Part V

WHAT FACTORS CAN AFFECT CHILDREN ADVERSELY?

Part II of this report looked at health status measures, such as mortality, morbidity and disability, and showed that while many Australian children experience relatively good health, some experience considerably worse health than others in the population. *Part III* of the report has discussed the positive factors that influence health, in particular those that promote healthy child development, such as breastfeeding, good dental health, physical activity and early learning experiences.

Part V will focus on factors which increase the risk of ill heath in children. Childhood, including the prenatal period, is a time of rapid development during which it is critical to establish good health, positive health behaviours and overall wellbeing. During these times it is important to reduce the factors that adversely affect the health of children and to promote factors that enhance health.

The following topics are therefore discussed in *Part V*:

- teenage births
- smoking in pregnancy
- alcohol use in pregnancy
- birthweight
- overweight and obesity
- environmental tobacco smoke in the home
- tobacco use
- alcohol misuse.

The following table shows how children fare across the various indicators presented in *Part V*, and whether there has been any improvement over time.

Indicator		Value	Trend
Teenage births	Age-specific birth rate for 15–19 year old women (2006)	17 per 1,000	✓
Smoking in pregnancy	Women who smoked during the first 20 weeks of pregnancy	National data not available	. .
Alcohol use in pregnancy	Women who consumed alcohol during pregnancy (2007)	60%	✓
Birthweight	Live born infants of low birthweight (2006)	6%	~
Overweight and obesity	Children aged 2–12 years whose BMI score is above the international cut-off points for 'overweight' and 'obese' for their age and sex (2007)	22%	. .
Environmental tobacco smoke in the home	Households with children aged 0–14 years where someone smokes inside (2007)	8%	✓
Tobacco use	Children aged 12–14 years who are current smokers (2005)	5%	✓
Alcohol use	Children aged 12–14 years who have engaged in risky drinking on any one occasion (in the last week) (2005)	2.6%	×

Key: ✓ = favourable trend; × = unfavourable trend; ~ = no change or clear trend; . . = no trend data presented.

18 Teenage births

Teenage motherhood poses significant long-term risks, including poorer health, educational and economic outcomes, for both mother and child.

In 2006, 11,900 babies were born to teenage mothers, or 5% of all births. For teenagers, the birth rate was 5 times as high among Indigenous girls, and those living in remote areas of Australia.

Teenage motherhood, particularly at younger ages, can pose significant long-terms risks to both mother and child. Teenage mothers often delay having their pregnancy confirmed and/or seeking antenatal care, and are more likely to engage in risky behaviour, including smoking and drinking alcohol during pregnancy (see *Chapter 19* and *Chapter 20*). Consequently, teenage mothers face increased risk of miscarriage, preterm delivery, low birthweight and other complications of pregnancy and birth, and perinatal mortality (WHQW 2008). Perinatal mortality is highest among infants of teenage mothers (perinatal deaths include fetal deaths of at least 20 weeks gestation or 400 grams in weight, up to babies aged less than 28 days). Infants born to teenage mothers are at an increased risk of infection, chemical dependence (due to maternal substance abuse) and SIDS (Malamitsi-Puchner & Boutsikou 2006).

Parenthood during the teenage years often means interrupted schooling, a high risk of lone parenthood, greater dependence on government assistance, increased problems in engaging with the labour market, and poverty (Sleebos 2003). As a result, many young mothers are unable to meet the financial and emotional needs of their babies. These negative consequences can affect the health, educational and economic futures of children born to teenage parents, as well as the parents themselves (Sleebos 2003). Children born to teenage mothers develop more behavioural problems, tend to be more impulsive than children of older mothers and are more likely to be born into, and continue to live in, social and economic disadvantage (Ambert 2006). Children of teenage mothers have a higher likelihood of becoming a teenage parent themselves (Felice & Feinstein 1999 cited in Pursche 2007).

A number of factors are associated with teenage birth including family history of teenage pregnancy, sexual abuse in childhood, unstable housing arrangements, poor school attendance and performance, socioeconomic disadvantage, absence of a father figure, living in rural and remote areas, and being Indigenous (Slowinski 2001). While not all teenage births result in negative outcomes for mother and child, the circumstances that often contribute to teenage birth mean that many young mothers do not receive the support they need during and after the birth. There is also the question of whether certain groups of young women have adequate support to avoid unintended pregnancy. Knowledge about reproductive matters and access to contraception are important factors in preventing unintended teenage pregnancies.

Teenage births has been endorsed by the AHMC, CDSMC and the AESOC as a Children's Headline Indicator priority area (see *Part X* for further information and state and territory data).

HOW MANY AUSTRALIAN CHILDREN ARE BORN TO TEENAGE MOTHERS?

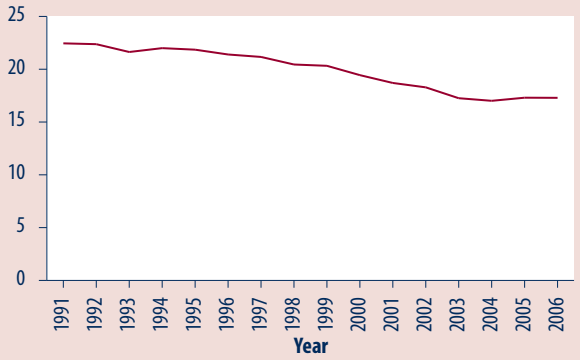
The teenage birth rate, that is, the number of babies born to teenage mothers, is expressed as the number of live births per 1,000 female population aged 15–19 years. There are few births to mothers under the age of 15 years in Australia—these births are included in the numerator. Data on births to teenage mothers is available from the AIHW National Perinatal Data Collection.

The teenage birth rate is distinct from the teenage pregnancy rate. The birth rate includes only live births and is therefore lower than the pregnancy rate, which would include terminations and stillbirths. The teenage birth rate is reported in this chapter to emphasise the relationship between early life experiences and their longer term effects on child health and wellbeing.

Headline Indicator: Age-specific birth rate for 15–19 year old women

In 2006:

- Around 11,900 infants were born to teenage mothers—a rate of 17 live births per 1,000 females aged 15–19 years. Births to teenage mothers accounted for 4.5% of all live births.
- Of teenagers who gave birth, 82% were first-time mothers.
- The declining trend observed in teenage births since the mid 1990s, when the rate was 22 per 1,000 females aged 15–19 years, appears to have stabilised from 2003 onwards at 17 (Figure 18.1).



Source: AIHW National Perinatal Data Collection.

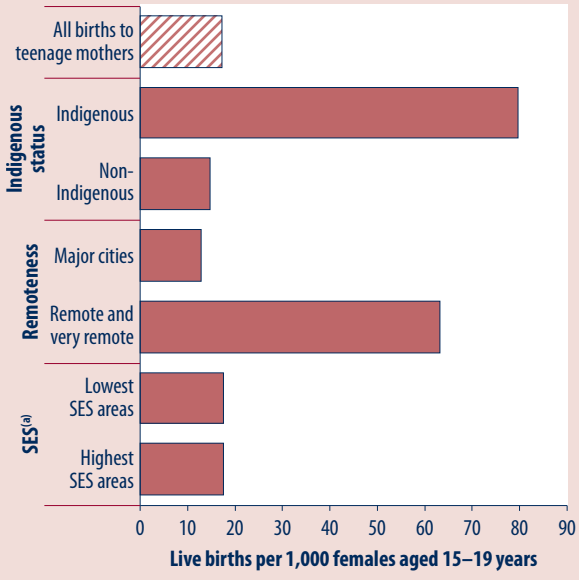
Figure 18.1: Teenage birth rate, Australia, 1991 to 2006

Do teenage birth rates vary across population groups?

Teenage births are more common among Indigenous Australians, and among mothers from remote areas. Research suggests that limited access to family planning information and services may contribute to relatively high numbers of teenage births in rural communities (Pursche 2007).

In 2006:

- The Indigenous teenage birth rate was 5 times the non-Indigenous rate—80 births per 1,000, compared with 15 for non-Indigenous teenagers (Figure 18.2). See *Part IX* for further information.
- The teenage birth rate increased with increasing remoteness, with teenage girls in *Remote and very remote* areas being 5 times as likely to give birth as their peers in *Major cities* (63 per 1,000 compared with 13).
- There was no statistically significant difference in teenage birth rates between those in the lowest and highest socioeconomic status (SES) areas (based on the mother's usual place of residence).

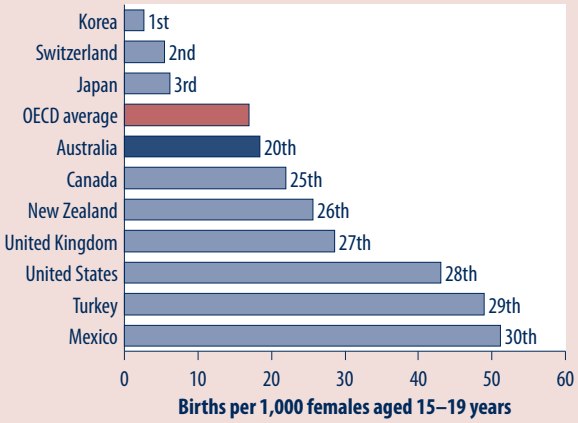


(a) See *Appendix 1 Methods* for explanation of socioeconomic status (SES).
Note: Remoteness and SES based on mothers' usual place of residence.
Source: AIHW National Perinatal Data Collection.

Figure 18.2: Teenage births by population groups, 2006

How do Australia's teenage birth rates compare internationally?

Australia's teenage birth rate ranked 20th out of 30 OECD countries in 2002 (Figure 18.3). At 18 births per 1,000 teenage females, the Australian rate was higher than the OECD average (17) and substantially higher than Korea (2.7), Switzerland (5.5) and Japan (6.2), the best performing OECD countries. Teenage birth rates were highest in Mexico (51), Turkey (49) and the United States (43).



Notes
1. Data for Turkey and United Kingdom based on data for 1998 and 2000, respectively.
2. Based on data from 30 OECD countries, using the most recent year of available data.

Source: OECD 2009.

Figure 18.3: Teenage births among selected OECD countries, 2002

19 Smoking in pregnancy

Smoking in pregnancy is an important modifiable risk factor for low birthweight, preterm birth, placental complications and perinatal mortality.

In 2006, one in six women smoked at any time during pregnancy, with rates at least twice as high among Indigenous women, those living in remote areas and those living in the most socioeconomically disadvantaged areas.

Smoking during pregnancy is a significant risk factor for the mother and her unborn baby. Tobacco smoke interferes with normal fetal development by restricting oxygen flow through the placenta and exposing the developing fetus to numerous toxins. This increases the risk of spontaneous abortion and ectopic pregnancy, and can result in health problems for the newborn, including low birthweight, intrauterine growth restriction, prematurity, placental complications, birth defects, lung function abnormalities and respiratory symptoms, and perinatal mortality (Jauniaux & Burton 2007; Julvez et al. 2007; Milner et al. 2007).

Low birthweight and short gestation are the most common short-term problems for infants whose mothers smoked in pregnancy, and are associated with increased perinatal morbidity and mortality, as well as adverse health outcomes throughout life (see also *Chapter 21 Birthweight*). Lower levels of exposure to cigarette smoke are associated with improved health outcomes for infants—reducing cigarette smoking to eight cigarettes a day significantly improves birthweight, while quitting smoking within the first 20 weeks of pregnancy results in birthweight similar to that of infants of non-smoking mothers (Chan & Sullivan 2008; Hoff et al. 2007). Conversely, mothers who smoked more than 10 cigarettes a day have infants of significantly lower birthweight (Chan & Sullivan 2008).

The effects of smoking during pregnancy are not restricted to the perinatal period but persist into infancy and childhood. Smoking during pregnancy has been found to be associated with SIDS and childhood conditions such as asthma, obesity, lowered cognitive development and psychological problems (Button et al. 2007; Julvez et al. 2007).

A number of maternal characteristics are associated with smoking in pregnancy. Rates of smoking in pregnancy are higher among teenage mothers, lone mothers, Aboriginal and Torres Strait Islander mothers, and mothers with lower levels of educational attainment and of low socioeconomic status (Laws et al. 2006). Women continue to smoke during pregnancy for many reasons such as addiction, and social and economic pressures, as well as the lack of understanding of the consequences of smoking during pregnancy (Hoff et al. 2007; OBGYN & Reproduction Week 2008).

Smoking in pregnancy has been endorsed by the AHMC, CDSMC and the AESOC as a Children's Headline Indicator priority area (see *Part X* for further information).

HOW MANY PREGNANT WOMEN SMOKE IN AUSTRALIA?

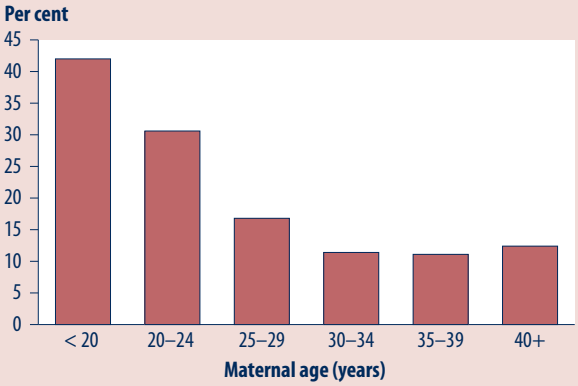
Headline Indicator: Proportion of women who smoked during the first 20 weeks of pregnancy

Smoking in the first 20 weeks of pregnancy is the endorsed Children's Headline Indicator. Currently, only South Australia collects suitable data for this indicator. A standard data element has been developed and it is expected that nationally consistent data on smoking during the first 20 weeks of pregnancy will be collected from 1 January 2010.

In the interim of national data being available on smoking in the first 20 weeks of pregnancy, this chapter reports on the proportion of women who smoke at any time during pregnancy, using data from the AIHW National Perinatal Data Collection (see *Appendix 2 Data sources*).

In 2006, excluding data for Victoria:

- One in six (17%) women who gave birth reported smoking during pregnancy, and the rate has remained fairly stable since 2001.
- Smoking in pregnancy was most common among teenage mothers (42%), and decreased with increasing maternal age to between 11% and 12% among mothers aged 30 years and over (Figure 19.1).
- Infants whose mothers smoked during pregnancy were twice as likely to be of low birthweight (11% compared with 5% for those who did not smoke) and 60% more likely to be pre-term at less than 37 weeks than mothers who did not smoke.



Note: Mother's tobacco smoking status during pregnancy is self-reported.
Sources: Laws & Hilder 2008; AIHW National Perinatal Data Collection, unpublished data.

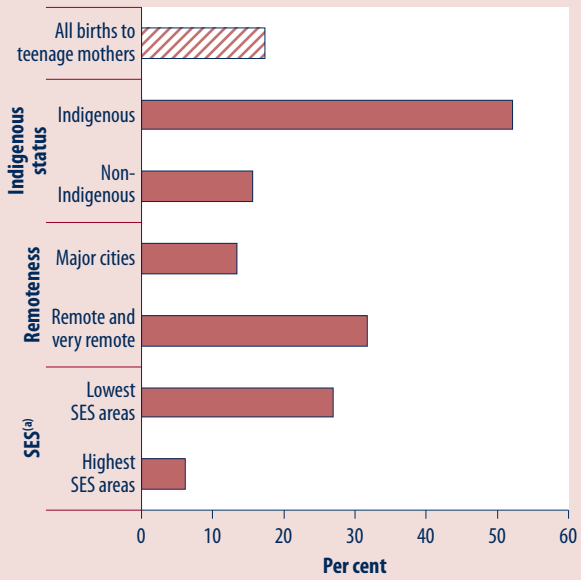
Figure 19.1: Women who smoked during pregnancy, by age of mother, 2006

How does smoking in pregnancy vary across population groups?

There are a number of reasons why rates of smoking in pregnancy may vary between population groups such as Aboriginal and Torres Strait Islander mothers, and mothers from remote and socioeconomically disadvantaged areas. These include access to high-quality maternal health services, which are less readily available to these population groups, and lower educational attainment. Combined, these factors may mean that women in these groups are less aware of the health effects of smoking on their baby, and may lack the resources or support to reduce or quit smoking while pregnant.

In 2006, excluding data for Victoria:

- More than half (52%) of Indigenous mothers reported smoking during pregnancy—more than 3 times the rate of non-Indigenous mothers (16%) (Figure 19.2) (see *Part IX* for further information).
- Mothers in *Remote and very remote* areas were more than twice as likely to have smoked during pregnancy compared with mothers in *Major cities* (32% and 13%, respectively).
- Mothers in the lowest socioeconomic status (SES) areas were over twice as likely to have smoked during pregnancy than those in the highest SES areas (27% and 6%, respectively).



(a) See *Appendix 1 Methods* for explanation of socioeconomic status (SES).
Note: Remoteness and socioeconomic status based on mother's usual place of residence.
Sources: Laws & Hilder 2008; AIHW National Perinatal Data Collection, unpublished data.

Figure 19.2: Women who smoked during pregnancy, by population group, 2006

20 Alcohol use in pregnancy

Maternal alcohol use during pregnancy is associated with severe adverse perinatal outcomes, such as fetal alcohol syndrome, alcohol-related birth defects and alcohol-related neurodevelopmental disorders.

In 2007, 60% of women consumed alcohol during pregnancy, with most of these women reducing their alcohol consumption due to pregnancy.

Maternal alcohol use during pregnancy is associated with adverse perinatal outcomes. Alcohol readily crosses the placenta and is a well-known teratogen (that is, it can cause birth defects). Research has shown that maternal drinking at high levels during pregnancy can cause miscarriage, stillbirth and premature birth, growth retardation, fetal alcohol syndrome, pseudo-Cushing's syndrome, alcohol withdrawal in the newborn, alcohol-related birth defects, and neurological, cognitive and behavioural problems (NHMRC 2001; Peadon et al. 2007; Tai et al. 1998 cited in AIHW: Ford et al. 2003). Exposure to alcohol in the uterus is the leading cause of birth defects and mental retardation among children (Kumada et al. 2007).

Fetal alcohol spectrum disorder is an umbrella term that describes a range of conditions that can occur in children exposed to alcohol before birth. Fetal alcohol spectrum disorder includes fetal alcohol syndrome, alcohol-related birth defects and alcohol-related neurodevelopmental disorders. These conditions are entirely preventable (Peadon et al. 2007).

FETAL ALCOHOL SYNDROME

Fetal alcohol syndrome (FAS) is the most severe alcohol-related disorder among children (Kumada et al. 2007). FAS refers to a pattern of abnormal features associated with the use of alcohol during pregnancy. The characteristic features of FAS include prenatal and/or postnatal growth restriction, characteristic facial features and central nervous system abnormalities (for example, neurological abnormalities, developmental delays, behavioural dysfunction and learning difficulties). Children with FAS experience lifelong problems, including learning difficulties and disrupted education, increased rates of mental illness, drug and alcohol problems, inappropriate sexual behaviour, unemployment and contact with the law (Streissguth et al. 2004 cited in Peadon et al. 2007).

Rates of FAS in Australia, and around the world, are likely to be underestimated, due to difficulties in identifying and managing the condition, and fears of stigmatisation for the child and family (Elliott et al. 2006b). In Australia, there was a significant increase in the number of children reported with FAS to the Australian Paediatric Surveillance Unit each year from 2001 to 2004 (Elliott et al. 2007). Higher rates of FAS occur in Indigenous communities compared with non-Indigenous communities (Elliott et al. 2006a). Many children affected by FAS are in foster care, while many others have an affected sibling, which suggests missed opportunities for prevention (Elliott et al. 2006a).

IS THERE A SAFE LEVEL OF ALCOHOL CONSUMPTION DURING PREGNANCY?

Damage to the fetus depends on the quantity, frequency and timing of alcohol consumption during pregnancy and is influenced by maternal factors. Drinking heavily or to intoxication poses the greatest risk to the developing fetus, but some recent studies suggest that even low levels of alcohol consumption (such as one or two drinks per week) may adversely affect neurodevelopmental and behavioural outcomes (NHMRC 2009). These effects can be prevented by abstaining from alcohol during pregnancy.

High levels of alcohol consumption in the first trimester can cause facial and brain malformations, while consumption during the third trimester is highly related to damage to the areas of the brain responsible for sensory

perception, motor control, short-term memory, spatial navigation and executive functioning (such as cognitive behaviour, personality expression and moderation of appropriate social behaviour) (Riley & McGee 2005).

The relative risk of drinking during pregnancy or breastfeeding (compared with not drinking) has not been determined across a range of drinking levels. Hence, a safe ('no-effect') level has not been established on a population basis. Furthermore, individual factors mean that actual risks vary considerably from one person to another. Most policies stress that heavy drinking or intoxication pose the greatest risk to the fetus and several stress that a safe level has not been established. The National Health and Medical Research Council's *Australian guidelines to reduce health risks from drinking alcohol* therefore recommend that not drinking alcohol during pregnancy is the safest option (NHMRC 2009).

HOW MANY WOMEN CONSUME ALCOHOL WHILE PREGNANT?

Alcohol consumption during pregnancy is not routinely collected on a national or state-wide level, except by the Northern Territory Midwives collection. At present, there is no standardised data collection instrument or data definition for alcohol consumption in pregnancy. Currently the only source of national data is the National Drug Strategy Household Survey.

The National Drug Strategy Household Survey asks women whether they consumed alcohol while pregnant, while breastfeeding, or while pregnant and breastfeeding in the previous 12 months. The survey also asks about changes in alcohol consumption due to pregnancy or breastfeeding: whether women abstained from alcohol, reduced alcohol consumption or made no change to alcohol consumption. The quantity and regularity of alcohol consumption during pregnancy is not available from this survey.

Key national indicator: Proportion of women who consume alcohol in pregnancy

In 2007, of those women who were pregnant in the 12 months before the survey:

- An estimated 60% (or around 356,700) reported that they consumed alcohol during pregnancy, while 40% abstained. The proportion of women who drank while pregnant has declined over recent years; from 64% and 62% in 2001 and 2004, respectively.
- Of those who reported that they did consume alcohol during pregnancy, the majority (94%) reduced their consumption, while a small proportion (6%) drank the same or more.

The National Drug Strategy Household Survey also found that women were likely to reduce their use of tobacco or marijuana when they were pregnant. Of those women who were pregnant in the 12 months before the survey, 10% used tobacco while pregnant and 3% used marijuana, down from rates of 18% and 9%, respectively, when the same women were not pregnant.

The 2006 Victorian Child Health and Wellbeing Survey collected information from women about their consumption of alcohol during pregnancy. The survey found that for children aged under 2 years:

- Three in five (61%) had mothers who said they drank alcohol early in their pregnancy before they knew they were pregnant (Table 20.1).
- One in five (21%) had mothers who reported that they had drunk more than 4 standard drinks in one day before they knew they were pregnant, and 8% had mothers who said they drank to this level at least once a week before becoming aware of their pregnancy.
- When women knew they were pregnant they were less likely to drink alcohol and very unlikely to drink more than 4 standard drinks in one day. One-third (34%) of children had mothers who drank alcohol at least once in early pregnancy after becoming aware that they were pregnant, and 31% had mothers who drank alcohol late in their pregnancy.

Table 20.1: Reported alcohol use in pregnancy: women with children under 2 years of age, 2006 (per cent)

	Ever drank alcohol	More than 4 standard drinks at least once	More than 4 standard drinks at least once a week
Unaware of pregnancy	60.8	21.0	8.0
Aware of pregnancy (early pregnancy)	33.7	3.5	1.0
Aware of pregnancy (late pregnancy)	30.7	3.9	1.3

Source: Vic DHS 2006.

How does alcohol consumption in pregnancy vary across population groups?

Aboriginal and Torres Strait Islander women

In the Northern Territory in 2002, one in ten women (10%) reported at the time of their first antenatal visit that they consumed alcohol in pregnancy (first trimester). However, there was a decline in the proportion consuming alcohol by the 36th week of pregnancy (third trimester) to 6%. These results may be understated, as drinking status was unknown for one-quarter of Indigenous women in the first trimester and one-third of Indigenous women in the third trimester (Stewart & Li 2005). As a result, it is difficult to draw comparisons between Indigenous and non-Indigenous women, as drinking status was unknown for a higher proportion of Indigenous women than non-Indigenous women in both the first and third trimesters.

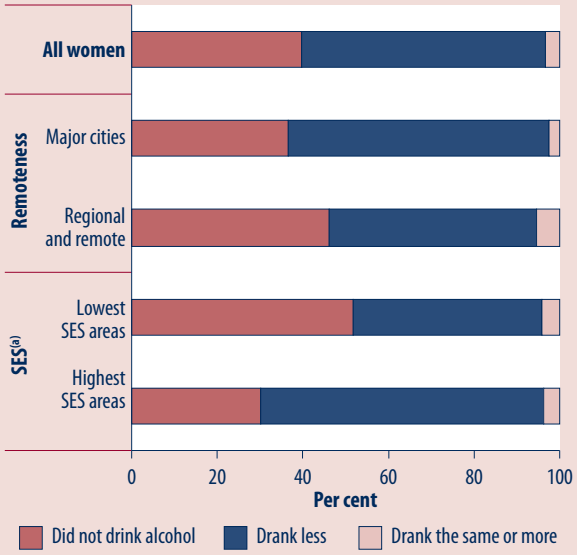
There has been little change over time in the proportion of Indigenous women in the Northern Territory consuming alcohol during pregnancy (d'Espaignet et al. 1999; Stewart & Li 2005).

Remoteness

According to the National Drug Strategy Household Survey, women in *Regional and remote* areas were more likely than women in *Major cities* to not drink alcohol in pregnancy in 2007 (47% compared with 37%). However, women in *Major cities* were more likely to reduce their alcohol consumption due to pregnancy than women in *Regional and remote* areas (61% compared with 48%) (Figure 20.1). Very few women continued to drink the same or more alcohol during pregnancy in both *Major cities* (2%) and *Regional and remote* areas (5%).

Socioeconomic status

The pattern of alcohol consumption among women who were pregnant in the previous 12 months differed by socioeconomic status (SES) in 2007, according to the National Drug Strategy Household Survey (Figure 20.1). Women in the lowest SES areas were more likely than women in the highest SES areas to not drink alcohol in pregnancy (52% compared with 30%). However, women in the highest SES areas were more likely to reduce their alcohol consumption due to pregnancy than women in the lowest SES areas (66% compared with 44%). There was little difference by socioeconomic status for women who drank the same or more during pregnancy (4% each).



(a) See *Appendix 1 Methods* for explanation of socioeconomic status (SES). Quartiles are used here for SES.

Note: Alcohol consumption for females aged 14–49 years who were pregnant in the previous 12 months.

Source: 2007 National Drug Strategy Household Survey, unpublished data.

Figure 20.1: Women consuming alcohol during pregnancy by socioeconomic status and remoteness, 2007

21 Birthweight

Infants who are born with low birthweight are at greater risk of poor health, disability and death than other infants.

In 2006, 6.4% of live born infants in Australia were of low birthweight, with this proportion twice as high among babies of Indigenous mothers.

Birthweight is a key indicator of infant health and a principal determinant of a baby's chance of survival and good health. For newborns, low birthweight poses a greater risk of lengthy hospitalisation after birth, the need for resuscitation, and death. Low birthweight is a risk factor for neurological and physical disabilities, with the risk of adverse outcomes increasing with decreasing birthweight (AIHW: Ford et al. 2003). Some 70% of high-risk babies admitted to Level III neonatal intensive care units in Australia in 2005 were low birthweight infants (Laws et al. 2007). Children with extremely low birthweight (less than 1,000 grams) are more likely to have psycho-social problems and are at an increased risk of having difficulties at school. Teenagers who had extremely low birthweight have been found to be less likely to achieve well on intellectual measures, particularly arithmetic, than their peers (Saigal 2000).

The health effects of low birthweight are not only restricted to infancy and childhood, but continue into adulthood. Research has found an increased risk of Type 2 diabetes, high blood pressure, metabolic and cardiovascular diseases, and possibly obesity in later life among adults who were low birthweight (Hovi et al. 2007; Phillips 2006; Tappy 2006). Behavioural interventions can be effective in addressing these disorders, and the identification of those at increased risk early in life provides an important opportunity for disease prevention (Hovi et al. 2007).

A baby may be small due to being born early (preterm), or may be small for its gestational age (intrauterine growth restriction). Factors that contribute to low birthweight include maternal age, illness during pregnancy, low socioeconomic status, multiple fertility, maternal history of spontaneous abortion, harmful behaviours such as smoking or excessive alcohol consumption, poor nutrition during pregnancy, and poor prenatal care (Laws et al. 2004, 2007). Many of these risk factors are modifiable and susceptible to intervention. The increasing number of infants born to older mothers in Australia, and the disproportionate risk faced by certain population groups, makes this is an important indicator of antenatal and neonatal health.

Birthweight has been endorsed by the AHMC, CDSMC and the AESOC as a Children's Headline Indicator priority area (see *Part X* for further information and state and territory data).

HOW MANY AUSTRALIAN BABIES ARE OF LOW BIRTHWEIGHT?

Low birthweight is defined as a birthweight of less than 2,500 grams. Within this category, weights of less than 1,500 grams are defined as 'very low birthweight' and less than 1,000 grams as 'extremely low birthweight' (WHO 1992).

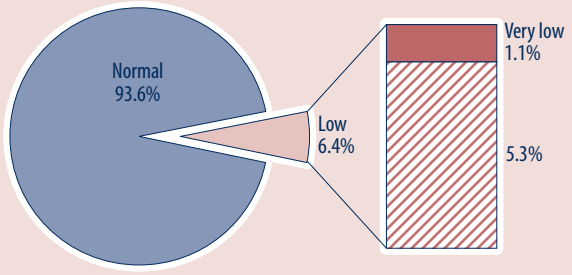
Headline Indicator: Proportion of live born infants of low birthweight

In 2006, 6.4% (or around 18,000) of live born infants weighed less than 2,500 grams (Figure 21.1). This comprised:

- 1.1% weighing less than 1,500 grams (very low birthweight, including extremely low birthweight)
- 5.3% weighing between 1,500 and 2,499 grams.

There has been no statistically significant change in the annual proportions of low birthweight infants between 1999 and 2006.

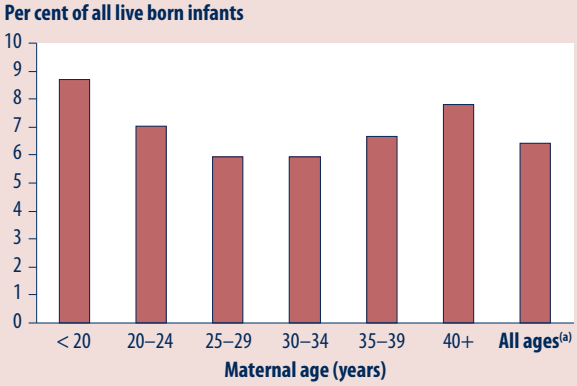
First-time mothers were more likely to have a low birthweight infant (7.5%) than women having a second or subsequent child (5.7%). Baby boys were slightly less likely to be of low birthweight (5.9%) than baby girls (6.9%).



Source: AIHW National Perinatal Data Collection.

Figure 21.1: Proportion of infants by birthweight category, 2006

Younger and older mothers (aged less than 20 years or 40 years or over) have a greater chance of having a low birthweight infant than other age groups (Figure 21.2). In 2006, 8.7% and 7.8% of live births to teenage and older mothers, respectively, were of low birthweight. Mothers aged 25–34 years were least likely to have a low birthweight infant (5.9%).



(a) Includes maternal age not stated.

Source: AIHW National Perinatal Data Collection.

Figure 21.2: Low birthweight infants, by maternal age, 2006

Does low birthweight vary across population groups?

Some groups of the Australian population are at an increased risk of having a low birthweight infant. While many risk factors for low birthweight are modifiable in the short term, such as by providing and accessing good antenatal care, improving maternal nutrition before and during pregnancy, and improving maternal health, there are other factors that cannot be altered (for example, infant gender or race), and others that may take at least a generation to change (for example, maternal birthweight). Addressing these health risks will reduce the proportion of low birthweight infants, particularly among disadvantaged populations where these issues are more prominent.

Infants of mothers born overseas

Infants with mothers born outside Australia are slightly less likely to be of low birthweight than infants with Australian-born mothers. Low birthweight occurred in 6.1% of infants of mothers born outside Australia and in 6.5% of infants to Australian-born mothers in 2006.

Aboriginal and Torres Strait Islander infants

Indigenous infants were twice as likely as non-Indigenous infants to be of low birthweight in 2006 (12% compared with 6%, respectively; Figure 21.3). During the period 1991–2004, there was a small, but statistically significant, widening in the gap between Indigenous and non-Indigenous infants of low birthweight (Leeds et al. 2007).

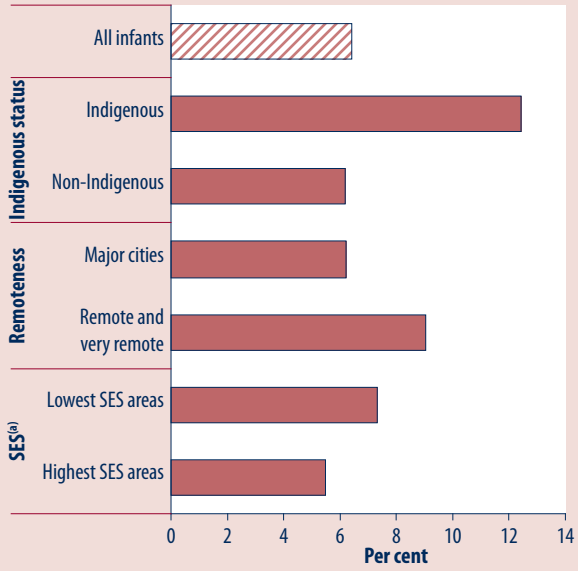
The proportion of low birthweight infants born to Indigenous mothers was similar across all remoteness areas of Australia in 2006. However, the mean birthweight of infants born to Indigenous mothers decreased with increasing remoteness of the mother's usual place of residence—between 2001 and 2004, Indigenous mothers in *Major cities* had heavier infants (mean 3,188 grams) than those in *Very remote* areas (mean 3,123 grams) (Leeds et al. 2007).

Remoteness

A significantly higher percentage of infants born in *Remote and very remote* areas of Australia were of low birthweight compared with *Major cities*—9.0% and 6.2%, respectively in 2006 (Figure 21.3).

Socioeconomic status

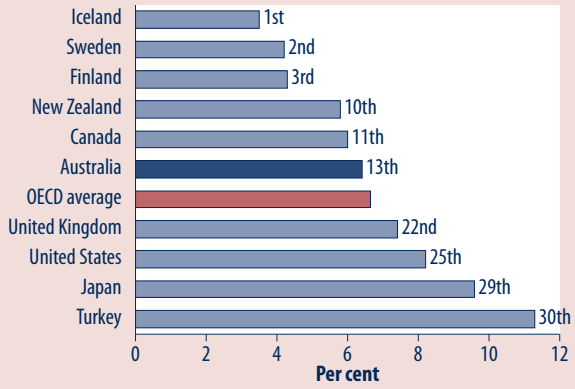
Poor perinatal outcomes generally increase with increasing socioeconomic disadvantage (Laws et al. 2007). In 2006, infants born to mothers in the lowest socioeconomic status (SES) areas were almost 30% more likely to be of low birthweight than those in the highest SES areas (7.3% compared with 5.5%, respectively).



(a) See *Appendix 1 Methods* for explanation of socioeconomic status (SES).

Source: AIHW National Perinatal Data Collection.

Figure 21.3: Low birthweight infants, by population group of mother, 2006



Notes

1. Year of available data if not 2006: Sweden (2004), Canada (2005), United States (2005) and Turkey (2003).
2. Based on data from 30 OECD countries, using the most recent year of available data.

Source: OECD 2008b.

Figure 21.4: Low birthweight infants, selected OECD countries, 2006

How does Australia perform internationally for low birthweight?

Australia performed slightly better than the OECD average for low birthweight. Australia ranked 13th out of 30 OECD countries in 2006, with 6.4% of infants of low birthweight, compared with an OECD average of 6.6% (Figure 21.4). The proportion of low birthweight infants was lowest in Iceland (3.5%) and Sweden (4.2%) and highest in Japan and Turkey (9.6% and 11.3%, respectively).

22 Overweight and obesity

Overweight and obese children are at risk of serious health conditions in both the short and long term, such as asthma, cardiovascular conditions and Type 2 diabetes.

Over one-fifth of Australian children aged 2–12 years were estimated to be overweight or obese—17% overweight but not obese; 6% obese in 2007.

Overweight and obesity increases a child's risk of poor physical health and is a risk factor for morbidity and mortality in adulthood. Obese children have a greater risk of developing asthma and Type 2 diabetes than non-obese children, and in severe cases may develop conditions such as gallstones, hepatitis and sleep apnoea (Must & Strauss 1999). Children who continue to be overweight or obese into adulthood are at increased risk of coronary heart disease, diabetes, certain cancers, gall bladder disease, osteoarthritis and endocrine disorders (Guo et al. 2002; Whitlock et al. 2005).

In addition to physical health problems, overweight and obese children frequently experience discrimination, victimisation and teasing by their peers. This may contribute to poor peer relationships, school experiences and psychological wellbeing, particularly among older overweight or obese children (Griffiths et al. 2006; Hayden-Wade et al. 2005; Sawyer et al. 2006). Children affected by overweight and obesity are also more likely to come from disadvantaged backgrounds or minority population groups such as Indigenous, Pacific Islander and Middle Eastern communities (O'Dea 2008).

There are many interacting factors that lead to increased body weight. All children naturally gain body weight as they grow and develop; however, for excess weight gain to occur, an imbalance must exist between the amount of energy children are consuming and the energy they expend over an extended period of time. While genetics may play an intervening role, it is clear that cultural, environmental, economic, familial and individual behavioural factors also influence the likelihood of this imbalance occurring.

Overweight and obesity has been endorsed by the AHMC, CDSMC and the AESOC as a Children's Headline Indicator priority area (see *Part X* for further information).

HOW MANY AUSTRALIAN CHILDREN ARE OVERWEIGHT OR OBESE?

Overweight and obesity can be indirectly measured in the child population using body mass index (BMI). The BMI is a measure of the ratio of weight in kilograms divided by height in metres squared (kg/m^2). In children, BMI changes substantially with age and can differ between boys and girls, rising steeply in infancy, falling during the preschool years and increasing during adolescence and adulthood (DoHA 2009). At the population level, a child is considered to be overweight or obese if their BMI exceeds international cut-off points for their age and sex, based on a statistical distribution of BMI scores in a standard child population (Cole et al. 2000).

Headline Indicator: Proportion of children whose body mass index (BMI) is above international cut-off points for 'overweight' and 'obese' for their age and sex

In 2007, according to measured height and weight of children aged 2–12 years:

- Around one-fifth (22%) of children were estimated to be either overweight or obese (17% overweight but not obese; 6% obese). However, the majority of children were within a normal weight range (73%) (Table 22.1).
- There was little difference overall in the prevalence of overweight or obesity between boys and girls, although girls aged 10–12 years were more likely to be overweight or obese than boys of the same age (31% compared with 26%).
- A small proportion of children were underweight (4.8%), and this varied slightly with age (3.6% to 6.0%).

Table 22.1: Australian children aged 2–12 years by BMI category, 2007 (per cent)

	Age group	Underweight	Normal	Overweight (but not obese)	Obese	Overweight or obese
Boys	2–4 years	4.8	76.0	16.2	3.1	19.3
	5–9 years	5.2	76.0	13.1	5.8	18.8
	10–12 years	5.4	68.3	18.8	7.5	26.2
	2–12 years	*5.2*	*73.8*	*15.6*	*5.5*	*21.1*
Girls	2–4 years	4.2	76.1	16.2	3.6	19.8
	5–9 years	3.6	74.5	15.7	6.3	21.9
	10–12 years	6.0	63.3	22.9	7.8	30.7
	2–12 years	*4.4*	*71.9*	*17.8*	*6.0*	*23.7*
Children	**2–12 years**	**4.8**	**72.8**	**16.7**	**5.7**	**22.4**

Source: 2007 Australian National Children's Nutrition and Physical Activity Survey, unpublished data.

Another survey, the National Youth Cultures of Eating Survey, found similar estimates of overweight and obesity prevalence among 6–11 year olds in 2006, according to measured height and weight. Overweight prevalence estimates in this survey were 16% for boys and 18% for girls. The corresponding prevalence of obesity was estimated to be 6.4% for boys and 5.6% for girls, although this gender difference was not statistically significantly different (O'Dea 2008).

Does overweight and obesity vary across population groups?

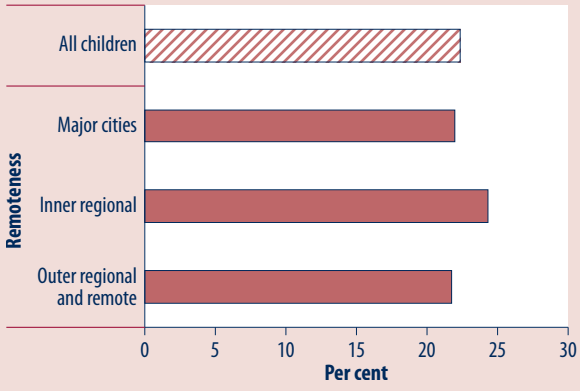
Children who are socially, economically and geographically disadvantaged are at an increased risk of ill health due to high levels of biomedical factors such as overweight and obesity. These children may not have the same opportunities for good health as other Australian children, in terms of access to goods and services—they generally have less access to basic necessities such as fresh fruit and vegetables due to availability and affordability—and are less likely to be physically active (AIHW 2008b).

Aboriginal and Torres Strait Islander children

There is currently no national data available on the prevalence of overweight and obesity among Indigenous children. However, it is known that, in the general population, rates of self-reported obesity among Indigenous adults are higher than for other Australian adults (ABS & AIHW 2008). The high rate of obesity in Indigenous adults may reflect the change over a long period from the traditional fibre-rich, high-protein, low saturated fat diet of many Aboriginal and Torres Strait Islander communities to one which is high in refined carbohydrates and saturated fats (Burns & Thompson 2008).

Remoteness

According to the 2007 Australian National Children's Nutrition and Physical Activity Survey, the prevalence of overweight and obesity was slightly higher among children living in *Inner regional* areas (24%) than for children in *Major cities*, and *Outer regional* and *Remote* areas combined (22% each) (Figure 22.1).



Notes
1. Children categorised as overweight or obese using cut-offs developed by Cole et al. 2000; 2007.
2. Remoteness category *Outer regional* and *Remote* excludes *Very remote* areas.

Source: 2007 Australian National Children's Nutrition and Physical Activity Survey, unpublished data.

Figure 22.1: Children aged 2–12 years who were overweight or obese, by remoteness, 2007

23 Environmental tobacco smoke in the home

Tobacco smoke damages the health of infants and children and is a risk factor for SIDS.

Around 8% of households with dependent children had at least one person who smoked inside the home in 2007—a decrease from almost one-third in 1995.

Environmental tobacco smoke is one of the most hazardous environmental exposures for children. Tobacco smoke contains numerous toxic and cancer-causing chemicals that increase the risk of adverse health outcomes for children, including SIDS, acute respiratory infections, middle-ear infection (otitis media), onset and increased severity of asthma, respiratory symptoms and slowed lung growth (CDC 2007; WHO 2007). Children with parents who smoke are also more likely to take up smoking later in life (Kestila et al. 2006).

Infants and children are particularly vulnerable to the effects of environmental tobacco smoke because they have less developed respiratory, immune and nervous systems, and have limited control over their exposure. These vulnerabilities combined with exposure to tobacco smoke in enclosed spaces, such as the home or car, mean that children can be exposed to high levels of environmental tobacco smoke in a short period of time. In homes where someone smokes inside, children have higher levels of cotinine, a biological marker for exposure to tobacco smoke, than children not exposed to tobacco smoke in the home (CDC 2007). Children travelling in a car with someone smoking are also at risk, even if the windows are down (Sendzik et al. 2008; Sly et al. 2007).

There is no safe level of exposure to environmental tobacco smoke and adults can do much to reduce or prevent a child's exposure, particularly by not smoking in the home or car. The benefits of reducing children's exposure to tobacco smoke in the home include improved health and school performance, reduced absenteeism from school, reduced uptake of smoking, and less frequent smoking among children who smoke (NDS 2002).

LEGISLATION TO REDUCE CHILD EXPOSURE TO TOBACCO SMOKE

Australia is a signatory to the UN Convention of the Rights of the Child and the WHO Framework Convention on Tobacco Control that acknowledges the need for the health of all children to be protected. In 2008, only South Australia and Tasmania had legal provisions to protect children from exposure to tobacco smoke in the car (SA DoH 2008; Tas DHHS 2008).

Restrictions on tobacco smoking in public places also contribute to reducing children's exposure to tobacco smoke. In 2002, most states and territories had legislation prohibiting smoking in restaurants and shopping centres, with further restrictions to all work places and enclosed public spaces by 2005.

CHILDREN EXPOSED TO TOBACCO SMOKE IN THE HOME

Key national indicator: Proportion of households with children aged 0–14 years where someone smokes inside

In 2007, of households with dependent children aged 0–14 years:

- About 8% of households had someone who smoked at least one cigarette, cigar or pipe of tobacco inside the home per day (Table 23.1).
- Children were less exposed to tobacco smoke in the home than in 1995—children in almost one-third of households were exposed to tobacco smoke in the home in 1995, compared with 8% in 2007. This decline has coincided with an increase in the proportion of households where someone smoked only outside the home (from 17% to 29%).

- The proportion of households with children where no one smoked regularly at home increased from 52% in 1995 to 63% in 2007, consistent with the general decline in smoking prevalence among the Australian population.

Table 23.1: Smoking status of households with children aged 0–14 years, 1995–2007 (per cent)

Household smoking status	1995	1998	2001	2004	2007
Smokes inside the home	31.3	22.6	19.7	12.3	7.8
Only smokes outside the home	16.7	21.5	24.9	28.1	29.2
No one at home regularly smokes	52.0	55.9	55.4	59.6	63.1

Notes

1. Household smoking status as reported by respondents aged 14 years and over. This may include a small number of 14 year olds who smoked inside the home.
2. Smoking status is defined as smoking at least one cigarette, cigar or pipe of tobacco per day in the previous 12 months.

Source: National Drug Strategy Household Survey (AIHW 2008b).

Do rates of exposure to environmental tobacco smoke vary across population groups?

Aboriginal and Torres Strait Islander children

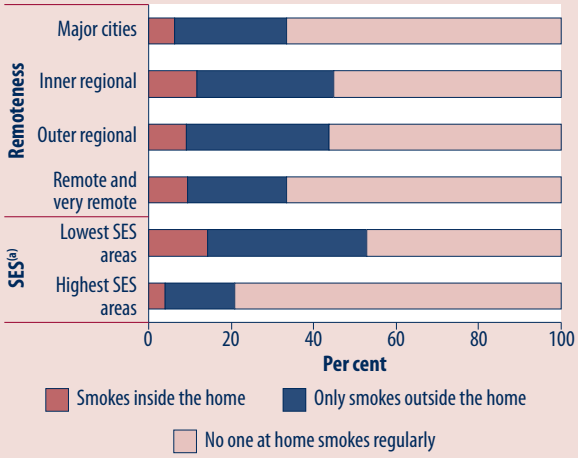
Indigenous children were around 3 times as likely to be exposed to tobacco smoke in the home than non-Indigenous children, according to the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey (see also *Part IX*).

Remoteness

Exposure to tobacco smoke in the home was highest among households with children in *Inner regional* areas (12%), compared with *Outer regional* and *Remote and very remote* areas (both 9%) and *Major cities* (6%) (Figure 23.1).

Socioeconomic status

Households with children in the lowest socioeconomic status (SES) areas were 3.6 times as likely as in the highest SES areas to be exposed to tobacco smoke in the home in 2007 (14% compared with 4%) (Figure 23.1). They were also twice as likely to have a regular smoker at home (who smokes outside) than households with children in the highest SES areas (38% compared with 17%).



(a) See *Appendix 1 Methods* for explanation of socioeconomic status (SES).

Notes

1. Household smoking status as reported by respondents aged 14 years and over. This may include a small number of 14 year olds who smoked inside the home.
2. Smoking status is defined as smoking at least one cigarette, cigar or pipe of tobacco per day in the previous 12 months.

Source: 2007 National Drug Strategy Household Survey, unpublished data.

Figure 23.1: Smoking status of households with children aged 0–14 years, by remoteness and socioeconomic status, 2007

24 Tobacco use

Tobacco smoking is the single most preventable cause of death in the world today. Tobacco use at a young age is a key predictor of continued smoking in adulthood.

An estimated 5.4% of secondary school students aged 12–14 years were current smokers in 2005—down from 17% in 1984.

Tobacco smoking is the single most preventable cause of death in Australia and in the world today (AIHW 2008b; WHO 2008b). It results in considerable ill health and is the risk factor associated with the greatest disease burden in Australia (8% of the total disease burden in 2003) (Begg et al. 2007). Smoking is known to cause damage to nearly every organ in the body and the detrimental health effects of tobacco smoking are well established. In the short term, tobacco use may lead to respiratory problems, shortness of breath, nicotine dependence (and subsequent withdrawal symptoms), persistent coughing and reduced physical fitness. In the long term, tobacco smoking is a major risk factor for a number of serious health conditions including coronary heart disease, chronic obstructive pulmonary disease, stroke, peripheral vascular disease, numerous cancers, and a number of other diseases and conditions (AIHW 2008b).

Most tobacco smokers take up smoking in adolescence, with very few people beginning to smoke as adults (Mathers et al. 2006). Those who begin smoking at younger ages (12 or 13 years) have been found to smoke more cigarettes per day on average, and to reach this higher level of smoking at a younger age than those who begin smoking when they are older (Hoffmann et al. 2006). Adolescent tobacco use is associated with a range of social and health problems in early adulthood, such as continued smoking, problematic alcohol use, and mental health, academic and sleep problems (Mathers et al. 2006). Preventing the uptake of smoking among young people is, therefore, a high-priority public health issue.

There are a number of factors known to affect the likelihood of smoking among children and adolescents. The smoking behaviour of peers is strongly associated with smoking uptake (Kobus 2003), and parents and siblings can also influence smoking behaviour (Avenevoli & Merikangas 2003). There is evidence that maternal smoking can have an affect on the developing fetus that leads to higher rates of smoking in adolescence (Scollo & Winstanley 2008), and preliminary research has identified genetic influences on the smoking of adolescents (Laucht et al. 2008). Lower socioeconomic status and exposure to the positive depiction of smoking in the media have also been associated with smoking among young adults (Fergusson et al. 2007; USNCI 2008).

PREVALENCE OF SMOKING AMONG CHILDREN

This chapter looks at the prevalence of current smoking among children aged 12–14 years using data from the Australian Secondary School Students' Alcohol and Drug Survey. As this is a school-based survey, information is presented for students, rather than for children. 'Current' smoking is defined as smoking tobacco at least once in the week before the survey.

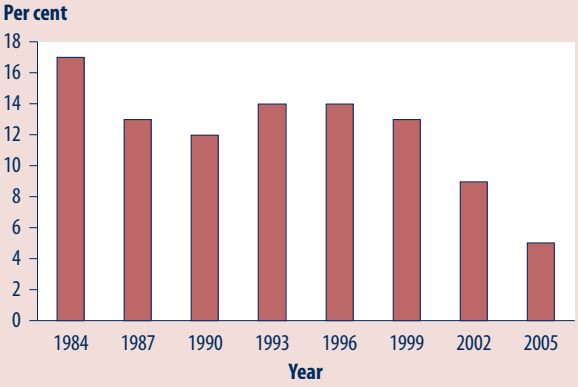
Key national indicator: Proportion of children aged 12–14 years who are current smokers

In 2005, among secondary school students aged 12–14 years:

- About one in 20 (5.4%) were current smokers, equating to an estimated 44,200 children Australia-wide.
- The rates of smoking increase considerably with age—from 2.4% to 4.9% to 8.8% for 12, 13 and 14 year olds, respectively.
- There was not a statistically significant difference between the proportion of boys and girls who were current smokers.

A marked decline has been seen in the proportion of students aged 12–14 years who were current smokers over the last two decades:

- About one in six students (17%) reported being current smokers in 1984 compared with about 1 in 20 (5.4%) in 2005 (Figure 24.1).
- The sharpest rates of decline were seen between 1984 and 1987 and between 1999 and 2005. An increase in the proportion of current smokers was seen between 1990 and 1993. This trend roughly coincides with the level of tobacco control activity underway at these times. Between 1984 and 1991, a number of states and territories established tobacco control campaigns and some introduced legislation prohibiting the outdoor advertising of tobacco products. Between 1992 and 1996 there was a decline in tobacco control activity, before a coordinated, national approach emerged in 1997 (White et al. 2008).



Source: Australian Secondary School Students' Alcohol and Drug Survey, various years, Centre for Behavioural Research in Cancer, Cancer Council Victoria, unpublished data.

Figure 24.1: Students aged 12–14 years who were current smokers, 1984–2005

Method of obtaining cigarettes

The ability of young people to purchase cigarettes increases their likelihood of smoking. Accordingly, all states and territories in Australia have legislation that prohibits the sale of cigarettes to persons under the age of 18 years. In 2005, students aged 12–15 years who were current smokers most commonly reported that their last cigarette was obtained from a friend (41%), while 17% reported that they bought their last cigarette themselves (White & Hayman 2006b).

Do smoking rates vary by population group?

Aboriginal and Torres Strait Islander children

In 2005, 17% of Indigenous students aged 12–15 years were current smokers, which was a greater proportion than the 7% of non-Indigenous students (White et al. 2009; see *Part X* for further information). In 2004–05, 50% of Indigenous Australians aged 18 years and over were daily smokers, more than twice the rate of non-Indigenous Australians (ABS & AIHW 2008). Reducing the number of Indigenous adolescents who smoke could play an important role in lowering the smoking rates among Indigenous adults. This would have positive health consequences as smoking is a major risk factor for death and disease (Vos et al. 2007).

Socioeconomic status

Smoking contributes significantly to the overall socioeconomic gradient in mortality (that is, low socioeconomic status is associated with higher mortality rates compared with high socioeconomic status) (Siahpush et al. 2006). Since tobacco smoking at a young age is a predictor of continued smoking in adulthood, reducing the prevalence of smoking among children and young adults from socioeconomically disadvantaged backgrounds will help to reduce the disparity in death rates between socioeconomic groups in the future.

In 2005, students aged 12–15 years from the most socioeconomically disadvantaged areas were more likely to be current smokers than those from the least socioeconomically disadvantaged areas (8% of students compared with 5%, respectively). Between 1987 and 2005, the proportion of students who were current smokers fell, however the decline was smaller for students who lived in the most socioeconomically disadvantaged areas (a 7 percentage point decline for these students compared with an 11 percentage point decline for students living in the least disadvantaged areas). When the period of time corresponding to the most recent tobacco control campaign is examined (1997 to 2005) an 11 percentage point decline was seen for students from both the least and most socioeconomically disadvantaged areas (White et al. 2008).

25 Alcohol misuse

Alcohol use at young ages is associated with more frequent use during late adolescence and an increased risk of later dependence.

In 2005, 2.6% of 12–14 year old students had engaged in risky drinking in the previous week.

Alcohol use by children and adolescents can have far-reaching effects on their health and wellbeing. Alcohol use can lower inhibitions and impair decision making, which can lead to unsafe behaviour with negative short- and long-term consequences (US DHHS 2007). Heavy drinking in childhood and adolescence can also have significant and detrimental effects on brain development, during a critical period of brain maturation (De Bellis et al. 2005).

Initiation to alcohol use at a young age has been associated with more frequent use during late adolescence and increased risk for later dependence (Lubman et al. 2007). Additionally, the risk of suffering an accidental injury, experiencing poor mental health or having social problems are increased when alcohol use starts early. Intoxication during first experience with alcohol has also been associated with an increased risk of problem drinking in adulthood (Warner et al. 2007).

Children are more vulnerable to the risks of alcohol use than adults—they are physically smaller, they lack experience of drinking and its effects, and do not have a built up tolerance to alcohol. The 2009 Australian Alcohol Guidelines advise that for those under the age of 18 years not drinking is the safest option, and that this is especially important for children aged under 15 years (NHMRC 2009).

Certain traits displayed during early childhood, such as externalising behaviours (aggressive, impulsive and under-controlled behaviour) and, to a lesser degree, internalising behaviours (anxious, sad and depressive behaviour) have been linked to early alcohol use and abuse (Zucker et al. 2008). Other factors include early school failure or a lower level of bonding to school. Influences from within the household such as neglectful or poor parenting, family breakdown, parental use of alcohol (especially problematic use) and their attitudes to drinking are also important. It is likely that there are genetic characteristics that contribute to early alcohol consumption (Lubman et al. 2007; Zucker et al. 2008).

This chapter focuses on risky (or binge) drinking, which is when a person drinks heavily over a short period of time, resulting in immediate and severe intoxication. Possible outcomes from risky 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 2004). Risky drinking can also increase the risk of injury (for example from falls, assault or road accidents), can foster coercive sexual activity and unprotected sex (Bonomo et al. 2001; NHMRC 2009) and increases the likelihood of tobacco and illicit drug use (US DHHS 2007). Acute alcohol intoxication (the result of severe binge drinking) can lead to alcohol poisoning, which may result in coma and/or death.

Long-term excessive use of alcohol can lead to a number of physical, emotional and social problems, including stomach, liver, heart or brain problems and an increased risk of some cancers. Depression, family and relationship problems, and legal and financial difficulties may also result from long-term alcohol abuse (Bruner & Fishman 1998; NDARC 2004; NHMRC 2009).

RISKY DRINKING AMONG CHILDREN

This chapter looks at the proportion of children aged 12–14 years who engaged in risky drinking, using data from the Australian Secondary School Students' Alcohol and Drug Survey. As this is a school-based survey, information is presented for students rather than for children.

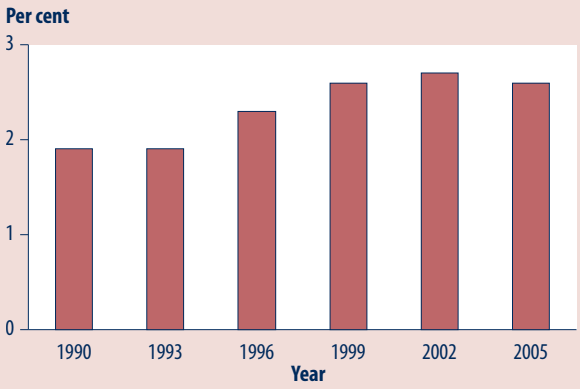
In this chapter, the 2001 Australian Alcohol Guidelines were used to define risky drinking for short-term harm (NHMRC 2001). These guidelines defined risky drinking

for adults as more than seven drinks for males and more than five drinks for females on any one occasion. These were guidelines for adults; as children are physically smaller and have less experience with alcohol, it is likely that for children consumption below these levels would also pose significant risks. Revised guidelines for adults released in 2009 lowered the suggested maximum number of drinks on any one occasion to four standard drinks for both males and females (NHMRC 2009).

Key national indicator: Proportion of children aged 12–14 years who have engaged in risky drinking (7+ drinks for boys; 5+ drinks for girls) on any one occasion

In 2005, among secondary school students aged 12–14 years:

- 2.6% had engaged in risky drinking in the week before the survey.
- The proportion engaged in risky drinking increased between the ages of 13 and 14 years (from 1.5% to 5.9%), and was lower for 12 year olds (0.4%).
- There was no statistically significant difference between the proportion of boys and girls who engaged in risky drinking.
- Although the proportion of students engaging in risky drinking was small at 2.6%, there has been a statistically significant increase of almost one percentage point since 1990 (Figure 25.1).



Source: Australian Secondary Students' Alcohol and Drug Survey, various years, Centre for Behavioural Research in Cancer, Cancer Council Victoria, unpublished data.

Figure 25.1: Trends in students aged 12–14 years engaging in risky drinking in the week before the survey, 1990–2005

Does alcohol misuse vary across population groups?

There are currently no reliable national data available that examine alcohol misuse among children aged 12–14 years who are Indigenous, or living in remote or socioeconomically disadvantaged areas. What we do know, however, is that in 2004–05, Indigenous adults were 3 times as likely as non-Indigenous adults to have drunk alcohol at short-term risky or high-risk levels at least once in the last 12 months, and adults living in *Outer regional* and *Remote* areas combined were 40% more likely than those in *Major cities* to consume alcohol in quantities that risked harm in the long term (AIHW 2008b). As alcohol use in childhood has been associated with more frequent use during late adolescence, preventing or reducing risky alcohol intake in childhood among these population groups will help to reduce some of the disparity in alcohol misuse, and consequently morbidity and mortality, in the future.

Use of illicit and over the counter drugs

In 2005, most 12–15 year old students had not used an illicit substance or an over the counter drug for non-medical purposes (excluding analgesics), and the proportion of students who reported their use has generally declined since 1996. Among 12–15 year old students, 15% had used an illicit substance in their lifetime (cannabis, hallucinogens, amphetamines, cocaine, opiates or ecstasy), down from 30% in 1996. In 2005, 7% had used an illicit substance other than cannabis.

The type of substance most often used by 12–15 year old students were inhalants (for example inhaling the contents of spray cans or sniffing glue); 19% had used inhalants in their lifetime, down from 29% in 1996. Cannabis use was the next most frequently reported, with 13% of students having used it in their lifetime; a smaller proportion than reported in 1996 (28%) (White & Hayman 2006a).