduction of 64%). Suicide deaths increased by 10% over the same period.

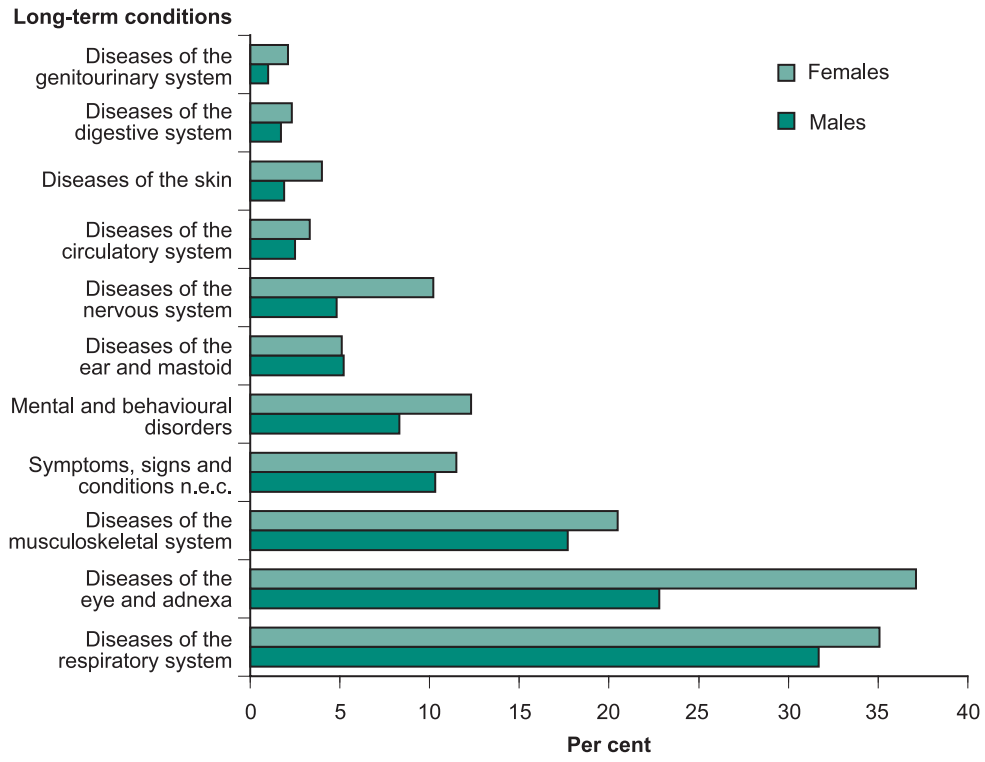
5. Morbidity

Most illnesses during childhood and adolescence are mild and are usually treated at home by parents themselves. More serious illnesses are usually treated by general practitioners. Hospital utilisation accounts for only a small part of health services use by young people, usually for more severe types of illness. Adolescents' use of health services depends on not only the state of their health but also their knowledge and attitudes, the availability and affordability of services, and the way in which services can deal with the sensitive health issues facing young people during their transition from adolescence to adulthood.

This chapter provides an overview of illness in young people by presenting the prevalence of self-reported illness, as well as indirect measures of illness including visits to general practitioners and hospitalisations.

Prevalence of illnesses

Information was gathered from the 2001 ABS NHS on self-reported, long-term medical conditions being experienced by a person at the time of the survey. 'Long-term' means having lasted, or being expected to last, for 6 months or more. In 2001, 71% of young people reported having a long-term medical condition (66% of males and 76% of females).



n.e.c. = not elsewhere classified

Source: ABS 2002.

Figure 5.1: Prevalence of self-reported long-term conditions among young people aged 15–24 years, 2001

- Respiratory conditions (mainly asthma and hay fever) were the most prevalent long-term condition among males aged 15–24 years and the second most prevalent among females, affecting over one-third of young people.
- Eye conditions were the most common long-term condition among females, affecting 37%. Eye conditions were the second most common condition among young males (23%).
- Diseases affecting the musculoskeletal system were the third most frequent conditions for both sexes.

The most common specific long-term conditions reported among young people aged 15–24 years in 2001 were hay fever and allergic rhinitis, affecting 17% of males and 21% of females. Short-sightedness was also a common long-term condition and affected 11% of males and 22% of females.

Asthma was also reported as a long-term condition for a substantial proportion of young people: 16% of males and 17% of females. Back pain and problems were reported for 16% of young people: 14% of males and 18% of females.

Consultation with general practitioners

This section examines the reasons young people aged 12–24 years consulted a general practitioner (GP). The data source is the Bettering the Evaluation and Care of Health (BEACH) program which, in a rolling survey, samples around 1,000 GPs each year on the details of 100 consecutive consultations per GP. It includes information on the reasons patients present, as well as the problems managed, referrals, treatments, tests and investigations ordered, and procedures carried out.

Profile of patients

Table 5.1: Summary of characteristics of young people aged 12–24 years seen by general practitioners, April 2001 – March 2002

Patient characteristics	Number	Per cent
Sex		
Male	4,273	39.5
Female	6,555	60.5
Age		
12–14 years	1,705	15.7
15–24 years	9,177	84.3
Background		
Non-English-speaking background	818	7.5
Aboriginal and Torres Strait Islander peoples	152	1.4
Health card status		
Holds a health care card	3,253	29.9
Holds a Department of Veterans' Affairs card	8	0.1
Consultation history		
Seen previously	8,734	82.7
New to practice	1,824	17.3
Total consultations	10,882	. .

. . Not applicable

Note: 53 consultations were missing information on sex. These are included in total consultations.

Source: BEACH survey, April 2001 – March 2002.

- Between April 2001 and March 2002, of the 96,973 GP consultations surveyed, there were 10,882 consultations (11%) with young people aged 12–24 years. This extrapolates to an estimated total of about 12 million consultations per year nationally by persons aged 12–24 years. Females accounted for a greater proportion of these consultations (60%) than did males.
- Just over 7% of these consultations were with young people from a non-English-speaking background, and 1% were with young people who identified as Aboriginal or Torres Strait Islander people. Indigenous young people are subject to underidentification in the BEACH survey, either through GPs not asking about Indigenous status or by not recording a response from the patient about their Indigenous status, or through non-identification by patients.
- Around 30% of the consultations were for young people who had a Commonwealth health care card or who were covered by a Commonwealth health care card of a family member.

Nature of consultation

Table 5.2: Type of consultation with general practitioners for young people aged 12–24 years, April 2001 – March 2002

Type of consultation	Number	Rate per 100 consultations
Direct consultations	9,937	98.3
No charge	71	0.7
Medicare items of service	*9,516*	*94.2*
Short consultation	115	1.1
Standard consultation	8,421	83.3
Long consultation	669	6.6
Prolonged consultation	46	0.5
Home visits	26	0.3
Hospital and nursing homes	8	0.1
Other items	233	2.3
Workers compensation	176	1.7
Other paid	174	1.7
Indirect consultations	169	1.7
Total consultations	**10,882**	**100.0**

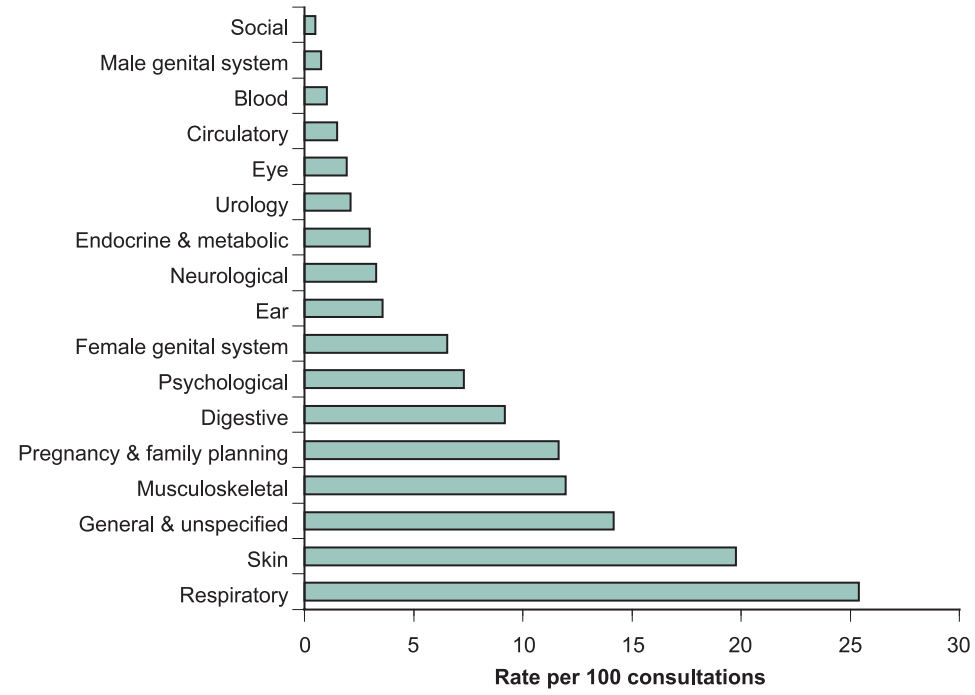
Note: There were 775 consultations for which data were missing. These are included in the total consultations.

Source: BEACH survey, April 2001 – March 2002.

- As in the general population, almost all consultations (98 per 100 consultations) by young people were direct consultations (i.e. a face-to-face meeting between the GP and the patient) and were Medicare claimable (94 per 100 consultations).
- Most consultations were standard surgery consultations (83 per 100 consultations). Just under 7 per 100 consultations were long surgery consultations.

Problems managed

There was a total of 13,446 problems managed in surveyed GP consultations with young people—a rate of 124 problems managed per 100 consultations. Of these, over half (7,392 or 55%) were new problems and just over 2% were work-related. The types of problems managed during general practice consultations according to the chapters of the International Classification of Primary Care, Version 2 (ICPC-2) are shown in Figure 5.2.



Note: Problems that involve multiple body systems are classified together as 'general and unspecified'.
Source: BEACH survey, April 2001 – March 2002.

Figure 5.2: Problems managed by general practitioners for young people aged 12–24 years, by problem groups (ICPC-2 chapters), April 2001 – March 2002

- Problems related to the respiratory system were the most often managed by GPs, at a rate of 25 per 100 consultations.
- The second most frequent problem group was skin problems (20 per 100 consultations) including problems such as acne and contact dermatitis, followed by problems related to the musculoskeletal system (12 per 100 consultations), pregnancy and family planning (12 per 100 consultations) and digestive problems (9 per 100 consultations).

The most frequent specific conditions managed by GPs are shown in Table 5.3.

Table 5.3: Top twelve specific problems managed in general practitioner consultations for young people aged 12–24 years, April 2001 – March 2002

Problem managed	Number	Rate per 100 consultations
Acute upper respiratory tract infection	1,001	9.2
Asthma	404	3.7
Immunisation—all[(a)]	391	3.6
Oral contraception[(a)]	351	3.2
Acute bronchitis/bronchiolitis	316	2.9
Sprain/strain[(a)]	316	2.9
Tonsillitis[(a)]	306	2.8
Contraception, other	300	2.8
Acne	277	2.5
Viral disease, other/NOS[(b)]	276	2.5
Depression	270	2.5
Pregnancy	244	2.2
Total managed	**13,446**	**100.0**

(a) Includes multiple ICPC-2 codes.
(b) NOS= not otherwise specified.

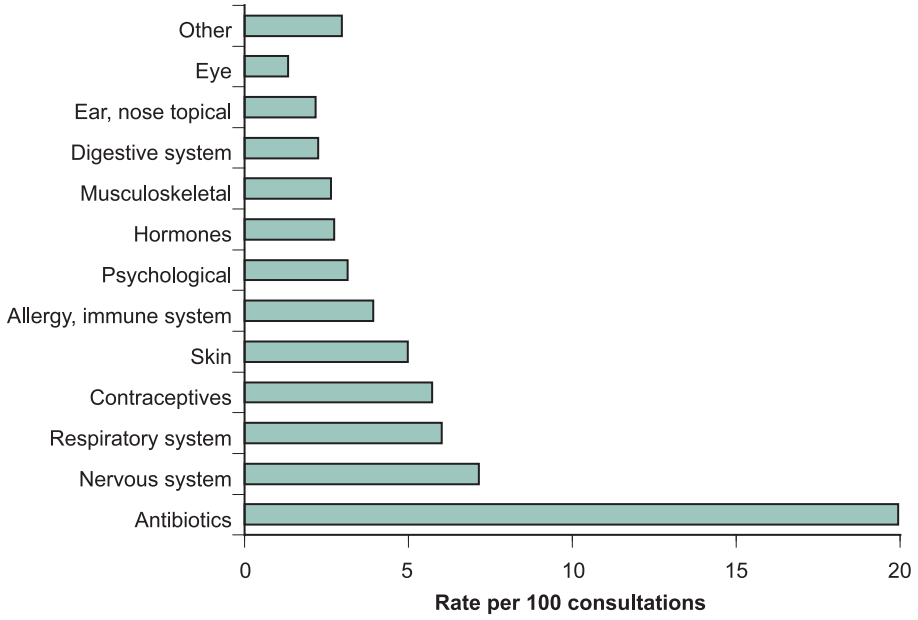
Note: Total problems managed are more than total consultations because more than one problem can be dealt with per consultation.

Source: BEACH survey, April 2001 – March 2002.

- Acute upper respiratory tract infections (for example the common cold) were the most common problems managed by GPs (9.2 per 100 consultations). Other respiratory conditions such as asthma and bronchiolitis were also commonly managed problems (3.7 and 2.9 per 100 consultations, respectively).
- Oral contraception, other contraception and pregnancy were managed by GPs at rates of 3.2, 2.8 and 2.2 per 100 GP consultations, respectively.
- Immunisation was also commonly managed by GPs (at a rate of 3.6 per 100 consultations).

Medications

The medications prescribed, advised or supplied by GPs for people aged 12–24 years provide another view of illness in Australian young people. The total number of medications over the 12-month period in the survey was 8,391 (rate of 85.1 per 100 consultations). This extrapolates to an estimated 15 million medications prescribed, advised or supplied for young people by GPs in Australia in that year. Of the medications reported in the BEACH survey, 7,059 were prescribed (at a rate of 65 per 100 consultations), 1,480 medications were advised for over-the-counter purchase (at a rate of 14 per 100 consultations) and 715 medications were supplied by the GP (at a rate of 7 per 100 consultations). The distribution of prescribed medications by group is presented in Figure 5.3.



Note: 'Other' includes medications related to nutrition, cardiovascular, blood and urogenital conditions, surgical preparation, anti-neoplastic medications and other miscellaneous medications.

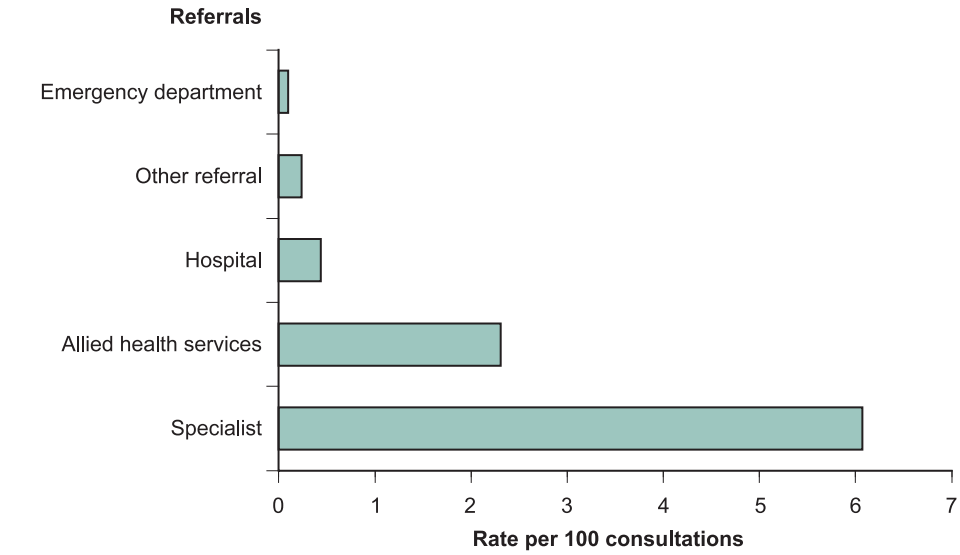
Source: BEACH survey, April 2001 – March 2002.

Figure 5.3: Medications prescribed to young people aged 12–24 years during consultations with general practitioners, April 2001 – March 2002

- Antibiotics were the most commonly prescribed medication (20 per 100 consultations).
- Medications for the treatment of illnesses related to the central nervous system or neurological problems were the second most common group of medications (7 per 100 consultations).
- Medications for treating respiratory illness (including asthma and bronchitis), as well as contraceptives, were the next most commonly prescribed groups (6 per 100 consultations).
- Medications for skin problems and for allergy and immune system problems were also common (5 and 4 per 100 consultations, respectively).

Referrals and admissions

During the 12-month survey period, there were 997 referrals to other health professionals including hospitals and emergency departments, representing a referral rate of just over 9 per 100 consultations. The health professionals to whom young people were referred are shown in Figure 5.4.



Source: BEACH survey, April 2001–March 2002.

Figure 5.4: Referrals to other health professionals of young people 12–24 years, April 2001–March 2002 (rate per 100 consultations)

- At about 6 per 100 consultations, young people were referred by the GP to a medical specialist. Referrals to medical specialists were most frequently to dermatologists (15%), orthopaedic surgeons (11%), gynaecologists (10%), ear, nose and throat specialists (9%) and surgeons (9%).
- GPs referred young patients to allied health specialists at a rate of 2.3 per 100 consultations. The majority of these referrals were to physiotherapists, psychologists or dentists.
- Some young people were referred to hospitals (0.5 per 100 consultations) and emergency departments (0.1 per 100 consultations).

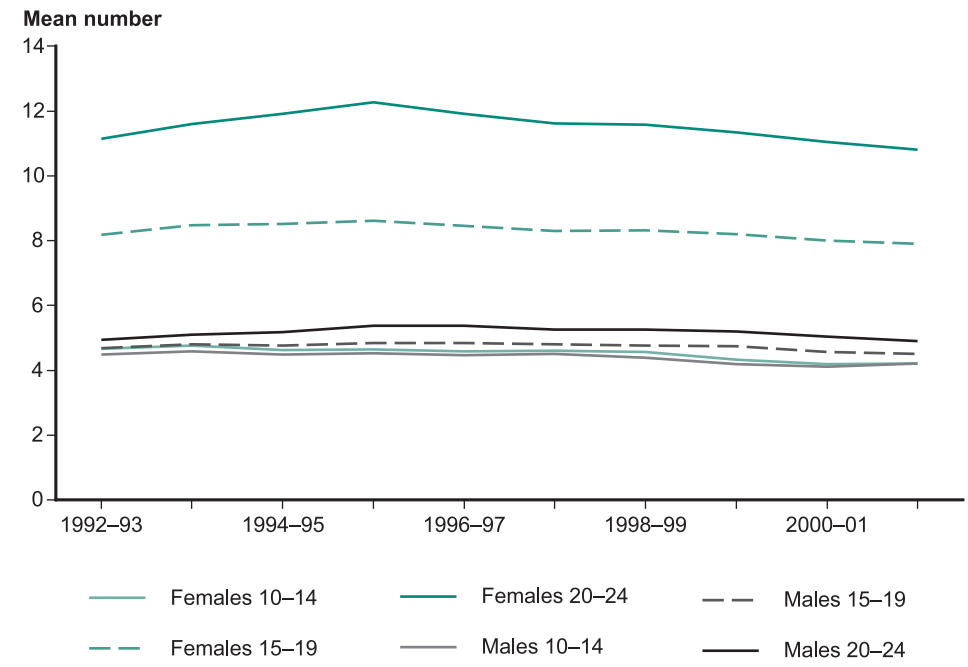
Pathology and imaging investigations

Pathology tests were ordered at a rate of 28 per 100 consultations and were most commonly for full blood count (15%), urine tests (6%), liver function tests (6%) or Pap smear (5%). Imaging (including X-ray, ultrasound and CT scans) was ordered at a rate of 7 per 100 consultations. Where the type of imaging was reported, X-rays represented the highest proportion (41%) and were most often ordered for the chest, ankle, knee, foot, wrist and hand.

Medicare use

Medicare items cover services provided outside hospitals by medical practitioners (either general or specialist) and treatment as a private patient in either a public or private hospital. Time series for average number of Medicare items per young person aged 10–24 years are shown in Figure 5.5.

Note that the following Medicare statistics relate only to services rendered on a 'fee-for-service' basis for which Medicare benefits were paid in the period in question. Excluded are details of services to public patients in hospital, Veterans' Affairs patients and some compensation cases. In addition, in the Northern Territory, services are provided to some Aboriginal communities outside Medicare 'fee-for-service' and are not reflected in these statistics.



Source: DoHA 2003.

Figure 5.5: Mean number of Medicare items per young person aged 10–24 years, 1992–93 to 2001–02

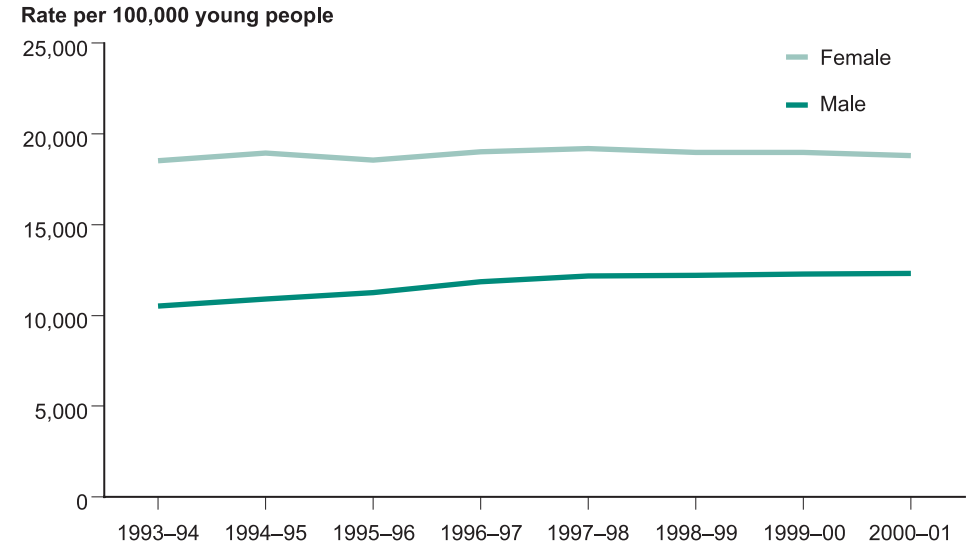
- Use of Medicare items by young people in Australia has remained fairly constant between 1992–93 and 2001–02.
- Rates of Medicare item usage were highest for young women aged 20–24 years, followed by those aged 15–19 years.
- Rates of Medicare item usage increased with increasing age.
- In 2001–02, the average numbers of Medicare services for males were 4.2, 4.5 and 4.9 for the age groups 10–14, 15–19 and 20–24 years respectively. Rates for females in the corresponding age groups were 4.2, 7.9 and 10.8.

The Northern Territory had the lowest average numbers of Medicare services. For young males the average number of services was less than 3 for each age group. For

females the average number of Medicare services in the Northern Territory ranged from 2.3 to 7.9 (10–14 years to 20–24 years).

For males, New South Wales had the highest average number of Medicare services of all states and territories, ranging from 4.5 to 5.3 (10–14 years to 20–24 years). For females, New South Wales had the highest average number for those aged 10–14 years (4.4), and Tasmania had the highest for those aged 15–19 and 20–24 years (8.4 and 11.8, respectively).

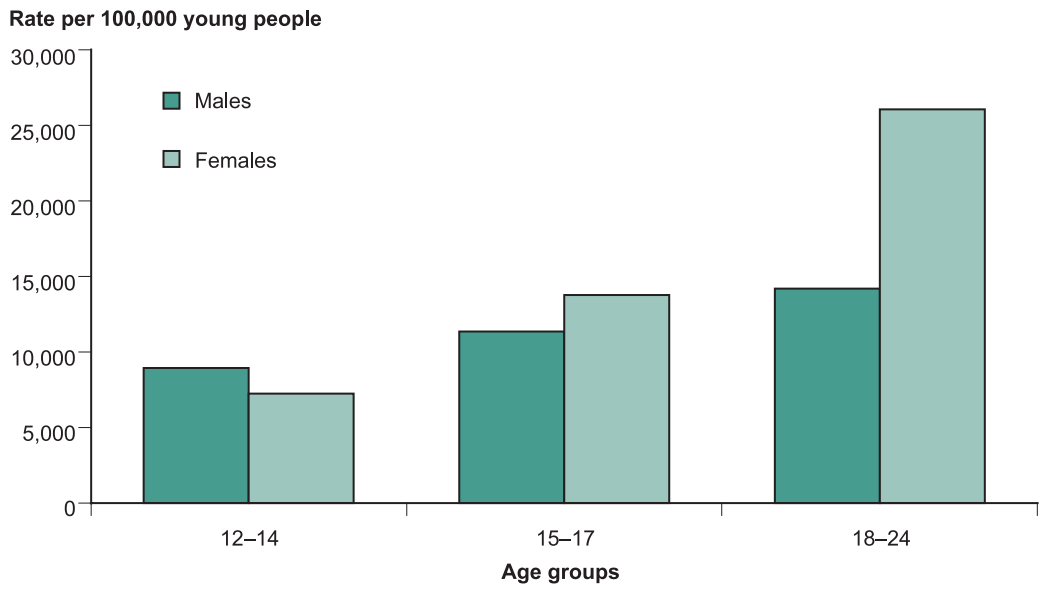
Hospitalisations



Source: AIHW National Hospital Morbidity Database.

Figure 5.6: Hospitalisation rates for young people aged 12–24 years, 1993–94 to 2000–01

- The hospitalisation rates for young Australians increased slightly between 1993–94 and 2000–01 by 17% for males and 2% for females.
- Rates were consistently higher for females than males. This was because of the relatively high number of hospitalisations for pregnancy and childbirth-related diagnoses. In 2000–01, pregnancy and childbirth-related hospitalisations accounted for 33% of all female hospitalisations. Of these, 91% were for pregnancy and child birth-related complications.



Source: AIHW National Hospital Morbidity Database.

Figure 5.7: Hospitalisation rates for young people aged 12–24 years, 2000–01

- In 2000–01, out of a total of over 6 million hospitalisations in Australia, 533,108 or 9% were for young people aged 12–24 years. In 2001, people aged 12–14 years constituted 17% of the Australian population. Of all hospitalisations of young people, 215,736 (40%) were of males and 317,372 (60%) were of females.
- Among young people aged 12–14 years, hospitalisation rates were higher for males than females, whereas in the other age groups they were higher for females. Among young people aged 15–17 years, rates for females were 1.2 times those for males. Among young people aged 18–24 years, rates for females were 1.8 times those for males.
- Rates for young people aged 18–24 years were 2.5 times higher than for those aged 12–14 years.

Reasons for hospitalisation of young people

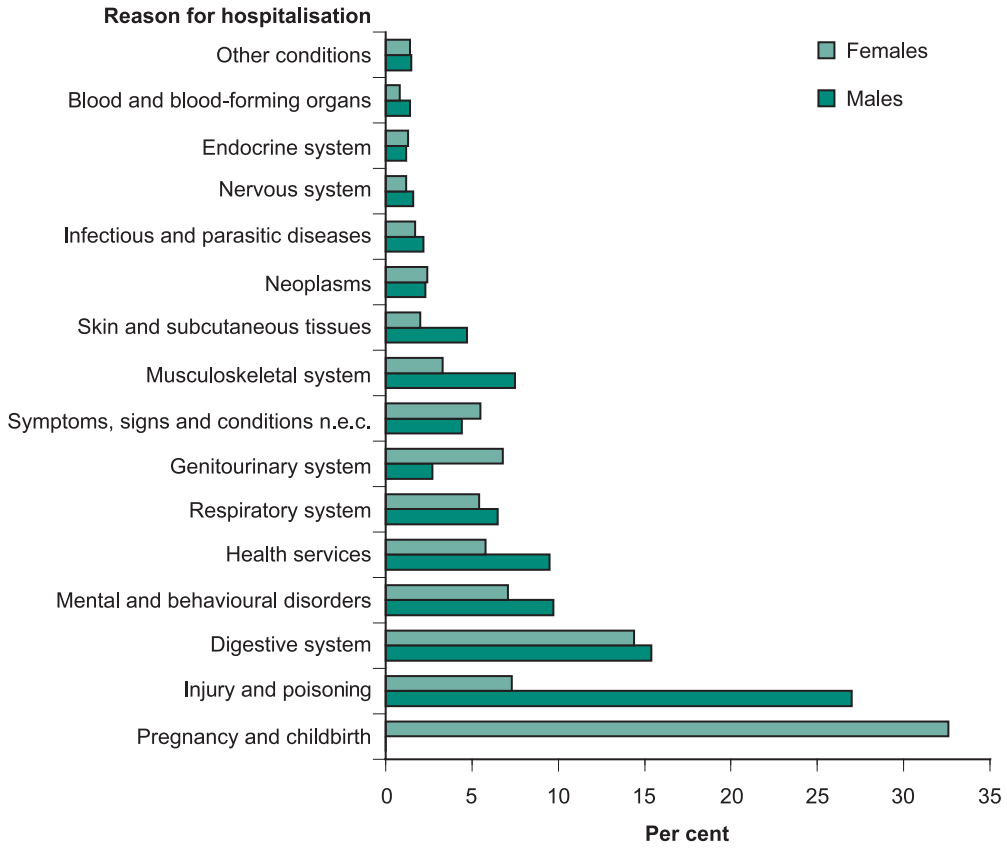
A summary of the main reasons for hospitalisation of young people in 2000–01 is presented in Table 5.4. The reasons presented here are classified mainly according to the chapters of the International Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification, 2nd edition (ICD-10-AM).

Table 5.4: Reasons for hospitalisation of young people aged 12–24 years, 2000–01

	Number			Rate per 100,000 young people		
ICD-10-AM diagnosis chapter	Males	Females	Persons	Males	Females	Persons
Pregnancy and childbirth	—	103,365	103,365	—	6,130.8	3,006.0
Injury and poisoning	58,152	23,017	81,169	3,318.0	1,365.2	2,360.5
Digestive system	33,214	45,849	79,066	1,895.1	2,719.4	2,299.4
Mental and behavioural disorders	20,946	22,557	43,505	1,195.1	1,337.9	1,265.2
Other reasons for contact with health services	20,556	18,265	38,821	1,172.9	1,083.3	1,129.0
Respiratory system	14,036	17,015	31,051	800.9	1,009.2	903.0
Genitourinary system	5,846	21,581	27,427	333.6	1,280.0	797.6
Symptoms, signs and abnormal findings	9,492	17,549	27,041	541.6	1,040.9	786.4
Musculoskeletal system	16,084	10,603	26,687	917.7	628.9	776.1
Skin and subcutaneous tissues	10,085	6,280	16,365	575.4	372.5	475.9
Neoplasms	5,002	7,543	12,545	285.4	447.4	364.8
Infectious and parasitic diseases	4,657	5,487	10,145	265.7	325.4	295.0
Nervous system	3,444	3,712	7,156	196.5	220.2	208.1
Endocrine system	2,670	4,075	6,745	152.3	241.7	196.2
Blood and blood-forming organs	3,123	2,484	5,607	178.2	147.3	163.1
Circulatory system	2,742	2,282	5,024	156.5	135.4	146.1
Congenital malformations	2,242	2,475	4,717	127.9	146.8	137.2
Ear diseases	1,746	1,702	3,448	99.6	100.9	100.3
Eye diseases	1,280	1,197	2,478	73.0	71.0	72.1
Mental retardation	41	48	89	2.3	2.8	2.6
Conditions originating in the perinatal period	16	6	22	0.9	0.4	0.6
No diagnosis recorded	362	280	635	20.7	16.6	18.5
Total	**215,736**	**317,372**	**533,108**	**12,309.5**	**18,824.0**	**15,503.7**

Source: AIHW National Hospital Morbidity Database.

- For all young people aged 12–24 years, the most frequent reasons for hospitalisation were pregnancy and childbirth, injury and poisoning, and conditions of the digestive system. Included in the digestive system category are hospitalisations for impacted teeth, which made up about 40% of these hospitalisations.
- For females, pregnancy and childbirth were the most common reasons for hospitalisation. These included 9,575 hospitalisations (or 9% of hospitalisations for pregnancy and childbirth) for single spontaneous deliveries with no complications.
- Under the category 'Other reasons for contact with health services', the most common reasons for hospitalisation were extracorporeal dialysis (30%), follow-up care involving removal of fracture plate and other internal fixation device (13%) and chemotherapy session for neoplasm (9%).



Note: 'Other conditions' include diseases of the circulatory system, congenital malformations, ear diseases, eye diseases, mental retardation and conditions originating in the perinatal period.

Source: AIHW National Hospital Morbidity Database.

Figure 5.8: Reasons for hospitalisations of young people aged 12–24 years, 2000–01

- Pregnancy and childbirth were the reasons for nearly 33% of all hospitalisations of young women aged 12–24 years, and injury was the main reason for hospitalisation of young males (27% of male hospitalisations).
- Problems with the digestive system (including impacted teeth) were the reason for around 15% of all hospitalisations. Mental and behavioural disorders were the reason for around 8%.

Table 5.5: Most frequent diagnoses for hospitalisations of young people aged 12–24 years, 2000–01

		Number			Rate per 100,000 young people		
Age (years)	Diagnosis	Males	Females	Persons	Males	Females	Persons
12–14	Impacted teeth	972	1,643	2,615	236.9	419.7	326.1
	Chronic tonsillitis	577	1,155	1,732	140.6	295.0	216.0
	Acute appendicitis, unspecified	956	613	1,569	233.0	156.6	195.7
	Ingrowing nail	895	519	1,414	218.1	132.6	176.3
	Asthma, unspecified	637	546	1183	155.2	139.5	147.5
15–17	Impacted teeth	3,210	4,910	8,120[(a)]	779.7	1245.5	1007.5
	Chronic tonsillitis	632	1,726	2,358	153.5	437.8	292.6
	Medical abortion, complete or unspecified, without complication	—	2,165	2,165	—	549.2	268.6
	Extracorporeal dialysis	1,191	645	1,836	289.3	163.6	227.8
	Acute appendicitis, unspecified	880	702	1,582	213.7	178.1	196.3
18–24	Impacted teeth	7,785	14,201	21,986[(b)]	836.6	1577.4	1200.9
	Medical abortion, complete or unspecified, without complication	—	12,389	12,389	—	1376.1	676.7
	Extracorporeal dialysis	5,707	3,619	9,326	613.3	402.0	509.4
	Single spontaneous delivery	—	8,858	8,858	—	983.9	483.8
	Second-degree perineal laceration during delivery	—	5,277	5,277	—	586.1	288.2

(a) Excludes 1 record with missing sex.

(b) Excludes 3 records with missing sex.

Note: ICD-10-AM codes: K01.1, J35.0, K35.9, L60.0, J45.9, K01.1, J35.0, O04.9, Z49.1, K35.9, K01.1, O04.9, Z49.1, O80, and O70.1

Source: AIHW National Hospital Morbidity Database.

- Impacted teeth were the most common reason for hospitalisation of young people in each age group.
- Chronic tonsillitis continues from childhood as a common reason for hospitalisation for young people aged 12–17 years.
- Diagnoses related to childbirth are among the most common reasons for hospitalisation among those aged 15–24 years, especially for those aged 18–24 years.

Health-related actions

The type of health-related action taken by young people in the 2 weeks before the ABS NHS is shown in Table 5.6.

Table 5.6: Health-related actions taken in the 2 weeks before the survey by young people aged 15–24 years, 1989–90, 1995 and 2001[a] (per cent)

Health-related action	1989–90	1995	2001
Consulted doctor (GP or specialist)	16.5	18.7	18.7
Consulted dentist	4.8	5.1	6.8
Consulted other health professional[b]	8.3	9.3	12.0
Visited day clinic	. .	1.3	2.1
Visited outpatients	. .	2.0	1.6
Visited casualty/emergency	. .	1.0	1.3
Hospital in-patient	0.9	0.5	0.5
Had days away from work/study[c]	11.3	10.7	13.0
Had other days of reduced activity	8.3	4.7	10.9
None of the above actions	66.0	65.8	60.1

. . not applicable (not asked in 1989–90)

(a) Changes in the survey methodology and classifications may reduce direct comparability between surveys.

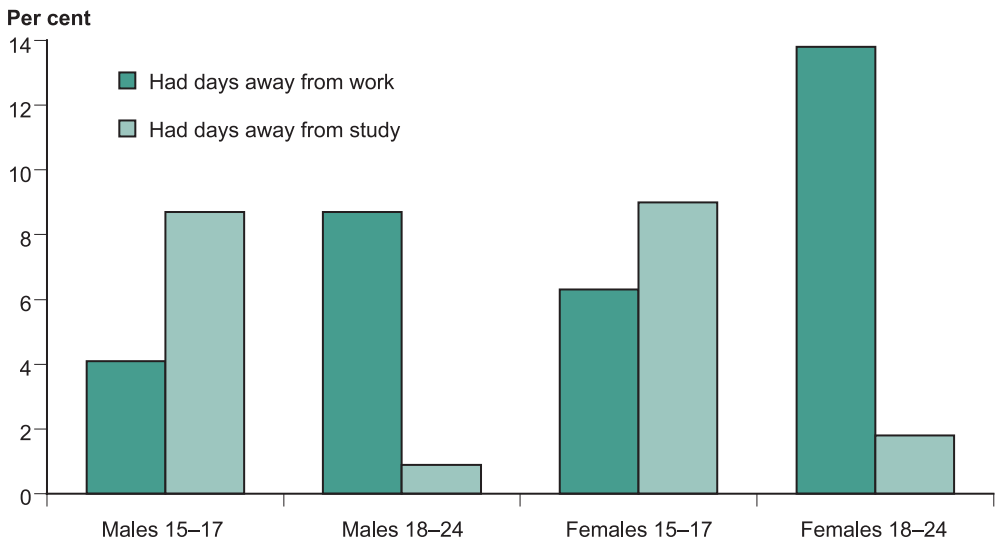
(b) The types of health professional covered within this group differ between surveys.

(c) Days away due to own illness/injury only.

Source: ABS 2002.

- The proportion of young people aged 15–24 years who did not take a health-related action in the 2 weeks before the survey decreased from 66% in 1989–90 to 60% in 2001.
- Of the 40% who took a health-related action in 2001, the most common actions taken were consulting a GP (19%), taking days away from work or study (13%), consulting other health professionals (12%), having days with reduced activity (11%) and consulting a dentist (7%).
- Dental consultations increased from 4.8% in 1989–90 to 7.0% in 2001.

The 2001 ABS NHS showed that, in the 2 weeks before interview, 9% of all young people aged 15–24 years had had days away from work and 3% days away from school/study because of illness (Figure 5.9).



Source: ABS NHS 2001, unpublished data.

Figure 5.9: Proportion of young people aged 15–24 years who reported taking days away from work or study due to illness, 2001

- Among young people who were ill, the majority did not take time off due to illness. Of those who were ill, approximately 15% had days away from work due to illness and 14% had days away from study due to illness.
- Of young people aged 15–17 years, 9% took days away from study due to illness, and 5% took days away from work. For young people aged 18–24 years, 1% took days away from study and 11% took days away from work.
- A higher proportion of females than males in both age groups had days off from work or study.

6. Disability

Disability can affect an individual's participation in society and therefore is an important aspect of health and wellbeing. Children and young people with a severe disability may be in good health, but may have long-term limitations on normal activities and be unable to participate in many activities. Young people may have a 'core activity restriction' if they are limited in their ability, to some degree, to perform tasks in relation to self-care, mobility, communication, schooling and/or employment. Disability can create serious financial hardship for the person with the disability, their parents and carers. Young people with a disability can have difficulty taking up employment and can often be excluded from normal social activities outside the home. A disability affects the overall wellbeing of the affected young people, their parents and their siblings.

This chapter presents information on the prevalence of disability among Australian young people. The information is derived from the 1998 ABS Survey of Disability, Ageing and Carers. A disability is defined by the ABS as the presence of one or more of 17 restrictions, limitations or impairments that had lasted, or that were likely to last, for a period of 6 months or more. Four levels of core activity restriction are distinguished: profound, severe, moderate and mild. People with a profound core activity restriction are not able to do, or always need help with, a core activity. Those with a severe restriction may sometimes need help with a core activity, may have difficulty understanding or being understood by others, or may use sign language more easily than spoken communication. People with a moderate restriction need no help but have difficulty with a core activity. Those with a mild restriction need no help and have no difficulty with core activities, but use aids and equipment, or may have other difficulties, for example with walking long distances, using public transport, walking up and down stairs or bending to pick up an object from the floor (ABS 1999).

Prevalence of disability and core activity restriction

In 1998, based on the ABS definition of disability, it was estimated that approximately 230,200 young people aged 15–24 years had a disability (Table 6.1). The proportion of young people aged 15–24 years with a disability was estimated to be about 9%.

Table 6.1: Estimated number of young people aged 15–24 years with a disability, 1998

		Total with specific restriction[a]		Total without specific restriction		Total with disability	
	Age (years)	Number ('000)	Per cent[b]	Number ('000)	Per cent[b]	Number ('000)	Per cent[b]
Males	15–19	52.0	7.7	10.2	1.5	62.3	9.2
	20–24	56.2	8.0	13.6	1.9	69.8	9.9
	15–24	10.8	7.9	23.8	1.7	132.1	9.6
Females	15–19	35.1	5.5	10.2	1.6	45.4	7.1
	20–24	41.0	6.2	13.8	2.1	54.8	8.2
	15–24	76.2	5.8	24.0	1.8	100.2	7.7
Persons	15–19	87.2	6.6	20.5	1.6	107.6	8.2
	20–24	97.2	7.1	27.3	2.0	124.6	9.1
	15–24	184.4	6.9	47.8	1.8	232.2	8.7

(a) 'Specific restriction' includes restrictions in self-care, mobility, communications and schooling or employment.

(b) Per cent is the rate per 100 population of the relevant age group.

Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers unit record file.

- The overall disability rate among young people aged 15–24 years was about 9%, with more males than females reporting having a disability (10%, compared with 8%). In both age groups, males had higher rates of disability and core activity restriction than females.
- Most young people with a disability had a specific restriction (79%). Specific restriction was lower among young people aged 15–19 years than those aged 20–24 years.

Although the prevalence of disability appears to have increased during the 5 years from 1993 to 1998, the two ABS disability surveys are not strictly comparable. A change in wording of a survey question from 'slow at learning or understanding' in the 1993 survey to 'difficulty in learning or understanding' in the 1998 survey is thought to have encouraged more reporting of intellectual and developmental disabilities, especially among boys.

The rate of those with activity restrictions by disability status is shown in Table 6.2.

Table 6.2: Young people aged 15–24 with a disability, 1998

		Profound/severe core activity restriction		Moderate/mild core activity restriction		Schooling or employment restriction only		Total with specific activity restriction	
	Age (years)	Number ('000)	Per cent[(b)]	Number ('000)	Per cent[(b)]	Number ('000)	Per cent[(b)]	Number ('000)	Per cent[(b)]
Males	15–19	17.6	2.6	21.9	3.2	12.5	1.9	52.0	7.7
	20–24	11.6	1.7	27.7	3.9	16.9	2.4	56.2	8.0
	15–24	29.2	2.1	49.6	3.6	29.5	2.1	108.2	7.9
Females	15–19	13.5	2.1	15.9	2.5	5.7	0.9	35.1	5.5
	20–24	9.6	1.4	21.0	3.2	10.4	1.6	41.0	6.2
	15–24	23.1	1.8	36.9	2.8	16.1	1.2	76.2	5.8
Persons	15–19	31.1	2.4	37.8	2.9	18.2	1.4	87.2	6.6
	20–24	21.2	1.6	48.7	3.6	27.3	2.0	97.2	7.1
	15–24	52.4	2.0	86.5	3.2	45.6	1.7	184.4	6.9

(a) The estimates of young people with schooling restriction include young people with schooling restriction only and with no restriction in core activities. Some children with mild, moderate, severe or profound core activity restriction may also have schooling restriction.

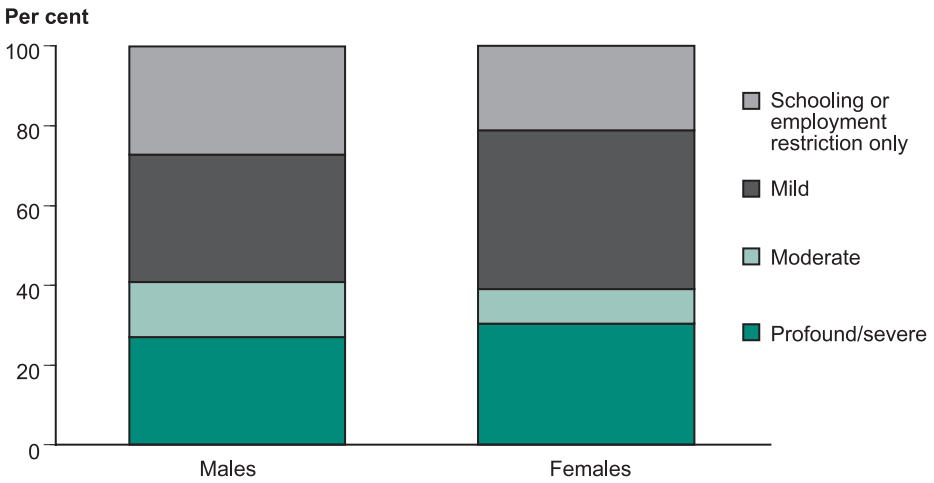
(b) Per cent is the rate per 100 population of the relevant age group.

Note: Estimates of 9,300 or less have an associated standard error of 25% or more and should be interpreted with caution.

Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers unit record file.

- Among young people aged 15–24 years, 2% had a profound or severe core activity restriction and just under 2% had a schooling or employment activity restriction only.
- Disability status varied by age and sex. Young people aged 15–19 years had a higher rate of profound/severe core activity restriction than those aged 20–24 years, whereas those aged 20–24 years had a higher rate of schooling or employment restriction only. In all age groups, females had a slightly lower rate of profound or severe core activity restriction than males.

Among those with specific restriction, the distribution by disability status is shown in Figure 6.1.



Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers unit record file.

Figure 6.1: Per cent distribution of specific restriction, 1998

- Of young people aged 15–24 years with a specific restriction, 47% had a moderate or mild core activity restriction, 28% had a profound/severe core activity restriction and 1 in 4 (25%) had a schooling/employment restriction only.
- Among males with a specific restriction, the highest proportion had a mild core activity restriction (32%), followed by schooling/employment restriction only and severe/profound core activity restriction (27% each).
- Among females with a specific restriction, the highest proportion (40%) had a mild core activity restriction, followed by a severe/profound core activity restriction (30%) and then schooling/employment restriction (21%).

Main disabling condition

A person's main disabling condition was defined in the 1998 disability survey as 'a long-term condition identified by a person as the one causing the most problems' (ABS 1999: 69). The main disabling conditions for young people are shown in Table 6.3.

Table 6.3: Main disabling condition of young people aged 15–24 years with a disability, 1998

	Number('000)			Per cent		
Main disabling condition	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Intellectual & other mental[a]	43.2	14.5	57.6	18.6	6.2	24.8
Respiratory diseases	15.6	18.7	34.3	6.7	8.1	14.8
Arthritis	2.8	2.0	4.7	1.2	0.8	2.0
Other musculoskeletal disorder	20.8	13.1	33.9	9.0	5.6	14.6
Nervous system diseases	4.5	15.0	19.6	2.0	6.5	8.4
Psychiatric[b]	7.4	9.7	17.1	3.2	4.2	7.4
Diseases of ear	5.1	2.8	7.9	2.2	1.2	3.4
Head injury/any other brain damage	2.7	2.3	5.0	1.2	1.0	2.2
Disease of eye	2.0	2.7	4.7	0.9	1.1	2.0
Stroke	0.4	0.3	0.7	0.2	0.1	0.3
Other circulatory diseases	1.0	1.4	2.5	0.4	0.6	1.1
All other diseases and conditions[c]	26.4	17.7	44.1	11.4	7.6	19.0
Total	**132.1**	**100.2**	**232.2**	**56.9**	**43.1**	**100.0**

(a) Includes the group entitled 'Intellectual and developmental disorders' and 'Other mental and behavioural disorders'. The definition has changed since the 1993 survey and now includes Down syndrome.

(b) Includes the group entitled 'Psychoses/mood affective disorders' and 'Neurotic/stress-related/somatoform disorders' in ABS publications. The definition has changed since the 1993 survey.

(c) Includes other physical diseases and conditions such as spina bifida, neoplasms and diseases of urinary system, genital organs and breast.

Note: Estimates of 9,300 or less have an associated relative standard error of 25% or more, and estimates of 2,700 or less have an associated relative standard error of 50% or more. These estimates should be interpreted with caution.

Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers unit record file.

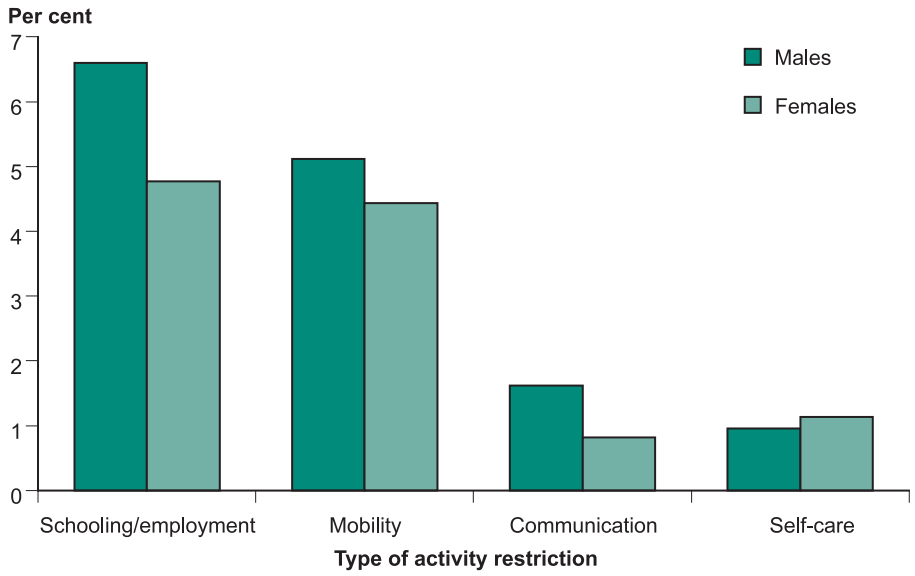
- In 1998, intellectual and other mental disorders were the most commonly reported main disabling condition of young people aged 15–24 years with a disability, accounting for 25% of all disabling conditions. The proportion of young people with a disability who had intellectual and other mental disorders in 1998 was almost twice that reported in 1993 (3%, compared with just under 2%). As noted, changes to a survey question in 1998 are thought to be responsible for the increased reporting of intellectual and developmental disabilities among young people, especially among boys.
- Musculoskeletal diseases, including arthritis, were the second most frequently reported disabling condition of young people with a disability aged 15–24 years (17%).
- Respiratory diseases accounted for 16% of all reported main disabling conditions among young people with a disability.
- There were differences in the main disabling conditions by sex. The three most commonly reported disabling conditions in males were intellectual and other mental conditions (19%), musculoskeletal (10%) and respiratory diseases (7%). The corresponding main disabling conditions for females were respiratory diseases (8%), diseases of the nervous system (7%) and intellectual and other mental conditions (6%).

Among young people aged 15–24 years with a profound/severe core activity restriction, intellectual and other mental conditions (39%) and psychiatric conditions (12%) accounted for 51% of all disabling conditions, and diseases of the nervous (16%) and musculoskeletal systems (10%) accounted for an additional 26% of main disabling conditions.

Among young people with profound or severe core activity restriction, intellectual and other mental conditions, diseases of the nervous system, psychiatric illnesses, and head injury and brain damage accounted for the majority of disabling conditions (69%).

Activity limitation

Young people are regarded as having activity limitations if they have difficulty doing a particular activity, need help from another person or use an aid.



Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers unit record file.

Figure 6.2: Proportion of young people aged 15–24 years with a specific restriction, 1998

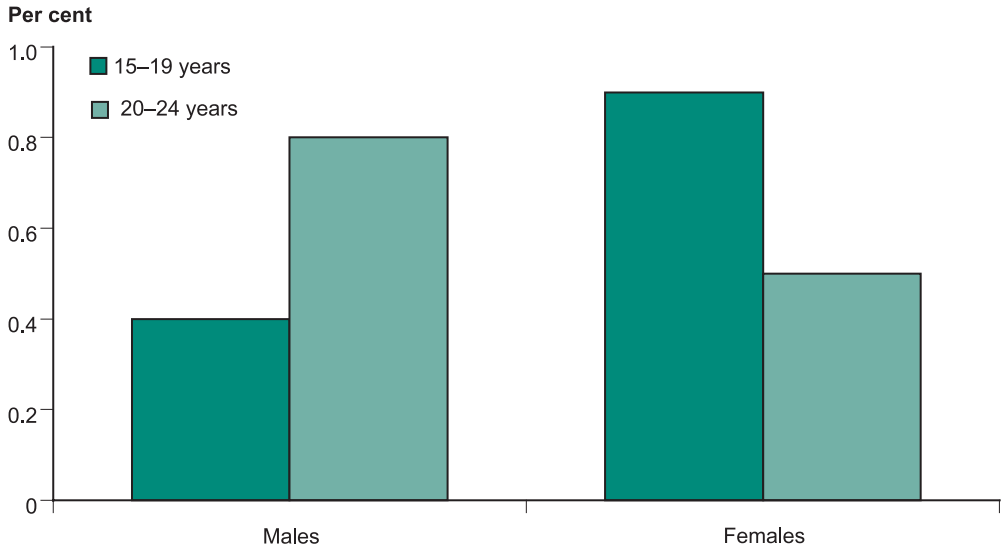
- The most commonly reported activity restrictions were limitations in the ability to undertake schooling or employment only, followed by limitations in mobility, communication, and self-care.
- The rates for all activity limitations, with the exception of self-care, were higher for males than females.

Hearing and sight impairments

Sight and hearing problems can play a role in hindering development and ability to learn.

Hearing impairment

Hearing impairments are more common than visual impairments among young people aged 15–24 years. In 1998, approximately 17,000 young people were reported as having some form of hearing impairment.



Note: Estimates for males aged 15–19 years have an associated relative standard error of 50% or more. Estimates for females aged 15–19 years and both males and females aged 20–24 years have an associated relative standard error of 25% or more.

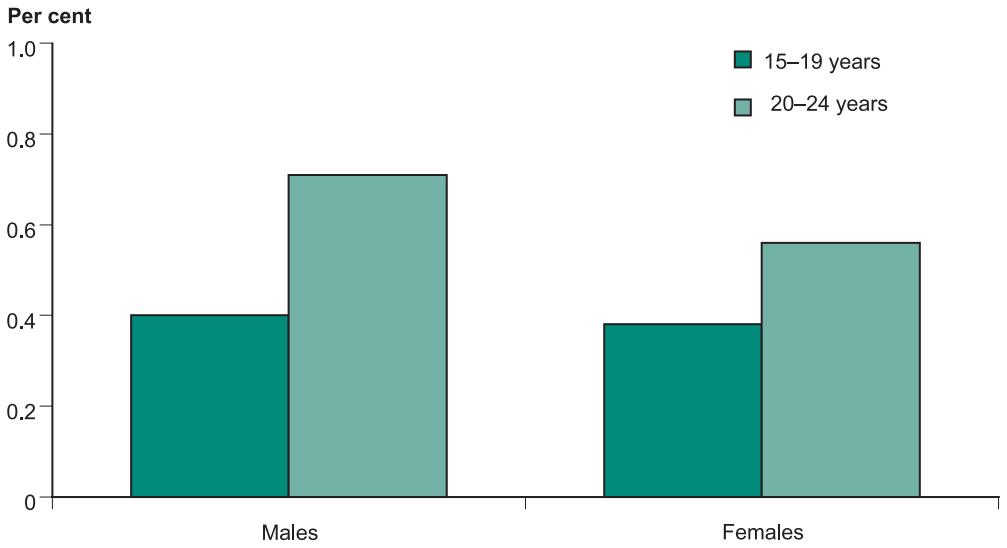
Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers unit record file.

Figure 6.3: Proportion of young people aged 15–24 years with hearing impairment, 1998

- Of all young people aged 15–24 years, just over 0.6% were reported as having some form of hearing impairment, with 0.09% having a total loss of hearing, and 0.6% a partial loss of hearing. Overall, hearing impairment was slightly higher in the 20–24 age group (0.7%, compared with 0.6%).

Sight impairment

Overall in 1998, approximately 13,400 young people were estimated to have some form of visual impairment. Of these, 55% were males.



Note: Estimates for young people aged 15–19 years have an associated relative standard error of 50% or more. Estimates for young people aged 20–24 have an associated relative standard error of 25% or more.

Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers unit record file.

Figure 6.4: Proportion of young people aged 15–24 years with visual impairment, 1998

- In 1998, all visual impairment among surveyed young people aged 15–24 years was due to partial loss of vision—0.5% of all young people. Visual impairment was highest among those aged 20–24 years, irrespective of sex.
- The visual impairment rate was slightly higher among males than females.

Effect of disability on schooling

Many young people aged 15–19 years with a disability are still attending school. The schooling characteristics of young people with a disability are shown in Table 6.4.

Table 6.4: Schooling characteristics of young people aged 15–19 years with a disability, by sex, 1998

	Number ('000)			Per cent attending school		
	Males	Females	Persons	Males	Females	Persons
Mainstream school	27.6	17.6	45.1	91.2	85.0	88.7
No special class	22.6	13.9	36.6	74.9	67.4	71.8
Special class	4.9	3.6	8.6	16.3	17.6	16.8
Special school	2.7	3.1	5.8	8.8	15.0	11.3
Difficulties at school[(a)]	18.8	9.6	28.4	62.2	46.5	55.8
Fitting in socially	8.6	4.0	12.7	28.6	19.5	24.9
Sight difficulties	0.5	0.3	0.8	3.8	10.6	6.6
Hearing difficulties	1.2	2.2	3.3	1.8	1.4	1.6
Other difficulties	1.9	5.4	7.3	6.3	25.9	14.3
						9.4
Need time off school	2.3	2.6	4.8	7.5	12.4	9.5
Attending school	**30.2**	**20.7**	**50.9**	**100.0**	**100.0**	**100.0**

(a) Young people may fall into none or more than one of these groups.

Note: Estimates of 9,300 or less have an associated relative standard error of 25% or more and estimates of 2,700 or less have an associated relative standard errors of 50% or more and should be interpreted with caution.

Source: AIHW analysis of ABS 1998 Survey of Disability, Ageing and Carers unit record file.

- Most young people aged 15–24 years with a disability who attended school were enrolled in mainstream schools (89%). Special schools were attended by 11%.
- Of young people attending mainstream schools, 72% attended normal classes and 17% attended special classes.
- Around 56% of young people with a disability who attended school were reported to have difficulties at school because of their disability.
- The most frequently reported difficulty at school was fitting in socially. Approximately 25% of young people with a disability attending school were reported as having this difficulty.
- About 10% of young people attending school needed time off school because of their disability.

Level of schooling and educational attainment by disability status

Disability, whether physical or intellectual, can have an impact on the ability to complete school or obtain a post-school qualification. This section explores the impact of disability on educational attainment.

A disability was, on average, associated with lower achievement at school. A higher proportion of young people aged 15–24 years without a disability completed Year 12 than did those with a disability—53%, compared with 32%. A higher proportion of young people aged 20–24 years without a disability had post-school qualifications than had those with a disability—69%, compared with 57%. The proportion of young people aged 15–24 years with and without post-school qualifications, by disability status, is shown in Table 6.5.

Table 6.5: Proportion of young people aged 20–24 years with and without post-school qualifications, by disability status, 1998

	With post-school qualification		Without post school qualifications[a]		
Disability status	**Number**	**Per cent**	**Number**	**Per cent**	**Total**
Profound core activity restriction	2,098	34.6	3,963	65.4	6,061
Severe core activity restriction	3,694	25.8	10,625	74.2	14,319
Moderate core activity restriction	3,670	25.9	10,524	74.1	14,194
Mild core activity restriction	9,993	29.0	24,451	71.0	34,444
Schooling or employment restriction only	10,602	38.8	16,713	61.2	27,315
All with specific restrictions[b]	30,057	31.2	66,276	68.8	96,333
No restrictions	8,766	32.1	18,547	67.9	27,313
All with disability[c]	38,823	31.4	84,823	68.6	123,646
No disability	538,687	43.4	702,503	56.6	1,241,190

(a) Includes un-codable post-school qualifications.

(b) Total may be less than the sum of the components as persons may have both a core activity restriction and a schooling or employment restriction.

(c) Includes those who do not have a specific restriction.

Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers unit record file.

- Approximately 43% of young people aged 20–24 years without a disability have post-school qualifications, compared with 31% of those with a disability.
- The level of educational attainment is influenced by disability status. Just over one-third (35%) of those with profound core activity restriction have post-school qualifications.

References

ABS (Australian Bureau of Statistics) 1997. National Health Survey: summary of results. ABS Cat. No. 4364.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 1999. Disability, ageing and carers: summary of findings. Cat. No. 4430.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002. National Health Survey: summary of results. ABS Cat. No. 4364.0. Canberra: ABS.

DoHA (Commonwealth Department of Health and Ageing) 2003. Medicare statistics 1984/85 to March Quarter 2003. DoHA. Viewed 1 July 2003, <http://www.health.gov.au/haf/medstats/index.htm>.

Idler EL & Benyamini Y 1997. Self-rated health and mortality: a review of twenty-seven community studies. Journal of Health and Social Behaviour 38:21–37.

Miilunpalo S, Vuori I, Oja P et al. 1997. Self-rated health status as a health measure: the predictive value of self-reported health status on the use of physician services and on mortality in the working-age population. Journal of Clinical Epidemiology 50(5):517–28.

Part III: Health conditions

Chapter 7. Injury and poisoning

Chapter 8. Mental health problems and disorders

Chapter 9. Sexual and reproductive health

Chapter 10. Infectious diseases

Chapter 11. Chronic conditions

Chapter 12. Oral health

7. Injury and poisoning

Injury[1] is a leading cause of death of young people in Australia—more deaths of young people are due to injury than all other causes of death combined. Injury is also among the leading causes of hospitalisation of young people. Injury can affect a person's employment or educational opportunities, and can lead to disability and disfigurement, which can then affect future health and wellbeing.

Some groups of young people are more at risk of injuries than others, in particular young males, people who are socioeconomically disadvantaged, people who live in remote and rural areas, and Indigenous Australians (DHAC 2001). Towner et al. (1994) found that among adolescents aged 11–14 years, boys and those from poorer households had a greater risk of injury when travelling to and from school and places of recreation. Males may be at greater risk of injury than females because they are more likely to be involved in risk-taking behaviours that lead to injury, such as consumption of alcohol (Norton & Lam 1999). The Victorian Injury Surveillance and Applied Research System (VISAR) found that lower socioeconomic status was associated with increased risk of death, hospital admission and emergency department presentation (Monash University 2003).

Causes of injury varied with socioeconomic status. Persons of low socioeconomic status were more likely to commit suicide, to cause themselves harm, or to be killed or assaulted by another person. People from the mid-range socioeconomic groups were more likely to have transport accidents other than pedestrian injury. Those in both the very high and very low socioeconomic groups were more likely to experience pedestrian injuries and drug overdoses.

Injuries and poisoning are the leading causes of mortality and ill health among children and young people, but the patterns of injury change during adolescence and early adulthood. For example, older children and adolescents are more likely than younger children to walk or ride to school without parental supervision, and they are at increased risk of pedestrian or pedal cyclist injury. Inexperience with activities such as driving a vehicle can lead to increased risk of injury from car accidents (Youthsafe 2003). Work-related injuries are also of concern among young people; these injuries may be due to the types of jobs young people are employed in, inexperience with the tasks required, or risk-taking (AIHW NISU 1995).

Risky behaviours which often lead to injury are more common in adolescence and early adulthood than in childhood or adulthood. These behaviours include not wearing a seatbelt when travelling in a car, driving under the influence of drugs or alcohol, being a passenger in a car with a driver under the influence of drugs or alcohol, riding a bicycle or motorcycle without a helmet, and being involved in a physical fight (CDC 1998). Young people are also more likely to experiment with or use illicit substances, as well as alcohol, which can make them more prone to certain types of injuries, such as falls, transport accidents and assault.

Although physical activity is extremely important for the health of young people, there are risks involved in many sports and other physical activities. Scott (1998) states that sport and occupational injuries are the leading causes of presentation to hospital emergency departments for injury. Injuries that can be sustained during participation in sports include head injuries, strains and sprains, injuries to teeth, and limb fractures.

1. 'Injury' as defined here includes poisoning.

Many injuries that are experienced by young people are preventable. Injury prevention and control has been a National Health Priority Area since 1986. Although there have been clear improvements in road safety over the last two decades (DHAC 2001), a major cause of injury to young people in Australia remains road and other transport accidents. The other major causes are suicide and self-inflicted injuries. There are a number of national campaigns aimed at the prevention of injury, including the National Road Safety Strategy (road injury), the National Occupational Health and Safety Commission (workplace injury) and the National Suicide Prevention Strategy (suicide and self-harm). The Strategic Injury Prevention Partnership is a national collaboration of health jurisdictions and is charged with the task of implementing the National Injury Prevention Plan.

Incidence

The ABS NHS 2001 collected information on injury events that resulted in a health action being taken by young people aged 12–24 years in the 4 weeks before the survey. According to the 2001 NHS, the incidence rate for injury was 17,682 per 100,000. The rate for males was 1.5 times that for females (21,113 compared with 14,138 per 100,000).

Table 7.1: Proportion of young people aged 12–24 years experiencing injury events in the previous 4 weeks, 2001 (per cent)

Injury event	Males	Females	Persons
Low fall	28.5	32.8	30.2
Hitting something or being hit by something	29.1	20.0	25.5
Bite or sting	6.8	11.1	8.5
Vehicle accident	5.8	2.2[(a)]	4.4
High fall	4.4	4.5[(a)]	4.4
Attack by another person	4.1[(a)]	3.7[(a)]	4.0
Exposure to a chemical	2.8[(a)]	—	1.7[(a)]
Exposure to fire	2.8[(a)]	3.7[(a)]	3.1
Other events resulting in action	35.7	41.5	38.0
Total ('000)	**359.0**	**232.7**	**591.7**

(a) Estimates have a relative standard error of between 25% and 50% and should be interpreted with caution.

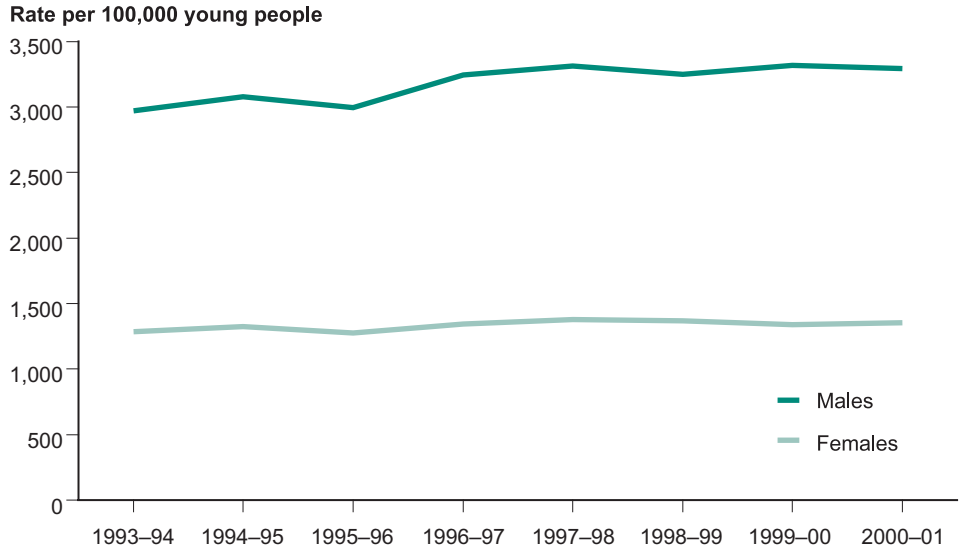
Note: Percentages do not add up to 100 as respondents may have had more than one type of injury event leading to health action.

Source: ABS NHS 2001, unpublished data.

- Among young people aged 12–24 years injured in the previous 4 weeks, the most frequently reported injury which resulted in a health action being taken was a low fall (30%). This was followed by hitting something or being hit by something (one in four young people or 26%) and bite or sting (9%). The remaining specific injury events leading to health-related action accounted for less than 5% each.
- Among injured males aged 12–24 years, the most frequently reported specific injury event was hitting something or being hit by something (29% of injury events).
- The most frequently reported specific injury event among injured females aged 12–24 years was low fall (33% of injury events).
- Most of the injuries reported in the 2001 NHS occurred in a sports facility or outside the home.
- Approximately 4% of young people aged 12–17 years and 2% of those aged 18–24 years had taken time off work or study because of an injury. Approximately 5% of

young people aged 12–24 years visited a general practitioner or other health professional and 2% attended a hospital because of their injuries.

Hospitalisations



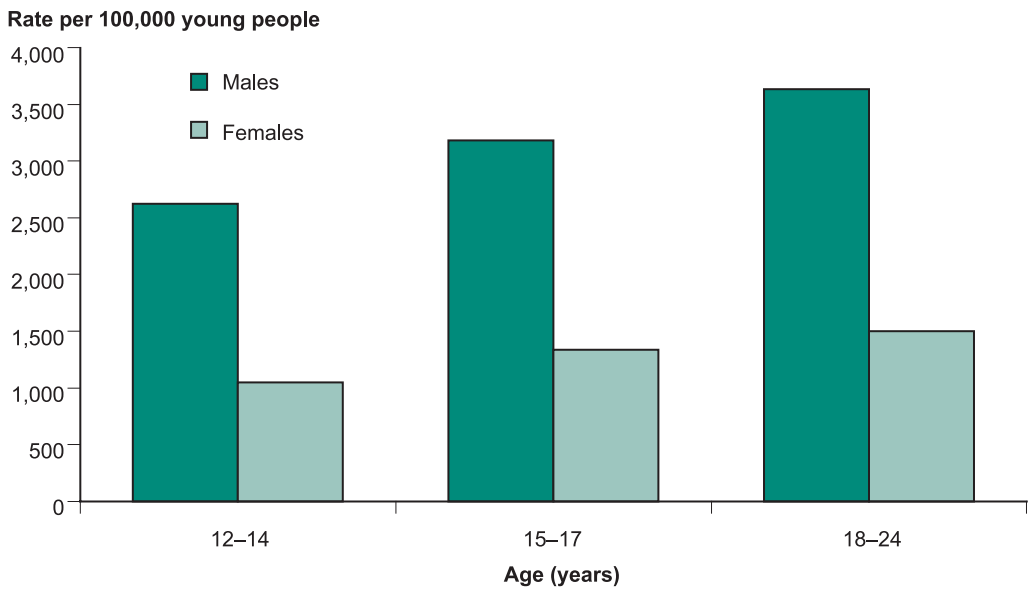
Notes

1. Includes all hospitalisations where injury or poisoning was recorded as the principal diagnosis for which an external cause was documented. This is the case for all hospital data in this chapter.
2. ICD-9-CM codes E800–E999 & 800–999 (1993–94 to 1997–98) and ICD-10-AM codes V01–Y99 & S00–T98 (1998–99 to 1999–00). ICD-10-AM codes for falls (W00–W19) are not equivalent to ICD-9-CM codes for falls (E880–E888) because there is no equivalent to ICD-9-CM code E887 (Fracture, cause unspecified) in ICD-10-AM.
3. The changeover to ICD-10-AM means that the time series should be interpreted with caution due to variations in injury coding. In 1998–99 ICD-9-CM continued to be used in Queensland, South Australia, Western Australia and Tasmania and data from these states had to be mapped to ICD-10-AM by AIHW.
4. These data include codes for complications of medical and surgical care. In 2000–01, these codes (Y40–Y84) accounted for approximately 11% of hospitalisations for injury.

Source: AIHW National Hospital Morbidity Database.

Figure 7.1: Hospitalisation rates for young people aged 12–24 years for injuries as a result of external causes, by sex and age group, 1993–94 to 2000–01

- The injury and poisoning hospitalisation rate for females remained relatively constant between 1993–94 and 2000–01. Over the same period, the injury and poisoning hospitalisation rate for males increased by around 11%.
- Males were hospitalised for injury at more than twice the rate for females throughout the period 1993–94 to 2000–01.



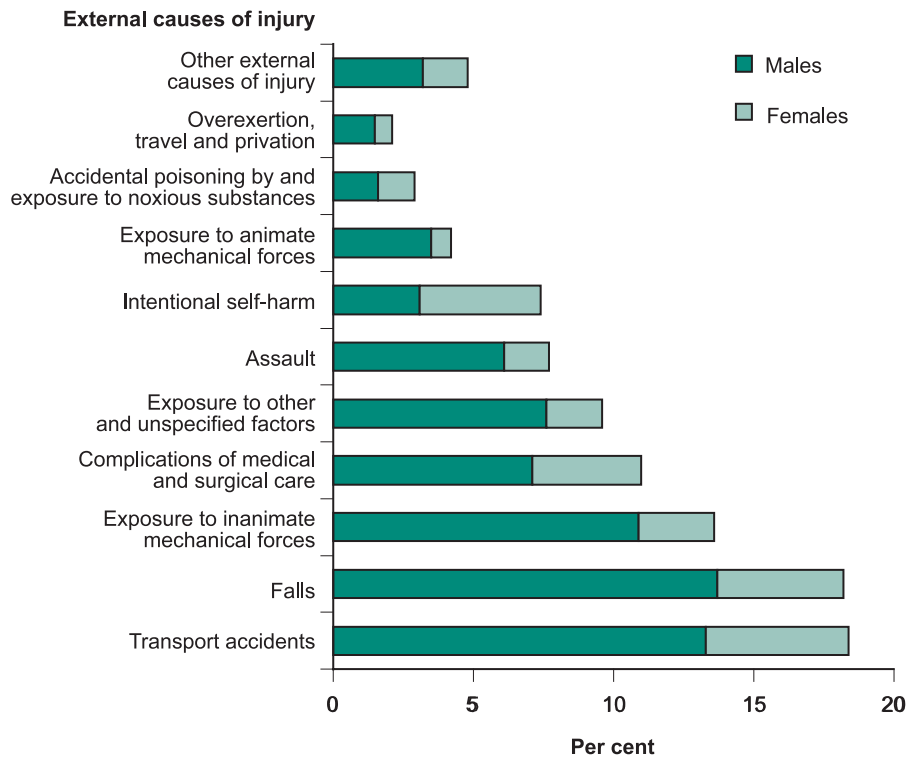
Note: ICD-10-AM codes V01–Y99 and S00–T98.
Source: AIHW National Hospital Morbidity Database.

Figure 7.2: Injury hospitalisation rate for young people aged 12–24 years, 2000–01

- In 2000–01, there were over 80,000 hospitalisations of young people aged 12–24 years for injuries.
- Injury hospitalisation rates for males were more than double those for females in all age groups. The difference was greatest among young people aged 12–14 years, with males hospitalised at a rate 2.5 times that of females (2,625 compared with 1,047 per 100,000).
- Hospitalisation rates increased with age for both males and females. Young people aged 18–24 years were hospitalised at a rate 1.4 times that for those aged 12–14 years (2,585 compared with 1,855 per 100,000).

Hospitalisations for specific external causes of injury

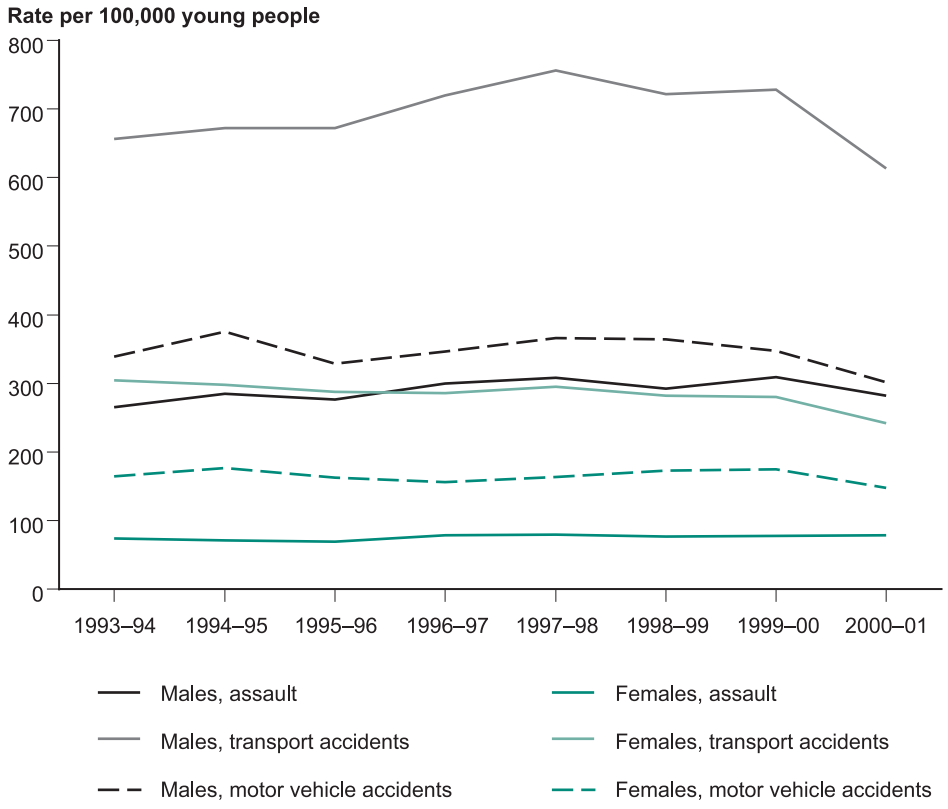
In 2000–01, the most common external cause of injury leading to hospitalisation was transport accidents (Figure 7.3). Transport accidents include any accident involving a device designed primarily for, or being used at the time primarily for, conveying persons or goods from one place to another. Motor vehicle accidents are a subset of this category. Other groups under the transport accident category include accidents involving pedestrians and pedal cyclists, and railway and water transport. Transport accidents may also include falls from animals or animal-drawn vehicles. There are some accidents relating to motor vehicles that are not considered part of the category 'motor vehicle accident'. Accidents which are classified as non-traffic accidents (i.e. those that happen elsewhere than a public highway or street) appear under 'other transport accidents'. For example, 'motorcycle rider injured in non-collision transport accident, non-traffic accident' (ICD-10 code V28.0) is a subset of 'other transport', even though a motor cycle is considered a type of motor vehicle.



Source: AIHW National Hospital Morbidity Database.

Figure 7.3: Injury hospitalisation for young people aged 12–24 years, by external cause of injury, 2000–01

- In 2000–01, there were 14,820 hospitalisations of young people aged 12–24 years for transport accidents (72%of whom were males). Transport accidents were responsible for 18% of hospitalisations for injury of young people aged 12–24 years. Within this category the most common reasons for hospitalisation were motor cycle riders injured in non-collision transport accidents (8% or 1,187 hospitalisations, 93% of whom were males) and car drivers injured in a collision with car, truck or van (7%, 995 hospitalisations, 55% of whom were males).
- Falls were responsible for 18% of hospitalisations for injury of young people.
- The only external cause of injury for which females made up a higher proportion of hospitalisations was intentional self-harm (7% overall or 5,934 total hospitalisations, 58% of whom were females).



Note: Codes: Transport accidents ICD-9-CM 800–848 & E800–E848 and ICD-10-AM S00–T98 & V01–V99; Motor vehicle accidents ICD-9-CM 800–848 & E810–E819 and ICD-10-AM S00–T98 & V02–V04 (.1, .9), V09.2, V12–V14 (.3–.9), V19 (.4–.6), V20–V28 (.3–.9), V29 (.4–.9), V30–V39 (.4–.9), V40–V49 (.4–.9), V50–V59 (.4–.9), V60–V69 (.4–.9), V70–V79 (.4–.9), V80 (.3–.5), V81.1, V82.1, V83–V86 (.3–.9), V87 (.0–.8), V89.2; Assault ICD-9-CM 800–848 & E960–E969 and ICD-10-AM codes X85–Y09.

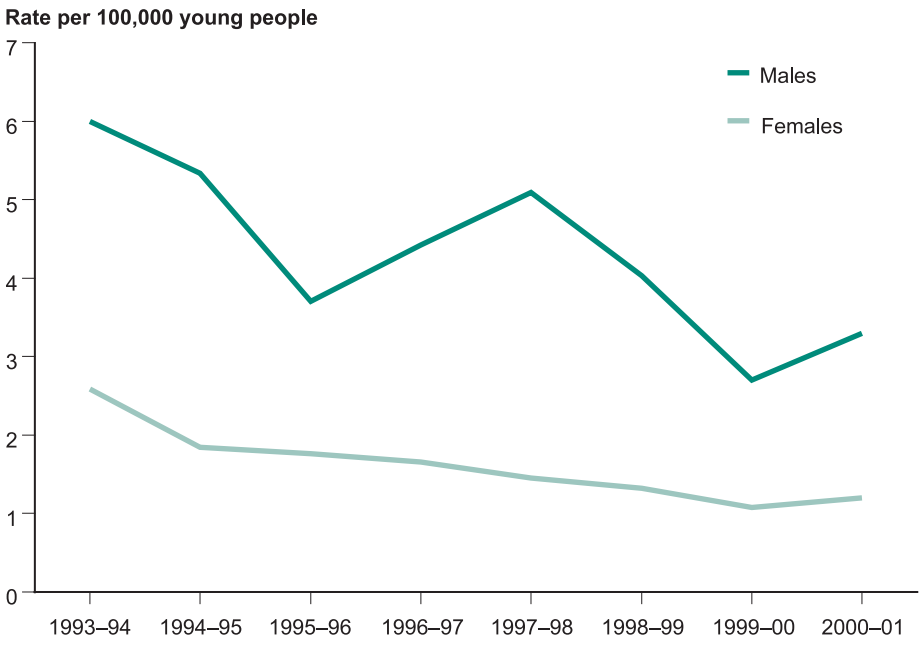
Source: AIHW National Hospital Morbidity Database.

Figure 7.4: Assault, transport and motor vehicle accident hospitalisation rates for young people aged 12–24 years, 1993–94 to 2000–01

- Between 1993–94 and 2000–01, transport accident hospitalisation rates (including motor vehicle accidents) decreased by 7% for males (657 to 613 per 100,000) and by 21% for females (305 to 242 per 100,000). Rates for males were consistently more than twice those for females. In 2000–01, rates for males were 2.5 times those for females.
- Of the total number of hospitalisations of young people for transport accidents in 2000–01, 52% were for motor vehicle accidents and 48% were for other transport accidents. Of all transport accident hospitalisations, 36% were for males involved in motor vehicle accidents and 37% for males involved in other transport accidents. The respective hospitalisations for females were 17% and 11%.
- The motor vehicle accident hospitalisation rate increased by 17% between 1993–94 and 2000–01 (187 to 226 per 100,000). For males the rate increased from 250 to 301 per 100,000 (17% increase), and for females the rate increased by 18% from 122 to 148 per 100,000. Rates for males were twice those for females throughout the period. Rates for males peaked in 1997–98 (366), and decreased 19% by 2000–01.
- Assault hospitalisation rates increased by over 40% for both males and females between 1993–94 and 2000–01. Rates peaked in 1999–00 for males and in 1997–98 for

females, and have fallen slightly since then. Rates for males were more than 3.5 times those for females throughout the period.

Although falls represent a high proportion of hospitalisations for injury of young people, time series data on falls cannot be presented. There is no equivalent code to ICD-9-CM code E887 (Fracture, cause unspecified) in ICD-10-AM. This code was responsible for a reasonably high proportion of hospitalisations for falls in the years before 1998–99 (e.g. 15% of hospitalisations for falls among young people in 1997–98). Hospitalisations for falls remained relatively constant over the period 1998–99 to 2000–01. Rates for males were up to 3 times those for females.



Note: Codes: ICD-9-CM 800–848 & E910 and ICD-10-AM S00–T98 & W65–W74.

Source: AIHW National Hospital Morbidity Database.

Figure 7.5: Near-drowning hospitalisation rates for young people aged 12–24 years, 1993–94 to 2000–01

- Over the period 1993–94 to 2000–01, 740 young people were hospitalised as a result of accidental drowning or near drowning. The hospitalisation rate over the period fluctuated between 1.9 and 3.2 hospitalisations per 100,000 young people.
- The accidental drowning hospitalisation rate was consistently higher for males than females across the whole period. In 2000–01, the hospitalisation rate for males was almost 3 times that for females (3.3 compared with 1.2 per 100,000).

Table 7.2: External cause of injury hospitalisation rates for young people 12–24 years, 2000–01

		Number			Rate per 100,000 young people		
External cause	Age (years)	Males	Females	Persons	Males	Females	Persons
Motor vehicle accidents	12–14	534	279	813	130.1	71.3	101.4
	15–17	1,081	562	1,643	262.6	142.6	203.9
	18–24	3,661	1,657	5,318	393.4	184.1	290.5
	12–24	5,276	2,498	7,774	301.4	148.0	226.1
Other transport accidents	12–14	1,509	426	1,935	367.7	108.8	241.3
	15–17	1,442	366	1,808	350.2	92.8	224.3
	18–24	2511	792	3,303	269.9	88.0	180.4
	12–24	5,462	1,584	7,046	311.7	94.0	204.9
Total transport accidents	12–14	2,043	705	2,748	497.8	180.1	342.7
	15–17	2,523	928	3,451	612.8	235.4	428.2
	18–24	6,172	2,449	8,621	663.3	272.0	470.9
	12–24	10,738	4,082	14,820	612.9	242.0	431.0
Falls	12–14	3,500	1,073	4,573	852.9	274.1	570.3
	15–17	2,678	791	3,469	650.5	200.7	430.4
	18–24	4,869	1,782	6,651	523.3	197.9	363.3
	12–24	11,047	3,646	14,693	630.3	216.3	427.3
Assault	12–14	290	102	392	70.7	26.1	48.9
	15–17	930	239	1,169	225.9	60.6	145.1
	18–24	3,726	985	4,711	400.4	109.4	257.3
	12–24	4,946	1,326	6,272	282.6	78.5	182.4
Drowning/near drowning	12–14	17	4	21	4.1	1.0	2.6
	15–17	10	6	16	2.4	1.5	2.0
	18–24	30	11	41	3.2	1.2	2.2
	12–24	57	21	78	3.3	1.2	2.3

Note: ICD-10-AM codes for falls: S00–T98 and W00–W19.

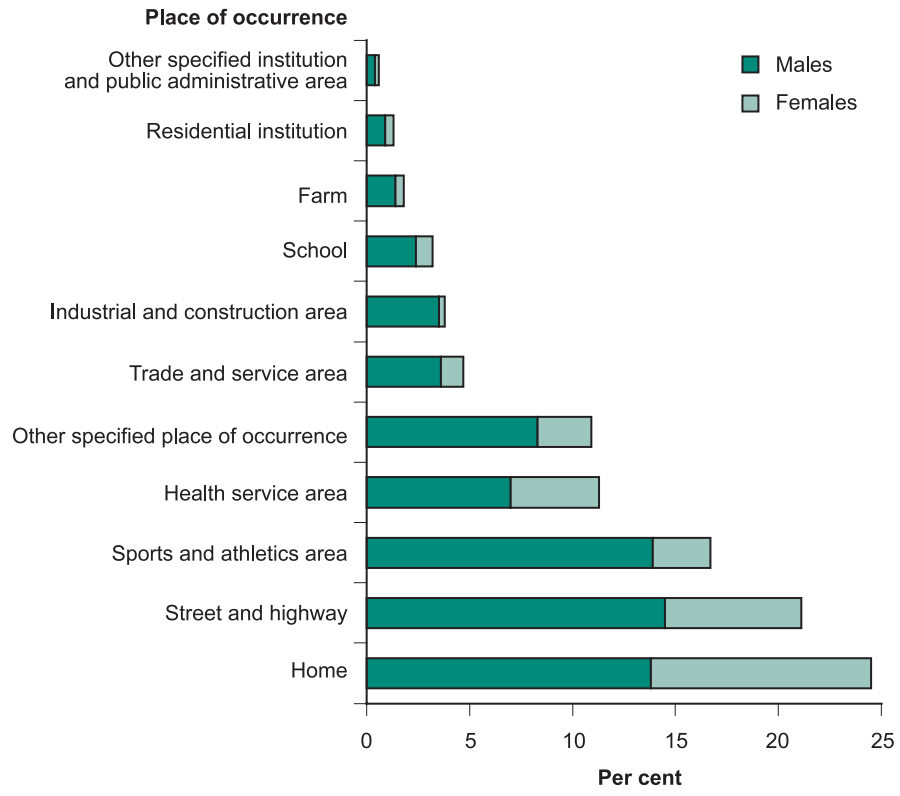
Source: AIHW National Hospital Morbidity Database.

- In 2000–01, there were 14,820 hospitalisations for all transport accidents. Rates were higher for males than for females in all age groups. Rates increased with age: rates for males aged 18–24 years were 1.3 times those for males aged 12–14 years, and rates for females aged 18–24 years were 1.5 times those for females aged 12–14 years.
- There were 14,693 hospitalisations for falls of young people aged 12–24 years. Rates were higher for males than for females in all age groups. The greatest difference was in the age group 15–17 years, where rates for males were 3.2 times those for females.
- There were 7,774 hospitalisations for motor vehicle accidents. Rates for males were higher than for females in all age groups. In the age groups 12–14 and 15–17 years, the ratio was 1.8. In the age group 18–24 years, males were hospitalised at a rate 2.1 times that for females. Rates increased with age for both males and females.
- There were 6,272 hospitalisations of young people as a result of an assault. Rates were very much higher for males than for females in all age groups. The difference was greatest among those aged 18–24 years, where hospitalisation rates for males were nearly 4 times those for females. Rates increased sharply with age.
- There were 78 hospitalisations of young people aged 12–24 years as a result of near drowning. Hospitalisation rates were higher for males than for females in all age groups.

Place of occurrence

The place where an injury occurs can often provide important information for developing preventive strategies to reduce the number of young people at risk of serious injury.

Unfortunately, information about the location where injuries were received is not always specified or collected. In 2000–01, a place of injury occurrence was recorded for 60% of injury hospitalisations. Data for 2000–01 are presented in Figure 7.6.



Notes

1. Percentages were calculated based upon those records for which a specific place of occurrence of injury was actually recorded.
2. 'Other specified place of occurrence' includes areas such as beach, lake, parking place, railway line and sea.

Source: AIHW National Hospital Morbidity Database.

Figure 7.6: Location where injuries of young people aged 12–24 years occurred, 2000–01

- Most young people hospitalised for injury received their injury in the home (25%), followed by the street or highway (21%).
- Around 11% of injuries occurred in a health service area. These included complications of medical and surgical care such as infection or haemorrhage. Complications of medical and surgical care made up 11% of hospitalisations for injury.

Severity of injury

Severity of injury is difficult to quantify. Currently, the best proxy national indicator of injury severity available from hospitalisation data is the average length of stay in hospital. This is not a perfect measure as factors other than severity of the injury can influence the length of a hospitalisation (e.g. socioeconomic factors, hospital policy).

Excluding same-day separations can provide a more accurate picture of the average length of stay in hospital. In 2000–001, there were 182,751 bed-days for which hospitalisations for injuries were the principal diagnoses. Of hospitalisations for injury, 32% were same-day separations. If these are included, the average length of stay was 2.3 days. If they are excluded, the average length of stay was 5.5 days. The average length of stay for selected types of injury causes, including and excluding same-day separations, are presented in Table 7.3.

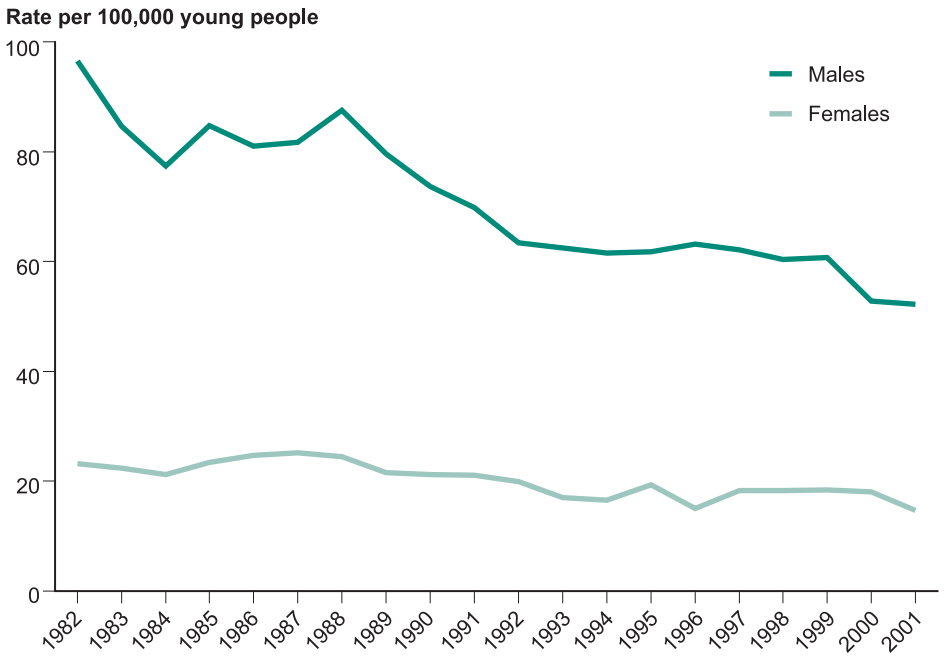
Table 7.3: Average length of stay of young people aged 12–24 years for selected injury causes, 2000–01

	Excluding same-day separations			Including same-day separations		
External cause	Total separations	Total bed-days	Average length of stay (days)	Total separations	Total bed-days	Average length of stay (days)
Accidental drowning and submersion	19	176	9.3	78	235	3.0
Transport accidents	5,853	40,845	7.0	14,820	49,812	3.4
Intentional self-harm	1,549	7,515	4.9	5,934	11,900	2.0
Falls	4,027	18,606	4.6	14,693	29,272	2.0
Assault	1,522	6,885	4.5	6,272	11,635	1.9
Accidental poisoning by and exposure to noxious substances	382	1,537	4.0	2,300	3,455	1.5
All injuries	**22,906**	**125,104**	**5.5**	**80,553**	**182,751**	**2.3**

Source: AIHW National Hospital Morbidity Database.

- The longest average length of stay in hospital, excluding same-day separations, was for injuries received from accidental drowning and submersion (9.3 days).
- Transport accidents had a relatively high average length of stay of 7 days.
- When same-day separations are included, the shortest average length of stay was for accidental poisoning (1.5 days) and the longest average length of stay was for transport accidents (3.4 days).
- Although the average length of stay for hospitalisations (excluding same-day separations) was longest for drowning, the burden on the hospital system is higher for transport accidents and falls, as there are many more hospitalisations caused by falls and transport accidents than drowning.

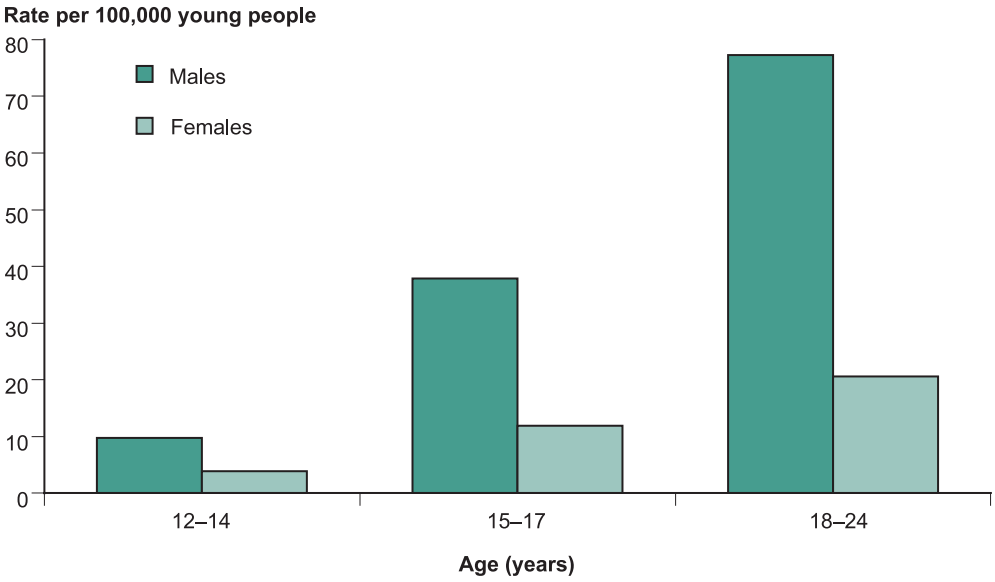
Deaths



Note: ICD-9 codes E800–E999 (1982 to 1996) and ICD-10 codes V01–Y99 (1997 to 2001).
Source: AIHW Mortality Database.

Figure 7.7: Injury death rates for young people aged 12–24 years, 1982 to 2001

- Death rates from injury decreased between 1982 and 2001. Rates for males decreased by 46%, from 97 to 52 per 100,000, and rates for females decreased by 46%, from 23 to 15 per 100,000.
- The male injury death rate was consistently higher than the female injury death rate over this period. However, the difference narrowed between 1982 and 2001: male rates in 1982 were 4 times those for females, whereas in 2000 the difference was 3 times.



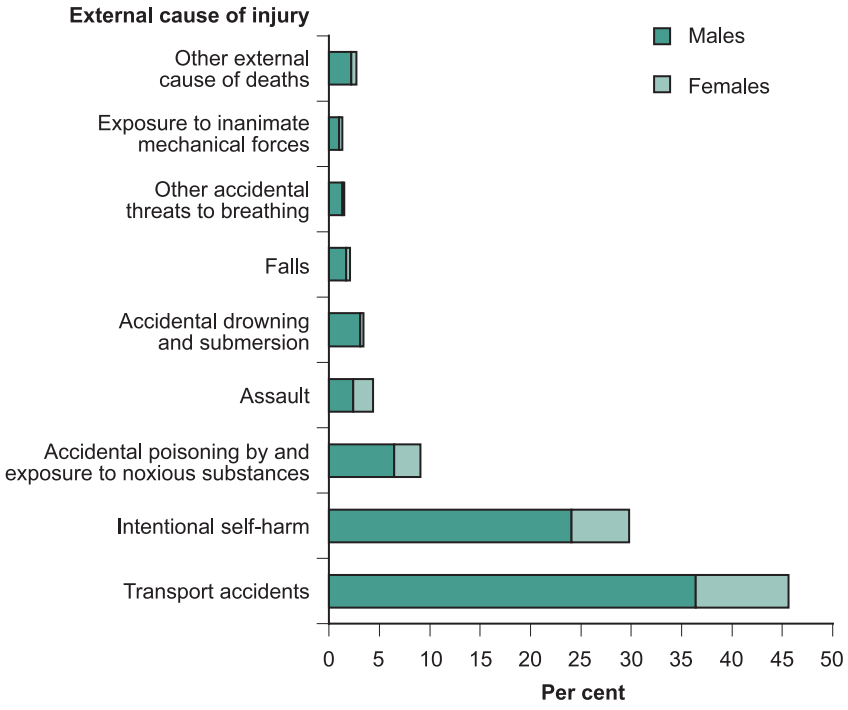
Note: ICD-10 codes V01–Y99

Source: AIHW Mortality Database.

Figure 7.8: Injury death rates for young people aged 12–24 years, 2001

- In 2001, there were 1,170 deaths of young people from injuries and poisoning.
- Death rates were considerably higher for males than for females. The greatest difference was among those aged 18–24 years, where the death rate for males was 3.8 times that for females (77 compared with 21 per 100,000).
- Death rates increased with age. The increase was more pronounced for males than for females. The rate for males aged 18–24 years was 7 times that for males aged 12–14 years, while the rate for females aged 18–24 years was 5 times that for females aged 12–14 years.

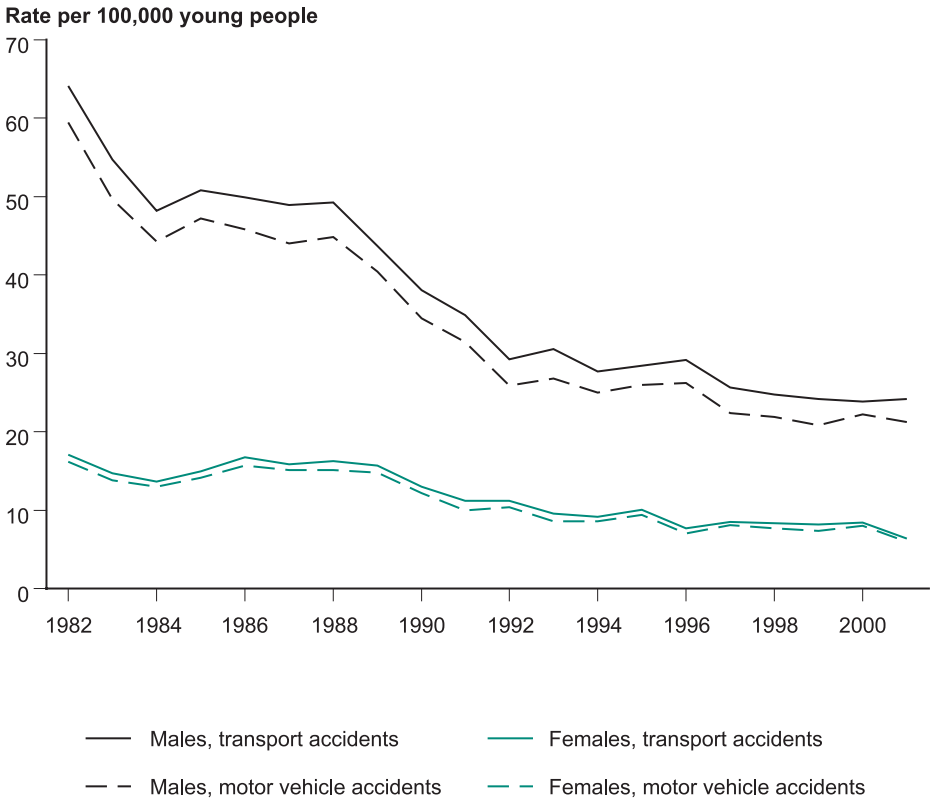
Deaths from specific injuries



Source: AIHW Mortality Database.

Figure 7.9: Proportion of injury deaths of young people aged 12–24 years caused by specific external causes, 2001

- In 2001, the greatest proportion of deaths from injury among young people aged 12–24 years was due to transport accidents (46%). Of all transport accidents, the largest number of deaths were of a driver or passenger in a vehicle in a collision with a stationary object. Although some of these deaths might be intentional, others could be caused by a lack of driving experience. In 2001, there were 158 deaths of young people aged 12–24 years as a driver or passenger in a vehicle that collided with a stationary object, compared with 229 deaths of those aged 25 years and over. The death rate was 2.6 times higher for those aged 12–24 years than for those aged 25 years and over (4.6 compared with 1.8 per 100,000).
- Intentional self-harm, or suicide, was responsible for nearly 30% of injury deaths of young people. Suicide is discussed in more detail in Chapter 8.
- Accidental poisoning by and exposure to noxious substances was the third highest external cause of death from injury (9%).



Note: ICD-9 codes E800–848 and ICD-10 codes V01–V99.
Source: AIHW Mortality Database.

Figure 7.10: Transport and motor vehicle accident death rates for young people aged 12–24 years, 1982 to 2001

- Transport accident death rates for young people aged 12–24 years decreased considerably between 1982 and 2001. The rate for young men decreased by 62%, from 64 to 24 per 100,000. The rate for young women decreased by 63%, from 17 to 6 per 100,000.
- The death rate between 1982 and 2001 from transport accidents was consistently higher for males than for females. Death rates for males were between 3 and 4 times higher than those for females over the period.
- The major contributor to the decline in transport accident death rates among young people was the decrease in motor vehicle accident death rates. The rate for males decreased by 64%, from 60 to 21 per 100,000. The rate for females also decreased by 64%, from 16 to 6 per 100,000.
- Motor vehicle death rates for males were considerably higher than death rates for females over this period.

Table 7.4: Deaths from selected external causes for young people aged 12–24 years, 1992 to 2001

External cause	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Assault										
number	63	69	63	66	55	66	51	53	55	51
Rate per 100,000 young people	1.8	2.0	1.8	1.9	1.6	1.9	1.5	1.6	1.6	1.5
Drowning										
Number	52	49	39	40	39	46	37	38	25	40
Rate per 100,000 young people	1.5	1.4	1.1	1.2	1.1	1.3	1.1	1.1	0.7	1.2
Accidental poisoning by narcotics and hallucinogens[(a)]										
Number	n.a.	n.a.	n.a.	n.a.	n.a.	17	53	101	64	43
Rate per 100,000 young people	n.a.	n.a.	n.a.	n.a.	n.a.	0.6	2.0	3.9	2.4	1.6
Falls										
Number	n.a.	n.a.	n.a.	n.a.	n.a.	21	19	18	17	25
Rate per 100,000 young people	n.a.	n.a.	n.a.	n.a.	n.a.	0.6	0.6	0.5	0.5	0.7

(a) Numbers and rates are for young people aged 15–24 years.

Note: ICD-9 and ICD-10 codes for accidental poisoning by narcotics and hallucinogens and falls are not comparable; data unavailable prior to 1997.

Source: AIHW Mortality Database.

- Each year from 1992 to 2001, between 50 and 70 young Australians aged 12–24 years died after being assaulted, a rate of between 1.5 and 2.0 per 100,000. There was a possible slight downward trend in the death rates from assault after 1997. In most years, males died from assault at higher rates than females.
- Young Australians drowned at rates between 0.7 and 1.5 per 100,000 between 1992 and 2001. In every year, rates for males were substantially higher than rates for females. During this period, between 6 and 7 males drowned for every female drowned.
- The death rate from accidental poisoning by narcotics and hallucinogens ranged between 0.6 and 3.9 per 100,000 from 1997 to 2001. Rates peaked in 1999 when 101 young people died. Between 3 and 4 males died for every female who died from this cause.
- Between 1997 and 2001, 83 males died as a result of a fall. Over the same period, the number of female deaths from falls was relatively smaller (17 deaths).

Table 7.5: Deaths of young people aged 12–24 years from selected external cause of injury, 2001

Age Group	MVA		Other transport		Transport		Assault		Drowning		Falls	
	No.	Rate per 100,000	No.	Rate per 100,000	No.	Rate per 100,000	No.	Rate per 100,000	No.	Rate per 100,000	No.	Rate per 100,000
12–14	21	2.6	7	0.9	28	3.5	3	0.4	4	0.5	–	0.0
15–17	98	12.1	14	1.7	112	13.8	5	0.6	9	1.1	6	0.7
18–24	358	19.4	36	2.0	394	21.4	43	2.3	27	1.5	19	1.0
12–24	477	13.8	57	1.6	534	15.4	51	1.5	40	1.2	25	0.7

Source: AIHW Mortality Database.

- In 2001, there were 534 deaths of young people from transport accidents (a rate of 15.4 per 100,000 young people). The death rate for young people aged 18–24 years was 6 times that for young people aged 12–14 years (21.4 per 100,000 compared with 3.5).
- In 2001, there were 477 deaths from motor vehicle accidents among young people aged 12–24 years (a rate of 13.8 per 100,000 young people).
- In 2001, there were 51 deaths from assault and 40 deaths from drowning of young people aged 12–24 years (rates of 1.5 and 1.2 per 100,000, respectively). For both causes of death, rates were highest for young people aged 18–24 years.
- There were 25 deaths from falls in 2001.

8. Mental health problems and disorders

Mental health is 'a state of successful performance of mental function' which allows people to undertake productive activities, experience meaningful interpersonal relationships, adapt to change and cope with adversity (USDHHS 1999: 4). Mental health is important for cognitive and communication skills, learning, personal development, resilience and self-esteem. It can be difficult to narrowly define mental health, as it is a subjective state that can vary across cultures and among subgroups. However, it is much easier to define and also to examine mental ill health, which may be manifested along a spectrum including psychological distress, mental health problems and clinical disorders.

Mental disorders are characterised by a clinically significant set of symptoms, as set out in the *Diagnostic and Statistical Manual of Mental Disorders,* fourth edition (DSM-IV) (APA 1994; Sawyer et al. 2000). Mental disorders have clear diagnostic criteria that must be met for a disorder to be diagnosed, including that the symptoms cause clinically significant impairment in social, academic or occupational functioning. Young people may experience both mental health problems and mental disorders.

Mental health problems are defined at a lower threshold of symptoms than mental disorders. Mental health problems are much more common than mental disorders, and also affect social and other functioning. They may be manifested as disturbance of feelings, behaviours and thoughts, and can have features, which are similar to those experienced by people with mental disorders, such as somatic complaints, attention problems and feelings of anxiety or depression.

Risk factors for mental ill health can include both biological factors and adverse psychosocial experiences during childhood (USDHHS 1999). It has been suggested that some people may have a genetic vulnerability to certain disorders, but that these disorders will not develop in the absence of other risk factors. There are many risk factors which have been associated with a higher likelihood of developing a mental illness, but this does not mean that these factors cause mental illness, or that everyone who is exposed to them will develop a mental disorder. Risk factors may include factors associated with the individual (e.g. prenatal brain damage, poor social skills, low self-esteem), family or social factors (e.g. marital discord between parents, parental mental disorder, parental alcoholism or drug addiction, social isolation), school context (e.g. bullying, failure to achieve academically), life events and situations (e.g. physical, sexual and emotional abuse, physical illness or impairment, poverty) and community and cultural factors (e.g. socioeconomic disadvantage, social or cultural discrimination) (DHAC 2000a).

Many mental health problems and disorders can have their origins in childhood, when exposure to many risk factors for mental illness can occur. Also, many mental health problems are first manifested in childhood and adolescence. Psychosocial problems that can be associated with child mental health problems may in turn play a part in the development of mental disorders in young people, through mechanisms such as lowered self-esteem and lack of social support. Mental disorders which have their onset in childhood and adolescence include anxiety disorders, attention-deficit and disruptive behaviour disorders, autism and other pervasive developmental disorders, eating disorders, learning and communication disorders, mood disorders, schizophrenia and tic disorders (USDHHS 1999). Substance use disorders can also arise in adolescence, and frequently co-occur with other mental disorders.

Young people who are experiencing mental health problems and disorders are at considerably increased risk of poor health and wellbeing outcomes. Mental health problems and disorders can affect people's ability to undertake their usual activities and responsibilities, such as schooling, working and socialising. Mental health problems and disorders can lead to increased substance use, poor relationships,

increased delinquency and antisocial behaviours, poor self-esteem, and other mental health problems.

Beautrais (2000) suggests that the strongest risk factors for youth suicide are mental disorders (particularly affective disorders, substance use disorders and antisocial behaviours) and a history of psychopathology. Young people who have substance use problems are also at increased risk of premature death, particularly from overdose.

Because of its enormous social and public health importance, mental health is one of the six National Health Priority Areas (AIHW & DHFS 1997). A number of public health strategies have been implemented to try to combat mental health problems and disorders, including the National Mental Health Strategy, the National Drug Strategy Action Plan and the National Suicide Prevention Strategy.

This chapter presents data on psychological distress among young people aged 18–24 years followed by an examination of mental health problems experienced by young people aged 12–17 years, and mental disorders experienced by people aged 12–17 and 18–24 years. It also focuses on substance use disorders, suicide and intentional self-harm.

Prevalence data on psychological distress come from the National Survey of Mental Health and Wellbeing for 1997 and the ABS NHS for 2001. Prevalence data on mental health problems and disorders among those aged 12–17 years come from the Child and Adolescent Component of the National Survey of Mental Health and Wellbeing, conducted in 1998. Prevalence data on mental disorders among those aged 18–24 years come from the National Survey of Mental Health and Wellbeing, conducted in 1997. These two surveys were conducted separately using different survey instruments, and thus data are not comparable.

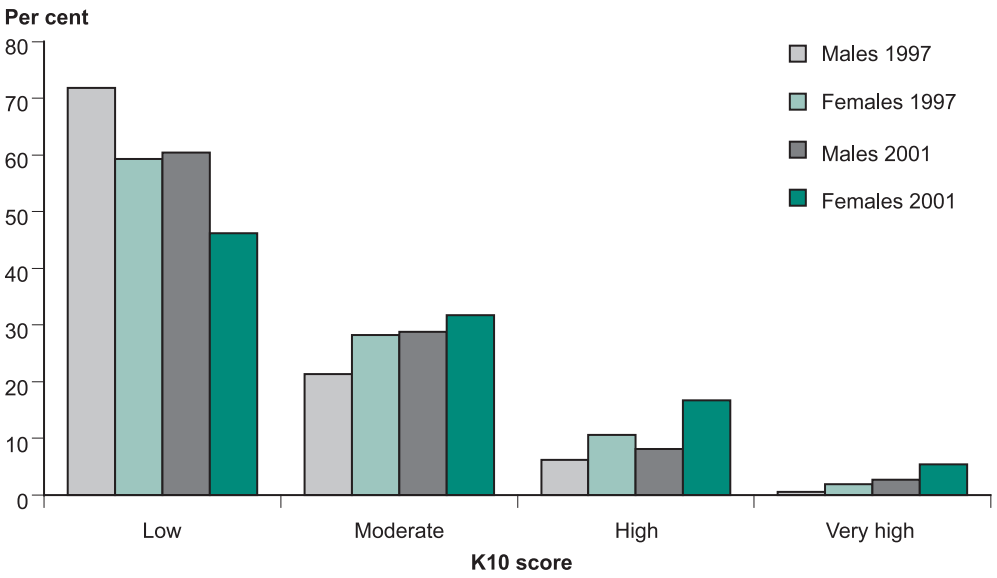
Psychological distress

Psychological distress refers to an individual's overall level of psychological strain or pain, evidenced by psychological states such as depression, anxiety and anger. Psychological distress may be fairly transient, e.g. experiencing high anxiety over an upcoming exam, or sadness because of the break-up of a relationship, but may also be a continuing problem, particularly among those experiencing mental health problems and clinical disorders.

Psychological distress can be measured using the Kessler-10 distress scale, or K10. The K10 contains 10 items asking about feelings such as nervousness, hopelessness, restlessness, depression and worthlessness. For each item, the respondents are asked how often they experienced these feelings in the past 4 weeks, with responses ranging from 'none of the time' to 'all of the time' (scoring 1 to 5). The maximum score is 50 (indicating severe distress) and the minimum score is 10 (no distress). Andrews and Slade (2001) showed a strong association between the K10 scale and current diagnoses of anxiety and affective disorders. They also showed a lesser, but significant, association with other mental disorder categories.

The K10 scores from the National Survey of Mental Health and Wellbeing for young people aged 18–24 years are presented in Figure 8.1. A K10 score of 10–15 indicates a low level of distress, 16–21 a medium level, 22–29 a high level, and 30–50 a very high level. People who score 16–30 have three times the population risk of having a current anxiety or depressive disorder (25% chance) or of ever having attempted suicide (1% chance) (Andrews 2003). People who score 30–50 have ten times the population risk

of meeting criteria for an anxiety or depressive disorder (75% chance), and 20 times the population risk of ever having attempted suicide (6% chance) (Andrews 2003).



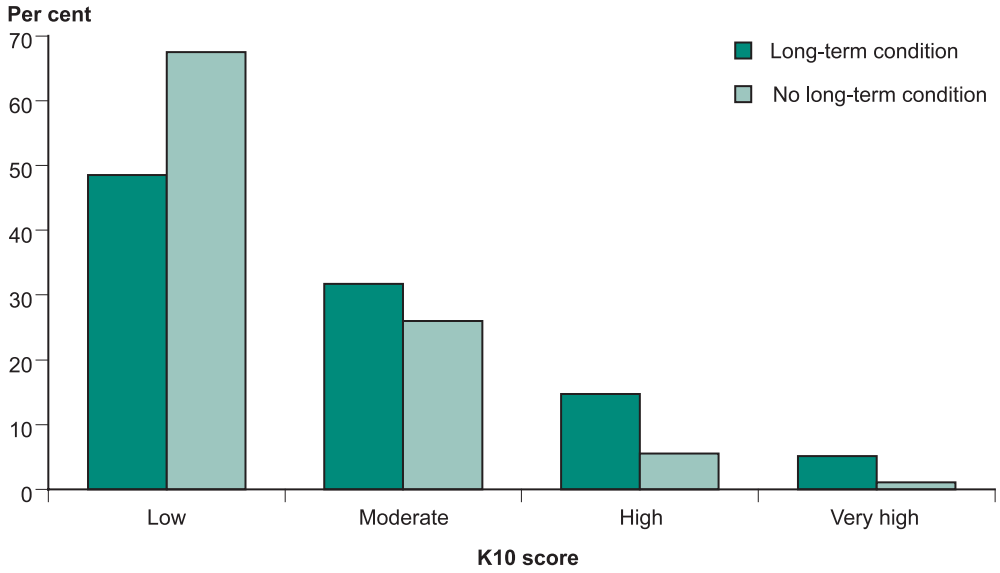
Source: 1997 National Survey of Mental Health and Wellbeing; ABS NHS 2001.

Figure 8.1: K10 scores for young people aged 18–24 years, 1997 and 2001

- In 1997, 0.6% of males and 1.9% of females aged 18–24 years reported very high levels of distress. In 2001, these proportions were 2.7% and 5.4%, respectively.
- In both 1997 and 2001, over half of young people aged 18–24 years had a low level of psychological distress (66% and 54%, respectively).
- In both years, a higher proportion of males had a low level of psychological distress, and a higher proportion of females had moderate, high and very high levels of psychological distress.

Data from the ABS NHS show that high levels of psychological distress in young people are more likely to be associated with poor educational and employment outcomes. The highest levels of psychological distress were found among young people whose highest year of school completed was Year 9. The lowest levels were among young people whose highest year of school completed was Year 12. A higher proportion of unemployed young people had very high K10 scores compared with other young people.

Psychological wellbeing is also associated with physical health problems. The psychological distress scores of young people aged 18–24 years with and without long-term conditions are shown in Figure 8.2.



Source: ABS NHS 2001.

Figure 8.2: K10 scores for young people aged 18–24 years, by existence of long-term condition, 2001

- Around 5% of young people aged 18–24 years with long-term conditions reported very high psychological distress, and around 50% with long-term conditions reported low levels of psychological distress.
- Of those with no long-term conditions, 1% reported very high levels of psychological distress and around two-thirds reported low levels of psychological distress.

Levels of psychological distress can also vary with different numbers of long-term conditions. Whereas 68% of those with no long-term conditions had low levels of psychological distress, this decreased to 61% of those with one long-term condition, 50% of those with two long-term conditions, and 33% of those with three or more long-term conditions. Conversely, 1% of those with no long-term conditions or one long-term condition, 3% with two long-term conditions and 11% of those with three or more long-term conditions had very high levels of psychological distress.

Prevalence of mental health problems

The Child Behaviour Checklist and the Youth Self-Report were used in the Child and Adolescent Component of the National Survey of Mental Health and Wellbeing to examine the prevalence of emotional and behavioural problems in children aged 4–17 years. Sawyer et al. (2000) considered children and adolescents to have mental health problems when they were experiencing a number of emotional and behavioural problems in the range typically seen in children and adolescents attending mental health clinics.

Two types of mental health problems were examined: internalising problems (inhibited or over-controlled behaviours, such as anxiety or depression) and externalising problems (antisocial or under-controlled behaviours, such as delinquency or overt aggression).

Data based on parent-report alone are presented for young people aged 12–17 years in Table 8.1.

Table 8.1: Prevalence of mental health problems among young people aged 12–17 years, 1998

	Males		Females		Persons	
	Per cent	Population estimate ('000)	Per cent	Population estimate ('000)	Per cent	Population estimate ('000)
Internalising	14.7	121	10.3	81	12.4	202
Externalising	12.3	101	13.8	108	13.1	209
Total problems	**14.9**	**122**	**12.1**	**95**	**13.5**	**217**

Note: Problem areas are not mutually exclusive, and thus 'total problems' do not equal the sum of internalising and externalising problems.

Source: 1998 National Survey of Mental Health and Wellbeing, Child and Adolescent Component, unpublished data.

- In 1998, 14% of young people aged 12–17 years (an estimated 217,000) had a mental health problem.
- Approximately equal numbers of young people were assessed as having externalising problems or internalising problems (13% and 12% respectively).
- The prevalence of internalising problems was higher for males than for females, and the prevalence of externalising problems was similar among males and females.

The most prevalent specific mental health problems were somatic complaints, affecting 9% of young people aged 12–17 years. Delinquent behaviour was next most common (6%), followed by attention problems and aggressive behaviour (around 5%).

Prevalence of mental disorders

Young people aged 12–17 years

The Child and Adolescent Component of the National Survey of Mental Health and Wellbeing examined the prevalence of three mental disorders among children and adolescents aged 6–17 years: depressive disorder, conduct disorder and attention-deficit hyperactivity disorder (ADHD). The Diagnostic Interview Schedule for Children (Version IV) (Shaffer et al. 2000, cited in Sawyer et al. 2000) was used. This Schedule uses the diagnostic criteria described in the DSM-IV. Anxiety disorders were not included in the survey, despite their relatively common prevalence among young people (see Sawyer et al. 2000).

Table 8.2: Prevalence of mental disorders among young people aged 12–17 years, 1998

	Males		Females		Persons	
	Per cent	Population estimate ('000)	Per cent	Population estimate ('000)	Per cent	Population estimate ('000)
ADHD[(a)]	12.3	101	3.8	30	7.9	131
Conduct disorder	4.1	34	1.1	9	2.6	43
Depressive disorder	4.0	32	4.1	32	4.1	65
Total	**16.1**	**132**	**7.8**	**61**	**11.9**	**193**

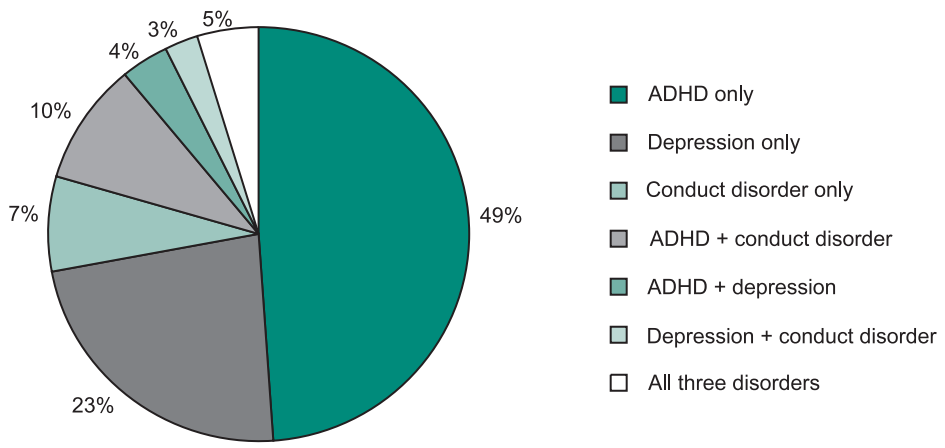
(a) The high proportion of young people with ADHD could be influenced by diagnostic definitions of ADHD.

Note: Disorders such as ADHD, conduct disorder and depressive disorder are not mutually exclusive, and thus the 'total' does not equal the sum of listed disorders.

Source: 1998 National Survey of Mental Health and Wellbeing, Child and Adolescent Component, unpublished data.

- Around 12% of young people aged 12–17 years (or 193,000 young people) were assessed as having ADHD, conduct disorder or depressive disorder in 1998. ADHD was the most prevalent (8%), followed by depressive disorder (4%) and conduct disorder (3%).
- The prevalence of ADHD was assessed to be higher in males than females (12%, compared with 4%).
- Conduct disorder was also more prevalent among males (4%) than females (1%).
- The prevalence of depressive disorder among males and females was the same (4%).

The majority of adolescents surveyed (89%) were assessed as not having ADHD, conduct disorder or depressive disorder. However, of those with a mental disorder, some had more than one disorder. The comorbidity of ADHD, depressive disorder and conduct disorder is shown in Figure 8.3.



Source: 1997 National Survey of Mental Health and Wellbeing; Child and Adolescent Component, unpublished data.

Figure 8.3: Comorbidity of ADHD, conduct disorder and depressive disorder among young people aged 12–17 years with a mental disorder, 1998

- Of young people aged 12–17 years with a mental disorder, 49% were assessed as having ADHD only, 23% depression only, and 7% conduct disorder only.
- Some young people had two mental disorders: 9% were assessed as having ADHD and conduct disorder, 4% ADHD and depression, and 3% depression and conduct disorder.
- A small proportion of those with a mental disorder (5%) were assessed as having ADHD, depression and conduct disorder.

Young people aged 18–24 years

The prevalence of certain mental disorders among young people aged 18–24 years was assessed in the National Survey of Mental Health and Wellbeing. This survey used the Composite International Diagnostic Interview (CIDI) to diagnose certain mental disorders. In particular, anxiety disorders, depressive disorders, and alcohol and drug use disorders were looked at in this survey.

Table 8.3: Prevalence of mental disorders among young people aged 18–24 years, 1997

	Males		Females		Persons	
Mental disorders	Per cent	Population estimate ('000)	Per cent	Population estimate ('000)	Per cent	Population estimate ('000)
Anxiety disorders						
Panic disorder	0.2	1.9	1.3	11.3	0.7	13.2
Agoraphobia	0.8	7.3	1.7	15.0	1.2	22.3
Social phobia	4.1	37.8	4.7	42.6	4.4	80.3
Generalised anxiety disorder	1.2	11.3	2.1	18.6	1.6	29.9
Obsessive–compulsive disorder	0.4	3.5	0.7	6.1	0.5	9.6
Post-traumatic stress disorder	3.4	30.9	6.8	61.0	5.1	91.9
Total anxiety disorders	8.3	76.5	13.8	123.8	11.0	200.3
Affective disorders						
Depression	2.7	24.6	10.2	91.6	6.4	116.2
Dysthymia	0.3	2.5	0.8	7.4	0.5	9.9
Total affective disorders	2.9	26.4	10.8	97.1	6.8	123.5
Substance use disorders						
Alcohol harmful use	4.4	40.4	4.0	35.6	4.2	76.0
Alcohol dependence	12.0	110.2	4.3	38.3	8.2	148.6
Drug use disorders	9.2	85.1	3.6	32.0	6.4	117.1
Total substance use disorders	21.2	194.8	10.5	94.4	15.9	289.2
Total mental disorders[(a)]	27.1	249.4	25.9	232.2	26.5	481.6
No mental disorders	72.9	671.2	74.1	664.3	73.5	1,335.5
Total persons ('000)	**100.0**	**920.6**	**100.0**	**896.5**	**100.0**	**1,817.1**

(a) Total anxiety, affective and substance use disorders only. Total is not cumulative as categories are not mutually exclusive.

Source: AIHW analysis of ABS 1997 National Survey of Mental Health and Wellbeing confidentialised unit record file.

- Among young people aged 18–24 years, 27% of males and 26% of females were assessed as having a mental disorder (over 481,000 young people).
- Substance use disorders were the most prevalent, affecting about 1 in 5 males and 1 in 10 females. Alcohol dependence was the most prevalent substance use disorder, affecting 12% of males and 4% of females.
- Anxiety disorders affected 8% of males and 14% of females. Within the group of anxiety disorders, post-traumatic stress disorder was the most prevalent, affecting 5% of young people.
- Depression and dysthymia (chronic mild depression) affected 3% of males and 11% of females.

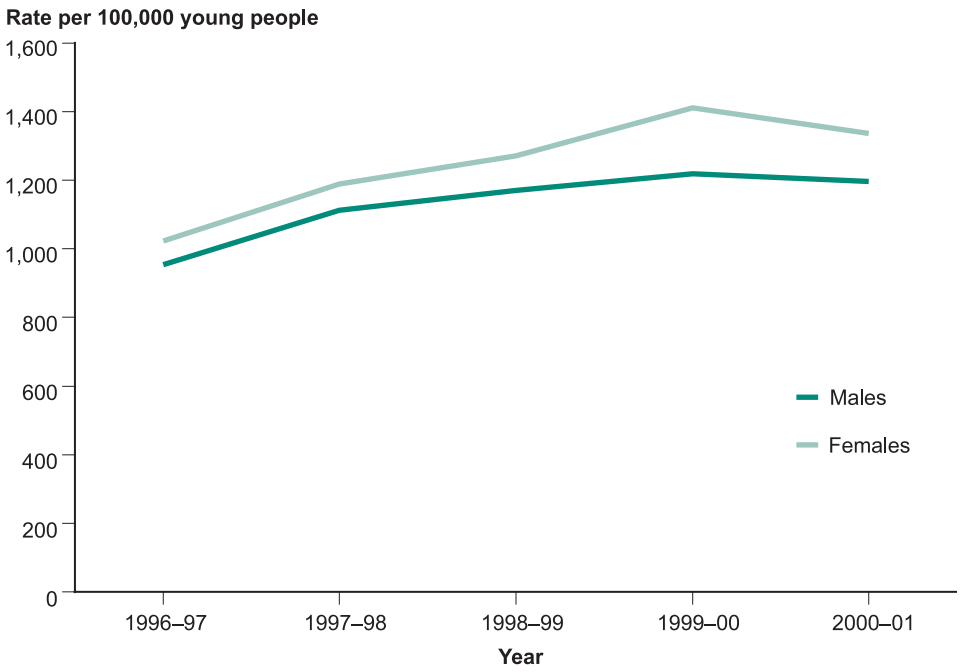
Experiencing a mental disorder can affect educational outcomes and participation in employment. For example, data from the National Survey of Mental Health and Wellbeing show that a higher prevalence of mental disorders occurred among young people who had not completed secondary education (35%) than among those who had

post-school qualifications or who had completed secondary school (just under 25%). Unemployed young people and those not in the labour force were also more likely to suffer from a mental disorder than other young people. Anxiety disorders and substance use disorders were most prevalent among young unemployed people and depressive disorders were more prevalent among young people not in the labour force.

Hospitalisations

A range of services provide support for young people with mental health problems or disorders. These include school or university counsellors, general practitioners, psychologists, social workers, psychiatrists and public mental health services (community-based and hospital services). The National Survey of Mental Health and Wellbeing found that, for all people with a mental disorder, the service most frequently used was general practitioners. The Child and Adolescent Component of the same survey found that the two services used most commonly by adolescents with a mental disorder were school counselling and family doctors.

Young people with mental disorders may be hospitalised if mental disorders are poorly managed, if a young person has hurt or threatened to hurt themselves or others, or if they are experiencing an acute phase of a moderate to severe psychiatric illness. Hospitalisation rates for young people aged 12–24 years for mental and behavioural disorders are presented only from 1996–97 onwards. Before this time, public psychiatric hospitals were not fully included in the AIHW National Hospital Morbidity Database.



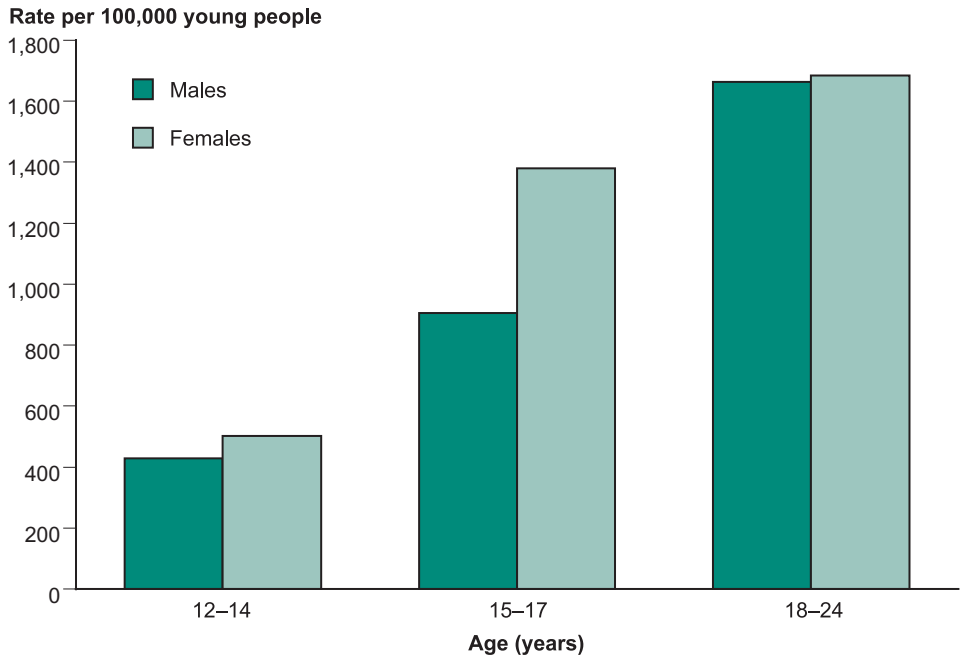
Note: ICD-9-CM codes 290–316 (1996–97 and 1997–98) and ICD-10-AM codes F00–F99 (excluding F70–F79) (1998–99 onwards).

Source: AIHW National Hospital Morbidity Database.

Figure 8.4: Mental and behavioural disorder hospitalisation rates for young people aged 12–24 years, 1996–97 to 2000–01

- Hospitalisations of young people for mental and behavioural disorders increased by 28% between 1996–97 and 2000–01, from 988 to 1,2651 hospitalisations per 100,000 young people. The rate of hospitalisations declined after 1999–00.
- Over this period, hospitalisation rates were similar for males and females, but females had slightly higher rates for all years.

Mental and behavioural disorder hospitalisation rates by age groups are shown in Figure 8.5.



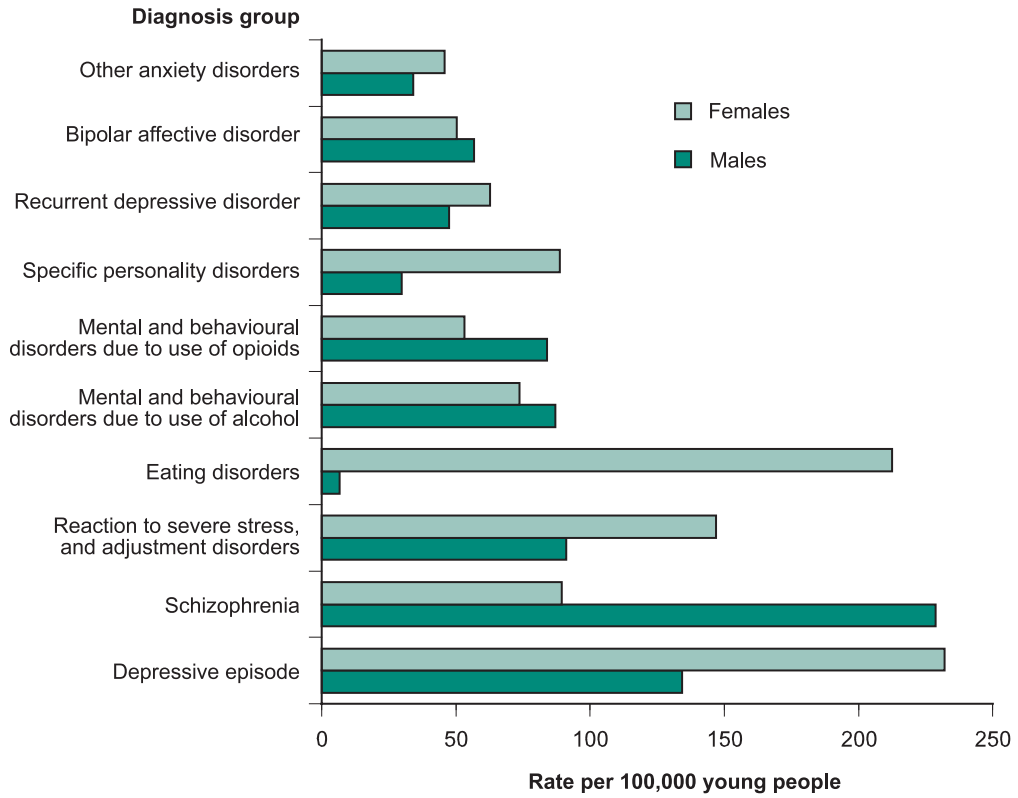
Note: ICD-10-AM codes F00–F99 (excluding F70–F79).
Source: AIHW National Hospital Morbidity Database.

Figure 8.5: Mental and behavioural disorder hospitalisation rates for young people aged 12–24 years, 2000–01

- In 2000–01, there were over 43,000 hospitalisations of young people for mental and behavioural disorders. This was a rate of around 1,265 hospitalisations per 100,000 young people.
- In the age groups 12–14 years and 18–24 years, males and females were hospitalised at similar rates. In the age group 15–17 years, females were hospitalised at a rate 1.5 times that for males.
- Hospitalisation rates increased with age. Rates for young people aged 18–24 years were over 3 times those for young people aged 12–14 years.

Hospitalisations for specific diagnoses

Hospitalisation rates for the 10 most frequent mental and behavioural disorder diagnosis groups are shown in Figure 8.6. In 2000–01, these 10 most frequent groups accounted for 73% of all hospitalisations for mental and behavioural disorders among young people aged 12–24 years.



Note: ICD-10-AM codes F32, F20, F43, F50, F10, F11, F60, F33, F31 and F41.

Source: AIHW National Hospital Morbidity Database.

Figure 8.6: Mental and behavioural hospitalisation rates for young people aged 12–24 years, most frequent disorder groups, 2000–01

- For young people aged 12–24 years in 2000–01, the most frequent diagnosis groups resulting in hospitalisation for mental and behavioural disorders were depressive episode and schizophrenia.
- The most frequent diagnosis groups for young women were depressive episode (232 hospitalisations per 100,000 young women, accounting for 17% of all mental and behavioural disorders) and eating disorders (213 per 100,000 young women, 16% of hospitalisations for all mental and behavioural disorders). Within the eating disorders diagnosis group, the most frequent diagnosis was anorexia nervosa.
- The most frequent diagnosis groups for young men were schizophrenia (229 per 100,000 young men, 19% of all mental and behavioural disorders) and depressive episode (134 per 100,000 young men, 11% of hospitalisations for all mental and behavioural disorders). Within the schizophrenia diagnosis group, the most frequent diagnosis was paranoid schizophrenia.
- The third most common diagnosis group among young people aged 12–24 was 'reaction to severe stress, and adjustment disorders'. This group contains acute stress reaction, and post-traumatic stress disorder.

Deaths

In 2001, 34 deaths among young people aged 12–24 years were classified as being caused by mental and behavioural disorders.[1] This accounted for 7% of all deaths in this age group. Of these 34 deaths, 28 were from mental and behavioural disorders due to psychoactive substance use, which are discussed in the following section on substance use disorders.

Substance use disorders

Many young people use substances such as alcohol responsibly or experiment with the use of illicit substances, but some young people may develop mental and behavioural disorders as a result of the use of alcohol and illicit substances.

Substance use disorders involve a pattern of use of alcohol or other drugs which is harmful to a person's psychological and physical health, and adversely affects those around them (Andrews et al. 1999). Substance use disorders have a greater prevalence among people aged 18–24 years than among older adults. Alcohol is the substance most commonly associated with substance use disorders.

Prevalence

In 1997, the National Survey of Mental Health and Wellbeing found that 22% of males and 11% of females aged 18–24 years had a substance use disorder (Andrews et al. 1999). Harmful use of alcohol affected 4% of young people, alcohol dependence 8%, and other drug use disorders 6%.

Hospitalisations

Hospitalisations for psychoactive substance use disorders are shown in Table 8.4. Data for years earlier than 1998–99 are not available due to lack of comparability between ICD-9-CM and ICD-10-AM codes. Hospitalisations for substance use disorders made up 22% of hospitalisations for mental and behavioural disorders in 2000–01.

1. Although death by suicide may be associated with some form of mental disorder, deaths from mental and behavioural disorders presented here do not include suicide.

Table 8.4: Substance use disorder hospitalisation rates for young people aged 12–24 years, 1998–99 to 2000–01

		Males		Females		Persons	
Year	Age (years)	Number	Rate per 100,000 young people	Number	Rate per 100,000 young people	Number	Rate per 100,000 young people
1998–99	12–14	196	48.2	190	49.0	386	48.6
	15–17	1,065	264.9	1,060	276.3	2,125	270.5
	18–24	4,217	455.2	2,155	240.7	6,372	349.8
	12–24	5,478	315.7	3,405	204.3	8,883	260.9
1999–00	12–14	213	52.2	228	58.5	441	55.3
	15–17	998	245.5	822	211.3	1,820	228.8
	18–24	4,620	500.4	2,482	278.1	7,102	391.1
	12–24	5,831	336.1	3,532	211.3	9,363	274.8
2000–01	12–14	169	41.2	200	51.1	369	46.0
	15–17	762	185.1	678	172.0	1,440	178.7
	18–24	4,461	479.4	2,408	267.5	6,869	375.2
	12–24	5,392	308.2	3,286	194.6	8,678	252.4

Note: ICD-10-AM codes F10–F19.

Source: AIHW National Hospital Morbidity Database.

- In 2000–01, there were over 8,600 hospitalisations of young people aged 12–24 years for substance use disorders.
- Rates were relatively stable over this period, and were highest for the age group 18–24 years.
- Rates were higher for males than for females in the age groups 15–17 years and 18–24 years.

Drug dependence disorders

Dependence disorders are among the most common substance use disorders. They are characterised by specific behavioural, cognitive and physiological symptoms that develop after repeated use of a substance. Symptoms include having difficulty controlling the substance use, giving a higher priority to drug use than to other activities, repeated drug use despite harmful outcomes, increased tolerance and sometimes physical withdrawal symptoms due to the drug (NCCH 1998).

Hospitalisation rates for drug dependence disorders are shown in Table 8.5 and Figure 8.7. Opiates were the substances most frequently responsible for these hospitalisations.

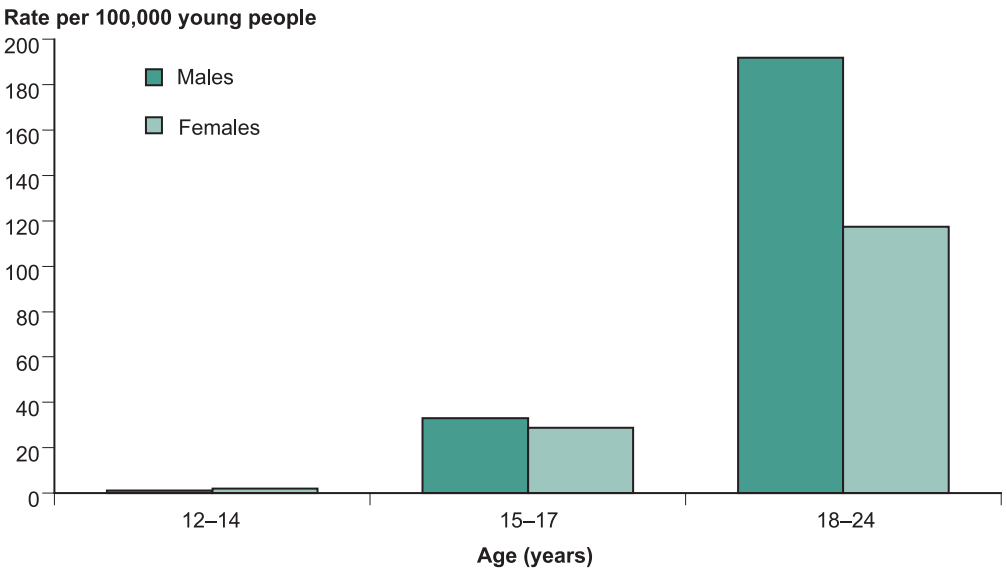
Table 8.5: Drug dependence disorder hospitalisation rates for young people aged 15–24 years, 1998–99 to 2000–01

		Males		Females		Persons	
Year	Age (years)	Number	Rate per 100,000 young people	Number	Rate per 100,000 young people	Number	Rate per 100,000 young people
1998–99	15–17	338	84.1	269	70.1	607	77.3
	18–24	1,890	204.0	1,111	124.1	3,001	164.7
	15–24	2,228	167.3	1,380	107.6	3,608	138.0
1999–00	15–17	260	64.0	243	62.5	503	63.2
	18–24	1,867	202.2	1,195	133.9	3,062	168.6
	15–24	2,127	160.0	1,438	112.1	3,565	136.4
2000–01	15–17	136	33.0	114	28.9	250	31.0
	18–24	1,787	192.0	1,058	117.5	2,845	155.4
	15–24	1,923	143.4	1,172	90.4	3,095	117.4

Note: ICD-9-CM codes 303–304 and ICD-10-AM codes F10–F19 with 4th character .2.

Source: AIHW National Hospital Morbidity Database.

- Overall, hospitalisation rates for drug dependence disorders decreased by 15% over the period 1998–99 to 2000–01, from 138 to 117 per 100,000.
- Rates for males decreased after 1998–99 and for females after 1999–00.
- Hospitalisation rates for drug dependence disorders for males were consistently around twice those for females.



Source: AIHW National Hospital Morbidity Database.

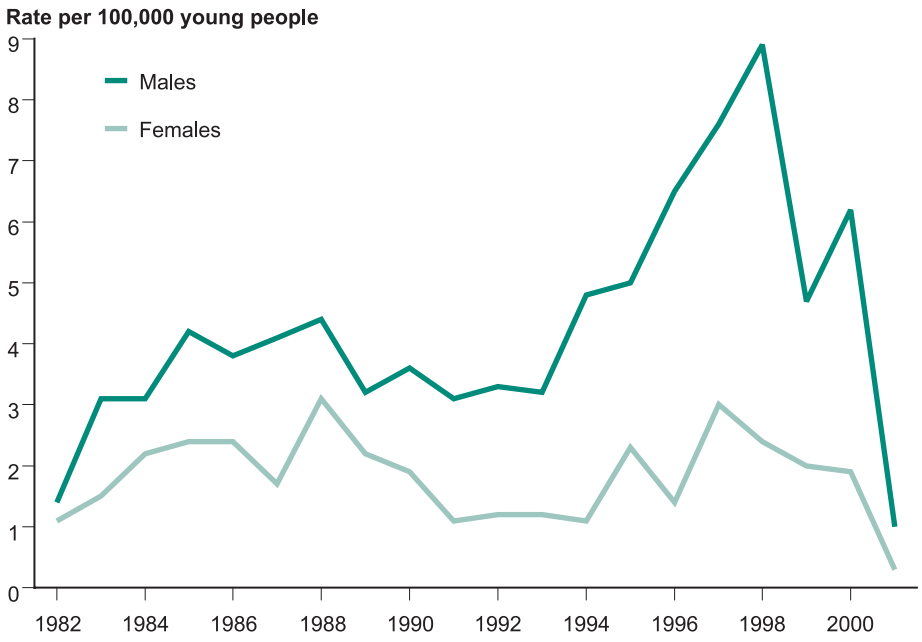
Figure 8.7: Drug dependence hospitalisation rates for young people aged 12–24 years, 2000–01

- There were over 3,000 hospitalisations of young people aged 12–24 years for drug dependence disorders in 2000–01.
- Drug dependence disorder hospitalisation rates among the young were overwhelmingly for people aged 18–24 years. There were almost no hospitalisations for drug dependence for people aged 12–14 years.
- The sex difference was greatest among people aged 18–24 years. In this age group, males were hospitalised at a rate 1.6 times that for females.

Deaths

In 2001, 19 deaths from substance use disorders occurred among young people aged 12–24 years and 9 were due to drug dependence disorders.

Deaths from drug dependence disorders are shown in Figure 8.8.



Note: ICD-9 codes 303–304 and ICD-10 codes F10–F19 with 4th character .2.
Source: AIHW Mortality Database.

Figure 8.8: Drug dependence disorder death rates for young people aged 15–24 years, 1982 to 2001

- Drug dependence disorder death rates fluctuated between 1982 and 2001, with a noticeable peak in deaths in 1998. Over this period, rates for males ranged from 1 to 9 deaths per 100,000 and rates for females ranged from 1.1 to 3.1 deaths per 100,000.
- Death rates were higher for males than for females in all years. In 2001, death rates for males were 3 times those for females.
- Death rates were higher for young people aged 18–24 years than for those aged 15–17 years. In 2001, the death rate for the older age group was 4.5 per 100,000, compared with 3.2 per 100,000 for the younger age group.

Intentional self-harm and suicide

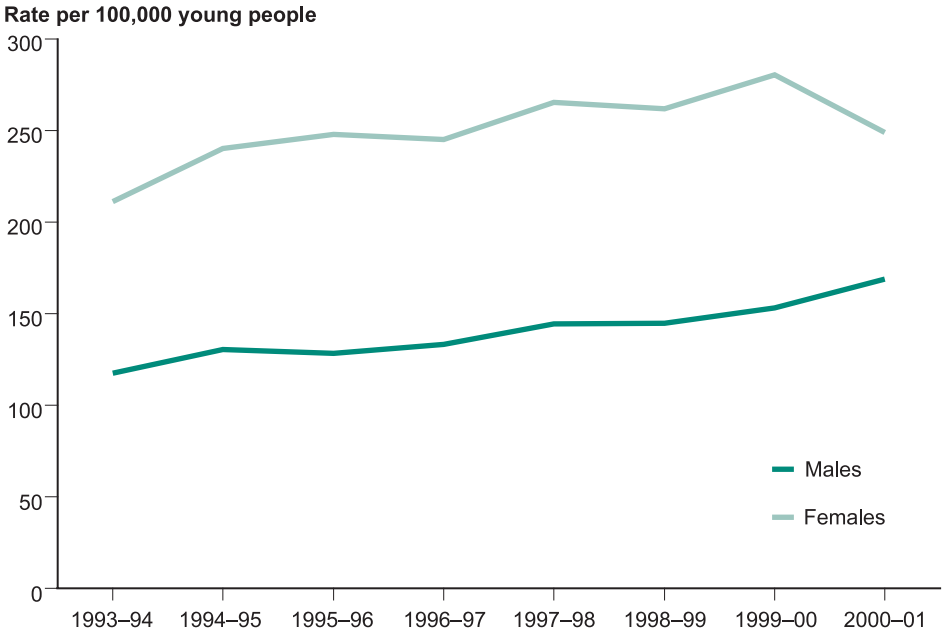
Intentional self-inflicted injuries are often associated with mental health problems and disorders, such as depression (Groholt et al. 2000). Intentional self-inflicted injuries include both attempted suicide and self-harming behaviours, which may not be intended to lead to death. Such behaviours may include cutting or burning the skin and self-poisoning.

An English study found that deliberate self-harm was reasonably common in adolescents, especially in females. A lifetime history of deliberate self-harm was reported by 13% of pupils aged 15–16 years, and self-harm in the previous 12 months was reported by 9% of pupils (Hawton et al. 2002). Patton et al. (1997) found that, among Victorian school students of the same age, the 12-month weighted prevalence estimate for deliberate self-harm was 5%. Taylor and Cameron (1998) found that among people who presented to hospital in Victoria for self-inflicted injuries, lacerations to the arm were the most common injuries. Not all intentional self-harm leads to hospitalisation; in the English sample, 13% of those who had self-harmed presented to hospital.

Hawton et al. (2002) found that factors occurring in the previous year that were significantly associated with intentional self-harm were having friends who had recently self-harmed, self-harm by family members, drug use and low self-esteem. Among females, depression, anxiety and impulsivity in the previous year were also associated with self-harm. Patton et al. (1997) found that psychiatric morbidity was the factor most strongly associated with self-harm. Antisocial behaviour and substance abuse were associated with self-harm among females but not males, and sexual activity was associated with self-harm among both males and females.

Among English students, 45% of those who had self-harmed said they wanted to die. Isacsson & Rich (2001) suggest that among people who repeatedly harm themselves, up to an estimated 10% will commit suicide within 10 years. However, Patton et al. (1997) found that most young people with self-injurious behaviour did not believe they would die as a result.

Hospitalisations



Note: ICD-9-CM codes E950–E959 (1993–94 to 1996–97) and ICD-10-AM codes X60–X84 (1998–99 to 1999–00).
Source: AIHW National Hospital Morbidity Database.

Figure 8.9: Intentional self-harm hospitalisation rates for young people aged 12–24 years, 1993–94 to 2000–01

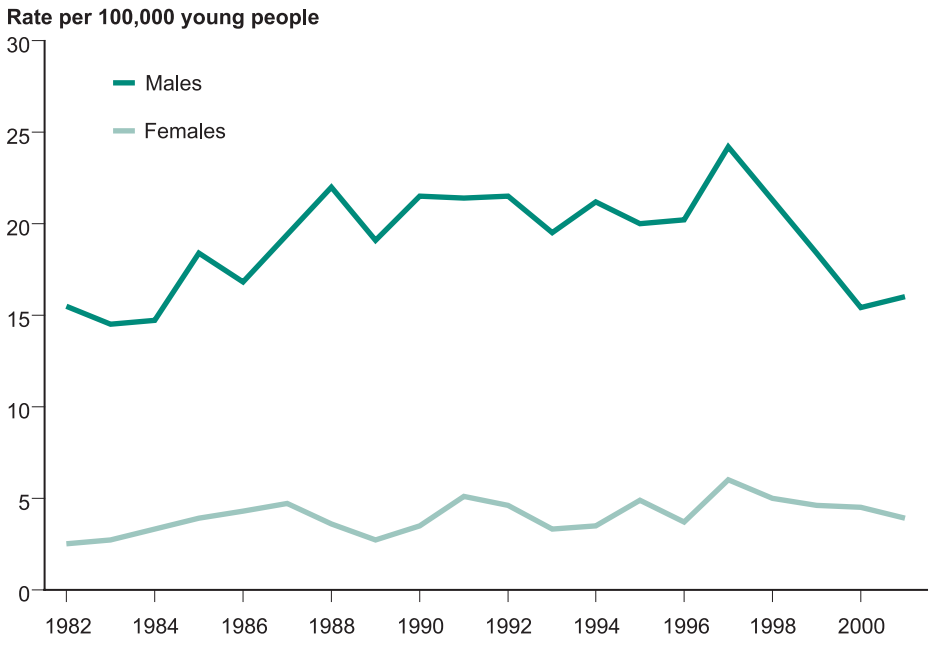
- In 2000–01, there were 2,957 hospitalisations of males and 4,204 hospitalisations of females for intentional self-harm.
- Although females were hospitalised at a rate nearly twice that of males, the difference between the sexes decreased over this period. In 1993–94, the rate for females was 1.8 times that for males. In 2000–01, the rate for females was 1.5 times that for males.
- Rates have been increasing since 1993–94. For males, hospitalisations were greatest in 2000–01 (169 per 100,000), and for females, hospitalisations were greatest in 1999–00 (280 per 100,000).

For both young men and young women, poisoning was the most common reason for hospitalisation, accounting for 78% of hospitalisations for self-harm. Self-harm with a sharp object was the next most common reason for hospitalisation (15%).

Suicide deaths

Youth suicide is a prominent public health problem in Australia. There are many complex factors linked to youth suicide. An increased risk of suicidal behaviour in young people is often associated with an interaction between multiple risk factors and adverse life sequences (Beautrais 2000).

In 2001, there were 2,452 deaths from suicide among all age groups in Australia. Of these deaths, 14% (349) were of young people aged 12–24 years. Among young people, 81% of suicide deaths were of males and 19% of females. Deaths from suicide among young people aged 12–24 years are shown in Figure 8.10.



Note: ICD-9 codes E950–E959 (1991 to 1996) and ICD-10 codes X60–X84 (1997 to 2000).
Source: AIHW Mortality Database.

Figure 8.10: Suicide death rates for young people aged 12–24 years, 1982 to 2001

- From 1982 to 2001, suicide rates fluctuated between 8.7 and 15.2 per 100,000 young people. Rates peaked in 1997, with a rate of 24.2 per 100,000 young males, and 6.0 per 100,000 young females.
- Rates for young men in 2001 were nearly the same as they were in 1982 (15.5 and 16.0 per 100,000 respectively). However, the rate for young women increased from 2.5 to 3.9 per 100,000.

In 2001, more suicides were from hanging, strangulation and suffocation than any other cause (200, or 57%). The next most common methods of suicide were poisoning (64 deaths, 18%) and firearms (29 deaths, 8%). In contrast, in 1982, of 311 deaths, 138 (44%) were from the use of firearms, 85 (27%) were caused by poisoning and 56 (18%) were caused by hanging, strangulation or suffocation.

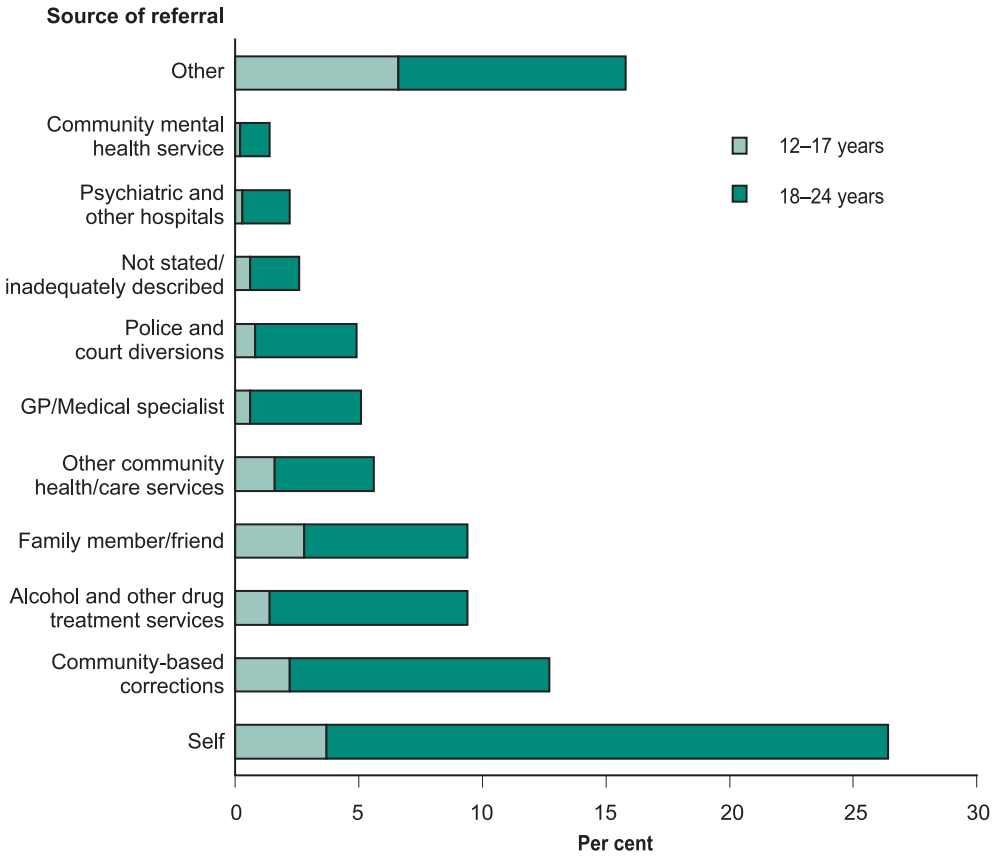
The Child and Adolescent Component of the National Survey of Mental Health and Wellbeing also examined thoughts of suicide and suicidal behaviour among adolescents aged 13–17 years. This survey found that 12% of young people had experienced

thoughts of suicide and 4% had made a suicide attempt, with 1% requiring treatment by a doctor or nurse. Adolescents with emotional and behavioural problems reported higher levels of suicidal thoughts and behaviour. Among those with severe problems, 42% reported they had experienced serious thoughts about suicide, whereas only 2% of adolescents with few problems had considered suicide (Sawyer et al. 2000).

Mental health services

Alcohol and other drug treatment services

In 2000–01, information was collected from 393 alcohol and other drug treatment services as part of a National Minimum Data Set. These services were from all states and territories except Queensland. Around half the treatment services (52%) were non-government providers. The reporting services had 27,336 clients aged 12–24 years registered, which represented one-third of all clients (33%). Among young people, 22% were aged 12–17 years and 78% were 18–24 years. More than half the clients registered (64%) were males. Around 28% of all clients had sought treatment themselves, with a greater proportion of young people aged 18–24 years being self-referred than those aged 12–17 years (Figure 8.11).



Notes

1. Excludes Queensland.

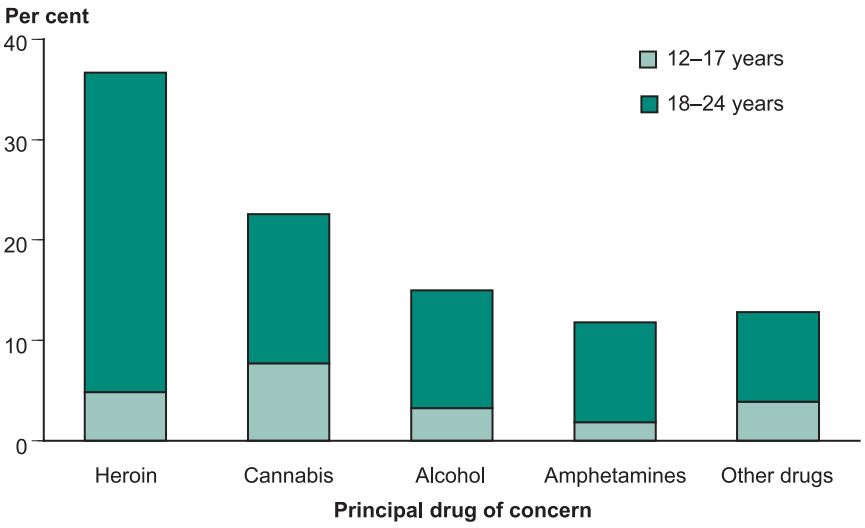
2. The category 'other community health/care services' comprises other residential community care unit; non-residential medical and/or allied health care agency; other non-residential community health care agency; and other community service agency.

Source: AIHW Alcohol and Other Drug Treatment Services NMDS 2000–01, unpublished data.

Figure 8.11: Source of referral to alcohol and other drug treatment services, young people aged 12–24 years, 2000–01

- Around 13% of referrals were from community-based corrections. Around 15% of males and 6% of females were referred from community-based corrections. Community-based corrections can include restricted movement, fines, community service, parole, bail and sentenced probation (ABS 2001).
- Other alcohol and other drug treatment services and a family member or friend were the sources of referral for about 10% each of patients.

The principal drugs for which clients aged 12–24 years sought treatment in 2000–01 are shown in Figure 8.12.



Notes

1. Substance user population comprises all client registrations excluding clients seeking treatment for the drug use of others.
2. Excludes Queensland.

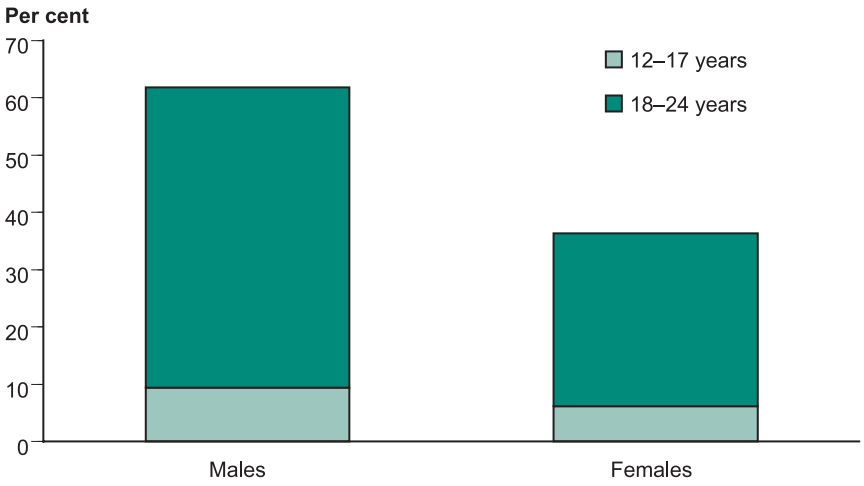
Source: AIHW Alcohol and Other Drug Treatment Services NMDS 2000–01, unpublished data.

Figure 8.12: Principal drugs of concern for which clients aged 12–24 years sought treatment, 2000–01

- More than one-third (37%) of patients sought treatment for heroin use, 22% for cannabis use and 16% for alcohol use.
- In all categories of drugs of concern, except nicotine, young people aged 18–24 years were in the majority.

More males than females sought treatment for problems with alcohol and cannabis, but more females than males sought treatment for all other drugs of concern.

Among drug treatment service clients who were aged 12–24 years, 86% recorded their injecting activity. Of these, nearly 66% were currently injecting or had previously injected drugs. The age and sex of injecting drug users is shown in Figure 8.13.



Note: Excludes Queensland.

Source: AIHW Alcohol and Other Drug Treatment Services NMDS 2000–01, unpublished data.

Figure 8.13: Young people aged 12–24 years who are currently injecting or who have injected drugs, by sex and age group, 2000–01

- A higher proportion of males than females were currently injecting or had injected drugs (62% compared with 36%).
- A higher proportion of young people aged 18–24 were currently injecting or had injected drugs than those aged 12–17 years (83% compared with 16%).

9. Sexual and reproductive health

Sexual health is the capacity to enjoy and manage sexual and reproductive behaviour in accordance with a social and personal ethic. It encompasses freedom from fear, shame, guilt and other psychological states that can impair sexual relationships (WHO 1975).

Sexual development is a normal part of adolescence. Though most adolescents go through these changes without significant problems, all adolescents need support and care during this transition to adulthood and some may need special help. Young people can be put at risk if they do not have the information, skills, support or access to health services to deal with problems they may encounter as they pass through adolescence.

Sexual and reproductive behaviour during adolescence can have far-reaching consequences in later life. A supportive social environment is critical to healthy adolescent development. Important environmental factors that can prevent adolescents from engaging in unsafe or unwanted sexual behaviour include a strong relationship with parents, a connection to school, and open communication with sexual partners (WHO 2003).

Sexual activity can be an important part in human relationships, but can also involve some degree of risk to health and wellbeing if appropriate precautions are not taken. Risks involved with engaging in sexual activity include contracting sexually transmissible diseases and unwanted pregnancy, as well as emotional risks involved with coercion and unwanted sexual activities. Although contraceptives, when used correctly, can decrease the risk of unwanted pregnancy, most contraceptives (other than condoms) do not protect against HIV and other sexually transmitted infections.

The age of consent for engaging in sexual intercourse is 16 years. Young people may purchase condoms at any age; condoms are available free from most family planning clinics, can be bought from chemists and supermarkets, and are sometimes available from vending machines in public toilets. Young women can be prescribed the contraceptive pill at age 16 without their parents' consent. Family planning clinics are also available to young people aged 14 years and older, and can be attended without parents. However, for many young people, the opening times or location of health centres can make them inaccessible. Moreover, one negative experience, such as the judgmental attitude of a health care professional, can discourage adolescents from seeking advice and treatment related to sexual and reproductive health (WHO 2003).

Once young women become sexually active, the possibility of pregnancy exists. Some young women will not have planned to become pregnant, whereas others will have made a conscious decision to conceive. Young women who are faced with an unplanned pregnancy are required to make a decision about the outcome of that pregnancy. Despite the conservative nature of available statistics, it appears there are about the same number of terminations as live births among young women in Australia.

Australia's teenage birth rate has decreased considerably over the last three decades (Healy 2001). However, over the same period, changes in Australian society, including later age of first marriage, increased education and employment opportunities for women and delayed childbearing, mean that more problems are now likely to be associated with teenage motherhood. Teenage mothers are at risk of a number of adverse social and psychological outcomes, such as leaving school early, having no or low qualifications, being unemployed or low paid, living in poor housing, suffering from depression, experiencing social isolation, and being dependent on government income assistance (UNICEF 2001; Healy 2001). A child of a teenage mother is also at risk of poor psychosocial outcomes, including living in poverty, growing up without a father, becoming a victim of neglect or abuse, achieving poorly at school, becoming

involved in crime, abusing drugs and alcohol, and becoming a teenage parent themselves (UNICEF 2001).

Maternal age is an important risk factor for perinatal outcomes, with adverse outcomes more likely among younger mothers (AIHW NPSU 2003). Premature births are more common among younger mothers, and perinatal death rates are higher for babies with mothers aged less than 20 years than older mothers. Although the majority of pregnancies and confinements in Australia do not result in mortality or severe illness, pregnancy, childbirth and infancy remain a time of vulnerability for young mothers and their children.

Some groups of young women are more likely to have babies at a younger age than others. For example, in 2000, more than 1 in 5 (23%) Aboriginal and Torres Strait Islander mothers were teenagers. The age at first birth for Indigenous mothers was 24.7 years compared with 29.0 for all mothers (AIHW NPSU 2003). Teenage confinements are more common among Australian-born women than those born overseas (apart from women born in New Zealand) (AIHW NPSU 2003).

This chapter presents information on sexual behaviour, contraception, the prevalence of sexually transmitted infections among young people, and pregnancy and its outcomes. The information covered is derived from a number of sources: 2001 ABS NHS and other ABS surveys, National Survey of Australian Secondary Students, the Australian Study of Health and Relationships and the National Notifiable Diseases Surveillance System. The chapter also provides data on teenage pregnancies. The data presented are drawn from a variety of sources, including the AIHW National Perinatal Statistics Unit and the AIHW National Hospital Morbidity Database, as well as data from the ABS. Statistics from selected states and territories on induced abortions are also presented.

Sexual behaviour

The National Survey of Australian Secondary Students (NSASS) was carried out in 1992, 1997 and 2001. The survey had a total sample size of 1,741 students in 1992 and 3,550 students in 1997.[1] More females than males participated in the surveys, which covered only government schools. Most students were born in Australia, with half the students from Year 10 and half from Year 12.

Sexual attraction

The majority of students surveyed in 1997 were sexually attracted to the opposite sex. About 10% were either attracted to the same sex, both sexes or were unsure of their sexuality (Table 9.1). These groups are at risk of marginalisation and isolation. In addition, gay men may be at increased risk of contracting a sexually transmitted infection like HIV/AIDS.

Table 9.1: The proportion of Year 10 and Year 12 students by sexual attraction, 1997

	Males		Females	
Sexual attraction	**Year 10**	**Year 12**	**Year 10**	**Year 12**
Attracted only to people of the opposite sex	93.0	93.6	91.4	89.2
Attracted to people of both sexes	1.9	2.5	2.8	4.6
Attracted only to people of same sex	3.4	2.9	2.5	3.7
Not sure	1.7	1.1	3.4	2.5
Total	100.0	100.0	100.0	100.0
Total number	**788**	**749**	**962**	**1,001**

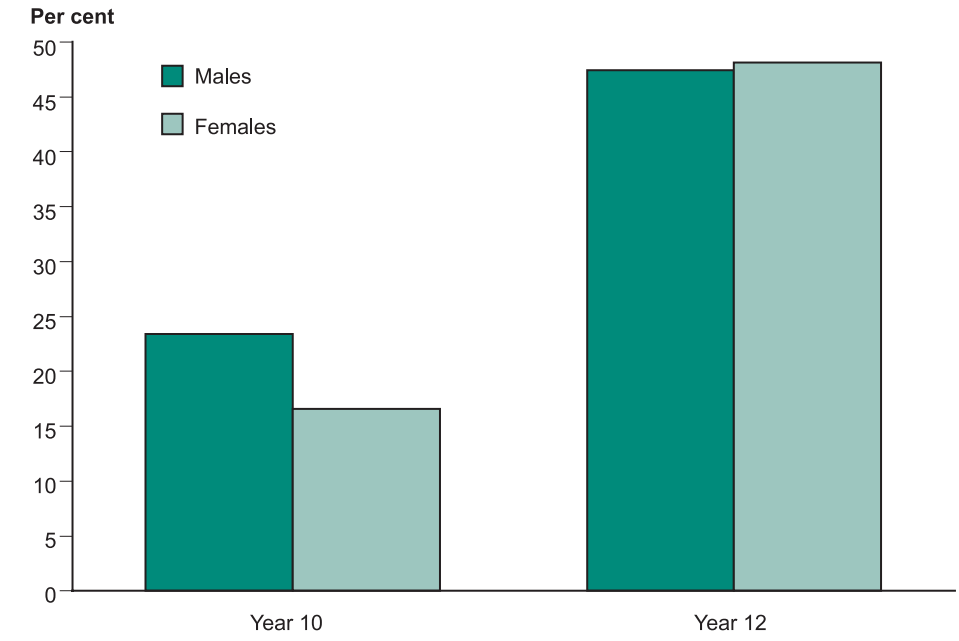
Source: Lindsay et al. 1997.

- The majority of Year 10 and Year 12 students reported attraction only to the opposite sex—93% of males and 91% of females in Year 10 and 94% of males and 89% of females in Year 12.
- More males than females reported attraction to the opposite sex in both Year 10 and Year 12.
- A higher proportion of females than males in both Year 10 and 12 reported attraction to the same sex, both sexes or were unsure of their sexual attraction (9% and 11% of females in Years 10 and 12, respectively, compared with 7% of males in both Years 10 and 12).

1. Results from the 2001 NSASS were unavailable at the time of writing this report

Sexual experience

In 1997, most students said they had experienced sexual activity. This included kissing (reported by 79% of males and 75% of females in Year 10 and 87% of males and 89% of females in Year 12) and sexual touching (67% of males and 54% of females in Year 10 and 77% of males and 80% of females in Year 12). A smaller proportion had engaged in sexual intercourse (Figure 9.1).



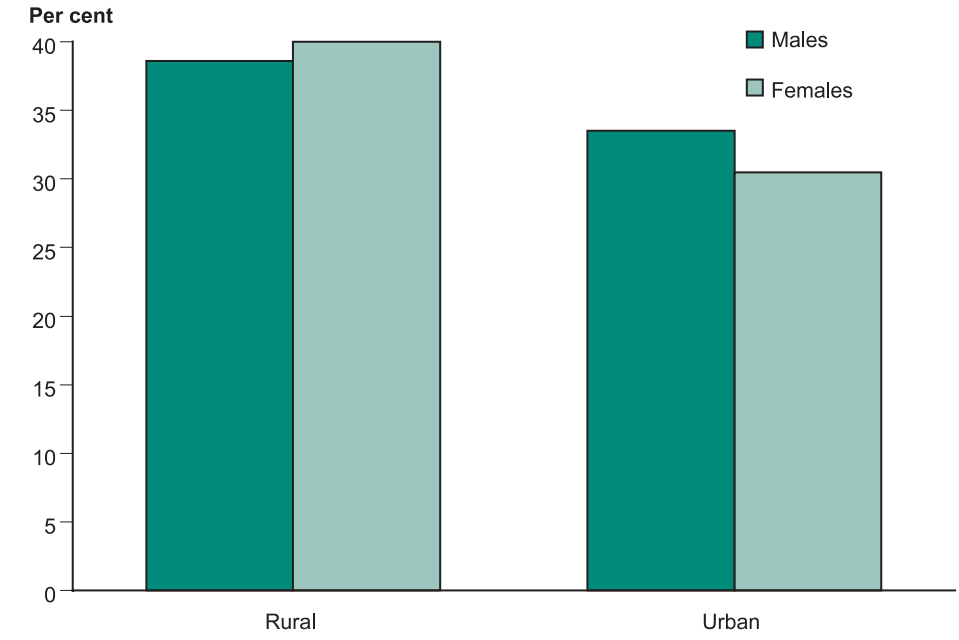
Source: Lindsay et al. 1997.

Figure 9.1: Proportion of Year 10 and Year 12 students who had had sexual intercourse at least once, 1997

- Among students in Year 10, just under 25% of students reported they had had sexual intercourse, but by Year 12, almost 50% students said they had.
- Only in Year 10 did more males than females report they had had sexual intercourse.

A lower proportion of Year 10 students reported that they had had sexual intercourse in 1997 than in 1992. In 1992, 27% of males and 21% of females reported having had intercourse, whereas in 1997 these proportions were 23% and 16%, respectively.

In 1997, the proportion of males who said they had had sexual intercourse was similar for those from English-speaking and non-English-speaking backgrounds (35%, compared with 34%). A substantially higher proportion of females from an English-speaking background reported having had sexual intercourse compared with females from non-English-speaking backgrounds (34%, compared with 19%).



Source: Lindsay et al. 1997.

Figure 9.2: Proportion of rural and urban students who had had in sexual intercourse at least once, 1997

- In 1997, the proportion of students who reported having had sexual intercourse was slightly higher among those living in rural areas than those living in urban areas, irrespective of sex. For example, 40% of females living in rural areas reported that they had participated in sexual intercourse compared with 31% for those living in urban areas. The respective proportions for males were 39% and 34%.

Number of sexual partners

The National Survey of Australian Secondary Students also looked at how many sexual partners Year 10 and Year 12 students had during one year.

Table 9.2: Sexually active students' reported number of sexual partners in the previous year, 1992 and 1997 per cent

		1992		1997	
	Frequency	**Males**	**Females**	**Males**	**Females**
Year 10	No sex in the past year	9.3	7.3	5.1	5.1
	1 person	45.5	56.5	53.7	55.1
	2 people	23.2	14.3	24.7	24.6
	3 or more people	22.0	21.9	16.4	15.2
	Total number	*101*	*100*	*185*	*157*
Year 12	No sex in the past year	6.8	5.8	9.2	5.3
	1 person	49.1	57.0	51.3	63.8
	2 people	15.7	19.7	20.0	17.9
	3 or more people	28.3	17.5	19.6	12.9
	Total number	*169*	*221*	*349*	*479*

Source: Lindsay et al. 1997.

- Most sexually active students in Years 10 and 12 had had only one sexual partner during the previous year.
- Sexually active females had fewer sexual partners than sexually active males. In both 1992 and 1997, a higher proportion of females reported having only one sexual partner during the previous year.
- Proportions of young people who had had three or more sexual partners in the previous year decreased between 1992 and 1997. Among males in 1992, 22% in Year 10 and 28% in Year 12 had had three or more sexual partners, compared with 16% in Year 10 and 20% in Year 12 in 1997. Among females in 1992, 22% in Year 10 and 15% in Year 12 had had three or more sexual partners, compared with 20% in Year 10 and 13% in Year 12 in 1997.

Contraception

Information on the use of contraception is available from the National Survey of Australian Secondary Students (NSASS) for Years 10 and 12 students of both sexes and from the 2001 ABS NHS for women aged 18–24 years only.

Information from the NSASS suggests that up to 80% of young women use condoms to prevent pregnancies and about 20% use an oral contraceptive. For older women in this age group, although condoms remain the most frequently used method of contraception, oral contraceptive use was more common.

Table 9.3: Current contraception use by sexually active students, 1997 (per cent)

	Year 10		Year 12	
Method	**Males**	**Females**	**Males**	**Females**
Condom	80.2	85.9	77.1	75.4
Oral contraceptives	24.5	36.5	43.8	55.2
The morning-after pill	4.2	9.0	5.2	4.4
Withdrawal	9.0	10.6	10.7	18.1
None	10.9	6.6	6.0	2.2
Other	7.2	5.5	6.1	3.7
Total number	**146**	**131**	**279**	**405**

Note: Persons may have reported more than one type of contraceptive practice and therefore components may not add to totals.

Source: Lindsay et al. 1997.

- The majority of sexually active students of both sexes reported using condoms as a means of contraception. The next most common contraceptive reported was oral contraceptives. The proportion of students who reported using condoms decreased with age and the proportion who reported using the contraceptive pill increased with age.
- Of females in Year 10, 11% reported using the unreliable withdrawal method, and this proportion increased to 18% among Year 12 females. Approximately 11% of Year 10 males and 7% of Year 10 females reported that they did not use any means of contraception.

A similar pattern in contraception use among young women aged 18–24 years was seen in findings of the 2001 ABS NHS (Table 9.4).

Table 9.4: Contraception practices for women aged 18–24 years

Contraception practices[a]	Per cent
Oral contraceptives	43.2
Condoms for protection or contraceptive purposes	35.9
Withdrawal method	9.6
Morning-after pill	5.4
Contraceptive injection (Depo-Provera)	2.0
Natural, Rhythm or Billings method	1.4[b]
Other[c]	2.0
Not sexually active	16.4
None of these apply	11.3
Not stated/missing	8.5

(a) Reported contraceptive practices of self and/or partner.

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

(c) Other includes: partner sterilised (including vasectomy), self or partner infertile or use an IUD.

Source: ABS 2002.

- More young women aged 18–24 years reported using oral contraceptives rather than condoms as a means of avoiding pregnancies (43% compared with 36%). The mean age of first taking the contraceptive pill was 17.3 years.
- Just under 10% reported using the withdrawal method as a form of contraception.
- Just over 16% of women aged 18–24 years stated that they were not sexually active.

Just over 26% of women aged 18–24 years have never used oral contraception and an additional 23% had used oral contraception in the past.

These data do not indicate the proportion of young women using multiple types of contraception, e.g. condom use as well as contraceptive pill use.

Condom use

Although no contraceptive method is 100% effective against pregnancy or contracting a sexually transmitted infection (STI), the best way to protect against contracting HIV or other STIs is by using condoms during sexual activity. The section below explores condom use among sexually active students.

Although condom use increased between 1992 and 1997, a marked proportion of young people continue not to use condoms in situations that placed them at risk of contracting HIV/AIDS, an STI or hepatitis. For example, in 1997, only 37% of sexually active males in Year 12 were using condoms sometimes and 9% never used them.

Table 9.5: Frequency of sexually active students' condom use in the previous year, 1992 and 1997 (per cent)

		1992		1997	
	Frequency	**Males**	**Females**	**Males**	**Females**
Year 10	Always	60.3	41.0	73.6	55.3
	Sometimes	28.1	43.4	22.1	39.7
	Never	11.6	15.6	4.4	5.0
	Total number	91	92	165	144
Year 12	Always	52.9	28.6	56.4	44.0
	Sometimes	32.7	55.4	36.8	47.5
	Never	14.3	16.1	6.8	8.5
	Total number	**160**	**211**	**309**	**425**

Source: Lindsay et al. 1997.

- Between 1992 and 1997, there was a considerable increase in the proportion of sexually active students who used condoms sometimes, but only a small increase in the number who always used condoms.
- In both 1992 and 1997, more Year 10 students used condoms than Year 12 students. This may be related to the formation of more stable relationships, as students grow older, or to older students becoming more casual in their attitudes to risk. More young men reported using condoms than young women—76% of males in Year 10, compared with 55% of women in the same year, and 63% of men in Year 12, compared with 52% of women.
- A high proportion of students continue to take risks by not using condoms at all times. In 1997 in Year 12, 56% of girls and 43% of boys used condoms only sometimes or never. The respective proportions for Year 10 students were 45% for boys and 27% for girls.

Other recent data on condom use among women aged 18–24 years are available from the 2001 ABS NHS (Table 9.6).

Table 9.6: Condom use among women aged 18–24 years, 2001

Condom use	Number	Per cent
Use for protection	53,859	6.2
Use for contraception	87,119	10.0
Use for protection and contraception	172,083	19.7
Sexually active but condom not used	286,376	32.8
Has a female partner	4,338[(a)]	0.5
Not sexually active	136,698	15.7
Refusal	64,046	7.3
Not known if condom is used	68,362	7.8
Total	**872,881**	**100.0**

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

Source: ABS NHS 2001, unpublished data.

- Just over 1 in 4 (26%) females aged 18–24 years reported that they use condoms for protection—20% reported using condoms both for protection and contraception, and an additional 6% reported that they use condoms for protection.

- Approximately one-third of sexually active women (33%) did not use condoms.
- About 1 in 10 women reported using condoms for contraception.

Condom use was reported to be influenced by whether a sexual partner was casual ('someone you had sex with once or infrequently') or steady ('someone with whom you have, or have had, an ongoing sexual relationship'). Of sexually actively students, 68% always used condoms with casual partners, and 28% sometimes used condoms with a casual partner.

Table 9.7: Proportion of sexually active students who had sex with a casual partner, by condom use in the previous year, 1997 (per cent)

	Frequency	Males	Females
Year 10	Always	76.4	55.3
	Sometimes	18.9	32.3
	Never	4.7	12.5
	Total number	**153**	**110**
Year 12	Always	63.2	52.2
	Sometimes	26.2	33.8
	Never	10.6	14.1
	Total number	**245**	**216**

Source: Lindsay et al. 1997

- Among sexually active students in both Year 10 and Year 12, a higher proportion of young men than women always used a condom during sexual intercourse.
- A large proportion of young people continue to take risks—just under 40% of Year 12 males and under 50% of Year 12 females said that they used condoms only 'sometimes' or 'never' when having sex with a casual partner.

The rate of condom use was lower for sexual intercourse with a steady partner—55% of students said they always used a condom with a steady partner and 35% said they sometimes used a condom. Overall, young women were less likely than young men to use a condom whether their sexual partner was casual or steady.

Sexually transmitted infections (STIs)

Some forms of contraception protect not only against unplanned pregnancy, but also against sexually transmitted infections (STIs). An STI is a communicable disease that may be contracted through sexual activity (oral, anal or genital sex). Of the main STIs, chlamydia, gonococcal infection and syphilis are transmitted solely or mainly through sexual contact. HIV/AIDS and hepatitis B and C can be transmitted by other means, such as contact between blood or saliva. Although hepatitis A is mainly transmitted through food contamination, it may also be spread through sexual contact.

STIs can share symptoms, but many show no symptoms and therefore commonly go undiagnosed for long periods. The signs and symptoms of infection with an STI include itching, painful sores or blisters, a discharge that is usually smelly, or burning and discomfort when passing urine. Most STIs can be treated successfully with antibiotics, but if left untreated they can lead to serious complications. Many STIs are notifiable in Australia, which means that they must be reported to the relevant state or territory health authorities. The Commonwealth Department of Health and Ageing compiles these data into reports, so that national incidence levels for specific age and sex groups are available.

In order to cater to the information needs of young people regarding sexual health, an understanding of young people's knowledge of and attitudes towards STIs is required. Education programs with the object of influencing young people's sexual behaviour—in particular their high-risk sexual behaviour—need to take such knowledge and attitudes into account.

In Australia, information on the knowledge and attitudes of young people regarding sexual behaviour is available from the Australian Research Centre in Sex, Health and Society at La Trobe University. This information was collected in nationally representative surveys of Year 10 and Year 12 students in 1992, 1997 and 2002 (results forthcoming). Among the topics investigated are knowledge about STIs, perceptions of the risk of STIs and attitudes towards people with HIV/AIDS.

In 1997 the 1,741 students surveyed were asked to identify from a list of various diseases the ones which could be sexually transmitted (Table 9.8), and to state whether statements about STIs were true or false (Table 9.9).

Table 9.8: Students' correct identification of whether a disease is sexually transmitted, 1997 (per cent)

	Year 10		Year 12	
Disease (correct answer)	Males	Females	Males	Females
Gonorrhoea (yes)	44.2	47.5	69.5	69.5
Glandular fever (no)	62.1	72.5	72.8	83.2
Genital herpes (yes)	77.0	87.0	93.7	95.3
Flu (no)	81.8	87.2	87.1	93.5
Venereal disease (yes)	35.9	34.3	54.9	52.6
Measles (no)	77.9	82.9	83.2	91.4
Syphilis (yes)	40.1	39.4	69.8	69.0
Chicken pox (no)	81.3	84.3	85.4	93.3
HIV/AIDS (yes)	98.2	99.2	99.6	99.3
Chlamydia (yes)	30.6	37.3	53.7	66.1
Mumps (no)	69.1	75.6	81.3	87.9
Tuberculosis (no)	36.8	37.9	56.7	62.2
Genital warts (yes)	70.7	84.8	88.4	93.2
Impetigo (no)	45.1	53.2	45.1	56.7
Pelvic inflammatory disease (yes)	41.5	46.7	38.2	49.9

Source: Lindsay et al. 1997.

- Knowledge about HIV/AIDS and STIs among young people is uneven. Nearly all students were aware that HIV/AIDS can be transmitted sexually, but knowledge about other sexually transmitted infections was poorer. This situation is presumably the outcome of the concentration on HIV/AIDS in the information provided to young people.
- Year 12 students had a better knowledge of STIs than Year 10 students. Female students knew more than males about most diseases.
- The proportion of students who correctly identified chlamydia (a very common STI) and pelvic inflammatory disease as STIs was low. Over two-thirds of the Year 12 students, but fewer than half of the Year 10 students, knew that gonorrhoea and syphilis are STIs. Recognition of the term 'venereal disease' was low.
- Most students knew that common illnesses such as flu, measles, chicken pox and mumps cannot be transmitted sexually. However, fewer knew that glandular fever, tuberculosis and impetigo are not transmitted sexually.

Table 9.9: Percentage of students giving the correct response to statements about STIs, 1997

	Year 10		Year 12	
Statement (correct answer)	**Males**	**Females**	**Males**	**Females**
A man can have an STI without any obvious symptoms (yes)	71.1	79.5	83.9	88.7
A woman can have an STI without any obvious symptoms (yes)	71.2	79.7	84.1	89.9
Apart from HIV, all STIs can be cured (no)	51.1	52.9	60.8	61.7
Chlamydia is a sexually transmitted infection that affects only women (no)	8.3	7.9	12.8	14.5
Chlamydia can lead to sterility among women (yes)	18.5	21.8	31.1	42.3
Once a person has caught genital herpes, then they will always have the virus (yes)	20.0	28.5	35.1	46.2
People who always use condoms are safe from all STIs (no)	68.4	72.6	76.0	76.3
Gonorrhoea can be transmitted during oral sex (yes)	30.0	31.0	38.4	39.5
Genital warts can only be spread by intercourse (no)	23.6	34.0	31.4	43.0
HIV only infects gay men and injecting drug users (no)	70.0	77.2	81.5	87.2
Cold sores and genital herpes can be caused by the same virus (yes)	22.9	29.3	36.3	41.7

Source: Lindsay et al. 1997.

- Knowledge about chlamydia, a widespread and common STI, was particularly poor. Less than 10% of Year 10 students and less than 15% of Year 12 students knew chlamydia was not an STI that affects women only. Approximately only 1 in 5 Year 10 students and less than half of Year 12 students knew that chlamydia can cause sterility in women.
- Knowledge was also poor about the spread of genital warts, genital herpes and gonorrhoea.

Additional questions in the survey investigated knowledge about three forms of hepatitis and transmission of diseases through injecting drug use. In general, knowledge about hepatitis was poor. Less than half of the students surveyed knew that hepatitis C can be transmitted by tattooing and body piercing and that hepatitis B can be transmitted sexually. Only just over half of students knew that injecting drug users were at increased risk of contracting hepatitis C.

In 1997, questions were introduced regarding knowledge about which diseases can be transmitted by injecting when sharing needles or other equipment. Nearly all students knew that HIV/AIDS can be transmitted through sharing needles, but fewer knew that other diseases can be transmitted in the same way. Just over half of the students knew that hepatitis C can be transmitted through sharing injecting equipment.

Perceptions

The surveys in 1992 and 1997 investigated how many students believed they might become infected with HIV, an STI or hepatitis (Table 9.10)

Table 9.10: Students believing they were likely or very likely to become infected with HIV or to get an STI or hepatitis, 1992 and 1997 (per cent)

	Year 10		Year 12	
	1992	1997	1992	1997
To become infected with HIV				
Males	8.1	3.9	4.7	4.7
Females	11.7	7.7	9.5	6.9
To get an STI				
Males	11.5	10.0	11.4	8.9
Females	15.3	11.4	14.9	14.1
To get any form of hepatitis				
Males	n.a.	10.8	n.a.	9.9
Females	n.a.	12.2	n.a.	15.5

n.a. not available.

Note: Questions on hepatitis were not asked in 1992.

Source: Lindsay et al. 1997.

- A small minority of students saw themselves as being at risk of an HIV infection—about 5% of males and 7% of females in the 1997 survey. Some of the more common reasons given by the students for not seeing themselves at risk were that they did not inject drugs, did not share needles, had not had sexual relations, or used condoms if they did (Lindsay et al. 1997).
- The proportion that believed they were likely or very likely to contract an STI or hepatitis was higher, at around 16%.
- Students who engaged in risky behaviour, such as injecting drugs, were more likely to see themselves at risk of contracting HIV, an STI or hepatitis (Lindsay et al. 1997).

Notifications for sexually transmitted infections

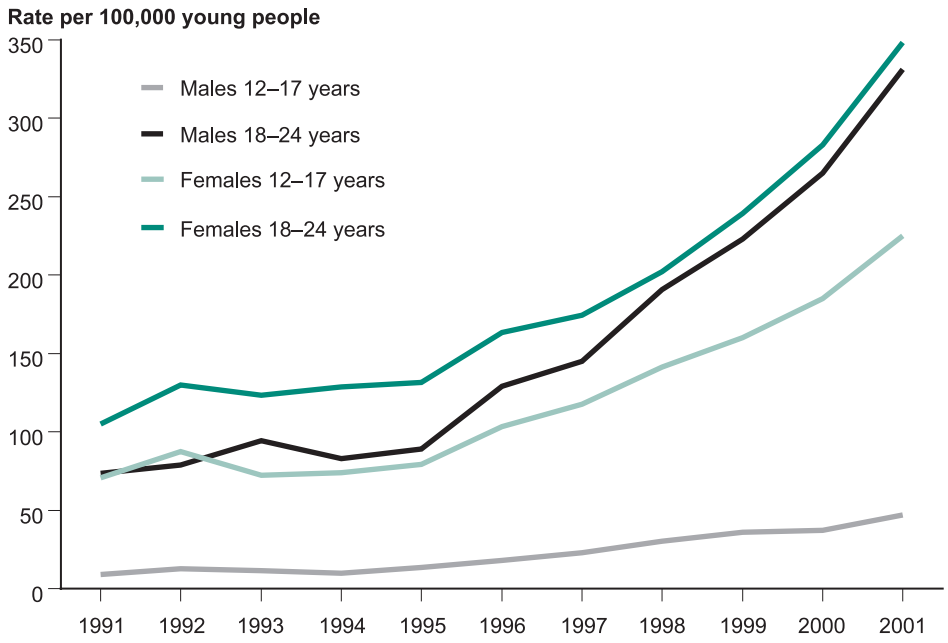
This section covers those infections transmitted only by sexual contact. The incidence of other diseases that are transmitted in part (but not exclusively) through sexual contact such as hepatitis A, B and C are covered in the section on infectious diseases (Chapter 10).

Chlamydia

Chlamydia is a curable STI, which is caused by the bacterium *Chlamydia trachomatis* and is acquired during oral, vaginal or anal sexual contact with an infected partner. Infections due to chlamydia are among the most prevalent of all STIs (Counahan et al. 2003). Males are more likely than females to have symptoms, but up to 75% of persons with chlamydia may show no symptoms.

In females, chlamydia infections can result in pelvic inflammatory disease, which can cause infertility, ectopic pregnancy and chronic pelvic pain. Pregnant women infected with chlamydia can pass the infection to their babies during delivery. In males, chlamydia can cause epidydimitis, a serious illness.

It is difficult to estimate the number of cases of chlamydia accurately, because of the potentially large number of asymptomatic persons who would be identified only through systematic screening, which is not available nationally. Chlamydia notification rates are shown in Figure 9.3.



Source: Communicable Diseases Network Australia—National Notifiable Diseases Surveillance System, personal communication.

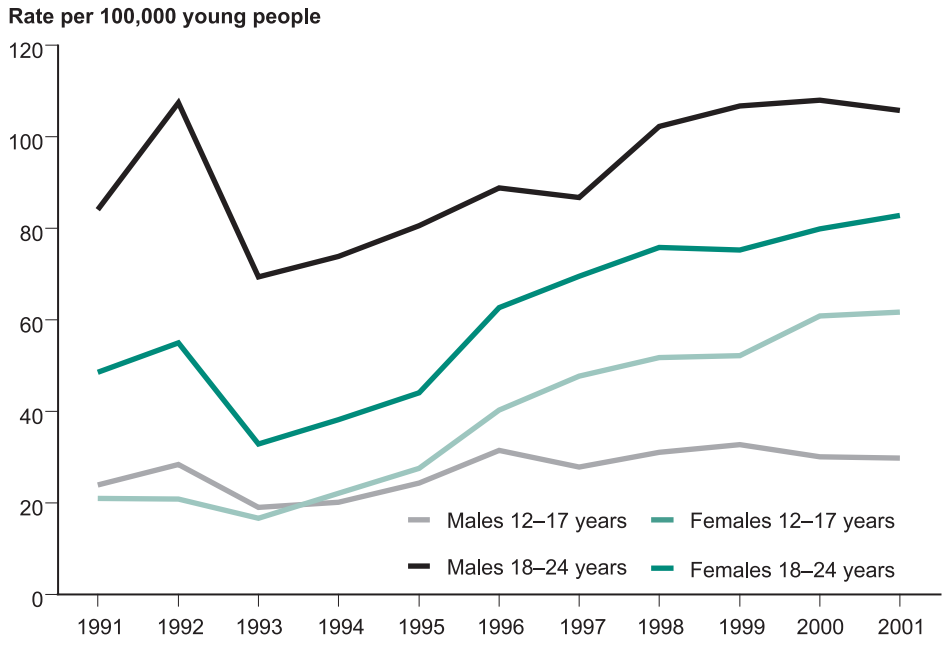
Figure 9.3: Chlamydia notification rates for young people aged 12–24 years, 1991 to 2001

- Chlamydia is a common communicable disease in Australia. In 2001, there were 11,859 notifications of chlamydia for young people aged 12–24 years. Of these, 69% were for females, 2% were for those aged 12–14 years, 17% for those aged 15–17 years and 82% for those aged 18–24 years. In 2001, chlamydia notifications for young people aged 12–24 years represented 59% of all notifications for chlamydia.
- The incidence of chlamydia in young people increased by more than three times, from 98 to 338 per 100,000. Although the increase of chlamydia is possibly related to increased awareness and diagnosis, a change in sexual behaviour may be behind the observed increase. Young people may be either using condoms less frequently and changing partners more often, or having unprotected sex with more than one sexual partner concurrently.
- Between 1991 and 2001, the notification rate was highest for females aged 18–24 years, followed by males aged 18–24 years. The difference in the rates between males and females may be due to higher screening among females, since they are more likely to consult a doctor about their sexual health. In 2001, the notification rate for females was 1.8 times that for males.
- The age distribution of chlamydia infections suggests a considerable number of young people are having unprotected sexual intercourse, which is of concern.

Gonococcal infection

Gonorrhoea is caused by an infection with the bacterium *Neisseria gonorrhoeae*. It is a major cause of pelvic inflammatory disease, infertility, ectopic pregnancy and chronic pelvic pain in women. Men can suffer from swelling of the testicles and penis. If the infection is not treated, in the longer term both sexes may suffer from arthritis, skin problems and other organ infections caused by the spread of gonorrhoea within the body. Gonorrhoea can also be spread from mother to child during birth.

Males with gonorrhoea are more likely to have symptoms and to seek treatment. In males, symptoms—burning while urinating and a yellowish-white discharge from the penis— usually appear 2–7 days after infection, but can take as long as 30 days to appear. However, people infected with gonorrhoea often have no symptoms; 10–15% of men and about 80% of women may have no symptoms. People with no symptoms are at risk of developing complications of gonorrhoea and can also spread the infection unknowingly.



Source: Communicable Diseases Network Australia—National Notifiable Diseases Surveillance System, personal communication.

Figure 9.4: Gonococcal infection notification rate for young people aged 12–24 years, 1991 to 2001

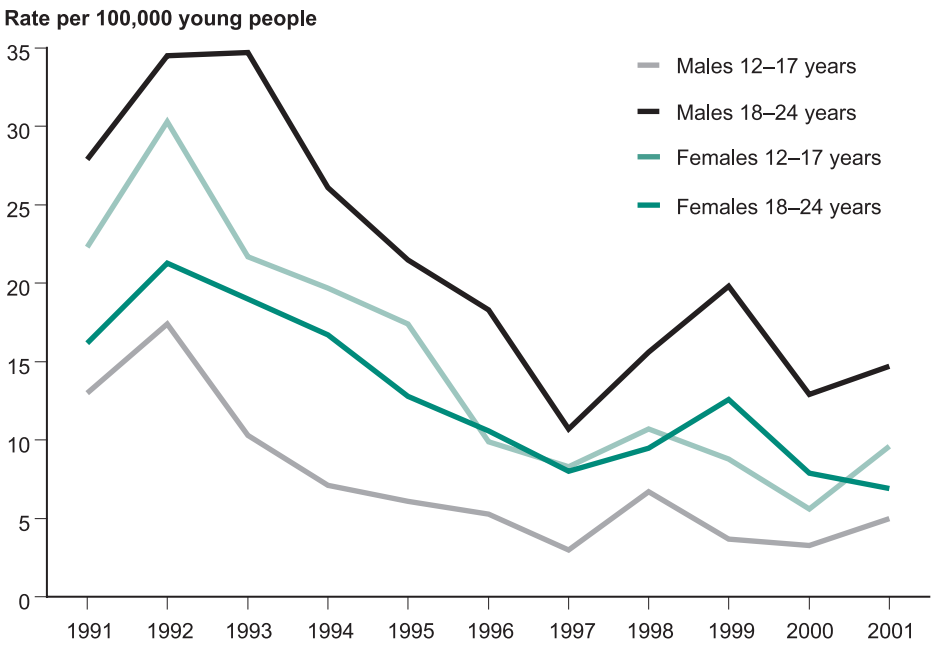
- In 2001, there was a total of 2,213 notifications of gonococcal infections for young people aged 12–24 years. This was 40% of total notifications for gonorrhoea for that year. Notifications were evenly spread between males and females. The distribution of cases was 7%, 23% and 71% among those aged 12–14, 15–17 and 18–24 years, respectively.
- Notifications of gonococcal infection among young people increased by 1.5 times between 1991 to 2001, from 47 to 72 per 100,000.
- The notification rate was highest for males aged 18–24 years, followed by females of the same age group.

Syphilis

Syphilis is a complex STI caused by the spirochaete *Treponema pallidum*. Syphilis is passed from person to person through direct contact with a syphilitic sore. Sores occur mainly on the external genitals, vagina, anus, or in the rectum. Sores also can occur on the lips and in the mouth. Transmission of the organism occurs during vaginal, anal or oral sex. Pregnant women with the disease can pass it to their foetus so that the infant is born with the infection.

The time between infection and early symptoms can range from 10 to 90 days (average 21 days). The first, or primary, stage of syphilis is usually marked by the appearance of a single sore (called a chancre), but there may be multiple sores. The chancre is usually firm, round, small and painless, and it appears at the spot where syphilis entered the body. The chancre lasts 3–6 weeks and then heals and disappears. If adequate treatment is not administered when the chancres appear, the infection will progress to the secondary and latent stages that are considerably more serious.

The health problems caused by syphilis in adults and newborns are serious in their own right, but it is now known that the genital sores caused by syphilis in adults also make it easier to transmit and acquire HIV infection sexually. There is a 2- to 5-fold risk of acquiring an HIV infection if syphilis is present and a person indulges in unprotected sexual intercourse with a person infected with HIV.

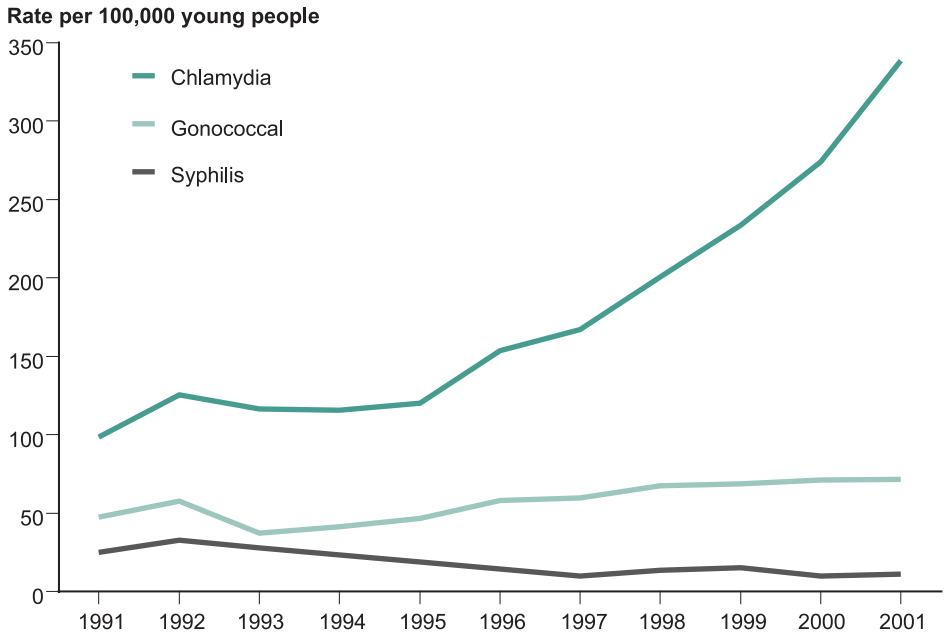


Source: Communicable Diseases Network Australia—National Notifiable Diseases Surveillance System, personal communication.

Figure 9.5: Syphilis notification rate for young people aged 12–24 years, 1991 to 2001

- In 2001, there was a total of 382 notifications of syphilis for young people aged 12–24 years. This represents 27% of total notifications for syphilis for that year. Of the notifications among young people in 2001, 53% were in females. The distribution of cases was 3%, 28% and 69% among those aged 12–14, 15–17 and 18–24 years, respectively.
- In contrast to chlamydia and gonococcal notifications, notification rates for syphilis among young people declined from 25 per 100,000 in 1991 to 11 in 2001. Notification rates fell to less than 10 per 100,000 in 1997, but rose again to reach 11 in 2001, which suggests that syphilis remains a concern for young people.
- Between 1991 and 2001, notification rates were highest for females and males aged 18–24 years, followed by females aged 12–17 years.

A summary of the notification rates for chlamydia, gonococcal infection and syphilis is shown in Figure 9.6.



Source: Communicable Diseases Network Australia—National Notifiable Diseases Surveillance System, personal communication.

Figure 9.6: Chlamydia, gonococcal infection and syphilis notification rates for young people aged 12–24 years, 1991 to 2001

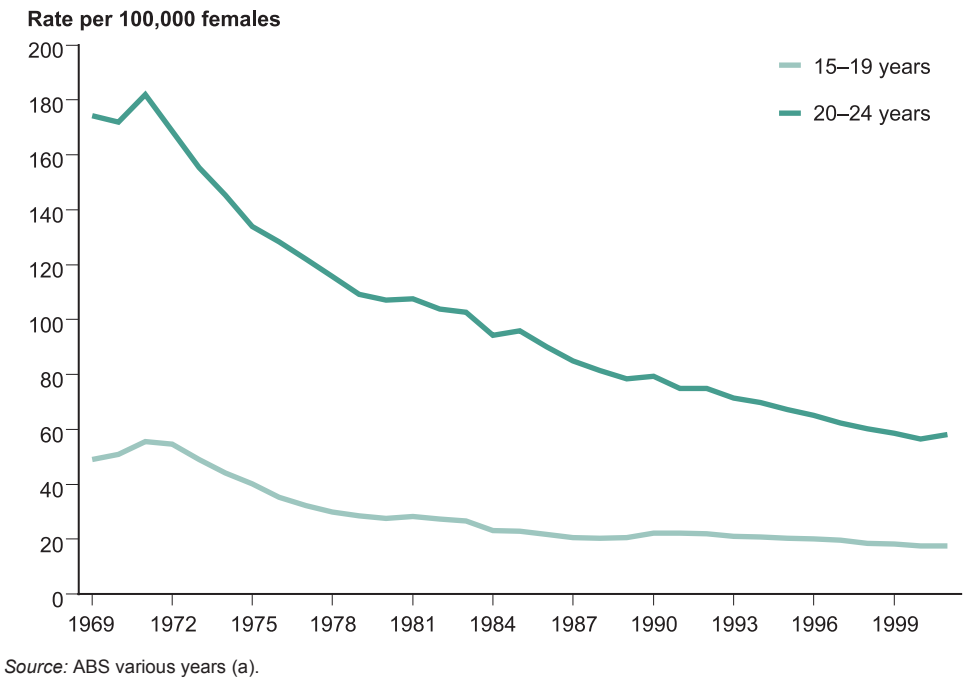
- Over the 10 years from 1991, notification rates for chlamydia increased 3.5 times. Gonococcal infection notification rates rose in the first part of the period, but have remained at just over 50 per 100,000 for the last 5 years. Syphilis notifications declined over the 10 years.
- Because of the asymptomatic nature of most STIs, these rates are probably an underestimate of the true incidence.

Pregnancy

A pregnancy has a number of possible outcomes: a spontaneous abortion (miscarriage), an induced abortion (pregnancy termination), a stillbirth (foetal death) or a live birth.

Information on the number of live births is published annually by the ABS from birth registration data. In 2001, there were 246,393 births to females of all ages in Australia. Of these births, 11,704 were live births to females aged 19 years or younger and 37,208 were live births to females aged 20–24 years. These accounted for 5% and 15% of all live births, respectively.

The age-specific birth rate is the number of births per 1,000 females of a given age. The age-specific birth rates for females aged 15–19 and 20–24 years from 1969 to 2001 are shown in Figure 9.7.



Source: ABS various years (a).

Figure 9.7: Birth rate for females aged 15–19 and 20–24 years, 1969 to 2001

- The birth rate for females aged 15–19 years declined from 55 per 1,000 in 1971 to 20 per 1,000 in 1988 (a decline of 55%), and has been fairly stable since then.
- The birth rate for females aged 20–24 years declined by nearly 70% over this period, from 182 to 62 births per 1,000 females.
- The decline in birth rates among females aged 15–19 years since 1971 has been attributed to a greater willingness of medical practitioners to prescribe contraceptives (particularly the contraceptive pill) to young unmarried females and a reinterpretation of and changes in state laws governing elective abortions.

The birth rate for females aged 19 years or younger (teenage) in Australia is high compared with other countries in the Organisation for Economic Cooperation and Development (OECD). In 1998, in a comparison of teenage birth rates in 28 countries, the Australian birth rate ranked 11th highest with a rate of 18.4 births per 1,000 females

aged 15–19 years. Korea had the lowest rate of teenage births with a rate of 2.9 per 1,000 females and the United States had the highest rate—52.1 births per 1,000 females (UNICEF 2001).

Induced abortions

Induced abortion, often referred to as 'termination of pregnancy', is one possible outcome of pregnancy. Statistics on induced abortions, as well as the teenage birthrate, are needed if the teenage pregnancy rate is to be estimated. The numbers of induced abortions have been recorded by the Health Insurance Commission (HIC) through Medicare claims since 1985 and through hospital data on medical abortions since 1993–94, but it is believed that the rate of teenage pregnancy in Australia is underestimated. One study has estimated that in New South Wales at least 15% of all induced abortions were not recorded in the HIC data (Adelson et al. 1995). A proportion of teenage induced abortions may not be recorded because the pregnant young teenagers may not yet have their own Medicare card (Adelson et al. 1995).

A case study

Reliable elective abortion data have been available in South Australia since 1970 and can be used to present trends over time in confinements and abortions in that state (Table 9.11).

Table 9.11: Teenage pregnancies in South Australia, 1970–74 to 1995–99

	Confinements		Terminations		Pregnancies		
Year period	Number	Per cent of pregnancies in state	Number	Per cent of pregnancies in state	Number	Per cent of pregnancies in state	Terminations as a proportion of pregnancies
1970–74	11,742	11.1	3,125	27.5	14,867	12.6	21.0
1975–79	8,727	9.3	5,001	31.7	13,728	12.5	36.4
1980–84	6,910	7.3	5,756	29.1	12,666	11.1	45.4
1985–89	5,775	6.0	5,228	24.6	11,003	9.4	47.5
1990–94	5,651	5.8	5,022	20.9	10,673	8.7	47.1
1995–99	5,074	5.4	5,903	21.3	10,977	9.1	53.8

Source: Van der Klis et al. 2002.

- The teenage pregnancy rate in South Australia declined in the 1970s and 1980s, in parallel with the decline in the overall fertility rates in Australia.
- Abortion increased as a proportion of teenage pregnancies, from 21% in the period 1970–74, to just over half of all pregnancies in the period 1995–99 (54%).

Confinements and elective abortion numbers for females aged 13–19 years are shown in Figure 9.8.

Source: Van der Kils et al. 2002.

Figure 9.8: Age distribution of teenage pregnancies in South Australia, 1995–99

- During 1995–99, there was a total of 10,977 pregnancies in females aged 13–19 years. Over 60% of these pregnancies (6,747) were to females aged 18–19 years and 37% were to females aged 15–17 years. The remaining 1% was in females aged 12–14 years.
- The number, proportion and rates of pregnancy increased with age. The younger the pregnant female, the more likely it was terminated—83% of pregnancies in females aged 13 ended in terminations, compared with 47% in females aged 19.

The United Nations report also showed that young females from lower socioeconomic areas had higher rates of pregnancy, but females aged 13–19 from higher socioeconomic areas were more likely to terminate their pregnancies with an abortion (UNICEF 2001).

Spontaneous abortion

Another outcome of pregnancy is a miscarriage, or 'spontaneous abortion'. Accurate information on spontaneous abortions is difficult to collect because miscarriages early in pregnancy are often not recorded. An estimate of the number of miscarriages, and one which is available by the age of the female, is the number of hospitalisations for spontaneous abortions. These data are shown in Table 9.12 for 2000–01.

Table 9.12: Hospitalisations for spontaneous abortion for females aged 12–24 years, 2000–01

Age (years)	Number	Rate per 100,000 females
12–14	16	4.1
15–17	374	94.3
18–24	3,142	348.7
12–24	**3,532**	**209.0**

Note: ICD-10-AM code O03.

Source: AIHW National Hospital Morbidity Database.

- In 2000–01, there were 3,532 hospitalisations of females aged 12–24 years with a principal diagnosis of spontaneous abortion. This reflected a rate of 209 spontaneous abortions per 100,000 females aged 12–24 years.
- The spontaneous abortion rate increased with age. This is because the pregnancy rate also increases as age increases.

Foetal and neonatal deaths—perinatal deaths

Another outcome of a 'viable' pregnancy (a pregnancy that has lasted for 20 weeks) is the birth of a dead child. The likelihood of having a stillbirth or 'foetal death' increases in females 40 years and over.

The AIHW National Perinatal Statistics Unit (NPSU) publishes detailed statistics on foetal deaths (foetuses of at least 20 weeks gestation or weighing 400 g or more at birth), the most recent being for 2000.

Table 9.13: Foetal deaths and live births by maternal age, 2000

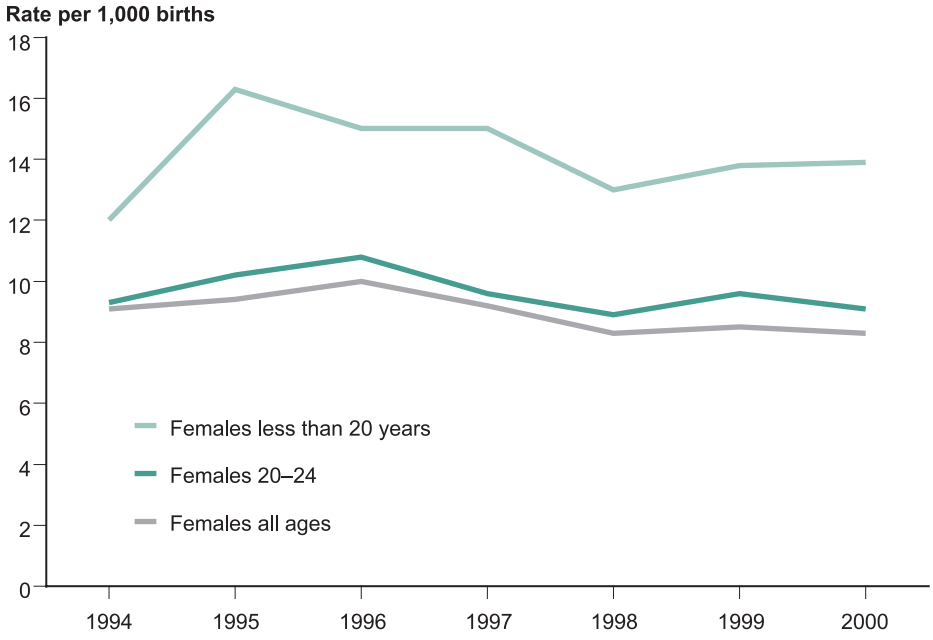
	Less than 20 years	20–24 years	All mothers
		Number	
Foetal deaths	138	317	1,793
Live births	12,627	39,422	255,445
Total births	**12,765**	**39,739**	**257,238**
		Per cent	
Foetal deaths	1.1	0.8	0.7
Live births	98.9	99.2	99.3
Total births	**100.0**	**100.0**	**100.0**

Source: AIHW NPSU 2003.

- In 2000, there were 1,793 foetal deaths—0.7% of all births (or a rate of 7 per 1,000 births).
- Among females aged less than 20 years, 138 of all births (1.1%) were foetal deaths.
- Among females aged 20–24 years, 317 of all births (0.8%) were foetal deaths. These data suggest that pregnancies of females aged less than 20 years and 20–24 years are slightly more likely to end in stillbirth than pregnancies of older females.

Perinatal deaths include both foetal (stillbirths) and neonatal deaths from all causes. Neonatal deaths are deaths of babies who are born alive, but who die within 28 days of birth.

Perinatal death rates are highest among children born to females aged less than 20 years (Figure 9.9).



Source: AIHW NPSU 2003.

Figure 9.9: Perinatal death rates, 2000

- In 2000, there were 2,076 perinatal deaths to mothers of all ages—1,303 or 63% of these were foetal deaths and 773 or 37% were neonatal deaths.
- Over the whole period, the perinatal death rate was highest for mothers aged 13–19 years. In 2000, the rate was 13.9 per 1,000 total births in this age group, compared with 9.1 per 1,000 for mothers aged 20–24 years.
- The relatively high perinatal death rate for females aged 13–19 years was due to a higher foetal death rate—in 2000, the foetal death rate for this age group was 7.9 per 1,000 total births, compared with 6.2 per 1,000 total births for neonatal deaths.

Services

Between April 2001 and March 2002, problems and issues related to pregnancy and family planning were the reason for 7% of GP visits. Of problems managed by GPs over the same period, 9% were related to pregnancy or family planning.

In 2000–01, there were 103,365 hospitalisations for childbirth, pregnancy and the puerperium (the period between childbirth and the return of the uterus to its normal size), accounting for just under 20% of hospitalisations of young people aged 12–24 years.

Family planning organisations cater for sexual and reproductive health needs of large numbers of Australians. Yearly, an average of 150,000 client visits are made to family planning clinics and over 85,000 people attend community education programs (Sexual Health and Family Planning Australia 2002).

10. Infectious diseases

Infectious diseases are illnesses due to specific infectious organisms or their toxic products. The agent or toxic product can be transmitted to humans by direct or indirect contact with other humans, animals or environments that carry the organism.

Infectious diseases were responsible for considerable illness and death in Australia in the late 1800s and early 1900s. The impact of infectious diseases was dramatically reduced by improvements in hygiene and the introduction of mass immunisation and antibiotic drugs.

In Australia during the 1990s, a number of programs improved vaccine coverage. These include the provision of incentives to improve vaccination levels, changes in vaccination schedules and the type of vaccine used. However, despite a reduction in the incidence of vaccine-preventable infectious disease since the introduction of mass immunisation, diseases such as pertussis, measles, rubella and mumps still occur in Australia, especially in young people. This could be because of lack of natural immunity to some of these infectious diseases, not being vaccinated or vaccination failure. In some cases, however, even if young people were vaccinated as children, the efficacy of some vaccines (such as that for pertussis) is reduced with time.

Young people may also be exposed to other types of infectious diseases, such as those transmitted mainly through sexual contact or through contact with infected blood. People are particularly at risk of these diseases if they engage in unprotected sexual activities or injecting drug use.

Certain communicable diseases are notifiable in Australia so that the number of cases can be monitored and appropriate public health measures implemented. The information presented here is a selective coverage of certain infectious diseases. Some diseases such as pertussis, rubella, mumps, measles, hepatitis B and meningococcal disease are part of the National Health and Medical Research Council (NHMRC) recommended childhood immunisation schedule (NHMRC 2000). Others, such as hepatitis A, have vaccines available but are not part of the NHMRC recommended schedule. For hepatitis C and HIV/AIDS, there is no vaccine available at present.

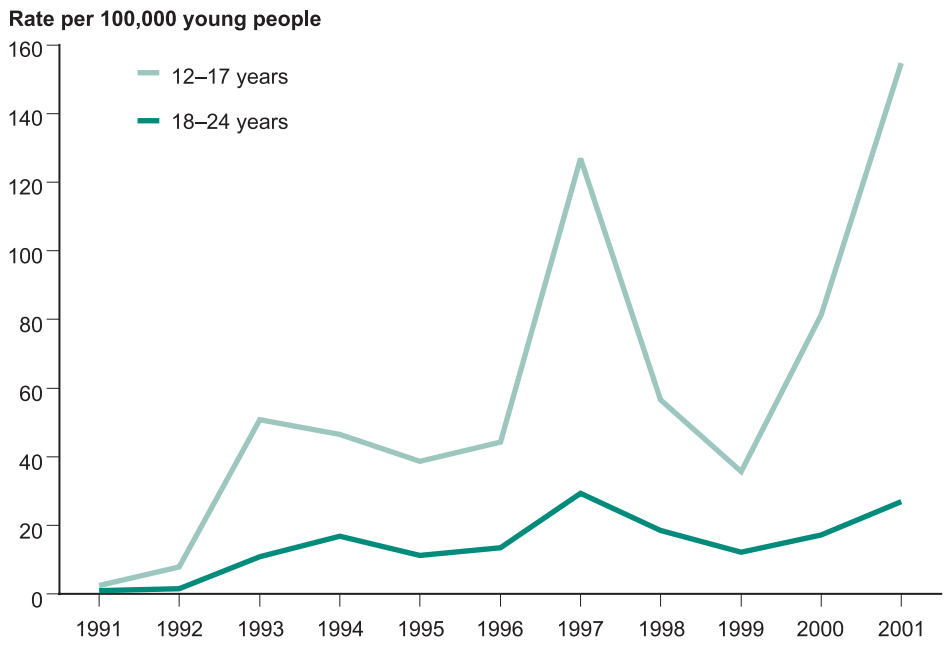
Information on the occurrence and impact of communicable diseases comes mainly from the following sources: disease notifications through the National Notifiable Diseases Surveillance System (NNDSS), hospital separations data from the AIHW National Hospital Morbidity Database, and deaths data from the AIHW Mortality Database.

Pertussis (whooping cough)

Pertussis, or whooping cough, is a highly contagious disease involving the respiratory tract. It is caused by the bacterium *Bordetella pertussis* that is found in the mouth, nose and throat of an infected person (NHMRC 2000). Pertussis is spread mainly through the air by respiratory droplets from an infected person.

Whooping cough can affect people of any age. Before the use of widespread immunisation, the disease occurred mostly in infants and young children. Now that the majority of children are immunised before school age, most cases are notified among adolescents and adults. Immunity from childhood vaccination declines from between 5 and 15 years after the last pertussis vaccine dose (Jenkinson 1988). Infected adolescents and adults can spread the infection to exposed infants who have the highest rates of complications and death (NHMRC 2000). It has been suggested that a pertussis vaccine should be used to prevent the disease and control the outbreaks in older age groups (Keitel & Edwards 1995; Yih et al., 2000).

Pertussis remains one of the most frequently reported vaccine-preventable diseases, and cyclic epidemics of pertussis continue to occur at intervals of 3–5 years. In recent years the epidemic periods occurred in 1997 and 2001. Trends in pertussis notification rates for young people aged 12–24 years are shown in Figure 10.1.



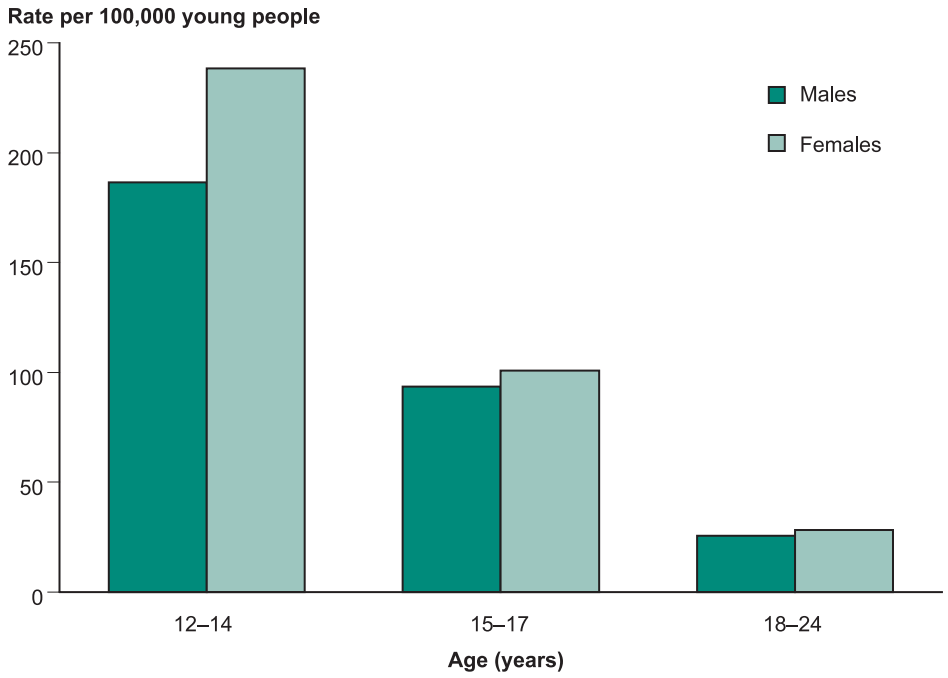
Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.1: Pertussis notifications for young people aged 12–24 years, 1991 to 2001

- Between 1991 and 2001, there were 55,456 notifications of pertussis, the highest number of notifications in Australia of any vaccine-preventable disease on the NHMRC vaccination schedule. Of these, 13,118 (24%) were for people aged 12–24 years. About equal numbers of young males and females were affected.
- Between 1991 and 2001, more than half (52%) of pertussis notifications among people aged 12–24 years were for those aged 12–14 years. The remaining notifications were

fairly equally distributed between those aged 15–17 years (27%) and 18–24 years (23%). A less well vaccinated population acquiring immunity by infection in early adolescence explains this pattern.

The real incidence of pertussis is likely to be higher than these figures indicate because notification rates are known to underestimate the incidence of pertussis, especially in adolescents in whom the illness is commonly diagnosed as a severe cold or upper respiratory tract infection (McIntyre et al. 2000).



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.2: Pertussis notification rates for young people aged 12–24 years, 2001

- In 2001, there were 9,084 notifications of pertussis. Of these, 2,996 or 33% were for people aged 12–24 years.
- The notification rates were 213, 97 and 27 per 100,000 young people aged 12–14, 15–17 and 18–24 years, respectively.
- The notification rate was slightly higher for females than males, especially among those aged 12–14 years.

The number of hospitalisations of young people for pertussis is low, as the disease is generally not serious in this age group. In 2000–01, there were 21 hospitalisations of young people aged 12–24 years with pertussis, a rate of 0.6 per 100,000.

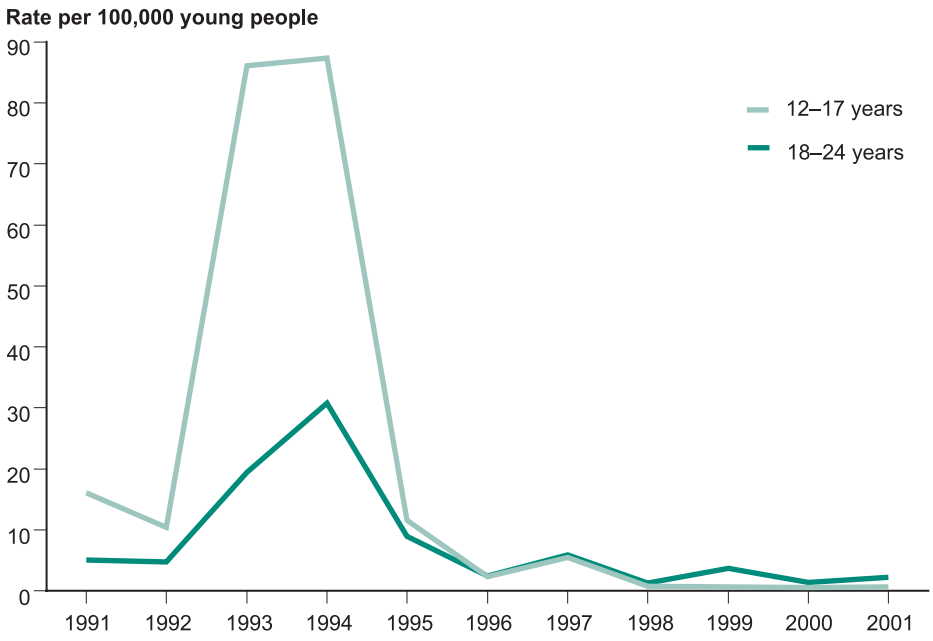
Measles

Measles is a highly infectious viral illness, which is spread by respiratory droplets from an infected person. Symptoms of measles include high fever, rash, runny nose, watery eyes and coughing.

Measles is often a serious disease. Approximately 20% of people with measles experience one or more complications. Complications are more common and more severe in chronically ill and very young children. Complications include ear infections in 7% of infected children and pneumonia in nearly 6%. About one child in every 1,000 who contracts measles will develop encephalitis (inflammation of the brain that can lead to deafness, mental retardation, convulsions and sometimes death). Measles encephalitis has a high mortality rate (10–15% of cases), and a high proportion (15–40%) of survivors have permanent brain damage (NHMRC 2000). Subacute sclerosing panencephalitis (SSPE) is a late complication of measles that is always fatal. In pregnant women, measles can cause miscarriage, premature birth or low-birthweight baby (CDC 2003a).

Measles vaccination first became available in Australia in 1968. A two-dose measles/mumps/rubella (MMR) vaccination strategy for children and adolescents was implemented in 1994. In 1998, as part of the Australian Measles Control Campaign, all primary school children were offered a dose of MMR vaccine regardless of their immunisation status. This coincided with the lowering of the recommended age for the second dose of MMR vaccine from 10–16 years to 4–5 years (McIntyre et al. 2000).

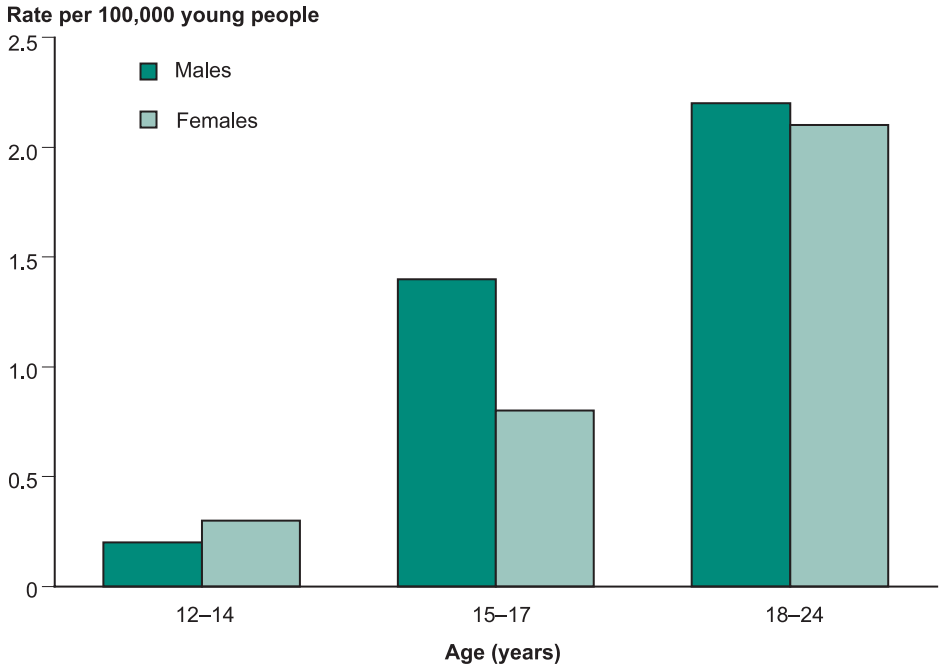
Trends in measles notification rates for young people aged 12–24 years are shown in Figure 10.3.



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.3: Measles notification rates for young people aged 12–24 years, 1991 to 2001

- Between 1991 and 2001, measles accounted for the second highest number of notifications of any vaccine-preventable disease in Australia. Over this period, there were 5,044 notifications of measles in young people aged 12–24 years. Of these, 52% were males.
- During the period 1991 to 2001, the notifications of measles were fairly equally distributed among the three age groups 12–14, 15–17 and 18–24 years.
- The notification rate was highest in 1993 and 1994 and lowest in 2000. In all years between 1991 and 2001, the notification rate for measles was higher among young people aged 12–17 years than for people aged 18–24 years.
- The decline in the overall incidence of measles is almost certainly the result of the introduction of a second dose of MMR vaccine for people aged 10–16 years in 1994. There was a decrease in measles notifications for children aged 12–17 years from 87 per 100,000 in 1995 to less than 1 in 2001.



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.4: Measles notification rates for young people aged 12–24 years, 2001

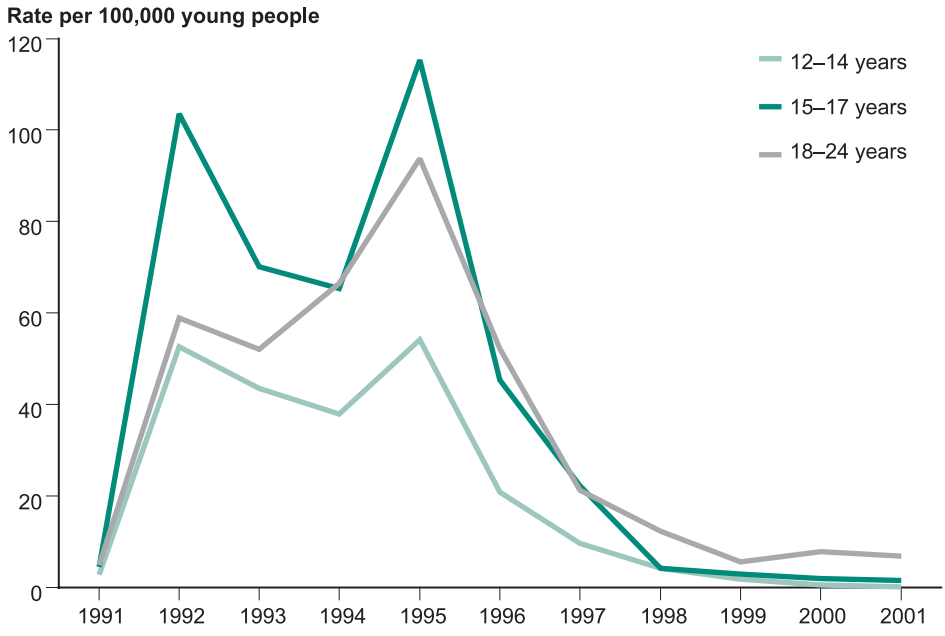
- In 2001, there were 135 notifications of measles. Of these, 51 or 38% were for young people aged 12–24 years.
- The notification rates were 0.2, 1.1 and 2.2 per 100,000 young people aged 12–14, 15–17 and 18–24 years, respectively.
- The notification rate was slightly higher for males than for females, especially in the age group 15–17 years.

The number of hospitalisations of young people for measles is low. In 2000–01, there were 18 hospitalisations of young people aged 12–24 years with measles (0.5 per 100,000 young people).

Rubella

Rubella is a mild, highly contagious illness that is caused by a virus. It is characterised by rash, swollen glands and, especially in adults, joint pain, though some infections can be fleeting or mistaken for other viral infections. Other symptoms include headache, loss of appetite and sore throat; these are more common in infected adults and teenagers than in children. Sometimes there are almost no symptoms at all. However, a very high risk of foetal damage exists if a pregnant woman contracts rubella, particularly in the first 8–10 weeks of pregnancy (NHMRC 2000). Birth defects, including multiple defects, occur in up to 90% of such cases. Foetal defects include intellectual impairments, cataracts, deafness, cardiac abnormalities, intra-uterine growth retardation, failure to thrive and developmental delays. There have been only six notifications of congenital rubella in Australia since 1995, with the last case reported in 1999.

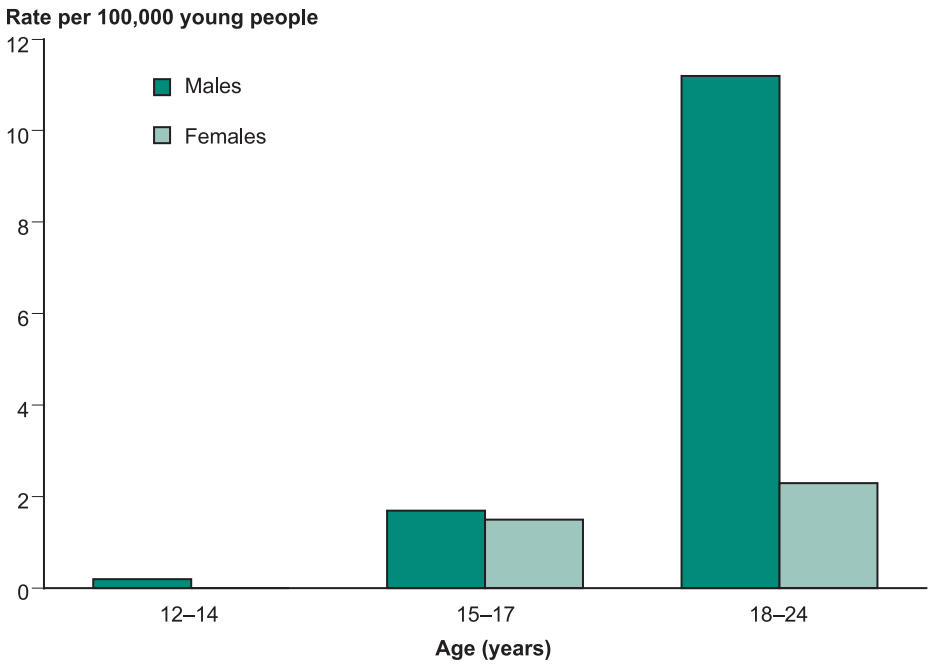
Trends in rubella notification rates for young people aged 12–24 years are shown in Figure 10.5.



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.5: Rubella notification rates for young people aged 12–24 years, 1991 to 2000

- Over the period 1991–01, there were 23,985 notifications of rubella in Australia. Of these, 48% of cases (11,435 notifications) were of young people aged 12–24 years. During 1991–01, 9,223 (81%) notifications among young people were for males aged 12–24 years.
- In this period, a number of rubella outbreaks occurred, the last major one occurring in 1995. During that year, there were 3,113 notifications for young people aged 12–24 years.
- Between 1991 and 2001, the notification rate for rubella was highest in 1995 (a rate of 90 per 100,000) and lowest in 2001 (4 per 100,000).
- Males had consistently higher notification rates than females. This higher incidence is probably related to a lower vaccination coverage among males. Until 1994, only females received vaccination against rubella at age 10–16 years to protect them against the disease during a future pregnancy (NHMRC 1997).
- Following the introduction of an adolescent vaccination for males in 1994–95, notification rates for males declined faster than those for females.



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication

Figure 10.6: Rubella notification rates for young people aged 12–24 years, 2001

- In 2001, there were 267 notifications of rubella. Of these, 140 or 52% were for young people aged 12–24 years.
- The notification rates were 0.1, 1.6 and 4.0 per 100,000 young people aged 12–14, 15–17 and 18–24 years, respectively.
- The notification rate was higher for males than for females in all age groups, but most noticeably so for those aged 18–24 years, where the rate of notifications for males was 5 times that for females. This is because most males aged 18–24 years are too old to have received the adolescent vaccination. The notification rates for rubella are expected to decline in future groups aged 18–24 years if compliance with the adolescent vaccination recommendation occurs.

The number of hospitalisations of young people with rubella is low. In 2000–01, there were 5 hospitalisations of young people aged 12–24 years with rubella, a rate of 0.1 per 100,000.

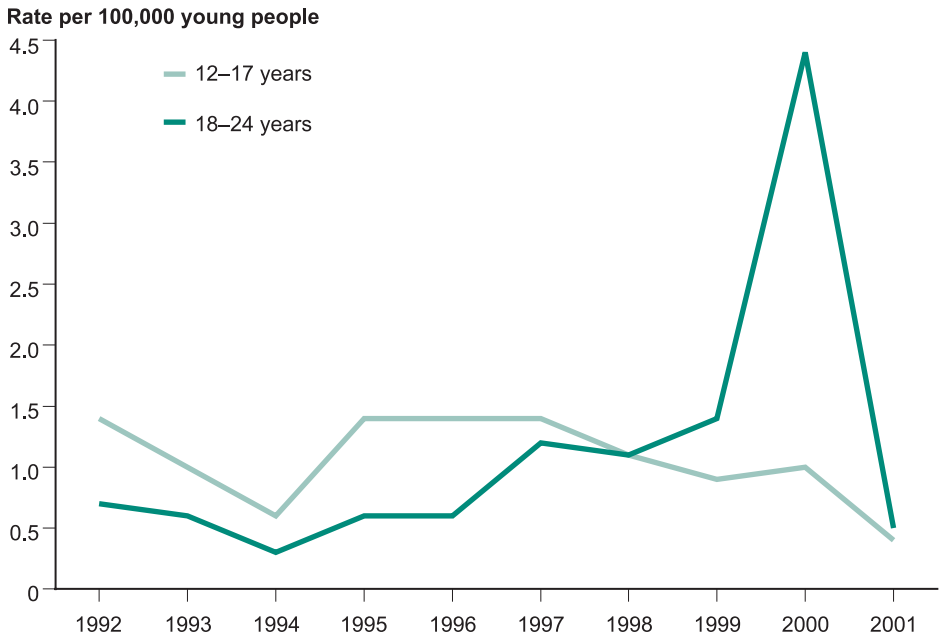
Mumps

Mumps is a disease caused by a virus that can infect many parts of the body, especially the salivary glands. It is characterised by swelling of the salivary glands in the neck over a period of 1 to 3 days, but some infections can be without clinical symptoms. As the glands swell, there is often a fever with headache and loss of appetite.

Mumps is usually a relatively mild disease in childhood. However, in about 15% of young adult males, the infection may result in the development of orchitis, an inflammation of the testicles that can lead ultimately to a decreased sperm count

(NHMRC 2000). Although some complications may occur with mumps, permanent damage is rare. Loss of hearing is the most serious of the complications (NHMRC 2000).

Trends in mumps notification rates for young people years are shown in Figure 10.7.



Note: Mumps was not a notifiable disease in Australia in 1991.

Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.7: Mumps notification rates for young people aged 12–24 years, 1992 to 2001

- Over the period 1992 to 2001, there were 1,317 notifications of mumps, of which 302 (24%) were for young people aged 12–24 years. Of these, 147 cases or 49% were for males. Almost 60% of the notifications in young people were for people aged 18–24 years.
- Notification rates for mumps varied from year to year, but remained relatively low. The highest notification rate recorded in the period from 1992 to 2001 was in 2000, when the rate was below 5 per 100,000.
- In 2001, there were 114 notifications of mumps. Of these, only 13 (11%) were for young people aged 12–24 years.

In 2000–01 there were 12 hospitalisations of young people for mumps, at a rate of 0.3 per 100,000.

Meningococcal disease

Meningococcal disease is caused by an infection with the bacterium *Neisseria meningitidis* (meningococcus). The disease most commonly affects children under 5 years and adolescents. Transmission occurs from person to person by infected droplets and respiratory secretions spread by coughing, sneezing and kissing. Living in crowded conditions can also increase the chance of infection with meningococcal disease.

Meningitis is the most common type of disease caused by the meningococcus bacterium. Three-quarters of meningococcal infections are meningitis, about 20% are meningococcal septicaemia, and less than 5% are other forms of infection such as bacteremia, pneumonia, bone or joint infections. Meningococcal septicaemia is much more dangerous than meningococcal meningitis. Less than 5% of people with meningococcal meningitis die of the disease, compared with more than 40% of people with meningococcal septicaemia.

Common symptoms of meningitis are high fever, headache and stiff neck. Symptoms can develop over several hours, or they may take 1 to 2 days. Other symptoms are nausea, vomiting, discomfort looking into bright lights, confusion and sleepiness. Meningococcal septicaemia has different symptoms from meningitis. A person with meningococcal septicaemia may not experience a headache or stiff neck. A characteristic sign of meningococcal septicaemia is a rash caused by bleeding into the skin from very small blood vessels damaged by the infection. The rash, which occurs in almost all cases of meningococcal septicaemia, occurs in only two-thirds of cases of meningitis.

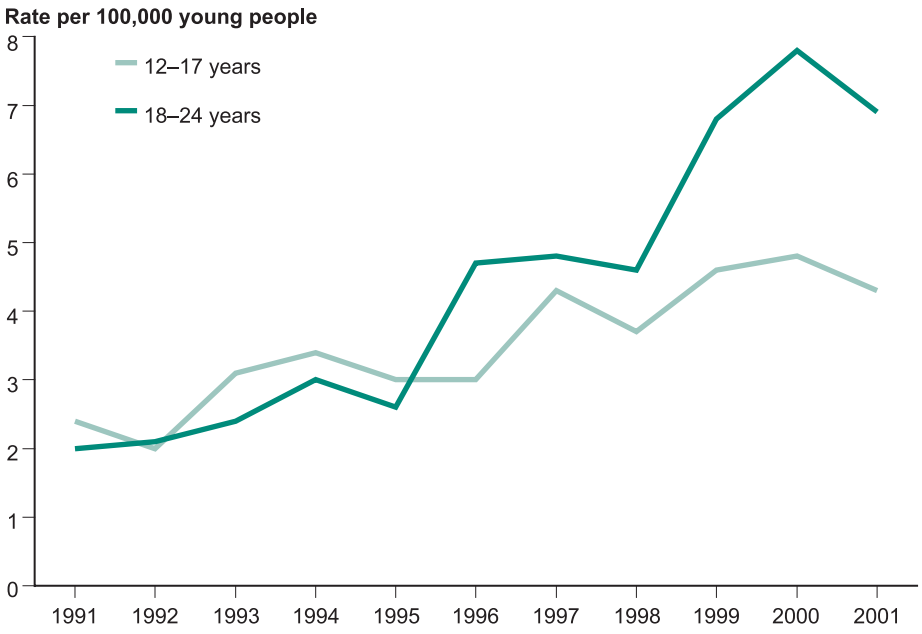
Meningococcus can be divided into 13 distinct strains or serogroups, but most infections are caused by groups B and C. Less common groups are Y, W135, X and Z. In Australia, groups A, B and C account for over 90% of all cases of meningococcal disease.

In Australia, the incidence of meningococcal disease and the frequency of outbreaks have been rising over the last decade. Most of the notifiable cases in 2000 (93%) were due to serogroup B and C. Serogroup B caused the majority of meningococcal disease nationally (56%) and in all states and territories, except in Victoria, where serogroup C predominated (54%). Serogroup C is associated with a significantly higher fatality rate (12%) than serogroup B (6%) (Tapsall 2001).

Currently, vaccines are available only for some of the strains and serotypes that cause meningococcal disease. A polysaccharide vaccine that is effective only in children over 2 years of age and adults, and only against groups A, C, Y and W135 has been available for some time. This vaccine is not recommended for routine use because it is not effective in children under 2 years of age, and because the protection is short-lived. More recently, a conjugate vaccine against group C has become available. A large-scale immunisation program of all children aged less than 18 years undertaken in England and Wales in 1999 resulted in a dramatic decline of incidence and death due to group C in this age group. Australia has also instituted a mass vaccination program for all young people turning 1 to 19 years of age in 2003, to be conducted over the next 4 years. The meningococcal C vaccine has also been added to the routine childhood immunisation schedule, with one dose at 12 months of age.

The limited level of protection provided by the polysaccharide vaccine and the lack of vaccines against group B means that the available vaccines cannot prevent all cases of meningococcal infection. Therefore, effective management of an individual with meningococcal disease will continue to play a role in the control of meningococcal disease. When meningococcal disease is suspected, immediate intravenous antibiotic therapy is recommended as treatment.

Notifications

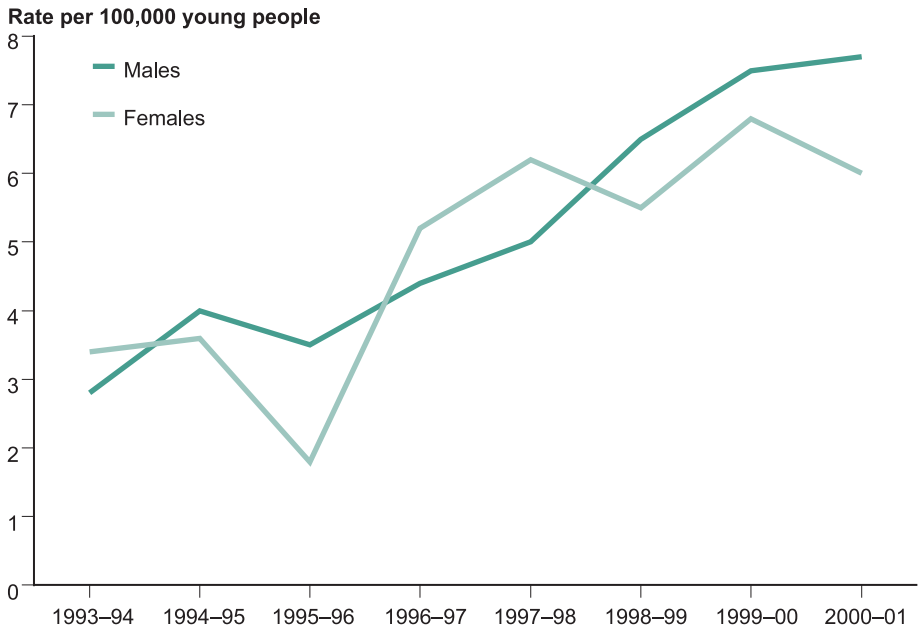


Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.8: Meningococcal disease notification rates for young people aged 12–24 years, 1991 to 2001

- Between 1991 and 2001, there were 5,075 notifications of meningococcal disease, of which 1,498 (30%) were for young people aged 12–24 years. Of these, 53% were females and 60% were people aged 18–24 years.
- Between 1991 and 2001, the incidence of meningococcal disease among young people aged 12–24 years increased by more than 2.5 times from 2.1 to 5.7 per 100,000.

Hospitalisations

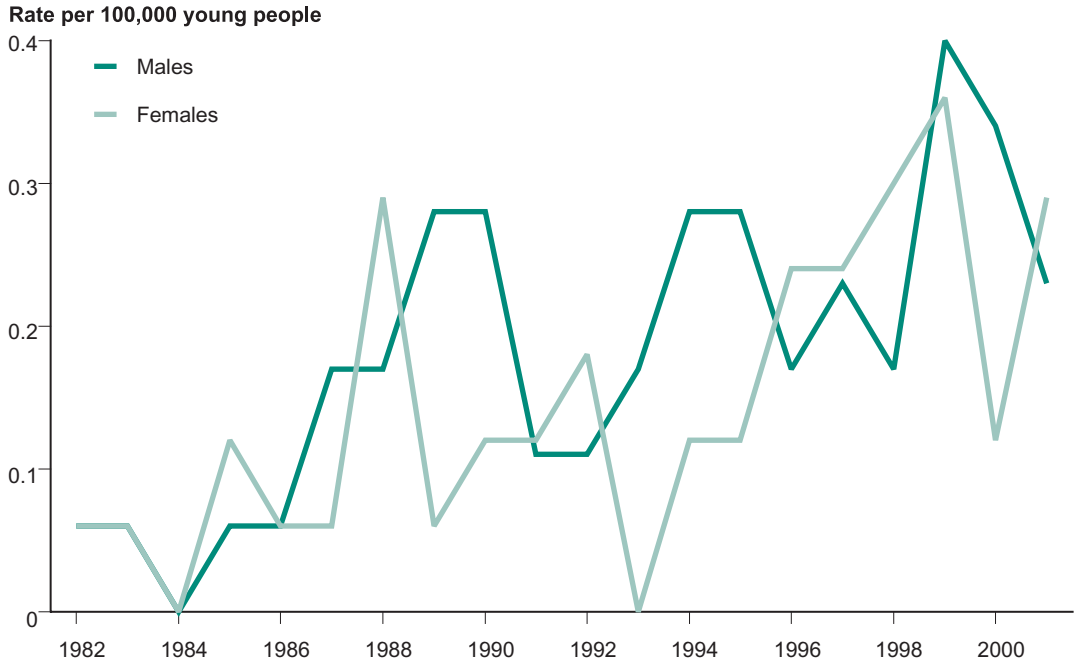


Note: ICD-9-CM code 036 (1993–94 to 1997–98) and ICD-10-AM code A39 (1998–99 to 1999–00).
Source: AIHW National Hospital Morbidity Database

Figure 10.9: Meningococcal disease hospitalisation rates for young people aged 12–24 years, 1993–94 to 2000–01

- There were 1,290 hospitalisations of young people aged 12–24 years for meningococcal disease between 1993–94 and 2000–01. Of all hospitalisations, 53% were males.
- From 1993–94 to 2000–01, the overall hospitalisation rate increased from 2.2 per 100,000 young people aged 12–24 years to 6.9 per 100,000, a threefold increase.

Deaths



Note: ICD-9 code 036 and ICD-10 code A39.
Source: AIHW Mortality Database.

Figure 10.10: Meningococcal disease death rates for young people aged 12–24 years, 1982 to 2000

- Between 1982 and 2001, there were 113 deaths of young people aged 12–24 years from meningococcal disease, of whom 43% were males. This is a death rate of 0.2 per 100,000 for this disease in young people aged 12–24 years.
- In 2001, the overall death rate from meningococcal disease of persons aged 12–24 years was 0.2 per 100,000 males and 0.3 per 100,000 females. Of the 9 young people who died in 2001, 5 were females aged 18–24 years, 3 were males aged 15–17 years and 1 was a male aged 12–14 years.

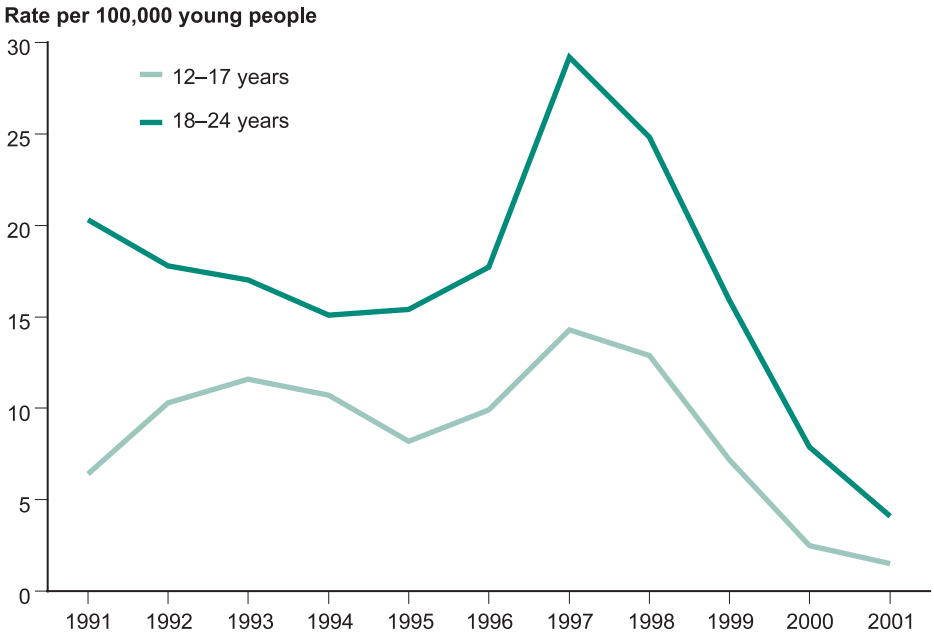
Hepatitis A

Hepatitis A is an infection of the liver caused by the hepatitis A virus. The virus is transmitted from faeces to the mouth. For this reason, the virus is more easily spread in areas where there are poor sanitary conditions or where personal hygiene is poor. The outcome of infection with the hepatitis A virus varies, depending on age, from a subclinical infection with no symptoms (over 90% of infections before the age of 5 are asymptomatic) to acute hepatitis. The proportion of infected persons showing symptoms increases with age, reaching about 90% in adults (NHMRC 2000).

Although fulminant (severe, rapidly developing) hepatitis A is rare in industrialised countries, occasional cases occur among people who have travelled to hepatitis A endemic countries or who live in conditions of considerable socioeconomic disadvantage and poverty. Hepatitis A is readily transmitted in environments with inadequate sanitation and water supply, low hygiene and overcrowding. Illicit drug use is an important risk factor for hepatitis A and may account for a higher notification rate among adolescent and young people. Hepatitis A is also more common among homosexual men and Indigenous young people.

In Australia, hepatitis A vaccine is recommended for selected at-risk groups and for people in certain occupations.

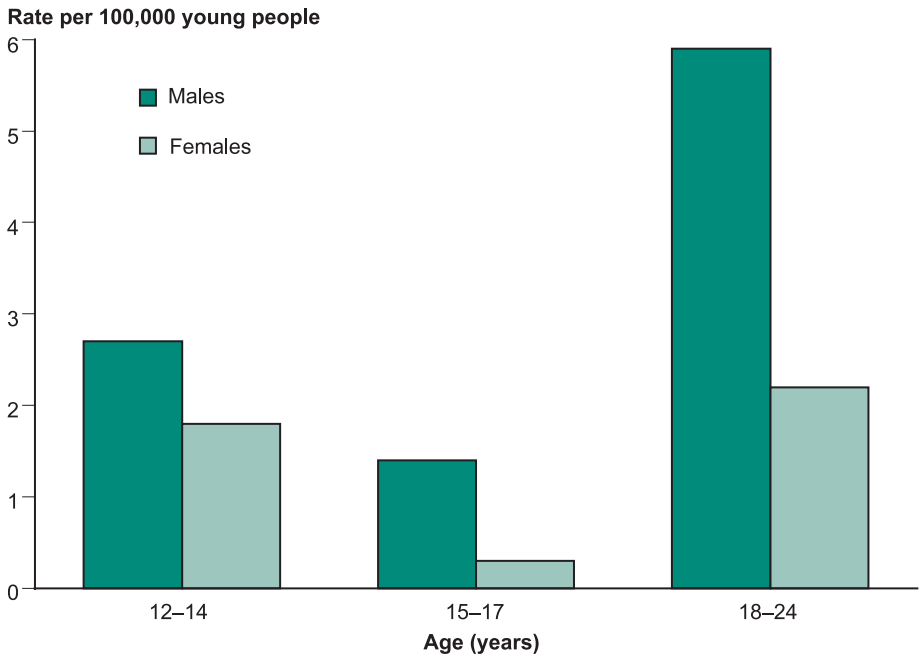
Notifications



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.11: Hepatitis A notification rates for young people aged 12–24 years, 1991 to 2001

- Between 1991 and 2001, there were 20,396 notifications of hepatitis A, of which 5,008 (25%) were young people aged 12–24 years. Of these, 61% were males. Distribution of notifications in those aged 12–17 years and 18–24 years were 30% and 70%, respectively.
- The notification rate for hepatitis A was consistently higher for males than for females. The highest notification rates were for males aged 18–24 years.



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.12: Hepatitis A notification rates for young people aged 12–24 years, 2001

- In 2001, there were 521 notifications of hepatitis A—of these, 101 or 19% were notifications for young people aged 12–24 years.
- The notification rate was higher for males than for females in all age groups. Highest notification rates were for males aged 18–24 years. Males had 2.7 times the notification rate of females in that age group.

In 2000–01, there were 36 hospitalisations of young people with hepatitis A. Over half of these hospitalisations were of females (56%). The hospitalisation rate in 2000–01 was 1 per 100,000 young people.

Hepatitis B

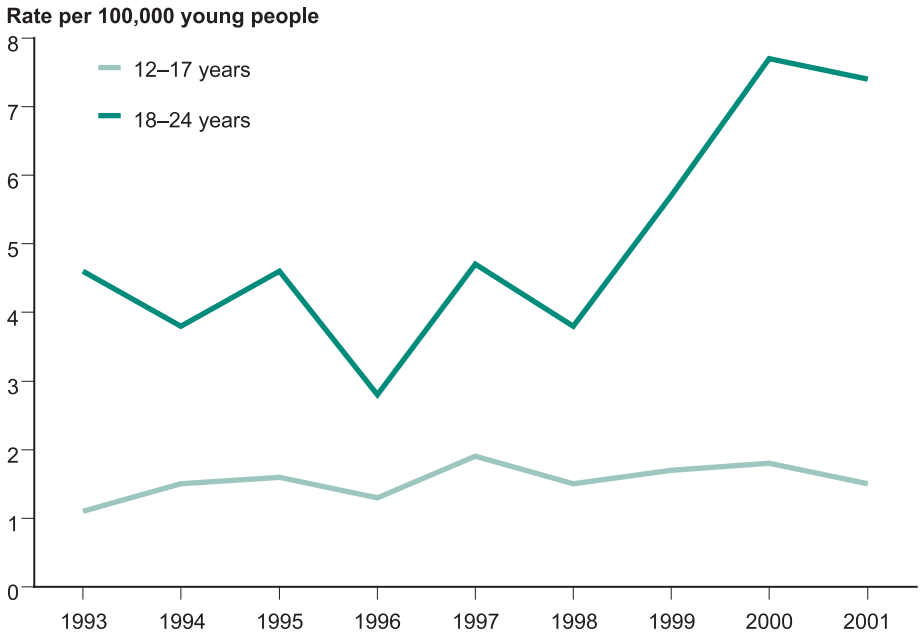
Hepatitis B is a liver disease caused by an infection with the hepatitis B virus (HBV). HBV is spread in blood, semen or saliva and is transmitted from one person to another by unprotected sex with an infected person, sharing needles when injecting drugs or through needle-stick injuries or sharps exposures, or from an infected mother to her infant during birth. Persons at risk for HBV infection might also be at risk for infection with hepatitis C virus (HCV) and HIV/AIDS. HBV, however, is more infectious than HIV because it is over 100 times more concentrated in an infected person's blood. Symptoms include jaundice, fatigue, abdominal pain, loss of appetite, nausea, vomiting and joint pain.

Infection with the hepatitis B virus causes acute hepatitis in about half of all infected adults, but in young children infection usually occurs without symptoms (NHMRC 2000). Following acute infection, up to 12% of those infected as adults and, importantly, up to 90% of those infected as very young children (neonates) remain

persistently infected for many years. As well as being able to infect others, those infected as very young children also have a significantly increased risk of chronic hepatitis and primary liver cancer in later life. Death from chronic liver disease occurs in 15–25% of persons chronically infected with hepatitis B (CDC 2003b).

Hepatitis B vaccine provides good protection against the disease; a universal vaccination program for infants against hepatitis B was implemented in Australia in May 2000.

Trends in hepatitis B notification rates for young people aged 12–24 years are shown in Figure 10.13. The data presented below for hepatitis B notification are for incident cases of hepatitis B, which require evidence of seroconversion. Therefore, the actual notification rates for hepatitis B are substantially higher than those reported below.

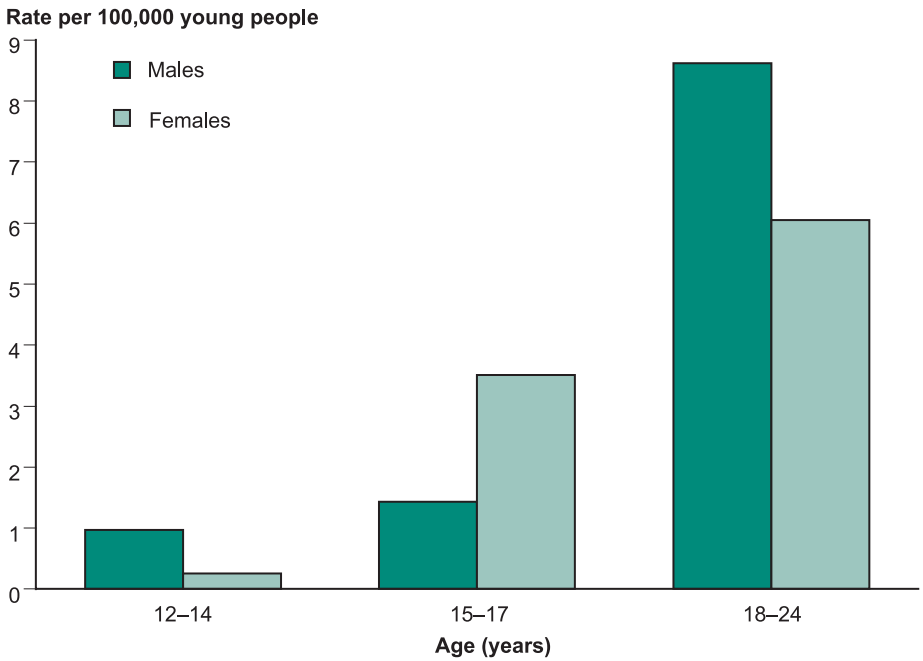


Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.13: Hepatitis B notification rates (incident cases) for young people aged 12–24 years, 1993 to 2001

- Notification of hepatitis B started in 1993. During 1993–2001, there were 1,023 notifications for hepatitis B in young people aged 12–24 years. Of these, 563 cases or 55% were notifications for males. The majority of notifications (80%) were for young people aged 18–24 years.
- The notification rates for hepatitis B are increasing. The rate among those aged 12–24 years increased from 3.1 per 100,000 in 1993 to 4.6 per 100,000 in 2001.

Hepatitis B notification rates for young people aged 12–24 years in 2001 are shown in Figure 10.14.



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.14: Hepatitis B notification rates (incident cases) for young people aged 12–24 years, 2001

- In 2001, there were 428 notifications of hepatitis B. Of these, 161 or 38% were notifications for young people aged 12–24 years.
- The notification rate increased with age.

In 2000–01, there were 104 hospitalisations of young people for hepatitis B. Over half of these hospitalisations were of males (63%). The hospitalisation rate in 2000–01 was 3 per 100,000 young people.

Hepatitis C

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV), which is found in the blood of persons who have this disease. Hepatitis C virus is a major cause of acute hepatitis and chronic liver disease, including liver cancer.

Hepatitis C virus is transmitted by blood-to-blood contact. This means that the blood of a person already infected with the virus must enter the bloodstream of another person. Hepatitis C has been found in bodily fluids other than blood, but the viral load is thought to be too low for transmission to occur. Hepatitis C transmission through the reuse of unsterilised needles, syringes or through needle sharing among drug users is well documented. Sexual transmission and mother to baby transmission may also occur, but are less frequent. Ear and body piercing, circumcision and tattooing can also transmit HCV, if inadequately sterilised equipment is used. It is estimated that 90% of persons with chronic HCV infection in developed countries are current and former injecting drug users or have a history of transfusion of unscreened blood or blood products.

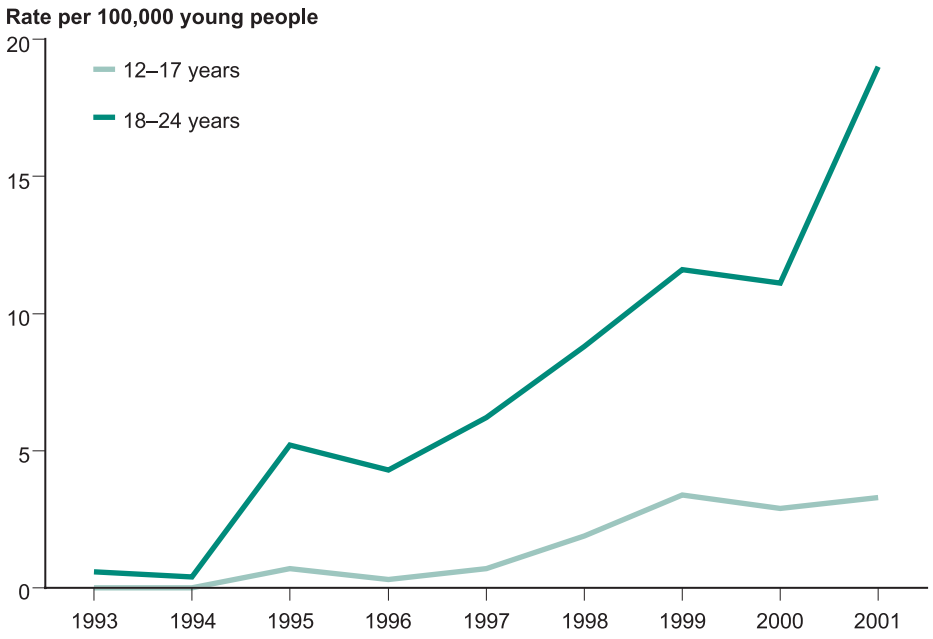
The estimated prevalence in the Australian community, based on blood donor screening, is 0.1 to 0.5 per cent, but the percentage of HCV positive individuals is higher in particular groups within the population. Among those injecting for more than 8 years, the rate of infection approaches 100% (DHS 2003).

Symptoms include jaundice, fatigue, dark urine, abdominal pain, loss of appetite and nausea. Infection with HCV results in a chronic carrier state in about 80% of cases. The majority of cases (between 60% and 70%), even those that develop chronic infections, are asymptomatic. Cirrhosis develops in about 10% to 20% of people with chronic infection, and liver cancer develops in 1% to 5% of people with chronic infection, over a period of 20 to 30 years (WHO 2000).

No vaccine is currently available to prevent hepatitis C. Efforts to reduce the risk of infections include strategies aimed at reducing HCV transmission through blood transfusions, unsafe injection practices and high-risk behaviours (e.g. injecting drug use).

The risk of contracting hepatitis C from a needle-stick injury from a seropositive source has been estimated at 3 per cent, compared with 0.3% for HIV infection and 30% for hepatitis B (DHS 2003).

The data presented below for hepatitis C notifications are for incident cases of hepatitis C and therefore the actual notification rate is substantially higher.

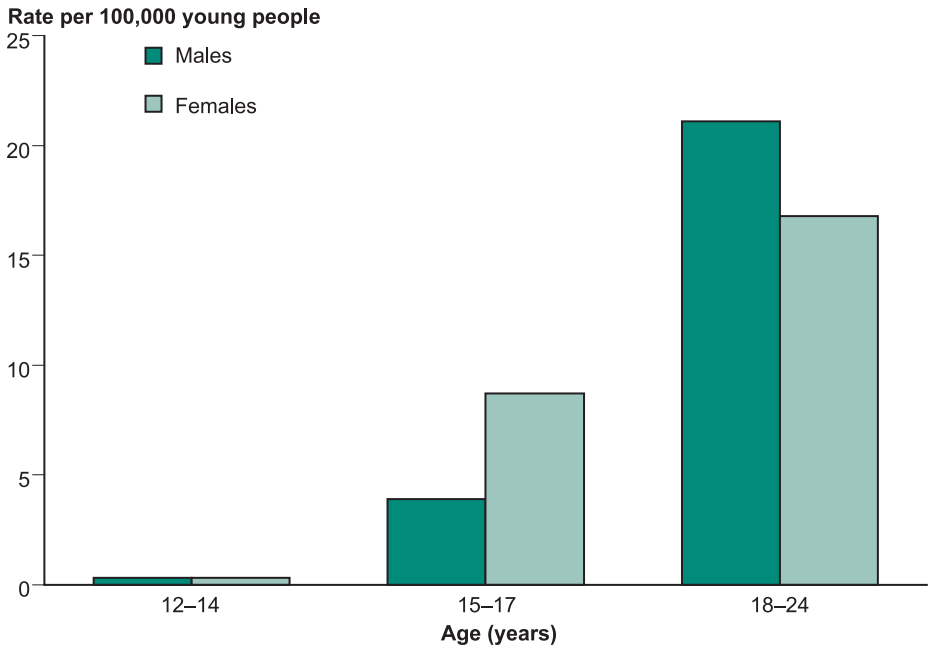


Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.15: Hepatitis C notification rate (incident cases) for young people aged 12–24 years, 1993 to 2001

- Between 1991 and 2001, there were 2,148 notifications of hepatitis C in Australia, of which 943 (44%) were for young people aged 12–24 years. Of these, 54% were males. Of the notifications for hepatitis C, 1%, 16% and 84% were for those aged 12–14, 15–17 and 18–24 years, respectively.
- The notification rate for hepatitis C was slightly higher for males than for females in most years. The highest notification rates were among males aged 18–24 years.

Injecting drug use among young people is an important part of the transmission of hepatitis C in this age group.



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.16: Hepatitis C notification rate (incident cases) for young people aged 12–24 years, 2001

- In 2001, there were 669 notifications for hepatitis C—of these, 326 or 49% were notifications for young people aged 12–24 years.
- The notification rate was higher for females than for males among those aged 15–17 years, but among those aged 18–24 years, males were infected at a higher rate.

In 2000–01, there were 113 hospitalisations of young people for hepatitis C. Over half of these hospitalisations were of males (61%). The hospitalisation rate in 2000–01 was 3.3 per 100,000 young people.

HIV/AIDS

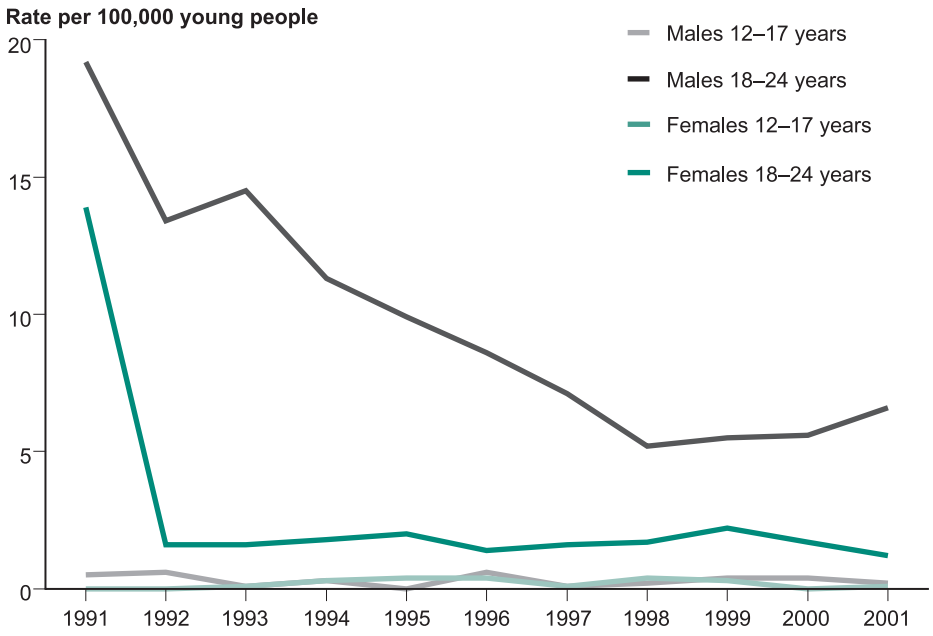
Acquired immunodeficiency syndrome (AIDS) is a severe, ultimately fatal disease that represents the late clinical stage of infection with the human immunodeficiency virus types 1 and 2 (HIV). Following infection with HIV, there is a short period of acute illness lasting for a week or two. After this illness, infected people may be free of clinical signs or symptoms for months or years before developing specific opportunistic infections, cancers and a range of other diseases indicative of a failing immune system (AIDS). Although the period from infection with HIV to primary illness can be short and ranges from 3 weeks to 3 months, the time from HIV infection to the diagnosis of AIDS can be considerably longer and ranges from about 2 months to 20 years or longer (DHS 2003).

HIV can be transmitted by unprotected sexual intercourse with an infected person, via contact with blood or semen of an infected person, and from an infected woman to the foetus during pregnancy or after birth or to a child by breastfeeding. Blood-borne transmission can occur with the entry into the body of infected blood or blood products such as whole blood transfusion, by needle-stick injuries or other exposure to blood and body fluids by health care workers, and through sharing of needles and equipment when injecting drugs. The presence of other sexually transmitted diseases, especially those causing genital ulceration, increases susceptibility for the sexual transmission of HIV (see Chapter 9).

Although antiviral treatment has recently become available for people infected with HIV, prevention remains the main focus of public health strategies. A global prevention and control program coordinated by World Health Organization was initiated in 1987.

In Australia, the strategies implemented to control the spread of HIV infection include public education about HIV transmission and regulations for appropriate control measures for groups at risk (e.g. health care workers), according to the Australian National Council on AIDS guidelines. Screening for blood, blood products and donated organs for HIV infection was also implemented. Most of the HIV infection in developed countries is acquired through sexual contact between men and to a lesser extent through sharing of needles and equipment among injecting drug users (National Centre in HIV Epidemiology and Clinical Research 2002). Public health education campaigns on condom use and safer sex practices and on the increased risk of HIV infection by sharing needles among injecting drugs users have been particularly successful in the control of HIV infection in Australia. The Australian results are among the best in the world, because affected communities were heavily involved in these campaigns (DHAC 2000b).

Notifications



Source: National Centre in HIV Epidemiology and Clinical Research, personal communication.

Figure 10.17: HIV notification rate for young people aged 12–24 years, 1991 to 2001

- Notification rates for HIV infection among females aged 12–24 years are low and were around 1 per 100,000 annually between 1991 and 2001.
- Among males aged 12–24 years, notification rates for HIV declined by 67% from around 11 per 100,000 in 1991 to 3.6 per 100,000 in 2001. The decline in HIV infection was evident in males aged 12–24 years, but infection rates in males aged 18–24 years increased slightly since 1998. This suggests that the very successful public education program that resulted in the earlier fall in infection rates is now not reaching some young males in Australia.
- HIV incidence rates were consistently higher for males than for females, and among males the rates were higher for those aged 18–24 years.

Summary

A summary of notifications and hospitalisations for the infectious diseases covered in this chapter is presented in Table 10.3.

Table 10.3: Selected infectious diseases notifications and hospitalisations, numbers and rates for young people aged 12–24 years, 2001

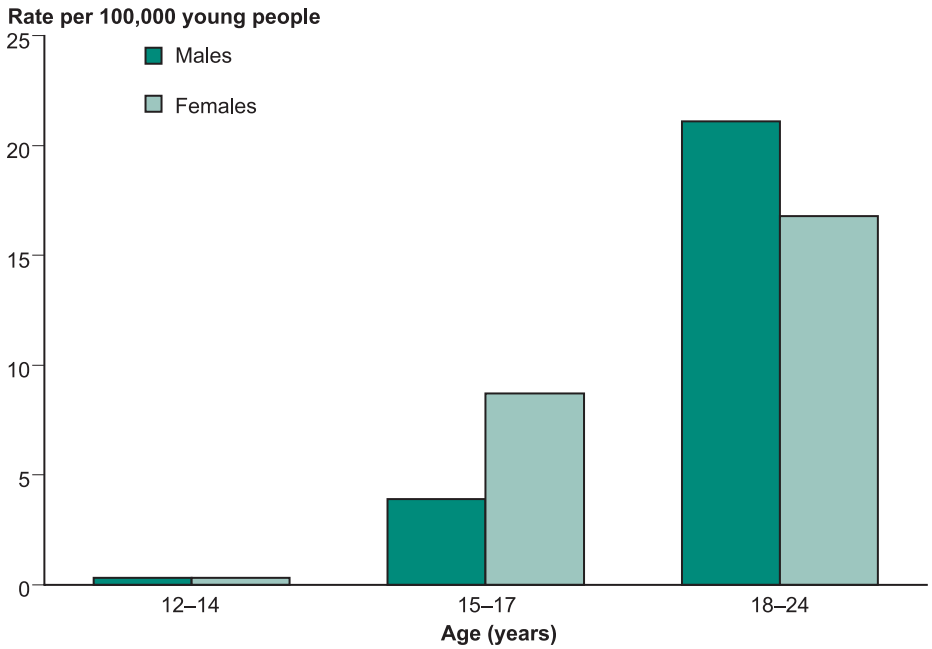
	Pertussis	Hepatitis C	Meningococcal	Hepatitis B	Rubella	Hepatitis A	Measles	Mumps
Notifications								
Year first notifiable[(a)]								
Number	55	5	75	95	81	498	347	21
Rate per 100,000 young people	1.6	0.3	2.1	3.1	4.4	14.2	9.9	1
2001								
Number	1,430	326	215	161	135	101	51	13
Rate per 100,000 young people	86.6	11.7	5.7	4.6	4.0	2.9	1.5	0.5
Hospitalisations								
1993–94								
Number	22	55	78	53	13	54	122	4
Rate per 100,000 young people	0.6	1.6	2.3	1.5	0.4	1.6	3.5	0.1
2000–01								
Number	21	113	236	104	5	36	18	12
Rate per 100,000 young people	0.6	3.3	6.9	3	0.1	1	0.5	0.3

(a) The communicable diseases listed first became notifiable in different years. For this reason, comparing rates between diseases for the year first notifiable is not recommended.

Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

- The incidence rates for pertussis, hepatitis C, hepatitis B and meningococcal disease have increased between the period when each disease was first notifiable and 2001, but the rates for mumps, measles, rubella and hepatitis A have declined.
- The hospitalisation rates corresponded to the incidence rates for all diseases, with the exception of pertussis. But although pertussis is usually a mild illness in young people, they can act as a reservoir of infection from which the disease can be spread to infants, in whom the disease can be fatal.

Injecting drug use among young people is an important part of the transmission of hepatitis C in this age group.



Source: Communicable Diseases Network Australia–National Notifiable Diseases Surveillance System, personal communication.

Figure 10.16: Hepatitis C notification rate (incident cases) for young people aged 12–24 years, 2001

- In 2001, there were 669 notifications for hepatitis C—of these, 326 or 49% were notifications for young people aged 12–24 years.
- The notification rate was higher for females than for males among those aged 15–17 years, but among those aged 18–24 years, males were infected at a higher rate.

In 2000–01, there were 113 hospitalisations of young people for hepatitis C. Over half of these hospitalisations were of males (61%). The hospitalisation rate in 2000–01 was 3.3 per 100,000 young people.

11. Chronic conditions

Asthma

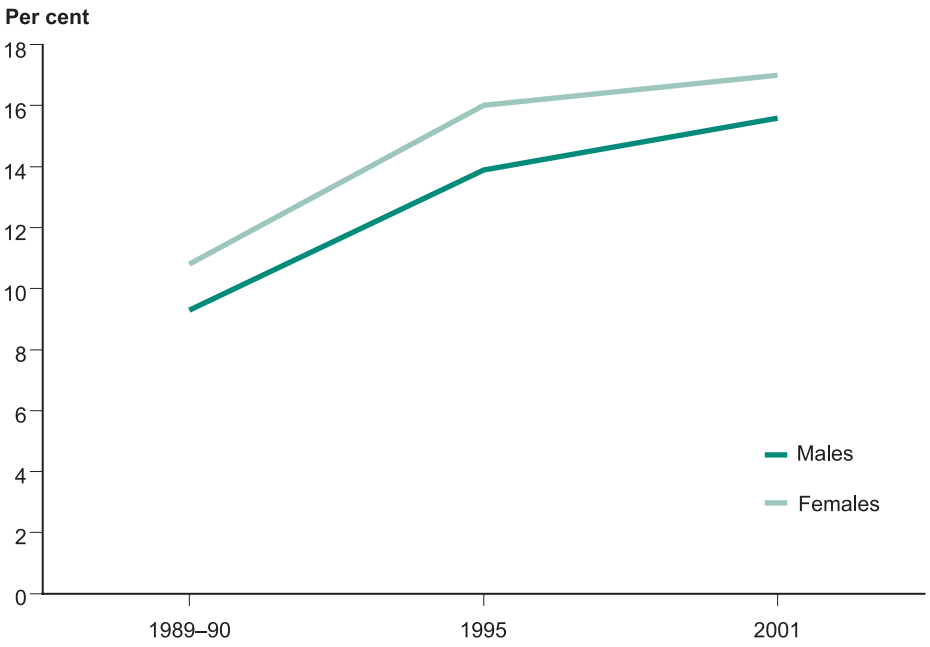
Asthma is a common disease in Australia and is characterised by recurrent episodes of wheeze, shortness of breath and sometimes a cough. Because of the severe impact of asthma on individuals and the growing costs of treating asthma, asthma was endorsed as the sixth National Health Priority Area (NHPA)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



Source: ABS various years(b).

Figure 11.1: Asthma prevalence rates for young people aged 15–24 years, 1989–90 to 2001

- 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)

	Age (years)		
Asthma status	**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
Total	*100.0*	*100.0*	*100.0*
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
Total	*100.0*	*100.0*	*100.0*
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.

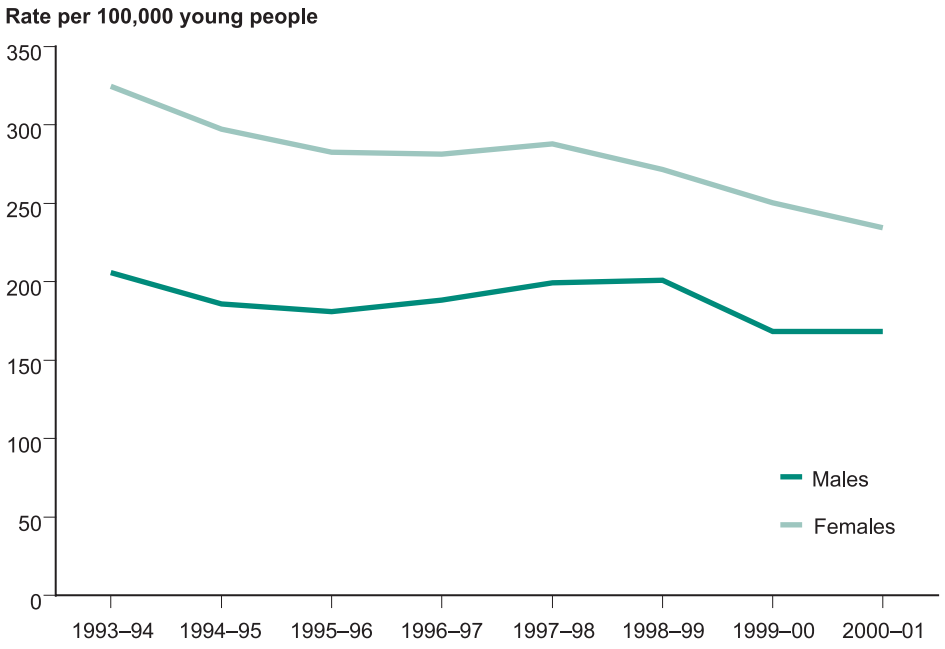
(b) Estimate has a relative standard error of between 25% and 50% and should be used with caution.

(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.

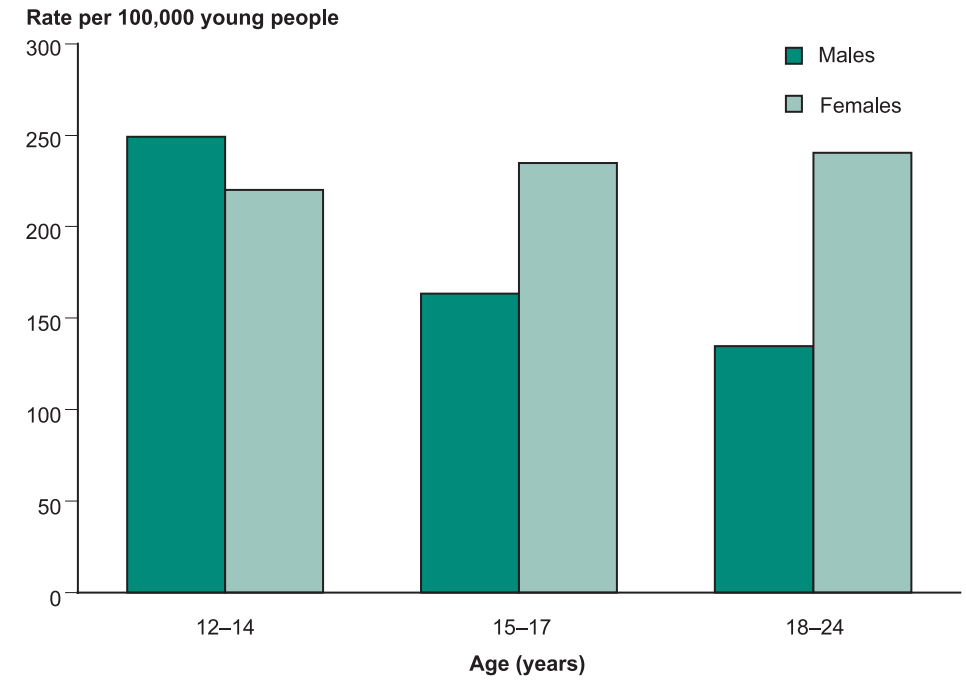
Hospitalisations



Note: ICD-9-CM code 493 (1993–94 to 1997–98) and ICD-10-AM codes J45 & J46 (1998–99 to 2000–01).
Source: AIHW National Hospital Morbidity Database.

Figure 11.2: Asthma hospitalisation rates for young people aged 12–24 years, 1993–94 to 2000–01

- 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.



Note: ICD-10-AM codes J45 & J46.
Source: AIHW National Hospital Morbidity Database.

Figure 11.3: Asthma hospitalisation rates for young people aged 12–24 years, 2000–01

- 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.

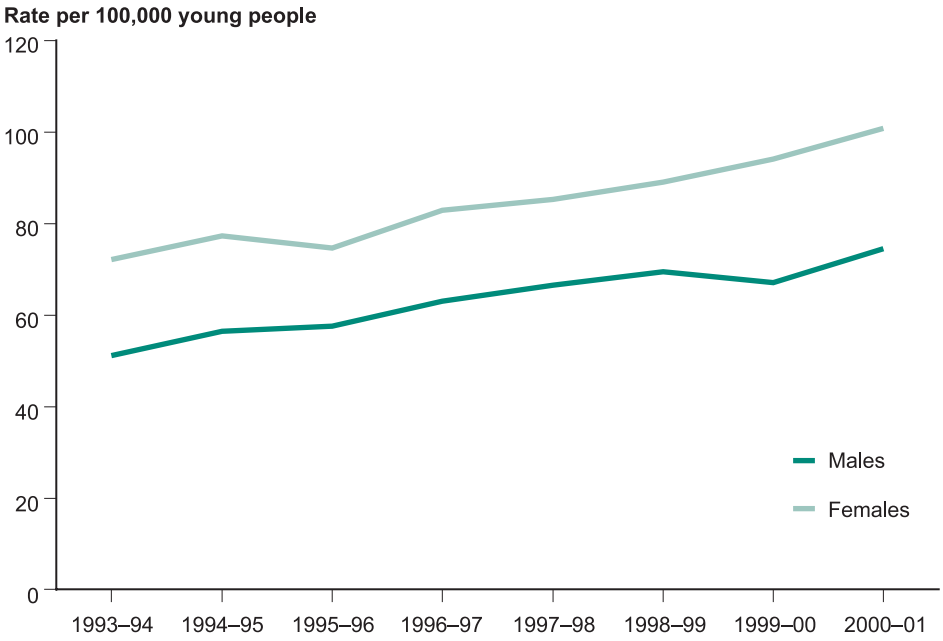
However, data on the incidence of type 1 diabetes are available from the National Diabetes Register. In addition, the ABS NHS provide information on the prevalence of self-reported diabetes.

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.



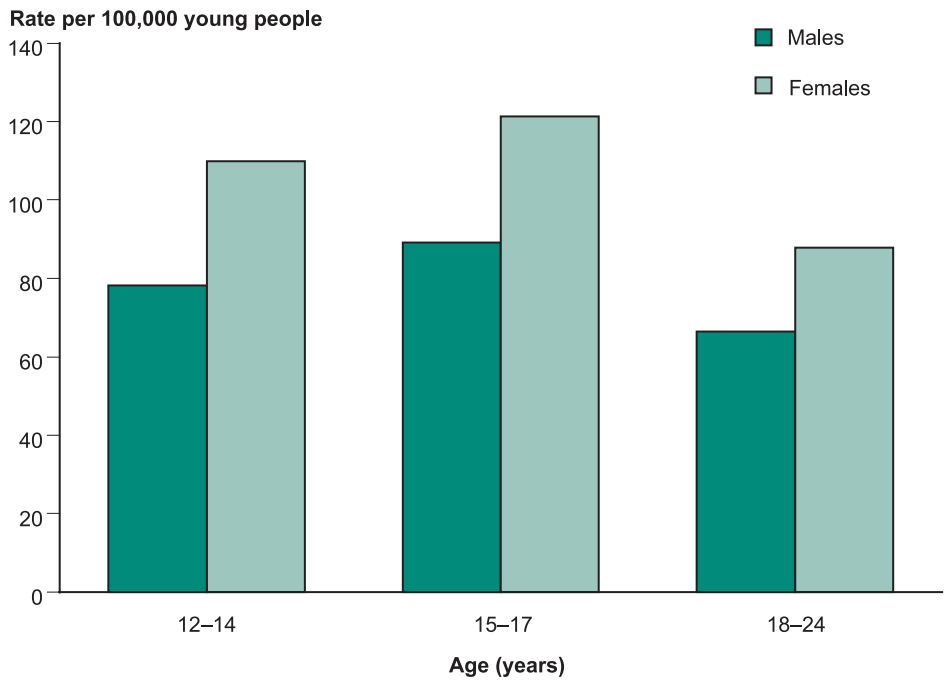
Note: ICD-9-CM code 250 (1993–94 to 1997–98) and ICD-10-AM codes E10–E14 (1998–99 to 2000–01).
Source: AIHW National Hospital Morbidity Database.

Figure 11.4: Diabetes hospitalisation rates for young people aged 12–24 years, 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.



Note: ICD-10-AM codes E10–E14.
Source: AIHW National Hospital Morbidity Database.

Figure 11.5: Diabetes hospitalisation rates for young people aged 12–24 years, 2000–01

- 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.

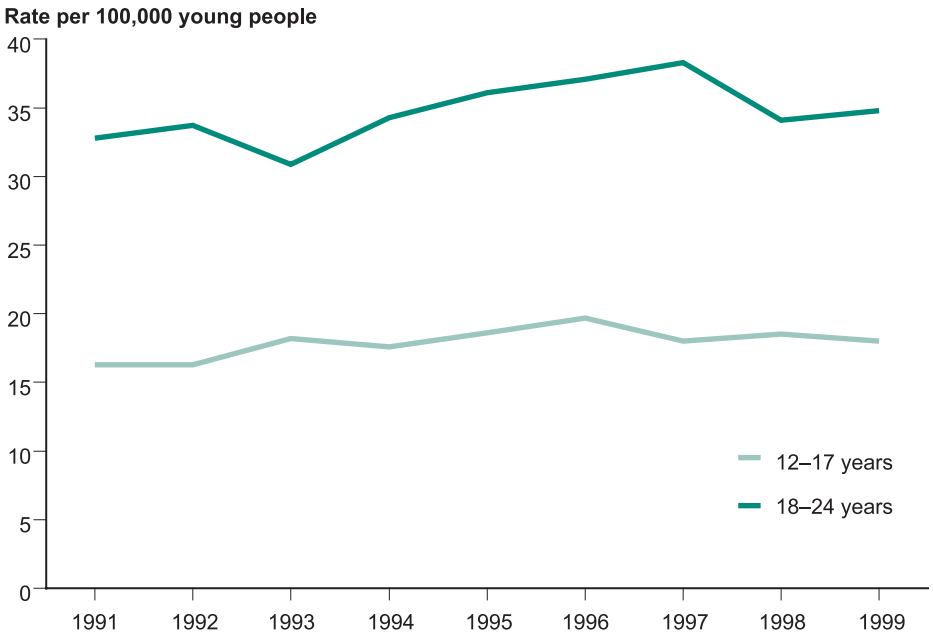
Importantly, however, exposure to some cancer-causing agents during childhood or adolescence is clearly associated with a number of cancers that develop in adulthood. For example, skin cancer (both melanoma and other skin cancers) is strongly linked to exposure to UV radiation (sunshine) during childhood 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

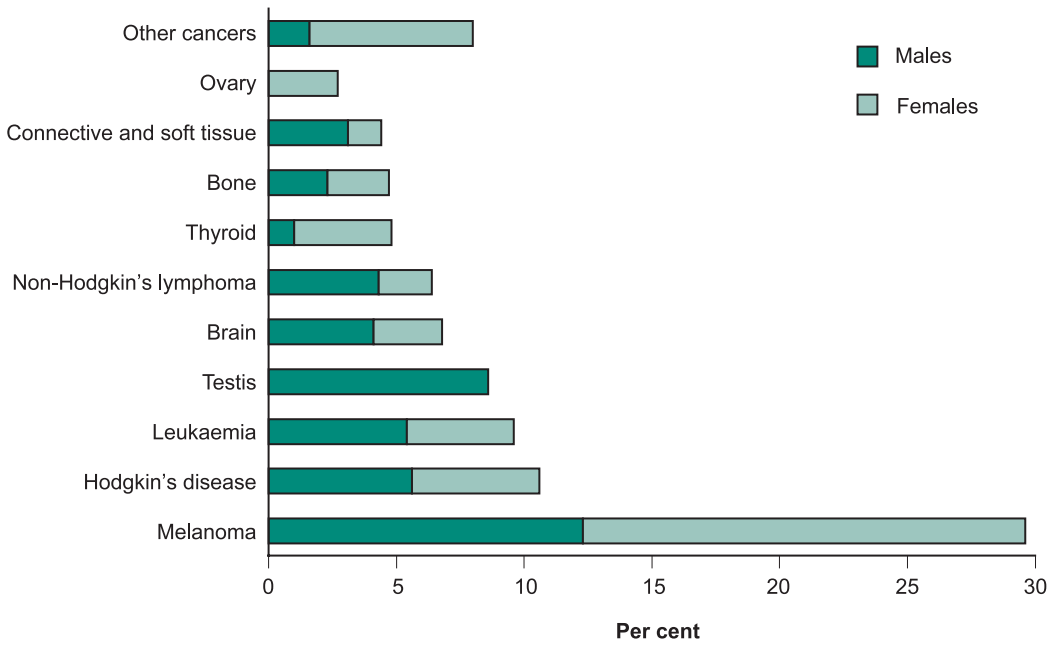


Note: ICD-9 codes 140-208 C00–C96 (excluding 173). ICD-10 codes C00–C96 (excluding C44).
Source: AIHW National Cancer Statistics Clearing House.

Figure 11.6: Cancer incidence rates for young people aged 12–24 years, 1991 to 1999

- 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.



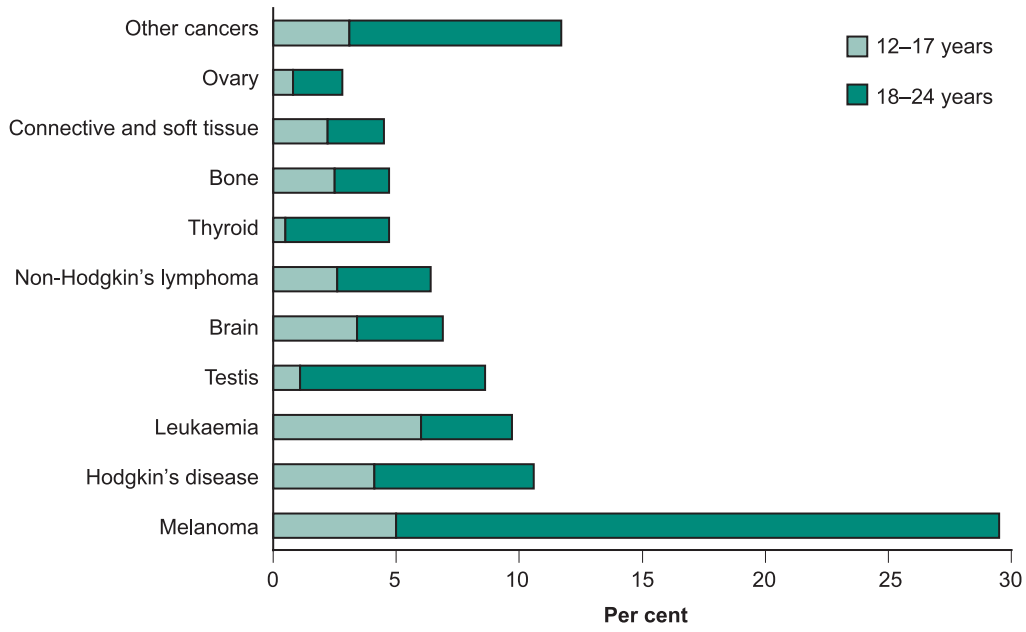
Note: 'Other cancers' includes cancers of the colorectal system (including anus), meninges and other central nervous system, kidney, cervix, lip and unknown primary cancers.

Source: AIHW National Cancer Statistics Clearing House.

Figure 11.7: Most common types of new cancer diagnosed in young people aged 12–24 years, 1999

- 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.



Notes

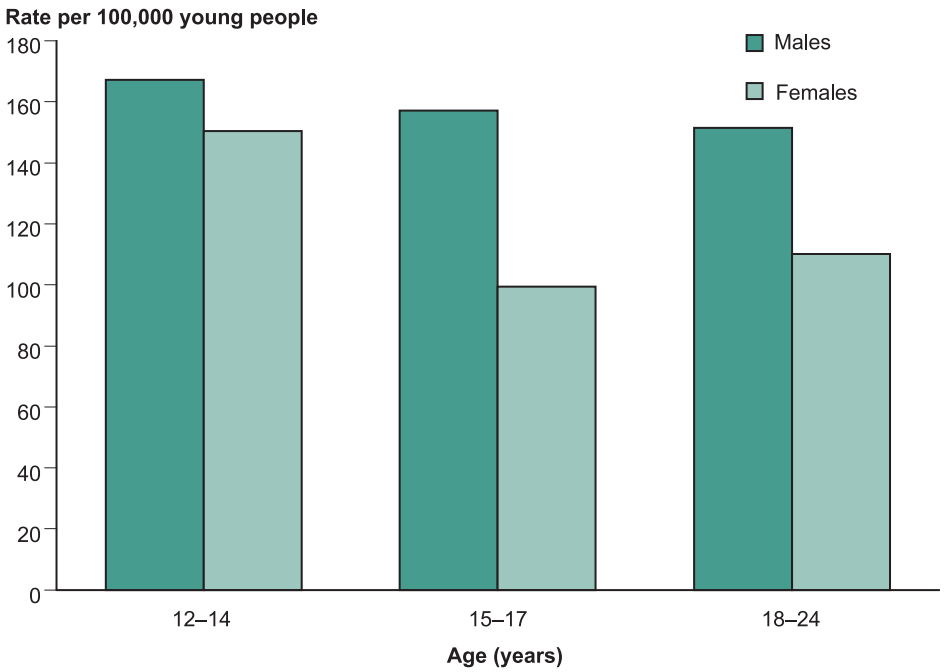
1. ICD-10 code C00–C97 (excluding C44).

2. 'Other cancers' includes cancers of the colorectal system (including anus), meninges and other central nervous system, kidney, cervix, lip and unknown primary cancers.

Source: AIHW National Cancer Statistics Clearing House.

Figure 11.8: Most common types of new cancer diagnosed in young people aged 12–24 years, by age group, 1999

- 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.



Note: ICD-10-AM code C00–C97 (excluding C44). Hospitalisations for chemotherapy and radiotherapy sessions are excluded from this analysis.

Source: AIHW National Hospital Morbidity Database.

Figure 11.9: Cancer hospitalisation rates for young people aged 12–24 years, 2000–01

- 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

		1982–86		1987–91		1992–97	
Sex	Age (years)	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)

	Males		Females	
Cancer type	**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.

12. Oral health

Oral health refers to the health of tissues in the mouth, including mucous membranes, connective tissue, muscles, bone, teeth and periodontal structures and gums. It may also refer to immunological, physiological, sensory and digestive system functioning, but is most often used to refer to the health of two specialised tissues of the mouth: the teeth and the gums.

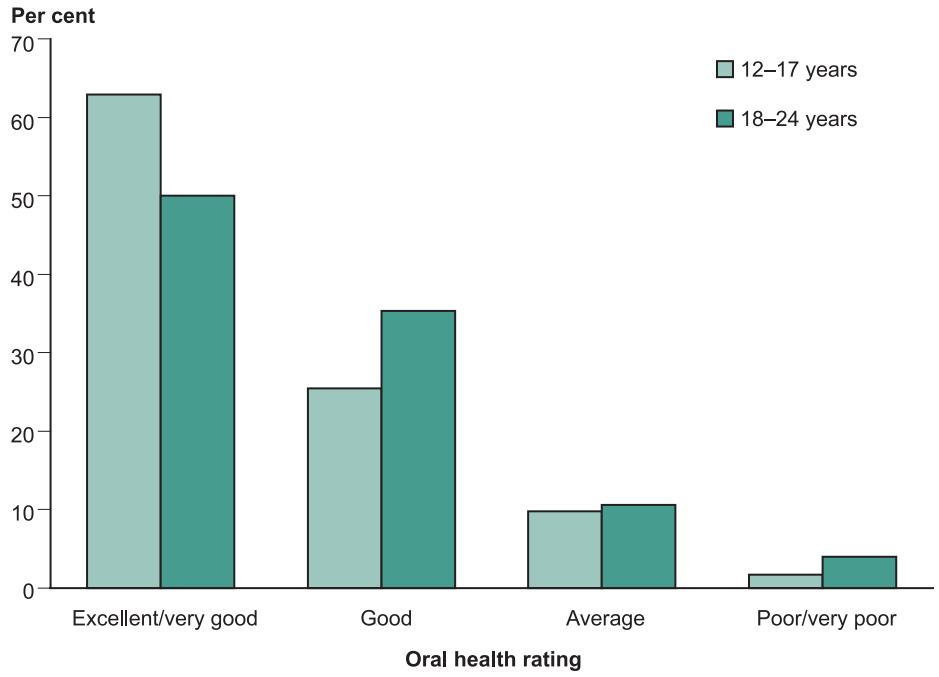
Dental decay and gum diseases are among the most prevalent illnesses in Australian adults. Decayed teeth can lead to considerable illness and pain. The loss of permanent teeth can lead to difficulties in chewing, discomfort while eating, personal embarrassment and social isolation (AIHW 2000).

Good oral heath throughout infancy and early childhood contributes to better dental health in adulthood and results in less decay and reduced loss of natural teeth. Early preventive strategies, including the fluoridation of the water supply, improved oral hygiene practices, better diet and improved disease management, all help to maintain the health of teeth and gums. The level of access to dental health services in terms of availability and affordability is also an important determinant of oral health.

Australian children and young people generally experience good dental health. Following the introduction of the School Dental Scheme in 1977 there has been ongoing monitoring of child dental health. There have been great improvements in the dental health of Australian children, including a decline in the amount of decay experienced and an increase in the proportion of children with no dental decay (AIHW 1996). However, it is possible that improvements in child dental health have slowed and may be in decline (AIHW 2002b). If so, this will affect the oral health of young people in the future. Another matter of ongoing concern is that a relatively small number of disadvantaged children experience a disproportionate amount of dental decay (AIHW 2002b).

Oral health of young people

Most young people say they have good oral health (Figure 12.1).



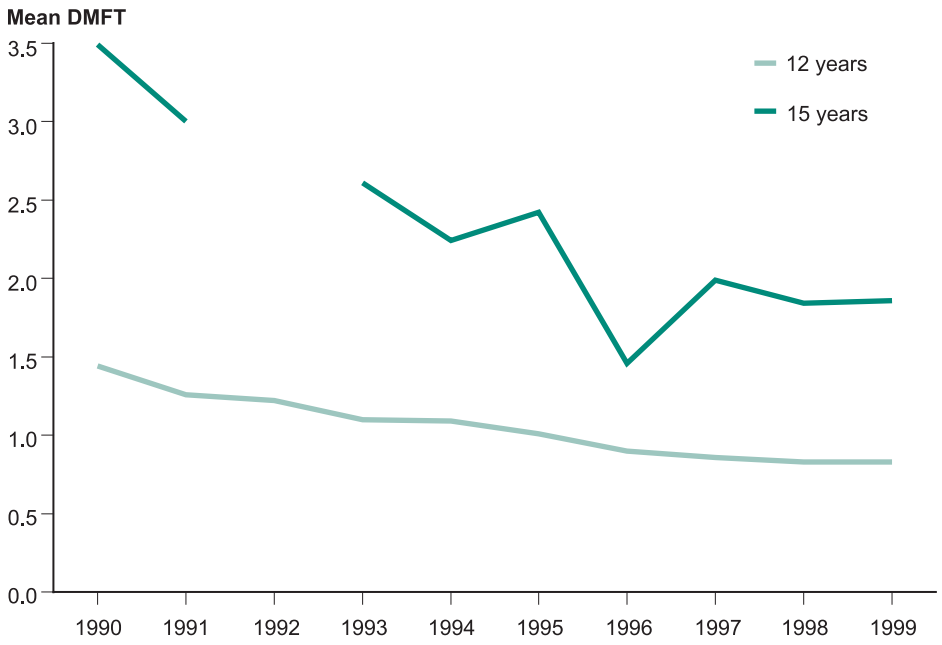
Source: AIHW: DSRU 1999 National Dental Telephone Interview Survey, unpublished data.

Figure 12.1: Proportion of young people aged 12–24 years rating their oral health as excellent/very good, good, average and poor/very poor, 1999

- In 1999, around 88% of young people aged 12–17 rated their oral health as excellent, very good or good. A similar proportion (85%) of young people aged 18–24 years also rated their oral health as excellent, very good or good.
- Less than 2% of young people aged 12–17 years rated their oral health as poor or very poor, and 4% of those aged 18–24 years rated their oral health as poor or very poor.

Oral health outcomes among young people are usually measured in terms of dental health decay experience. There are two main measures of dental decay experience. Dental decay experience is expressed as either a 'dmft' or a 'DMFT' score: the number of teeth currently decayed, teeth extracted due to decay, and teeth with fillings (AIHW 2000). The 'dmft' score describes the condition of deciduous teeth, and the 'DMFT' score describes permanent teeth. The other commonly used statistic is the percentage of individuals free of clinical decay, i.e. when the dmft and DMFT scores equal zero.

The average number of decayed permanent teeth (mean DMFT score) among young people aged 12 years and 15 years from 1990 to 1999 is shown in Figure 12.2. Data were not available for those aged 15 years in 1992.

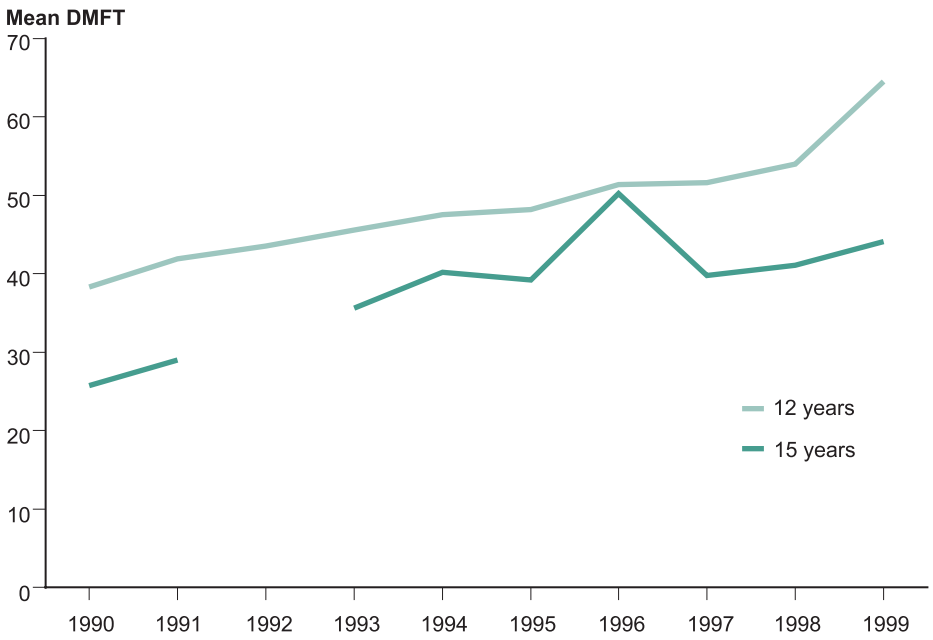


Sources: AIHW DSRU 1993; AIHW DSRU: Davies et al. 1994a; AIHW DSRU: Davies et al. 1994b; AIHW DSRU: Davies & Spencer 1995; AIHW DSRU: Davies & Spencer 1997a; AIHW DSRU: Davies & Spencer 1997b; AIHW DSRU: Armfield et al. 1999; AIHW DSRU: Armfield et al. 2000; AIHW DSRU: Armfield et al. 2001; AIHW DSRU: Armfield et al. 2003.

Figure 12.2: Mean caries experience (DMFT score) of young people aged 12 and 15 years, 1990 to 1999

- Average decay experience among young people aged 12 and 15 years was lower in 1999 than in 1990. For those aged 12 years, the mean DMFT fell from 1.44 to 0.83. For those aged 15 years, the DMFT score fell from 3.49 to 1.86.
- The rate of decline in average decay experience in young people aged 12 years is slowing with time.
- The rate of decline in decay experience among young people aged 15 years was higher than for those aged 12 years.

The proportions of young people aged 12 and 15 years free from clinical decay are shown in Figure 12.3. Data were not available for young people aged 15 years in 1992.



Sources: AIHW DSRU 1993; AIHW DSRU: Davies et al. 1994a; AIHW DSRU: Davies et al. 1994b; AIHW DSRU: Davies & Spencer 1995; AIHW DSRU: Davies & Spencer 1997a; AIHW DSRU: Davies & Spencer 1997b; AIHW DSRU: Armfield et al. 1999; AIHW DSRU: Armfield et al. 2000, AIHW DSRU: Armfield et al. 2001; AIHW DSRU: Armfield et al. 2003.

Figure 12.3: Proportion of young people aged 12 and 15 years free from decay experience, 1990 to 1999

- The proportions of young people aged 12 years free from clinical decay experience increased between 1990 and 1999. The proportion with DMFT = 0 increased from 38% in 1990 to 64.5% in 1999.
- The proportion of young people aged 15 years free of clinical decay experience increased from 26% in 1990 to 44% in 1999.
- Over the period, the proportion of young people with DMFT = 0 was higher among those aged 12 years than those aged 15 years.

Another measure of oral health is the proportion of young people in need of immediate treatment. These data are shown in Table 12.1.

Table 12.1: Young people aged 12–15 years in need of immediate treatment and the state of their dental health, 1990 and 1999

	Proportion needing immediate treatment		Mean dmft		Mean DMFT		Proportion with 4 or more decayed teeth	
Age (years)	1990	1999	1990	1999	1990	1999	1990	1999
12	6.2	6.5	1.10	1.02	2.90	1.37	22.4	6.8
13	6.1	7.7	0.62	0.47	4.68	2.88	33.4	13.2
14	9.0	8.3	0.11	0.38	4.46	1.87	35.1	14.9
15	19.4	7.9	0.00	0.59	5.66	3.75	36.4	22.8

Note: Immediate treatment need was not recorded in Victoria and Western Australia in 1990 and 1999 or in the Australian Capital Territory in 1999.

Source: AIHW DSRU 1993; AIWH DSRU: Armfield et al. 2003.

- In 1990, the proportion of young people aged 15 years needing immediate treatment was more than twice the proportion of those aged 14 years and 3 times the proportion of those aged 12 years needing immediate treatment.
- By 1999, this pattern had changed, with the proportion of children aged 15 years requiring immediate treatment being considerably reduced.
- Between 1990 and 1999, a marked decrease in mean DMFT and the proportion with 4 or more decayed teeth was observed for all ages. In particular, the proportion of young people with 4 or more decayed teeth has reduced considerably.

Differences in oral health

Although there have been improvements in the oral health of Australian young people, problems have been seen in particular groups within the youth population. Davies et al. (1997) found that in 1992, Aboriginal and Torres Strait Islander children had significantly more decayed teeth and higher aggregate dental decay experience in both deciduous and permanent teeth than other Australian children. They also found that overseas-born children had more fillings than other Australian children.

The 1998 Child Dental Health Survey found that decay experience for young people aged 12 years was highest in very remote areas, followed by remote areas (AIHW DSRU: Armfield et al. 2001). Interestingly, the opposite was true for young people aged 15 years: those in remote and very remote areas had the lowest mean DMFT. This is contrary to overall trends and most likely reflects state/territory access policy for the School Dental Service and enrolment patterns across the ages 12 to 15 years.

Oral health also varied by state and territory. In 1999, Queensland had the highest DMFT for young people aged 12 years (1.3), and New South Wales had the lowest (0.55). The same pattern was seen for decay-free experience: Queensland had the lowest proportion (57%) and New South Wales the highest (75%). However, caries experience for some areas within states and territories is based on small numbers of children sampled, and although the sample was randomly selected, it may not be an accurate reflection of the entire age-group population in each area (AIHW DSRU: Armfield et al. 2003).

Dental consultations by young people

Information on dental visits by young people was collected by the National Dental Telephone Interview Survey. This information is shown in Table 12.2.

Table 12.2: Dental consultations by young people aged 12–24 years, 1999

	Age (years)	
Question	**12–17**	**18–24**
Time since last dental visit		
< 12 months	78.5	51.6
1–< 2 years	14.2	25.6
2–< 5 years	6.8	14.5
5+ years	0.5	8.3
Place of last dental visit[a]		
Private	58.9	81.4
Public clinic	9.9	14.5
School Dental Service	31.1	3.8
Reason for last dental visit[a]		
Problem	28.7	45.6
Check-up	71.3	54.4
Mean number of[a]:		
Visits	3.06	2.12
Extractions	0.34	0.37
Fillings	0.46	0.54
Scale and clean services	0.75	0.95
Social impact		
Toothache[b]	9.8	18.2
Food avoidance[c]	11.6	11.9

(a) Among young people who made a dental visit in the previous 12 months.

(b) Percentage reporting experience of toothache as 'very often', 'often', or 'sometimes' during the last 12 months.

(c) Percentage reporting avoidance of eating some foods because of problems with their teeth or mouth as 'very often', 'often', or 'sometimes' during the last 12 months.

Source: AIHW DSRU 1999 National Dental Telephone Interview Survey, unpublished data.

- In 1999, 79% of young people aged 12–17 years and 52% of young people aged 18–24 years had visited a dentist or dental professional in the previous 12 months.
- Around one-third aged 12–17 years had used the school dental service on their last dental visit, and 59% had consulted a private dentist. Among those aged 18–24 years, 81% used a private dentist and 15% a public clinic.
- Among those aged 12–17 years, over two-thirds (71%) had last visited a dentist for a check-up. Among those aged 18–24 years, most visited for a check-up (54%) rather than for a problem.
- Among those who had visited a dentist in the past 12 months, the mean number of visits for those aged 12–17 years and 18–24 years was 3 and 2 respectively.
- In 1999, 10% of those aged 12–17 years and 18% of those aged 18–24 years reported experiencing toothache. Around 12% of those aged 12–24 years reported avoiding eating some foods because of problems with their teeth or gums.

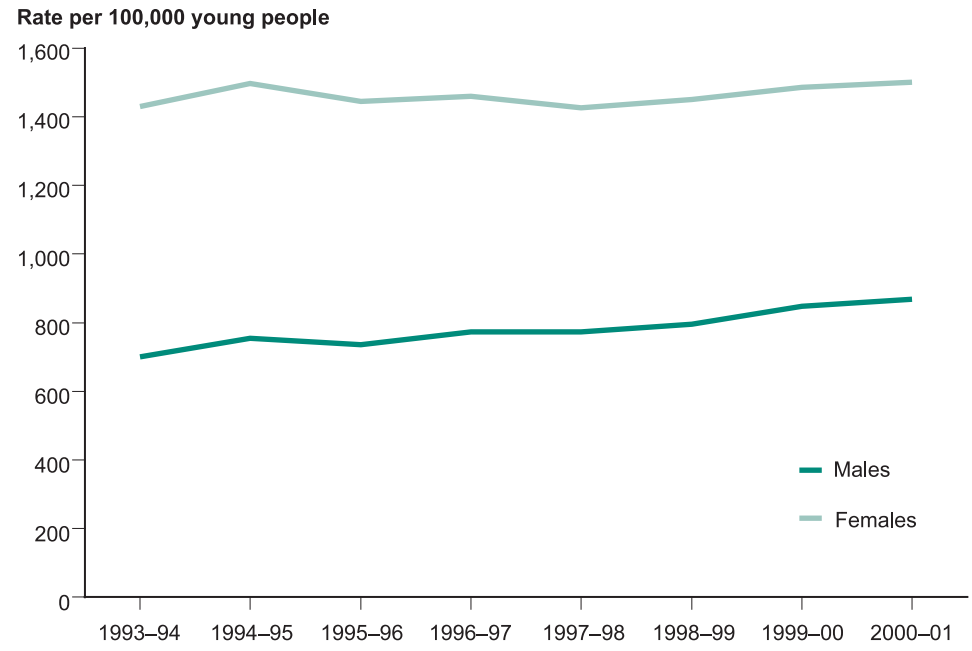
The proportion of young people who visited a dentist or dental professional in the previous 12 months remained fairly stable between 1994 and 1999. For those aged 12–17 years, the proportion fluctuated between 72% (1995) and 79% (1999). For those aged 18–24 years, the proportion fluctuated between 50% (1996) and 58% (1995).

The proportion of young people who reported experiencing toothache remained fairly stable between 1994 and 1999. For those aged 12–17 years, the proportion fluctuated between 8% (1996) and 10% (1999). For those aged 18–24 years, the proportion fluctuated between 15% (1995) and 18% (1999).

The 1999 National Dental Telephone Interview Survey found that the number of dental visits in the last 12 months was associated with sociodemographic status (AIHW DSRU 2002). Those young people who had made a dental visit in the last 12 months were more likely to be non-indigenous males from non-English-speaking backgrounds, live in urban areas, have private health insurance and not hold a government dental card. These patterns reflect the need for treatment among these population groups as well as issues about accessibility to dental treatment in terms of both availability and affordability.

Hospitalisations

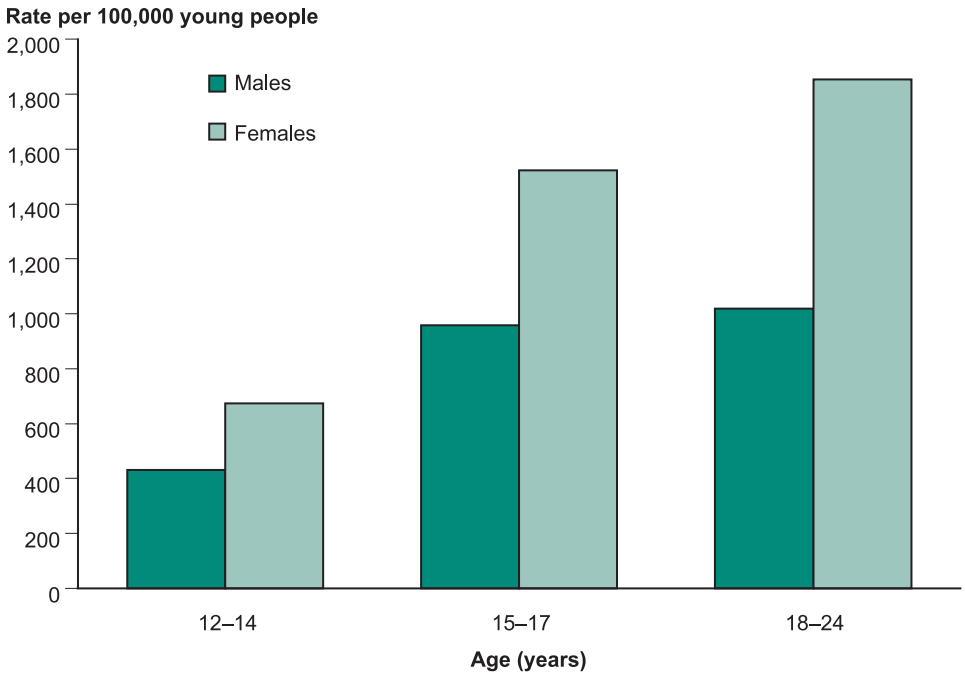
In 2000–01, there were over 40,000 hospitalisations of young people aged 12–24 years for oral health problems. The hospitalisation rates from 1993–94 to 2000–01 are shown in Figure 12.4.



Note: ICD-9-CM codes 250–259 and ICD-10-AM codes K00–K08.
Source: AIHW National Hospital Morbidity Database.

Figure 12.4: Oral health problem hospitalisation rates for young people aged 12–24 years, 1993–94 to 2000–01

- Rates for oral problem hospitalisations increased slightly between 1993–94 and 2000–01. Rates for females increased by 5% (1,430 to 1,501 per 100,000), and rates for males increased by 24% (700 to 868 per 100,000).
- Rates were consistently higher for females than for males. In 2000–01, rates for females were 1.7 times those for males.



Note: ICD-9-CM codes 250–259 and ICD-10-AM codes K00–K08.
Source: AIHW National Hospital Morbidity Database.

Figure 12.5: Oral health problems hospitalisation rates for young people aged 12–24 years, 2000–01

- Hospitalisation rates for oral problems were higher for older age groups. Rates for those aged 18–24 years were 2.6 times the rates for those aged 12–14 years.
- Hospitalisation rates were greater for females than males in all age groups. The greatest difference was in the age group 18–24 years, where rates for females were 1.8 times those for males.

The most common reason for oral problem hospitalisations for both males and females was impacted teeth—accounting for 81% of dental hospitalisations—followed by anomalies of tooth position and dental decay, which accounted for an additional 10%.

References

ABS (Australian Bureau of Statistics) various years(a). Births, Australia. ABS Cat. 3301.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) various years(b). National Health Survey: summary of results. ABS Cat. No. 4364.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 1998. National Health Survey: asthma and other respiratory conditions. Cat. No. 4373.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2001. Corrective services, Australia. ABS Cat. 4512.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002. National Health Survey: summary of results. ABS Cat. No. 4364.0. Canberra: ABS.

Adelson PL, Frommer MS & Weisberg E 1995. A survey of women seeking termination of pregnancy in New South Wales. Medical Journal of Australia 163(8):419–22.

AHMAC (Australian Health Ministers' Advisory Council) 1991. Cervical cancer screening in Australia: options for change. Prevention Program Evaluation Series No. 2. Canberra: Australian Institute of Health.

AIHW (Australian Institute of Health and Welfare) various years. Cervical screening in Australia. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 1996. Australia's Health 1996: the fifth biennial health report of the Australian Institute of Health and Welfare. Canberra: AGPS.

AIHW (Australian Institute of Health and Welfare) 2000. Australia's Health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2002a. Diabetes: Australian facts 2002. AIHW Cat. No. CVD 20 (Diabetes Series No. 3). Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2002b. Australia's Health 2002: the eighth biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit) 1993. The child dental health survey, Australia 1990. AIHW DSRU Series No. 2. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit) 2002. Access to dental services of Australian children and adolescents 1999. AIHW Dental Statistics and Research Unit Research Report No. 2. South Australia: AIHW DSRU.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Armfield J, Roberts-Thomson K & Spencer A 1999. The child dental health survey, Australia 1996. AIHW Dental Statistics and Research Unit Series No. 20. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Armfield J, Roberts-Thomson K & Spencer A 2000. The child dental health survey, Australia 1997. AIHW Dental Statistics and Research Unit Series No. 21. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Armfield J, Roberts-Thomson K & Spencer A 2001. The child dental health survey, Australia 1998. AIHW Dental Statistics and Research Unit Series No. 24. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Armfield JM, Roberts-Thomson KF & Spencer AJ 2003. The Child Dental Health Survey, Australia 1999: trends across the 1990s. AIHW Dental Statistics and Research Series No. 27. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Davies M, Spencer A & Slade G 1994a. The child dental health survey, Australia 1991. AIHW Dental Statistics and Research Unit Series No. 4. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Davies M, Spencer A & Slade G 1994b. The child dental health survey, Australia 1992. AIHW Dental Statistics and Research Unit Series No. 5. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Davies M & Spencer A 1995. The child dental health survey, Australia 1993. AIHW Dental Statistics and Research Unit Series No. 7. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Davies M & Spencer A 1997a. The child dental health survey, Australia 1994. AIHW Dental Statistics and Research Unit Series No. 9. Adelaide: Adelaide University.

AIHW DSRU (Australian Institute of Health and Welfare Dental Statistics and Research Unit): Davies M & Spencer A 1997b. The child dental health survey, Australia 1995. AIHW Dental Statistics and Research Unit Series No. 10. Adelaide: Adelaide University.

AIHW NISU (Australian Institute of Heath and Welfare National Injury Surveillance Unit) 1995. The literature on adolescents and young adults. Australian Injury Prevention Bulletin 11. Adelaide: AIHW NISU.

AIHW NPSU (Australian Institute of Health and Welfare National Perinatal Statistics Unit) 2003. Australia's mothers and babies 2000. Cat. No. PER 21. Sydney: AIHW NPSU.

AIHW (Australian Institute of Health and Welfare) & DHFS (Commonwealth Department of Health and Family Services) 1997. First report on National Health Priority Areas 1996. Canberra: AIHW and DHFS.

American Diabetes Association 2000. Type 2 diabetes in children and adolescents. Consensus statement. Diabetes Care 23(3):381–9.

Andrews G 2003. K10 symptom scale. Clinical Research Unit for Anxiety and Depression. Viewed 1 July 2003, <http://www.crufad.com/K10/k10info.htm>.

Andrews G & Slade T 2001. Interpreting scores on the Kessler Psychological Distress Scale (K10). Australian and New Zealand Journal of Public Health 25(6):494–7.

Andrews G, Hall W, Teeson M & Henderson S 1999. The mental health of Australians. Canberra: DHAC.

APA (American Psychiatric Association) 1994. Diagnostic and statistical manual of mental disorders (DSM IV), 4th edn. Washington, DC: APA.

Beautrais AL 2000. Risk factors for suicide and attempted suicide among young people. Australian and New Zealand Journal of Psychiatry 34(3):420–36.

CDC (Center for Disease Control) 1998. Youth risk behaviour surveillance—United States, 1997. MMWR Surveillance Summaries 47 (No. SS-3).

CDC (Center for Disease Control) 2003a. Measles—what you need to know. National Immunization Program (NIP). Viewed 1 July 2003, < http://www.cdc.gov/nip/diseases/measles/vac-chart.htm>.

CDC (Center for Disease Control) 2003b. Viral hepatitis B fact sheet. National Center for Infectious Diseases. Viewed 1 July 2003, < http://www.cdc.gov/ncidod/diseases/hepatitis/b/fact.htm>

Counahan ML, Hocking JS & Fairley CK 2003. Enhanced chlamydia surveillance indicates more screening needed. Medical Journal of Australia 178(10):523.

Davies MJ, Spencer AJ, Westwater A & Simmons B 1997. Dental caries among Australian Aboriginal, non-Aboriginal Australian-born, and overseas-born children. WHO Bulletin 75(3):197–203.

DHAC (Commonwealth Department of Health and Aged Care) 2000a. Promotion, prevention and early intervention for mental health: a monograph. Canberra: DHAC.

DHAC (Commonwealth Department of Health and Ageing) 2000b. National HIV/AIDS strategy 1999–2000 to 2003–2004. Canberra: DHAC.

DHAC (Commonwealth Department of Health and Ageing) 2001. National injury prevention plan priorities for 2001–2003. Canberra: DHAC.

DHS (Department of Human Services), Victoria 2003. The Blue Book. Guidelines for the control of infectious diseases. Infectious Diseases Unit, Public Health Division, Victorian Department of Human Services. Viewed 1 July 2003, <http://www.dhs.vic.gov.au/phb/hprot/inf_dis/bluebook/infdis.pdf>.

DHFS (Commonwealth Department of Health and Family Services) 1997. Youth suicide in Australia: a background monograph. Canberra: DHFS.

Ehtisham S, Kirk J, McEvilly A, Shaw N, Jones S, Rose S et al. 2001. Prevalence of Type 2 diabetes in children in Birmingham. British Medical Journal 322(7299):1428.

Fagot-Campagna A, Narayan K & Imperatore G 2001. Type 2 diabetes in children. British Medical Journal 322(7283):377–8.

Farnsworth A & Mitchell HS 2003. Prevention of cervical cancer. Medical Journal of Australia Vol 178 (12):653–654.

Gies HP, Roy C, Toomey S, MacLennan R & Watson M 1998. Solar ultraviolet radiation exposures of school children at three locations in Queensland. Photochemistry and Photobiology 68(1):78–83.

Groholt B, Ekeberg O, Wichstrom L & Haldorsen T 2000. Young suicide attempters: a comparison between a clinical and an epidemiological sample. Journal of the American Academy of Child and Adolescent Psychiatry 39(7):868–875.

Hansen BC, Saye JA & Wennogle LP 1999.The metabolic syndrome X: convergence of insulin resistance, glucose intolerance, hypertension, obesity, and dyslipidemias–searching for the underlying defects. Annals of the New York Academy of Sciences 892.

Handelsman P & Jackson L 1999. A national needs assessment of children and adolescents with diabetes, Australia, 1999. Sydney: The Diabetes Research Foundation, Juvenile Diabetes Foundation of Australia.

Hawton K, Rodham K, Evans E & Weatherall R 2002. Deliberate self-harm in adolescents: self-report survey in schools in England. British Medical Journal 325(7374):1207–11.

Healy K 2001. Choices and pathways for young women who are pregnant and parenting: supporting health relationships, education and training. Canberra: Commonwealth of Australia.

Isacsson G & Rich CL 2001. Management of patients who deliberately harm themselves. British Medical Journal 322(7280):213–5.

Jenkinson D 1988. Duration of effectiveness of pertussis vaccine: evidence from a 10-year community study. British Medical Journal (Clin Res Ed) 296(6622):612–4.

Keitel WA & Edwards KM. 1995. Pertussis in adolescents and adults: time to reimmunize? Seminars in Respiratory Infections 10(1):51–7.

Lindsay J, Smith A & Rosenthal D 1997. Secondary students, HIV/AIDS and sexual health 1997. Monograph series no. 3. Carlton: La Trobe University.

McIntyre P, Amin J, Gidding H, Hull B, Torvaldsen S, Tucker A et al. 2000. Vaccine preventable diseases and vaccination coverage in Australia, 1993–1998. Communicable Disease Intelligence supplement 24(9):276–7.

Monash University 2003. Socioeconomic status and injury. Hazard. Viewed 14 January 2003, <http://www.general.monash.edu.au/muarc/visar/Haz.htm>.

National Centre in HIV Epidemiology and Clinical Research 2002. HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia annual surveillance report. Sydney: National Centre in HIV Epidemiology and Clinical Research, The University of New South Wales.

National Asthma Campaign (NAC) 1998. Asthma management handbook 1998. NAC. Viewed 1 July 2003, <http://www.nationalasthma.org.au>.

National Cancer Institute 2002. National Cancer Institute: research on causes of cancers in children. National Cancer Institute. Viewed 1 August 2003, <http://cis.nci.nih.gov/fact/6_40.htm>.

NCCH (National Centre for Classification in Health) 1998. The international statistical classification of diseases and related health problems, 10th revision, Australian modification (ICD-10-AM). Vol. 1. Sydney: National Centre for Classification in Health, Faculty of Health Sciences, University of Sydney.

NHMRC (National Health and Medical Research Council) 1997. The Australian immunisation handbook, 6th edn. Canberra: NHMRC.

NHMRC (National Health and Medical Research Council) 2000. The Australian immunisation handbook, 7th edn. Canberra: NHMRC.

Norton R & Lam L 1999. Young males and risk-taking project: report to the Injury Prevention Policy Unit Health Promotion Branch NSW Health. Sydney: Institute for International Health.

O'Riordan DL, Stanton WR, Eyeson-Annan M, Gies P & Rey C 1999. Correlations between reported and measured ultraviolet radiation exposure of others and young children. Photochemistry and Photobiology 71(1):60–64.

Patton GC, Harris R, Carlin JB, Hibbert ME, Coffey C, Schwartz M and Bowes G 1997. Adolescent suicidal behaviours: a population-based study of risk. Psychological Medicine. 27(3):715–24.

Robertson CF, Dalton MF, Peat JK, Haby MM, Bauman A, Kennedy JD & Landau LI 1998. Asthma and other atopic diseases in Australian children: Australian arm of the International Study of Asthma and Allergy in Childhood. Medical Journal of Australia 168(9):434-8.

Sawyer MG, Arney FM, Baghurst PA, Clark JJ, Graetz BW, Kosky RJ, Nurcombe B, Patton GC, Prior MR, Raphael B, Rey J, Whaites LC & Zubrick SR 2000. The mental health of young people in Australia. Canberra: Commonwealth Department of Health and Aged Care.

Scott I 1998. Injuries to young men in Australia. Injury Prevention 4:77–78.

Sexual Health and Family Planning Australia 2002. Who do family planning organisations serve in the Australian community? Fact Sheet 2. Viewed 1 July 2003, <http://www.fpa.net.au/pdfs/Factsheet%202.PDF>.

Tapsall J W 2001. Annual report of the Australian meningococcal surveillance programme, 2000. Communicable Diseases Intelligence 25(3):113–21.

Taylor DM & Cameron PA 1998. Deliberate self-inflicted trauma: population demographics, the nature of injury and a comparison with patients who overdose. Australian and New Zealand Journal of Public Health 22(1):120–5.

Towner EML, Jarvis SN, Walsh SSM & Aysnley-Green A 1994. Measuring exposure to injury risk in schoolchildren aged 11–14. British Medical Journal 308(6926):449–52.

UNICEF (United Nations Children's Fund) 2001. A league table of teenage births in rich nations. Innocenti Report Card No. 3. Florence: UNICEF Innocenti Research Centre.

USDHHS (United States Department of Health and Human Services) 1999. Mental health: a report of the Surgeon General. Washington, DC: USDHHS.

Van der Klis KAM, Leontine L, Westenberg A, Chan A, Dekker G & Keane RJ 2002. Teenage pregnancy: trends, characteristics and outcomes in South Australia and Australia. Australian and New Zealand Journal of Public Health 26(2):125–31.

WHO (World Health Organization) 1975. Education and treatment in human sexuality: the training of health professionals. Report of a WHO meeting. Technical Report Series No. 572. Viewed 1 July 2003, <http://www2.hu-berlin.de/sexology/GESUND/ARCHIV/WHOR.HTM>.

WHO (World Health Organization) 2000. Hepatitis C: fact sheet no. 164. World Health Organization. Viewed 1 July 2003, <http://www.who.int/inf-fs/en/fact164.html>.

WHO (World Health Organization) 2003. Adolescent sexual and reproductive health. Department of Reproductive Health and Research (RHR), World Health Organization. Viewed 1 July 2003, <http://www.who.int/reproductive-health/adolescent/Adolescent_intro.en.html>.

Woolcock A, Bastiampillai S, Marks G & Keena VA 2001. The burden of asthma in Australia. Medical Journal of Australia 175(3):141–5.

Yih WK, Lett SM, des Vignes FN, Garrison KM, Sipe PL & Marchant CD 2000. The increasing incidence of pertussis in Massachusetts adolescents and adults, 1989–1998. Journal Infectious Diseases 182(5):1409–16.

Youthsafe 2003. Young people and injury. Youthsafe. Viewed 9 January 2003, <http://www.youthsafe.org/injury/summary.htm>.

Zardawi IM 2002. Cervical screening: time to change the policy. Medical Journal of Australia 177(6):332–3.

Part IV: Biological and behavioural risk and protective factors

Chapter 13. Substance use

Chapter 14. Diet and nutrition

Chapter 15. Physical activities

Chapter 16. Overweight and obesity

Chapter 17. Sun protection

13. Substance use

Youth is the stage in life when many people begin to experiment with and use substances which, if misused, can cause severe immediate and long-term health and wellbeing problems. Tobacco use causes an immediate loss of physical fitness and respiratory problems and, in the long term, increases the chances of developing a number of cancers in adulthood. Nicotine is highly physically addictive and many adult smokers became addicted in their youth. Young people sometimes indulge in binge drinking of alcohol. Binge drinking can cause immediate bowel, central nervous system and psychological problems. Alcohol is also physically addictive and most adult alcoholics became dependent in their youth. Addiction and high long-term alcohol consumption leads to major body organ damage, brain damage, depression, and family and relationship problems. Substances like cannabis, prescription drugs and other drugs, if misused, can cause immediate psychological problems and addiction, and can affect long-term cognitive, social and emotional development.

Patterns of substance misuse developed in youth can continue into adult life. Many young people who experiment with tobacco, alcohol and illicit drugs do not go on to abuse them as adults, but the earlier the age of initiation, the greater the risk of later substance misuse (Guo et al. 2002). Tobacco use usually starts in early adolescence, and almost all first-use of tobacco occurs before young people have completed high school (USDHHS 1994), despite it being illegal for people under the age of 18 to be sold cigarettes. If people do not use tobacco when they are young, it is likely they will never use tobacco. However, many young people will experiment with tobacco because they are influenced by peers, siblings and friends. Actors smoking in films have also been shown to influence some young people (Tickle et al. 2001). Others believe that smoking is a way of signifying membership of a group. Young people who do less well academically and who have a lower self-image are also more likely to smoke than other young people (USDHHS 1994).

It is illegal for young people under the age of 18 years to be sold alcohol, but many find ways to obtain and consume alcohol. For many young people, alcohol consumption is a group behaviour, with peer group norms considerably influencing their alcohol use (Shanahan & Hewitt 1999). Young people who use alcohol can be at risk of a number of poor outcomes—particularly those who engage in binge drinking, which leads to immediate and severe intoxication. Possible outcomes from binge drinking include damage to the small bowel and subsequent diarrhoea, depression of the central nervous system, headaches, and stomach problems resulting in nausea, shakiness and vomiting (NDARC 2003a). Binge drinking can also increase the risk of injury from falls, assault, road accidents, fights and other violence, and can foster coercive sexual activity and unprotected sex. Serious binge drinking can lead to alcohol poisoning, which may result in coma and death. Compared with other age groups, young people are more likely to have had an alcohol-induced memory lapse at least weekly (4%) and monthly (11%) in the previous 12 months (AIHW 2003). Long-term excessive use of alcohol can lead to a number of physical, emotional and social problems, including alcohol addiction, poor diet, stomach problems, liver, heart and brain damage, depression, family and relationship problems, and legal and financial difficulties (NDARC 2003a).

It has been shown, however, that low levels of alcohol consumption can protect against some illnesses in adulthood, including hypertension, ischaemic heart disease, stroke and gallstones (AIHW 2002). If young people learn to drink in a responsible manner and in moderation, their alcohol consumption may actually lead to long-term health benefits.

Illicit drugs include drugs which are generally not legal to obtain (such as cannabis, heroin and cocaine), drugs which can be legally purchased with a prescription (such as pain-killers and tranquillisers) but are used for non-medical purposes, and other

harmful substances used inappropriately (such as inhalants). The use of illicit drugs can interfere with normal cognitive, social and emotional development (Guo et al. 2002), can cause erratic and violent behaviour, and in some cases can lead to a physical addiction. Potential consequences of illicit drug use are shown in Box 13.1. The most common illicit drug in Australia is cannabis. Guo et al. (2002) suggest that initiation to and increased use of illicit drugs is often due both to individual factors, including genetic predisposition and childhood psychopathology, and to environmental factors, such as family and peer influences. They found that having a close and supportive family with strong bonds and low conflict, as well as good parental control and clear family rules, decreased the risk of initiation to illicit drugs. A higher level of peer antisocial behaviour, on the other hand, increased the risk of initiation to illicit drugs. The AIHW National Drug Strategy Household Survey found that curiosity was the reason cited by 82% of people who had used illicit drugs as influencing their first use of an illicit drug (AIHW 2003). Peer pressure was cited by 55%. Of those who had never tried an illicit drug, over half said they were 'just not interested'.

Box 13.1: Potential consequences of the use of illicit drugs

***Cannabis**: memory impairment, weight gain, increased risk of cancer, paranoid thinking, psychological dependence, impairment of learning of key developmental skills, motor vehicle accidents.*

***Inhalants (solvents, aerosols, glue, petrol):** Brain damage, pains in chest, muscles, joints, heart trouble, severe depression, fatigue, loss of appetite, bronchial spasm, sores on nose or mouth, nosebleeds, diarrhoea, bizarre or reckless behaviour, sudden death, suffocation.*

***Depressants (sleeping pills, tranquillisers):** Anxiety, depression, restlessness, psychotic episodes, insomnia, changes in eyesight, dependence, severe withdrawal symptoms and suicide.*

***Stimulants (amphetamine, methamphetamine, Ritalin, dexamphetamine, ecstasy)**: weight loss, chronic sleep problems, high blood pressure, paranoia, anxiety, nervousness, decreased emotional control, severe depression, violent behaviour, death from heart failure or suicide, nerve cell damage.*

***Hallucinogens (LSD, MDA, PCP):** risk of injury, self-inflicted injury, violent behaviour, paranoia, depression, anxiety, unpredictable flashbacks.*

***Opioids (heroin, morphine, codeine, methadone, pethidine)**: dependence, overdose, mood swings, chronic constipation, high potential for addiction, death from overdose, HIV and hepatitis infections through sharing of needles.*

***Cocaine and crack cocaine**: high risk of addiction, violent or erratic behaviour, hallucinations, cocaine psychosis, eating or sleeping disorders, impaired sexual performance, ongoing respiratory problems, ulceration of the mucous membrane of the nose, collapse of the nasal septum, cardiac arrest or respiratory arrest, convulsions.*

Source: DHAC 2001.

Collins and Lapsley (2002) have estimated the social cost of substance misuse in Australia. Social costs include lost production in the workplace and home, road accidents, fires, crimes and the costs to the health system of caring for people made sick by substance misuse. They found that tobacco and alcohol were responsible for most of the social costs of drug use in Australia in 1998–99 (61% and 22%, respectively). Illicit drugs were responsible for 18% of the total social cost of drug use.

In 1998, it was estimated that almost 15% of all deaths were related to drug use. Tobacco and alcohol were responsible for over 90% of the drug use-related mortality and morbidity (AIHW: Ridolfo & Stevenson 2001).

Data for this chapter come from the Australian Secondary Schools Drug and Alcohol Survey (ASSAD) for young people aged 12–17 years and from the AIHW National Drug Strategy Household Survey (NDSHS) for those aged 18–24 years, though data on people aged 14 years and over are also available.

Tobacco smoking

In 2001, the NDSHS found that the mean age of initiation into tobacco smoking among young people aged 14–24 years was 14.5 years for males and 14.2 for females. These ages were about the same as in 1998, when mean age of initiation was 14.2 years for males and 14.3 for females. In 2001, the mean age of first smoking daily was 16.0 years for males and 15.5 years for females.

Data from the 1999 ASSAD show that, although there are many more students aged 12–17 years who do not smoke than students who do, around 16% identified themselves as smokers (Table 13.1).

Table 13.1: Self-reported smoking status of young people aged 12–17 years, 1999 (per cent)

	12–14 years			15–17 years		
Smoking status	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Chain smoker	1.2	1.0	1.1	1.1	1.3	1.2
Heavy smoker	2.3	1.9	2.1	5.1	5.4	5.3
Light smoker	3.9	4.6	4.3	9.7	10.1	9.9
Occasional smoker	7.0	9.6	8.3	12.3	16.5	14.5
Ex-smoker	6.5	6.5	6.5	6.1	7.5	6.8
Non-smoker	79.0	76.4	77.7	65.7	59.0	62.3
Total number	**393,997**	**378,432**	**772,429**	**309,579**	**313,611**	**623,190**

Source: 1999 ASSAD, unpublished data.

- In 1999, 78% of young people aged 12–14 years and 62% of those aged 15–17 years were non-smokers. In both age groups, a higher proportion of males did not smoke.
- A considerable proportion in each age group identified themselves as 'occasional' smokers (8% and 15%, for younger and older age groups, respectively).
- Around 8% of those aged 12–14 years and 16% of those aged 15–17 years reported being light, heavy or chain smokers.
- Around 7% in both age groups reported being ex-smokers.
- Among those who smoked, regardless of smoking status, there was generally a higher proportion of females than males.

The NDSHS also collected information on smoking status. The NDSHS defined an individual who has 'never smoked' as a person who does not smoke now and has smoked fewer than 100 cigarettes or the equivalent tobacco in their lifetime. 'Recent smokers' were defined as people who have smoked 100 cigarettes in their lifetime and who have not permanently stopped smoking. An ex-smoker was a person who has smoked at least 100 cigarettes or the equivalent tobacco in their life, but reported no longer smoking.

The NDSHS showed that, among those aged 14–17 years in 2001, 3% were ex-smokers, 15% recent smokers, and 82% had never smoked. Using the NDSHS definition of a 'recent smoker', ASSAD shows that, among those aged 12–14 years in 1999, 5% of males and 4% of females were recent smokers. Among those aged 15–17 years, 16% of both males and females were recent smokers. Proportions vary between the two surveys because they used different methods and different age groups. Data from the NDSHS for young people aged 18–24 years are presented in Table 13.2.

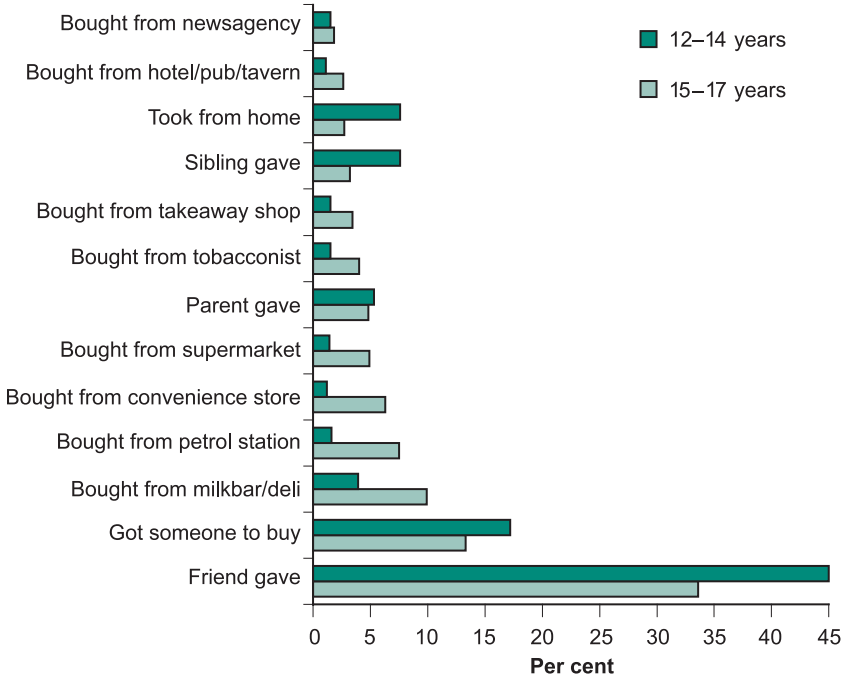
Table 13.2: Smoking status, young people aged 18–24 years, 1998 and 2001 (per cent)

	Males		Females		Persons	
Smoking status	**1998**	**2001**	**1998**	**2001**	**1998**	**2001**
Daily	30.4	24.5	28.6	23.7	29.5	24.1
Less than daily	5.8	9.9	4.7	5.8	5.2	7.9
Total recent	36.1	34.4	33.3	29.6	34.8	32.0
Ex-smoker	11.7	9.5	15.4	11.0	13.5	10.3
Never smoked	52.1	56.0	51.4	59.4	51.8	57.7

Source: AIHW NDSHS 1998 and 2001, unpublished data.

- In 2001, among those aged 18–24 years, 56% of males and 59% of females had never smoked; the 2001 ABS National Health Survey reported similar figures (ABS 2002). This was an increase from 1998, when 52% of males and 51% of females had never smoked.
- In 2001, 34% of males and 30% of females were recent smokers. These proportions decreased between 1998 and 2001. The ABS NHS reported that 36% of males and 27% of females were 'smokers' (daily or current).

It is illegal for retailers to sell tobacco to young people aged less than 18 years. Despite this, the ASSAD survey showed that, in 1999, 15% of those aged 12–14 years and 41% of those aged 15–17 years who smoked bought their own cigarettes. How students obtained their last cigarette is shown in Figure 13.1.



Source: 1999 ASSAD, unpublished data.

Figure 13.1: How students aged 12–17 years obtained their last cigarette, 1999

- Of students aged 12–14 years, 45% had got their last cigarette from a friend, and 17% had got someone else to buy it for them. Around 8% had been given it by a sibling, and another 8% had taken it from the home.
- Of those aged 15–17 years, 34% had got their last cigarette from a friend, 13% had got someone else to buy it for them, and 10% had bought it from a milk bar or deli. Around 8% had bought it from a petrol station, 6% from a convenience store, and 5% from a supermarket.
- Among both age groups, about 5% had been given their last cigarette by a parent.

The NDSHS found that, in 2001, around 17% of young people aged 14–17 years and 20% of those aged 18–24 years had successfully given up smoking for more than one month in the last 12 months. Over one-third of young people aged 14–24 years had tried to give up unsuccessfully in the last 12 months. Around one-fifth of recent smokers aged 14–24 years had made no attempts in the last 12 months to reduce tobacco consumption. Among all people aged 14 years and over, the main motivator for changing smoking behaviour was that smoking was considered to be costing too much. The next most common reason was that smoking was affecting health or fitness.

Alcohol use

The 2001 NDSHS showed that the mean age of initiation into drinking alcohol (drinking a full glass) among young people aged 14–24 years was 14.6 years for males and 14.8 years for females. These ages were similar to those in 1998: 14.2 for males and 14.8 for females.

The alcohol drinking status of young people aged 14–24 years is shown in Table 13.3.

Table 13.3: Alcohol drinking status, young people aged 14–24 years, 2001 (per cent)

	14–17 years		18–24 years	
Drinking status	**Males**	**Females**	**Males**	**Females**
Regular	19.8	17.1	57.4	41.5
Occasional	44.3	51.6	32.5	46.9
Ex-drinker	6.6	4.3	2.9	3.8
Never a full glass of alcohol	29.2	27.0	7.2	7.9

Source: AIHW NDSHS 2001, unpublished data.

- Although the sale of alcohol to young people aged less than 18 years is illegal, in 2001, 20% of males and 17% of females aged 14–17 years were regular alcohol consumers and nearly half of all young people aged 14–17 years were occasional drinkers.
- Among young people aged 18–24 years, 57% of males and 42% of females were regular drinkers, and 33% of males and 47% of females were occasional alcohol drinkers.
- Nearly three-quarters of a million young people aged 14–17 years and over 1.6 million aged 18–24 years were regular or occasional alcohol drinkers.

Young males commonly consume regular strength beer, and young females consume pre-mixed bottles or bottled spirits and liqueurs (AIHW 2003). Among under-age drinkers, the most commonly nominated way of obtaining alcohol was from a friend or relative (69%). Nearly half of all under-age drinkers purchased alcohol from a shop or retail outlet (47%).

The National Health and Medical Research Council (NHMRC) Australian alcohol guidelines (NHMRC 2001) suggest that:

- men should drink an average of no more than 4 standard drinks a day and no more than 6 standard drinks on any one day
- women should drink an average of no more than 2 standard drinks a day and no more than 4 standard drinks on any one day
- both men and women should spread their drinks over several hours and have one or two alcohol-free days per week
- young people aged 18–25 years should not drink at all for at least several hours before undertaking potentially risky activities (e.g. driving, swimming and boating) and should not mix alcohol with mood-altering drugs
- young people aged up to 18 years, if they choose to drink, should be under adult supervision, keep drinking to a minimum, and not drink to become intoxicated.

Examples of standard drinks are shown in Box 13.2.

Box 13.2: What is a standard drink?

Different types of alcoholic drinks contain different amounts of pure alcohol. A standard drink is defined as one that contains 10 grams of pure alcohol. The following are all equal to approximately one standard drink:

- *one 425 ml glass of light beer (2.7% alcohol)*
- *one 285 ml glass of regular beer (4.9% alcohol)*
- *one 100 ml glass of wine (12% alcohol)*
- *one 30 ml nip of spirits (40% alcohol)*
- *one 60 ml glass of port or sherry (20% alcohol).*

Source: NDARC 2003b.

Young people are considered to be drinking at risky or high risk levels when they consume more than is recommended by NHMRC guidelines. The threshold numbers of drinks for each alcohol risk level are shown in Table 13.4.

Table 13.4: NHMRC Australian alcohol guidelines (number of standard drinks), 2001

Risk term	Low risk	Risky	High risk
Risk of harm in the short term			
Males	Up to 6 (on any one day, no more than 3 days per week)	7 to 10 (on any one day)	11 or more (on any one day)
Females	Up to 4 (on any one day, no more than 3 days per week)	5 to 6 (on any one day)	7 or more (on any one day)
Risk of harm in the long term			
Males			
On an average day	Up to 4 (per day)	5 to 6 (per day)	7 or more (per day)
Overall weekly level	Up to 28 (per week)	29 to 42 (per week)	43 or more (per week)
Females			
On an average day	Up to 2 (per day)	3 to 4 (per day)	5 or more (per day)
Overall weekly level	Up to 14 (per week)	15 to 28 (per week)	29 or more (per week)

Source: NHMRC 2001.

- Low risk defines a level and pattern of drinking at which there is only a minimal risk of harm.
- Risky or high risk defines a level and pattern of drinking at which risk of harm is significantly increased beyond any possible benefits.
- Short-term risk is the risk of harm (particularly injury or death) in the short term that is associated with given levels of drinking on a single day, assuming that overall drinking patterns remain within the levels set for long-term risk, and that heavy drinking takes place 3 times a week or less.
- Long-term risk is the level of risk associated with regular daily patterns of drinking, defined by the total amount of alcohol typically consumed per week.

The proportion of young people aged 14–24 years who drink at levels and patterns risking short-term harm is shown in Table 13.5. Table 13.6 shows the risk of harm in the long term.

Table 13.5: Risk of harm in the short term, proportion of young people aged 14–24 years, 2001 (per cent)

	14–17 years			18–24 years		
	Males	Females	Persons	Males	Females	Persons
Abstainers	35.7	31.1	33.5	10.1	11.6	10.9
Low risk	32.7	31.2	32.0	25.1	25.4	25.3
Risky or high risk						
At least yearly	10.8	12.5	11.6	19.4	17.6	18.6
At least monthly	15.9	16.7	16.3	28.4	31.0	29.7
At least weekly	4.9	8.5	6.6	16.9	14.3	15.6
Total risky or high risk	**31.6**	**37.7**	**34.6**	**64.7**	**63.0**	**63.9**

Source: AIHW NDSHS 2001, unpublished data.

- In 2001, around one-third of young people aged 14–17 years (an estimated 375,100) and one in ten aged 18–24 years (204,100) said they did not drink alcohol.
- Just under a third of young people aged 14–17 years (358,400) and one-quarter aged 18–24 years (475,100) had low risk of harm in the short term.
- Of young people aged 14–17 years, 35% (387,400) drank at risky or high-risk levels in the short term. A greater proportion of females drank at risky or high-risk levels than males (38%, compared with 32%).
- Among those aged 18–24 years, 64%, or over 1.2 million, drank at levels that were risky or high risk for short-term harm.

Table 13.6: Risk of harm in the long term, proportion of young people aged 14–24 years, 2001 (per cent)

	14–17 years			18–24 years		
	Males	Females	Persons	Males	Females	Persons
Abstainers	35.7	31.1	33.5	10.1	11.6	10.9
Low risk	60.4	58.0	59.3	72.5	68.7	70.6
Risky or high risk						
Risky	2.6	7.6	5.0	11.3	13.9	12.6
High risk	1.3	3.3	2.3	6.0	5.7	5.9
Total risky or high risk	**3.9**	**10.9**	**7.3**	**17.3**	**19.7**	**18.5**

Source: AIHW NDSHS 2001, unpublished data.

- Approximately 350,000 young people aged 14–24 years reported drinking in a way that was risky or high risk for long term harm.
- Of those aged 14–17 years, 7% (or 81,500) were risky or high risk in the long-term (3% of males, 11% of females). Nearly 60% drank at low risk levels.
- Among those aged 18–24 years, nearly one in five drank at risky or high-risk levels in the long term (17% of males, 20% of females), and 71% were low-risk.

Use of illicit substances

A number of substances are proscribed by law as generally being illegal to have in one's possession. The mean ages of initiation of young people aged 14–24 years into illicit drug use are shown in Table 13.7.

Table 13.7: Mean age of initiation into illicit drug use of young people aged 14–24 years, 1998 and 2001

	Males		Females	
Substance	**1998**	**2001**	**1998**	**2001**
Cannabis	15.6	15.5	15.8	15.4
Inhalants	16.3	15.6	14.6	15.3
Amphetamines/speed	18.1	17.8	17.3	17.4
Ecstasy/designer drugs	18.8	18.4	18.4	18.0
Injecting drugs	17.9	16.8	17.1	17.1
Any other illicit	17.3[(a)]	16.4[(b)]	16.7[(a)]	15.6[(b)]
Total any illicit	15.4	15.3	15.6	15.1

(a) Includes pain-killers, tranquillisers, steroids, methadone and barbiturates used for non-medical purposes, heroin, cocaine and hallucinogens.

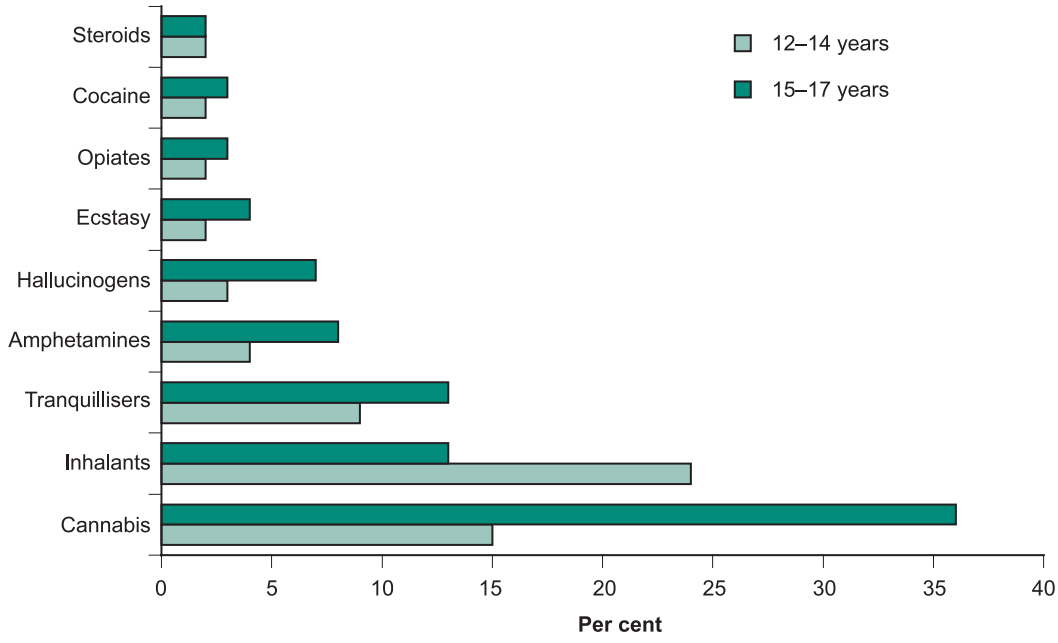
(b) Includes pain-killers, tranquillisers, steroids, methadone and barbiturates used for non-medical purposes, heroin, cocaine, hallucinogens and opiates.

Source: AIHW NDSHS 2001, unpublished data.

- Among illicit drugs, cannabis and inhalants had the earliest ages of initiation in 2001: for both drugs and for males and females, the mean age of initiation was aged less than 16 years.
- In 1998 and 2001, the mean age of initiation into the use of amphetamines and speed was 18 years for males and 17 years for females.
- The mean age of initiation into injecting drug use was 17 for males and 18 for females in 2001.

According to the ASSAD survey in 1999, 38% of young people aged 12–17 years had used an illicit drug (excluding analgesics and tranquillisers) within the previous 12 months. This was a decrease from 42% in 1996.

The proportion of young people in 1999 aged 12–17 years who used specific illicit substances is shown in Figure 13.2.



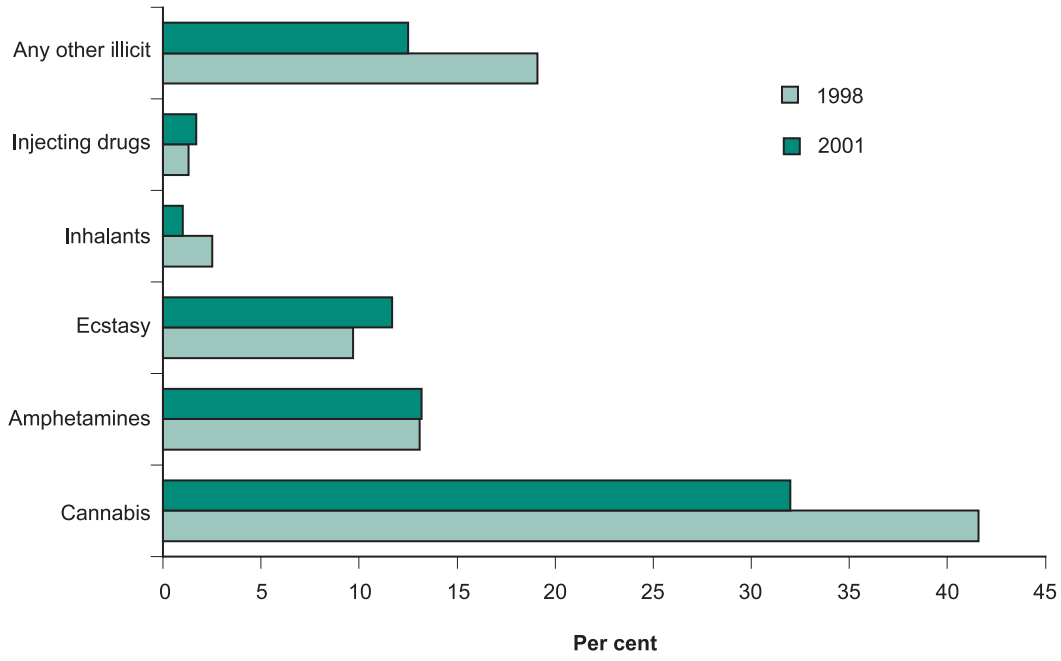
Source: 1999 ASSAD survey, unpublished data.

Figure 13.2: Proportion of young people aged 12–17 years who had used an illicit drug in the last 12 months, 1999

- The illicit drug most frequently used by young people was cannabis. One-quarter of all young people aged 12–17 years (around 337,000 users) reported that they had used cannabis. The proportion of users increased with age. The proportion of males using cannabis (27%) was higher than the proportion of females (23%). The reported use of cannabis by this age group decreased from 31% in 1996 to 25% in 1999.
- The next most frequently used illicit substances were inhalants, used by 19% of young people aged 12–17 years (around 264,000 users). A greater proportion of those aged 15–17 years used inhalants than those aged 12–14 years (24% compared with 13%). Use was equally spread between males and females.
- Tranquillisers were the third most frequently used illicit substances, used by 11% of young people aged 12–17 years in the previous 12 months (just over 148,000 users). A higher proportion of those aged 15–17 years had used tranquillisers than those aged 12–14 years (13% compared with 9%).
- Amphetamines were used by 6% of young people aged 12–17 years (10% of those aged 15–17 years, and just less than 5% of those aged 12–14 years).

Another perspective on illegal substance use is offered by the NDSHS. The 2001 data from this survey show that in the previous 12 months 20.7% of young people aged 14–17 years had used cannabis, 1.1% inhalants, 3.6% amphetamines, 3.2% ecstasy, 0.5% injecting drugs, and 6.1% some other illicit drug. In comparison, in 1998 the proportion who had used cannabis was 31.4%, and the proportion who had used ecstasy was 0.8%.

The proportion of young people aged 18–24 years who had used illicit drugs in the last 12 months is shown in Figure 13.3.



Source: AIHW NDSHS 1998 and 2001, unpublished data.

Figure 13.3: Proportion of young people aged 18–24 years who used an illicit substance in the previous 12 months, 1998 and 2001

- In 2001, although cannabis was used by the greatest proportion of young people aged 18–24 years in the last 12 months (40% of males, 26% of females), use declined significantly between 1998 and 2001 (32% in 2001 compared with 42% in 1998).
- Amphetamines were used by 13% of young people in 2001 (247,800 users). The proportion of males using amphetamines decreased slightly between 1998 and 2001 (18% to 15%), and the proportion of females using increased (8% to 11%). There was little change in the overall proportion that reported using between 1998 and 2001.
- In 2001, ecstasy was used by 12% of young people (220,400 users). This was an increase from 10% in 1998. Use among females increased from 7% in 1998 to 10% in 2001.
- In 2001, injecting drugs were used by slightly less than 2% of young people (32,000 users). This was a small increase from 1998 (1.3%).

Drug-related harm

Victims of harm

Teece and Williams (2000) found that, among people of all ages, being young and male were the biggest risk factors for experiencing alcohol-related violence. The younger people started drinking alcohol, the more likely they were to experience alcohol-related violence.

Table 13.8: Proportion of young people aged 14–24 years experiencing alcohol- or illicit drug-related incidents in the last 12 months, by sex and age, 1998 and 2001

	14–17 years		18–24 years	
Incident	**1998**	**2001**	**1998**	**2001**
Males				
Verbal abuse	32.5	27.1	57.9	48.7
Physical abuse	8.4	10.7	20.6	15.0
Put in fear	19.1	15.5	27.6	23.2
Any abuse[(a)]	*37.9*	*32.3*	*62.8*	*54.1*
Females				
Verbal abuse	28.0	26.0	50.5	45.7
Physical abuse	6.4	8.2	11.0	11.6
Put in fear	26.3	23.6	36.3	33.3
Any abuse[(a)]	*37.2*	*36.2*	*56.8*	*54.8*
Persons				
Verbal abuse	30.2	26.6	54.3	47.3
Physical abuse	7.3	9.5	15.9	13.4
Put in fear	22.8	19.5	31.9	28.2
Any abuse[(a)]	*37.5*	*34.2*	*59.9*	*54.5*

(a) Respondents could report more than one type of alcohol- or drug-related harm so 'any abuse' is not equal to the sum of the proportions listed for 'verbal abuse', 'physical abuse' and 'put in fear'.

Source: AIHW NDSHS 2001, unpublished data.

- Over one-third of young people aged 14–17 years and over half of young people aged 18–24 years had experienced verbal or physical abuse, and/or had been 'put in fear' by another drug- or alcohol-affected person.
- The most common form of incident was verbal abuse—27% of those aged 14–17 years and 47% of those 18–24 years in 2001. These proportions were smaller than those in 1998.
- The greatest difference between males and females was the proportions who were 'put in fear'. Among those aged 14–17 years, 24% of females, compared with 16% of males, were put in fear. Of those aged 18–24 years, 33% of females, compared with 23% of males, were put in fear.

Perpetrators of alcohol- and drug-related harm

Respondents were asked whether they undertook particular activities while under the influence of alcohol or illegal drugs (Table 13.9).

Table 13.9: Activities undertaken by young people aged 14–24 years while under the influence of alcohol or other drugs, 2001

	14–17 years		18–24 years	
Activity	**Males**	**Females**	**Males**	**Females**
Under the influence of alcohol				
Drove a motor vehicle	7.3	3.6	27.4	15.8
Operated a boat or hazardous machinery	3.8	0.4[(a)]	6.8	1.1
Verbally or physically abused someone	21.3	18.8	27.9	14.0
Created a disturbance; damaged or stole goods	21.7	14.8	24.8	10.8
Went swimming	11.5	10.6	20.7	10.1
Went to work	5.3	5.6	17.3	8.3
Under the influence of other drugs				
Drove a motor vehicle	9.5	8.5	39.4	21.8
Operated a boat or hazardous machinery	4.8	0.6[(a)]	10.0	0.6
Verbally or physically abused someone	20.0	16.5	11.4	6.4
Created a disturbance; damaged or stole goods	17.6	13.8	10.9	4.3
Went swimming	15.0	15.3	28.8	10.9
Went to work	13.1	16.7	25.0	15.8

(a) Relative standard error is greater than 50%.

Source: AIHW NDSHS 2001, unpublished data.

- Around 20% of young people aged 14–17 years reported they had verbally or physically abused someone while under the influence of alcohol (21% of males, 19% of females) or other drugs (20% of males, 17% of females).
- Among those aged 18–24 years, 28% of males and 14% of females reported verbally or physically abusing someone while under the influence of alcohol. A smaller proportion (11% of males, 6% of females) had verbally or physical abused someone while under the influence of other drugs.
- Among those aged 18–24 years, 27% of males and 16% of females reported that they drove a motor vehicle while under the influence of alcohol. An even higher proportion (39% of males, 22% of females) reported they had driven a motor vehicle while under the influence of other drugs.
- Among young people aged 14–17 years, around 10% reported swimming under the influence of alcohol, and 15% under the influence of other drugs. Among those aged 18–24 years, 21% of males and 10% of females reported swimming under the influence of alcohol, and 29% of males and 11% of females did so under the influence of other drugs.

Attitudes towards and perceptions of substances and substance use

A Commonwealth Department of Health and Aged Care study commissioned in 2000 to help develop strategies to reduce young people's substance use (Clark, Scott & Cook 2003) found that young people's attitudes to and perceptions of the positives and negatives of substance use varied depending on the drug and the level of use. Young people regarded addiction negatively.

A key finding was that most young people thought that cannabis was an acceptable social drug that was less harmful than tobacco and, at least by those who used it, less harmful than alcohol. However, young people distinguished between occasional and heavy marijuana use. Heavy use was viewed negatively.

Ecstasy was also viewed by young people as a 'scene' drug, often linked with dance parties. This finding was confirmed by the NDSHS which found that among users of all ages, 70% of recent users of ecstasy and other so-called 'designer' drugs used these drugs only at raves or dance parties. A considerable proportion of young people saw ecstasy as a fun drug, associated with a happy atmosphere, and a good drug to share with friends, even though it was seen as a risky drug. Heroin, on the other hand, was seen in a negative way, with young people describing heroin users as 'junkies' (addicts), and stating that it causes loss of control, brain damage and destroys friendships. Young people viewed heroin as the most dangerous drug, followed by cocaine, speed, LSD, ecstasy, tobacco, cannabis and alcohol.

A question in the NDSHS in 2001 asked respondents to name the drug they thought of when people talked about a drug 'problem' (Figure 13.10).

Table 13.10: Drugs associated with a drug 'problem' by young people aged 14–24 years, 2001

Drug first nominated	Males	Females
Heroin	38.0	39.7
Cannabis	34.7	33.4
Alcohol	8.6	6.2
Amphetamines/speed	4.9	6.9
Cocaine	4.4	5.2
Tobacco	3.6	2.7
Ecstasy/designer drugs	3.0	3.6
Other	2.7	2.4
Total	**100.0**	**100.0**

Source: AIHW 2001 NDSHS, unpublished data.

- Among young people aged 14–24 years, 38% of males and 40% of females nominated heroin as the drug they first thought of as being associated with a drug problem.
- Cannabis was nominated by 35% of males and 33% of females in this age group as the drug they first thought of as being associated with a drug problem.
- Alcohol was nominated by only 9% of males and 6% of females despite being the substance most commonly associated with actual drug dependence disorders.

Acceptability of drugs

Not surprisingly, in 2001, the legal drugs—tobacco and alcohol—were considered by young people to be the most acceptable for regular use by adults (Table 13.11). However, some young people also found regular use of illicit drugs by adults to be acceptable.

Table 13.11: Proportion of young people aged 14–24 years who find regular drug use by adults acceptable, 2001

Drug	Males	Females
Alcohol	81.9	77.1
Tobacco	48.2	49.2
Cannabis	38.6	31.8
Ecstasy/designer drugs	11.1	6.9
Natural hallucinogens	9.2	5.0
Pain-killers/analgesics	7.7	8.0
Amphetamines/speed	7.7	6.5
LSD/synthetic hallucinogens	6.6	4.0
Tranquillisers/sleeping pills	6.1	4.9
Steroids	4.6	1.5
Cocaine	4.4	3.2
Methadone	2.4	1.3
Barbiturates	2.4	1.2
Inhalants	1.8	0.7
Heroin	1.8	1.0

Source: AIHW NDSHS 2001, unpublished data.

- In 2001, over three-quarters of young people aged 14–24 years thought alcohol use by adults was acceptable and nearly half thought tobacco use acceptable.
- Around one-third of young people found cannabis use by adults acceptable and more than 10% thought ecstasy use was acceptable.
- More than 90% of young people thought amphetamine and LSD use was not acceptable and more than 95% thought the use of steroids, cocaine, methadone, barbiturate, inhalants and heroin was not acceptable.

Availability and source of drugs

In order to estimate the availability of drugs, young people were asked to report on the substances they had been offered or had had the opportunity to use (Table 13.12).

Table 13.12: Proportion of young people aged 14–24 years who were offered or had the opportunity to use selected drugs, 2001

Drug	Males	Females
Alcohol	91.9	92.0
Tobacco	74.8	73.9
Cannabis	54.8	48.4
Pain-killers/analgesics	40.7	41.9
Ecstasy/designer drugs	24.5	20.0
Amphetamines/speed	22.5	19.1
LSD	12.9	9.1
Tranquillisers/sleeping pills	9.2	9.2
Cocaine	8.9	7.3
Natural hallucinogens	8.2	5.1
Inhalants	8.0	5.8
Heroin	4.3	3.0
Kava	3.1	1.8
Steroids	3.1	1.0
Barbiturates	1.9	1.4

Source: AIHW NDSHS 2001, unpublished data.

- Alcohol was available to over 90% of young people, and nearly three-quarters had been offered or had had the opportunity to use tobacco.
- Cannabis was available to over 50%.
- Around 20% of young people had been offered the use of ecstasy/designer drugs or amphetamines/speed.

Source of supply

Young people who use illicit drugs often source them from friends or acquaintances (Table 13.13).

Table 13.13: Source of supply of selected illicit drugs, young people aged 14–24 years, 2001 (per cent)

Drug	Friend or acquaintance	Relative	Dealer	Bought at shop	Other	Total
Cannabis	69.3	6.1	19.3	..	5.4	100.0
Inhalants	58.3	5.1[(a)]	1.0[(a)]	23.6	11.9	100.0
Amphetamines/speed	68.8	2.3	25.3	..	3.6	100.0
Ecstasy/designer drugs	66.4	2.3	29.4	..	1.9	100.0

. . Not applicable.

(a) Estimates have an associated relative standard error of 25% or more and should be interpreted with caution.

Source: AIHW NDSHS 2001, unpublished data.

- Most users of substances obtained them from a friend or acquaintance.
- Around one-fifth of young people who used cannabis, 25% of young people who used amphetamines or speed and 30% who used ecstasy or designer drugs bought them from a dealer.

14. Diet and nutrition

Adolescence is a time where food and nutrition choices are increasingly made by young people for themselves, rather than by their parents on their behalf. Many young people who leave the family home have to prepare their own meals, some for the first time. Some adopt unhealthy eating habits, which can vary greatly: some will severely limit their food intake, whereas others will consume a large amount of foods containing high levels of fats or sugars with little nutritional value. Eating habits established in adolescence may persist into adulthood. Poor nutrition has been associated with a number of illnesses, including obesity, coronary heart disease, stroke, hypertension, some cancers, type 2 diabetes, and osteoporosis (AIHW: Lester 1994). Adolescence is also a time when young people's bodies are developing rapidly and they can become almost obsessively concerned about their physical appearance, including body weight.

The National Health and Medical Research Council (NHMRC 2003) suggests that a healthy diet for children and adolescents should include a wide variety of nutritious foods: fruit and vegetables, cereals (including breads, rice, pasta), lean meat, meat alternatives such as legumes and nuts, and reduced-fat dairy foods. Saturated fats should be limited in the diet and the total fat intake should be moderate. Foods should be low in salt, and only moderate amounts of sugars should be consumed. Young people should be encouraged to drink water rather than sweetened soft drinks, and engage in physical activity. Examples of two different eating patterns are shown in Table 14.1, one illustrating a high consumption of cereals, the other illustrating a smaller consumption of cereals.

Table 14.1: Sample daily serves suggested for children and adolescents

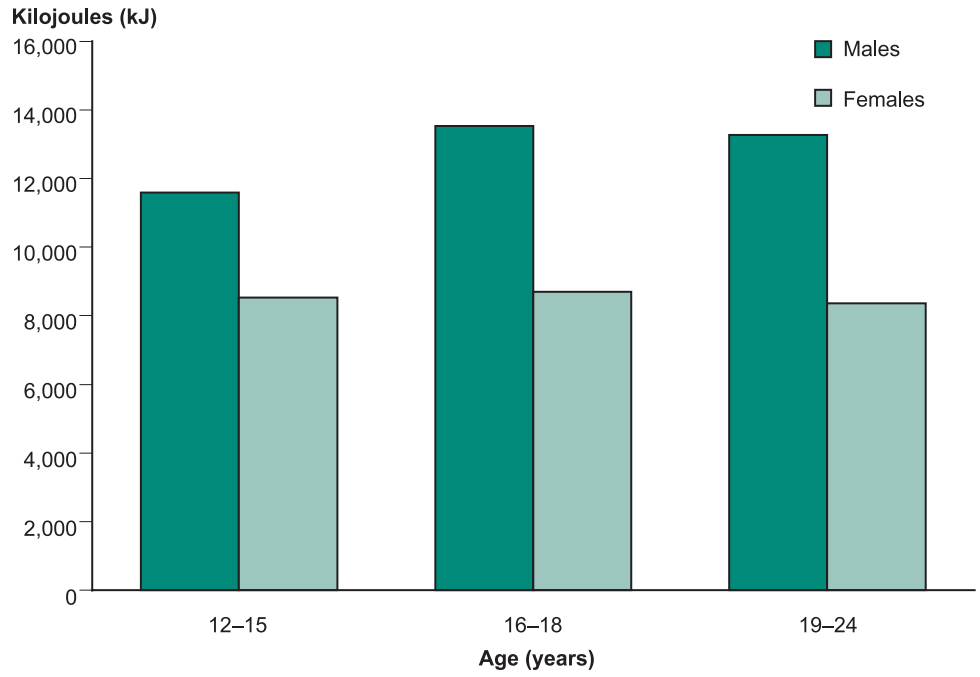
Children and adolescents	Bread, cereals, rice, pasta, noodles	Vegetables, legumes	Fruit	Milk, yoghurt, cheese	Meat, fish, poultry, eggs, nuts, legumes	Extra foods
Children 4–7 years						
High cereals	5–7	2	1	2	½	1–2
Less cereals	3–4	4	2	3	½–1	1–2
Children 8–11 years						
High cereals	6–9	3	1	2	1	1–2
Less cereals	4–6	4–5	1–2	3	1–1 ½	1–2
Adolescents 12–18 years						
High cereals	5–11	4	3	3	1	1–3
Less cereals	4–7	5–9	3–4	3–5	1–2	1–3

Source: NHMRC 2003.

- Adolescents require more serves of these basic food groups than do children. In particular, the NHMRC recommends a high intake of vegetables (4–9 serves daily) and fruits (3–4 serves daily), particularly if fewer cereals are being consumed.
- Consumption of cereals is important (between 4 and 11 serves per day), as is consumption of dairy products (between 3 and 5 per day). Snacks and extra foods may be enjoyed in moderation as part of a healthy diet.

Adolescents need to consume a reasonably high amount of energy to facilitate growth and development. All people have a minimum caloric requirement for sustaining normal body functions. This requirement is influenced by age, height, rate of growth, body composition and stress. Young people in general have a higher caloric requirement than older people. Despite this, if more energy is consumed than is expended by the body, that energy will be stored in the body. The 1995 ABS National Nutrition Survey collected information on foods and beverages consumed during the

day before the interview (midnight to midnight). The nutrient composition was determined from the details supplied. The mean daily energy intake of young people aged 12–24 years is shown in Figure 14.1.

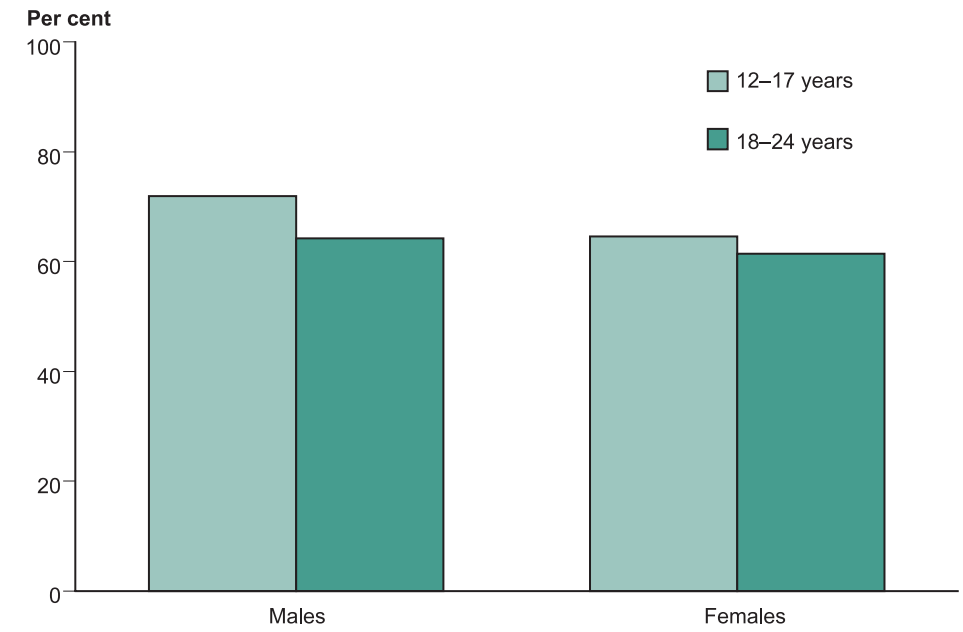


Source: ABS 1995.

Figure 14.1: Mean daily energy intake of young people aged 12–24 years, 1995

- In all age groups, the mean daily energy intake was higher for males than for females.
- Mean daily energy intake was relatively consistent among females in this age group, at just over 8,000 kJ.
- Main daily energy intake was greater in older boys than in boys aged 12–15 years (over 13,000 kJ, compared with 11,5000 kJ).

The NHMRC recommends that approximately 30% of young people's daily energy intake should be from fats. The proportions of young people who consume more than the recommended level of fats are shown in Figure 14.2.



Source: AIHW analysis of 1995 ABS National Nutrition Survey.

Figure 14.2: Proportion of young people aged 12–24 years whose daily energy intake from fats is greater than 30% of the total daily energy intake, 1995

- A majority (65%) of young persons aged 12–24 years consumed more fats than recommended by the NHMRC.
- Slightly more young people aged 12–17 years consumed more fats than recommended by the NHMRC (72% of males, 65% of females) than did those aged 18–24 years (68% of males, 63% of females).
- A greater proportion of males consumed more than recommended levels of fats than did females.
- Although the majority of young people consume more than recommended levels of fats, it is difficult to examine nutritional data in the absence of data on physical activity, as both factors are important with regards to weight status and health.

The proportions of young people who had consumed from major food groups are shown in Table 14.2.

Table 14.2: Consumption from major food groups among young people aged 12–24 years, 1995 (per cent)

	12–15 years		16–18 years		19–24 years	
Major food groups	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
Cereals and cereal-based products						
Cereals and cereal products	98.1	95.1	93.9	93.0	91.4	90.2
Cereal-based products and dishes	73.6	70.0	64.7	71.2	71.3	62.0
Fruit products and dishes	49.9	58.0	39.9	41.1	31.9	41.4
Vegetables and legumes						
Vegetable products and dishes	78.8	85.9	83.1	85.8	84.7	86.5
Legume and pulse products and dishes	7.1	5.8	5.8	8.3	5.6	8.2
Milk products and dishes	92.8	90.8	94.2	87.3	89.1	90.1
Meat, poultry and game products and dishes	78.8	80.2	80.9	74.5	84.1	74.0
Fish and seafood products and dishes	12.8	11.2	8.8	16.7	16.0	15.8
Egg products and dishes	12.3	8.7	18.1	8.5	15.7	12.8
Snack foods, sugar and confectionery						
Snack foods	28.7	38.4	24.4	24.1	18.9	17.7
Sugar products and dishes	58.1	53.2	56.8	44.9	60.5	59.4
Confectionery	46.7	51.3	37.2	39.9	26.8	32.4
Other foods						
Seed and nut products and dishes	10.9	8.3	7.7	9.8	10.3	10.8
Fats and oils	76.5	73.2	65.7	66.9	72.9	63.7
Soup	5.7	5.8	3.6	4.5	6.4	10.8
Savoury sauces and condiments	56.9	52.8	61.8	63.0	61.6	51.7
Beverages						
Non-alcoholic beverages[(a)]	99.6	100.0	99.7	100.0	99.8	99.7
Alcoholic beverages [(b)]	0.5	1.3	16.0	12.0	28.8	17.6
Total[(c)]	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Includes plain drinking water.

(b) Includes all alcoholic beverages containing alcohol (e.g. whisky, reduced alcoholic beer) and does not indicate amount of pure alcohol consumed.

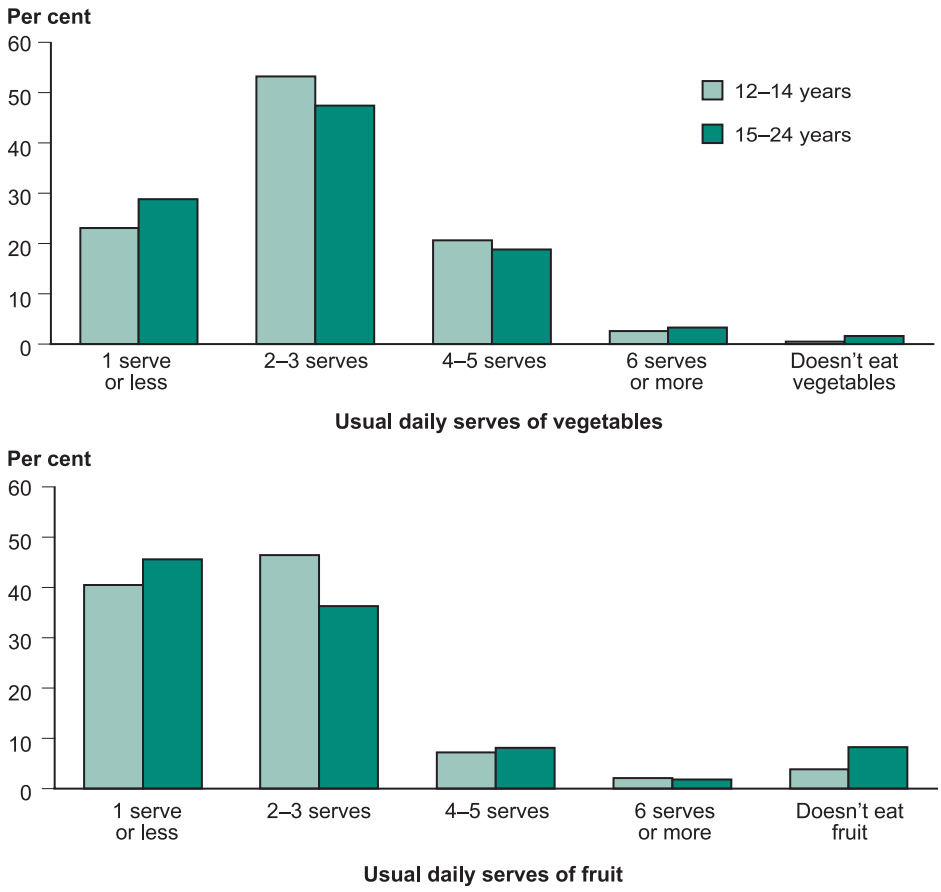
(c) Total includes infant formula and food, special dietary foods and miscellaneous foods.

Source: ABS 1995.

- Most young people aged 12–24 years reported consuming cereals and cereals-based products on the day before interview. However, the proportion decreased with age.
- A high proportion consumed meat, dairy foods, and vegetables every day.
- In most age groups, less than 50% of young people had consumed fruit on the day prior to interview.

Inadequate consumption of fruit and vegetables is responsible for 3% of the total burden of disease among Australians, with most of this burden (75%) due to cancer, and much of the remaining burden relating to heart disease and stroke (AIHW: Mathers et al. 1999). Although a recent 5-year study found that supplementation of diets with antioxidants did not have an effect on mortality, cardiovascular disease, stroke or cancer (Heart Protection Study Collaborative Group 2002), circumstantial evidence shows that a diet high in antioxidants has been associated with increased health benefits (Heart Foundation 2003a).

Current NHMRC guidelines suggest eating at least 5 serves of vegetables and 2 serves of fruit every day. The 2001 ABS NHS collected information on selected dietary habits among young people, including fruit and vegetable consumption (Figure 14.3).



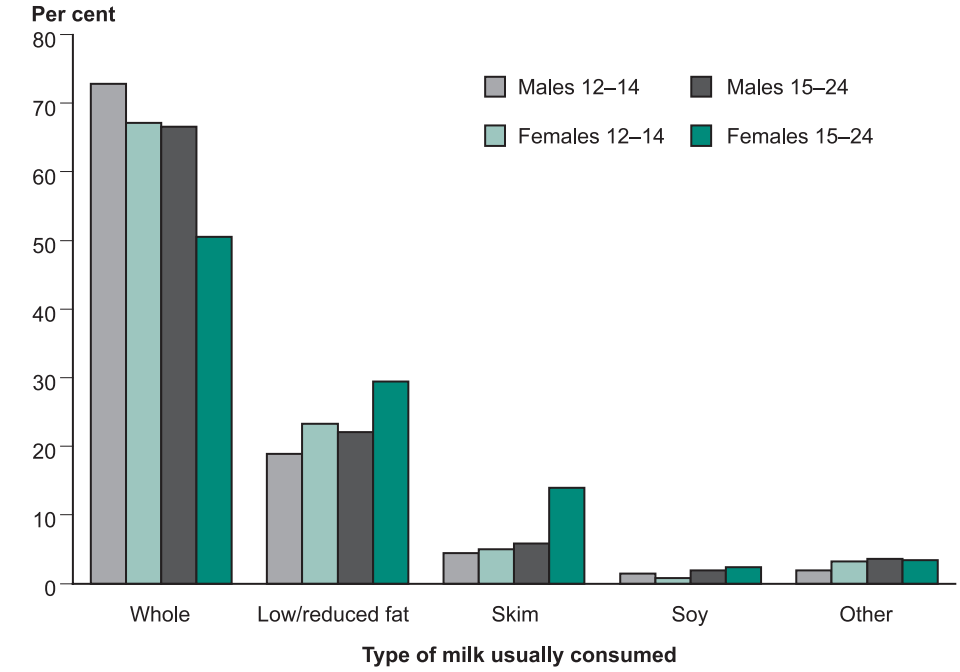
Source: ABS NHS 2001, unpublished data.

Figure 14.3: Usual daily serves of vegetables and fruit among young people aged 12–24 years, 2001

- In 2001, a high proportion of young people reported that they consumed lower than the recommended daily amounts of fruits and vegetables: 77% of those aged 12–14 years and 78% of those aged 15–24 years ate less than 4–5 serves of vegetables, and 44% of those aged 12–14 and 54% of those aged 15–24 years ate less than 2–3 serves of fruit.
- Of those aged 12–14 years, 23% consumed 4–5 or more daily serves of vegetables, and 56% 2–3 or more daily serves of fruit. Of those aged 15–24 years, the proportion consuming these amounts of vegetables and fruits were 22% and 46%, respectively.

Fruit and vegetable consumption patterns were fairly similar for males and females. The biggest difference was for males and females aged 15–24 years who did not eat fruit: 11% of males compared with 6% of females.

NHMRC guidelines recommend young people consume low-fat dairy foods. The usual milk consumption patterns of young people are shown in Figure 14.4.



Source: ABS NHS 2001, unpublished data.

Figure 14.4: Type of milk usually consumed by young people aged 12–24 years, 2001

- More young people consumed whole milk than any other type of milk, although consumption of whole milk decreased with age: 73% of males aged 12–14 years, compared with 67% of males aged 15–24 years, and 67% of females aged 12–14 years compared with 51% of females aged 15–24 years, consumed whole milk.
- The consumption of reduced-fat or skim milks increased with age, especially among females. Skim milk was consumed by 14% of young women aged 15–24 years, compared with only 5% of those aged 12–14 years.

The NHMRC recommends a low intake of salt. However, a substantial minority of young people reported that they usually add salt to their food after cooking: 20% of those aged 15–24 years, and 14% of those aged 12–14 years. In the age group 15–24 years, a higher proportion of males than females usually add salt to their food after cooking.

The 1995 ABS National Nutrition Survey asked young people whether they wanted to change their current consumption patterns. A substantial proportion said that they wanted to consume less fat (25% of males and 46% of females aged 16–18 years and 33% of males and 45% of females aged 19–24 years). A much smaller proportion wanted to consume more breads and cereals (between 9% and 15%, depending on sex and age group). A large proportion wanted to consume more fruits and vegetables: 31% of males and 40% of females aged 16–18 years, and 45% of males and females aged 19–24 years.

Dieting and disordered eating

Australian studies have shown that a large proportion of young people are worried about being overweight or want to be thinner, even among those who are healthy weight for their height and body type. Nowak (1998) found that, among Queensland adolescents aged 12–15 years, 52% of females and 27% of males wanted to weigh less. Grigg et al. (1996) found that among adolescent school girls aged 14–16 years, 77% wanted to weigh less and 51% had tried to lose weight in the previous month. Among the girls sampled, 63% saw themselves as overweight, when only 16% were actually overweight on the basis of their body mass index (BMI). Of those who were already underweight, 19% were currently trying to lose weight, and of those who were of normal weight, 56% were trying to lose weight. Patton et al. (1999) stated that dieting is the most important predictor of a new eating disorder, with the risk of an eating disorder developing increasing as the severity of dieting increases. Thomas et al. (2000) found that the most significant predictors of dieting were low self-esteem and high BMI. However, Paxton et al. (1999) found that individual body image concern and eating behaviour can be affected by the attitudes of friendship groups with members of Grade 10 friendship groups having similar levels of concern about body image, restricted eating and extreme weight-loss behaviours. These similarities were to some degree independent of BMI, depression, self-esteem and anxiety. Paxton et al. suggest this finding may be because girls may copy the behaviour of their friends and adopt the standard attitude towards dieting and body image, or it may be because girls who are similar choose one another as friends. Paxton et al. found that girls in friendship groups tended to be similar to each other on measures of BMI, depression and self-esteem, and that friendship groups which had high levels of negative emotions were also likely to have high levels of anxiety about losing weight.

Body image and dieting behaviours are related to peer and familial factors, but it also seems likely that they can be influenced by the mass media. Field et al. (1999) found that among girls in Years 5–12 in the United States, 69% reported that magazine pictures influence their idea of the perfect body shape, and 47% reported wanting to lose weight because of pictures they had seen in magazines. Only 29% were actually overweight. The frequency of reading fashion magazines was positively associated with having dieted to lose weight and having gone on a diet because of an article in a magazine. However, magazines also were promoting physical activity as a healthy way to control weight, and more girls reported exercising to lose weight than reported dieting.

Grigg et al. (1996) found that, in their sample, 33% of girls engaged in disordered eating (recurrent binge eating, vomiting after a meal for weight control, or trying to lose weight when already excessively underweight), 57% in unhealthy dieting, and 12% had a poor image of their own bodies. Over half of the girls in this study had used at least one unhealthy weight reduction method in the last month, most commonly skipping meals (46%). Skipping meals may lead to consumption of snack foods that are high in fat, sugar and salt, lowering the intake of essential nutrients, and leading to weight gain. Many girls (10–20%) also engaged in other unhealthy weight-reduction methods, such as cutting out all meats, all dairy foods, or all starchy foods. Nowak (1998) found that, in Queensland, boys aged 12–15 years who dieted to lose weight reduced high-fat and high-sugar foods and snacks while increasing some low-fat foods such as yoghurt, fruit and low-fat milk. However, girls aged 12–15 years who dieted to lose weight not only reduced high-fat foods but also bread, meat and dairy products, and also skipped meals and snacks. Often the lower intake of core foods and the tendency to skip meals continued after the conscious effort to diet had ended.

Prevalence data are not available for the number of young people in Australia who suffer from disordered eating, or who are experiencing clinical eating disorders. The Child and Adolescent Component of the 1998 National Survey of Mental Health and Wellbeing gathered some data from children and adolescents aged 13–17 years on dieting and exercise behaviour (Table 14.3). The survey indicated that 17% of children and adolescents aged 13–17 years (26% of females and 7% of males) were dieting to control weight, and 36% (47% of females and 26% of males) were exercising to control weight. It is unlikely that all these adolescents were clinically overweight and needed to lose weight, although this information is not available from the survey. A much smaller percentage of adolescents were using inappropriate weight-loss behaviours, such as vomiting or using laxatives (2%) or taking medication (0.6%). These behaviours were more common among females than males.

Table 14.3: Proportion of children aged 13–17 years reporting dieting and exercise behaviours, by sex, 1998

Dieting and exercise behaviour	Males	Females	All adolescents
Dieting to control weight	7.4	26.1	16.8
Exercising to control weight	25.5	46.9	36.2
Losing weight by vomiting/laxatives	0.8	3.0	1.9
Losing weight by taking medication	0.3	0.9	0.6

Source: Sawyer et al. 2000.

15. Physical activities

Physical activity is important for the health of young people. Physical activity builds and maintains healthy bones, muscles and joints, and helps control weight and reduce body fat (CDC 1999). Studies also show that participation in physical activity is beneficial to mental health, reducing symptoms of depression and possibly stress and anxiety (Dunn et al. 2001). Physical activity has been shown to prevent and reduce high blood pressure in some adolescents (USDHSS 1996). Other benefits from exercise include improvements in confidence and self-esteem, energy levels, concentration and the ability to manage anxiety and stress, as well as helping with sleep and to manage anger (Heart Foundation 2003b; Reach Out! 2003). Among adults, physical activity has been associated with a lowered risk of premature mortality, coronary heart disease, high blood pressure, colon cancer, and Type 2 diabetes (USDHSS 1996). Physical inactivity is estimated to be responsible for 7% of the total burden of disease in the entire Australian population, with coronary heart disease and stroke accounting for 60% of this disease burden (AIHW: Mathers et al. 1999). People of all ages are encouraged to engage in moderate amounts of daily physical activity (USDHSS 1996). Young people are recommended to be physically active daily through activities such as walking, cycling, sports, games, and other general activities with family and friends (Heart Foundation 2003b).

Patterns of physical activity learned during adolescence if carried into adulthood, can lead to a lifelong maintenance of physical activity. However, the transition between school and higher education or the workforce can be a time when young people's physical activity patterns are altered considerably. Among young people aged 18–24 years, 18% of males and 32% of females are not sufficiently physically active to gain a health benefit (AIHW 2002).

Many activities widely undertaken by young people involve very little physical activity, including homework and studying, watching television and videos, and playing computer games. When young people obtain their driver's licence, they are more likely to drive and less likely to walk or cycle. Young people who are not sufficiently active may become overweight and are at risk of becoming inactive and overweight adults.

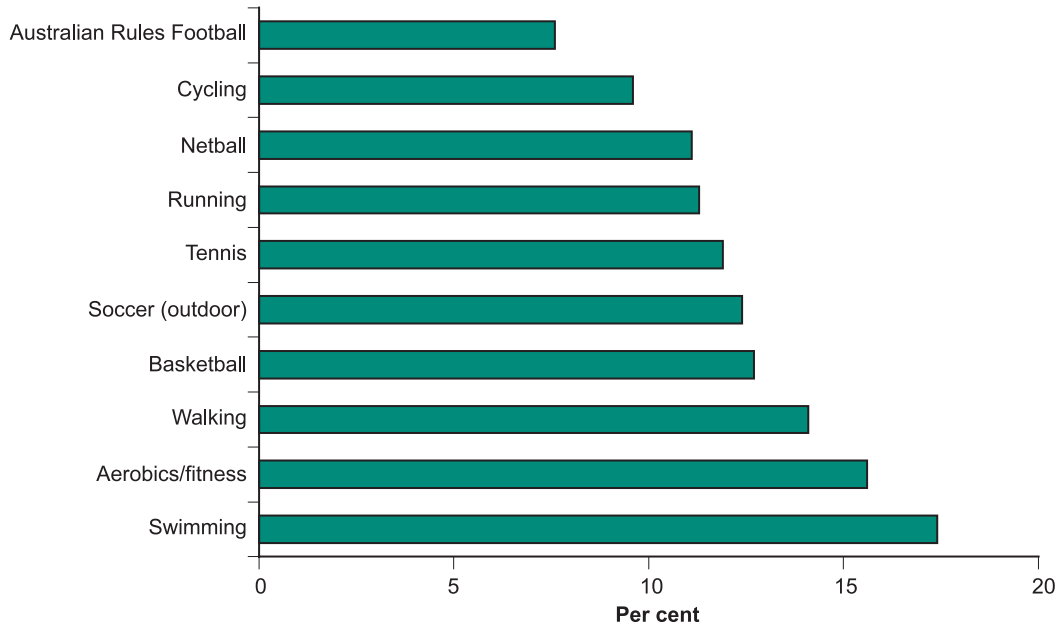
The National Physical Activity Guidelines (DHAC 1999) suggest people undertake at least 30 minutes of moderate-intensity physical activity on most, preferably all, days. Moderate physical activity is activity that uses large skeletal muscles and involves some effort, but does not necessarily lead to shortness of breath (Heart Foundation 2001). AIHW: Armstrong et al. (2000) suggest that at least 150 minutes of moderate-intensity physical activity accrued over 5 days a week reflect the current physical activity guidelines. There is no real consensus, however, on what constitutes 'sufficient' physical activity to confer a health benefit for young people under the age of 18 years.

Data for this chapter come from a number of sources. In 2001 the Australian Sports Commission undertook a survey called Participation in Exercise, Recreation and Sport, which has some data on participation by people aged 15 years and over. The Housing, Income and Labour Dynamics Australia (HILDA) survey collected self-reported data on weekly participation in physical activity for people aged 15 years and over.
The National Physical Activity Surveys also collected data on participation in physical activity by those aged 18 years and over. There are also state data available on New South Wales schoolchildren, from the 1997 New South Wales Schools Fitness and Physical Activity Survey. This survey provides information on, among other things, physical activity for children aged 7–16 years.

Participation in sport and physical activity

The 2001 Australian Sports Commission's survey on Participation in Exercise, Recreation and Sport found that 89% of people aged 15–24 years had participated in some sort of sport or physical activity in the 12 months before interview (91% of males and 87% of females). Among males, 65% participated in organised sport, and 66% in non-organised sport. Among females, the corresponding proportions were 60% and 63%, respectively. Young people had the highest participation rates of those surveyed, and participation rates decreased with age.

Participation in the most popular sports is shown in Figure 15.1.



Source: ASC: Dale and Ford 2002.

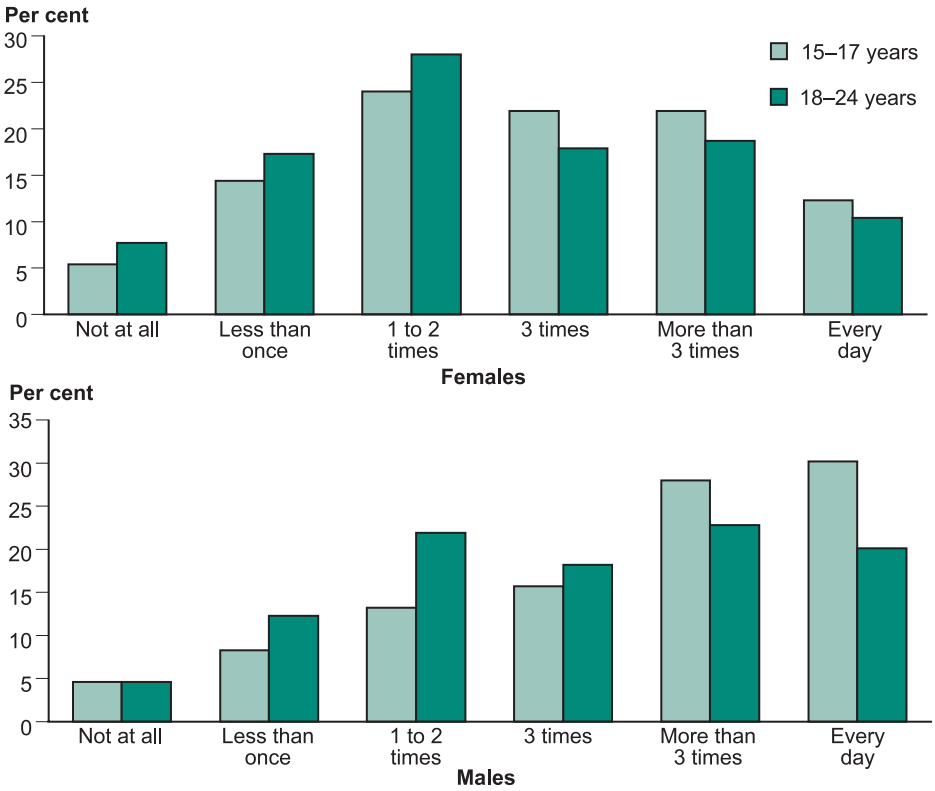
Figure 15.1: Participation rate in most popular sports, young people aged 15–24 years, 2001

- The most popular sport in 2001 was swimming, which was undertaken by 17% of young people aged 15–24.
- Aerobics fitness activities were undertaken by 16% of young people, and walking was undertaken by 14% of young people.
- Basketball was the most popular team sport, undertaken by 13%.

Levels of participation in physical activity

The Housing, Income and Labour Dynamics Australia survey

The 2001 Housing, Income and Labour Dynamics Australia (HILDA) survey asked young people how often they undertook moderate or intensive physical activity for at least 30 minutes in a week. The results are shown in Figure 15.2.



Source: AIHW analysis of 2001 HILDA survey.

Figure 15.2: Weekly participation in physical activity by young people aged 15–24 years, 2001

- Around 1 in 5 young people didn't participate in physical activity or participated in less than one session in a week (16% of males, 23% of females). A higher proportion of those aged 18–24 years didn't participate in physical activity or participated in less than one session in a week than those aged 15–17 years (21% compared with 16%).
- Around 60% of young people undertook exercise 3 or fewer times per week (52% of males, 69% of females). A higher proportion of those aged 18–24 years undertook physical activity 3 times a week or less than those aged 15–17 years (64% compared with 54%).
- Exercise was undertaken more than 3 times a week (including every day) by 48% of males and 31% of females. A higher proportion of those aged 15–17 years than those aged 18–24 years undertook physical activity more than 3 times a week (46% compared with 36%).

The New South Wales Schools Fitness and Physical Activity Survey

The 1997 New South Wales Schools Fitness and Physical Activity Survey looked at levels of moderate and vigorous physical activity among students in Years 8 and 10 during summer and winter terms. Students were considered to be 'moderately active' when they undertook a total of 210 minutes (3.5 hours) of moderate-intensity activity over five sessions during a normal week. They were 'vigorously active' when they participated in at least three 20-minute sessions of fairly vigorous activities per week.

Table 15.1: Physical activity among Year 8 and Year 10 students in New South Wales, 1997 summer and winter terms (per cent)

	Males		Females	
	Summer	Winter	Summer	Winter
Moderately active				
Year 8 (13–14 years)	16.3	12.6	17.7	21.4
Year 10 (15–16 years)	13.0	13.4	19.8	23.0
Vigorously active				
Year 8	64.6	63.0	63.1	48.0
Year 10	72.9	70.6	57.9	43.0
Total active				
Year 8	80.9	75.6	80.8	69.4
Year 10	85.9	84.0	77.7	66.0

Source: Booth et al., 2002.

- In 1997, 81% of males in Year 8 and 86% of males in Year 10 were moderately or vigorously physically active during summer. These proportions declined in the winter term.
- Among females, 81% of those in Year 8 and 78% of those in Year 10 were moderately or vigorously active. These proportions declined to 70% and 66%, respectively, in the winter term.
- Among males, a greater proportion was vigorously active in Year 10 than in Year 8. The opposite was true for females.
- Kimm et al. (2002) found that a decline in physical activity among females began at the onset of adolescence, and that by age 18 and 19 years, most females undertook no regular physical activity except that required at school. The New South Wales data also suggest that physical activity declines with age among young females.

The most common activities for students in New South Wales in 1997 were similar to those most popular among young people aged 15–24 years in the ASC 2001 survey. For males in Years 8 and 10 (13–16 years), the most popular activities were recreational cycling, school sport, walking, soccer, cricket, swimming and basketball. The most common activities for females in Years 8 and 10 were walking, swimming, school sport, netball, recreational cycling and dancing.

National Physical Activity Survey

Data from the National Physical Activity Survey have been analysed using the time and sessions definition for 'sufficient' physical activity, which most closely resembles the National Physical Activity Guidelines (Figure 15.3).

Source: AIHW analysis of the 2000 National Physical Activity Survey (Australian Sports Commission).

Figure 15.3: Proportion of young people aged 18–24 years achieving 'sufficient' physical activity time and sessions, 2000

- The proportion of males who undertook sufficient physical activity in 2000 was 70%, compared with 55% in 1999 and 72% in 1997.
- The proportion of females who undertook sufficient physical activity in 2000 was 56%, compared with 61% in 1999 and 64% in 1997.

Although again not directly comparable, the HILDA survey showed that, in 2001, 61% of males and 56% of females aged 18–24 years undertook moderate or vigorous physical activity for at least 30 minutes, 3 times a week or more. These proportions are similar to the proportion of young people aged 18–24 years-undertaking sufficient physical activity according to the National Physical Activity Survey.

Knowledge

The 2000 National Physical Activity Survey also asked people to rate their level of agreement with four physical activity knowledge statements in order to gauge understanding and awareness of the moderate physical activity message (Table 15.2). The four statements were:

1. Taking the stairs at work or generally being more active for at least 30 minutes each day is enough to improve your health.
2. Half an hour of brisk walking on most days is enough to improve your health.
3. To improve your health, it is essential for you to do vigorous exercise for at least 20 minutes each time, three times a week.
4. Exercise doesn't have to be done all at one time—blocks of 10 minutes are okay.

Table 15.2: Proportion of respondents 18–24 years agreeing with physical activity knowledge statements, 2000 (per cent)

	Statement 1	Statement 2	Statement 3	Statement 4
Males	82.3	88.7	69.4	75.3
Females	89.1	92.6	65.9	78.3
Persons	*85.6*	*90.6*	*67.7*	*76.7*
Education				
Secondary or below	82.9	89.3	69.7	76.3
Tertiary or higher	91.7	93.5	63.0	77.8
Marital status				
Single/never married	87.2	95.7	65.2	83.0
Married/de facto	85.3	89.8	68.1	75.8

Source: Australian Sports Commission 2000 National Physical Activity Survey, unpublished data.

- Most young people had a good knowledge of the moderate physical activity statements. The statement that the highest proportion agreed with was that 'half an hour of walking each day was sufficient to improve health' (no. 2): 89% of males and 93% of females agreed with this.
- Around three-quarters of young people agreed with the message that it is okay to do exercise in 10-minute blocks (no.4).
- It is not essential to do three sessions of vigorous exercise to improve health (no.3). Despite this, around two-thirds of young people agreed that it was.
- Those who had a tertiary or higher education had a higher level of agreement with the physical activity statements than those with secondary education only or below.

16. Overweight and obesity

Healthy weight can protect against many diseases and conditions; conversely, being overweight or obese is a risk factor for many diseases. Overweight and obesity are conditions of the human body which are predominantly defined using the body mass index (BMI), a measure of a person's weight relative to their height (weight in kilograms divided by height in metres squared). If a person's BMI is between 25 and 30, that person is considered overweight. A BMI of 30 or more defines obesity. These BMI cut-off points are used for adults, but other age- and sex-specific cut-off points have been endorsed as the Australian standards for determining the overweight and obesity levels in children and adolescents (Cole et al. 2000).

The health consequences of obesity range from increased risk of premature death to serious chronic conditions that reduce the overall quality of life (WHO 2000). In 2000, the World Health Organization estimated the number of obese adults in the world to be over 300 million. Obesity has been identified as a high-risk factor for chronic diseases, including type 2 diabetes, coronary heart disease, high blood pressure, stroke and certain forms of cancer. Obesity has serious social and psychological consequences that affect all ages and socioeconomic groups.

In Australia in 1999, about two-thirds of males (67%) and half of females (52%) of all ages were overweight or obese (AIHW 2002). The rapid increase in the rate of overweight and obesity among children and adolescents is of serious concern (Magarey et al. 2001).

In studies in the United Kingdom, parental obesity more than doubles the risk of adult obesity among their children. Irrespective of the weight status of the parents, childhood obesity increases the risk of adult obesity, and the majority (80%) of obese adolescents become obese adults (Whitaker et al. 1997).

Obese children and adolescents risk a number of particular health and psychosocial problems. In the United States, obese children and adolescents have higher than normal frequencies of hyperlipidemia (high blood fats), hypertension and abnormal blood glucose (Dietz 1997). Hill (2000) suggests that psychosocial problems are the most common problems associated with childhood and adolescent obesity. They include poor body image, decreased self-worth, peer teasing and victimisation—all of which have adverse effects on normal socialisation.

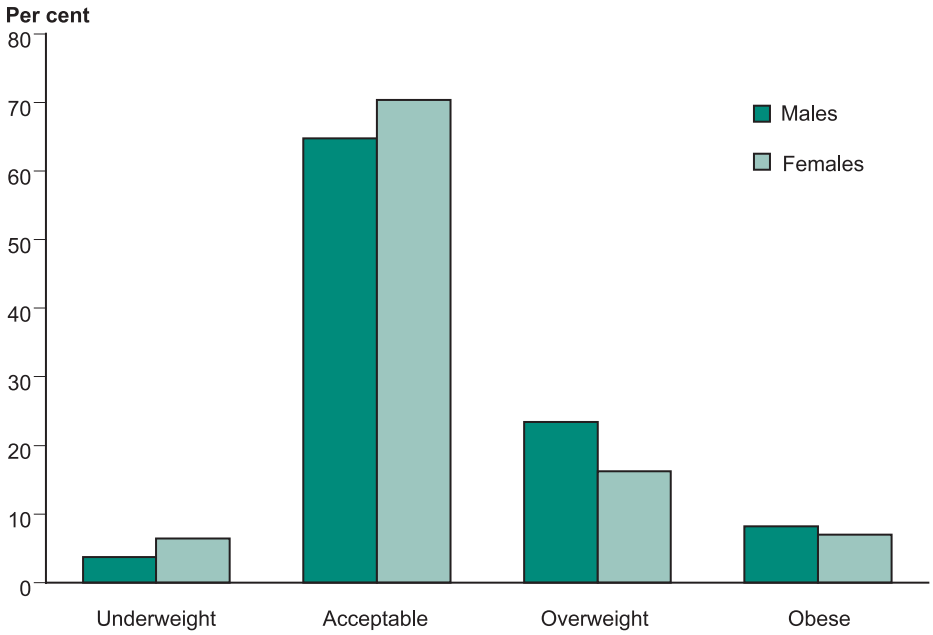
Adolescence is a period of continued growth and development. Overweight and obesity during this time of life used to be rare, and were usually related to metabolic or genetic problems. Although genetic factors can contribute to the development of obesity, they do not explain the rapid rise in the proportion of people in the total population who have become obese in the last 20 years. It is believed that changes in the type and amounts of food consumed and in the amount of physical activity undertaken and the resultant imbalance between the amount of energy consumed and the amount expended in physical activity are the main causes of the increased prevalence of obesity in young people (Tapsall & Batterham 2002).

The health costs of obesity and its resulting disease in Australia during 1989–90 were estimated to be around $840 million (NHMRC 1997). AIHW: Mathers et al. (1999) estimated that obesity caused 4% of the total burden of disease in Australia in 1996, with cardiovascular disease and diabetes being the major contributors.

Data for this chapter are derived from two sources: the 1995 ABS National Nutrition Survey (NNS) which provides measures of height and weight used to derive obesity levels, and the 2001 National Health Survey, which provides more recent self-reported height and weight data. It is well known that when people are asked to self-report their weight and height, they overestimate their height and underestimate their weight (Hill & Roberts 1998). The prevalence of overweight and obesity based on self-reporting

in 1995 was 36% of women and 52% of men, compared with 49% and 64%, respectively, based on measured height and weight in the NNS (ABS & DHFS 1997; ABS 1997).

The distribution of young people aged 12–24 years according to their weight status is shown in Figure 16.1.



Source: AIHW analysis of ABS NNS data, 1995.

Figure 16.1: Proportion of young people aged 12–24 years who are underweight, of acceptable weight, overweight or obese, 1995

- In 1995, although the majority of young people aged 12–24 years were of an acceptable weight for their height—65% of males and 70% of females—a relatively high proportion of young people were overweight and obese: 23% of males and 16% of females were overweight and 8% of males and 7% of females were obese.
- A small percentage of Australian young people were underweight: 4% of males, and 6% of females.

The weight status of young people aged 12–24 years by sex is presented in Table 16.1.

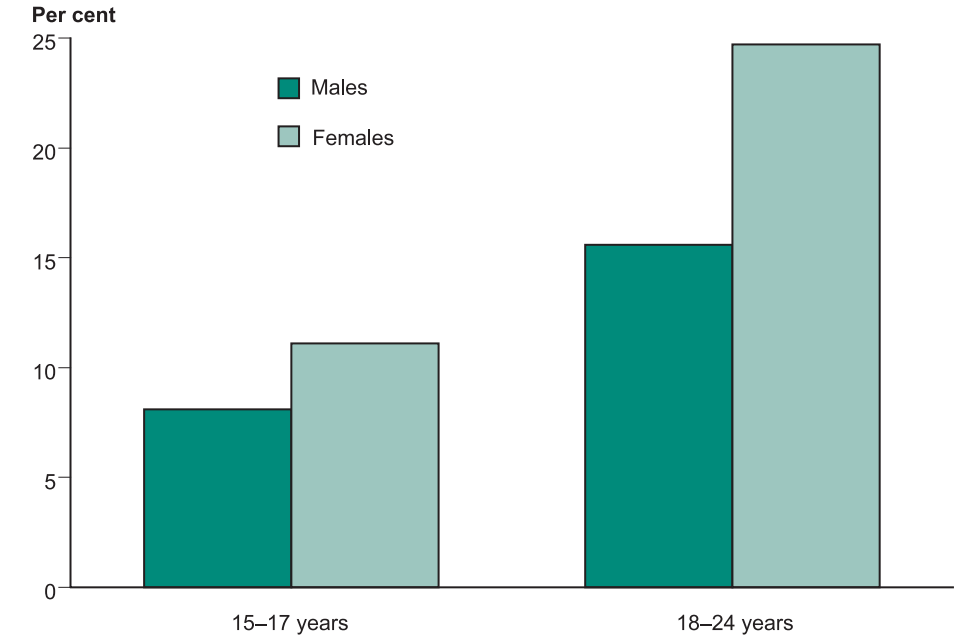
Table 16.1: Proportion and estimated number of young people aged 12–24 years who are underweight, of acceptable weight, overweight or obese, by sex, 1995 (per cent)

	Age (years)	Underweight	Acceptable	Overweight	Obese	Estimated population
Males	12–14	6.6	64.7	23.0	5.6	393,910
	15–17	3.3	72.6	18.0	6.1	383,595
	18–24	2.7	61.3	26.0	10.0	994,827
	12–24	3.7	64.7	23.4	8.2	1,772,332
Females	12–14	6.1	71.5	16.7	5.7	371,425
	15–17	7.3	78.1	11.4	3.2	365,448
	18–24	6.2	66.8	18.0	9.1	921,638
	12–24	6.4	70.3	16.2	7.0	1,658,511

Source: AIHW analysis of ABS NNS data, 1995.

- For males and females, the highest proportion of those overweight occurred among those aged 18–24 years, with 26% of males and 18% of females. Obesity was also more common among young people aged 18–24 for both males and females--10% of males and 9% of females.
- More males than females in all age groups were overweight or obese.

More recent data on weight are available from the 2001 ABS NHS (Figure 16. 2). The NHS data are not comparable to the NNS, because they are based on self-reported weight and height, whereas in the NNS, height and weight were measured.



Source: ABS NHS 2001, unpublished data.

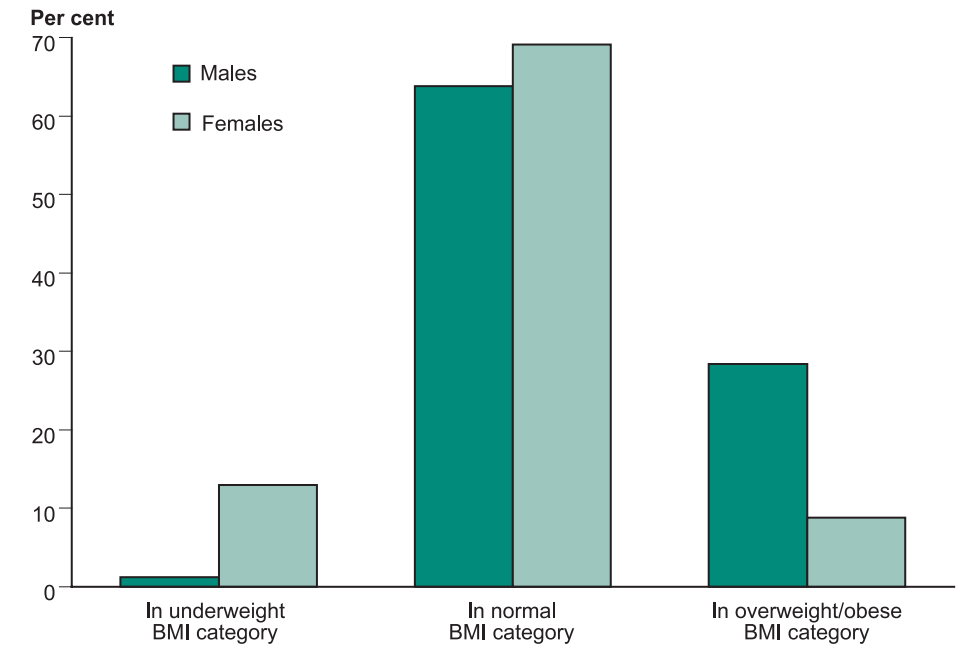
Figure 16.2: Proportion of young people aged 15–24 years who were classified as overweight or obese, 2001

- In Australia in 2001, 8% of males and 11% of females aged 15–17 years were classified as overweight or obese, based on self-reported height and weight.
- For young people aged 18–24 years, the proportions were higher—16% of males and 25% of females were classified as overweight or obese.

Perception

In Australia there are little data on weight control behaviour. In order to understand weight control behaviour, some knowledge is needed of how people perceive their weight.

The 2001 ABS NHS asked respondents to state whether their weight was acceptable, and compared these responses with BMIs derived from self-reported height and weight. The results are shown in Figure 16.3.



Source: ABS 2002.

Figure 16.3: Young people aged 18–24 years who perceived themselves to be of acceptable weight according to their BMI category, 2001

- The majority of young people who reported their weight as acceptable were in the normal BMI range (64% of males and 69% of females).
- A considerably greater proportion of males (28%) males than females (9%) whose self-reported BMI placed them in the overweight class thought their weight was acceptable. However, some people with high BMI scores may have a high muscle mass, rather than an excess of body fat, and these people would be unlikely to consider themselves 'overweight'.
- In contrast, more young women (13%) than young men whose BMI placed them in the underweight class reported their weight was 'acceptable'.

17. Sun protection

On average, 14% of Australian teenagers get sunburnt every weekend during summer (SunSmart 2003a). The origins of skin cancer (melanocytic and non-melanocytic) are strongly linked to UV exposure (SunSmart 2003b). Non-melanocytic skin cancer is the most frequently occurring cancer in Australia (almost 300,000 new cases each year), but is the least life-threatening. Melanoma, however, is the most dangerous type of skin cancer. Among people aged 15–44 years, melanoma is the most frequently occurring cancer (AIHW 2000). Rates of melanoma in Australia are among the highest in the world, matched only by New Zealand.

Although adult sun exposure (especially sunburn) can increase the risk of skin cancer, it is childhood exposure which is the greatest risk factor. The relationship between the risk of melanoma and sun exposure is also affected by a person's sensitivity to sunlight.

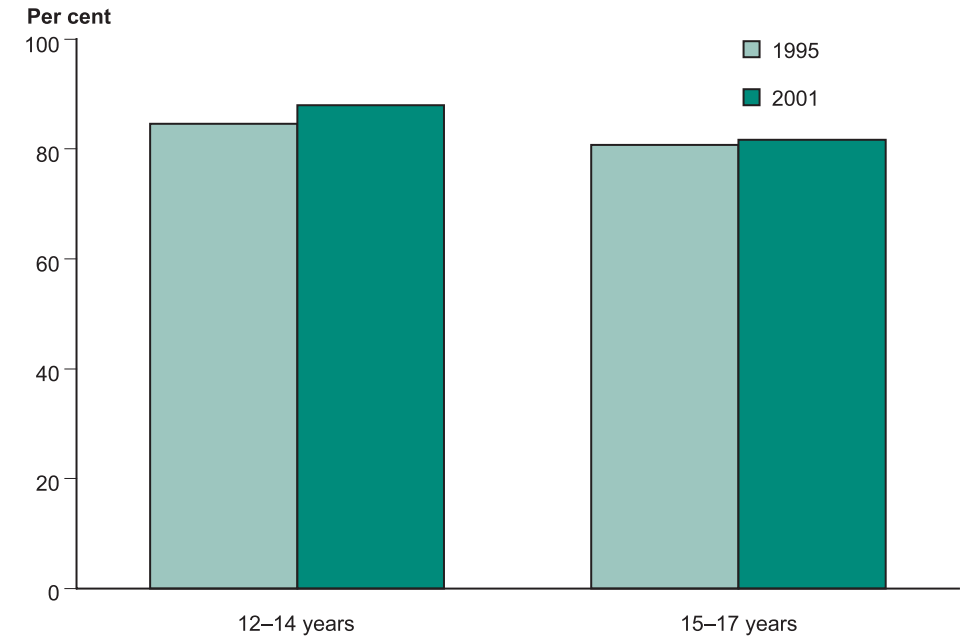
Children and adolescents spend long periods of time in the sun and do not always take precautions to avoid overexposure. Most teenagers get sunburnt while doing something they don't think is risky, such as walking the dog, reading a book in the park or working outside (SunSmart 2003a). The National Health and Medical Research Council (NHMRC) continues to recommend education programs that target primary prevention behaviours in young people, including staying out of the sun during the hottest part of the day, wearing protective clothing including hats, making use of shade and applying sunscreen correctly.

Skin cancer rates for young Australians have decreased recently. This is thought to be the result of public education campaigns about skin cancer and increasing awareness of the damaging effects of UV light (Cancer Council Australia 2002). Recent policy changes are also likely to have affected sun protection, such as 'no hat, no play' policies in schools, and the funding of shade provision for outside play areas (NHMRC 1996).

However, it may be easier to protect younger children from the sun than older children and adolescents. Although the level of knowledge among adolescents about the importance of protection is high, the type of sun protection they actually use depends on their perceptions of acceptability and fashion (NHMRC 1996). Australian teenagers know the most about sun protection, but do the least to protect themselves from the sun (SunSmart 2003a).

Use of sun protection

The proportion of young people aged 12–24 years who had taken sun protection measures in the month before the National Health Survey (NHS) is shown in Figure 17.1.



Source: ABS NHS 1995 and 2001, unpublished data.

Figure 17.1: Proportion of young people aged 12–17 years who took sun protection measures in the month before survey, 1995 and 2001

- In 2001, the majority of young people aged 12–17 years had taken a sun protection measure in the previous month (85%).
- A slightly higher proportion used sun protection in 2001 than in 1995—85% compared with 83%.
- In both years, a higher proportion of those aged 12–14 years used sun protection measures. In 2001, 88% of those aged 12–14 years used sun protection measures, compared with 82% of those aged 15–17 years.

Type of protection

National estimates of the proportion of young people aged 12–17 years using different types of sun protection during sunny days in summer were derived from the Australian Secondary Students Alcohol and Drug (ASSAD) survey (Table 17.1).

Table 17.1: Proportion of students who usually or always use sun protection on a sunny day in summer, 1993 to 1999 (per cent)

	12–14 years			15–17 years		
Type of sun protection	1993	1996	1999	1993	1996	1999
Sunscreeen	66	54	58	61	60	55
Hat	55	69	54	45	44	42
Sunglasses	37	25	30	49	45	40
Stay in shade	28	29	31	24	31	29
Stay inside	20	20	23	17	19	20
Cover with clothing	26	30	24	22	22	18

Source: 1993, 1996 and 1999 ASSAD, unpublished data.

- The proportion of students who reported always or usually using sunscreen on a sunny day in summer decreased between 1993 and 1999, from 66% to 58% of those aged 12–14 years, and from 61% to 55% of those aged 15–17 years.
- For those aged 12–14 years, the proportion who reported always or usually wearing a hat rose from 55% to 69% between 1993 and 1996, but declined again to 54% in 1999. The proportions of those aged 15–17 years who reported always or usually wearing a hat decreased from 45% in 1993 to 42% in 1999.
- For both age groups, the proportion who reported always or usually wearing sunglasses decreased.
- For both age groups, the proportion who reported usually or always staying in the shade increased between 1993 and 1999: from 28% to 31% for those aged 12–14 years, and from 24% to 29% for those aged 15–17 years.
- The proportion who reported usually or always staying inside also increased: from 20% to 23% for those aged 12–14 years and from 17% to 20% for those aged 15–17 years.
- The proportion who reported using clothing for sun protection decreased in both age groups.
- The proportion who reported using all the sun protective behaviours was greater for those aged 12–14 years, except for wearing sunglasses, with a higher proportion aged 15–17 years usually or always wearing sunglasses.

There were some differences between males and females in the reported use of certain sun protection behaviours. These are shown in Figure 17.2.

Source: 1999 ASSAD, unpublished data.

Figure 17.2: Proportion of students aged 12–17 years usually or always using selected sun protection behaviours on a sunny day in summer, by sex 1999

- A higher proportion of males in each age group reported wearing hats and covering their skin with clothing. Among males aged 12–14 years, 66% said they wore a hat and 29% protective clothing, compared with 39% and 18% of females, respectively. For those aged 15–17 years, 53% of males and 31% of females reported wearing a hat, and 22% of males and 14% of females protective clothing.
- A higher proportion of females in each age group reported wearing sunscreen and sunglasses. Among those aged 12–14 years, 52% of males and 66% of females reported wearing sunscreen, and 24% of males and 36% of females sunglasses. Among those aged 15–17 years, 45% of males and 66% of females reported wearing sunscreen, and 32% of males and 50% of females wore sunglasses.
- Wearing sunglasses was the only sun protective behaviour that was more common to older age groups.
- A slightly higher proportion of females than males in both age groups usually or always stayed in the shade on a sunny day in summer, and a slightly higher proportion of males in both age groups usually or always stayed inside on such a day.

Using only one or two sun protective behaviours in the absence of others can negate the effects of the sun protective behaviours. Current sun protection messages suggest people should 'slip, slop, slap and wrap' when in the sun: 'slip' on a shirt, 'slop' on some sunscreen, 'slap' on a hat, and 'wrap' on a pair of sunglasses. The proportion of students who use all these sun protective behaviours is shown in Table 17.2.

Table 17.2: Proportion of students aged 12–17 years who routinely wear a hat, clothes to cover body, sunglasses and sunscreen, 1999 (per cent)

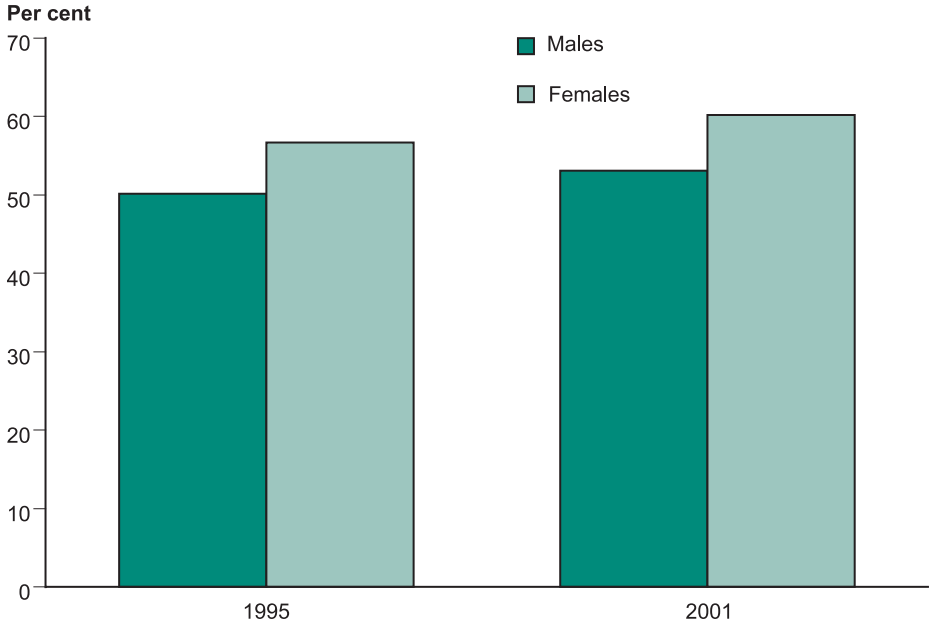
Sun protection behaviours routinely practised	12–14 years		15–17 years		12–17 years		
	Males	Females	Males	Females	Males	Females	Persons
Hat, clothes, sunglasses and sunscreen	5	5	4	4	5	5	5
Hat, clothes and sunglasses	1	1	1	1	1	1	1
Hat, clothes and sunscreen	9	4	4	2	7	5	5
Hat, sunscreen and sunglasses	8	10	9	12	8	10	10
Clothes, sunscreen and sunglasses	1	2	1	2	1	2	1
Hat and clothes	6	1	4	1	5	1	3
Hat and sunscreen	18	14	13	9	15	11	13
Hat and sunglasses	4	1	5	2	5	2	3
Clothes and sunglasses	1	1	1	1	1	1	1
Clothes and sunscreen	2	2	2	2	2	2	2
Sunscreen and sunglasses	2	10	5	18	3	14	8
Hat only	15	3	14	2	15	3	9
Clothes	4	3	5	3	4	3	4
Sunscreen only	8	18	8	17	8	17	12
Sunglasses only	2	7	6	11	4	8	6
None	14	18	18	15	16	17	17

Source: 1999 ASSAD, unpublished data.

- Only 5% of males and 4% of females aged 12–17 years routinely undertook all four sun protective behaviours. These proportions have remained relatively stable since 1993.
- Around 17% of students used none of these sun protective behaviours. This proportion increased from 12% in 1993.
- Some students routinely used a number of sun protective behaviours, but not all four: 10% of students routinely wore a hat, sunscreen and sunglasses, and 13% of students routinely wore a hat and sunscreen when in the sun.
- Many students routinely used only one sun protective behaviour: 12% used sunscreen only, and 9% wore a hat only.
- A higher proportion of males wore a hat and clothing covering the body (5%), a hat and sunscreen (15%), and a hat only (15%) than females (1%, 11% and 3%, respectively).
- A higher proportion of females wore sunscreen and sunglasses (14%), sunscreen only (17%) and sunglasses only (8%), compared with males (3%, 8% and 4%, respectively).
- A higher proportion of students wore a hat, clothes and sunscreen, hat and clothes covering the body, or hat and sunscreen, than students aged 15–17 years.
- A higher proportion of students aged 15–17 years wore sunscreen and sunglasses or sunglasses only compared with those aged 12–14 years.

Skin examination

The proportion of young people aged 12–24 years who reported that they regularly checked their skin for changes in freckles and moles or had it checked by a doctor is shown in Figure 17.3.



Source: ABS NHS 1995 and 2001, unpublished data.

Figure 17.3: Proportion of young people aged 12–24 years who had their skin regularly examined for freckles or moles, 1995 and 2001

- Overall, over half of young people aged 12–24 years reported that they regularly checked their skin for changes in freckles and moles or had it checked by a doctor. The proportion increased from 53% in 1995 to 57% in 2001.
- In both years, a higher proportion of females than males reported that they regularly checked their skin.

References

ABS (Australian Bureau of Statistics) 1995. National Nutrition Survey: selected highlights. ABS Cat. No. 4802.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 1997. National Health Survey: summary of results. ABS Cat. No. 4364.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002. National Health Survey: summary of results. ABS Cat. No. 4364.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) & DHFS (Commonwealth Department of Health and Family Services) 1997. National Nutrition Survey: selected highlights. Cat. No. 4802.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2000. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2002. Australia's health 2002: the eighth biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2003. 2001 National Drug Strategy Household Survey: detailed findings. AIHW Cat. No. PHE 41. Canberra: AIHW (Drug Statistics Series No. 11).

AIHW (Australian Institute of Health and Welfare): Armstrong T, Bauman A & Davies J 2000. Physical activity patterns of Australian adults: results of the 1999 National Physical Activity Survey. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare): Lester IH 1994. Australia's food and nutrition. Canberra: AGPS.

AIHW (Australian Institute of Health and Welfare): Mathers C, Vos T & Stevenson C 1999. The burden of disease and injury in Australia. Cat. No. PHE 17. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare): Ridolfo B & Stevenson C 2001. The quantification of drug-caused mortality and morbidity in Australia, 1998. AIHW Cat. No. PHE 29. Canberra: AIHW (Drug Statistics Series no. 7).

ASC (Australian Sports Commission): Dale T & Ford I 2002. Participation in exercise, recreation and sport 2001. Canberra: ASC.

Booth ML, Okely AD, Chey T, Bauman AE & Macaskill P 2002. Epidemiology of physical activity participation among New South Wales school students. Australian and New Zealand Journal of Public Health 26(4):371–4.

Cancer Council Australia 2002. Skin cancer in Australia. Viewed 1 July 2003, < http://www.cancer.org.au/content.cfm?randid=960742 >.

CDC (National Center for Chronic Disease Prevention and Health Promotion) 1999. Adolescents and young adults fact sheet. CDC. Viewed 1 July 2003, <http://www.cdc.gov/nccdphp/sgr/adoles.htm>.

Clark G, Scott N & Cook S (2003). Formative research with young Australians to assist in the development of the National Illicit Drugs Campaign. Canberra: Commonwealth Department of Health and Ageing.

Cole T, Bellizzi M, Flegal K & Dietz WH 2000. Establishing a standard definition for child overweight and obesity worldwide: international survey. British Medical Journal 320(7244):1240–3.

Collins DJ & Lapsley HM 2002. Counting the cost: estimates of the social costs of drug abuse in Australia in 1998–9. National Campaign Against Drug Abuse Monograph Series No. 49. Canberra: Commonwealth of Australia.

DHAC (Commonwealth Department of Health and Aged Care) 1999. National physical activity guidelines for Australians. Canberra: DHAC.

DHAC (Commonwealth Department of Health and Aged Care) 2001. Tough on drugs! parents booklet. Viewed 28 January 2003, <http://www.drugs.health. gov.au>.

Dietz WH 1997. Health consequences of obesity in youth: childhood predictors of adult disease. Pediatrics 101(3 Pt 2):518–25.

Dunn A, Trivedi M & O'Neal H 2001. Physical activity dose-response effects on outcomes of depression and anxiety. Medicine & Science in Sports & Exercise 33:S587–97.

Field AE et al. 1999. Exposure to the mass media and weight concerns among girls. Pediatrics 103(3):E36.

Grigg M, Bowman J & Redman S 1996. Disordered eating and unhealthy weight reduction practices among adolescent females. Preventative Medicine 25(6):748–56.

Guo J, Hill KG, Hawkins D, Catalano RF & Abbott RD 2002. A developmental analysis of sociodemographic, family, and peer effects on adolescent illicit drug initiation. Journal of the American Academy of Child and Adolescent Psychiatry 41:838–45.

Heart Foundation 2001. National Heart Foundation of Australia physical activity policy. Viewed 1 July 2003 <http://www.heartfoundation.com.au/downloads/phys_policy_2001.htm>

Heart Foundation 2003a. The use of antioxidant supplements in heart disease: position statement. Viewed 1 July 2003, <http://www.heartfoundation.com.au/downloads/AntioxidantPolicy%20Oct%202002.pdf>

Health Foundation 2003b. Physical activity and heart health. Heart Foundation. Viewed 3 January 2003, <http://www.heartfoundation.com.au/school/3_sch_03_physical.html>.

Heart Protection Study Collaborative Group 2002. MRC/BHF Heart Protection Study of antioxidant vitamin supplementation in 20,536 high-risk individuals: a randomised placebo-controlled trial. Lancet 360: 7–22.

Hill A 2000. How does being overweight or obese affect a child psychologically? Medical Journal of Australia 173(Suppl): S10–S11.

Hill A & Roberts J 1998. Body mass index: a comparison between self report and measured height and weight. Journal of Public Health Medicine 20(2): 206-210.

Kimm SY, Glynn NW, Kriska AM, Barton BA, Kronsberg SS, Daniels SR, Crawford PB, Sabry ZI & Liu K 2002. Decline in physical activity in black girls and white girls during adolescence. New England Journal of Medicine 347(10):709–15.

Magarey A, Daniels L & Boulton T 2001. Prevalence of overweight and obesity in Australian children and adolescents: reassessment of 1985 and 1995 data against new standard international definitions. Medical Journal of Australia 174(11):561–4.

NDARC (National Drug and Alcohol Research Centre), University of New South Wales 2003a. Alcohol factsheet. NDARC. Viewed 28 January 2003, <http://ndarc.med.unsw.edu.au/ndarc.nsf/website/DrugInfo.factsheets >.

NDARC (National Drug and Alcohol Research Centre), University of New South Wales 2003b. Standard drinks and safe drinking levels factsheet. NDARC. Viewed 28 January 2003, < http://ndarc.med.unsw.edu.au/ndarc.nsf/website/DrugInfo.factsheets >.

NHMRC (National Health and Medical Research Council) 1996. Primary prevention of skin cancer in Australia: report of the Sun Protection Programs Working Party. Canberra: NHMRC.

NHMRC (National Health and Medical Research Council) 1997. Acting on Australia's weight. The report of the NHMRC Working Party on the prevention of overweight and obesity. Canberra: NHMRC 1997.

NHMRC (National Health and Medical Research Council) 2001. National drug strategic framework 1998–99 to 2002–03. Canberra: Ministerial Council on Drug Strategy.

NHMRC (National Health and Medical Research Council) 2003. Dietary guidelines for children and adolescents in Australia: incorporating the infant feeding guidelines for health workers. Canberra: NHMRC

Nowak M 1998. The weight-conscious adolescent. Journal of Adolescent Health 23(6):389–98.

Patton GC, Selzer R, Coffey C, Carlin JB & Wolfe R 1999. Onset of adolescent eating disorders: population based cohort study over 3 years. British Medical Journal 318:765–8.

Paxton SJ, Schutz HK, Wertheim EH and Muir SL 1999. Friendship clique and peer influences on body image concerns, dietary restraint, extreme weight-loss behaviours, and binge eating in adolescent girls. Journal of Abnormal Psychology 108(2): 255–266.

Reach Out! 2003. Benefits of activity and exercise. Fact sheet. Inspire Foundation. Viewed 3 January 2003, <http://www.reachout.asn.au>.

Sawyer MG, Arney FM, Baghurst PA, Clark JJ, Graetz BW, Kosky RJ, Nurcombe B, Patton GC, Prior MR, Raphael B, Rey J, Whaites LC & Zubrick SR 2000. The mental health of young people in Australia. Canberra: Commonwealth Department of Health and Aged Care.

Shanahan P & Hewitt N 1999. Developmental research for a National Alcohol Campaign summary report. Canberra: DHAC.

SunSmart 2003a. Tans, solariums and faking it. Anti-Cancer Council of Victoria. Viewed 1 July 2003 <http:// www.sunsmart.com.au/s/schools/st_tans.htm>.

SunSmart 2003b. Skin cancer and Australians. Anti-Cancer Council of Victoria. Viewed 1 July 2003 <http://www.sunsmart.com.au/s/facts/skin_cancer_and_australians.htm>.

Tapsall LC & Batterham MJ 2002. Role of fats: adolescents and young people. Medical Journal of Australia 176(11 Suppl):S105–S124.

Teece, M & Williams, P. 2000. Alcohol-related assaults: time and place. Trends and Issues in Crime and Criminal Justice, No. 171. Canberra: AIC.

Thomas K, Ricciardelli L & Williams R 2000. Gender traits and self concept as indicators of problem eating and body dissatisfaction among children. Sex Roles 43:441–58.

Tickle JJ, Sargent JD, Dalton MA, Beach ML & Heatherton TF 2001. Favourite movie stars, their tobacco use in contemporary movies, and its association with adolescent smoking. Tobacco Control 10:16–22.

USDHHS (United States Department of Health and Human Services) 1994. Preventing tobacco use among young people: a report of the surgeon general. Washington, DC: USDHHS.

USDHHS (United States Department of Health and Human Services) 1996. Physical activity and health: a report of the surgeon general. Washington, D.C.: USDHSS.

Whitaker RC, Wright JA, Pepe MS, Seidel KD & Dietz W 1997. Predicting obesity in young adulthood from childhood and parental obesity. New England Journal of Medicine 337(13):869–73.

WHO (World Health Organization) 2000. Obesity: preventing and managing the global epidemic: a report of a WHO consultation. WHO Technical Series: 894. Geneva: WHO.

Part V: Social and cultural risk and protective factors

Chapter 18. Family environment

Chapter 19. Relationships and social participation

Chapter 20. Education, employment and income

Chapter 21. Housing and homelessness

Chapter 22. Juvenile justice

18. Family environment

Young people in Australia live in a diverse range of family types and environments. Some live at home with parents, some live independently—either with friends or alone—some live with a partner, and others may have their own children and live either in a couple relationship or as a sole parent. The way young people progress through life stages has changed over the past 30 years. Young people are remaining in education for longer, achieving economic independence at a later stage in their life, and thus remaining in the parental home for longer periods of time. Consequently, in 2001, the majority of young people aged 15–24 years (62%) lived at home with their parent/s. This chapter focuses mainly on the family environments of young people still living at home. Data are generally available only for those aged less than 18 years, although some data are presented on the living arrangements of the overall population aged 15–24 years.

The family setting in which a young person has been and is living is the most important determinant of how well they will pass through the transition between childhood and adulthood. During the last 30 years, family circumstances have changed markedly (Weston et al. 2001; Gregory 1999). Some of the more notable changes include declining fertility rates, an increasing number of individuals living alone, decreasing marriage rates and increasing divorce rates, increasing cohabitation rates, increasing numbers of one-parent families, and increasing labour force participation by women of child-bearing age.

Changes in the prevalence of different family types are associated with social and economic changes. For example, delayed child-bearing and reduced fertility have led to an increase in the number of couple families without children, and an increase in divorce and remarriage rates has led to an increase in the number of one-parent, step and blended families. The ABS predicts that single-parent families will increase by between 30% and 60% over the next 20 years. Much of the increase in one-parent families is the outcome of marriage breakdown, separation and divorce. The increasing separation and divorce rate has a number of serious implications for young people in Australia.

It has been known for some time that children have difficulty in adjusting to the break-up of their parents' relationships. As a result of family conflict, children and young people can show behavioural problems even before the final breakdown of the relationship. But research in the United Kingdom shows that children whose parents remarry following divorce are more likely to have serious problems than children whose parents do not remarry. For example, stepchildren are more likely than children living with a single divorced parent to leave school at age 16, to leave home and to marry by the age of 20. These occurrences are also more likely for children of single divorced parents than for children whose parents have not separated (Kiernan 1992). Of course, divorce or the breakdown of parental relationships does not necessarily mean that social or behavioural problems in affected young people will always arise. Fortunately, young people can adapt to new situations provided social support networks are available (Smart 2000).

Female headed one-parent families are likely to have significantly lower incomes than male-headed one-parent families or couple families, and this can have significant implications for child-rearing. Lone mothers are less likely to be employed than mothers in a couple family. Employed lone parents may have less time to spend with children. A low income can mean poor nutrition, inadequate health care, crowded housing, lack of cognitive stimulation at home, and an inability to meet teachers' expectations. It can also lead to low parental self-esteem, low parental aspirations and social isolation. Low-income couple families can also suffer from these problems, but

they can be exacerbated by one parent having to face them without the support of a partner (Wise 2003).

Young people with poor health and wellbeing outcomes are more likely to have experienced the greatest number of adverse conditions and events or risk factors, such as low socioeconomic status and poor family functioning. Multiple risk factors across a person's life have a cumulative effect, and adverse conditions in early childhood can place these children at risk then and later in life. Risk factors can often cluster in families and communities and these will influence vulnerability (Wise 2003).

This chapter presents information on the family environment of young people such as living arrangements, family type, marriage rates, divorce rates and family cohesion. In addition, information on young people who come to the attention of community services departments as in need of protection from abuse or harm is also presented. Research has shown that these people have multiple family risk factors.

Living arrangements

The relationships within the households of young people aged 15–24 years are shown in Table 18.1.

Table 18.1: Relationship in the households of young people aged 15–24 years, 2001

Category	Number	Per cent
Dependent full-time student (15–24 years)	876,047	35.7
Non-dependent child	642,191	26.2
Group household member	210,410	8.6
Partner in de facto marriage	166,629	6.8
Other related individual	120,051	4.9
Visitor (from within Australia)	109,810	4.5
Husband or wife in registered marriage	97,738	4.0
Lone person	89,324	3.6
Unrelated individual living in family household	61,845	2.5
Lone parent	40,364	1.6
Overseas visitors	38,356	1.6
Total	**2,452,765**	**100.0**

Source: ABS 2002a.

- In 2001, over one-third of young people aged 15–24 years living in a household were dependent full-time students (36%) and over one-quarter (26%) were non-dependent children (non-full-time student under the age of 25 years).
- A higher proportion of young people aged 15–24 years were partners in a de facto relationship (7%) than in a marriage (4%).

Family type

Family type can have an impact on young people's health and wellbeing. The family types for young people who live with their families are presented in Table 18.2.

Table 18.2: Distribution of Australian families by family type, 2001

Family type	Number	Per cent
Couple family with children	**2,321,165**	**47.0**
With children under 15, with and without non-dependent children[(a)]	1,331,514	27.0
With dependent students[(b)] (15–24 years), with and without non-dependent children	289,576	5.9
With children under 15 and dependent students (15–24 years), with and without non-dependent children	283,032	5.7
With non-dependent children	417,043	8.4
Couple family without children	**1,764,167**	**35.7**
One-parent family	**762,632**	**15.4**
With children under 15, with and without non-dependent children	378,301	7.7
With dependent students (15–24 years), with and without non-dependent children	90,272	1.8
With children under 15 and dependent students (15–24 years), with and without non-dependent children	61,396	1.2
With non-dependent children	232,663	4.7
Other family	**88,864**	**1.8**
Total	**4,936,828**	**100**

(a) Non-full- time student under the age of 25 years.

(b) Full-time student under the age of 25 years.

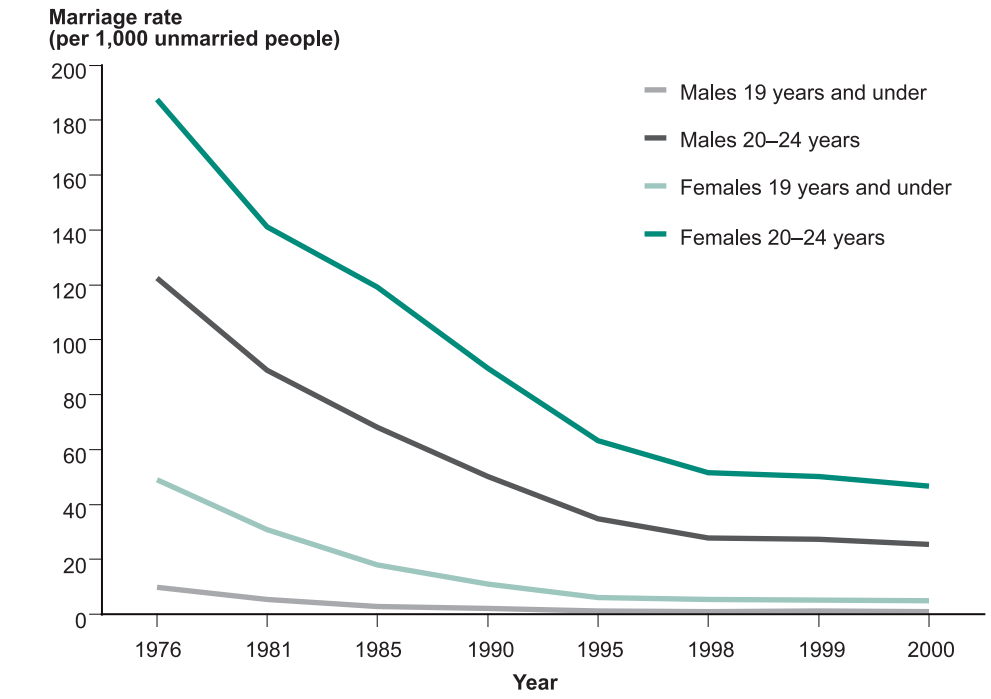
Source: ABS 2002a.

- At the 2001 Census, there were 4,936,828 families in Australia. The majority of those were couple families with children[1] (47%), followed by couple families without children (36%) and one-parent families (15%).
- Within couple families with children, the highest proportion were those with children under 15 with and without dependent students (27%). This was followed by families with non-dependent children (8%) and with dependent students aged 15–24 years with and without non-dependent children (6%).
- Of the 762,632 one-parent families, the majority were with children under 15 with and without non-dependent children (8%) and with non-dependent children (5%).

1. A couple family with children is a couple family who have children (regardless of the age of the children) usually resident in the family.

Youth and marriage

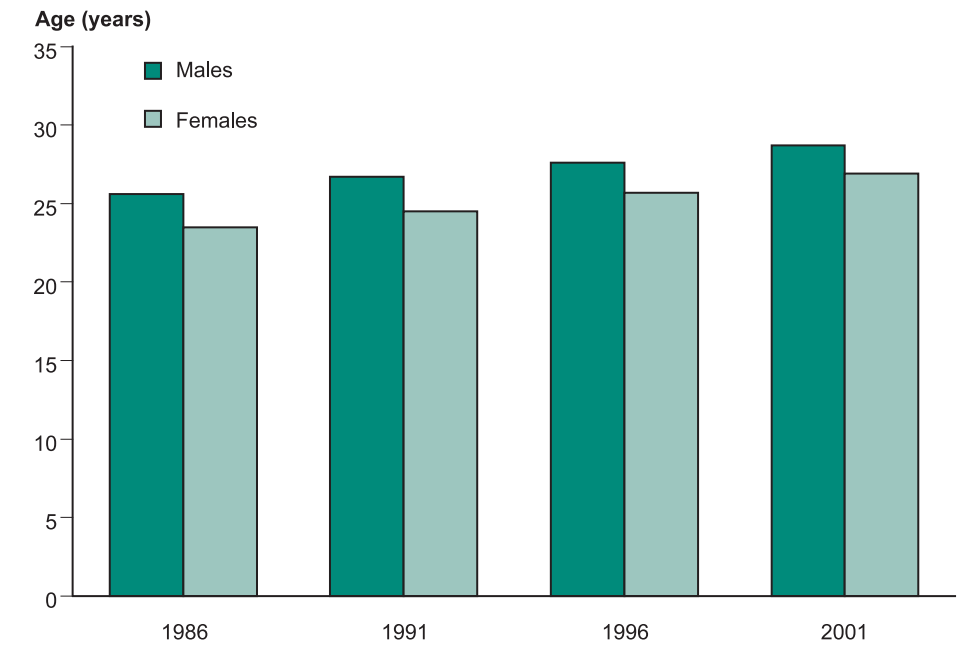
First marriage rates of young people aged under 25 years between 1976 and 2000 are shown in Figure 18.1.



Source: ABS various years(a).

Figure 18.1: First marriage rates of young people aged under 25 years, 1976 to 2000

- Between 1976 and 2000, marriage rates declined for young people under 25 years for both males and females.
- In 2000, rates of first marriage per 1,000 unmarried people were less than 1.0 for males aged 19 years and under, 4.9 for females aged 19 years and under, 25.4 for males aged 20–24 years and 46.6 for females aged 20–24 years. Part of this decline can be attributed to an increase in the prevalence of de facto relationships among young people and the result of young people delaying the age at which they get married. This delay is illustrated by the increase in the median age at first marriage for people of all ages (Figure 18.2).

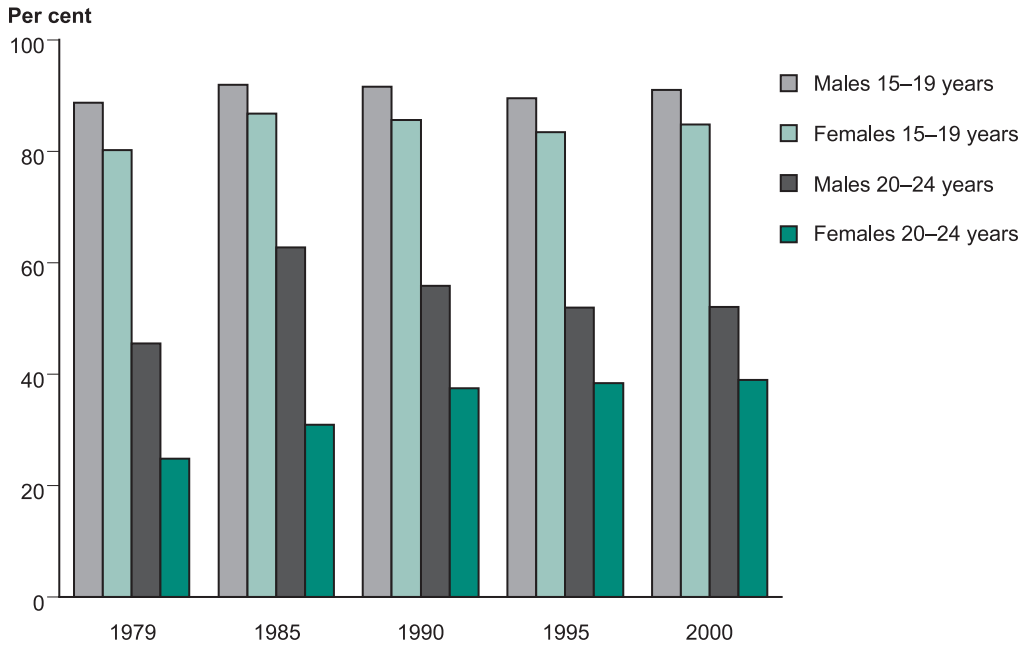


Source: ABS various years(a).

Figure 18.2: Median age at first marriage, 1986 to 2001

- Between 1986 and 2001, the median age at first marriage increased from 25.6 years to 28.7 years for males of all ages, and from 23.5 years to 26.9 years for females of all ages.

Another aspect of young people's changing family circumstances is an increasing tendency for young people to live in the family home for longer. In both 1981 and 2001, the majority of young people aged 15–19 years were living at home, but over the period the proportion of those aged 15–19 years and 20–24 living at home increased markedly. The proportion of young people living at home is shown in Figure 18.3.



Source: Weston, Stanton, Qu & Soriano 2001.

Figure 18.3: Proportion of young people aged 15–24 living with parents, 1979 to 2000

- Between 1979 and 2000, the proportion of young people aged 15–19 years living with their parents was higher than those aged 20–24 years. More males than females were living with their parents, irrespective of age. For example, in 2000, 91% of males and 85% of females aged 15–19 years were living at home, compared with 52% and 39% for males and females aged 20–24 years, respectively.
- Over the period 1979 to 2000, the proportion of young males aged 15–19 years living with parents ranged between 89% and 92%, and the proportion of females aged 15–19 years ranged between 80% and 87%.
- A higher proportion of both males and females were living at home in 2000 than in 1979.

Many young people who left home had returned at least once. The percentage of young people aged 20–24 years who were living at home, had never left home, or had left home and returned at least once is shown in Table 18.3.

Table 18.3: Proportion of young people aged 20–24 years who had never left home, were living at home, or had left home and returned at least once, 1981 and 1998

	Males		Females	
	1981	1998	1981	1998
Those living at home when surveyed	54.8	64.8	37.5	53.5
Those who had never left home	35.2	35.1	24.2	35.9
Those who had left home but returned at least once	52.2	66.7	44.3	66.9

Source: Weston et al. 2001.

- In 1998, about two-thirds of young people aged 20–24 years who had left home had returned at least once—67% of both males and females. The proportion increased from 1981, when 52% of males and 44% of females who had left home returned at least once.
- The proportion of young males who had never left home remained constant between 1981 and 1998, but the proportion for females increased from 24% to 36%.

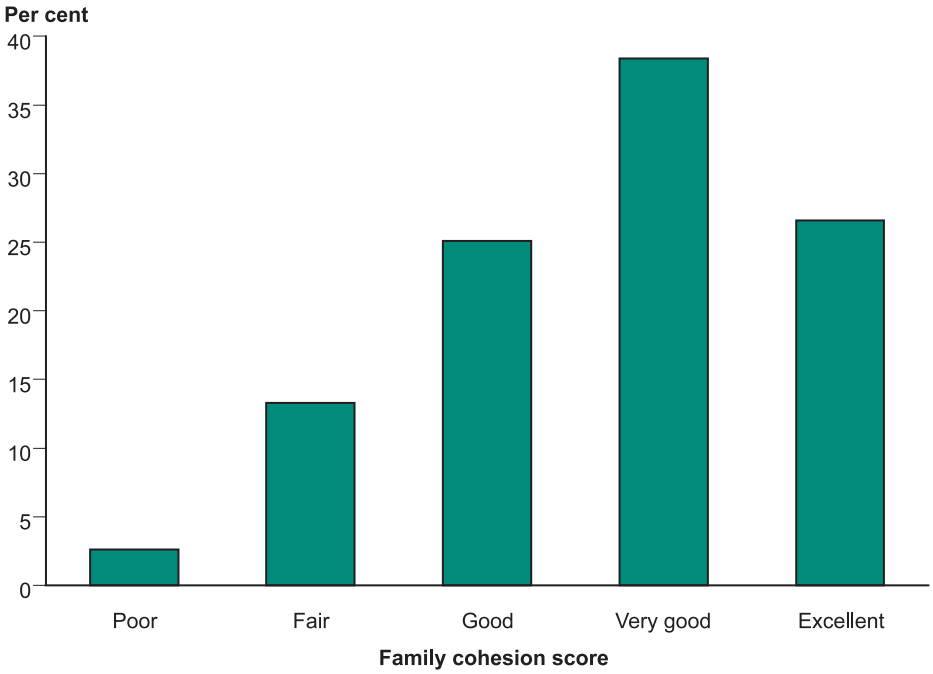
Family functioning

Family functioning has an important effect on the health and wellbeing of young people (AIHW: Al-Yaman et al. 2002). Silburn et al. (1996) defined family functioning as 'achieving some degree of acceptance of each individual reaching consensus on decisions, communicating feelings and solving day-to-day problems'. The following section examines two aspects of family functioning that can affect young people: family cohesion and divorce. The data presented are for families with children aged 12–17 years.

Family cohesion

The 1998 Child and Adolescent Component of the National Survey of Mental Health and Wellbeing examined the relationship between the level of family cohesion, and the mental health of children aged 4–17 years (Sawyer et al. 2000). The survey measured family cohesion by asking parents with a child aged 4–17 years about their family's ability to 'get on with one another'. Families with difficulty getting on with one another were characterised as follows—'They do not always agree and they may get angry'. The ability of families to get on was rated on a five-point scale, from 'poor' to 'excellent'.

Data for families with young people aged 12–17 years are presented in Figure 18.4.



Source: Child and Adolescent Component of the 1998 National Survey of Mental Health and Wellbeing, unpublished data.

Figure 18.4: Family cohesion in families with young people aged 12–17 years, 1998

- In 1998, 16% of young people aged 12–17 years reported that their family's ability to 'get along' was 'poor' (3%) or 'fair' (13%).
- Almost two-thirds (65%) of those aged 12–17 years rated their family's ability to get on as 'very good' (38%) or 'excellent' (27%).

Family cohesion (as reported by adolescents) by emotional and behavioural problems (as reported by parents) is shown in Table 18.4. The clinical cut-off reflects the level of emotional and behavioural problems typically experienced by young people with mental health problems and disorders.

Table 18.4: Family cohesion, by emotional and behavioural problems of young people aged 12–17 years, 1998

Family cohesion	Below the clinical cut-off	Above the clinical cut-off
Poor	1.8	8.7
Fair	11	26.9
Good	24.6	30.9
Very good	40.2	26.9
Excellent	22.4	6.7

Source: Child and Adolescent Component of the 1998 National Survey of Mental Health and Wellbeing, unpublished data.

- A higher proportion of young people aged 12–17 years with emotional and behavioural problems lived in less cohesive families—36% of young people with emotional and behavioural problems lived in families with 'poor' or 'fair' family cohesion, compared with only 13% among those without emotional and behavioural problems.
- The relationship between family cohesion and young people's emotional and behavioural problems may act in two ways: the poor degree of family cohesion may affect mental health of the young person, but also young people with emotional and behavioural problems are likely to affect family cohesion.

Divorce rates

Research in Australia, as overseas, has found that parental separation and divorce tend to have negative effects on children's emotional and mental health in the short term. However, in the long term, the health of most (but not all) children is not seriously affected and they adjust to their changed family circumstances (Amato 1987, 1997). Studies suggest that, in the longer term, children's emotional and mental health is affected more by the level of family conflict than by the divorce of their parents (Dunlop & Burns 1989). Parental separation and divorce can result in a considerable fall in income of female-headed lone-parent families. Behavioural difficulties are evident in children where a high level of family conflict, family violence or abuse and neglect occurs, and these children are also more likely to have problems as adults

Data on young people under the age of 18 whose parents divorce are presented in Table 18.5. Data are not available on the number of young people who experience the break-up of their parents' de facto relationship. In 1997, 9% of couple families with children were living in de facto relationships (ABS 1998a).

Table 18.5: Young people under 18 years affected by divorce, 1991 to 2001

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number	46,700	45,700	48,100	47,500	n.a.	52,500	51,700	51,600	53,400	49,600	53,400
Rate per 1,000 young people	10.2	10.0	10.5	10.1	n.a.	11.2	11.0	11.0	11.3	10.4	11.1

Source: ABS various years(a).

- From 1991 to 2001, the rate per 1,000 young people of those under the age of 18 whose parents divorced increased only slightly, from 10.2 to 11.1.

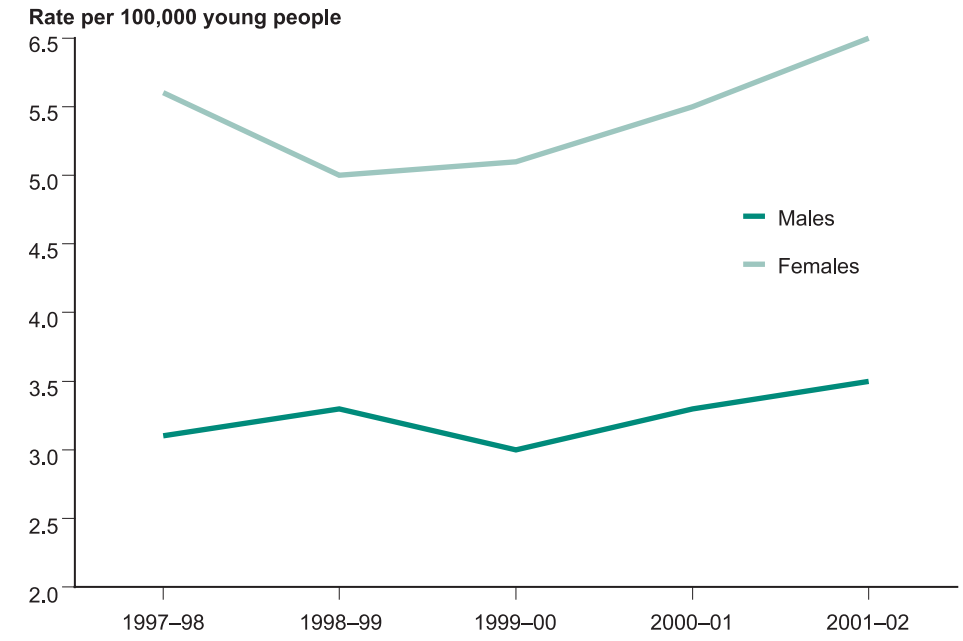
Young people in need of protection

Children and young people who are in need of protection include those who have been abused, neglected or otherwise harmed, and whose parents cannot provide adequate care and protection. Child abuse and neglect is associated with low socioeconomic status, family disruption, domestic violence and substance abuse (AIHW 2001a). Children and young people in need of protection are of concern to health professionals because of the profound negative impact abuse and neglect can have on their health and wellbeing.

The following section provides data on young people who were the subject of a child protection substantiation, who were in out-of-home care and who were on care and protection orders, which are indicators of the number of children and young people in need of protection.

Young people in substantiations

Child abuse, neglect or harm to a child is substantiated if, in the professional opinion of officers of the child protection authority, there is reasonable cause to believe that a child has been, is being or is likely to be abused or neglected or otherwise harmed (AIHW 2001a). The rate of young people aged 12–16 years who were the subject of a substantiation from 1997–98 to 2001–02 is shown in Figure 18.5.



Source: AIHW Child Protection Data Collection.

Figure 18.5: Rate of young people aged 12–16 years who were the subject of a child protection substantiation 1997–98 to 2001–02

- The number and rate of children aged 12–16 years who were the subject of a substantiation increased slightly from 5,699 (4.4 per 1,000) in 1997–98 to 6,419 (4.8 per 1,000) in 2001–02.
- Changes in the number and rate of young people in substantiations in the second half of the 1990s are partly due to changes in child protection policies in a number of states and territories. Policies were introduced that allowed for a substantial proportion of reports of concerns about children to be dealt with outside the formal child protection system.
- From 1997–98 to 2001–02, the rate for females who were the subject of a child protection substantiation was consistently higher than the rate for males. In 2001–02, 3,993 females aged 12–16 years (or 6.0 per 1,000 females in this age group) were the subject of a child protection substantiation compared with 2,415 males aged 12–16 years (or 3.5 per 1,000 males in this age group).

Young people on care and protection orders

Most young people and families who come into contact with child protection authorities through the substantiation process or through other avenues are helped by appropriate support services. Such services include parenting education, family mediation and counselling, and in-home family support. In situations where continued involvement with the family is required in order to protect a young person, the child protection authority may apply to the relevant court to have him or her admitted to a care and protection order.

Recourse to the court is generally a last resort and is used in situations where supervision and counselling are resisted by the family, where other avenues for resolution of the situation have been exhausted, or where removal of a young person into out-of-home care requires legal authorisation. Young people on care and protection orders are those for whom there are more serious concerns about their safety and wellbeing.

Care and protection orders provide the community services department with greater authority and responsibility for the young person. These orders include guardianship and custody orders, as well as supervision orders. The data on young people on care and protection orders show the total number of children on these orders at 30 June of each year.

Young people aged 12–17 years on care and protection orders from 30 June 1991 to 30 June 2002 are shown in Table 18.6.

Table 18.6: Young people aged 12–17 years on care and protection orders at 30 June 1991 to 30 June 2002

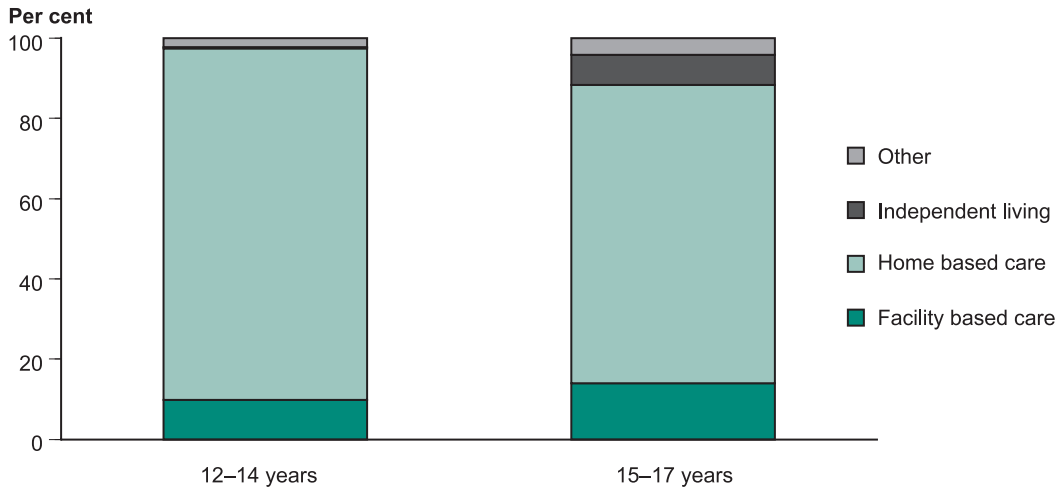
Age (years)		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
12–14	Number	2,760	2,673	2,600	2,699	2,819	2,862	3,395	3,370	3,378	3,469	3,638	3,847
	Rate	3.7	3.6	3.5	3.5	3.6	3.6	4.3	4.2	4.2	4.3	4.5	4.7
15–17	Number	2,951	2,646	2,678	2,675	2,642	2,699	3,013	3,167	3,013	3,688	3,446	3,458
	Rate	3.7	3.4	3.5	3.6	3.5	3.5	3.9	4.0	3.8	4.6	4.2	4.2

Note: The scope of the data collection for young people on care and protection orders was changed in 1997, so the data from 1997 onwards should not be compared with previous years.

Source: AIHW Child Protection Data Collection.

- From 1991 to 2002, the rate of young people aged 12–17 years on care and protection orders increased by 28% from 5,711 (3.7 per 1,000) to 7,305 (4.5 per 1,000).
- For those aged 12–14 years, the rate increased from 3.7 per 1,000 in 1991 to 4.7 per 1,000 in 2002. For those aged 15–17 years, the rate increased from 3.7 per 1,000 in 1991 to 4.1 per 1,000 in 2002.

Living arrangements of young people on care and protection orders



Source: AIHW Child Protection Data Collection.

Figure 18.6: Young people aged 12–17 years on care and protection orders: living arrangements, 2002

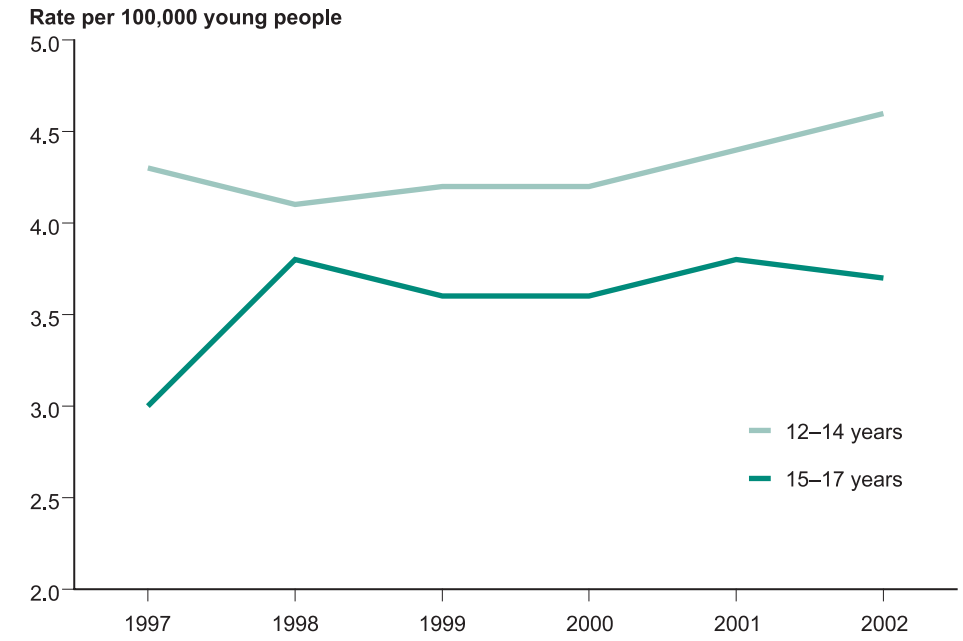
- The majority of young people aged 12–17 years on care and protection orders are living in home-based care: 88% of those aged 12–14 years and 74% of those aged 15–17 years. Home-based care includes parents, relative/kin and foster care.
- Of young people aged 12–17 years on care and protection orders, a higher proportion of those aged 15–17 years (14%) are living in facility-based care than those aged 12–14 years (10%).
- The proportion of young people aged 15–17 years living independently (8%) is considerably larger than the proportion of those aged 12–14 years living independently (0.2%).

Young people in out-of-home care

Out-of-home care is one of a range of services provided to young people who are in need of care and protection, and their families. This type of service assists and supports young people in a variety of care arrangements other than with their parents. These arrangements include foster care, placements with relatives or kin, and residential care. In most cases, children in out of home care will also be on a care and protection order of some kind.

Some young people are placed in out-of-home care because they are the subject of a child protection substantiation and require a more protective environment. Other situations include those where parents are incapable of providing adequate care, or where there is family conflict and time out is needed. There are no national data available, however, on the reasons that young people are placed in out-of-home care.

Young people aged 12–17 years in out-of-home care at 30 June in each year from 1997 to 2002 are shown in Figure 18.7.



Source: AIHW Child Protection Data Collection.

Figure 18.7: Young people aged 12–17 years in out-of-home care, 30 June 1997 to 30 June 2002

- Between 1997 and 2002, the rate of young people aged 12–17 years in out-of-home care increased slightly. From 1997 to 2002, the rate per 1,000 young people aged 12–14 years increased from 4.3 to 4.6, and the rate per 1,000 for those aged 15–17 years increased from 3.0 to 3.7.
- The rate of young people in out-of-home care was consistently higher for young people aged 12–14 years than for those aged 15–17 years.

19. Relationships and social participation

For young people, the period of transition from childhood to adulthood is a very important and often difficult time. For many, it will involve a transition from school to work and from being an individual to being a partner in a relationship and perhaps the parent of a new child. Adolescence is a period of physical and emotional development, of maturity and competence, of strengthening identity formation and of changing relationships with family and peers, with peers becoming progressively more important. Throughout this period, young people negotiate more independent relationships with their parents and, develop a network of friends and acquaintances that extends beyond family. It can be a vulnerable period of life, with the risk of poverty, unemployment and homelessness among subgroups of young people leading to social exclusion and marginalisation from the wider society.

Over the last three decades, there has been significant change in those things most important to young people--families, schools and society at large. Changes in family formation, educational participation, lifestyle options and the growing difficulties around long-term career paths are influencing the lives of young people. In response, young peoples' attitudes to education and their future careers have also changed. Young people today have multiple responsibilities at an early age, such as juggling study and work (Wyn and White 1997) (see Chapter 20).

Although many young Australians are doing well, changes in the social and economic environments have been accompanied by an increase in what is described as 'youth problems' and the growing societal concerns about these problems. These concerns are wide-ranging, including mental and behavioural problems and suicide, transport accidents, drug and alcohol misuse, declining participation in education, the high representation of youth in the justice system and homelessness, to mention a few. Eckersley (1998) argues that the rapid rates of social change are the cause of increased levels of mental illness, depression and suicide.

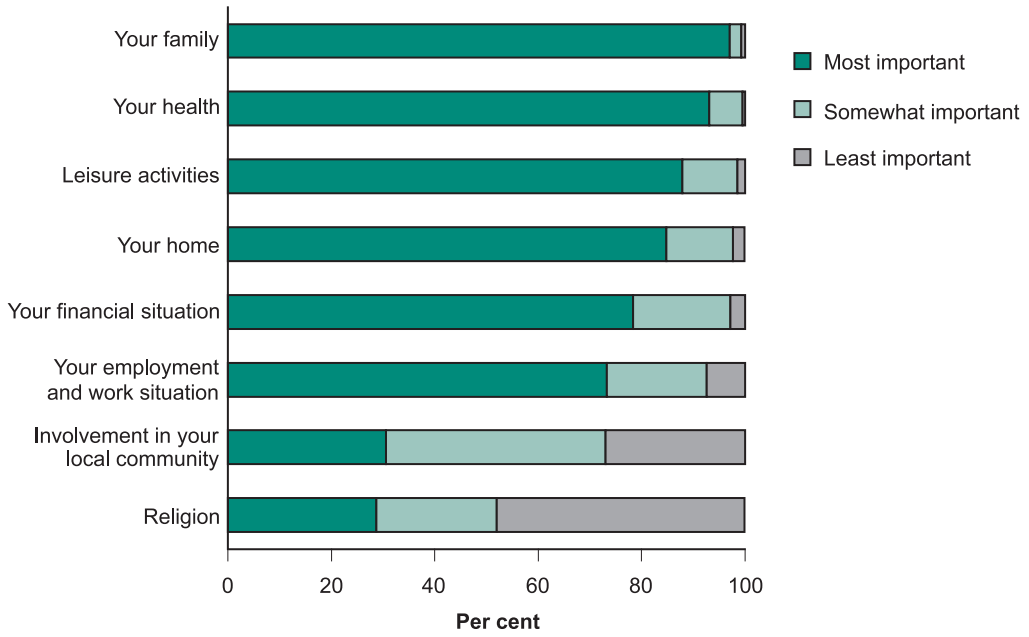
A popular response to problems of youth health and wellbeing is a public health approach. In this approach, individuals who have a problem or a disease are treated, and attempts are made to modify the attitudes and behaviours of those at risk of developing the problem and to educate those not yet at risk (Pittman 2003). It has been argued, however, that this approach, which focuses mainly on the problems that young people encounter, is not enough to deal with complex issues they may face, such as violence, unemployment and teenage pregnancy (Pittman 2003). Pittman argues that desirable youth outcomes include having a sense of confidence (self-worth and future mastery), character (responsibility, spirituality), connection (membership and belonging) and competence (social, civic and cultural competence, physical and emotional health and employability). However, she stresses that these personal outcomes can only be achieved through youth development rather than a problem prevention approach.

The importance of the environment on the way youth development takes place is widely recognised. The maturation of young people is influenced by their surroundings and their relationships with parents, teachers and peers. Of the social environments that influence young peoples' behaviour, family and school are the most important (Resnick et al. 1997). Resnick et al. examine the role of parents, family and school in shaping the health of adolescents across a wide range of risk behaviours. Connectedness to parents and family as well as to school was the most important factor associated with lower levels of emotional distress and risk-taking behaviour, including attempted suicide. A sense of connectedness and belonging to family and school is recognised as being important for emotional health and wellbeing of young people in Australia (Glover et al. 1998).

This chapter explores questions about what young people consider to be important in their lives, their satisfaction with their personal lives and relationships, their social and cultural participation, and the problems they face.

What is important to young people?

The Household, Income and Labour Dynamics in Australia (HILDA) survey asked young people to rank the importance in their lives of family, health, accommodation, finances, employment, community involvement and religion. The results, ranked by degree of importance, are presented in Figure 19.1.



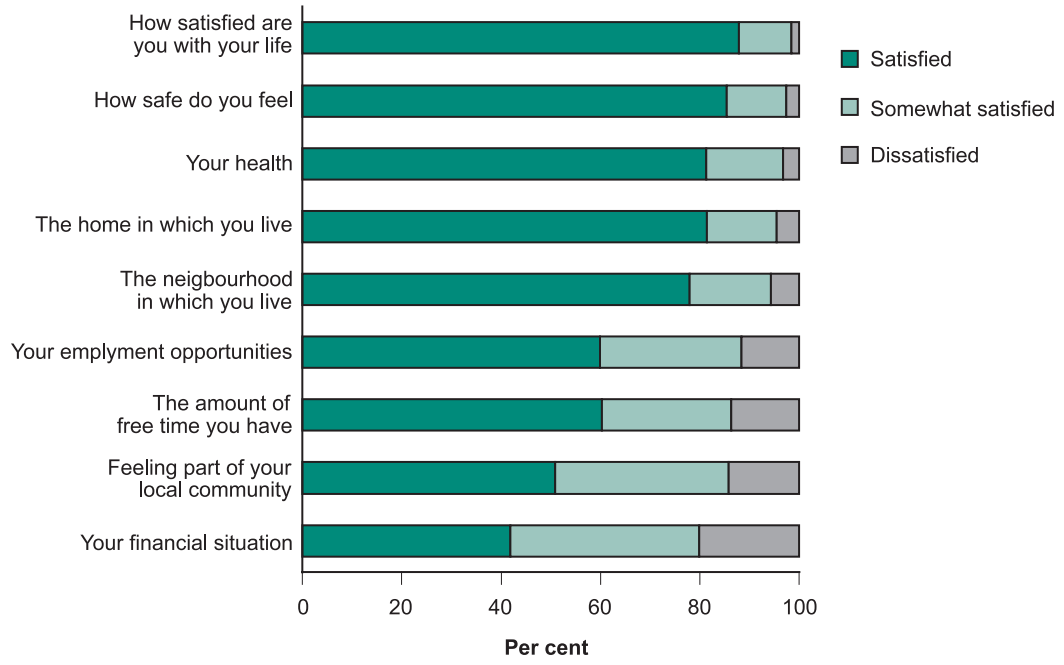
Source: AIHW analysis of the 2001 HILDA survey.

Figure 19.1: Degree of importance of selected aspects of personal life for young people aged 15–24 years, 2001

- Young people regarded their families as the most important thing in their lives, followed by their health and leisure activities, which includes hobbies and contact with friends.
- Contact with the local community and religion were regarded as the least important of these eight things by more than two-thirds of the young people surveyed.

Satisfaction with personal life

The HILDA survey also asked young people how satisfied they were with their lives (Figure 19.2).



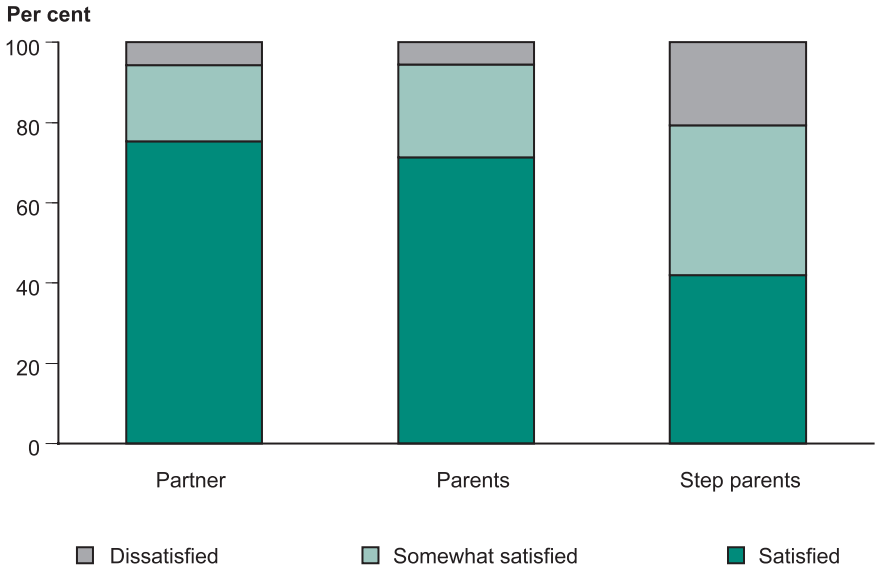
Source: AIHW analysis of the 2001 HILDA survey.

Figure 19.2: Young people's satisfaction with different aspects of personal life, 2001

- The majority of young people aged 15–24 years said they were satisfied with their lives overall (88%), and with safety aspects of their lives (85%), their health (81%), the home in which they live (81%) and their neighbourhood (78%).
- Approximately 20% of young people expressed feeling dissatisfied with their financial situation, with feeling part of the local community (14%), with the amount of free time they had available (14%) and with their employment opportunities (12%).

Relationships

The HILDA survey had a number of questions relating to young peoples' relationships with a partner, parents or a step-parent (Figure 19.3).



Source: AIHW analysis of the 2001 HILDA survey.

Figure 19.3: Degree of satisfaction of young people aged 15–24 years with their relationships with a partner, parents and step-parents, 2001

- The majority of young people aged 15–24 years expressed satisfaction with their relationship with a partner. This was similar for both males and females.
- Most also expressed satisfaction with their relationship with parents, with less than 5% saying that they were dissatisfied with the relationship with their parents.
- However, around 20% were dissatisfied with their relationship with a step-parent and a further one-third were only 'somewhat satisfied' with step-parent relationships. More males than females said they were satisfied with their relationship with a step-parent.

Participation in community activities

Health and wellbeing has been shown to be associated with a sense of being connected to family, school and the community. Connectedness to community is enhanced by participation in community activities. Social participation can take a number of forms including volunteering, participation in clubs and community organisations, socialising with friends, and cultural activities.

Volunteering

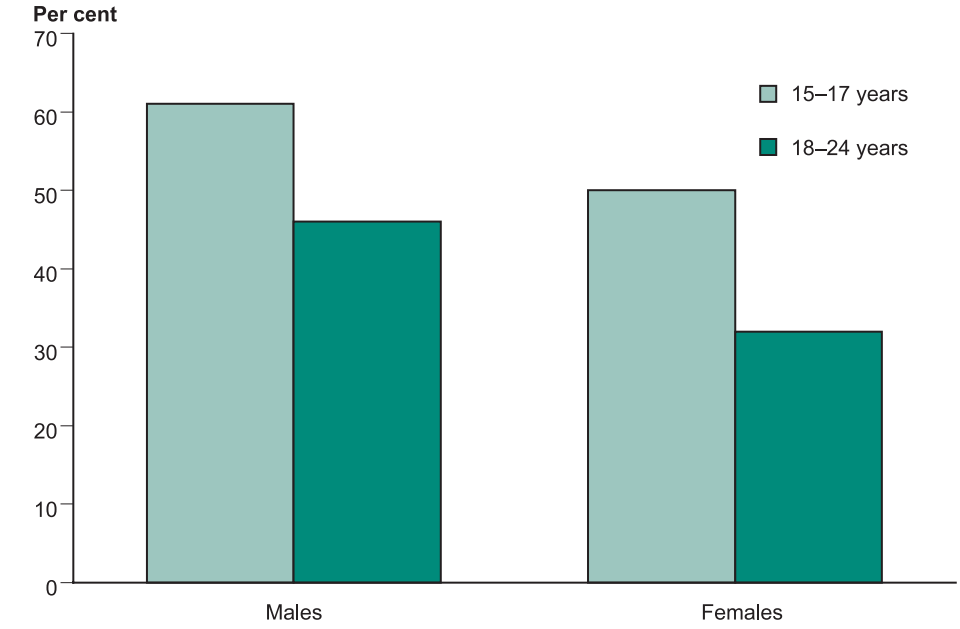
Table 19.1: Number and proportion of young volunteers aged 18–24 years, 1995 and 2000

	1995		2000	
	Number ('000)	Per cent	Number ('000)	Per cent
Males	180.6	11.9	247.5	11.9
Females	196.0	11.8	245.7	10.6
Persons	**376.6**	**11.8**	**493.3**	**11.2**

Source: ABS 2000.

- The ABS Survey of Voluntary Work found that of young people aged 18–24 years, approximately 12% of young people aged 18–24 years were involved in voluntary work in 1995 and 2000.
- A similar proportion of males and females were involved in voluntary work in both years. These proportions were similar to those reported in the 2001 HILDA survey (13%).

Participation in sport and hobby groups



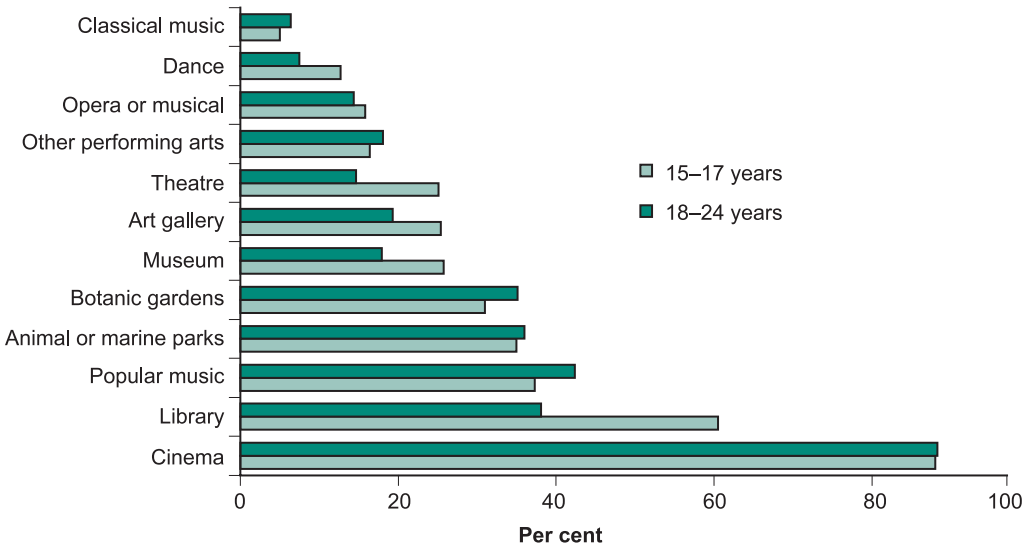
Source: AIHW analysis of the 2001 HILDA survey.

Figure 19.4: Proportion of young people who are active members of a sporting/ hobby/community-based association, 2001

- Just over 60% of males and 50% of females aged 15–17 years participated in a sporting club, hobby or community-based association.
- A lower proportion of those aged 18–24 years participated in sporting clubs or community-based organisations—46% of males and 32% of females.

Cultural activities

The proportion of young people attending various cultural activities is shown in Figure 19.5.



Source: ABS 1999.

Figure 19.5: Attendance rate at selected cultural venues of persons aged 15–24 years, during the 12 months ending April 1999

- Almost all young people said they went to see films. The attendance rate for the cinema in the 12 months ending April 1999 was 91% and 88% for those aged 15–17 years and 18–24 years respectively, compared with 70% for all persons aged 15 years and over.
- Young people aged 15–17 years visited the library in the same proportions as they belonged to sporting clubs (61%), but the proportion of those aged 18–24 years who visited a library was much lower. This suggests that the main reason for visiting the library among younger people is to find information for school assignments, rather than for recreational purposes. More young people aged 18–24 years attended popular music venues (42%) than visited libraries.
- Young people aged 15–17 years had higher attendance rates than those aged 18–24 years at cinemas, libraries, museums, art galleries, theatres, operas and musicals, and dance venues.

Time use

Another perspective on the involvement of young people in community activities is provided by an ABS time allocation survey in 1997. The amount of time young people said they spent on different activities, other than formal schooling, is presented in Table 19.2.

Table 19.2: Average number of hours spent per day by young people aged 15–24 years on major activities other than formal schooling, 1997

Major activities	Males	Females
Recreation and leisure	5.4	4.4
Employment-related	3.2	2.5
Education	1.6	2.1
Social/community interaction	0.9	0.9
Domestic	0.7	1.2
Purchasing	0.4	0.8
Voluntary work	0.2	0.2
Child care	0.0	0.3

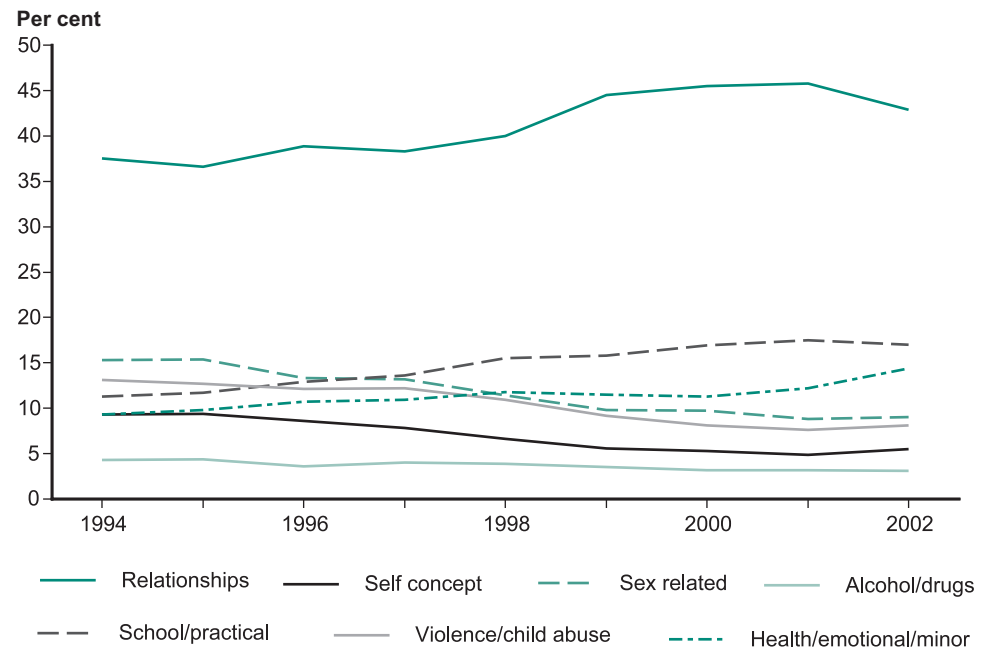
Source: ABS 1998b.

- The activity grouping on which young people spent most time per day was 'recreation and leisure'—young men and women spend on average 5.4 and 4.4 hours per day respectively.
- Young people spent on average 3 hours per day on employment-related activities and approximately 2 hours on education, presumably homework or assignments from school or university.
- With the exception of domestic duties for women, less than one hour per day was spent on other activities.

Problems faced by young people

The other side of young people's lives are the problems they confront. Some data that provide insights into the sort of problems that concern young people come from an analysis of the type of calls from young people received by the national Kids Help Line over the period 1994 to 2002.

Kids Help Line is a free 24-hour telephone counselling service available every day of the year. It began in Queensland in 1991 and extended to become a nation-wide service on 10 May 1993. In 2002, over 1 million phone calls were made to Kids Help Line, of which 429,982 were answered (Kids Help Line 2002). Approximately 20% of these calls involved immediate and significant concerns.



Source: Kids Help Line 2002.

Figure 19.6: Most frequent problems dealt with by Kids Help Line, children and young people aged 5–18 years, 1994 to 2002

- Between 1994 and 2002, the most common problem dealt with by the Kids Help Line involved relationships with family, friends and partners (between 35% and 45% of calls, compared with 15% of calls for any other problem). The proportion of young people calling about relationship problems increased from 38% in 1994 to 43% in 2002.
- In 1994, the second most common reason for calling Kids Help Line was sex-related problems. By 2002, the next most common problem area after relationship problems was school and 'practical' problems involving things like bullying, study, employment/financial matters and leaving home. Calling about these problems increased from 11% in 1994 to 17% in 2002.
- The proportion of young people calling with sex-related problems, including sexual activity, contraception, pregnancy and sexually transmitted diseases, decreased from 15% in 1994 to 9% in 2002. Self-concept problems such as development and sexual orientation also decreased from 9% in 1994 to 6% in 2002.

A consistent picture emerges in which most young people with problems who call the Kids Help Line are troubled by problems with their relationships with their family and friends. Phone calls to the service about problems with schooling and employment and emotional problems have become more common since 1994, and problems associated with sexual activities and violence less common.

20. Education, employment and income

Education

Education is important for the overall wellbeing of young people and in the development of individuals and society. An educated workforce is important for a prosperous society. Education and training help young people make a successful transition into the workforce. Literacy is associated with improved health and wellbeing.

Educational institutions such as schools, technical colleges and universities are places where socialisation and peer influence take place. A study conducted by the Australia Council for Educational Research in 1999 found that student participation in extracurricular school activities such as drama, music, sport and community work promotes feelings of connectedness to the school community and has flow-on effects to the academic side of schooling. The study also found that participation rates by females were higher than males in all areas of extracurricular school activities except sports (Fullarton 2002).

In the 1970s the transition between education and employment was straightforward and career paths were more linear than they are today. Today, for some young people, moving from education to employment is not a simple single step of leaving the education system and entering the workforce. Now the transition can extend for some time and for many, it can involve several steps. Young people may be engaged in part-time work while still at school, or can study for an extended period of time, or can be unemployed and involved in job searching after leaving school or in 'time-off' for leisure, travel or other activities.

Young people who leave school before completing Year 10 or Year 12 limit their chances of getting a job as employers increasingly require post-secondary qualifications (DSF 2002). However, there are alternative pathways for young people who do not complete Year 12 such as post-school training or apprenticeships.

In recent years, school retention rates and school participation rates have been increasing and more young people are staying at school. The extended transitional period from education to work and the increased number of choices now open to young people mean that a number of indicators are required to measure performance and change in the educational process. The indicators include participation in education, apparent retention rates and Year 12 completion rate, educational attainment and literacy levels for young people.

Educational institutions

In August 2002, there were 3,301,776 full-time students attending 9,632 schools in Australia, of which, 72% were government schools and 28% were non-government schools. Most non-government schools have a religious affiliation. Primary schools made up 69% of the total number of schools, 15% were secondary schools, 11% were combined primary and secondary schools and 4% were special schools (ABS 2002b).

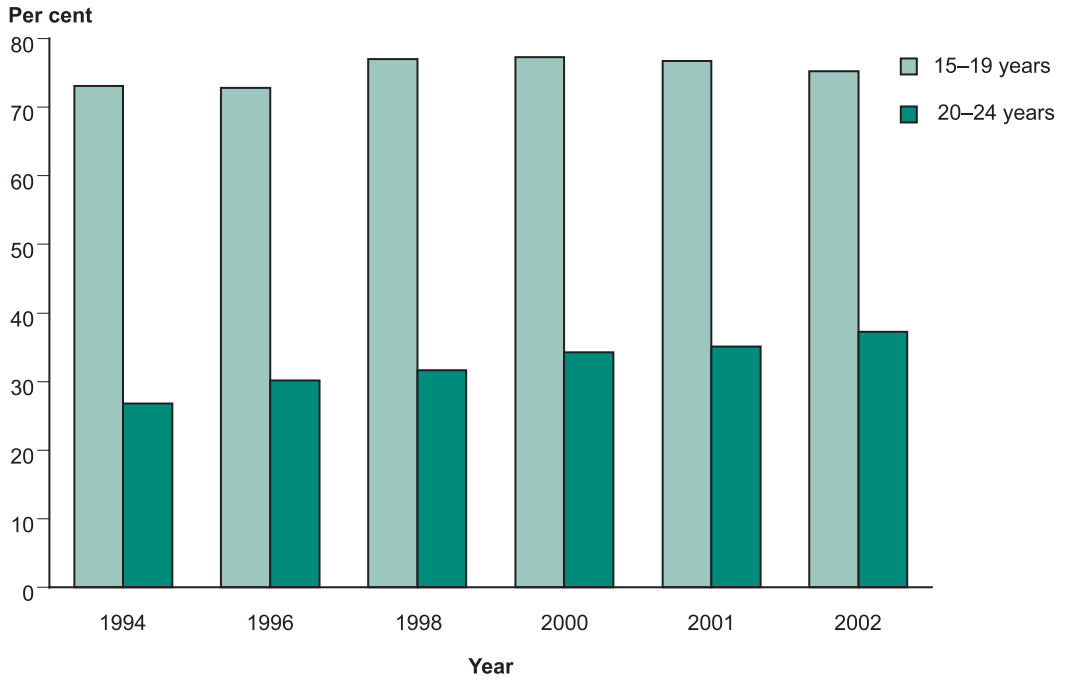
The two main types of post-secondary education in Australia are (1) vocational education and training and (2) tertiary, or higher education. Institutes of Technical and Further Education (TAFE), private providers, individual enterprises and—increasingly—some secondary schools and colleges provide formal vocational education and training. Universities and other higher education institutions offer programs leading to Bachelor and postgraduate degrees. Although these two education sectors remain largely distinct, there are increasing overlaps and connections between them. A number of universities offer training and some Bachelor degrees are offered by vocational education and training institutions. Pathways for the movement from

vocational education and training programs at TAFE into specific degree-level programs at universities are also well developed.

In 2001, formal vocational education and training programs that received some government funding were provided by 87 TAFEs and other government providers, 985 community-based centres and 5,645 other registered training providers (DEST 2002). The majority of students were enrolled in TAFEs (74%), with a further 13% in community-based centres and 13% with other registered training providers.

Education participation rate

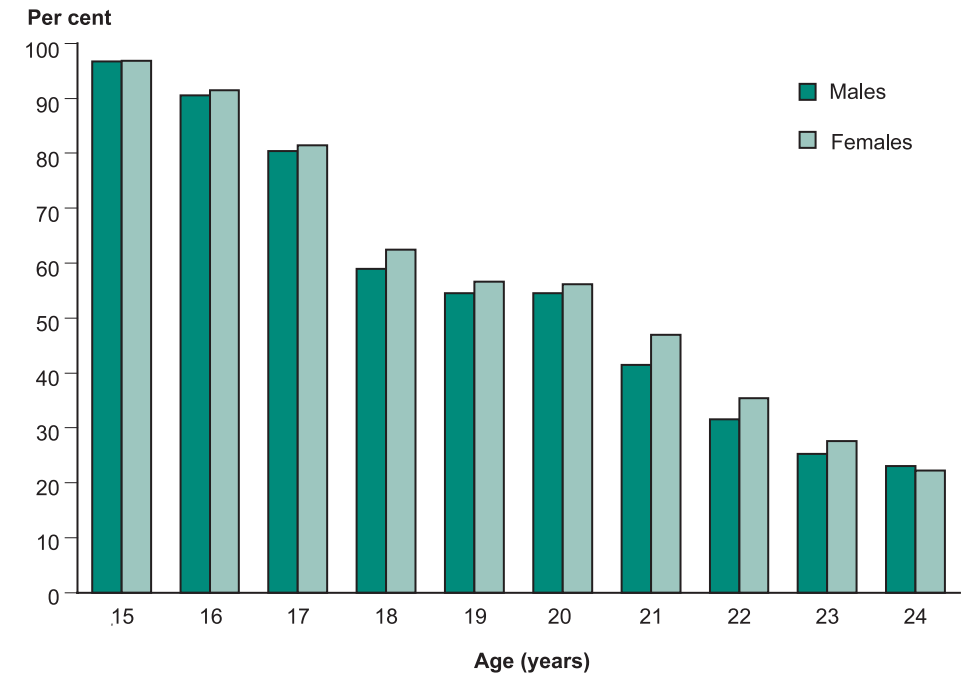
The education participation rate is an indicator of the participation in school and post-school studies of young people aged 15–19 years and 20–24 years. The education participation rate is the number of persons of a specific age enrolled at a course of study at an educational institution expressed as a percentage of the total population of that age. The rates include both full-time and part-time participation and cover attendance at schools, secondary colleges, TAFEs and higher education establishments. The education participation rates for young people aged 15–19 years and 20–24 years for selected years between 1994 and 2002 are shown in Figure 20.1.



Source: ABS various years(c)

Figure 20.1: Education participation rates for young people aged 15–24-years, 1994 to 2002

- Between 1994 and 2002, the education participation rate for young people aged 15–19 years increased from 73% to 75%.
- The education participation rate for those aged 20-24 years increased from 27% to 37% over the same period.



Source: ABS 2002c.

Figure 20.2: Education participation rates, by age, 2002

- In 2002, the education participation rate starts to fall after age 15 (Figure 20.2), when schooling becomes no longer compulsory. The decline is more marked for males than females.
- At age 19, when almost all young people have finished Year 12, the participation rate for all persons was 56% (55% for males and 56% for females).
- Of all 24-year-olds in Australia, 23% were still participating in education (23% of males and 22% of females).

School participation

In Australia, school education is compulsory until the age of 15 years, which equates to Year 10, except in Tasmania and South Australia where it is compulsory until age 16. To complete secondary school education in Australia, students need to attend for two further non-compulsory years, Years 11 and 12. Most students are aged 17 or 18 years when they complete Year 12.

School participation is defined as the number of full-time students of a specific age expressed as a percentage of the total population in that age group. School participation rates for young people aged 15, 16, 17 and 18 years for 1989 and 2002 are shown in Table 20.1.

Table 20.1: School participation rates for young people aged 15–18 years, 1989 and 2002

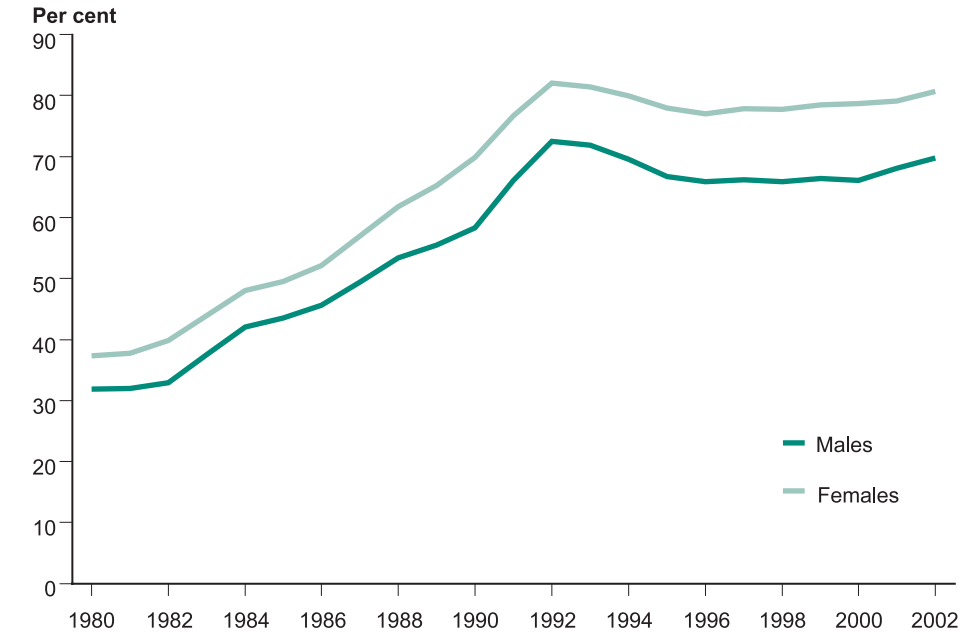
Ages	1989	2002
15	91.8	92.5
16	72.6	80.9
17	48.5	62.3
18	9.5	13.0

Source: ABS various years(b).

- Between 1989 and 2002, school participation rates increased markedly for young people aged 16 and 17 years. For young people aged 17 years, the rate increased from 49% to 62%, and for young people aged 16 years the rate increased from 73% to 81%.
- In both 1989 and 2002, most young people aged 15 years were still at school: 92% in 1989 and 93% in 2002.
- In both years, only a minority of young people aged 18 years were still at school: 10% in 1989 and 13% in 2002.

Apparent retention rate and Year 12 completion

The apparent retention rate to Year 12 is the percentage of students who remain in secondary education from the start of secondary school to Year 12. To calculate the apparent retention rate in 2002, the total number of full-time students in Year 12 in 2002 is divided by the number of full-time students who were in the base year—Year 7 in New South Wales, Victoria, Tasmania and the Australian Capital Territory in 1997 and Year 8 in Queensland, South Australia, Western Australia and the Northern Territory in 1998. The resulting figure is converted to a percentage. The trends of apparent retention rates from 1980 to 2002 are shown in Figure 20.3.



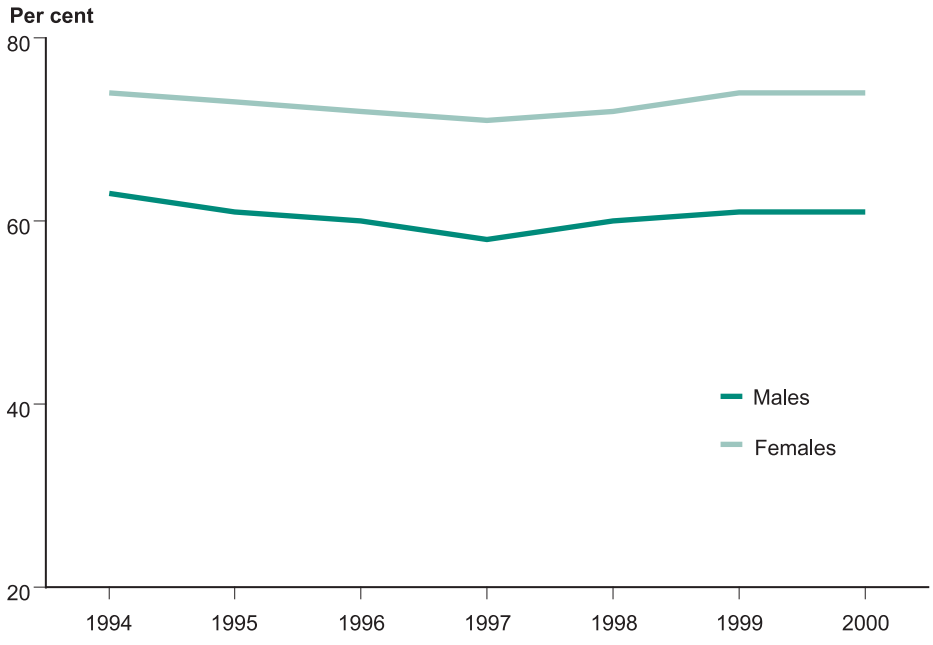
Source: ABS various years(a).

Figure 20.3: National retention rates of secondary school students, 1980 to 2002

- National retention rates have increased significantly since 1980, when only 35% of children beginning secondary schooling progressed to Year 12. The retention rate doubled in the 1980s and reached 77% in 1992. The retention rate declined to 71% in 1996 and then increased to 75% in 2002.
- Throughout the period, retention rates were consistently higher for females than males and the difference between the sexes increased with time. The difference between the male and female retention rates in 1980 was only 5 percentage points, but was 11% percentage points in 2002.
- Although retention rates increased between 1980 and 2002, 19% of females and 30% of males still did not remain in school until Year 12 in 2002. However, there are alternative pathways for young people who do not complete Year 12--some will undertake post-school training such as apprenticeships and others may go back to school to complete Year 12 later.
- Apparent retention rates varied by type of school. Apparent retention rates are lowest in government schools (ABS 2002b).

The calculation of the apparent retention rate is affected by a number of factors including migration and students repeating a year of education. No adjustments are made for these effects in the calculation of the rate.

A more direct measure of educational achievement is the completion rate. The Year 12 completion rate is the proportion of all students enrolling in Year 12 in any year who complete Year 12 in that year. Year 12 completion rates from 1994 to 2000 are shown in Figure 20.4.



Source: MCEETYA 2000.

Figure 20.4: National Year 12 completion rates, 1994 to 2000

- The overall average Year 12 completion rate in Australia in 2000 was 67%, with females (74%) completing at a higher rate than males (61%). Australian completion rates are slightly lower than the Organisation for Economic Co-operation and Development (OECD) average. In 2001, 71% of Australians aged 25–34 had attained at least upper secondary education compared with an OECD average of 74% (OECD 2002).

Early school leavers

Many school leavers in Australia, especially those who did not complete Year 12, continue to face difficulties in finding work. Low levels of educational attainment for young people affect their employment opportunities and their likelihood of future financial independence. This section explores the reasons for leaving school early and some of the problems faced by early school leavers in terms of training and employment opportunities.

Table 20.2: Most important reason for leaving school before Year 12, 1999

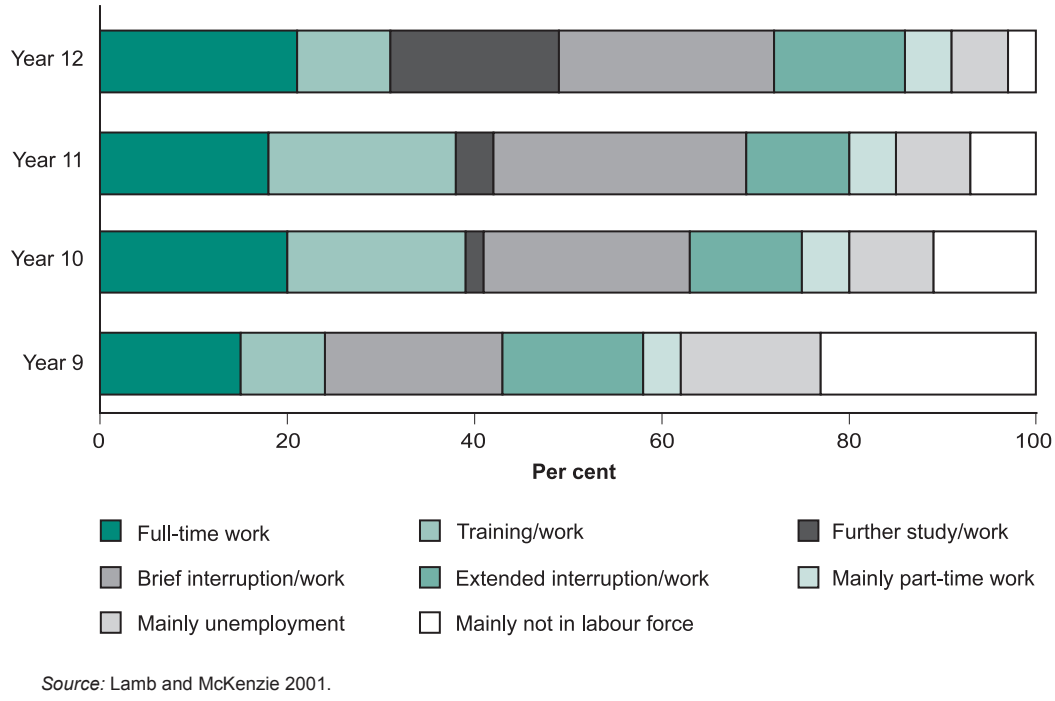
Reason for leaving school	Males (%)	Females (%)	Persons (%)
Employment/apprenticeship	64	40	54
Not doing well at school	4	7	5
Job training that wasn't available at school	3	8	5
Did not like school	11	15	13
Could not afford to stay at school	0	3	1
Teachers thought student should leave	3	2	2
To earn money	7	5	6
The school did not offer desired subjects/courses	3	8	5
Other reasons	7	14	10
Total	100	100	100
Number sampled	467	328	795

Source: Marks & Fleming 1999.

- Two of the main reasons given for school non-completion was to focus on getting a job or an apprenticeship and earning some money (71% of males and 45% of females).
- Negative experiences at school also figured among top reasons for non-completion—18% of males and 24% of females said they left Year 12 because they were doing poorly, they did not like school, or teachers advised them to leave.

Young people who did not complete Year 12 were more likely to be males and were overrepresented in government schools and in rural areas. They were also more likely to be from a lower socioeconomic background and from English-speaking families and of Aboriginal descent (Marks and Fleming 1999).

The importance of Year 12 completion is emphasised by the fact that these young people can suffer long-term disadvantages in the labour market (DSF 2002). Seven years after they were in Year 12, or would have been in Year 12 if they had not left early, outcomes are poorer across the board for those young people who did not complete Year 12. Outcomes improve for every year completed from Year 9 to Year 12 (Figure 20.5).



Source: Lamb and McKenzie 2001.

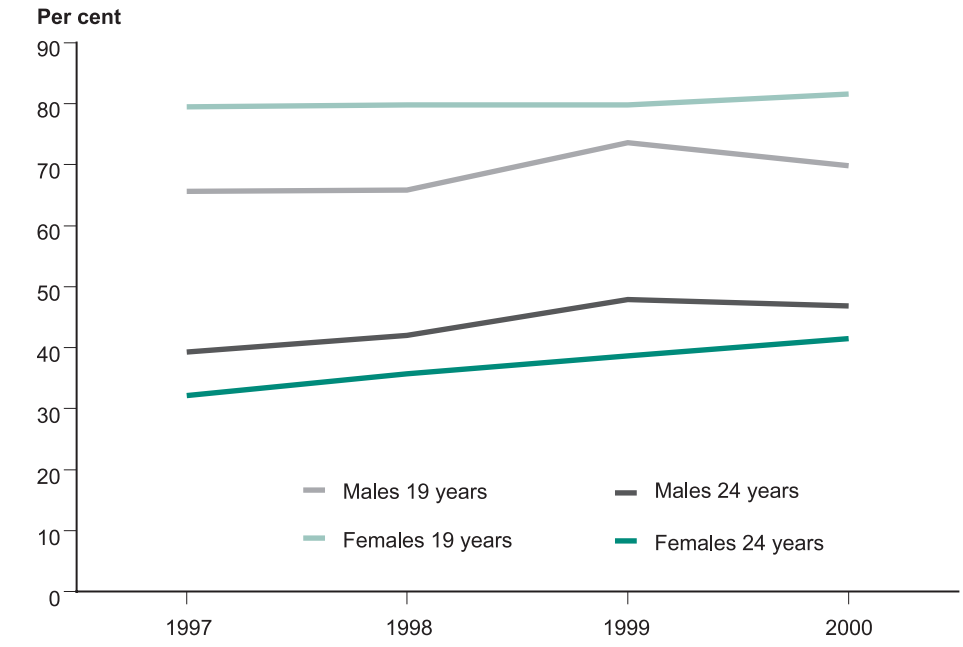
Figure 20.5: Long-term outcomes of early school leavers 7 years after leaving school, 2001

- Leaving school before Year 12 is associated with a higher likelihood of not being in education and being unemployed or not in the labour force in the long term.
- Remaining at school and completing Year 12 is associated with a higher likelihood of being in training or further education up to 7 years after leaving school.

Educational attainment

Education participation rates are a good indicator of young people's progress and achievement, but levels of educational attainment are important to monitor as they provide a more complete picture of the education received by young people.

Educational attainment is the highest school or post-school educational qualification attained. A measure of educational attainment is the proportion of 19-year-olds who have completed Year 12 or obtained a post-secondary school qualification, and the proportion of 24-year-olds with a skilled vocational qualification or higher. Trends in the educational attainment of young people aged 19 and 24 years are presented in Figure 20.6.



Source: MCEETYA 2000.

Figure 20.6: Attainment of Year 12 or a post-secondary school qualification by 19-year-olds, and attainment of a skilled vocational qualification or higher by 24-year-olds, Australia, 1997 to 2000

- The educational attainment of young people increased between 1997 and 2000. However, there were some differences between the attainments of men and women of different ages.
- For 19-year-olds, educational attainment increased between 1997 and 2000 for both males and females from 66% to 70% for males and from 80% to 82% for females.
- Although the attainment rates were lower for 24-year-olds, there was a greater increase in educational attainment from 36% to 44% over the period. Female attainment rates in this age group were lower than the rates for males, but they increased by a larger number of percentage points than the male rates—from 32% to 42% for females, compared with 39% to 47% for males. The lower proportion of females may be related to women in this age group having children.

Literacy and numeracy levels

Attendance in courses is considered an educational input measure. Actual skill levels can be measured through literacy and numeracy surveys. Proficiency in reading, writing and mathematics is essential for day-to-day living and for further educational opportunities. In Australia, the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) has established national benchmarks for reading, writing and numeracy for Years 3, 5 and 7 students. A benchmark is a nationally agreed minimum standard without which a student has difficulty in progressing at school. In addition to national benchmarking, Australia participates in the OECD's Programme for International Student Assessment (PISA), the first assessment of which took place in 2000. Every 3 years PISA assesses the skills of

15-year-old students in over 30 countries, in the domains of reading literacy, mathematical literacy and scientific literacy.

Australia was among the highest performing nations in the first cycle of PISA (2000) in all three domains. Out of more than 30 countries, Australia was significantly outperformed (statistically) by only one other country in each of reading and mathematical literacy (Finland and Japan respectively) and two countries in scientific literacy (Japan and Korea).

Table 20.3 provides the mean scores of various student subgroups in Australia compared with the OECD averages.

Table 20.3: Mean scores for reading literacy, mathematical literacy and scientific literacy of 15-year-old Australian secondary students, by student subgroup, PISA, 2000

Student subgroup	Reading literacy	Mathematical literacy	Scientific literacy
All Australian students	528	533	528
OECD average	500	500	500
Male students	513	539	526
Female students	546	527	529
Indigenous students	448	449	448
Other Australian students	531	535	529
Highest SES[(a)] quarter	576	578	571
Lowest SES[(a)] quarter	490	495	498
Major cities[(b)]	541	538	532
Geographically remote students[(b) (c)]	495	514	481

(a) Based on parental occupation status coded in accordance with The International Standard Classification of Occupations (ISCO) developed by the International Labour Organisation.

(b) Based on the ARIA Plus classification.

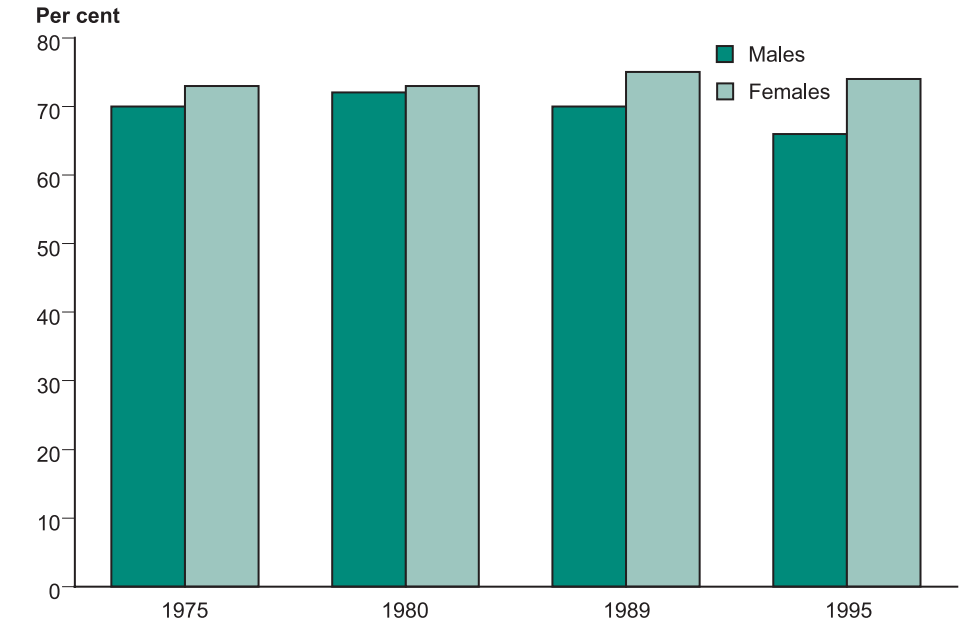
(c) Includes the ARIA Plus categories of Remote and Very Remote.

Source: DEST, unpublished data.

- Although Australian students on average performed well in PISA compared with other countries, the PISA results highlighted a number of areas of concern:
  - –the poor performance of Indigenous students in all three domains
  - –the relatively strong impact of socioeconomic background on performance
  - –the comparatively low results of boys compared with girls in reading literacy.
- Students attending schools in outer regional areas and remote and very remote parts of Australia achieved lower results than students attending schools in major cities and inner regional areas.

Trend data on the literacy and numeracy of secondary school students are not yet available from the Year 7 national benchmark testing or from PISA. The main data on literacy and numeracy among junior secondary school students come from a report by Marks and Ainley (1997). The authors analysed data from eight data sets covering a period of 20 years, including the Australian Youth Survey and the first wave of the Longitudinal Survey of Australian Youth (LSAY). The performance and levels of

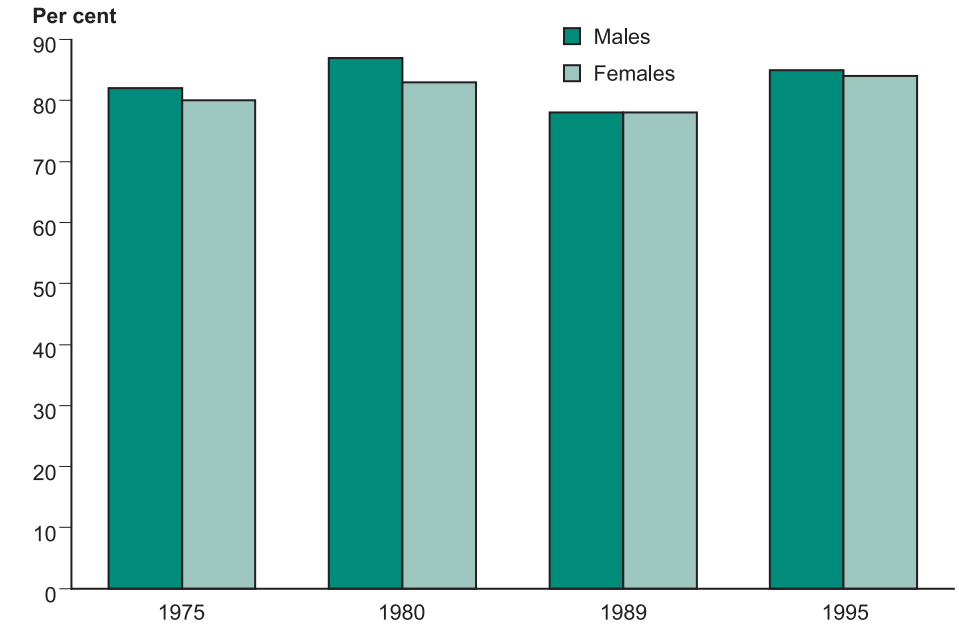
mastery of young people aged 14 years in tests of reading, comprehension and numeracy between 1975 and 1995 are shown in Figures 20.7 and 20.8.



Source: Marks & Ainley 1997.

Figure 20.7: Acceptable performance in reading and comprehension of young people aged 14 years by sex, 1975 to 1995

- In the 20 years between 1975 and 1995, a greater proportion of girls aged 14 years attained acceptable levels of mastery in reading and comprehension than boys, and the difference between the sexes grew larger over the period. In 1975, 70% of boys aged 14 years were assessed as acceptable, compared with 73% of girls. By 1995 these proportions were 66% of boys and 74% of girls.
- In 1975, 47% of 14-year-old students whose main language at home was not English attained an acceptable level of mastery in reading compared with 53% in 1995. However they continue to trail behind English-speaking students by 20 percentage points.



Source: Marks & Ainley 1997.

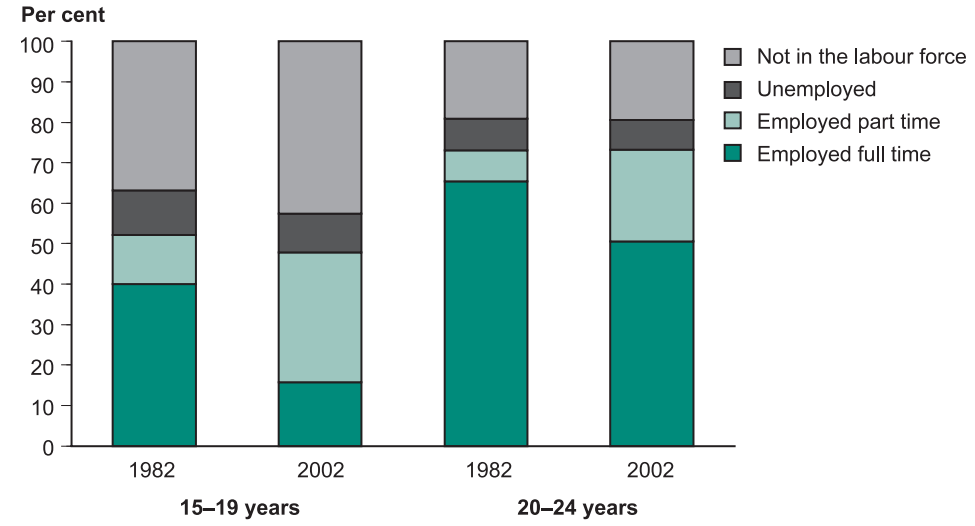
Figure 20.8: Acceptable performance in numeracy for students aged 14 years, by sex, 1975 to 1995

- With the exception of one period (1989), in the 20 years between 1975 and 1995, a greater proportion of 14-year-old boys than girls attained acceptable levels of mastery in numeracy.
- In 1975, 82% of 14-year-old boys were assessed as having an acceptable mastery in numeracy compared with 80% of girls. By 1995 these proportions had increased to 85% of boys and 84% of girls.

Employment

Over the last three decades, substantial change has taken place in the youth labour market. The most outstanding change has been an increase in participation in education and a deferral of entry into the full-time, long-term labour market. In conjunction with this, there has been a marked shift from full-time to part-time work.

Trends in labour force participation



Source: ABS, various years(d).

Figure 20.9: Labour force status of young people aged 15–24 years, 1982 and 2002

- Between 1982 and 2002, the proportion of young people in full-time employment decreased from 40% to 16% for young people aged 15–19-years, and from 65% to 50% for young people aged 20–24 years (Figure 20.9).
- Over the same period, the proportion of young people employed part time increased from 12% to 32% for 15–19-year-olds, and from 8% to 23% for 20–24-year-olds.
- The proportion of young people who were unemployed decreased slightly from 1982 to 2002: from 10.9% to 9.6% for young people aged 15–19 years and from 7.8% to 7.4% for those aged 20–24 years. Note that a relatively large proportion of unemployed 15–19-year-olds were at school or attending a tertiary institution full time (59% in August 2002). A relatively small proportion of unemployed 20–24-year-olds were full-time tertiary students (18% in August 2002).
- Between 1982 and 2002 the proportion of young people not in the labour force increased for young people aged 15–19 years from 37% to 43%, whereas for young people aged 20–24 years, the proportion remained unchanged at 19%. Many of those not in the labour force were in full-time education or, for young women aged 20–24 years, looking after their own children.

Occupation

Most of the jobs in the youth labour market are in the areas of services, sales and labouring (Table 20.4). Many of these jobs are occupied by students and are low paid, part time or casual and have no career paths associated with them.

Table 20.4: Types of occupations by age group, 2002

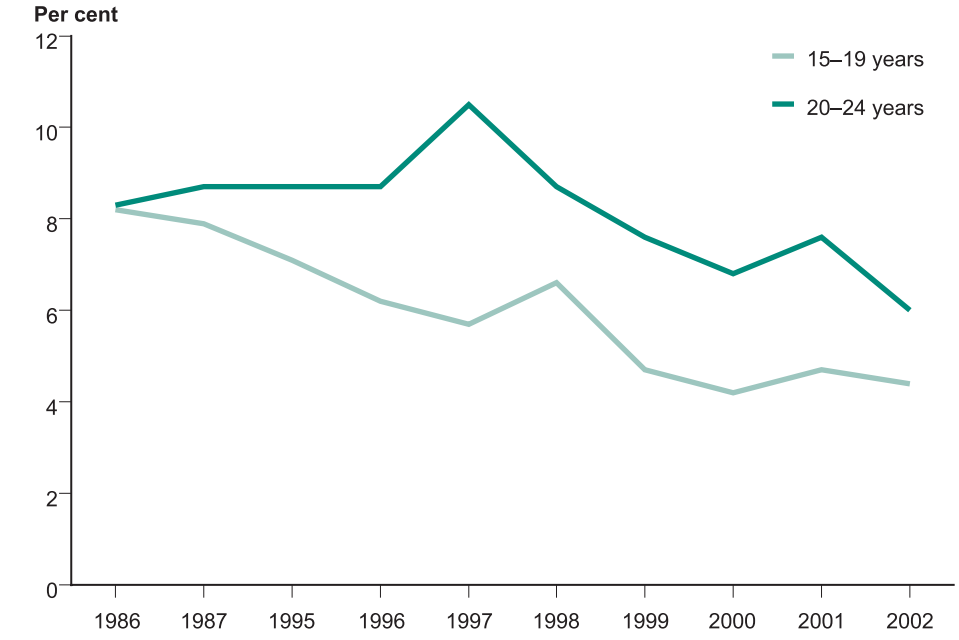
	15–19 years		20–24 years		25 years and over	
Occupation	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Elementary clerical, sales and service workers	267.1	41.0	161.3	16.0	510.2	6.6
Labourers and related workers	120	18.4	105.9	10.5	670.7	8.7
Intermediate clerical, sales and services workers	98.4	15.1	240.3	23.8	1,251.5	16.3
Tradespersons and related workers	78.9	12.1	156.8	15.5	936	12.2
Intermediate production and transport workers	46.2	7.1	69.3	6.9	674.1	8.8
Associate professionals	22	3.4	87.4	8.7	968.5	12.6
Professionals	9.2	1.4	137.3	13.6	1,663.3	21.6
Advanced clerical and service workers	7.4	1.1	37.3	3.7	343.5	4.5
Managers and administrators	2.4 *	0.4	14.7	1.5	670.5	8.7
Total	**651.6**	**100.0**	**1010**	**100.0**	**7,688.3**	**100.0**

* Subject to sampling variability too high for most practical uses.

Source: ABS 2002(d)

- In 2002, about 60% of employed young people aged 15–19 years were employed as elementary clerical, sales and service workers, and as labourers and related workers.
- Among employed young people aged 20–24 years, about 66% were employed as intermediate and elementary clerical, sales and services workers, tradespersons and labourers.

Unemployed young people not in full-time education



Source: ABS various years(d).

Figure 20.10: Proportion of young people aged 15–19 years and 20–24 years who were unemployed and not in full-time education,1986 to 2002

- Between 1986 and 2002, the proportion of young people who were unemployed and not in full-time education was consistently higher for young people aged 20–24 years than those aged 15–19 years.
- From 1986 to 2002, the proportion of young people who were unemployed and not in full-time education decreased from 8.2% to 4.4% for those aged 15–19 years, and from 8.3% to 6.0% for those aged 20–24.

Young people unemployed long term

Young people who are unemployed long term, i.e. more than 52 weeks, are the most disadvantaged in the labour market.

Figure 20.11 shows trends in the proportion of young people who were unemployed for more than 52 weeks.

Source: ABS various years(d).

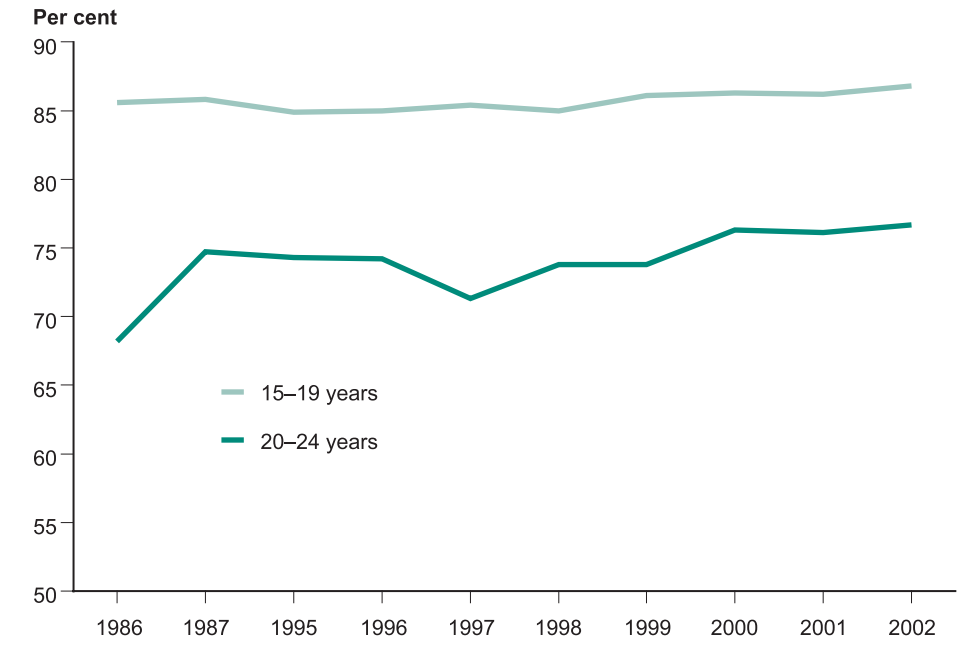
Figure 20.11: Proportion of young people aged 15–24 years who were long-term unemployed, 1988 to 2002

- Between 1988 and 2002, the proportion of young people aged 15–19 years unemployed for more than 52 weeks, fluctuated between 0.9% and 2.7%.
- For young people aged 20–24 years, the proportion who were long-term unemployed ranged between 1.5% and 4.7%.

Young people in education and work

Nowadays, many young people are combining work and study. In recent years the proportion of young students who work part time or full time has increased. The proportion of full-time students aged 15–19 years who are working either full time or part time increased from 28% in 1986 to 37% in 2002 (ABS 2002e). The proportion of 20–24-year-olds studying full time and working part time or full time increased-from 37% in 1986 to 53% in 2002 (ABS 2002e).

The MCEETYA considers that young people not participating in full-time education or full-time work or part-time education combined with part-time work are at risk in the labour market. The proportion of young people aged 15–24 years participating in full-time education or full-time work or both part-time education and part-time work is shown in Figure 20.12.



Source: ABS various years(e).

Figure 20.12: The proportion of young people participating in full-time education or full-time work or both part-time education and part-time work, 1987 to 2002

- Between 1987 and 2002, the proportion of young people aged 15–19 years engaged in full-time work or full-time study, or a combination of part-time work and part-time study remained steady at around 85%.
- Over the same period, the proportion of young people aged 20–24 years engaged in full-time work or full-time study, or both part-time work and part-time study increased from 68% in 1986 to 71% in 1997 and 77% in 2002.

Income

The income received by young people varies considerably depending on their employment status and whether they are in full-time or part-time education. Therefore, gross weekly income without information on study and labour force participation does not provide a complete picture of income distribution among young people. Most young people with no personal income live with their parents in middle- to high-income families. Those who have their own personal income receive it through employment and/or government income support. Most young people who receive government income support live in low-income families or independently on a low income. This section examines the weekly income distribution of young people and the mean weekly earnings of full-time and part-time workers. Indicators of low income presented here are the proportion of young people on income support including the Youth Allowance; the proportion of young people receiving the Independent rate of Youth Allowance and the proportion of young people who experienced hardship because of a shortage of money.

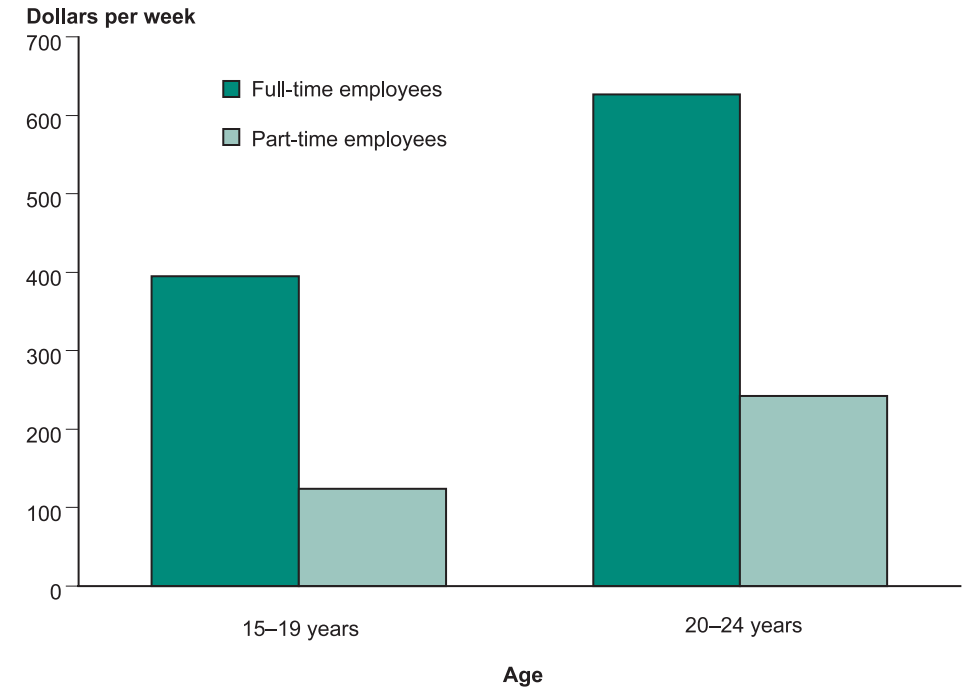
Table 20.5: Gross weekly income of young people aged 15–24 years, 2001

	15–19 years		20–24 years		15–24 years	
Gross weekly income	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Negative/Nil income	373,868	32.2	72,172	6.2	446,040	19.2
With income	788,203	67.8	1,084,410	93.8	1,872,613	80.8
Total	**1,162,071**	**100.0**	**1,156,582**	**100.0**	**2,318,653**	**100.0**
Income distribution						
$1–$119	388,971	49.3	88,140	8.1	477,111	25.5
$120–$199	147,847	18.8	168,847	15.6	316,694	16.9
$200–$399	185,470	23.5	284,482	26.2	469,952	25.1
$400–$599	52,136	6.6	310,042	28.6	362,178	19.3
$600–$799	9,343	1.2	158,643	14.6	167,986	9.0
$800–$999	1,916	0.2	46,922	4.3	48,838	2.6
$1,000 or more	2,520	0.3	27,334	2.5	29,854	1.6
Total	**788,203**	**100.0**	**1,084,410**	**100.0**	**1,872,613**	**100.0**

Note: Excludes 306,282 young people aged 15–24 years who were either visitors or whose income was not stated.

Source: ABS 2001 Census of Population and Housing, unpublished data.

- The proportions of young people with no income were 32% of 15–19-year-olds and 6% of 20–24-year-olds. Most of these 446,000 young people would have been dependent on their parents for financial support.
- Just over two-thirds of the 15–19-year-olds who had an income (68%) had an income of less than $200 per week. Only 24% of 20–24-year-olds receiving an income had an income of less than $200 per week.
- Of young people aged 15–19 years who had an income, 98% had an income of less than $600 per week. In comparison, 79% of those aged 20–24 years with an income had an income of less than $600 per week.
- Almost no young people aged 15–19 years with an income had an income of $800 or more per week, compared with 7% of those aged 20–24.



Source: ABS 2002f.

Figure 20.13: The mean weekly earnings of young people aged 15–24 years, 2002

- In 2002, the average weekly earnings for full-time and part-time workers was lower for those aged 15–19 years than it was for those aged 20–24.
- For those aged 15–19 years, average weekly earnings were $395 for full-time workers and $124 for part-time workers. For those aged 20–24, average weekly earnings were $627 for full-time workers and $242 for part-time workers.

Income support

Most young people who receive government income support live in low-income families or independently on a low income.

- Young people aged 15–24 years in low-income families who are full-time students are eligible to receive Youth Allowance: this payment is income-tested on parental income unless the young person is assessed as independent (see Table 20.7). Unemployed people aged 18–20 years in low-income families are also eligible for Youth Allowance, which is also income-tested on parental income. Unemployed people aged 21–24 years, however, are eligible to receive Newstart Allowance which is income-tested on their own income, not their parents'.
- Young people aged 16–24 years in specific circumstances are eligible for other income support payments. For instance, if they have a disability they may be eligible for a Disability Support Pension (which is income-tested on their own income and not on parental income) and parents aged 16 and over with no income or a low income and/or with a partner with no income or a low income are eligible for Parenting Payment.
- Young people aged 15 years are generally not eligible for government income support unless they have attained the minimum school-leaving age for their state or territory, are homeless and in full-time study, or are undertaking a combination of approved activities. In these circumstances they are eligible for Youth Allowance at the independent rate.

The proportion of young people who received income support in 2002 by single year of age is shown in Table 20.6.

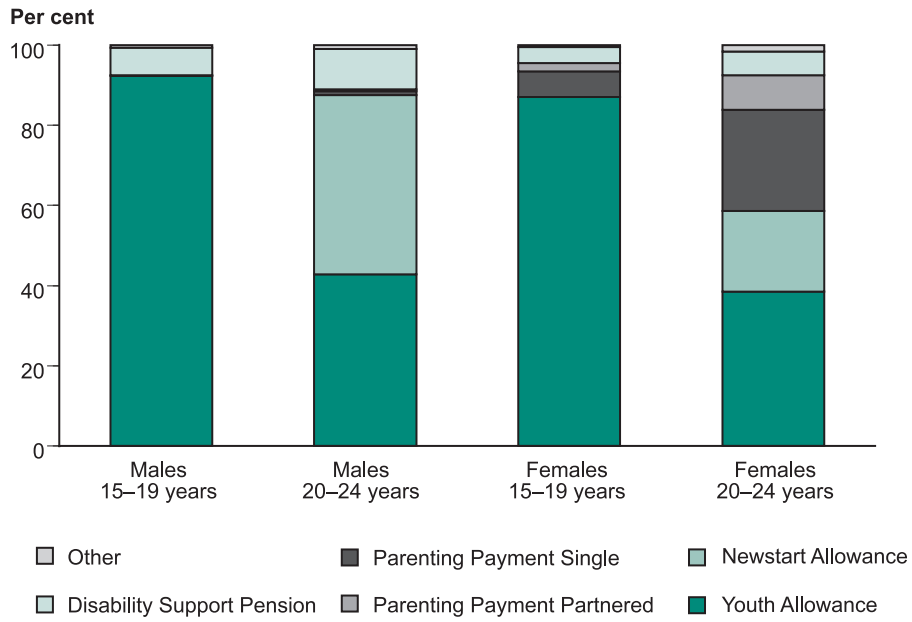
Table 20.6: The proportion of young people aged 15–24 years receiving income support, 2002

	Males		Females		Persons	
Age	Number	Per cent	Number	Per cent	Number	Per cent
15	568	0.4	1,070	0.8	1,638	0.6
16	34,710	24.6	36,193	27.1	70,903	25.8
17	36,106	25.4	40,406	29.7	76,512	27.5
18	33,307	23.4	40,843	30.1	74,150	26.7
19	32,721	22.8	41,727	30.4	74,448	26.5
20	33,128	23.4	43,622	31.9	76,750	27.6
21	33,996	24.3	42,401	31.2	76,397	27.7
22	30,805	22.7	36,654	27.9	67,459	25.3
23	27,252	20.6	32,477	25.1	59,729	22.8
24	24,288	18.4	30,457	23.6	54,745	21.0

Source: Centrelink 2002 unpublished data.

- The proportion of young people receiving income support varied by age and sex.
- Very few people aged 15 years are entitled to this benefit, and hence the proportion of 15-year-olds receiving income support is very low.
- The highest proportion of males receiving income support was at age 17 where 1 in 4 received income support and of females at age 20 where just under a third (32%) received income support.
- The proportion of young people receiving income support declined at ages 22, 23 and 24 for both males and females—24% of females and 18% of males aged 24 years were on income support.
- Irrespective of age, a higher proportion of females received income support than males for all ages examined.

The type of income support received by young people is shown in Figure 20.14.



Source: Centrelink 2002 unpublished data.

Figure 20.14: Young people aged 15–24 years receiving income support by type of income support, 2002

- In 2002, the proportion of young people aged 15–19 years receiving the youth allowance was 22%—24% of females and 19% of males.
- Of young people aged 15–19 years receiving income support, 92% of males and 87% of females were receiving Youth Allowance.
- Of young people aged 20–24 years receiving income support, the proportion receiving Newstart Allowance was 45% for males and 20% for females. Of the females aged 20–24 years receiving income support, 34% were receiving either a single or partnered Parenting Payment.

A small proportion of young people aged 15–17 years (2%) were independent from their parents for the purpose of the Youth Allowance—1.6% of males and 2.4% of females. The proportion increased with age: 0.4%, 2% and 3.6% for those aged 15, 16 and 17 years respectively.

The reasons for the independent status for the purpose of receiving the youth allowance among those aged 15–17 years are shown in Table 20.7.

Table 20.7: Youth aged 15–17 years who receive independent income support, by reason for independence, June 2002 (per cent)

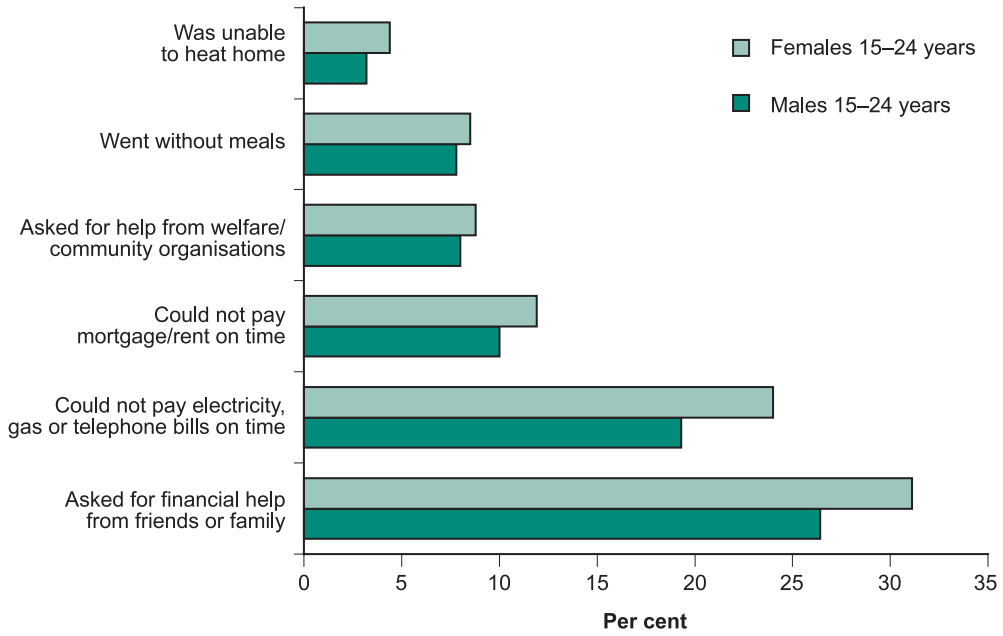
Reason for independence	Males	Females	Persons
Homelessness			
Serious family breakdown	93.5	93.3	93.4
Other exceptional circumstances	3.8	4.3	4.1
No parental home	1.6	1.1	1.3
Other homeless	0.8	0.8	0.8
Domestic violence	0.3	0.5	0.4
	100.0	100.0	100.0
Total homeless (number)	**5,487**	**7,930**	**13,417**
Not homeless			
State care or ward–-supported	49.9	58.2	54.3
Other not homeless	22.4	20.5	21.4
Orphan	12.2	10.8	11.4
Earned 75% of Commonwealth Training Award pay	11.9	7.3	9.5
Parents cannot exercise responsibilities	3.6	3.2	3.4
	100.0	100.0	100.0
Total non- homeless (number)	**1,368**	**1,544**	**2,912**

Source: Centrelink 2002 unpublished data.

- In 2002, a total of 16,329 young people aged 15–17 years received the independent rate of Youth Allowance. The majority (13,417 or 82%) of these were homeless.
- Of these homeless young people, the most common reasons they were eligible for the independent rate of Youth Allowance were that they had experienced a serious family breakdown (12,527 or 93%), were in other exceptional circumstances (553 or 4%), or had no parental home (176 or 1.3%).
- A small number of young people aged 15–17 years who received the independent rate of Youth Allowance were not homeless (2,912 or 18%). The most common reasons for these young people receiving the independent rate were that they were supported in state care (1,582 or 54%) or were orphans (333 or 11%).

Hardship

The proportion of young people who are considered to be in financial difficulty or hardship is difficult to assess from data on employment and income support only. The Household, Income and Labour Dynamics in Australia (HILDA) survey provides a good source for examining financial difficulties faced by young people. The measure selected for this purpose was hardship caused by a shortage of money (Figure 20.15).



Source: AIHW analysis of the 2001 HILDA survey.

Figure 20.15: Hardship indicators, young people aged 15–24 years, 2001

- The most common form of hardship for young people aged 15–24 years was not being able to pay their electricity, gas or telephone bills on time because of a shortage of money; 19% of males and 24% of females had this type of experience.
- Of those aged 15–24, 3% of males and 4% of females were unable to heat their homes because they couldn't afford it.
- The results of the HILDA survey revealed that approximately 8% of males aged 15–24 years and 9% of females aged 15–24 years had gone without meals because they were short of money. The NHS showed a similar result—approximately 10% of males and 9% of females aged 18–24 years reported sometimes running out of food and having no money to buy more (2001ABS NHS, unpublished data).

21. Housing and homelessness

Leaving the family home is a major transition for young people. Despite a recent trend for young people to live with their parents for longer, many will move out of the family home between the ages of 15 and 24 years, even if such a move does not signal total financial independence. In fact, young people move back into the family home for a number of reasons (see Chapter 18).

Moving from the family home is usually associated with decisions about education and employment. But regardless of whether a young person is engaged in study or work, or a combination of these activities, they tend to be on low incomes. One of the greatest barriers to young people moving away from the family home is locating affordable housing. In a survey of young Commonwealth Rent Assistance clients conducted in 1999, 42% of recipients stated that the high cost of housing was a major problem in their most recent search for accommodation (Burke et al. 2002).

A number of links between health and housing are especially relevant to young people. Because of financial constraints, they are more likely to live in substandard or overcrowded dwellings and therefore be more at risk of poor health outcomes. Waters (2001a) showed that people living in rented accommodation in Australia were significantly more likely to report fair or poor health status, to be smokers, to have recently visited a doctor or to have a higher than average number of serious health conditions than people living in accommodation they owned. Overcrowded houses and houses that are damp or cold pose greater risks of infectious diseases, respiratory conditions and meningococcal infection (Waters 2001b).

Various forms of housing assistance are available to young people who have difficulty achieving housing independence because of financial hardship. Young people under 25 who receive Youth Allowance and who live permanently or indefinitely apart from their parents or guardians are also eligible to receive Commonwealth Rent Assistance, which provides additional financial help to young people who rent privately. Housing assistance for young people is also provided through the Commonwealth–State Housing Agreement (CSHA), the purpose of which is to provide appropriate, affordable and secure housing to those who most need it, for the duration of their need (AIHW 2001b).

Moving out of the family home is not always voluntary and may be forced on a young person due to family conflict, domestic violence or parental abuse and neglect. When this situation arises, the potential for the young person to become homeless or housed under poor conditions increases. Structural factors such as poverty, unemployment and lack of affordable housing are also important determinants of youth homelessness. Thus, leaving home early does not necessarily lead to homelessness per se, but home leavers who have a number of family risk factors and are also faced with issues of housing affordability and other financial considerations may quickly find themselves homeless or housed under poor conditions.

Homeless young people are more likely to have a mental health problem, a psychiatric disorder or a mood or anxiety disorder than non-homeless young people (Kamieniecki 2001). They are also more likely to already have, or to develop, a substance use disorder and to have experienced at least one traumatic event (Burhich et al. 2000). In addition to mental health and substance use problems, homeless people often suffer from health problems such as asthma, bronchitis, HIV infection and tuberculosis (Martens 2001), and have a higher likelihood of being the victim of crime (especially assault and other types of violence).

Access to health services is an important concern for homeless young people. Failure to seek appropriate treatment can exacerbate existing health problems, making overcoming homelessness even more difficult. For example, it is generally observed in

the community that people with drug use disorders do not readily seek treatment, but due to their marginalisation, people who are drug dependent *and* homeless are even less likely to use treatment services than other substance users (Teesson et al. 2000).

Homeless young people may be supported in a number of ways. Some receive assistance from community services such as family support programs or programs for the mentally ill. Others may receive assistance from programs or agencies funded mainly to support those who are homeless. The Supported Accommodation Assistance Program (SAAP) is the major government response to homelessness.

This chapter covers information on the housing of young people aged 15–24 years, using overcrowding and housing mobility as measures of disadvantage. In addition, an estimate of the number of homeless young people and the number who access SAAP services is also presented. For more details on young people accessing SAAP services, see *Young Homeless People in Australia 2001–02* (2003). The main sources of data are the ABS Census of Population and Housing, AIHW SAAP data collection and the Household, Income and Labour Dynamics in Australia (HILDA) survey.

Dwelling types

Young people in Australia live in a variety of private and non-private dwelling types. The proportion living in different types of private dwellings is shown in Table 21.1.

Table 21.1: Young people aged 12–24 years living in private and non private dwellings on census night 2001, by dwelling type (per cent)

	Age (years)		
	12–17	**18–24**	**12–24**
Private dwellings			
Separate house	87.9	71.8	79.4
Semi-detached, row/terrace, townhouse, flat, apartment etc.	8.2	21.6	15.3
Caravan, cabin, houseboat	0.3	0.5	0.4
House or flat attached to a shop, office, etc.	0.3	0.4	0.4
Flat, unit or apartment attached to a house	0.1	0.2	0.2
Improvised home, tent, sleepers out	0.1	0.1	0.1
Non-private dwellings	2.6	4.7	3.7
Not stated[(b)]	0.5	0.6	0.6
Total	**100.0**	**100.0**	**100.0**
Total number			
Private dwellings	1,566,233	1,712,588	3,278,821
Non-private dwellings	42,220	84,816	127,036
Not stated	8,629	11,189	19,818
Total	**1,617,082**	**1,808,593**	**3,425,675**

Notes

(1) Cells in this table have been randomly adjusted to avoid the release of confidential data.

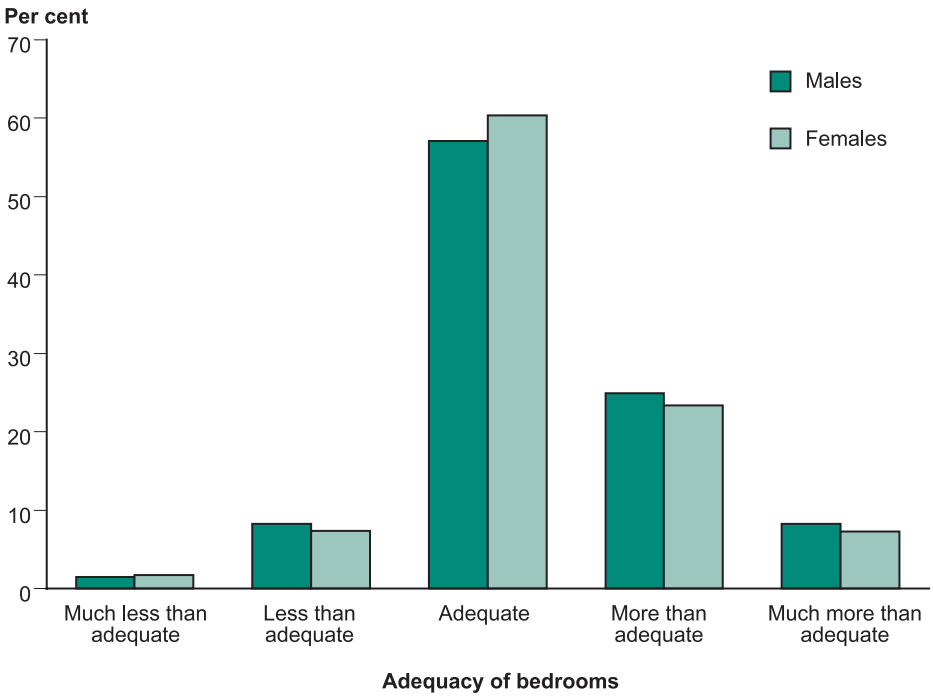
(2) A private dwelling is normally a house, flat, or even a room. It can also be a caravan, houseboat, tent, or a house attached to an office, or rooms above a shop. Non-private dwellings include hotels, motels, guest houses, prisons, religious and charitable institutions, defence establishments, hospitals and other communal dwellings.

Source: ABS Census of Population and Housing 2001 unpublished data.

- In 2001, there were approximately 3.4 million young people living in private and non-private dwellings. Of these, the majority (96%) lived in private dwellings.
- Of those living in private dwellings, 79% (2.7 million young people) were living in a separate house, with a further 16% living in flats, apartments or townhouses.
- Young people aged 18–24 years are less likely to live in separate houses and more likely to live in flats, apartments or townhouses than those aged 12–17 years. For example, the proportion of young people aged 18–24 years living in a semi-detached, row/terrace, townhouse, a flat or apartment was more than twice that of young people aged 12–17 years (22%, compared with 8%). Presumably, this reflects a higher proportion of younger people living in their parents' houses.
- Less than 5% of young people were living in accommodation that could be considered temporary, including caravans, cabins or houseboats, improvised homes or tents.
- The age distribution of young people in non-private dwellings reflects the different life cycle stages of young people aged less than 18 years and those aged 18–24 years. Older young people were more highly represented in the category of staff quarters, residential college or corrective institutions, whereas a much higher proportion of young people aged 12–17 years lived in boarding schools than those aged 18–24 years.

Housing and overcrowding

As stated earlier, living in overcrowded houses can be associated with higher rates of infectious diseases and respiratory conditions. The adequacy of the number of bedrooms in the homes of young people is used as an indicator of overcrowding. The following data based on perception of overcrowding, are derived from the HILDA survey.[1]



Source: AIHW analysis of the 2001 HILDA survey.

Figure 21.1: Proportion of young people aged 15–24 years in households, by adequacy of the number of bedrooms, 2001

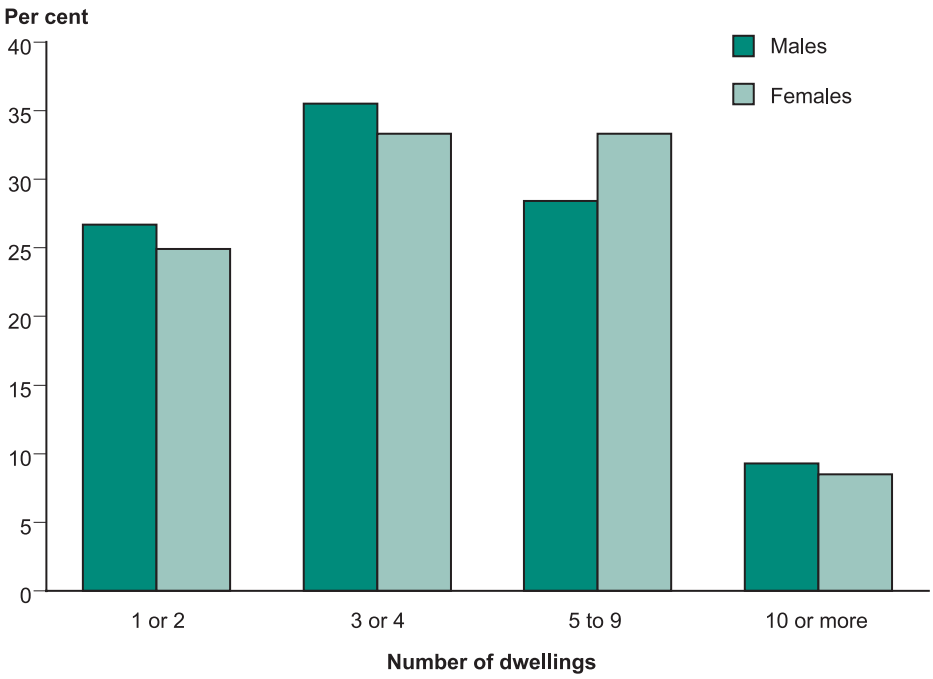
- Around 1 in 10 young people lived in homes where they considered the number of bedrooms was less than adequate (8%) or much less than adequate (2%).
- The majority of young people were in households where the number of bedrooms was adequate (around 60%).
- Over 30% of young people were in households where the number of bedrooms was more than adequate or much more than adequate.

1. Perception of overcrowding as reported in the HILDA survey may differ from measures based on using occupancy standards that relate the number and type of occupants to the number of bedrooms available.

Mobility

National data show that young people are more likely to move and change their living arrangements than Australians in other age groups. One-quarter of young adults whose living arrangements changed during 1999 had moved out of their parents' home; 1 in 10 had moved back in with their parents (ABS 2002g).

Data from the HILDA survey provide information on the number of dwellings lived in by young people over the previous 10 years (Figure 21.2).



Source: AIHW analysis of the 2001 HILDA survey.

Figure 21.2: Young people aged 15–24 years by number of dwellings lived in during the previous 10 years, 2001

- Around 1 in 4 young people had lived in 1 or 2 dwellings during the previous 10 years (27% of males and 25% of females)
- One-third of young people had lived in 3 or 4 dwellings over the same period.
- Nearly 40% of young people had lived in 5 or more dwellings in the previous 10 years.

Homelessness

Central to the information presented in this section is the concept that being homeless is not limited to whether a young person lives in a dwelling or not. Homeless youth can range from young people who leave their family home for a short period of time as a result of a family issue or dispute or problems at school which leads them to being vulnerably housed (i.e. staying in temporary accommodation such as caravan parks or hostels), to those young people who are permanently without a place to live or take shelter.

The precise number of homeless young people in Australia is difficult to ascertain. Throughout the late 1980s and early 1990s, estimates ranged from 11,000 to more than 25,000 homeless young people, depending on the survey methods used and when surveys were undertaken (National Crime Prevention 1999). High estimates of youth homelessness generated a large amount of controversy during this period, and a consensus was formed that the level of youth homeless in Australian society was unacceptably high.

The Australian Bureau of Statistics used data from the 1996 Census to generate a comparison with the estimate of homelessness produced by Chamberlain and MacKenzie in 1994 (ABS 1996a). These figures for young people aged 19–24 years are close—between 15,000 and 16,000 homeless young people at these two points in time, as shown in Table 21.2. The ABS suggests that the discrepancy between the two estimates for this age group may have occurred because young people who were sleeping out on Census night were not identified by census collectors.

The number of homeless young people aged 12–18 years, however, presents a more complex comparison. According to the ABS, it is probable that the Census 'missed' 13,000 homeless young people aged 12–18 years who were 'hidden' in the 'visitors' category on the census form and thus the Chamberlain and MacKenzie estimate is probably still comparable to the ABS figure. More details about the differences in the homelessness estimates calculated by Chamberlain and MacKenzie and the ABS are discussed in *Counting the Homeless* (ABS 1996a).

Chamberlain and MacKenzie estimated the number of homeless young people aged 12–18 years again in August 2001. The 2001 methodology differed from 1994 as remote area Indigenous communities were included in the 2001 estimates. After adjustments were made for these differences, Chamberlain and MacKenzie estimated that the number of young homeless people aged 12–18 years had increased by 8.4% since 1994.

Table 21.2: Estimates of the homeless population aged 12–24 years, 1994, 1996 and 2001

	Chamberlain and MacKenzie (May 1994)	ABS (August 1996)	Chamberlain and MacKenzie (August 2001)
Number of persons 12–18 years	21,000	7,100[a]	26,060[b]
Number of persons 19–24 years	16,000	14,710	not estimated

(a) The discrepancy between the Chamberlain and ABS estimate of the number of homeless young people aged 12–18 years is discussed in detail in *Counting the Homeless* (ABS 1996a).

(b) After adjustment for comparison with 1994, the figure is 24,230.

Sources: ABS 1996a; Chamberlain & MacKenzie 2002.

The definition of homelessness in the National Community Services Data Dictionary (NCSDD) states 'a person is homeless if he or she does not have access to safe, secure and stable housing' (AIHW 2000). This means that even if a person has a physical home, they would be considered homeless if it were not safe at home, if there were no legal right to continued occupation of the home or the home lacked the amenities or resources necessary for safe and secure living. Using this definition, at least some of those young people residing in the 'separate house' or similar categories in Table 21.1 may have been 'homeless'.

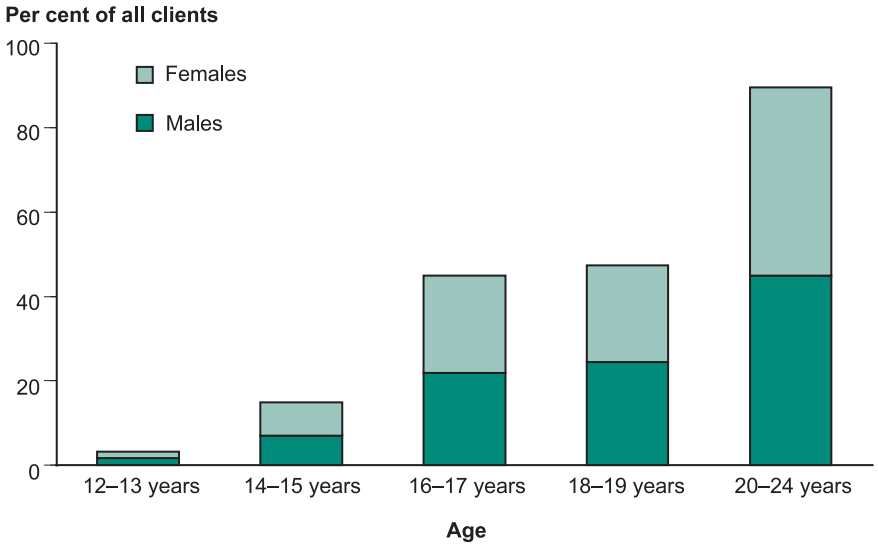
This definition essentially encompasses those people in Australia for whom support and accommodation services are required to help them become safe, secure and adequately housed. Service delivery definitions such as those in the NCSDD and which govern the SAAP data collections recognise that people at risk of homelessness should be included among the homeless. In addition, the delivery of programs providing services to improve social wellbeing often encompass preventive and early intervention strategies and establish eligibility criteria for assistance. As such, persons enumerated using a service delivery definition may not be counted in a cultural definition such as that used by Chamberlain and MacKenzie to count the homeless population for the 1996 Census of Population and Housing. It should therefore be noted that the service delivery definition may result in counts of people in the homeless population that differ from those obtained using a cultural definition (AIHW 2001b).

SAAP clients

As the major program response to homelessness in Australia, SAAP supports a large number of young Australians. In 2001–02, 34,100 young people presenting on their own were supported and/or accommodated by SAAP agencies (AIHW 2003a).

The age distribution of young SAAP clients aged 12–24 years in 2001–02 is shown in Figure 21.3. Importantly, the data represent only young people who present to SAAP alone. There were around 100 clients aged under 12 years in 2001–02 who were assisted independently of a parent or guardian, but these clients are not included in this report. There were also more than 5,300 children aged 12–17 years who accompanied a parent or guardian to a SAAP agency in 2001–02 (AIHW 2002a).

The proportion of young people in Australia aged 12–24 years who were SAAP clients in 2001–02 was 1.0%.



Notes

1. Number excluded due to errors and ommissions: < 50 clients aged 12–24 years (gender) and 200 clients (age).
2. Figures have been weighted to adjust for agency non-participation and client non-consent.

Source: AIHW 2003a.

Figure 21.3: SAAP clients aged 12–24 years, 2001–02

- Young people are overrepresented in SAAP compared with the proportion of young people in the total Australian population. Young people aged 12–24 years accounted for around 36% of the estimated 94,600 SAAP clients aged 12 years and over in 2001–02 (AIHW 2003a), even though young people account for only 18% of the total Australian population.
- Females were more highly represented within SAAP than males. For young people aged 12–24 years, there were 1.4 times as many female clients as males. Young people aged 18–19 years had the highest rate of SAAP use of all clients, with 14.7 people in this age bracket using SAAP services per 1,000 people in the general population. Females in this age group had a high rate of 17.4 per 1,000, whereas males had a rate of 12.2 per 1,000.

Of young SAAP clients in 2001–02, the highest proportions were aged 20–24 years (45%, or 15,300 clients). Interestingly, there were more clients aged 16–19 years (46%, or 15,700) than 20–24 years, despite the difference in the number of years in each category. Clients aged 12–15 years made up just under 9% (3,200) of young clients (AIHW 2003a).

Table 21.3: SAAP support periods for clients aged 12–24 years: main reasons for seeking assistance, 2001–02

	Males		Females	
Main reason for seeking assistance	**Per cent**	**Number**	**Per cent**	**Number**
Accommodation-related reasons	34.6	6,800	25.2	7,200
Family-related reasons	24.5	4,900	25.3	7,200
Interpersonal conflicts	3.7	700	3.6	1,000
Physical/emotional abuse	1.5	300	4.0	1,100
Recent arrival to area with no means of support	5.7	1,100	3.2	900
Domestic violence	0.9	200	18.7	5,300
Financial difficulty	9.7	1,900	6.5	1,900
Drug/alcohol/substance abuse	4.9	1,000	2.1	600
Itinerant	3.9	800	2.7	800
Other reasons	10.5	2,100	8.6	2,500
Total	*100.0*	. .	*100.0*	. .
Total number	. .	**19,800**	. .	**28,500**

Notes

1.Number excluded due to errors and omissions (weighted): 2,500 support periods (main reason, gender and age).

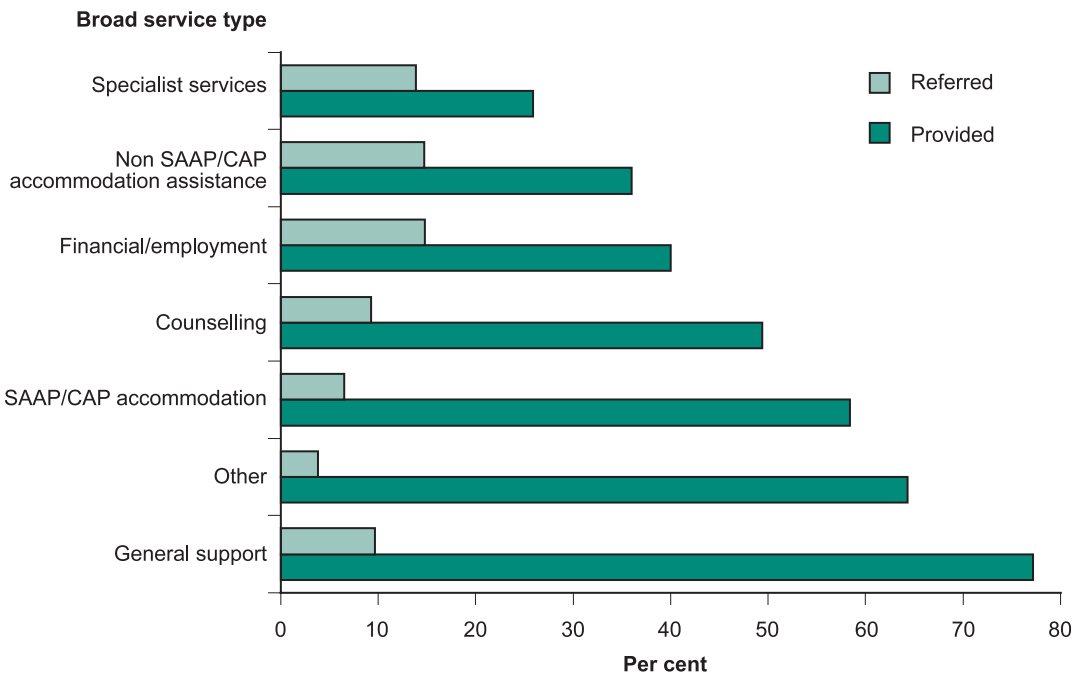
2.Table excludes high-volume records (7,500) because not all items were included on the high-volume form.

3.Figures have been weighted to adjust for agency non-participation and client non-consent.

4.'Other reasons' include recently left institution, psychiatric illness, sexual abuse and gambling.

Source: SAAP Client Collection, unpublished data.

- Young females sought SAAP assistance most frequently because of accommodation-related reasons and family-related reasons, which were both reported in 25% of support periods. Domestic violence was also a common main reason for seeking assistance (19%).
- Accommodation and family reasons were also the most common main reasons for seeking assistance for young male clients (35%). Accommodation-related reasons were reported in a higher proportion of support periods than for females (25%). Family-related reasons were reported in the same proportion as females (25%).



Notes

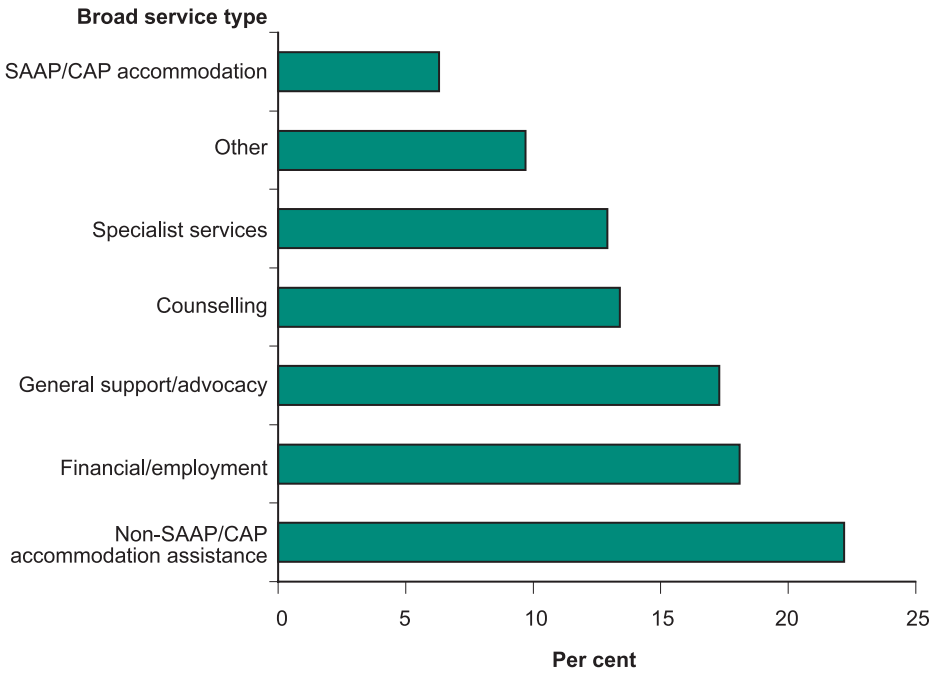
1. Number excluded due to errors and omissions (weighted): 1,300 closed support periods with no information on service requirements or provision and 200 support periods where the age of the client was missing.

2. Clients were able to receive multiple services, so percentages do not total 100. Percentages refer to if a service was provided or referred within a broad grouping, not the sum of individual services within that grouping.

Source: AIHW 2003a.

Figure 21.4: Services provided and referred to young clients, SAAP closed support periods, 2001–02

- The most frequently provided service to young SAAP clients aged 12–24 years was general support or advocacy (in 77% of support periods). 'Other' services, including meals, laundry or shower facilities, recreation, transport and other support not elsewhere specified, were also provided in a high proportion of support periods (64%).
- SAAP or CAP accommodation was provided in 58% of support periods and formal referrals to other agencies were made in 7% of support periods.
- In general, there was a higher proportion of referrals for those broad service groups where the rate of provision was relatively low. For example, specialist services were provided in 26% of support periods for young clients but referred in 14%.



Notes

1. Number excluded due to errors and omissions (weighted): 1,300 closed support periods with no information on service requirements or provision and 200 support periods where the age of the client was missing.

2. A client may require more than one type of service within the broad type of assistance.

Source: AIHW 2003a.

Figure 21.5: Services that could not be provided or referred for young clients, SAAP closed support periods, 2001–02

- The most frequent unmet need of young SAAP clients aged 12–24 years was for help in obtaining or maintaining non-SAAP or non-CAP accommodation. This assistance was unable to be provided after being requested by clients in 22% of closed support periods.
- In contrast, the fewest unmet requests for accommodation among young SAAP clients was for SAAP or CAP accommodation. This identified need was unmet in 6% of closed support periods.

22. Juvenile justice

During their transition from adolescence to young adulthood, some young people will have an encounter with the criminal justice system. A number will also be affected by a criminal act, as victim. The juvenile justice system in each State and Territory is comprised of several organisations, with each having a different primary role and responsibility in dealing with young offenders (AIHW: Broadbent 2001):

- The police are usually a young person's first point of contact with the system. The police may administer warnings, cautions and in some jurisdictions use conferencing to divert the juvenile from formal court proceedings.
- The courts (usually a special children's or youth court) are where formal charges against a young person are heard. The courts are largely responsible for decisions regarding bail (and remand) and sentencing options if a young person admits guilt or is found guilty.
- The juvenile justice departments are responsible for the supervision of juveniles on a range of community-based orders and supervised bail and are also responsible for the administration of juvenile detention centres. They also provide conferencing in some jurisdictions.

Although every state and territory has its own juvenile justice legislation, the legislation is similar across Australia. The basic emphasis of juvenile justice in all jurisdictions in Australia is on diversion of young people from court where appropriate, incarceration as a last resort, the victim's rights, the acceptance of responsibility by the offender for his or her behaviour, and community safety. When sentencing young people, the courts must consider how to minimise re-offending and the integration of juveniles back into the community, at the same time ensuring that youth who commit offences are appropriately penalised (AIHW: Broadbent 2001).

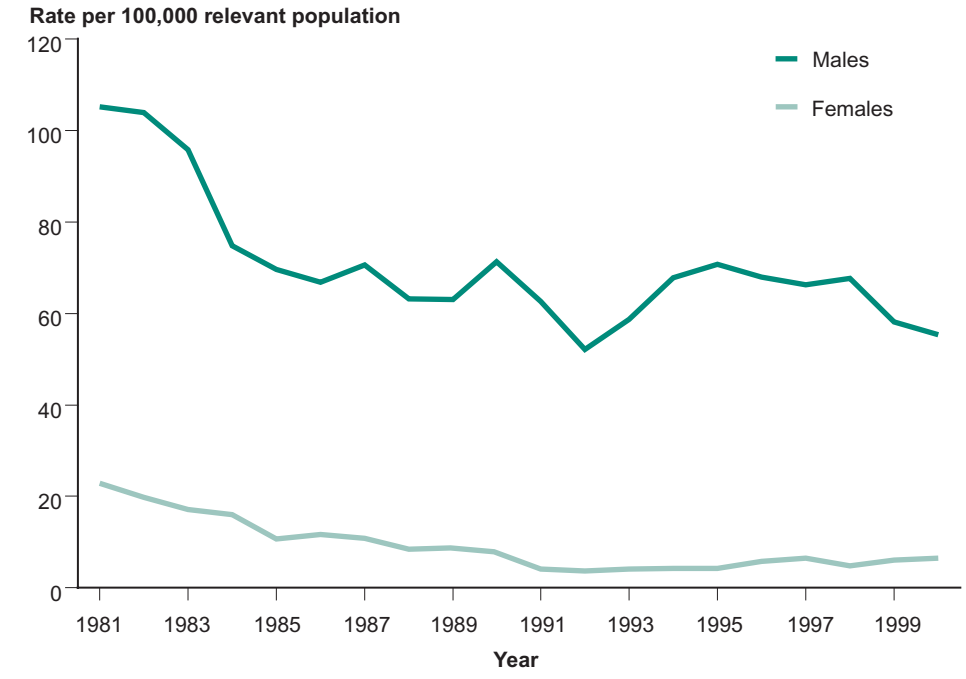
The likelihood that a young person will commit an offence is associated with their personal and social environments. Most episodes of juvenile crime are one-off events (Carcach and Leverett 1999). However, the incidence of juvenile crime appears to be rising. Mukherjee et al. (1997) reported increased involvement by juveniles in offences against the person as well as an increase in young females committing offences.

Risk factors for involvement in juvenile crime include family factors, intelligence and school performance, truancy, the influence of delinquent peers, poverty and unemployment, and substance misuse (Weatherburn 2001). 'Family factors' include a lack of parental supervision, parental rejection, lack of parental involvement with the child, and the inconsistent application of discipline. Other social environment risk factors include low family socioeconomic status, parental and sibling criminality, child abuse and neglect, and youth homelessness.

Young perpetrators of crime are commonly already suffering from or are at risk of poor health outcomes as a result of their offending. Young people with a history of juvenile offending are more likely to have existing mental health problems including mental retardation (Vermeiren 2003; Kessler 2002), to have been maltreated as children (Stewart et al. 2002) and to have substance dependencies. Adverse health outcomes for young victims of crime can range from injuries to suicidal ideation behaviour (Simon, Anderso, Thompson et al. 2002) and depression (Arboleda-Florez & Wade 2001).

Juvenile detention

The definition of a 'juvenile' differs between Australian jurisdictions. In Queensland, juvenile justice legislation applies to those people who were aged 10–16 years at the time of offence. In most other jurisdictions, however, those who were 10–17 years are considered as juveniles. Victoria has a dual-track system that provides a sentencing option for adult courts, allowing appropriate 17–20-year-olds to be sentenced to detention in juvenile justice facilities (AIC 2002). Each state and territory in Australia submits a quarterly count of juveniles in correctional institutions to the Australian Institute of Criminology to produce a detention rate for the whole of Australia. Figure 22.1 shows the detention rate for young people aged 10–17 years in Australia between 1981 and 2000.



Source: Cahill and Marshall 2002

Figure 22.1: Persons aged 10–17 years in juvenile correctional institutions (sentenced and unsentenced) at 30 June each year, 1981 to 2000

- The detention rate for young people aged 10–17 years has tended to decline over the period 1981 to 2000 from a total of 1,351 detainees in 1981 to 671 detainees in 2000. The rate for males decreased by 47% (105.2 per 100,000 to 55.3) and for females the decrease was 72% (22.9 per 100,000 to 6.4).
- Young males had rates of juvenile detention more than 8 times those of young females.

Because the trends presented in Figure 22.1 are a collated national picture of juveniles in custody, they are heavily influenced by changes within particular jurisdictions that have the largest number of detainees—particularly New South Wales, Queensland and Western Australia, (Cahill & Marshall 2002).

Importantly, however, the available data do not adequately describe the extent of young people's involvement with violence, crime and juvenile justice in Australia. National data are currently available on the number of young people held in juvenile justice detention centres, either on remand or who have been sentenced. This group of young people represents only a small proportion of juveniles supervised by juvenile justice departments and an even smaller proportion of those who are dealt with by the juvenile justice system as a whole.

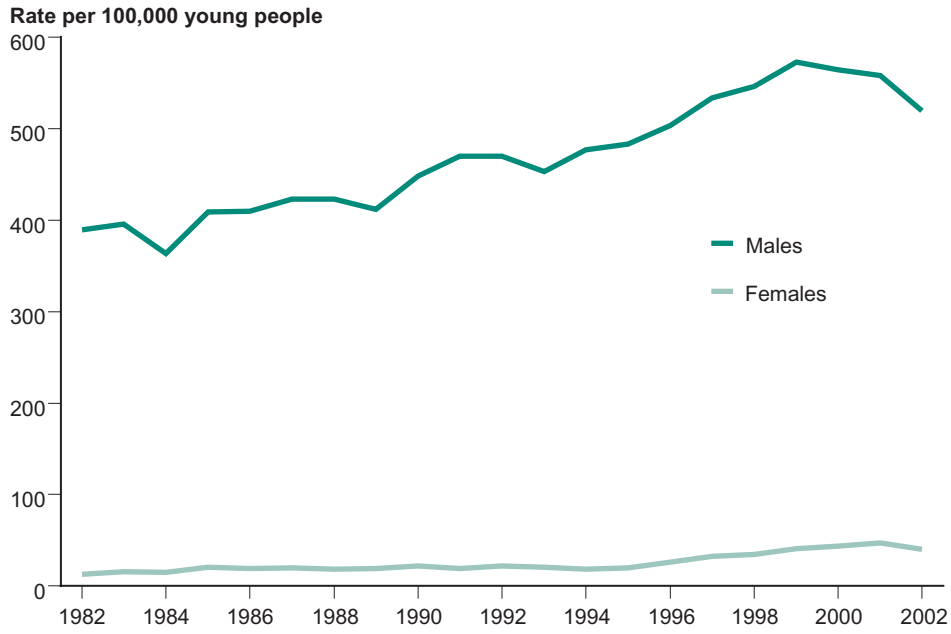
States and territories are currently working towards establishing a national data collection that will include young offenders who are on supervised community-based orders as well as in detention centres (AIHW 2003b).

Young people in prisons

Data on the imprisonment rate of young people are collected through an annual prison census carried out by the ABS. The statistics collected are derived from information from administrative records held by corrective service agencies in each state and territory.

The health status of prisoners is generally poor. Inmate surveys have shown that high proportions of prisoners have communicable diseases such as hepatitis A, hepatitis B, hepatitis C and herpes simplex virus type 2 (AIHW 2002b).

On 30 June 2002, there were 22,492 prisoners in Australia, of whom, 24% (5,399) were aged less than 25 years.

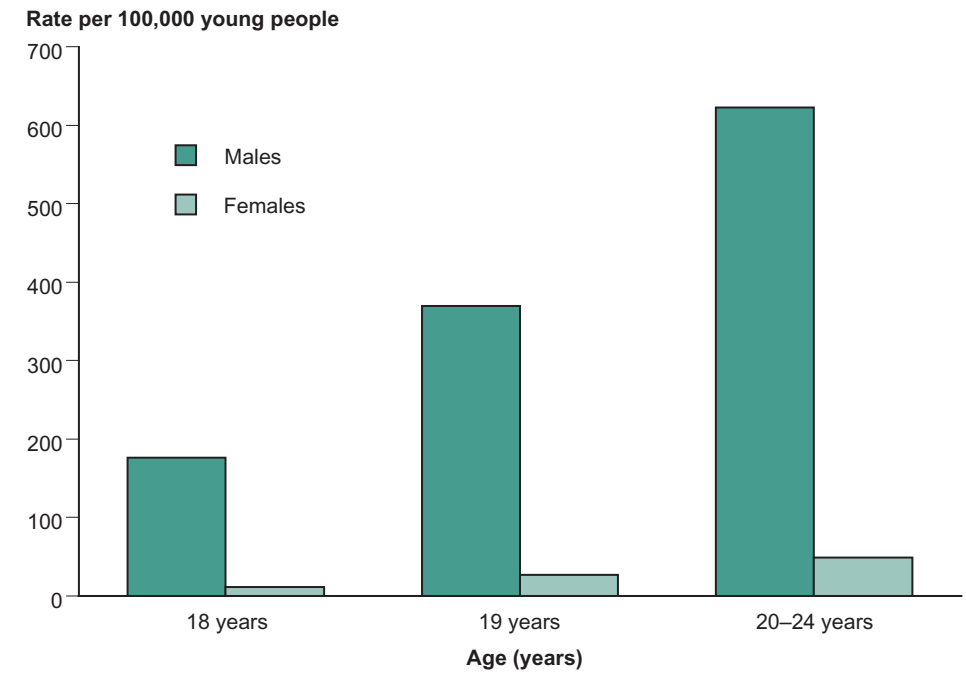


Source: ABS various years(f).

Figure 22.2: Imprisonment rate for young people aged 18–24 years in adult correctional facilities, 1982 to 2001

- The imprisonment rate for young people aged 18–24 increased steadily between 1982 and 2002. The total number of imprisoned young people rose from 3,809 in 1982 to 5,399 in 2002.
- The imprisonment rate for males aged 18–24 years was 30 times the rate for females in 1982, but had reduced to 11 times by 2002. This was the outcome of a higher increase in the imprisonment rate for females—205% (from 13.2 per 100,000 to 40.3) compared with 33% (from 389.3 per 100,000 to 519.5) for males.
- The highest rate of imprisonment for males was in 1999 for males (571.4 per 100,000) and in 2001 for females (47.1 per 100,000)

Figure 22.3 shows the imprisonment rate in 2002 by age and sex.



Source: ABS 2002h.

Figure 22.3: Imprisonment rate for young people aged 18–24 years in adult correctional facilities, 2002

- In 2002, there were relatively few imprisonments of young people aged 18 and 19 years (833, with 94% of these males).
- In 2002, the imprisonment rate for young people aged 20–24 years was 622.9 per 100,000 (4,566 imprisoned).
- Among young people aged 20–24 years, the imprisonment rate for males was more than 12 times the rate for females.

Type of offence

Table 22.1: Prisoners in Australia by most serious offence, 2002

	Number		Per cent distribution	
	18–24 years	All age groups	18–24 years	All age groups
Robbery, extortion and related offences	1,122	3,105	20.8	13.8
Unlawful entry with intent	1,001	2,857	18.5	12.7
Acts intended to cause injury	881	3,118	16.3	13.9
Theft and related offences	585	1,899	10.8	8.4
Offences against justice procedures, government security and government operations	475	1,691	8.8	7.5
Homicide	315	2,330	5.8	10.4
Illicit drug offences	249	2,194	4.6	9.8
Road traffic and motor vehicle regulatory offences	175	1,005	3.2	4.5
Sexual assault and related offences	153	2,222	2.8	9.9
Deception and related offences	72	693	1.3	3.1
Property damage and environmental pollution	61	228	1.1	1.0
Abduction and related offences	54	164	1.0	0.7
Dangerous or negligent acts endangering persons	51	237	0.9	1.1
Public order offences	34	134	0.6	0.6
Weapons and explosives offences	28	98	0.5	0.4
Miscellaneous offences	141	513	2.6	2.3
Unknown	2	4	0.0	0.0
Total	**5,399**	**22,492**	**100**	**100**

Source: ABS Prisoners Australia, unpublished data.

- The most common serious offence category for which young people were held in prison (both as sentenced and unsentenced prisoners) was robbery, extortion and related offences (21% of all young people in prisons)
- Young prisoners had been convicted for robbery (21%), unlawful entry (19%), assault (16%) and theft (11%) at a higher rate than the total prisoner population (14%, 13%, 14% and 8% respectively)
- Prisoners in the total prison population had been convicted for sexual assault and homicide (10% each) at a higher rate than the young prisoner population (3% and 6% respectively).

Victims of crime

Young people aged 15–24 years have higher victimisation rates for a number of specific offences than members of the overall population.

Table 22.2: Victims[(a)] aged 15–24 years by selected offence category, 2002 (rate per 100,000 young people)

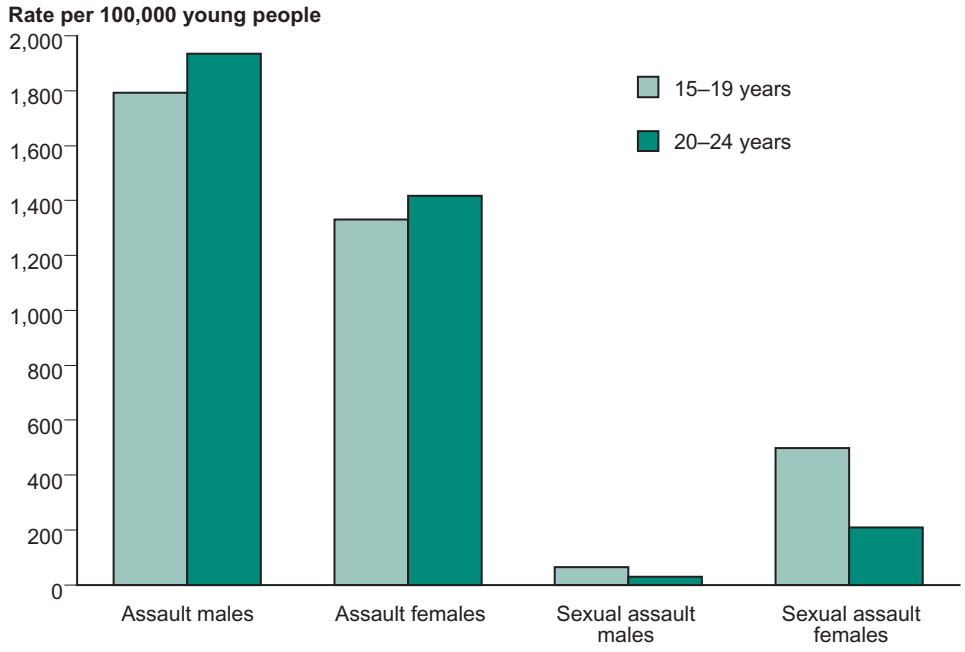
Offence	15–19 years	20–24 years	Total population aged 15+
Murder	1.5	2.6	1.6
Attempted murder	2.5	4.2	2.0
Driving causing death	2.5	2.5	1.0
Assault	1,580.5	1,728.7	809.7
Sexual assault	277.6	121.1	90.6
Kidnapping/abduction	11.1	7.6	3.5
Robbery	331.9	236.3	88.9
Blackmail/extortion	2.2	2.5	1.5

(a) Refers to individual persons.

Source: ABS 2003a.

- In 2002, young people were more likely to be victims of a number of specific crimes than the general population aged 15 years and over.
- Young people aged 20–24 were more likely to be victims of assault than those aged 15–19 years whereas 15–19-year-olds were more likely to be victims of sexual assault and robbery than 20–24-year-olds.

Assaults were the most common type of crime against the person recorded by police in 1998. Figure 22.4 shows the number and rate of assault victimisation for young people aged 15–24 years.



Source: ABS 2003a.

Figure 22.4: Victims of assault and sexual assault by sex and age, 2002 (rate per 100,000 young people)

- Over 50,000 victims of all types of assault were recorded by police in 2002.
- Males aged 20–24 years (1,934 per 100,000 young people) were assaulted more than any other age group.
- Males were assaulted at higher rates than females in both the age groups.
- Females aged 15–19 and 20–24 years were sexually assaulted at rates around 7 times higher than males (499 compared with 64 per 100,000 and 210 compared with 31 per 100,000).
- Females aged 15–19 years were sexually assaulted at twice the rate of females aged 20–24 years (499 per 100,000 compared with 210 per 100,000).

Reporting violence

Data on young people as victims of crime are incomplete. Victims of violence and other crimes are often reluctant to report crimes to the police and therefore the true estimation of the level of crime experienced by young people is likely to be underestimated in the data presented. For example, Williams and Bryant (2000) used data from the National Drug Strategy Household Survey to show that during 1998 nearly 70% of victims of an alcohol-related assault did not report the incident to police. Many victims stated they did not report matters because they believed the police could not do anything or because they thought the violence was too trivial to be reported to the police.

Table 22.3 shows the proportion of young people who were victims of an assault in 2002 and whether they reported the incident to police. These figures come from the 2002 ABS Crime and Safety Survey.

Table 22.3: Whether a victim of an assault in the previous 12 months reported the matter to police, by age group and sex, 2002

		Number ('000s)			
		Police told	Police not told	Total	Reporting rate (%)[a]
Males	15–19	17.7	57.3	75.0	23.6
	20–24	16.1	47.3	63.4	25.4
	Total 15+	*128.5*	*263.7*	*392.2*	*32.8*
Females	15–19	9.0	45.6	54.6	16.5
	20–24	9.8	26.4	36.2	27.0
	Total 15+	*92.6*	*233.0*	*325.7*	*28.4*
Persons	15–19	26.7	102.9	129.6	20.6
	20–24	25.8	73.7	99.6	25.9
	Total 15+	**221.1**	**496.7**	**717.9**	**30.8**

(a) The reporting rate is the number of victims who told police, expressed as a percentage of victims.

Source: ABS 2002 Crime and Safety Survey, unpublished data.

- The 2002 Crime and Safety survey data show that around 230,000 young people were the victims of assault in the 12 months before the survey.
- In 2002, only 21% of young people aged 15–19 years out of 130,000 and 26% of people aged 20–24 years out of around 100,000 reported an assault on them to police.
- Males 15–19 years reported assaults to police at a higher rate than females of the same age (24% compared with 17%). For young people aged 18-24 the reporting rates for males and females were similar.
- Females aged 20–24 years reported assaults to police at a higher rate than all other young people (27%).

In 1996 the ABS conducted a survey to look at women's safety. The percentage of young women aged 18–24 who were the victim of violence by a male, compared with all women over 18, is shown in Table 22.4.

Table 22.4: Young women's experience of violence[(a)] by a male during the 12 months before the survey, by age group and marital status, 1996

	18–24 years		18 years+	
Marital status	**Number ('000)**	**Per cent**	**Number ('000)**	**Per cent**
Married/de facto	239.1	10.0	4,318.3	4.0
Not married (%)	706.2	18.6	2,562.3	10.0
Total women	**945.2**	**16.5**	**6,880.5**	**6.2**

(a) Includes physical and sexual violence.

Source: ABS 1996b.

- Approximately 945,000 women aged 18–24 years (17%) experienced violence by a male in the 12 months before the survey, compared with nearly 688,000 women aged 18 years and older (6%).
- Young women who were married or in a de facto relationship were less likely to be the victim of violence by a male than those young women who were not married (10% of married/de facto young women compared with 19% of unmarried women).

Services for young women experiencing violence

Services available to young women experiencing violence include crisis, legal and financial services as well as health and counselling services.

The majority of women who experienced either a sexual or physical assault during 1998 did not use services available to them after the last incident of assault. In 1998, only 11% of women aged 18–24 years who had experienced a physical assault and 9% who had experienced sexual assault used at least one service after the incident respectively. These are important findings as women who access services and support following an experience of assault are more likely to make a successful recovery than those women who seek no services.

References

ABS (Australian Bureau of Statistics) 1996a. Census of population and housing: occasional paper--counting the homeless. Cat. No. 2041.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 1996b. Women's safety. Cat. No. 4128.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 1998a. Family characteristics. Cat. No. 4442.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 1998b. How Australians use their time. ABS Cat. No. 4153.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 1999. Attendance at selected cultural venues, Australia. ABS Cat. No. 4114.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2000. Voluntary work, Australia. ABS Cat. No. 4441.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002a. Census of population and housing: selected social and housing characteristics, Australia. ABS Cat. No. 2015.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002b. Schools, Australia. ABS Cat. No. 4221.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002c. Participation in education, Australia. ABS Cat. No. 6272.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002d. Labour force, Australia. ABS Cat. No. 6203.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002e. Education and work, Australia. ABS Cat. No. 6227.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002f. Employee earnings, benefits and trade union membership. ABS cat. no.6310.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002g. Australian social trends. Cat. No. 4102.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002h. Prisoners in Australia. ABS Cat. No. 4517.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2003. Recorded crime, 2002. ABS Cat. No. 4510.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) various years(a). Marriages and divorces, Australia. ABS Cat. No. 3310.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) various years(b). Schools, Australia. ABS Cat. No. 4221.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) various years(c). Participation in education, Australia. ABS Cat. No. 6272.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) various years(d). Labour force, Australia. ABS cat. no.6203.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) various years(e). Education and work. ABS cat. no.6227.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) various years(f). Prisoners in Australia. ABS Cat. No. 4517.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2000. National community services data dictionary (NCSDD) 2000. Viewed 1 July 2003. <http://www.aihw.gov.au/pls/nhik/nhik_data_elements.data_element_search?pLinkType=DD&pLink_ID=NCSDD>.

AIHW (Australian Institute of Health and Welfare) 2001a. Child protection Australia 1999–00. Cat. No. CWS 13. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2001b. Australia's welfare 2001: services and assistance. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2002a. Homeless people in SAAP: SAAP National Data Collection annual report 2001–02 Australia. AIHW Cat. No. HOU 72. Canberra: AIHW (SAAP NDCA report).

AIHW (Australian Institute of Health and Welfare) 2002b. Australia's health 2002: the eighth biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2003a. Young homeless people in Australia 2001–02. AIHW Cat. No. HOU 87. Canberra: AIHW (SAAP NDCA report).

AIHW (Australian Institute of Health and Welfare) 2003b. Australia's welfare 2003: services and assistance. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare): Al-Yaman F, Bryant M & Sargeant H 2002. Australia's children: their health and wellbeing 2002. AIHW Cat. No. PHE 36. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare): Broadbent A 2001. Report on the development of a Juvenile Justice National Minimum Data Set. AIHW Cat. No. CWS 14. Canberra: AIHW.

Amato P 1987. Children's reactions to parental separation and divorce: the views of children and custodial mothers. Australian Journal of Social Issues 22(4):610–23.

AIC (Australian Institute of Criminology) 2002. Australian crime: facts and figures 2002. Canberra: Australian Institute of Criminology.

Amato P 1997. The post-divorce American family: an intergenerational perspective. Family Matters 46:22–5.

Arboleda-Florez J & Wade TJ 2001. Childhood and adult victimization as risk factor for major depression. International Journal of Law and Psychiatry 24(4–5):357–70.

Burhich N, Hodder T & Teesson M 2000. Lifetime prevalence of trauma among homeless people in Sydney. Australian and New Zealand Journal of Psychiatry 34:963–6.

Burke T, Pinkney S & Ewing S 2002. Rent assistance and young people's decision-making. Melbourne: Australian Housing and Urban Research Institute.

Cahill L & Marshall P 2002. Statistics on juvenile detention in Australia: 1981–2001. Technical and Background Paper Series, no. 1. Canberra: Australian Institute of Criminology,

Carcach C & Leverett S 1999. Recidivism among juvenile offenders: an analysis of times to reappearance in court. Research and Public Policy Series, no. 17. Canberra: Australian Institute of Criminology.

Chamberlain C & Mackenzie D 2002. Youth homelessness 2001: a research program funded by all state and territory governments and the Salvation Army. Melbourne: RMIT.

DEST (Department of Education, Science and Training) 2002. DEST annual report 2001–02. Canberra: DEST.

DSF (Dusseldorp Skills Forum) 2002. How young people are faring: key indicators 2000. An update about the learning and work situation of young Australians. Ultimo: DSF.

Dunlop R & Burns A 1989. Adolescents in divorce: a three year follow up. A report to the Australian Institute of Family Studies on Phase Two of the Adolescents in Divorce Study. Melbourne: AIFS.

Eckersley R 1998. Rising pyschosocial problems among young people: historical myth or contemporary reality. Family Matters, no. 50. Melbourne: Australian Institute of Family Studies.

Fullarton S 2002. Student engagement with school: individual and school level influences. LSAY Research Report No. 27. Camberwell, Victoria: ACER.

Glover S, Burns J, Butler H & Patton G 1998. Social environments and the emotional well-being of young people. Family Matters, No. 49. Melbourne: Australian Institute of Family Studies.

Gregory RG 1999. Children and the changing labour market: joblessness in families with dependent children. Paper presented for the Labour Market Trends and Family Policy: Implications for Children Conference. Canberra 1999.

Kamieniecki G 2001. Prevalence of psychological distress and psychiatric disorders among homeless youth in Australia: a comparative review. Australian and New Zealand Journal of Psychiatry 35:352–8.

Kessler C 2002. Need for attention to mental health of young offenders: commentary. Lancet 359:1965–7.

Kiernan KE 1992. The impact of family disruption in childhood on transitions made in young adult life. Population Studies 46:213–234.

Kids Help Line 2002. 2002 statistical summary. Viewed 1 August 2003, <http://www.kidshelp.com.au/research/infosheets/02StatisticalSummary02.pdf>.

Lamb S & McKenzie P 2001. Patterns of success and failure in the transition from school to work in Australia. ACER Longitudinal Surveys of Australian Youth Program, Research Report No. 18. Camberwell, Victoria: ACER.

McDonald P 2000. Institutional support for Australian families. Paper presented to the Centenary of Federation Seminar Series, Parliament House, Canberra, October 2000.

Marks G & Fleming N 1999. Early school leaving in Australia: findings from the 1995 Year 9 LSAY cohort. LSAY Research Report No. 11. Camberwell, Victoria: ACER.

Marks G & Ainley J 1997. Reading comprehension and numeracy among junior secondary school students in Australia. LSAY Research Report No. 3. Camberwell, Victoria: ACER.

Martens WH 2001. A review of physical and mental health in homeless persons. Public Health Reviews 29(1):13–33.

MCEETYA (Ministerial Council on Education, Employment, Training and Youth Affairs) 2000. National report on schooling in Australia: 2000. Viewed 1 August 2003, <http://www.curriculum.edu.au/anr/index.html>.

Mukherjee S, Carcach C & Higgins K 1997. Juvenile crime and justice: Australia 1997. Research and Public Policy Series, no 11. Canberra: Australian Institute of Criminology.

National Crime Prevention 1999. Living rough: preventing crime and victimisation among homeless young people. Canberra: National Crime Prevention.

OECD (Organisation for Economic Co-operation and Development) 2002. Education at a glance 2002. Paris: OECD.

Pittman K 2003 Preventing problems, promoting youth development: competing goals or linked priorities? In: Ausyouth (ed) Youth development, the best investment you'll ever make: future directions in youth development. Canberra: Commonwealth of Australia, 32–53.

Resnick MD, Bearman PS, Blum RW, Bauman KE, Harris KM, Jones J, Tabor J, Beuhring T, Sieving RE, Shew M, Ireland M, Bearinger LH & Udry JR 1997. Protecting adolescents from harm: findings from the National Longitudinal Study on Adolescent Health. Journal of the American Medical Association 278(10):823–32.

Sawyer MG, Arney FM, Baghurst PA, Clark JJ, Graetz BW, Kosky RJ, Nurcombe B, Patton GC, Prior MR, Raphael B, Rey J, Whaites LC & Zubrick SR 2000. The mental health of young people in Australia. Canberra: Commonwealth Department of Health and Aged Care.

Silburn S, Zubrick S, Garton A, Gurrin L, Burton P & Dably R et al. 1996. Western Australia child health survey: family and community health. Perth: Australian Bureau of Statistics & TVW Telethon Institute for Child Health Research.

Simon T, Anderson M, Thompson M, Crosby A & Sacks J 2002. Assault victimization and suicidal ideation or behavior within a national sample of US adults. Suicide and Life-Threatening Behavior 32(1):42–50.

Smart C. 2000. Divorce and changing family practices in a post-traditional society: moral decline or changes to moral practices? Family Matters No. 56:10–19. Melbourne: Australian Institute of Family Studies.

Stewart A, Dennison S, & Waterson E 2002. Pathways from child maltreatment to juvenile offending. Trends and Issues in Crime and Criminal Justice no, 241. Canberra: Australian Institute of Criminology.

Teesson M, Hodder T & Buhrich N 2000. Substance use disorders among homeless people in inner Sydney. Social Psychiatry and Psychiatric Epidemiology 35: 451–6.

Vermeiren R 2003. Psychopathology and delinquency in adolescents: a descriptive and developmental perspective. Clinical Psychology Review 23 (2):277–318.

Waters AM 2001a. Do housing conditions impact on health inequalities between Australia's rich and poor? Positioning Paper prepared by the AHURI. Canberra: Australian National University Research Centre.

Waters AM 2001b. Do housing conditions impact on health inequalities between Australia's rich and poor? Work in Progress Report prepared by the AHURI. Canberra: Australian National University Research Centre.

Weatherburn D 2001. What causes crime? Crime and Justice Bulletin: Contemporary Issues in Crime and Justice, 54. Sydney: NSW Bureau of Crime Statistics and Research.

Weston R, Stanton D, Qu L & Soriano G 2001 Australian families in transition: sociodemographic trends 1901–2001. Family Matters, no. 60. Melbourne: Australian Institute of Family Studies.

Williams P & Bryant M 2000. Alcohol and other drug-related violence and non-reporting. Trends and Issues in Crime and Criminal Justice, no. 171. Canberra: Australian Institute of Criminology.

Wise S 2003. Family structure, child outcomes and environmental mediators: an overview of the Development in Diverse Families study. Research Paper No. 30. Melbourne: Australian Institute of Family Studies.

Wyn J & White R 1997. Rethinking youth. Sydney: Allen & Unwin.

Part VI: Population groups

Chapter 23. Aboriginal and Torres Strait Islander young people

Chapter 24. Rural and remote residents

23. Aboriginal and Torres Strait Islander young people

The poor health of Aboriginal and Torres Strait Islander peoples is well documented. Not only do they experience poorer health outcomes than the rest of the population, but the health of Indigenous people in Australia has not improved to the same extent as that of indigenous people in other industrialised countries. For example, Indigenous Australians have significantly lower life expectancy and higher infant mortality than Maoris or Native Americans (ABS 2002a). Poor population estimates, the under-identification of Indigenous people in most routine data collections, changes in the extent to which Indigenous people self-identity and changes in coverage hamper efforts to accurately capture the health status of Indigenous Australians over time, or to compare them with other populations. Nevertheless, data from a number of different sources indicate that health and wellbeing outcomes and the burden of illness are worse for Indigenous people than for other Australians.

If significant improvements can be achieved in the health status of indigenous populations in other counties, similar outcomes should be achievable in Australia (Ring & Brown 2002). Race and ethnicity alone have little effect on health and wellbeing outcomes. However, when race and ethnicity are closely associated with socioeconomic disadvantage, they become significant influences on health and wellbeing.

The relationship between socioeconomic status and health is well established in many populations, with people in the lowest socioeconomic groups experiencing higher rates of illness and mortality. Compared with other Australians, Aboriginal and Torres Strait Islander peoples are disadvantaged on a number of socioeconomic indicators including education, employment and income. However, low socioeconomic status alone cannot explain the difference between the health of different groups in a society. A number of additional factors are thought to be important determinants of health. These include the social environment in which people live (which encompasses social connections with family members, friends and the community), the degree of inclusion or exclusion from the society, and the sense of control that people feel they have over their lives. Loss of control and feelings of hopelessness and the marginalisation and exclusion of Indigenous Australians from wider society are thought to explain, in part, the higher rates of morbidity and mortality and the higher prevalence of risk-taking behaviours among Indigenous Australians (Ring & Brown 2002).

Aboriginal and Torres Strait Islander Australians are also disadvantaged in relation to access to health and welfare services. Nearly 20% of Indigenous people live in areas classified as very remote, compared with only 1% of other Australians, and consequently they experience difficulties in physically accessing health services. In addition to these problems, a lack of trained Indigenous staff among health professionals and other workers and a lack of understanding about the knowledge and values of Indigenous people can discourage Indigenous people even in non-remote areas from accessing services that are available. For example, Indigenous people access services funded by the Medical and Pharmaceutical Benefits Schemes at much lower rates than the other Australian population, despite their much poorer health status (AIHW 2001). Further, more needs to be done to disseminate culturally appropriate material about health and healthy lifestyles to Indigenous Australians.

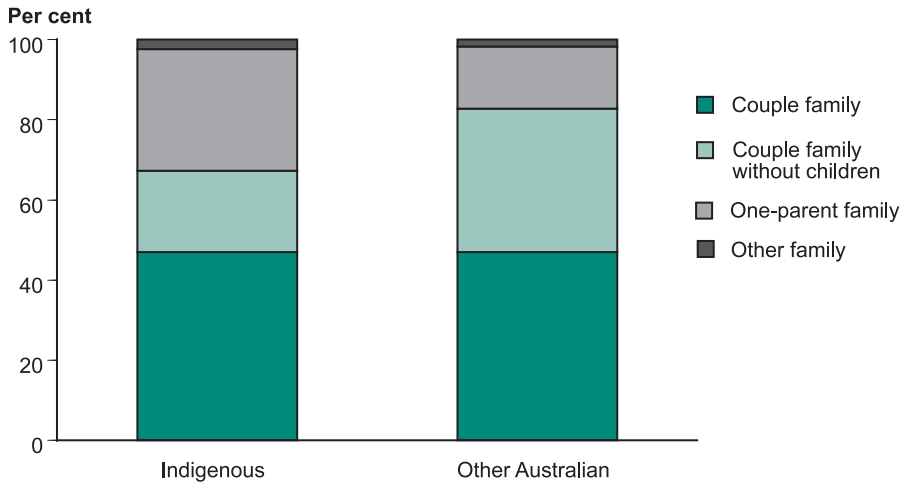
Aboriginal and Torres Strait Islander peoples suffer disadvantage at a young age and continue to be disadvantaged throughout their lives. Although children and young people also suffer from the disadvantages that affect the whole Indigenous community, problems and issues that are particularly pertinent to young people tend to affect Indigenous young people disproportionately. This chapter presents some information on the demography of Indigenous young people, and on their educational attainment and employment. Measures of health status including mortality, hospitalisations, risk factors and information about the provision of community and health services are also

presented. Data sources for this chapter come from a variety of sources including the 2001 ABS Census of Population and Housing, the reports on schooling prepared by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA), the 2001 ABS National Health Survey (NHS), other ABS publications, the AIHW National Hospital Morbidity Database, the AIHW Mortality Database and a number of community services data collections held at AIHW.

Population— an overview

A summary of the population characteristics of Indigenous young people is presented in Chapter 2. As noted, in 2001 the Aboriginal and Torres Strait Islander population numbered 458,520, representing 2.4% of the total Australian population. Of these, 116,698 or 26% were young people aged 12–24 years. Australian Indigenous young people represent 4% of the total population of young people in Australia.

Family type

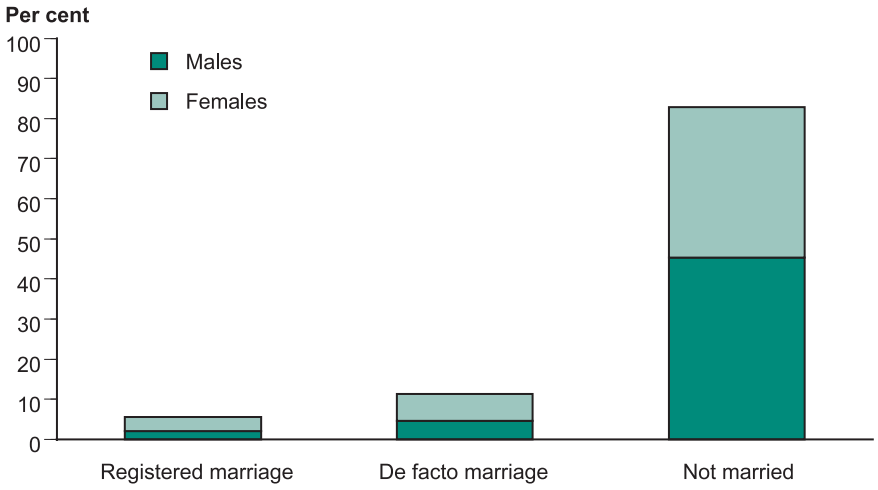


Source: 2001 ABS Census of Population and Housing.

Figure 23.1: Distribution of family type, 2001

- In 2001, about the same proportion of Aboriginal and Torres Strait Islander and other Australian families were couple families with children (see Table 18.2) for the different types of couple families). However, the Indigenous population had significantly more one-parent families and significantly fewer couple families without children than other Australians.

Marital status



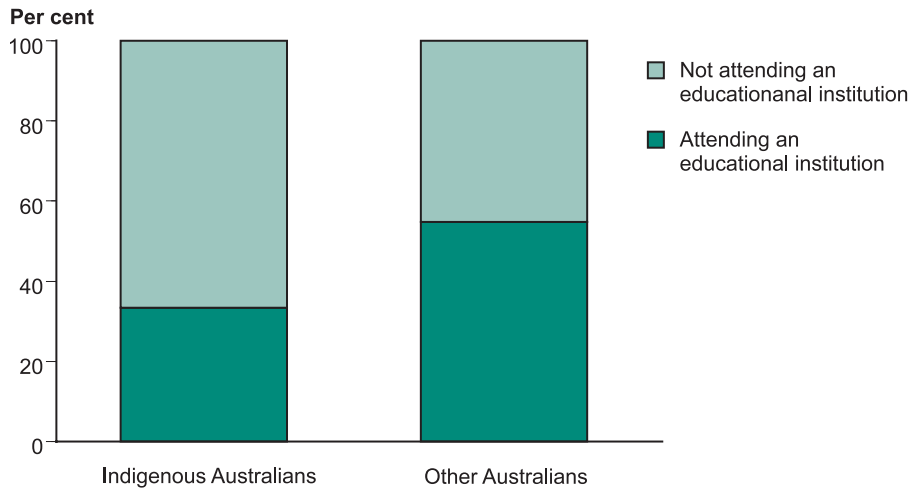
Source: 2001 ABS Census of Population and Housing.

Figure 23.2: Marital status of Indigenous young people aged 15–24 years, 2001

- The majority (83%) of Aboriginal and Torres Strait Islander young people aged 15–24 years were not married—45% were males and 38% were females.
- Around 1 in 10 young people (11%) were in a de facto relationship, and 6% were in a registered marriage. A higher proportion of females than males were in a registered marriage or a de facto relationship.

Education, income and employment

Education participation, educational attainment and mean literacy and numeracy scores are lower for Indigenous than other Australian young people.

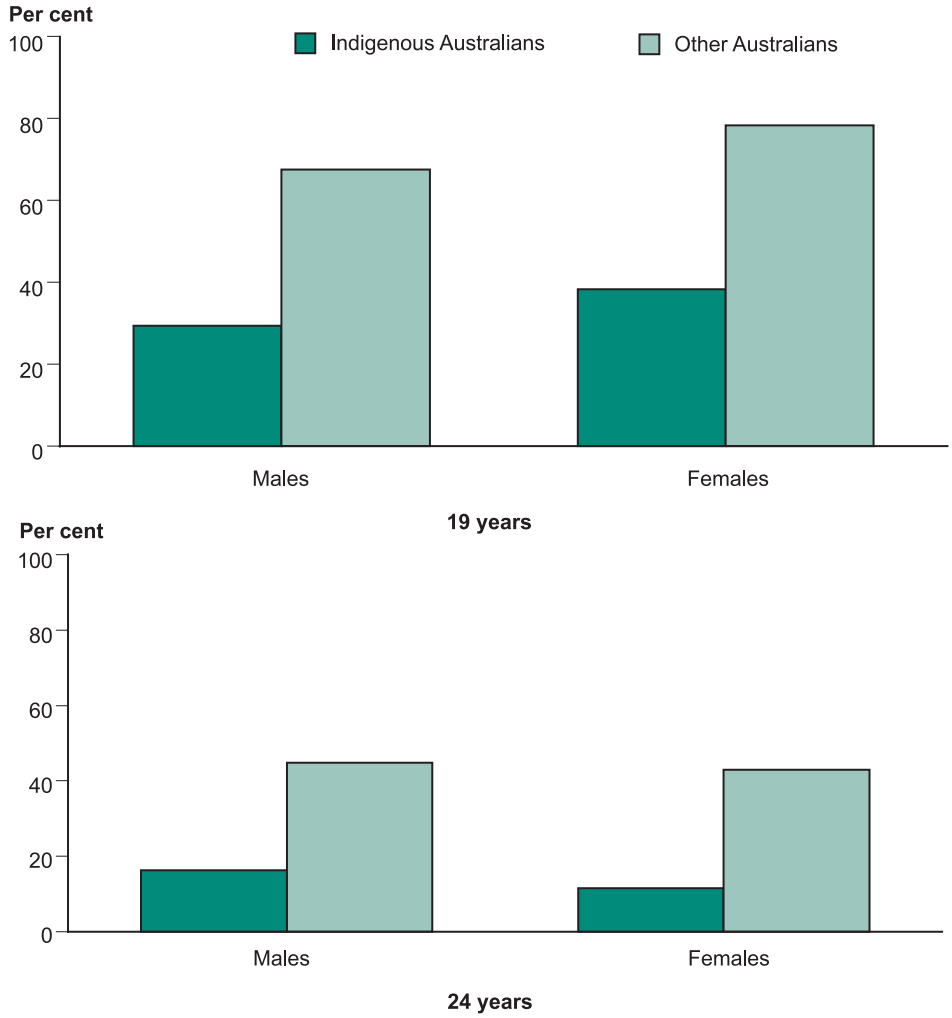


Source: 2001 ABS Census of Population and Housing.

Figure 23.3: Proportion of Indigenous and other Australian young people aged 15–24 years attending an educational institution, 2001

- In 2001, the proportion of young people aged 15–24 years attending an educational institution was higher among other Australian than among Aboriginal and Torres Strait Islander young people—37% for other Australian males, compared with 20% for Indigenous males, and 39% for other Australian females, compared with 27% for Indigenous females.

Educational attainment is measured at ages 19 and 24 years by examining, in the first case, the proportion of young people aged 19 who are still at school, or who remained at school until they were aged more than 17 years, and in the second case, the proportion of young people aged 24 years who have skilled vocational training. Educational attainment levels of Aboriginal and Torres Strait Islander young people are substantially lower than those of other Australian young people on both measures (Figure 23.4).



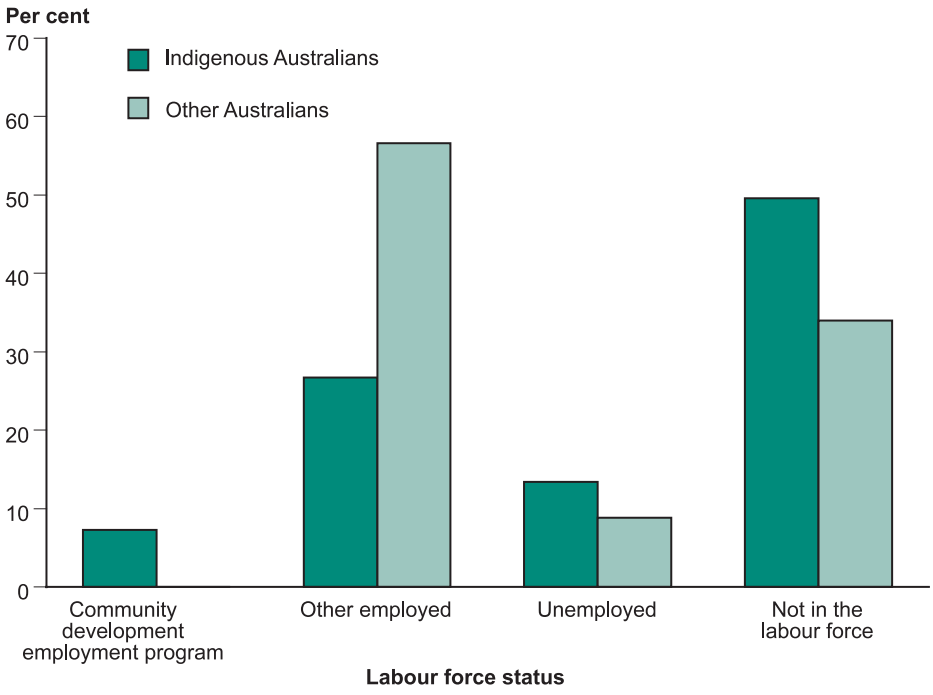
Note: Skilled vocational training or higher education comprises Certificate level 3 and higher of the Australian Standard Classification of Education (ASCED).

Source: 2001 ABS Census of Population and Housing, unpublished data.

Figure 23.4: Proportion of young people aged 19 years who are still at school or completed Year 12, and proportion of those aged 24 years with skilled vocational training or higher education, 2001

- At age 19, the proportion of Aboriginal and Torres Strait Islander males who were still at school or who had completed Year 12 is 29% (compared with 68% of other Australian males), and for Aboriginal and Torres Strait Islander females, 38% were still at school or had completed Year 12, compared with 78% of other Australian females.
- The disparity between Aboriginal and Torres Strait Islander and other Australian young people among those aged 24 years with skills training is even greater; 45% of other Australian males, compared with 16% of Indigenous males, and 43% of other Australian females, compared with only 12% of Indigenous females.

The labour force status of Indigenous young people is shown in Figure 23.5 (definitions of participation in the labour force can be found in the glossary).



Source: ABS 2001 Census of Population and Housing, unpublished data.

Figure 23.5: Labour force status of Indigenous and other Australian young people aged 15–24 years, 2001

- In August 2001, Aboriginal and Torres Strait Islander young people aged 15–24 years were more likely to be unemployed than other Australian young people—13% compared with 9%.
- Around half of Indigenous young people (50%) are not in the labour force, compared with one-third of other Australian young people (34%).
- Only about a third of Indigenous young people are employed (34%), compared with more than half of other Australian young people (57%). Of the 34% employed Indigenous young people around one fifth were in community development employment programs (CDEP) and 27% were in other employment. The CDEP programs are quite restricted in terms of training opportunities for Indigenous people.

Marked differences exist in the income earned from employment between Indigenous and other Australians aged 15–24 years (Table 23.1).

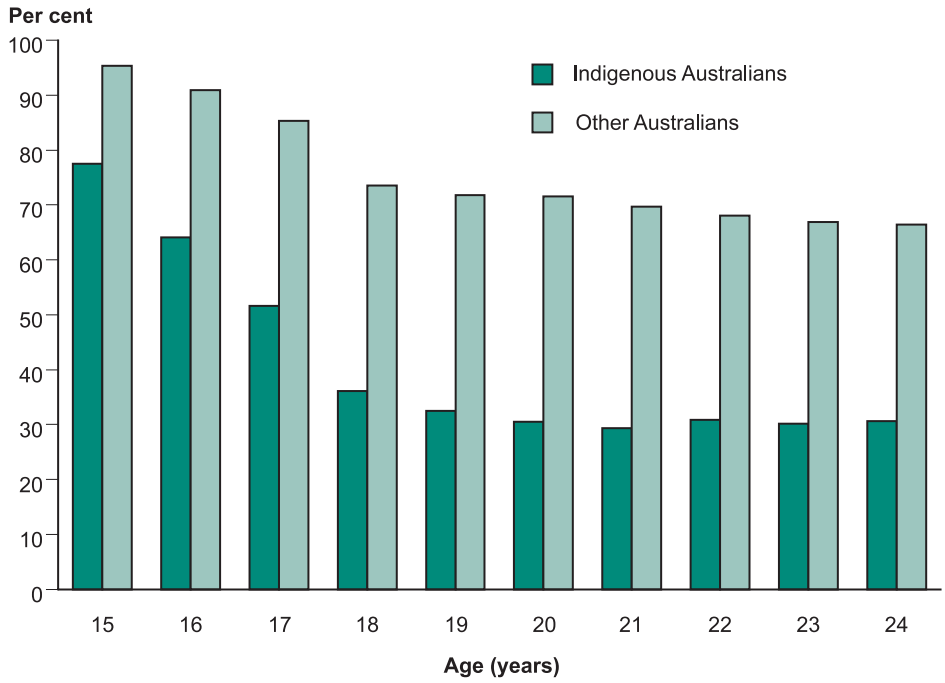
Table 23.1: Gross weekly income of Indigenous and other Australian young people aged 15–24 years, 2001

	Indigenous Australians		Other Australians	
Gross weekly income	**Number**	**Per cent**	**Number**	**Per cent**
Negative/nil income	11,578	17.4	434,462	19.3
With income	55,102	82.6	1,817,511	80.7
Total	66,680	100.0	2,251,973	100.0
Income distribution				
$1–$119	11,524	20.9	465,587	25.6
$120–$199	19,555	35.5	297,139	16.3
$200–$399	14,915	27.1	455,037	25.0
$400–$599	6,007	10.9	356,171	19.6
$600–$799	2,016	3.7	165,970	9.1
$800–$999	494	0.9	48,344	2.7
$1,000 or more	591	1.1	29,263	1.6
Total	**55,102**	**100.0**	**1,817,511**	**100.0**

Source: ABS 2001 Census of Population and Housing, unpublished data.

- In 2001, although the proportion of young people aged 15–24 years with personal income was similar between Aboriginal and Torres Strait Islander and other Australian young people, the income distribution was different.
- Among those young people with personal incomes, other Australian young people had higher weekly incomes than Indigenous Australians—56% of Indigenous young people had incomes of less than $200 per week, compared with 42% of other Australian young people. The proportion of Indigenous young people who had incomes of $400 or more per week was 17%, compared with 33% of other Australian young people.

Full-time participation rates for 2001 are shown in Figure 23.6. The full-time participation rate is the proportion of the population, at specific ages, that is in full-time education or training, or in full-time work, or in both part-time education or training and part-time work.



Source: ABS 2001 Census of Population and Housing, unpublished data.

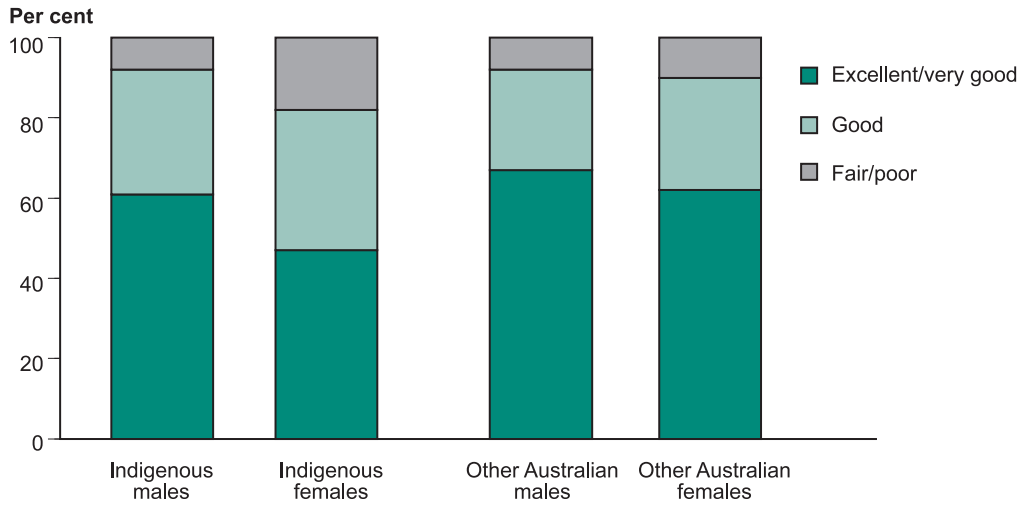
Figure 23.6: Full-time participation rate by Indigenous and other Australian young people, 2001

- Among Aboriginal and Torres Strait Islander and other Australian young people, the full-time participation rates are lower for those aged 20–24 than for those aged 15–19 years. However, for every age, the full time participation rate was lower for Indigenous than for other Australian young people.
- For young people aged 24 years, the full-time participation rate of other Australian young people was more than twice that of Indigenous Australians (66% compared with 31%).

Health and wellbeing

Self-assessed health status

A greater proportion of Indigenous Australians rate their health status as 'fair' or 'poor' than other Australians, and this pattern is more marked among females than males. The proportion of young people assessing their own health as 'excellent' or 'very good' is higher among other Australian young people than among Indigenous young people. It is possible that Indigenous people rate their health differently from the way other Australians do, and might be more tolerant of being sick than other Australian people. However, analysis of self-assessed health status from the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS) by Cunningham and others (ABS 1997) shows that this global measure is useful in Indigenous people.

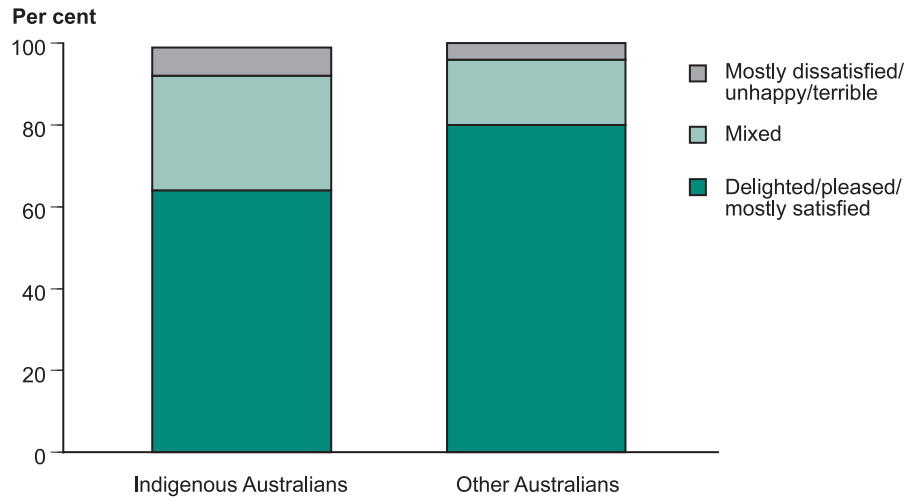


Source: ABS NHS 2001, unpublished data.

Figure 23.7: Self-assessed health of Indigenous and other Australian young people aged 18–24 years, 2001

- Nearly two-thirds of other Australian young people rated their health status as 'excellent' or 'very good', compared with 54% of Aboriginal and Torres Strait Islander young people.
- A higher proportion of Indigenous young people (13%) than other Australian young people (9%) rated their health as 'fair' or 'poor'.
- A higher proportion of Indigenous females (18%) rated their health status as 'fair' or 'poor' than Indigenous males (9%), other Australian males (8%) or other Australian females (10%).

Quality of life



Source: ABS NHS 2001, unpublished data.

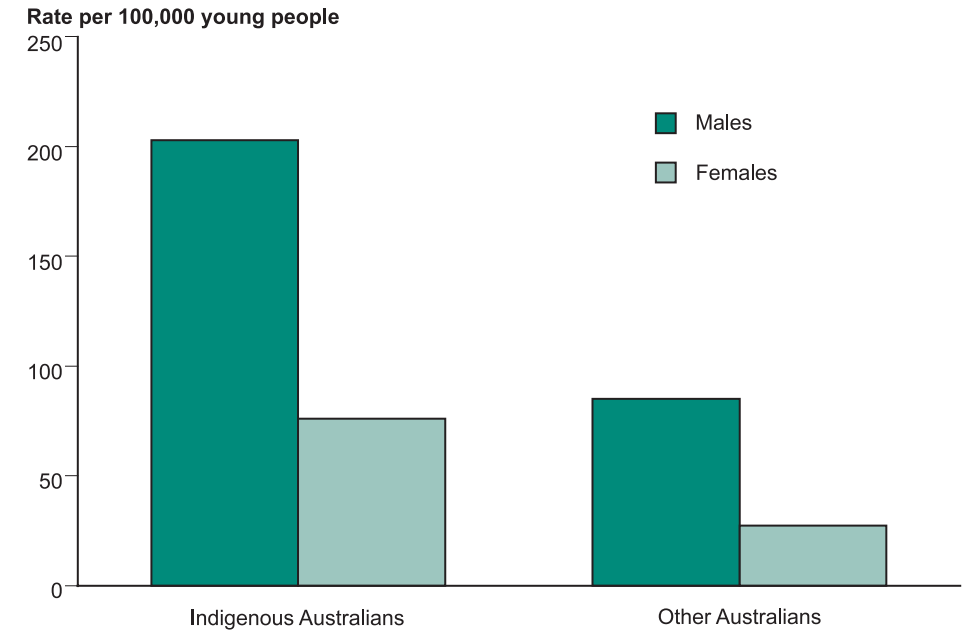
Figure 23.8: Self-assessed quality of life of young people aged 18–24 years, 2001

- About 80% of other Australian young people reported that they were 'delighted, pleased or mostly satisfied' with their lives, compared with 64% of Indigenous young people. A higher proportion of Indigenous young people (28%) than other Australian young people (16%) reported that they felt 'mixed' about their lives.
- A higher proportion of Indigenous young people (9%) stated that they felt 'mostly dissatisfied, unhappy or terrible' than other Australian young people (7%),

Mortality

This section provides an overview of mortality in Aboriginal and Torres Strait Islander young people. It presents information on the age distribution of deaths and the underlying causes of death by age group using the 10th Revision of the International Classification of Diseases and Related Health Problems for Mortality (ICD-10). Selected specific causes of death are also presented. Only data from Queensland, Western Australia, South Australia and the Northern Territory are presented.

Age-specific death rates



Note: Includes Qld, WA, SA and NT.
Source: AIHW Mortality Database.

Figure 23.9: Average death rates for Aboriginal and Torres Strait Islander and other Australian young people aged 12–24 years, 1999–01

- Death rates of Aboriginal and Torres Strait Islander young people for 1999–01 were almost three times those for other Australian young people, and were heavily skewed towards males. Between 1999 and 2001 in Queensland, Western Australia, South Australia and the Northern Territory, 289 Aboriginal and Torres Strait Islander young people aged 12–24 years died. The overall death rate for Indigenous young people was 144 per 100,000, compared with 52 per 100,000 other Australian young people.
- Of the 289 Indigenous deaths among young people, 203 (70%) were of males. The death rate for Indigenous males was 2.4 the rate for other Australian males. For Indigenous females, the rate was 2.8 times that for other Australian females.

Table 23.2: Average death rates for Aboriginal and Torres Strait Islander and other Australian young people aged 12–24 years, 1999–2001

		Number		Rate per 100,000 young people		
Sex	Age group	Indigenous Australians	Other Australians	Indigenous Australians	Other Australians	Rate ratio
Males	12–14	14	82	46.9	18.5	2.5
	15–17	46	259	173.6	57.8	3.0
	18–24	143	1,096	285.5	109.2	2.6
	12–24	203	1,437	202.9	85.1	2.4
Females	12–14	11	59	38.9	14.1	2.8
	15–17	26	94	100.3	22.0	4.6
	18–24	49	343	95.1	35.5	2.7
	12–24	86	496	76.0	27.3	2.8
Total	12–24	289	1,933	143.7	52.1	2.8

Source: AIHW Mortality Database.

- The death rate increased with age for both males and females, with the highest rates for young people aged 18–24 years. However, the highest difference in mortality between Aboriginal and Torres Strait Islander and other Australian young people occurred among those aged 15–17 years, where Indigenous males died at rates 3 times those of other Australian males and Indigenous females at rates almost 5 times those of other Australian females.

Causes of death

The causes of death of Aboriginal and Torres Strait Islander young people, according to ICD-10 chapter, are presented in Table 23.3.

Table 23.3: Causes of deaths of Aboriginal and Torres Strait Islander and other Australian young people aged 12–24 years, 1999–01

	Total number		Rate per 100,000 young people		
Cause of death	Indigenous Australians	Other Australians	Indigenous Australians	Other Australians	Rate ratio
External causes of injury and poisoning	203	1,392	101.7	37.6	2.7
Diseases of the circulatory system	16	54	8.0	1.5	5.3
Diseases of the nervous system	12	77	5.8	2.1	2.8
Diseases of the respiratory system	11	20	5.4	0.5	10.8
Mental, behavioural disorders	10	65	5.1	1.8	2.8
Other conditions[(a)]	37	325	17.8	8.8	2.0
Total	289	1,933	143.7	52.1	2.8

(a) 'Other conditions' includes malignant neoplasms; symptom, signs and abnormal findings not elsewhere classified; congenital malformations, deformations and chromosomal abnormalities; certain infectious and parasitic diseases; digestive system; endocrine, nutritional and metabolic diseases; musculoskeletal system and connective tissue; genitourinary system; conditions of the eye and adnexa; ear and mastoid process; skin and subcutaneous tissue; pregnancy, childbirth and puerperium; diseases of blood and blood-forming organs and certain disorders involving the immune mechanisms; benign neoplasms and conditions originating in the perinatal period.

Note: Includes Qld, WA, SA and NT only.

Source: AIHW Mortality Database.

- For Indigenous young people, the conditions responsible for the greatest numbers of deaths were external causes of injury (203 deaths, or 101.7 per 100,000), conditions of the circulatory system (16, or 8.0 per 100,000), diseases of the nervous system (12, or 5.8 per 100,000) and respiratory system (11, or 5.4 per 100,000). These conditions were responsible for 84% of all deaths of Indigenous young people, with injury accounting for the highest proportion—70%. Of Indigenous young people dying of injury, more than three-quarters (77%) were male.

Specific causes of death among young people aged 12–24 years are presented in Table 23.4.

Table 23.4: Most common causes of death of young people aged 12–24 years, 1999–01

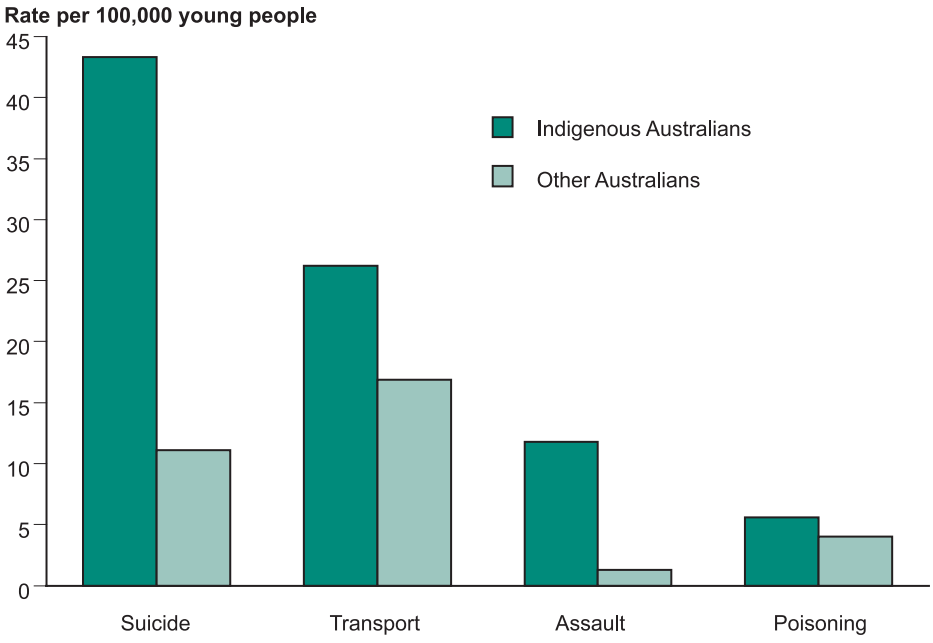
	Number		Rate per 100,000 young people		
Specific cause of death	Indigenous Australians	Other Australians	Indigenous Australians	Other Australians	Rate ratio
Intentional self-harm by hanging, strangulation and suffocation	75	236	38.1	6.4	6.0
Other accidental hanging and strangulation	11	27	5.5	0.7	7.5
Assault by sharp object	11	8	5.8	0.2	26.7
Other ill-defined and unspecified causes of mortality	7	16	3.6	0.4	8.2
Pedestrian injured in collision with car, pick-up truck or van (traffic accident)	7	41	3.4	1.1	3.1
Car occupant injured in collision with fixed or stationary object (driver in traffic accident)	7	101	3.5	2.7	1.3
Car occupant injured in collision with fixed or stationary object (passenger in traffic accident)	7	70	3.4	1.9	1.8
Car occupant injured in non-collision transport accident (passenger in traffic accident)	6	32	2.9	0.9	3.4
Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	5	75	2.6	2.0	1.3
Assault by blunt object	5	4	2.6	0.1	24.2

Note: Includes Qld, WA, SA and NT only. ICD-10 codes used in order of presentation: X70, W76, X99, R99, V031, V475, V476, V486, X44 and Y00.

Source: AIHW Mortality Database.

- Between 1999 and 2001, Aboriginal and Torres Strait Islander young people aged 12–24 years were at least 6 times more likely to die from intentional self-harm (suicide) by hanging, strangulation and suffocation than from any of the other most common causes of death. The death rate for males from intentional self-harm was 4 times higher than for females (61.6 and 15.1 per 100,000, respectively).
- Young Indigenous people died from assault by sharp object at nearly 27 times the other Australian rate, and from assault by blunt object at 24 times the rate for other Australian young people.
- Transport accidents were a common cause of death for both Aboriginal and Torres Strait Islander young people and other Australian young people.

The rates for injury mortality among Aboriginal and Torres Strait Islander and other Australian young people are shown in Figure 23.10.



Note: Includes Qld, WA, SA and NT only.
Source: AIHW Mortality Database.

Figure 23.10: Most common external causes of death of young people aged 12–24 years, 1999–01

- Between 1999 and 2001, there were 203 deaths due to external causes of injury among Aboriginal and Torres Strait Islander young people, compared with 1,392 among other Australian young people. Deaths due to suicide, transport accidents, assault and poisoning represented 85% of all deaths due to injury among Indigenous young people and 89% among other Australian young people.
- The death rates for Indigenous young people for the period 1999–01 were 43.3 per 100,000 for suicide, 23.8 per 100,000 for transport accidents and 5.6 per 100,000 for assault. The corresponding rates among other Australian young people were 11.1, 15.1 and 1.3 per 100,000.
- Death rates for assault among Indigenous young people were 9 times higher than among other Australian young people. Suicide rates were 4 times as high, transport accident death rates 1.5 times higher, and poisoning death rates 1.4 times higher.

Illness

It is difficult to have an accurate estimate of the extent of illness among Indigenous peoples as there is no uniform approach to the way in which they interact with health services. For example, people living in rural and remote communities may have only a single health clinic or service that provides all basic clinical needs. Such a service could be a state-run clinic, regional hospital, an Aboriginal community-controlled health or substance misuse service or an Aboriginal Medical Service. Indigenous people living in urban areas may choose to use mainstream services in addition to, or instead of, Aboriginal Medical Services. Young people's choice of health services depends not only on the status of their health, but also on factors such as availability and affordability of services, distance (especially for remote communities), availability of transport, the proximity of culturally appropriate services, and the proportion of Indigenous workers in health services.

Information on the extent of illness in Indigenous young people is derived from a number of sources. These include surveys such as the Bettering the Evaluation and Care of Health (BEACH) survey of general practice, the 2001 ABS Indigenous National Health Survey, service activity reporting from Aboriginal community-controlled health services, and state and territory hospitalisation data. However, Indigenous Australians are underidentified in the mainstream sources of data, including general practice consultations and hospitalisation data. The low representation of Indigenous people in the BEACH survey may be due to lower attendance at general practice where other services exist such as Aboriginal community-controlled health services (ACCHS), the geographic distribution of general practitioners (GPs) not reflecting that of the Indigenous population. Other reasons for the lower presentation in GP attendance may be that Indigenous people are accessing hospital emergency departments instead of GPs or using other advice when needed. The service activity reporting based on the Aboriginal community-controlled health services are at a level of aggregation that makes establishing rates for particular illnesses impossible. The information presented in this section, therefore, is based only on the 2001 ABS Indigenous NHS and hospitalisation statistics.

The prevalence of long-term conditions in young people aged 15–24 years from the ABS NHS is shown in Table 23.5.

Table 23.5: Proportion of Indigenous and other Australian young people aged 15–24 years with selected long-term conditions, 2001 (per cent)

Long-term conditions	Indigenous Australians	Other Australians
Diseases of the respiratory system	31.0	33.0
Diseases of the eye and adnexa	22.0	30.0
Diseases of the musculoskeletal system and connective tissue	19.0	19.0
Symptoms, signs and conditions not elsewhere classified	9.0	11.0
Diseases of the ear and mastoid	13.0	5.0
Diseases of the nervous system	10.0	8.0
Other diseases and conditions [(a)]	13.0	13.0
Total persons who reported a long-term condition[(b)]	65.0	71.0
Total persons who did not report a long-term condition	35.0	29.0
Total	100	100
Total persons who reported a long-term condition ('000)	52	1,783

(a) Includes diseases of the circulatory, digestive and genitourinary systems and diseases of the skin and subcutaneous tissue, endocrine, nutritional and metabolic diseases; congenital malformations, deformations and chromosomal abnormalities; and infectious and parasitic diseases.

(b) Components may not add to total as persons may have reported more than one type of condition.

Source: ABS 2001.

- Just under two-thirds of Indigenous young people aged 15–24 years were reported to have a long-term medical condition.
- Diseases of the respiratory system (including asthma) were the most frequently reported long-term condition (31%), followed by diseases of the eye (22%) and musculoskeletal system and connective tissue (19%).
- Diseases of the ear and nervous system were also common and accounted for 13% and 10% of all long-term conditions, respectively.

Hospitalisations

Hospitalisation rates can be used as an indicator of the level of serious illness in the community, although they can be affected by access and admission practices. However, Aboriginal and Torres Strait Islands peoples are underidentified in these data. True hospitalisation rates for Indigenous young people are likely to be greater than those presented in this section.

Hospitalisation rates for Indigenous young people aged 12–24 years are presented in Table 23.6.

Table 23.6: Hospitalisation rates for Aboriginal and Torres Strait Islander and other Australian young people, 2000–01

		Number		Rate per 100,000 young people		
	Age (years)	Indigenous Australians	Other Australians	Indigenous Australians	Other Australians	Rate ratio
Males	12–14	1,262	34,320	7,514.6	8,689.6	1.0
	15–17	1,464	43,768	9,801.2	10,955.6	1.0
	18–24	4,214	123,843	15,380.1	13,615.0	1.1
	12–24	6,940	201,931	12,242.9	11,846.0	1.0
Females	12–14	1,242	26,207	7,767.4	6,951.1	1.2
	15–17	3,360	49,261	23,174.0	12,893.6	1.9
	18–24	12,022	216,292	43,708.4	24,588.4	1.8
	12–24	16,624	291,760	30,535.5	17,744.8	1.7
Persons	**12–24**	**23,564**	**493,691**	**21,379.7**	**14,746.1**	**1.4**

Source: AIHW National Hospital Morbidity Database.

- In 2000–01, there were 23,564 hospitalisations of Aboriginal and Torres Strait Islander young people aged 12–24 years. Of these, 65% were of females. The reason for the high proportion of hospitalisations for females is the large number of hospitalisations for pregnancy, childbirth and the puerperium (the period between childbirth and the return of the uterus to its normal size). Hospitalisation for pregnancy and child birth accounted for over half of all Indigenous female hospitalisations, compared with 31% of other Australian female hospitalisations.
- While the hospitalisation rate for young Indigenous males was similar to young other Australian males, hospitalisations rates for young Indigenous females were 1.7 times those for young other Australian females.

Causes of hospitalisations

Hospitalisation rates for Aboriginal and Torres Strait Islander young people are presented by diagnosis according to ICD-10-AM chapter (Table 23.7).

Table 23.7: Reasons for hospitalisations of young people aged 12–24 years, 2000–01

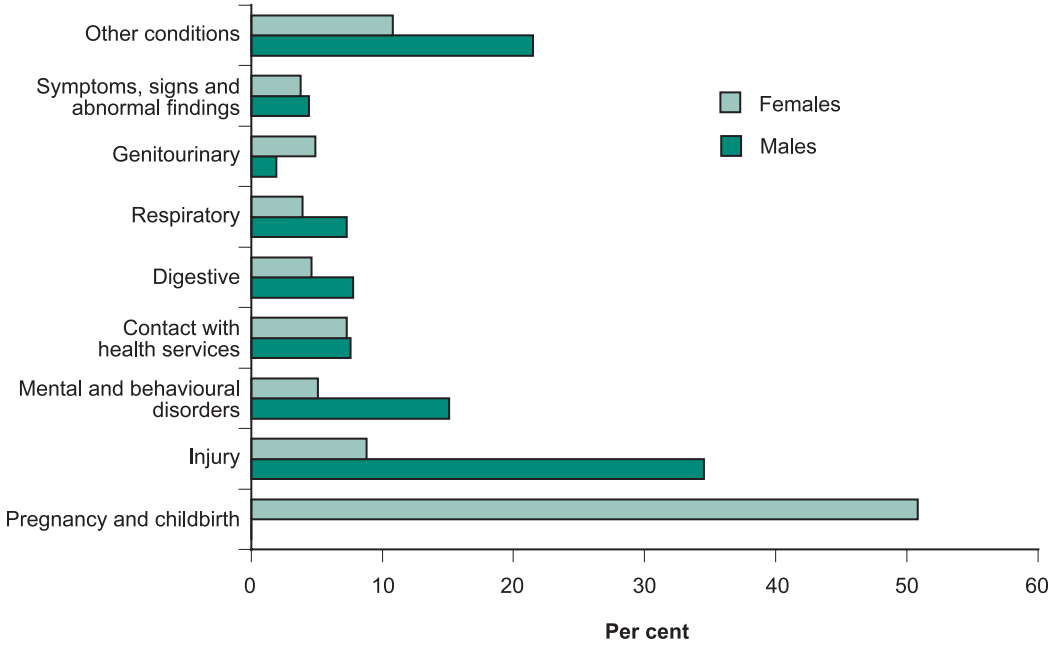
	Number		Rate per 100,000 young people		
Principal diagnosis	Indigenous Australians	Other Australians	Indigenous Australians	Other Australians	Rate ratio
Pregnancy and childbirth	8,445	93,173	7,880.7	2,777.2	2.8
Injury and poisoning	3,854	75,463	3,447.2	2,256.2	1.5
Mental and behavioural disorders	1,892	40,809	1,757.2	1,218.6	1.4
Contact with health services	1,742	35,860	1,600.5	1,070.8	1.5
Digestive system	1,301	73,854	1,177.6	2,206.1	0.5
Respiratory system	1,152	28,998	979.0	867.4	1.1
Genitourinary system	947	25,485	860.9	760.6	1.1
Symptoms signs and abnormal findings	942	25,461	823.9	760.8	1.1
Skin diseases	888	15,020	763.9	449.2	1.7
Musculoskeletal system	543	25,164	471.2	751.8	0.6
Infectious and parasitic diseases	413	9,482	352.3	283.5	1.2
Nervous system	259	6,729	231.3	201.2	1.1
Circulatory system	257	4,640	227.5	138.6	1.6
Ear diseases	236	3,085	184.8	92.5	2.0
Endocrine, nutritional and metabolic diseases	209	6,422	180.4	192.1	0.9
Neoplasms	204	11,842	178.8	354.1	0.5
Other conditions	280	12,204	242.1	365.3	0.7
Total	**23,564**	**493,691**	**21,379.7**	**14,746.1**	**1.4**

Note: 'Other conditions' include diseases of the blood and blood-forming organs, congenital malformations, diseases of the eye and perinatal conditions.

Source: AIHW National Hospital Morbidity Database.

- Aboriginal and Torres Strait Islander young people were hospitalised most often for pregnancy and related conditions, at a rate of 2.8 times that of other Australian young people.
- Other conditions for which Indigenous young people were hospitalised at a higher rate than other young Australians include diseases of the ear (2 times as high), circulatory system (1.6 times as high), skin diseases (1.7 times as high), injury and poisoning (1.5 times as high) mental illness (1.4 times as high) and infections (1.2 times as high).

The reasons for hospitalisations differed by sex (Figure 23.11).



Source: AIHW National Hospital Morbidity Database.

Figure 23.11: Reason for hospitalisation of Aboriginal and Torres Strait Islander young people aged 12–24 years, 2000–01

- Hospitalisations for pregnancy and childbirth, injury, mental health problems and digestive and respiratory system diseases accounted for 70% all hospitalisations of Indigenous young people.
- Pregnancy-related complications accounted for 51% of all hospitalisations among females. The main conditions leading to pregnancy-related hospitalisations were maternal care related to foetus and possible delivery problems (26%), complications of labour and delivery (25%), pregnancy with an abortive outcome (12%) and other maternal disorders related to the pregnancy (7%).
- Injury accounted for 16% of all hospitalisations. The main reasons for hospitalisation for injury were assault (29%), falls (13%), exposure to inanimate mechanical forces (13%), transport accidents (13%), complications of medical and surgical care (7%) and intentional self-harm (7%). Most of the injuries were head (31%), wrist and hand (13%), elbow and forearm (10%) and knee and leg (7%) injuries.
- The self-inflicted injury hospitalisation rate was 1.2 to 2.5 times as high among Indigenous females than males depending on age group. The rates were also between 1.2 to 1.7 times as high among Indigenous than other Australian males and females.
- Mental health problems accounted for 8% of all hospitalisations. The main causes (accounting for 93% of mental and behavioural disorder hospitalisations) were mental and behavioural disorder due to psychoactive substance use (33%), schizophrenia (33%), mood (affective) disorders (14%) and neurotic stress-related disorders (13%).

Table 23.8: Hospitalisation rates for Aboriginal and Torres Strait Islander and other Australian young people aged 12–24 years, by most frequent specific diagnoses, 2000–01

		Number		Rate per 100,000 young people		
	Diagnosis	Indigenous Australians	Other Australians	Indigenous Australians	Other Australians	Rate ratio
Males	Pneumonia, unspecified	122	727	206.3	42.7	4.8
	Cutaneous abscess, furuncle and carbuncle of limb	118	544	199.6	31.9	6.3
	Paranoid schizophrenia	112	1,041	189.4	61.1	3.1
	Schizophrenia, unspecified	95	1,480	160.7	86.9	1.8
	Acute appendicitis, unspecified	91	3,298	153.9	193.5	0.8
Females	Medical abortion, complete or unspecified, without complication	469	14,101	808.7	860.5	0.9
	Second degree perineal laceration during delivery	369	5,220	636.3	318.5	2.0
	Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium	327	3,171	563.9	193.5	2.9
	Preterm delivery	275	1,351	474.2	82.4	5.8
	First degree perineal laceration during delivery	263	3,667	453.5	223.8	2.0

Note: ICD-10-AM codes in order of presentation: J18.9, L02.4, F20.0, F20.9, K35.9, O04.9, O70.1, O99.8, O60, O70.0. ICD-10-AM codes excluded from the analysis were: Z49.1 extracorporeal dialysis (7,186 hospitalisations) and O80 single spontaneous vaginal deliveries (9,376 hospitalisations)

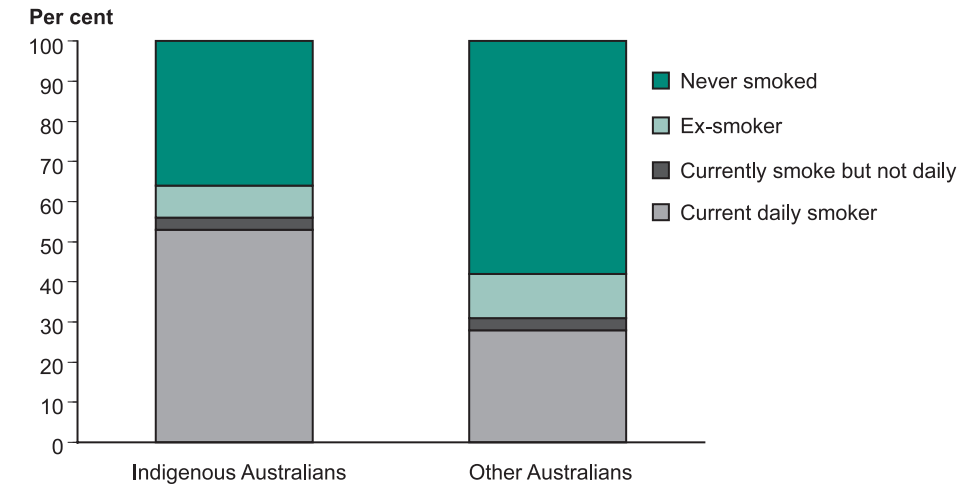
Source: AIHW National Hospital Morbidity Database.

- In 2000–01, the most common diagnoses for hospitalisation of young Aboriginal and Torres Strait Islander males aged 12–24 years were pneumonia, cutaneous abscess and paranoid schizophrenia.
- Medical abortion was the most common specific diagnosis for Aboriginal and Torres Strait Islander females, followed by perineal laceration and other pregnancy-related complications including preterm delivery. Hospitalisations for preterm delivery were 6 times higher among Indigenous than other Australian young females.

Behavioural risk factors

This section covers a number of selected risk factors such as smoking, alcohol and drug consumption, dietary behaviour and the level of obesity. Most of these data are derived from the 2001 ABS NHS or the National Drug Strategy Household Survey (NDSHS). There are data limitations associated with comparing Indigenous and other Australian people from the 2001 NHS and the NHS Indigenous component (NHS(I)). Because the NHS was conducted over a 10 month period and the NHS(I) was conducted over a 6 month period, seasonal effects may be exaggerated for the NHS(I) sample. Therefore, reported differences between the two populations should be interpreted with caution.

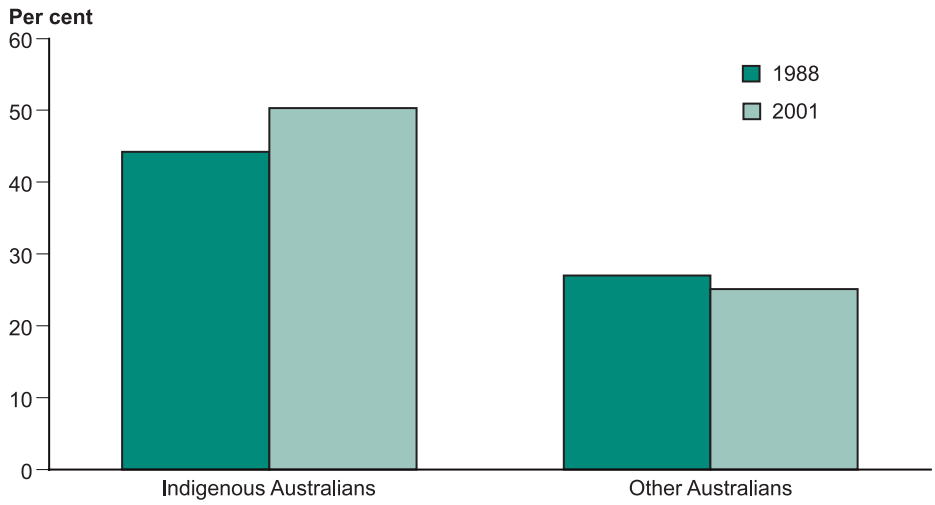
Smoking



Source: ABS NHS 2001, unpublished data.

Figure 23.12: Smoking status of Indigenous and other Australian young people aged 18–24 years, 2001

- More than half of Indigenous young people aged 18–24 years are current daily smokers—53%, compared with 28% of other Australian young people. Only 35% of Indigenous young people have never smoked, compared with 60% of other Australian young people.

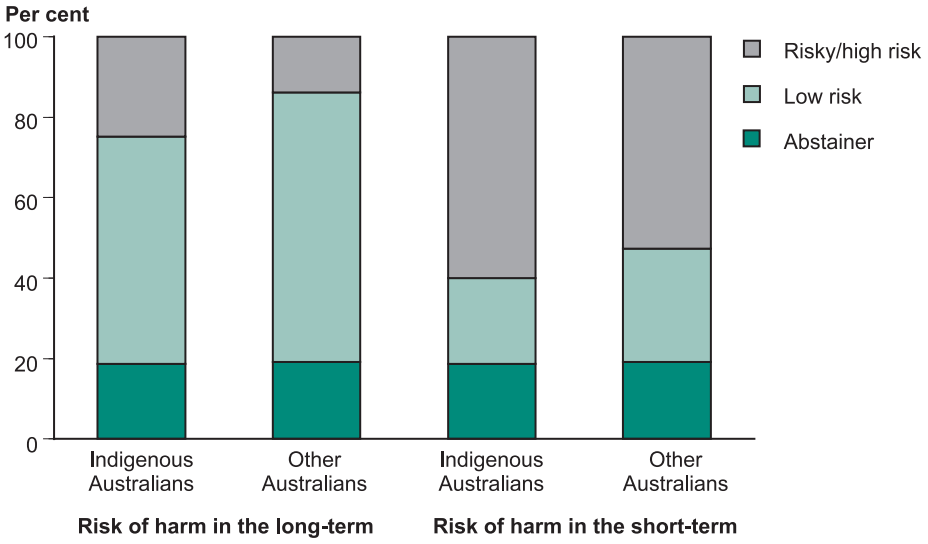


Source: AIHW NDSHS 1998 and 2001, unpublished data.

Figure 23.13: Smoking among Indigenous and other Australian young people aged 14–24 years, 1998 and 2001

- In 2001, the proportion of Indigenous young people aged 14–24 years who were current smokers increased to 50% from 44% in 1998, whereas the proportion among other Australians of the same age group decreased slightly.

Alcohol consumption



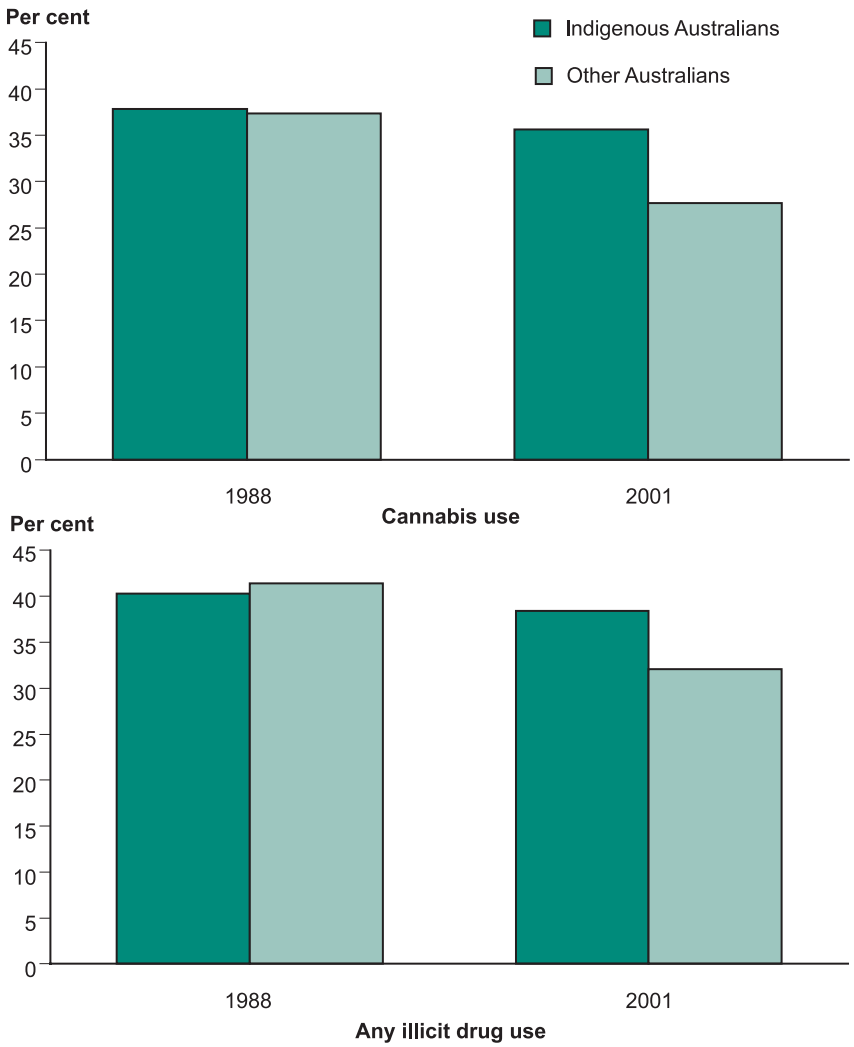
Source: AIHW NDSHS 2001, unpublished data.

Figure 23.14: Proportion of Indigenous and other Australian young people aged 14–24 years at risk of harm, 2001

- In 2001, one-quarter of Indigenous young people drank at levels considered to be at high risk over the long term, compared with 14% of other Australian young people.
- A slightly higher proportion of Indigenous than other Australian young people drank alcohol at levels considered to be high risk in the short term (60% compared with 53%).

Use of illicit drugs

The use of illicit drugs by Indigenous young people is shown in Figure 23.15.



Source: AIHW NDSHS 1998 and 2001, unpublished data.

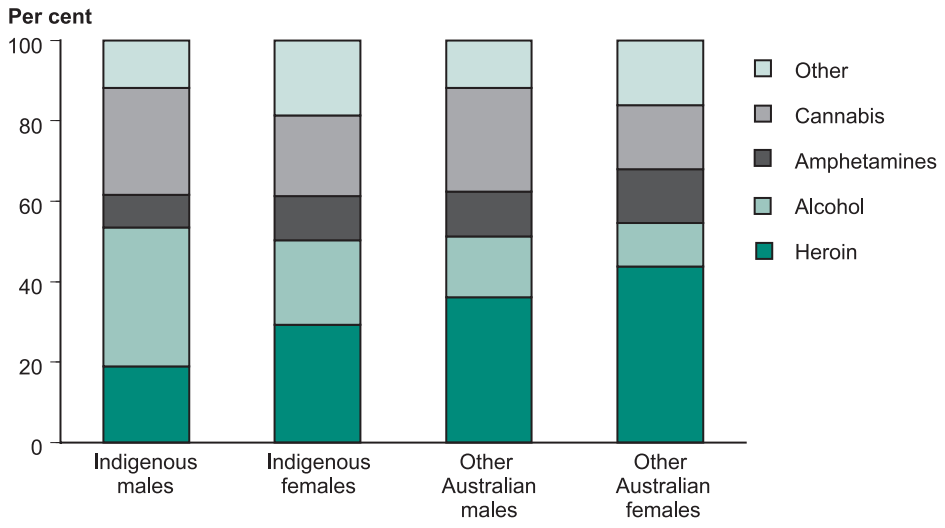
Figure 23.15: Recent use of cannabis and any illicit drug among Indigenous and other Australian young people aged 14–24 years, 1998 and 2001

- In 1998, similar proportions of Indigenous (38%) and other Australian (37%) young people reported that they used cannabis recently (in the last 12 months). However, although the proportion of other Australian young people using cannabis declined to 28% in 2001, there was no decline in recent cannabis use among Indigenous young people (39% in 1998, compared with 38% in 2001).
- Similarly, between 1998 and 2001, recent use of any illicit drug declined from 41% to 32% among other Australian young people, whereas the decline in the reported recent use of any illicit drug among Indigenous young people was very small—40% in 1998 to 38.4% in 2001.

Drug and alcohol services

In 2000–01, a total of 16,232 young people aged 12–24 years used drug and alcohol services. Of these, 2,257 or 9% were Aboriginal or Torres Strait Islander young people. More Indigenous males (1,463 or 65%) than females used the services. Of Indigenous young people using the services, 66% were aged 18–24 years. These numbers are likely to be an underestimate of the total number of Indigenous people using the services, as these data do not cover Aboriginal community-controlled health services, many of which offer drug and alcohol treatment facilities.

The principal drugs of concern for young people using these services are shown in Figure 23.16.



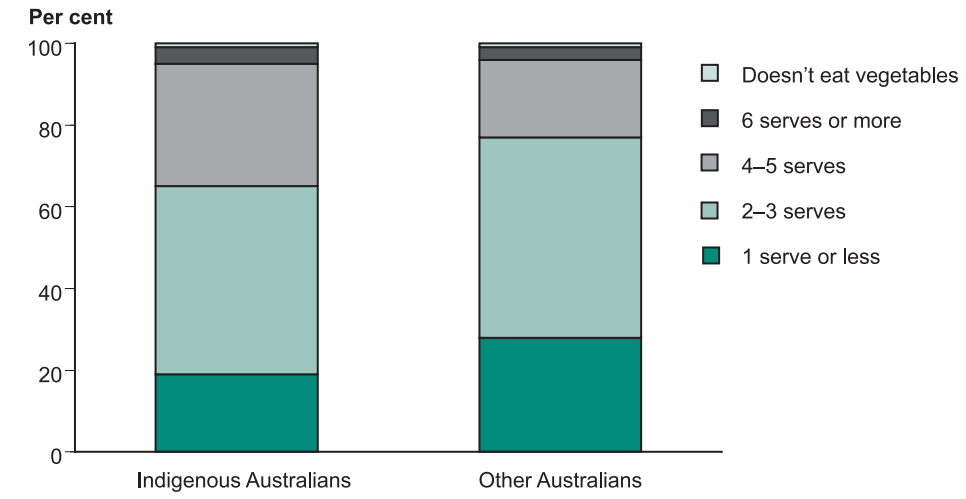
Source: AIHW Alcohol and Other Drug Treatment Services NMDS 2000–01.

Figure 23.16: Principal drug of concern for which clients aged 12–24 years sought treatment, 2000–01

- Among those using drug and alcohol services, there were differences in the drugs of addiction used by males and females for both Indigenous and other Australian young people. Among Indigenous females, the main drugs of concern were heroin, alcohol, cannabis and amphetamines in that order, whereas for males the order was alcohol (34%), cannabis (27%) and heroin (19%).

Diet and nutrition

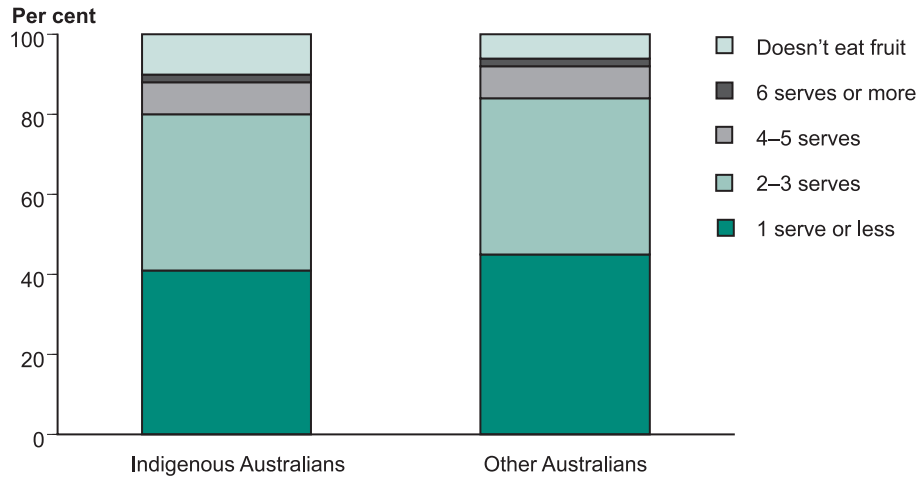
Consumption of daily serves of vegetables and fruit by Indigenous and other Australian young people is shown in Figures 23.17 and 23.18.



Source: ABS NHS 2001, unpublished data.

Figure 23.17: Usual daily serves of vegetables consumed by young people aged 12–24 years, by Indigenous status, 2001

- A higher proportion of Indigenous than other Australian young people aged 12–24 years reported that they consumed the recommended daily amounts of vegetables: 34%, compared with 21%.
- A greater proportion of both Indigenous and other Australian young people ate less than the daily recommended proportion of vegetables: 19% of Indigenous young people ate 1 serve or less and an additional 46% ate 2–3 serves per day, compared with 28% and 49% of other Australian young people, respectively.

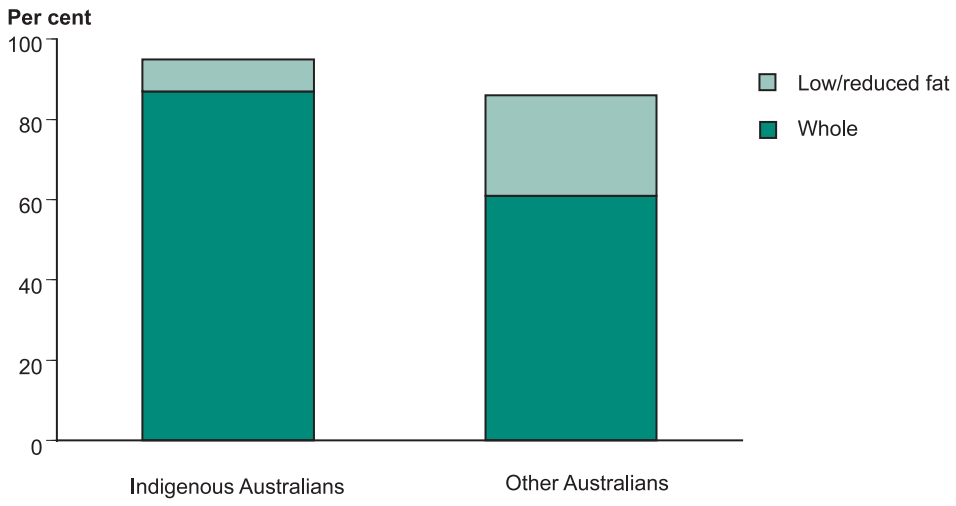


Source: ABS NHS 2001, unpublished data.

Figure 23.18: Usual daily serves of fruit consumed by young people aged 12–24 years, 2001

- A similar proportion of Indigenous and other Australian young people aged 12–24 years reported that they consumed the recommended daily amounts of fruit: 49%.
- A higher proportion of Indigenous than other Australian young people did not eat any fruit: 10%, compared with 7%.

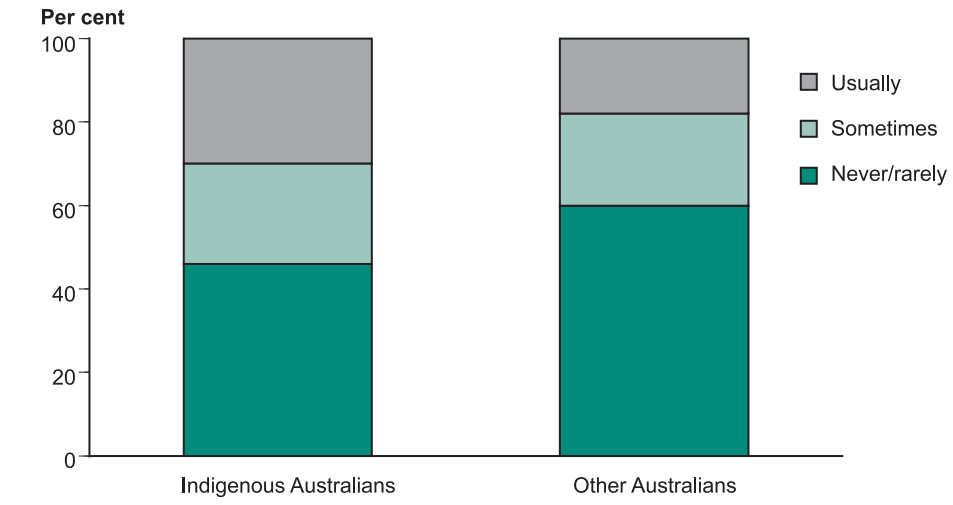
A higher proportion of Indigenous young people drink whole milk and add salt to their food (Figures 23.19 and 23.20).



Source: ABS NHS 2001, unpublished data.

Figure 23.19: Type of milk consumed by young people aged 12–24 years, 2001

- A higher proportion of Indigenous than other Australian young people consumed whole milk than low-or reduced-fat milk—87% compared with 61%.

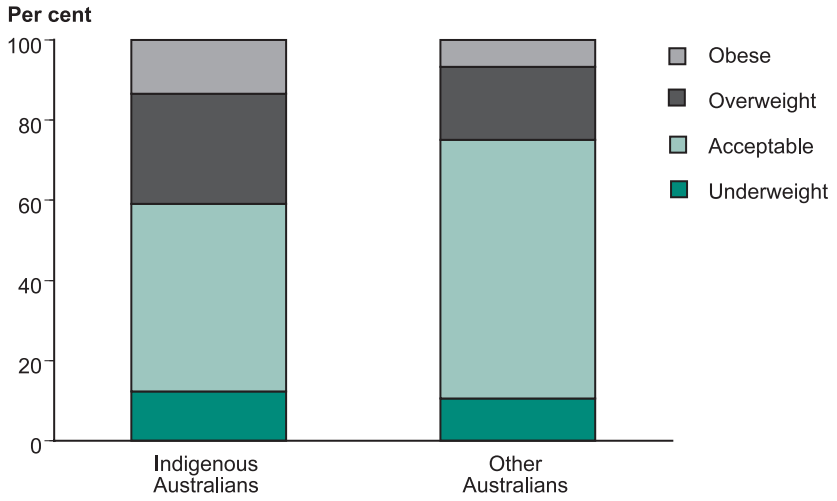


Source: ABS NHS 2001, unpublished data.

Figure 23.20: Salt added to cooking by young people aged 12–24 years, 2001

- The National Health and Medical Research Council (NHMRC) recommends a low intake of salt. However, a higher proportion of Indigenous than other Australian young people add salt to their diet either usually or sometimes—54%, compared with 40%.

Weight status



Source: ABS NHS 2001, unpublished data.

Figure 23.21: Weight status of young people aged 15–24 years, 2001

- Based on self-reported height and weight, less than half (47%) of Aboriginal and Torres Strait Islander young people aged 15–24 years were of acceptable weight, compared with 64% of other Australian young people.
- A higher proportion of Indigenous people aged 15–24 years were estimated to be overweight or obese than other Australian young people. The proportion of overweight and obese Indigenous young people was estimated to be 41%, compared with 25% of other Australian young people.
- The estimated proportion of Indigenous young people classified as underweight was similar to other Australian young people—12% compared with 11%.

Community services

This section presents information on Indigenous young people in child protection, juvenile justice and imprisonment, and the Supported Accommodation Assistance Program (SAAP) services.

Child protection

The three areas of child protection services for which national data are collected are: child protection notifications, investigations and substantiations; children on care and protection orders; and children in out-of-home care. Description of these services has been covered in Chapter 18.

Table 23.9: Young people who were the subject of a child protection substantiation, on care and protection orders or in out-of-home care, 2001–02 and June 2002

	Indigenous Australians						Other Australians					
	Number			Rate per 1,000 young people			Number			Rate per 1,000 young people		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
Child protection substantiations 2001–02												
12–16 years	234	429	664	8.6	16.6	12.5	2,181	3,564	5,755	3.3	5.6	4.4
Children on orders[(a)]												
12–14 years	391	377	768	23.3	23.6	23.4	1,574	1504	3,079	4.0	4.0	4.0
15–17 years	254	289	544	17.0	19.9	18.5	1,478	1437	2,914	3.7	3.8	3.7
Out of home care[(a)]												
12–14 years	397	386	783	23.6	24.1	23.9	1,461	1,354	2,817	3.7	3.6	3.6
15–17 years	190	221	412	12.7	15.2	14.0	1,279	1,138	2,416	3.2	3.0	3.1

(a) At 30 June 2002.

Note: Rates per 1,000 children aged 12–16 years. The Indigenous rates were calculated using 2001 Census data and should not be compared with the Indigenous rates published for previous years.

Source: AIHW Child Protection Data Collection.

- In 2001–02, there were 664 Indigenous young people who were the subject of a child protection substantiation. On 30 June 2002, 1,312 Indigenous young people were on care and protection orders and 1,195 were in out-of-home care.
- The rates for young people in out-of-home care and on care and protection orders were higher among those aged 12–14 years—66% of those on care and protection orders and 59% of those in out-of-home care.
- The rates of Indigenous young females who were the subject of a child protection substantiation, in out-of-home care or on care and protection orders were considerably higher than those for males.
- The rates of Indigenous young people who were the subject of a child protection substantiation, in out-of-home care or on care and protection orders were considerably higher than those of other Australian young people. For example, the rate for Indigenous young people aged 12–16 years who were the subject of protection substantiation was 12.5, compared with 4.4 for other Australians.

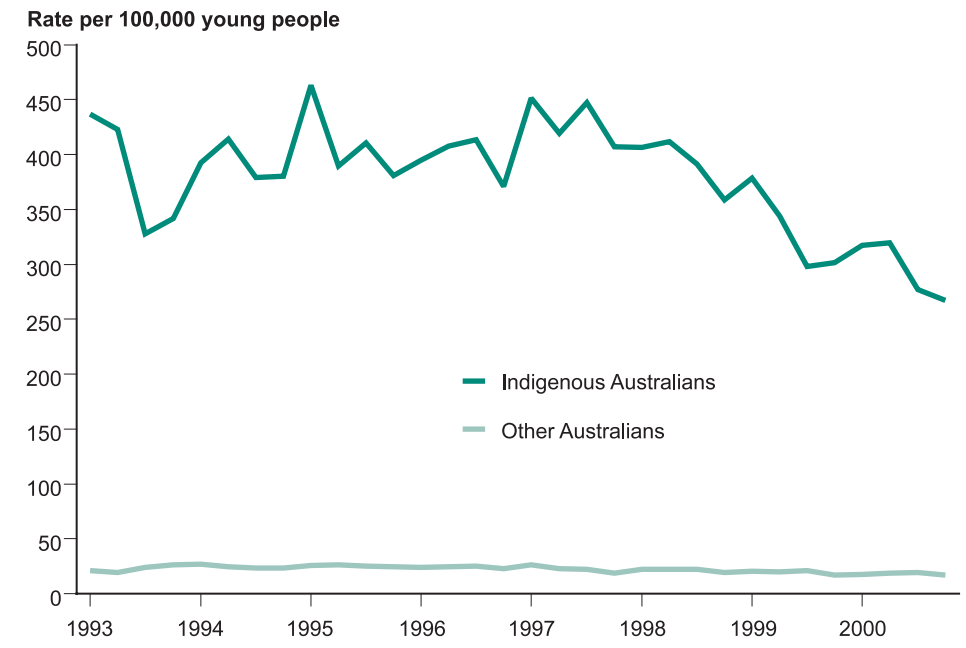
One of the most significant changes in child welfare policy in relation to Indigenous children was the introduction of the Aboriginal Child Placement Principle. The principle is based on the premise that Aboriginal children are better off cared for in

Aboriginal families and communities. All jurisdictions have adopted the Aboriginal Child Placement Principle either in legislation or in policy. At 30 June 2002, the majority of Indigenous young people in out-of-home care in Australia (79%) were placed in accordance with the principle. These include placements with Indigenous relative/kin (43%), other Indigenous caregiver (21%), other Australian relative/kin (12%) and Indigenous residential care (2%). The remaining Indigenous young people (21%) were placed with other Australian caregiver (19%) and other Australian residential care (3%).

Juvenile justice

At present, national data are not available for all components of the juvenile justice system. However, state and territory information indicates that Indigenous young people are not only over-represented in juvenile detention centres as presented below, but are also over-represented among those charged by the police, those facing court, and those placed on community-based orders (AIHW: Broadbent 2001).

The over-representation of Indigenous people in the justice system is not confined to young people, with Indigenous adults also heavily over-represented in the prison population. At 30 June 2001, almost 20% of prisoners in Australian prisons were Indigenous, although Aboriginal and Torres Strait Islanders peoples make up only 2% of the total population (ABS 2002b).

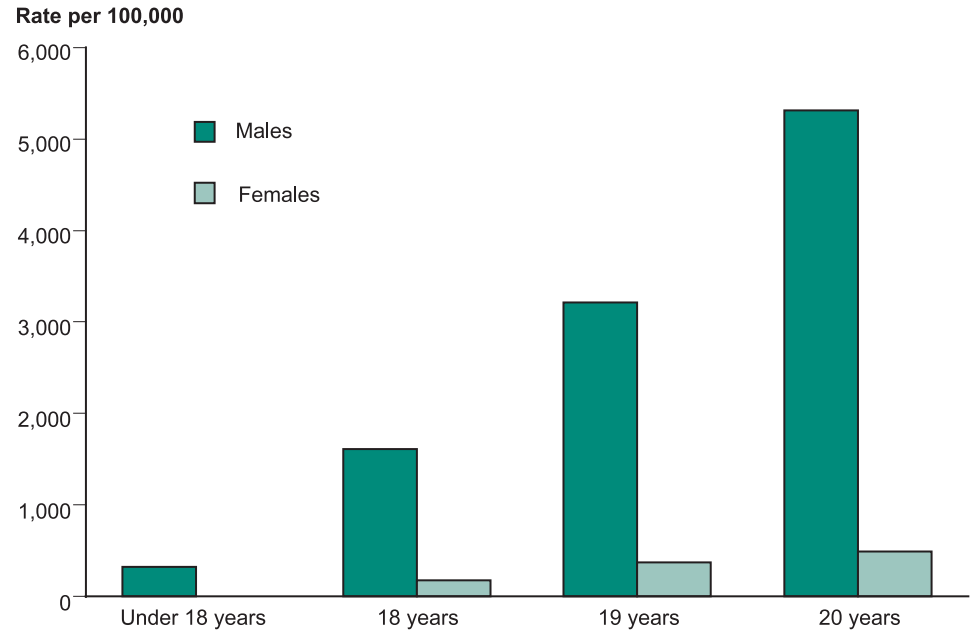


Source: Cahill & Marshall 2002.

Figure 23.22: Young people aged 10–17 years in juvenile justice institutions, 1993 to 2000

- Over the period 1993 to 2000, the rate of juvenile detention for Indigenous young people was between 16 and 19 times higher than that for other Australian young people.

Indigenous young people are also overrepresented in the prison system, and a higher proportion of young males than females end up in prison (Figure 23.23).



Source: ABS 2003.

Figure 23.23: Indigenous young people as prisoners by sex, 2002

- In 2002, there were total of 1,401 Indigenous young people aged 24 years or less in prison, with the great majority (92%) males. The rate of imprisonment increased with age from 165 per 100,000 for young people aged under 18 years to 2,923 per 100,000 for those aged 20–24 years—an 18 times increase in the rate.

Indigenous young people are over-represented in the prison system. Young Indigenous males are up to 20 times more likely to be in juvenile detention than young other Australian males. In 2002, Indigenous young people aged 24 years or less represented 25% of the total prison population for that age group. Their corresponding representation in the Australian population for that age group was 3%.

Programs for homeless young people

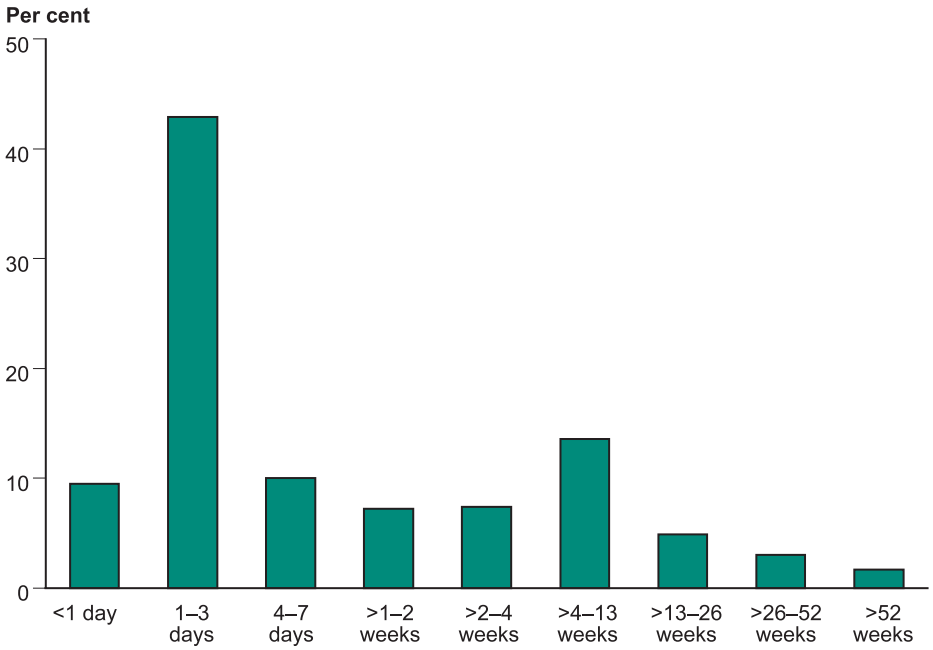
The Supported Accommodation Assistance Program (SAAP) provides temporary accommodation and support services, such as domestic violence counselling, employment assistance and living skills development, to homeless people, and aims to help them achieve self-reliance and independence. Families, single people, young people, and women and children who are escaping domestic violence are assisted under the program.

In 2001–02, 33% of support periods for Indigenous clients who accessed services under the SAAP program were for those escaping domestic violence, compared with 19% of support periods for other Australian people. The proportions for all other main reasons for seeking assistance among Indigenous and other Australian populations were

relatively similar, with the exception of accommodation difficulties, which was a more common reason for seeking assistance among other Australian clients.

In 2001–02, there were 34,100 young people aged 12–24 years who were SAAP clients, of whom 5,200 were Indigenous. Of these 5,200 Indigenous young people, the majority (71%) were females. During the same period 59% of all SAAP young clients were female. Indigenous young people were over-represented in the SAAP system at 16% compared with a 3% representation in the general population of young people.

The length of support periods for young Indigenous clients is shown in Figure 23.24.



Source: AIHW 2002a.

Figure 23.24: SAAP closed support period for Indigenous young people aged 12–24 years, 2001–02

- In 2001–02, Indigenous young people had a total of 900 closed support periods. A high proportion of these support periods were for 1 to 3 days which was higher than other cultural groups. The mean number of support periods per client was highest for Indigenous young people at 1.94. The median length of support and accommodation was 3 days and 2 days, respectively.

24. Rural and remote residents

Young people living in rural and remote areas tend to have poorer health than young people living in metropolitan areas. This is true in relation to illnesses but is especially so for injury and suicide (e.g. Mitchell et al. 2002; Page & Fragar 2002).

For some risk factors, people from rural and remote areas are worse off than those from metropolitan areas or major cities. For example, in 1995, the rate of physical inactivity during leisure time was higher among people living in remote areas of Australia (37%) than for people living in metropolitan (34%) and rural (32%) areas. National Health Survey data have also shown higher rates of overweight for people in rural areas compared with those from metropolitan areas. People from rural and remote areas also have high rates of regular smoking, drinking at hazardous levels and using illicit substances—often higher than young people in metropolitan areas (AIHW 2002b; Richardson et al. 2001; Hancock et al. 2001; Williams 2001).

As well as these biological and behavioural risk factors, there are a number of social and environmental factors that make it more likely for young people in rural and remote regions of Australia to have worse health than young people living in other parts of Australia. Firstly, young people living outside major cities are often disadvantaged by a lack of educational and employment opportunities, which results in lower incomes and possible unemployment (Garnaut et al. 2001). This disadvantage is often further compounded by the price of commodities such as food and petrol being higher in rural and remote communities than in metropolitan and regional centres (AIHW 2002b). Rural young people also have limited choices for recreational and leisure activities. As a result of boredom or frustration, young people sometimes engage in reckless or dangerous behaviour leading to injury or even accidental death (Patterson & Pegg 1999).

People living outside major cities can have poorer access to services. Access to health services for people living in regional Australia is influenced by a lower number of general practitioners, lower rates of bulk billing (AMWAC 2000), and lower levels of access to specialists and major hospitals as a consequence of longer travelling distances (AIHW: Al-Yaman et al. 2002).

Finally, the substantially higher proportion of Aboriginal and Torres Strait Islander people living in remote areas means that the overall health status in some of the areas is partly determined by the health status of the Indigenous population (AIHW: Strong et al. 1998).

This chapter presents information on health status, quality of life and morbidity of young people by area of residence, using the new remoteness classification under the Australian Standard Geographical Classification (ASGC) Remoteness Structure. Mortality data by area of residence are presented using the rural, remote and metropolitan areas (RMMA) classification, as deaths could not be classified using the new ASGC remoteness classification at the time of writing. Detailed data on the health of people living in rural and remote areas will become available in the AIHW publication: *Rural, Regional and Remote Health: a Study on Mortality* (2003). The main data sources are the 2001 ABS NHS, the AIHW National Hospital Morbidity Database and the AIHW Mortality Database.

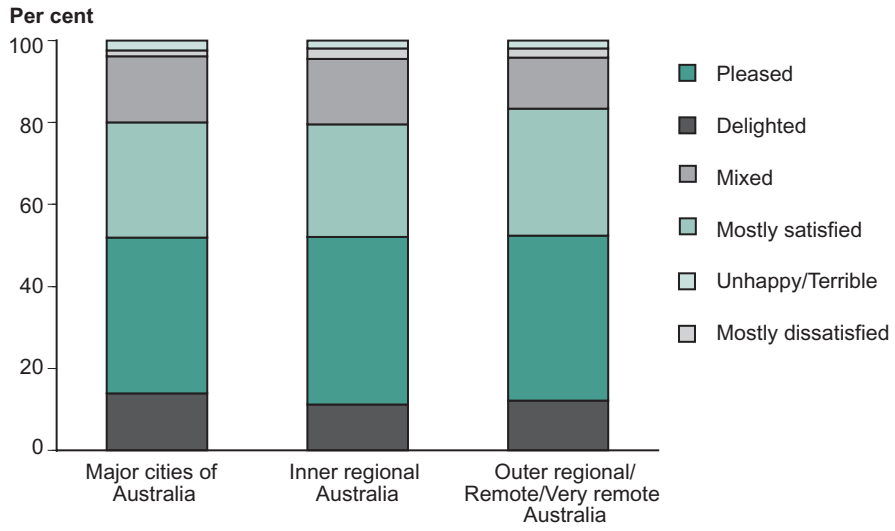
Table 24.1: Self-assessed health status of Australian young people aged 15–24 years, by remoteness of area of usual residence, 1995 and 2001

	Number		Per cent	
	1995	2001	1995	2001
Major cities				
Excellent/very good	1,213,315	1,170,566	64.9	64.1
Good	486,953	492,625	26.1	26.9
Fair/poor	167,951	165,312	9	9
Total	**1,868,219**	**1,828,502**	**100**	**100**
Inner regional				
Excellent/very good	360,061	315,891	67.0	64.5
Good	128,004	125,929	23.8	25.7
Fair/poor	49,363	47,798	9.2	9.8
Total	**537,428**	**489,618**	**100**	**100**
Outer regional/remote/very remote				
Excellent/very good	182,257	169,769	59.8	67.8
Good	99,011	56,771	32.5	22.7
Fair/poor	23,345	23,835	7.7	9.5
Total	**304,613**	**250,374**	**100**	**100**

Source: ABS NHS 1995 & 2001, unpublished data.

- Little change occurred in the way young people rated their health between 1995 and 2001. The largest changes were in reported self-assessed health of young people living in outer regional and remote areas of Australia.
- In 2001, more outer regional and remote young people rated their health as 'fair/poor' than in 1995 (10% compared with 8%). The proportion of young people from outer regional and remote areas rating their health as 'excellent/very good' also increased over time (60% in 1995 compared with 68% in 2001). The proportion rating their health as 'good' decreased from 33% in 1995 to 23% in 2001.
- In 2001, most young people living in major cities (64%) and inner regional areas (65%) rate their personal health as either very good or excellent. However, in outer regional/remote/very remote communities, the proportion was slightly higher (68%).

Quality of life



Source: ABS NHS 2001, unpublished data.

Figure 24.1: Self-rating of quality of life by young people aged 15–24 years, by ASGC classification, 2001

- Young people from major cities were more likely to say they were 'delighted' with their life (14%) than young people from regional or remote areas (11% and 12%, respectively).
- Around 70% of young people in regional or remote areas rated that they were pleased or mostly satisfied with their quality of life.

Hospitalisations

Table 24.2: Reasons for hospitalisation of young people aged 15–24 years by ICD chapter and remoteness area of usual residence, 2000–01

	Major cities			Inner regional			Outer regional, remote, very remote		
	Number	Rate per 100,000 young people	Per cent	Number	Rate per 100,000 young people	Per cent	Number	Rate per 100,000 young people	Per cent
Pregnancy and childbirth	58,735	6,466	19.9	23,267	9,363	24.5	20,809	14,174	27.0
Digestive system	47,004	5,174	15.9	13,784	5,547	14.5	8,760	5,967	13.1
Injury and poisoning	38,133	4,198	12.9	14,205	5,716	15.0	12,891	8,780	16.3
Mental and behavioural disorders	29,047	3,198	9.9	5,749	2,313	6.1	4,226	2,879	6.0
Contact with health services	23,845	2,625	8.1	5,976	2,405	6.3	4,874	3,320	6.6
Genitourinary system	16,315	1,796	5.5	5,301	2,133	5.6	3,518	2,396	4.8
Respiratory system	14,903	1,641	5.1	5,398	2,172	5.7	4,002	2,726	5.5
Other conditions	21,180	2,332	22.7	66,908	26,925	22.3	15,238	10,379	20.9
Total	**333,495**	**36,712**	**100**	**110,020**	**44,274**	**100**	**67,211**	**45,779**	**100**

Note: 'Other conditions' include symptoms, signs and abnormal findings not elsewhere classified; diseases of the musculoskeletal system; diseases of the skin and subcataneous tissue; neoplasms; certain infectious and parasitic diseases; diseases of the nervous system; endocrine, nutritional and metabolic diseases, diseases of the blood and blood-forming organs; diseases of the circulatory system; congenital malformations; diseases of the ear; diseases of the eye; and perinatal conditions

Source: AIHW National Hospital Morbidity Database.

- The rate of hospitalisations for pregnancy and childbirth among young women living in inner regional and in outer regional and remote areas was higher than for those living in major cities (9,363 and 14,173 per 100,000 compared with 6,466 per 100,000).
- The rate of hospitalisations for external causes of injury was also higher among young people living in inner regional and in outer regional and remote areas (5,716 and 8,780 per 100,000 compared with 4,198 per 100,000).
- The most frequent reasons for hospitalisation of young people aged 15–24 years did not vary greatly by area of residence in 2001. The top five specific diagnoses for major cities, inner regional and more remote areas alike were impacted teeth, medical abortion, extracorporeal dialysis, single spontaneous delivery and chronic tonsillitis.

Mortality

Table 24.3: Causes of death for young people aged 12–24 years, by ICD chapter and area of residence, 1999–01

	Number			Rate per 100,000 young people		
Cause of death	**Metropolitan**	**Rural**	**Remote**	**Metropolitan**	**Rural**	**Remote**
External causes of injury and poisoning	2,202	1,036	223	37.6	57.4	99.4
Malignant neoplasms	262	92	17	4.5	5.1	7.6
Mental, behavioural disorders	203	34	7	3.5	1.9	3.1
Diseases of the nervous system	143	61	9	2.4	3.4	4.0
Circulatory system	95	42	15	1.6	2.3	6.7
Endocrine, nutritional and metabolic diseases	77	24	4	1.3	1.3	1.8
Congenital malformations, deformations and chromosomal abnormalities	57	27	5	1.0	1.5	2.2
Respiratory system	49	20	9	0.8	1.1	4.0
Symptoms, signs and abnormal findings not elsewhere classified	34	23	8	0.6	1.3	3.6
Certain infectious and parasitic diseases	46	13	2	0.8	0.7	0.9
Other causes of death	53	16	11	0.9	0.9	4.9
Total deaths	**3,221**	**1,388**	**310**	**55.0**	**76.9**	**138.1**

Note: 'Other conditions' include: diseases of the blood and blood-forming organs, diseases of the digestive system, benign neoplasms, diseases of the genitourinary system, diseases of the musculoskeletal system, pregnancy, childbirth and puerperium, diseases of the skin and subcutaneous tissue, diseases of the eye, adnexa, ear and mastoid process.

Source: AIHW Mortality Database.

- Death rates due to external causes of injury and poisoning were higher among young people in rural and remote areas than those living in metropolitan areas (57.4, 99.4 and 37.6 deaths per 100,000 young people, respectively). In 1999–01, around 72% of deaths of young people living in rural and remote areas were due to external causes compared with 68% of deaths of young people living in metropolitan areas.

Between 1999 and 2001 the most common causes of death for young people aged 12–24 years varied by area of residence (Table 24.4).

Table 24.4: Most frequent causes of death for young people aged 15–24 years, by area of residence, 1999–01

Cause of death	Number			Rate per 100,000 young people		
	Males	Females	Persons	Males	Females	Persons
Metropolitan						
Intentional self-harm by hanging, strangulation and suffocation	303	73	376	10.3	2.5	6.4
Accidental poisoning by and exposure to narcotics and hallucinogens, not elsewhere classified	136	40	176	4.6	1.4	3.0
Driver injured in collision with fixed or stationary object	137	29	166	4.6	1.0	2.8
Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	96	50	146	3.2	1.7	2.5
Rural						
Intentional self-harm by hanging, strangulation and suffocation	128	30	158	13.7	3.4	8.8
Driver injured in collision with fixed or stationary object	92	20	112	9.8	2.3	6.2
Passenger injured in collision with fixed or stationary object	47	19	66	5.0	2.2	3.7
Driver injured in collision with car, pick-up truck or van	30	19	49	3.2	2.2	2.7
Remote						
Intentional self-harm by hanging, strangulation and suffocation	48	6	54	39.9	5.8	24.1
Driver injured in collision with fixed or stationary object	11	5	16	9.1	4.8	7.1
Assault by sharp object	5	5	10	4.2	4.8	4.5
Passenger injured in non-collision transport accident	8	2	10	6.7	1.9	4.5

Source: AIHW Mortality Database.

- Among young people living in all areas, intentional self-harm by hanging, strangulation and suffocation was the most common cause of death. Drivers killed in collisions also featured among the top causes of death in all areas.
- Among young people living in metropolitan areas, the second and fourth most common causes of death were accidental poisoning by narcotics and hallucinogens or other unspecified substances. However, for young people from rural and remote areas, accidental poisoning did not feature in the top four causes of death.
- Other transport accidents, as well as assault, featured in the top four causes of death among young people living in rural and remote areas.

References

ABS (Australian Bureau of Statistics) 1997. Self-assessed health status, Indigenous Australians, 1994. Occasional Paper Cat. No. 4707.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2001. National Health Survey: Aboriginal and Torres Strait Islander results, Australia. Cat. No. 4715.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002a. Deaths, Australia. Cat. No. 3302.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002b. Prisoners in Australia, 2001. ABS Cat. No. 4517.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2003. Prisoners in Australia, 2002. ABS Cat. No. 4517.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2001. Expenditures on health services for Aboriginal and Torres Strait Islander people 1998–99. AIHW Cat. No. IHW 7. Canberra: AIHW and Commonwealth Department of Health and Aged Care.

AIHW (Australian Institute of Health and Welfare) 2002a. Homeless people in SAAP: SAAP National Data Collection annual report 2001–02, Australia. AIHW Cat. No. HOU 72. Canberra: AIHW (SAAP NDCA report).

AIHW (Australian Institute of Health and Welfare) 2002b. Australia's health 2002: the eighth biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare): Al-Yaman F, Bryant M & Sargeant H 2002. Australia's children: their health and wellbeing 2002. AIHW Cat. No. PHE 36. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare): Broadbent A 2001. Report on the development of a Juvenile Justice National Minimum Data Set. AIHW Cat. No. CWS 14. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare): Strong K, Trickett P, Titulaer I & Bhatia K. 1998. Health in rural and remote Australia. Cat. No. PHE 6. Canberra: AIHW.

AMWAC (Australian Medical Workforce Advisory Committee) 2000. The general practice workforce in Australia. AMWAC Report 2000. Sydney: AMWAC.

Cahill L & Marshall P 2002. Statistics on juvenile detention in Australia: 1981–2001. Technical and Background Paper Series, no. 1. Canberra: Australian Institute of Criminology.

Garnaut J, Connell P, Lindsay R & Rodriguez V 2001. Country Australia: influences on employment and population growth. ABARE Research Report 2001. Canberra: Australian Bureau of Agriculture and Resource Economics.

Hancock L, Sanson-Fisher R, Perkins J, Girgis A, Howley P & Schofield M 2001. The effect of a community action intervention on adolescent smoking rates in rural Australian towns: the CART project. Cancer Action in Rural Towns. Preventative Medicine 32(4):332–40.

Mitchell RJ, Franklin RC, Driscoll TR & Fragar LJ 2002. Farm-related fatal injury of young and older adults in Australia, 1989-1992. Australian Journal of Rural Health 10(4):209–19.

Page AN & Fragar LJ 2002. Suicide in Australian farming, 1988–1997. Australian and New Zealand Journal of Psychiatry 36(1):81–5.

Patterson I & Pegg S 1999.Nothing to do: The relationship between 'leisure boredom' and alcohol and drug addiction: is there a link to youth suicide in rural Australia? Youth Studies Australia 18(2):24–9

Richardson R, Bolisetty S & Ingall C 2001. The profile of substance-using pregnant mothers and their newborns at a regional rural hospital in New South Wales. Australian and New Zealand Journal of Obstetric Gynaecology 41(4):415–9.

Ring IT & Brown N 2002. Indigenous health: chronically inadequate responses to damning statistics. Medical Journal of Australia 177(2/16):629–31.

Williams P 2001. Illicit drug use in regional Australia, 1988–1998. Trends and Issues in Crime and Criminal Justice, No. 192. Canberra: Australian Institute of Criminology.

Abbreviations

Glossary

Data sources and methods

Methodology

Indicators of youth health and wellbeing

Abbreviations

ABS	Australian Bureau of Statistics
ACER	Australian Council for Educational Research
ADHD	Attention-deficit hyperactivity disorder
AIHW	Australian Institute of Health and Welfare
AHMAC	Australian Health Ministers' Advisory Council
ASGC	Australian Standard Geographical Classification
ASSAD	Australian Secondary Students Alcohol and Drug (Survey)
BEACH	Bettering the Evaluation and Care of Health
BMI	Body mass index
DoHA	Commonwealth Department of Health and Ageing
DHAC	Commonwealth Department of Health and Aged Care
DHFS	Commonwealth Department of Health and Family Services
DHSH	Commonwealth Department of Human Services and Health
Dmft	Number of decayed, missing and filled deciduous teeth
DMFT	Number of decayed, missing and filled permanent teeth
DPIE	Commonwealth Department of Primary Industries and Energy
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, 4th edition
DSRU	Dental Statistics and Research Unit
HIC	Health Insurance Commission
ICD-9	International Classification of Diseases, 9th Revision
ICD-9-CM	International Classification of Diseases, 9th Revision, clinical modification
ICD-10	International Classification of Diseases and Related Health Problems, 10th Revision
ICD-10-AM	International Classification of Disease and Related Health Problems, 10th Revision, Australian modification
ICPC-2	International Classification of Primary Care, Version 2
LSAY	Longitudinal Survey of Australian Youth
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
MMR	Measles/mumps/rubella (vaccine)
NACCHO	National Aboriginal Community Controlled Health Organisation
NATSIS	National Aboriginal and Torres Strait Islander Survey
NCSCH	National Cancer Statistics Clearing House
NDSHS	National Drug Strategy Household Survey
NHMRC	National Health and Medical Research Council
NHS	National Health Survey
NISU	National Injury Surveillance Unit

NNDSS	National Notifiable Diseases Surveillance System
NNS	National Nutrition Survey
NPSU	National Perinatal Statistics Unit
OATSIH	Office for Aboriginal and Torres Strait Islander Health
OECD	Organisation for Economic Cooperation and Development
PISA	Programme for International Student Assessment
RRMA	Rural, remote and metropolitan areas
SAAP	Supported Accommodation Assistance Program
STI	Sexually transmitted infection
TFR	Total fertility rate
UNICEF	United Nations Children's Fund
USDHSS	United States Department of Health and Human Services
WHO	World Health Organization

States/Territories

NSW	New South Wales
Vic	Victoria
Qld	Queensland
WA	Western Australia
SA	South Australia
Tas	Tasmania
ACT	Australian Capital Territory
NT	Northern Territory

Glossary

Aboriginal: A person of Aboriginal descent who identifies as an Aboriginal and is accepted as such by the community in which he or she lives.

Acute: Coming on sharply to a crisis and often brief, intense and severe.

Age-specific rate: A rate for a specific age group. The numerator and denominator relate to the same age group.

Age standardisation: A method of removing the influence of age when comparing populations with different age structures.

Accessibility/Remoteness Index of Australia Plus (ARIA+): A continuous variable with a score of 0–15 which gives a measure of remoteness.

Bed-days: The number of full or partial days of stay for patients who were admitted for an episode of care and who underwent separation during the reported period. A patient who is admitted and separated on the same day is allocated 1 bed day.

Birthweight: The first weight of the baby (stillborn or liveborn) obtained after birth (usually measured to the nearest 5 grams and obtained within 1 hour of birth).

Body mass index (BMI): The most commonly used method of assessing whether a person is normal weight, underweight, overweight or obese. Calculated by dividing the person's weight (in kilograms) by their height (in metres) squared.

Cause of death: From information reported on the medical certificate of cause of death, each death assigned an underlying cause of death according to rules and conventions of the 9th or 10th revision of the International Classification of Diseases and Related Health Problems. The underlying cause is defined as the disease which initiated the train of events leading directly to death. Deaths from injury or poisoning are classified according to the circumstances of the violence which produced the fatal injury, rather than to the nature of the injury.

Confinement: Pregnancy resulting in at least one birth.

Congenital: A condition that is recognised at birth, or that is believed to have been present since birth, including conditions which are inherited or caused by environmental factors.

Core activity restrictions: The extent of a person's disability; 'core activities' are defined as self-care (bathing, dressing, eating, using toilet), mobility (moving around at home and away from home, getting into or out of bed or chair, using public transport), and communication (understanding and being understood by others). A person with a profound restriction is unable to perform a core activity, or always needs assistance with that activity, while a person with a severe restriction sometimes needs assistance to perform the activity.

Diagnosis: A decision based on the recognition of clinically relevant symptomatology, the consideration of causes that may exclude a diagnosis of another condition, and the application of clinical judgment.

Disability: The presence of one or more of 17 restrictions, limitations or impairments.

Disordered eating: Problematic eating behaviour like skipping meals for the purpose of weight loss.

Eating disorder: Clinically severe disturbances in eating behaviour, such as anorexia or bulimia nervosa.

External cause: Environmental event, circumstance and/or condition as the cause of injury, poisoning and/or other adverse effect.

Gestation: The carrying of young in the uterus from conception to delivery.

Hospitalisation: The term used to refer to the episode of care, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning and ending in a change of type of care (for example, from acute to rehabilitation).

Immunisation: Inducing immunity against infection by the use of antigen to stimulate the body to produce its own antibodies. See also Vaccination.

Incidence: The number of new cases (of an illness or event, etc.) occurring during a given period. Compare with Prevalence.

Indicator: A key statistic that indicates an aspect of population health status, health determinants, interventions, services or outcomes. Indicators are designed to help assess progress and performance, as a guide to decision making. They may have an indirect meaning as well as a direct one; for example, Australia's overall death rate is a direct measure of mortality but is often used as a major indicator of population health.

Indigenous: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander and is accepted as such by the community with which he or she is associated.

Infants: Children aged less than 1 year.

International Classification of Diseases: The World Health Organization's internationally accepted classification of causes of death and diseases. The 10th Revision (ICD-10) is currently in use.

Intervention (for health): Any action taken by society or an individual which 'steps in' (intervenes) to improve health, such as medical treatment and preventive campaigns.

Labour force*:* The labour force includes people who are employed and people who are unemployed (not employed and actively looking for work).

Labour force participation: young people who are employed either part time of full time and those who are currently unemployed but are looking for either full time or part time work are part of the labour force. The labour force participation rate is the proportion of people employed and unemployed out of the total population for the relevant age group

Labour force status: the labour force status of young people can be classified as follows: employed either full time or part time, unemployed (not employed and looking for full time or part time work) and not in the labour force (neither employed nor looking for work).

Length of stay: Duration of hospital stay, calculated by subtracting the date the patient is admitted from the day of separation. All leave days, including the day the patient went on leave, are excluded. A same-day patient is allocated a length of stay of 1 day.

Live birth: Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born (WHO definition).

Medicare: A national, government-funded scheme that subsidises the cost of personal medical services, and that covers all Australians to help them afford medical care.

Medications: Pharmaceutical drugs available only on the prescription of a registered medical practitioner and available only from pharmacies. Morbidity: Refers to ill health in an individual and to levels of ill health in a population or group.

National Health Priority Areas (NHPA): The NHPA initiative is a collaborative effort involving the Commonwealth Government and State and Territory Governments that seeks to focus public attention and health policy on those areas that are considered to contribute significantly to the burden of illness in the community, and for which there is potential for health gain.

Organisation for Economic Cooperation and Development (OECD): An organisation of 24 developed countries, including Australia.

Prescription drugs: Pharmaceutical drugs available only on the prescription of a registered medical practitioner and available only from pharmacies.

Prevalence: The number or proportion (of cases, instances, etc.) present in a population at a given time. Compare with Incidence.

Principal diagnosis: The diagnosis established to be the problem that was chiefly responsible for the patient's episode of care in hospital.

Psychiatric hospitals: Establishments devoted primarily to the treatment and care of admitted patients with psychiatric disorders.

Public health: Health activities which aim to benefit a population. Prevention, protection and promotion of health are emphasised, as distinct from treatment tailored to individuals with symptoms. Examples include provision of a clean water supply and good sewerage, conduct of anti-smoking campaigns, and screening for diseases such as cancer of the breast and cervix.

Quintile: A group derived by ranking the population according to specified criteria and dividing it into five equal parts.

Risk factor: Any factor which represents a greater risk of a health disorder or other unwanted condition or event. Some risk factors are regarded as causes of disease, others are not necessarily so.

SAAP support period: A support period commences when a client begins to receive support and/or supported accommodation from a SAAP agency. The support period is considered to finish when: the client ends the relationship with the agency; or the agency ends the relationship with the client.

SAAP closed support period: A support period that had finished before the end of the reporting period—30 June.

Socioeconomic status: A relative position in the community as determined by occupation, income and level of education.

Torres Strait Islander: A person of Torres Strait Islander descent who identifies as a Torres Strait Islander and is accepted as such by the community in which he or she lives.

Unemployment rate: The unemployment rate is the proportion of those unemployed (not employed and looking for full time or part time work) out of the total work force (those working and those unemployed).

Vaccination: The process of administering a vaccine to a person to produce immunity against infection. See also Immunisation.

Data sources and methods

A number of data sources have been used to compile this report, including population-based data sources and sample surveys. The two main data sources used throughout are the AIHW Mortality Database and the AIHW National Hospital Morbidity Database. The section below explores these data sources.

AIHW Mortality Database

The AIHW is supplied with annual death data from the State and Territory Registrars of Births Deaths & Marriages. The data, which constitute the AIHW Mortality Database, include all deaths registered in Australia from 1964 to the present. Data are added annually towards the end of each year. For some attributes, data are inconsistent because particular states or territories do not collect the same information on death certificates, or data codes have changed over time. It is also important to note that deaths are recorded by the date of death and the year in which they were registered, which may differ from the year the death actually occurred. Approximately 6% of deaths in a particular calendar year are registered in subsequent years, most being deaths that occurred in December of the preceding year. Since 1997, the causes of death in the Mortality Database have been coded using the International Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). Variables contained in the AIHW Mortality Database which were used in this report include underlying cause of death, age, sex, area of residence and Indigenous status.

AIHW National Hospital Morbidity Database

The National Hospital Morbidity Database is compiled by the AIHW from data supplied by the State and Territory health authorities. It is a collection of electronic summary records of hospitalisations for patients admitted to public and private hospitals in Australia. Data are compiled when patients leave the hospital or 'are separated', because only when a patient leaves the hospital is a final diagnosis and length of stay in hospital available. Data are held for hospital separations ending the period 1 July to 30 June, 1993–94 to 1999–00. Almost all hospitals in Australia are included. The total number of records for 1999–00 was 5.9 million. The National Health Data Dictionary definitions form the basis of the database, ensuring a high standard of data comparability. From 1993–94 to 1997–98, all principal diagnoses leading to the hospitalisation have been coded using the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) while since 1998–99 the International Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM) has been used. In 1998–99, the year when the change-over from ICD-9-CM to ICD-10-AM took place, some states and territories supplied their hospital data to AIHW already coded in ICD-10-AM (NSW, Vic, ACT and NT), while others supplied their data coded in ICD-9-CM (Qld, SA, Tas and WA). Data supplied from these states had to be mapped to ICD-10-AM by the AIHW. Variables contained in the AIHW National Hospital Morbidity Database which were used in this report include the principal diagnosis, age, sex, area of residence and Indigenous status.

National Health Survey (NHS)

The Australian Bureau of Statistics (ABS) conducted the 2001 ABS NHS from February to November 2001. Trained interviewers conducted personal interviews with residents of approximately 27,000 private dwellings. The first of the NHS series was conducted in

1989–90 with a second survey conducted in 1995. However, similar national surveys covering health status and the use of health services were conducted by the ABS in 1977–78 and 1983.

This survey provides information on the health status of the Australian population. Topics covered include use of health services and facilities, smoking, alcohol consumption and exercise. The 2001 NHS also included a supplementary sample of Aboriginal and Torres Strait Islander people to provide information on the health of Aboriginal and Torres Strait Islander Australians. The Indigenous sample covered all areas of Australia, including sparsely settled areas.

Bettering the Evaluation and Care of Health (BEACH) Program

The BEACH Program is aiming to establish an ongoing database of GP–patient encounter information. The program continuously collects information about the patients seen, the reasons for seeking medical care, problems managed and treatments provided in general practice in Australia. This information can then be used to assess patient-based risk factors and the relationship these factors have with health service activity. The survey uses a cross-sectional, paper-based data collection system developed over the past 20 years in the Department of General Practice, University of Sydney. Data collection is ongoing, with 20 general practitioners (GPs) recording their consultations for the program per week. An Australia-wide random sample of 1,000 GPs is taken annually from HIC Medicare records. A sample of 100 consecutive consultations is collected from each GP.

Disability, Ageing and Carers Survey

The Disability, Ageing and Carers Survey is conducted by the Australian Bureau of Statistics (ABS). It provides information on people with disabilities, older people and people who provide assistance to others because of their disabilities. The most recent survey was conducted in 1998. Previous surveys were conducted in 1981, 1988 and 1993.

Households with a member (such as parent or child) with a disability were identified, together with families in which a member is a primary carer. The survey sample includes private dwellings and selected non-private dwellings (such as hotels, motels, hospitals, nursing homes and other establishments providing care accommodation, but excluding corrective institutions). The survey was conducted in both urban and rural areas in all states and territories, but since 1997 excludes persons living in some remote and sparsely settled parts of Australia.

National Notifiable Diseases Surveillance System (NNDSS)

The National Notifiable Diseases Surveillance System (NNDSS) was established in 1990 by the Communicable Diseases Network of Australia and New Zealand (CDNANZ). The NNDSS coordinates the national surveillance of more than 40 communicable diseases. Notifications are made to State or Territory health authorities under the provisions of the public health legislation in their jurisdiction. Computerised, de-identified unit records of notifications are supplied to the NNDSS secretariat at the Department of Health and Ageing for collation, analysis and publication in the *Communicable Diseases Intelligence* journal.

Data provided for each notification include a unique record reference number, State or Territory code, disease code, date of onset, date of notification to the relevant health authority, sex, age, Aboriginality, postcode of residence, and the confirmation.

The quality and completeness of data compiled in the NNDSS are influenced by various factors. Surveillance of communicable diseases varies between jurisdictions, as each State and Territory has specific requirements under its public health legislation for notification by medical practitioners, laboratories and hospitals. The notifiable diseases and the case definition may also vary between jurisdictions. Further, the way in which notifications are made differs between states and territories. In some jurisdictions, different diseases are required to be notified by different health care providers. Therefore, the proportion of diagnosed cases of a particular disease which are subsequently notified to health authorities is not known with confidence and may vary between diseases, between jurisdictions and over time.

National Cancer Statistics Clearing House (NCSCH)

The AIHW maintains the National Cancer Statistics Clearing House (NCSCH). Information on the incidence of cancer in the Australian population is provided to the NCSCH by the State and Territory cancer registries. The NCSCH is the only national database of cancer incidence in Australia. The earliest cases recorded in the database are those diagnosed in 1982.

The Child and Adolescent Component of the National Survey of Mental Health and Well-being (The Mental Health of Young People in Australia)

The Child and Adolescent Component of the National Survey of Mental Health and Wellbeing (also known as the Mental Health of Young People in Australia) was commissioned by the Mental Health Branch of the then Commonwealth Department of Health and Aged Care and undertaken by the University of Adelaide. The data were collected between February and April 1998. Households were randomly selected in proportion to the population of each State or Territory, and spread proportionally across metropolitan and non-metropolitan areas (except in the Northern Territory, where only children in metropolitan areas were included). A representative sample of 4,500 children was recruited, and the response rate for the survey was 70%. Information was gathered from parents of children and from adolescents aged 13–17 years. Parents were interviewed, and both parents and adolescents completed a self-report questionnaire (Sawyer et al. 2000).

The National Survey of Mental Health and Wellbeing of Adults

The 1997 National Survey of Mental Health and Wellbeing of Adults (SMHWB) was conducted from May to August 1997 from a representative sample of persons living in private dwellings in all states and territories of Australia. Approximately 13,600 private dwellings were initially selected in the survey sample. One person aged 18 years or over from each dwelling was subsequently invited to participate. Approximately 10,600 people aged 18 years or over participated in the survey, representing a response rate of 78%.

The SMHWB was designed to provide information on the prevalence of a range of major mental disorders for Australian adults. The range of mental disorders included in this survey was determined by a Technical Advisory Committee, taking into consideration: disorders that were expected to affect more than one per cent of the population; the capacity of the Composite International Diagnostic Interview (CIDI) to

diagnose selected mental disorders; and the limitations of a household survey identifying relevant population groups.

The selected mental disorders examined in the survey included; anxiety disorders, affective disorders, alcohol use disorders and drug use disorders

National Dental Telephone Interview Survey

The AIHW Dental Statistics Research Unit at Flinders University conducted the National Dental Telephone Interview Survey (NDTIS) in mid-1999. The survey comprised a stratified random sample of persons aged 5 years or more. Proxy interviews were conducted for children, usually with a parent. The NDTIS collected a wide range of information, including data on oral health status, dental treatment (such as time and place of, and reason for, last dental visit; services received in the previous year; and waiting time), perceived needs, social impact of dental health, hardship and affordability, difficulties associated with dental care, and sociodemographic and economic details. There were 7,824 participants across Australia in the 1999 survey. The sample included responses for 446 and 462 children in the age groups 5–9 years and 10–14 years, respectively.

National Nutrition Survey (NNS)

This survey provided information on food and nutritional intake, eating patterns and selected physical measures of the Australian population. The NNS was conducted in association with the 1995 ABS NHS as a joint project between the ABS and the then Commonwealth Department of Health and Family Services.

Because common variables were collected in both the NHS and the NNS, nutrition data can be linked to the family and demographic information collected in the NHS, together with data on health status, health-related actions, health risk factors and women's health supplementary items.

Australian Secondary Students Alcohol and Drug Survey (ASSAD)

The Centre for Behavioural Research in Cancer in Victoria conducts sample surveys on the use of alcohol and drugs by secondary school children in Australia. The sample is designed to represent students from all types of schools and provides statistically significant national and state-specific estimates for each age and sex group (Letcher & White 1999).

Members of the research team administer a written questionnaire to students at school. Students answer the questionnaire anonymously. The presence of teachers during the survey is discouraged.

The core questionnaire covers the use of tobacco, alcohol, over-the-counter medicines (used for non-medical purposes) and illicit substances. Questions relating to tobacco and alcohol cover the lifetime experience of smoking or drinking. The substances included in the questionnaire represent a wide range of licit and illicit substances, including analgesics, tranquillisers, cannabis, amphetamines, inhalants and steroids.

Household, Income and Labour Dynamics in Australia Survey

The Household, Income and Labour Dynamics in Australia (or HILDA) Survey is a household-based panel survey funded by the Commonwealth Government, which aims to tracks all members of an initial sample of households over an indefinite life. The first wave of the survey was conducted in the second half of 2001

The initial sample selected for the first wave of the HILDA Survey comprised 12,252 households selected from 488 different neighbourhood regions across Australia, of which 11,693 were subsequently identified as in-scope. Interviews were successfully conducted with 13,969 members of 7682 households, giving a household response rate of 66 per cent.

In Wave 1 data was collected on a wide range of issues, including: household structure, family background, marital history, family formation, education, employment history, current employment, job search, income, health and well-being, child care and housing.

Methodology

Methods of standardisation used in this report

Death rates and hospitalisation rates throughout this report have been standardised to control for any effects of differing age structure in the Australian child population.

Direct age standardisation was the method of standardisation used in all cases except for death rates of Aboriginal and Torres Strait Islander young people. For these particular rates, indirect age standardisation was more appropriate given the small numbers involved.

For the direct standardisation, the estimated resident young people population of Australia at 2001 was used as the standard. The following formula illustrates the steps undertaken to standardise the data:

$SR = \sum (Ri \times Pi) / \sum Pi$

Where SR = the age-standardised rate

Ri = the age-specific rate for age group i, and

Pi = the standard population in age group i.

Indirect standardisation was used to estimate Aboriginal and Torres Strait Islander death rates. Average death rates in the total Australian population of young people in the period 1999–01 for Queensland, Western Australia, South Australia and Northern Territory were applied to the number young Aboriginal and Torres Strait Islander people in these jurisdictions, to obtain the number of expected deaths of Indigenous young people in those populations. The standardised mortality ratio was then calculated by dividing the total number of observed deaths in the Aboriginal and Torres Strait Islander populations by the total number of expected deaths. This ratio was then applied to the crude death rates in the standard population to obtain the standardised rate.

Indicators of youth health and wellbeing

The following list is a summary of the indicators of youth health and wellbeing that are presented in this report. The indicators, are listed according to the chapter of the report in which they appear.

Health and wellbeing

- Proportion of young people aged 15–24 years rating their own health as 'excellent', 'very good' or 'good'
- Proportion of young people aged 15–24 years stating that they feel 'delighted', 'pleased' or 'mostly satisfied' with their life as a whole

Mortality

- Death rates for young people aged 12–24 years

Morbidity

- Rate of GP consultations per young person aged 12–24 years
- Hospitalisation rate for young people aged 12–24 years
- Proportion of young people aged 15–24 years who had had days away from work or study because of illness or injury in the previous 2 weeks
- Mean number of Medicare services processed per young person aged 12–24 years
- Proportion of young people aged 15–24 years taking a health-related action in the past 2 weeks

Disability

- Prevalence rate for disability in young people aged 15–24 years
- Prevalence rate for severe or profound core activity restriction among young people aged 15–24 years

Injury and poisoning

- Incidence rate for injury of young people aged 12–24 years
- Injury hospitalisation rate for young people aged 12–24 years
- Injury death rate for young people aged 12–24 years
- Transport accident hospitalisation rate for young people aged 12–24 years
- Transport accident death rate for young people aged 12–24 years
- Assault hospitalisation rate for young people aged 12–24 years
- Assault death rate for young people aged 12–24 years
- Death of young people aged 15–24 years from accidental poisoning by narcotics and hallucinogens

Mental health

- Proportion of young people aged 18–24 years having the highest levels of psychological distress as measured by the K10 scale
- Prevalence rate for mental health problems among young people aged 12–17 years
- Prevalence rate for mental health disorders among young people aged 12–24 years
- Mental health problems and disorders hospitalisation rate for young people aged 12–24 years
- Prevalence rate for depressive disorders among young people aged 12–24 years
- Prevalence rate for anxiety disorders among young people aged 18–24 years
- Prevalence rate for ADHD among young people aged 12–17 years
- Prevalence rate for conduct disorder among young people aged 12–17 years
- Prevalence rate for suicidal ideation for young people aged 12–17 years
- Intentional self-harm hospitalisation rate for young people aged 12–24 years
- Suicide rate for young people aged 12–24 years
- Prevalence rate for substance use disorders for young people aged 18–24 years
- Substance use disorder hospitalisation rate for young people aged 15–24 years
- Drug dependence disorder hospitalisation rate for young people aged 15–24 years
- Drug dependence disorder death rate for young people aged 15–24 years

Sexual and reproductive health

- Proportion of young people in Year 10 and Year 12 who have had sexual intercourse
- Proportion of sexually active young people aged 16–24 who are currently using any contraception to avoid pregnancy
- Proportion of young people in Year 10 and Year 12 who are attracted to the same sex, both sexes or unsure of their sexual attraction
- Chlamydia, gonococcal infection and syphilis notification rates for young people aged 12–24 years
- Proportion of students in Year 10 who correctly identified whether a disease was sexually transmitted and proportion of students in Year 12 who correctly identified whether a disease was sexually transmitted
- Proportion of young people aged 16–24 years who have non-regular sexual partners and who sometimes or never use condoms
- Induced abortion rate for young women aged 12–24 years
- Birth rate for young women aged 12–24 years
- Infectious diseases:
- HIV infection notification rate for young people aged 12–24 years
- Hepatitis A, B and C notification rates for young people aged 12–24 years
- Pertussis, meningococcal disease, measles, mumps and rubella notification rates for young people aged 12–24 years
- Meningococcal disease hospitalisation rate for young people aged 12–24 years

Chronic diseases

- Prevalence rate of asthma for young people aged 12–24 years
- Asthma hospitalisation rate for young people aged 12–24 years
- Incidence rate for type 1 diabetes among young people aged 12–24 years
- Incidence rate for impaired glucose tolerance among young people aged 12–24 years
- Diabetes hospitalisation rate for young people aged 12–24 years
- Incidence rate for cancer among young people aged 12–24 years
- Five-year relative cancer survival rates for young people aged 12–24 years
- Proportion of young women aged 20–24 years who have had a Pap smear in the previous 24 months

Oral health

- Proportion of young people aged 12–24 who rate their oral health positively
- Percentage of young people aged 12–24 experiencing toothache in last 12 months
- Mean DMFT at 12 years and mean DMFT at 15 years
- Percentage of young people free of clinical decay at 12 years and at 15 years
- Oral health problems hospitalisation rate for young people aged 12–24 years
- (continued)
- Proportion of young people aged 12–24 making a dental consultation in the past 12 months

Substance use

- Mean age of initiation: tobacco, alcohol and illicit drugs
- Proportion of young people aged 12–24 years who are 'recent' smokers
- Proportion of young people aged 12–17 years who smoke and who buy their own cigarettes
- Proportion of young people aged 14–24 years who are 'daily' smokers
- Proportion of young people aged 14–24 years who drink at risky or high risk levels in the short term
- Proportion of young people aged 14–24 years who drink at risky or high risk levels in the long term
- Proportion of young people aged 12–24 years who had used an illicit drug within the previous 12 months
- Proportion of young people aged 12–24 years who had used cannabis within the previous 12 months
- Proportion of young people aged 14–24 years who had injected drugs within the previous 12 months
- Proportion of young people successfully quitting smoking in the last 12 months
- Alcohol and other drug-related violence victimisation rate for young people aged 14–24 years

Diet and nutrition

- proportion of young people aged 12–24 years whose daily energy intake from fats is above the level recommended by NHMRC
- Mean daily intake of energy of young people aged 12–24 years
- Proportion of young people aged 12–24 years eating sufficient daily serves of fruit and vegetables

Physical activity

- Proportion of young people aged 18–24 years reporting undertaking moderate or vigorous physical activity in previous week
- Overweight and obesity:
- Proportion of young people aged 12–24 years who are overweight or obese
- Sun protection:
- Proportion of young people aged 12–17 years reporting that they always or usually use some type of sun protection on a sunny day in summer
- Proportion of young people aged 12–24 years whose skin is regularly checked for changes in freckles and moles

Family environment

- Proportion of young people in families who rated their family cohesion as 'fair' or 'poor'
- Rate of young people aged 12–16 years who are the subject of a child protection substantiation
- Rate of young people aged 12–17 years who are the subject of care and protection orders
- Proportion of young people aged 12-17 years who were in out of home care

Relationships and social participation

- Volunteering rate for young people aged 18–24 years
- Proportion of young people aged 15–24 years who are active members of sporting, hobby, or community-based clubs or associations

Education, employment and income

- School participation rate for young people aged 15–18 years
- Apparent retention rates for young people to Year 12
- Education participation rate for young people aged 15–24 years
- Attainment of Year 12 or a post-school qualification by 19-year-olds and attainment of a skilled vocational qualification or higher by 24-year-olds
- Proportion of young people aged 14 years who achieved mastery in reading and numeracy
- Proportion of young people aged 15–24 years who are unemployed and not in full-time education
- Proportion of young people aged 15–24 years who were long-term (more than 52 weeks) unemployed
- Proportion of young people aged 15–24 participating in full-time education or training, or in full-time work, or in both part-time education or training and part-time work
- Proportion of young people aged 15–24 years receiving government income support
- Proportion of young people aged 15–17 years who are considered to be independent from their parents for the purpose of Youth Allowance
- Proportion of young people aged 15–24 years who experienced hardship because of a shortage of money

Housing and homelessness

- Rate of young people aged 12–24 years who are currently homeless
- Proportion of young people aged 12–24 years who are SAAP clients
- Proportion of young people aged 12–24 years who live in overcrowded housing
- Juvenile justice:
- Proportion of people aged 12–16 years in custody in a juvenile justice facility
- Rate of imprisonment among young people aged 18–24 years
- Personal crime victimisation rate among young people aged 18–24 years

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Australia's Young People: Their Health and Wellbeing 2003

is the second national report on the health and wellbeing of young people in Australia. It provides comprehensive information on the health status of young people including causes of hospitalisations and deaths, chronic diseases, infectious diseases, injury, disability, reproductive and sexual health. The behavioural risk and protective factors influencing young people's health and wellbeing that are covered in this report include substance use, diet and nutrition, physical activity and overweight and obesity.

Social conditions are also important determinants of health. The report therefore includes information on the family environment, relationships and social participation, education, employment and income.

An overview of the health and welfare of Aboriginal and Torres Strait Islander young people is also presented.

It is an important reference for anyone interested in youth health.

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