

10 Low birthweight

Birthweight is a key indicator of infant health and has been described as a principal determinant of a baby's chance of survival and good health (Ford et al. 2003). Babies who are born with low birthweight are at a greater risk of poor health, disability and death than other infants. Mathers (AIHW: Mathers et al. 1999) identified low birthweight as the third leading cause of burden of disease among Australian children aged 0–14 years.

Low birthweight is defined by the World Health Organization as follows:

- low birthweight—babies weighing less than 2,500 grams
- very low birthweight—babies weighing less than 1,500 grams
- extremely low birthweight—babies weighing less than 1,000 grams.

Low birthweight can be due to prematurity or being small for gestational age (intra-uterine growth retardation).

Infants from each of these groups make up two distinct populations with differing associated morbidities.

Immediate and long-term consequences

Low birthweight babies are at increased risk of hospitalisation and neonatal death and are more likely to suffer from physical and neurological complications than babies with normal birthweight. In addition to the increased risk of morbidity and mortality, children with an extremely low birthweight (less than 1,000 grams) have also been found to have more psycho-social problems. These children are at risk of having difficulties at school. Teenagers who had an extremely low birthweight were less likely to achieve well on intellectual measures, particularly arithmetic, than their peers (Saigal 2000).

Not only does low birthweight often result in complications during infancy and childhood, a number of adult health conditions have also been associated with low birthweight, although the relationship appears to be more complex. Some research suggests that low birthweight babies are at an increased risk of premature death and hospitalisation in adulthood (McIntire et al. 1999; Power & Li 2000). These babies are more likely to develop high blood pressure, non-insulin dependent diabetes and impaired glucose tolerance later in life (Barker et al. 1990; Hales et al. 1991). Frankel et al. (1996) found that low birthweight was associated with increased risk of coronary heart disease among obese adults, and Stein et al. (1996) suggest that coronary heart disease has its origins in foetal under-nutrition.

However, in recent times the causal relationship between low birthweight and adult health outcomes has been a subject of vigorous debate among researchers (Samaras et al. 2003; Huxley et al. 2002). Some researchers contend that there may be other factors, such as socioeconomic status or weight status later in life, that better explain why poor health outcomes are more likely for these particular infants. Nevertheless, low birthweight seems at least a marker for poor health outcomes in adulthood if not an independent predictor in its own right.

‘Babies who are born with low birthweight are at greater risk of poor health, disability and death than other infants’

Table 10.1: Baby's birthweight, by birth status, 2002

Birthweight (g)	Live births		Foetal deaths		Total	
	Number	Per cent	Number	Per cent	Number	Per cent
Less than 1,000	1,156	0.5	980	57.4	2,136	0.8
1,000–1,499	1,528	0.6	125	7.3	1,653	0.7
1,500–1,999	3,276	1.3	113	6.6	3,389	1.3
2,000–2,499	10,270	4.1	106	6.2	10,376	3.9
≥2,500	237,109	93.6	355	20.8	237,464	93.2
Not stated	49	—	28	1.6	77	—
Total	253,388	100	1,707	100	255,095	100
Mean weight		3,371		1,306		3,358

— Rounded to zero.
Source: AIHW NPSU: Laws & Sullivan 2004.

How many Australian children are born with low birthweight?

Approximately 6% of all births in Australia result in babies with low birthweight. There were 17,554 low birthweight babies in 2002, representing 6.9% of all births, up from 6.3% in 1991. In 2002, the average birthweight of all live-born and stillborn babies was 3,358 grams. The number and proportion of infants born with a low birthweight in 2002 are shown in Table 10.1.

- Around 1 in 16 (6.4%) live births in 2002 were of low birthweight. By comparison, over three-quarters of foetal deaths were babies with low birthweight (77.5%). Overall, approximately 17,000 or 6.9% of all births were low birthweight.
- During 2002, there were a total of 1,653 very low birthweight babies (0.7% of total births) and 2,136 extremely low birthweight babies (0.8% of total births).
- Greater than 1 in 2 foetal deaths (57%) were of babies with extremely low birthweight.

Indicator

- **Proportion of infants weighing less than 2,500 grams at birth.**

Table 10.2: Birthweight of live births, by maternal Indigenous status, 2000–02

	Low birthweight (<2,500 g)		Normal or high (2,500 g or more)		Total		Mean birthweight
	Number	Per cent	Number	Per cent	Number	Per cent	Grams
Indigenous mother	3,356	12.9	22,729	87.1	26,104	100.0	3,169
Non-Indigenous mother	43,607	6.1	674,121	93.9	717,858	100.0	3,382

Note: Data related to babies born to Indigenous mothers only, and exclude babies born to non-Indigenous mothers and indigenous fathers. Thus the information is not based on the total count of Indigenous babies.
Source: AIHW NPSU unpublished data.

Risk factors

There are a number of risk factors associated with low birthweight including younger gestational age, younger or older maternal age, a high number of previous births, and multiple births. Maternal tobacco smoking, alcohol or other substance abuse, inadequate nutrition, and maternal illnesses or infection during pregnancy are also risk factors for low birthweight (Campbell 2004).

Population sub-groups

Low birthweight is more common in babies born to families of low socioeconomic status (James et al. 1997), single mothers and Indigenous mothers. No data are currently available on birthweight by marital status of the mother or the maternal socioeconomic status.

The proportion of live-born babies with low birthweight born to Indigenous mothers between 2000 and 2002 was almost 13%. This is approximately double the percentage of low birthweight babies of non-Indigenous mothers (6.1%) (Table 10.2).

International comparisons

The proportion of low birthweight babies varies across OECD countries (Figure 10.1).

- While around 6% of Australian babies are born with low birthweight, the percentage in Japan is close to 9%. In contrast, the proportion of low birthweight babies in Korea is much lower (3.8%).

Figure 10.1: Babies with low birthweight, selected OECD countries, 2000 (per cent)

11 Smoking during pregnancy

Tobacco smoke is known to have a detrimental effect on babies before they are born. Smoking during pregnancy restricts the flow of oxygen to the foetus while, at the same time, nicotine, carbon monoxide and other chemicals in tobacco smoke are passed on from the mother to the baby through the placenta. This process can result in a multitude of poor birth outcomes. Smoking is a risk factor for pregnancy, and is associated with low birthweight, preterm birth, birth anomalies and perinatal death (NHMRC 1997; Walsh et al. 2001). Smoking also increases the mother's risk of spontaneous abortion, ectopic pregnancy (a pregnancy outside the uterus) and other obstetric complications (NHMRC 1997). Such is the impact of smoking during pregnancy that it is considered the most important known modifiable risk factor for low birthweight and infant mortality, given its high prevalence rates in comparison with other types of substance use (Chomitz et al. 1995).

In addition to these immediate physiological effects, prenatal exposure to smoking has also been associated with problems for children later in childhood. Cornelius et al. (2000) found that maternal smoking during pregnancy was significantly associated with an increased incidence of tobacco experimentation among children. The same study

showed that smoking during pregnancy also predicted childhood anxiety/depression and externalising behaviours. Many other studies have also found a link between maternal smoking and childhood mental health and behavioural problems (see Brennan 2003). However, causal connections between maternal smoking and psycho-social problems are difficult to establish since smoking mothers may differ from non-smoking mothers in other ways (such as socioeconomic status and parenting style), which may better account for the subsequent development of problem behaviours among their children.

The extent of smoking during pregnancy in Australia

There are no overall national data on the prevalence of smoking in pregnancy and there is currently no national agreement on the collection of data on smoking during pregnancy. However, state and territory perinatal data are available for five states and territories: New South Wales, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory (Table 11.1).

- The proportion of women who smoked while pregnant ranged from 14.9% in the Australian Capital Territory to 26.3% in the Northern Territory. Overall, 18.0% of women in the five states and territories smoked during pregnancy.

Table 11.1: Mother's tobacco smoking status during pregnancy, NSW, WA, SA, ACT and NT, 2002

	NSW	WA	SA ^(a)	ACT	NT	Total
Smoking status	Number					
Smoked	13,829	4,932	4,393	703	966	24,823
Did not smoke	70,745	19,464	12,722	3,884	2,276	109,091
Not stated	13	—	306	121	432	872
Total	84,587	24,396	17,421	4,708	3,674	134,786
	Per cent					
Smoked	16.3	20.2	25.2	14.9	26.3	18.4
Did not smoke	83.6	79.8	73.0	82.5	61.9	80.9
Not stated	0.0	—	1.8	2.6	11.8	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

(a) Defined as smoking status at first antenatal visit.
 Note: There is currently no data available from other states and territories.
 Source: AIHW NPSU: Laws et al. 2004.

Aboriginal and Torres Strait Islander children

The 2001 Western Australian Aboriginal Child Health Survey found a high prevalence of maternal tobacco use. The mothers of 47% of Aboriginal children (whose primary carer was also their birth mother) had smoked tobacco during pregnancy (Zubrick et al. 2004). This finding is largely consistent with data from the 1994 Aboriginal and Torres Strait Islander Survey which also showed a high prevalence of maternal smoking in Western Australia (45.4%) (Zubrick et al. 2004).

Tobacco smoking among Aboriginal and Torres Strait Islander women can be the outcome of many historical and contemporary social circumstances that result in complex patterns of use. For instance, the prevalence of tobacco use for Indigenous women in rural and remote areas is lower than that of Indigenous women in urban areas and, similarly, smoking prevalence decreases with higher socioeconomic status among Indigenous women (Ivers 2001; Zubrick et al. 2004).

‘Smoking during pregnancy is considered to be the most important known modifiable risk factor for low birthweight and infant mortality’

Other substance use during pregnancy

The 2001 National Drug Strategy Household Survey asked women whether they had used licit and/or illicit drugs when they were pregnant, breastfeeding, or pregnant and breastfeeding, at some time during the previous 12 months. Women who were pregnant and/or breastfeeding in the previous 12 months were less likely to consume alcohol (53%), tobacco (23%) and any illicit drug (8%) while they were pregnant and/or breastfeeding compared with when they weren't (83%, 24% and 17% respectively) (AIHW 2003b). The 2001 NDSHS also found those women who were pregnant, breastfeeding, or both pregnant and breastfeeding in the past 12 months were generally less likely to smoke, drink alcohol and use illicit drugs than women who were not pregnant and/or breastfeeding.

Almost all women who were pregnant in the past 12 months either abstained from consuming alcohol (36%) or reduced their consumption while pregnant (59%). A similar pattern applied to women who were breastfeeding, 66% of whom drank less alcohol and 28% of whom did not drink at all.

Indicator

- **Proportion of women smoking during pregnancy.**

12 Environmental tobacco smoke in the home

Environmental tobacco smoke is a toxin known to contain around 4,000 different chemical substances, making it one of the most hazardous environmental exposures for children (DiFranza et al. 2004). The health effects on children of inhaling second-hand smoke, or passive smoking, are well documented. Passive smoking is associated with respiratory infections, middle ear infections and more frequent colds, onset and severity of asthma, decreased lung function, eye and nose irritation, and sudden infant death syndrome (ACAM 2003; DiFranza et al. 2004; NHMRC 1997). Children in households with a smoker are more likely to take up smoking themselves. Darling and Reeder (2003) noted a three-fold increase in daily smoking behaviour among youth with any second-hand smoke exposure.

‘Exposure to tobacco smoke is an environmental hazard for children’

Infants and children are particularly susceptible to the effects of passive smoking for a number of reasons. Firstly, children, and especially babies, have limited control over their physical environment. When exposed to second-hand smoke, children may be strapped into a car seat or confined in the same room as a parent or family member, with no choice but to breathe in polluted air. Secondly, very young children and infants are more at risk than adults because their immune system and respiratory functioning are still developing, making them more susceptible to harm from second-hand smoke (NHMRC 1997).

With increased awareness about the harmful effects of environmental tobacco smoke and with many jurisdictions moving towards legislating against smoking in public places and in the workplace, the number of smoke-free homes has also increased (Borland et al. 1999). It has been argued that because of the enormous potential harm to children from tobacco exposure, implementing effective tobacco control in this area through legislation and other government initiatives is not only a valid concern, but also a binding obligation under the UN Convention on the Rights of the Child (WHO 2001b).

Table 12.1: Household smoking status^(a), by dependent children status^(b), 1995–2001 (per cent)

Household smoking status	Dependent children			No dependent children ^(c)		
	1995	1998	2001	1995	1998	2001
Smokes inside the home	31.3	22.6	19.7	32.2	26.6	21.3
Only smokes outside the home	16.7	21.5	24.9	13.7	18.0	19.8
No-one at home regularly smokes	52.0	55.9	55.4	54.1	55.4	58.9

(a) Household smoking status as reported by respondents aged 14 years and over.

(b) Households contain dependent children aged 14 years or under.

(c) May include dependants aged 15 years and over.

Source: AIHW 2004b.

Children's exposure—trends over time

Data from the National Drug Strategy Household Surveys show that the proportion of households where adults smoked inside the home decreased between 1995 and 2001. Over the same period there was an increase in the proportion of households where smoking only took place outside (Table 12.1). Changes over the period were somewhat greater for those households with children under the age of 15.

- In 2001, around 1 in 5 Australian households with children under 15 years had a person that smoked inside the home.
- Between 1995 and 2001 the proportion of households with dependent children where household members smoked inside decreased by 37%. In households without dependent children, the proportion of indoor smokers also decreased by 34%.
- Over the same period, the proportion of household members who only smoke outside the home increased by 49% for those households with dependent children and by 45% for households without dependent children.
- In contrast, the proportion of households which were totally smoke free remained relatively constant over time.

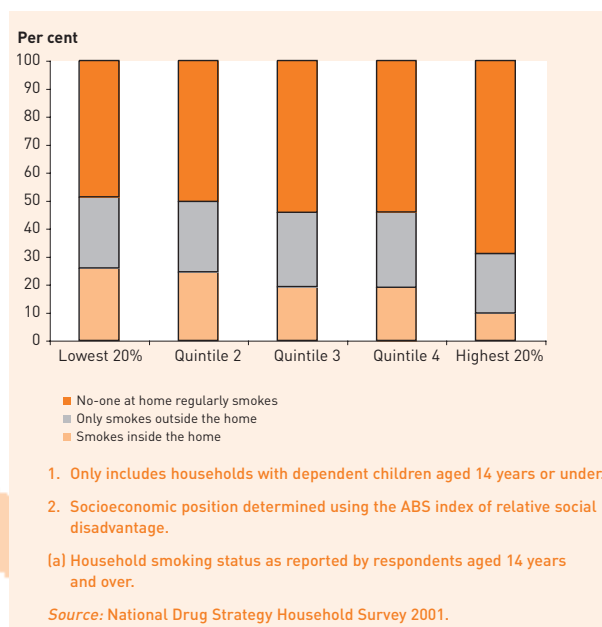
Indicator

- **Proportion of households with children aged 0–14 years where adults smoke inside.**

Exposure to second-hand smoke and socioeconomic disadvantage

- Children in relatively disadvantaged households were more likely than other children to be exposed to second-hand tobacco smoke. For example, 26% of households in the most disadvantaged quintile had members who smoked inside compared to 10% of households in the least disadvantaged quintile.
- Households in the highest socioeconomic quintile also had lower proportions of regular smokers compared to other households—70% of households in the least disadvantaged quintile did not have any regular smokers compared to 49% of households in the most disadvantaged quintile.

Figure 12.1: Household smoking status^(a), by socioeconomic position, 2001 (per cent)



13 Overweight and obesity

The increasing prevalence of overweight and obesity in Australian children is a serious public health concern (Catford & Caterson 2003; Waters & Baur 2003). Childhood obesity in Australia has been estimated to be rising at an annual rate of 1% (Australasian Society for the Study of Obesity 2004), meaning that half of all young Australians could be overweight by the year 2025.

In the short-term, children who are overweight or obese frequently experience psycho-social problems such as poor body image, disordered eating, low self-esteem and teasing by their peers. Overweight and obese children may also develop a range of health problems including asthma, sleep apnoea and early development of risk factors for heart disease such as raised blood pressure (Royal College of Physicians of London 2004). Even Type 2 diabetes—a chronic disease traditionally diagnosed only among adults—is now increasingly being detected among Australian children (McMahon et al. 2004).

Research also shows that young people who were overweight or obese as children are likely to be overweight as adults (Whitaker et al. 1997). This in turn can lead to a number of serious chronic conditions and even premature death. Overweight and obesity in adulthood is a risk factor for a number of health conditions including heart disease, high blood pressure, Type 2 diabetes and even some cancers (WHO 2000). As Australians are now living longer, this means that an increased number of people will live with long-term health problems and disability.

Prevalence

Overweight and obesity are measured by the body mass index (BMI), which is the ratio of weight in kilograms to the square of height in metres (kg/m^2). BMI is used to categorise people into one of four groups: underweight, acceptable weight, overweight, or obese. A child is considered obese if his/her BMI exceeds the cut-off point for his/her age.

The most recent national data on the weight of Australian children come from the 1995 ABS National Nutrition Survey (Table 13.1).

Table 13.1: Distribution of children aged 2–14 years, by weight category^(a), 1995 (per cent)

	Age group	Underweight	Acceptable	Overweight but not obese	Obese	Total number
Boys	2–4	4.3	78.9	14.6	2.2	261
	5–9	8.0	77.2	10.4	4.3	489
	10–14	7.3	70.3	18.3	4.1	456
Total		6.9	75.0	14.3	3.7	1,206
Girls	2–4	4.8	72.5	18.5	4.2	285
	5–9	3.3	74.7	14.9	7.1	465
	10–14	4.9	73.3	16.9	4.9	426
Total		4.3	73.7	16.4	5.6	1,176

[a] Cole et al. (2000) developed age- and sex-specific BMI cut-off points that are appropriate for use with children. These revised cut-offs have been applied to this analysis.

‘Young people who are overweight or obese as children are likely to be overweight as adults. This in turn can lead to a number of serious chronic conditions and even premature death’

Indicator

- **Proportion of children aged 2–14 years whose body weight is at an acceptable/unacceptable level as measured by BMI scores.**

- In 1995, while the majority of Australian children aged 2–14 years (75.0% of boys and 73.7% of girls) were of an acceptable weight, a relatively high proportion were overweight and obese: 14.3% of boys and 16.4% of girls were overweight, and 3.7% of boys and 5.6% of girls were obese.
- A small proportion of children were underweight: 6.9% of boys and 4.3% of girls.
- The proportion of children who were overweight or obese in 1995 was highest among boys aged 10–14 years (22.4%), and among girls aged 2–4 years (22.7%).

Causes

There are many interacting factors that have led to the increase in body fat among children in Australia. All children naturally gain body weight as they grow and develop. But fundamentally, for excess weight gain to occur, an imbalance must exist between the amounts 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. The following sections will focus on these factors with a particular focus on nutrition and physical activity.

Nutrition

There is evidence in Australia that children's intake of energy has been increasing over time (Cook et al. 2001; Magarey et al. 2001). This increase may have occurred for a number of reasons. Firstly, there is now a proliferation of food choices available to children. The foods marketed towards children are often highly refined and calorie dense (Zuppa et al. 2003). As a result, over-consumption can easily occur because not only are these foods pleasurable to eat, they are also ultimately less filling than more nutritious foods, prompting children to eat more in order to feel full. In parallel, fresh fruit and vegetables may be difficult to obtain or more expensive to buy in some areas (especially in regional and remote parts of Australia), and are less aggressively marketed and therefore may hold less appeal to children.

Secondly, processed and take-away foods also represent an attractive option for many parents. The well-documented changes in family structure and dynamics over recent decades (such as the increase in sole parent families and the greater participation of women in the labour force) mean that many parents struggle to meet the competing demands of work and family responsibilities (Weston et al. 2001). Since processed foods are now easier to prepare, cheaper to buy, and marketed more strongly than ever before (Catford & Caterson 2003), families may be selecting foods based on convenience or price rather than focusing on foods that are optimal for maintaining healthy weight.

Research shows that parental obesity increases the risk of adult obesity among their children (Lake et al. 1997; Whitaker et al. 1997). In part, this reveals that parents' personal food (and exercise) behaviours can also have a direct influence on the lifestyle patterns their children develop.

Physical activity

The other side to the energy equation that determines levels of body fat is the amount of energy expended by children on a daily basis. A whole-of-population shift to more sedentary lifestyles has been experienced in many developed countries including Australia (AIHW 2004d). Children are far less likely to use walking or pedal cycling as a means of transport or to play outdoors after school or on weekends than children of previous generations. Harten and Olds (2004) found that active transport levels of Australian children are very low. Children are also missing out on the benefits of incidental exercise due to the increase in labour-saving devices.

Changes in children's entertainment choices have also contributed to an increase in sedentary behaviour. Playing console and computer games and watching television and DVDs/videos are very popular leisure pursuits among children (ABS 2001b). Coupled with unprecedented access to the internet and mobile phones, children need not even leave home to maintain contact with their friends outside school hours.

With a decrease in incidental activity, planned physical activity becomes much more important to maintain a healthy weight. One important determinant of structured physical activity is whether community infrastructure and public spaces facilitate exercise by children. This infrastructure includes sports grounds, playgrounds, skate parks, bike paths, and so on. When suitable infrastructure does not exist or is perceived to be unsafe, parents may be less likely to encourage children to take up physical activity.

Participation in sport is also a positive way to encourage children to be physically active. However, the cost of equipment and uniforms can sometimes be an impediment to children taking part. Additionally, if children are already overweight, they may feel uncomfortable or incapable of participating in sport if the focus is more on achievement rather than participation and having fun.

Finally, as is the case for nutrition, children may not be inclined to participate in physical activity if their parents are not modelling healthy lifestyle behaviours themselves. Again, parents may find it difficult to engage in active play with their children due to increased demands on their time, or because of poor health or disability.

Differences among population groups

Most Australian children are not overweight or obese, but some children are more likely to be overweight than others. For example, children from lower socioeconomic quintiles are more likely than other children to be overweight or obese. Data from a social health atlas of South Australian

children (Tennant et al. 2003) show that in both metropolitan and non-metropolitan areas, higher levels of overweight and obesity were recorded for disadvantaged children (Table 13.2).

- The proportion of overweight and obese children was higher for socioeconomically disadvantaged children in both Adelaide and non-metropolitan areas of South Australia.
- For example, among 4 year old boys in Adelaide, the proportion of overweight and obese among the most disadvantaged group of children was 1.2 times the level among children categorised as the least disadvantaged (1st quintile) (rate ratio). Similarly, among girls in non-metropolitan areas, the level of overweight and obesity was 1.4 times higher for the most disadvantaged children compared to the least disadvantaged group.

Overweight is also an important health concern among Aboriginal and Torres Strait Islander Australians but data about Indigenous Australian children are scarce. One study by Mackerras et al. (2003) looked at groups of Indigenous children living in urban and remote areas of the Northern Territory. Results showed that Indigenous children in urban areas included an excess of both overweight and underweight children, while the remote group included a large excess of underweight children.

Table 13.2: Children aged 4 years who are overweight or obese, by socioeconomic position, SA, 2000–01 (per cent)

Socioeconomic disadvantage	Adelaide		Non-metropolitan areas	
	Boys	Girls	Boys	Girls
Lowest 20% (most disadvantaged)	16.0	21.0	16.8	22.9
Quintile 2	16.7	20.2	19.3	20.8
Quintile 3	16.8	18.9	16.2	19.6
Quintile 4	14.4	19.1	16.0	19.8
Highest 20% (least disadvantaged)	12.8	17.0	12.4	16.9
Rate Ratio (quintile 1 to quintile 5)	1.2	1.2	1.4	1.4

Source: Tennant et al. 2003.

14 Tobacco use

Tobacco use is the risk factor associated with the greatest disease burden in Australia, responsible for about 10% of the total burden of disease in the Australian population (AIHW: Mathers et al. 1999). For this reason, dissuading young people from taking up smoking is a high-priority public health issue. Reduced smoking rates can be achieved by health promotion and prevention action that targets health risk behaviour more generally. Even adult-focused initiatives, which typically focus on quitting, can have a beneficial flow-on effect for children by contributing to effective prevention. Most importantly, if people do not begin using tobacco when they are young, they will most likely not begin using tobacco at all.

There have been some promising declines in tobacco smoking rates among young people in recent years. Hill et al. (2002) found a significant decrease in the number of committed 12–15 year old smokers between 1996 and 1999, as well as evidence that teenagers were finding it more difficult to purchase their own cigarettes. However, the same study showed there were still approximately 26,100 Australian school students aged 12–14 years making the transition from experimental smoking to established smoking each year (White & Scollo 2003).

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 addition, tobacco use is also a major risk factor for a number of serious health conditions including coronary heart disease, stroke, peripheral vascular disease, numerous cancers and a number of other diseases and conditions (AIHW 2004b).

‘Tobacco use is the risk factor associated with the greatest disease burden in Australia’

Why do children take up smoking?

There are a wide variety of factors that influence children to start cigarette smoking (Rugkasa et al. 2001). One common finding is that children with parents or family members who smoke are more likely to take up smoking themselves. Similarly, children who believe that their parents would disapprove of smoking are less likely to experiment with tobacco. On the other hand, experimenting with cigarettes can also be a rebellion against adult authority, a way of bonding with peers or establishing personal identity.

The smoking behaviour of friends is yet another widely researched influence, and peer pressure is well established as a reason that children take up smoking. Factors such as low education and poor socioeconomic circumstances may also be connected with children taking up smoking (Winstanley et al. 1995).

Representations of smoking in popular culture such as movies and television also make an impression on young people about the status and fashionable aspects of smoking (Dalton et al. 2003).

Prevalence

Time-series data on the prevalence of tobacco smoking by children aged 12–14 years are presented in Figure 14.1.

Figure 14.1: Secondary students aged 12–14 years smoking tobacco at least once in the previous week, 1984–2002 (per cent)

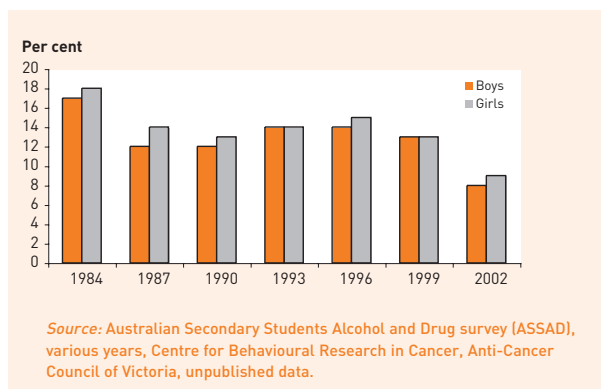


Table 14.1: Secondary students aged 12–14 years smoking tobacco at least once in the previous week, 2002 (per cent)

Age (years)	Boys		Girls		All	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
12	7.0	6	6.1	5	13.2	6
13	8.4	6	10.2	7	18.6	7
14	16.1	12	20.0	15	36.1	14
12–14	31.6	8	36.3	9	67.9	9

(a) Estimated number of secondary students aged 12–14 using tobacco in the week before the survey. Numbers estimated from 2002 school enrolments and based on the portion of students smoking tobacco found in a 23,417 secondary students in Years 7 to 12.

Source: ASSAD Survey (2002), Centre for Behavioural Research in Cancer, Anti-Cancer Council of Victoria, unpublished data.

- Between 1984 and 2002, the estimated proportion of students who had smoked in the previous week fell from 17% to 9%. However, the proportion of students increased again after 1990.
- With the exception of 1993 and 1999, the proportion of girls who had smoked in the previous week was consistently higher than that of boys.
- In 2002, nearly 68,000 or 1 in 11 children aged 12–14 years (9%) had smoked tobacco in the week prior to the survey.
- Use of tobacco increased with age. Around 14% of children aged 14 years had smoked tobacco in the previous week, compared with 7% of children aged 13 years and 6% of children aged 12 years.

The Australian National Drug Strategy Household Survey (NDSHS) conducted in 2001 also found that a number of 14 year old children had had experience with tobacco. Among this age group, 11.4% of children were either occasional or regular smokers (AIHW, unpublished data).

In a new development, the 2004 NDSHS collected information on tobacco, alcohol and other drug use from children aged 12 years of age and over. Previously this survey only collected information from people aged 14 years and above.

Indicator

- **Proportion of children aged 12–14 who are current smokers.**

15 Alcohol misuse

Attitudes and behaviours that develop during childhood may continue into adult life. These behaviours often include use of alcohol and other drugs. Children often experiment with drugs that are used legally by adults, such as alcohol and tobacco. While use of tobacco and illicit drugs is usually actively discouraged by society, initiation to responsible alcohol use, especially in older children, can begin during childhood depending on family values and attitudes towards drinking as well as peer behaviours.

Younger people's ability to cope with alcohol is influenced by factors including their physical size and developmental readiness. Because children have no physiological tolerance to alcohol, the NHMRC recommends that in settings where alcohol is available to children under the age of 18, supervision by adults should occur at all times and any drinking of alcohol should be kept to a minimum. In addition, children who choose not to drink should be supported in their decision (NHMRC 2001).

What factors influence children's drinking behaviour?

A number of factors are known to influence a child's decision to experiment with alcohol. A study commissioned in 1998 by the then Commonwealth Department of Health and Community Services found that peer group norms were very influential in adolescent alcohol use, with the types of drinking behaviours adopted depending on the drinking behaviours of peer groups (Shanahan & Hewitt 1999). In the same study, adolescents indicated that they drank alcohol, among other reasons, to try a new experience, socialise or relax, because of peer pressure, to drown problems, or because they did not feel good about themselves. Other research has highlighted the importance of parenting influences on alcohol use. Hayes et al. (2004) suggest that parental monitoring, quality of the relationship between young people and their parents, and parental norms are all factors which impact on young adolescent's attitudes towards, and use of, alcohol. Moreover, their research shows that peer effects are particularly influential when a parent-child relationship is of poorer quality.

The variety of ready-to-drink alcoholic beverages known as 'alcopops' or 'designer drinks' that have emerged on the market have proved very appealing to young people, and especially younger drinkers (ADGP 2004; White & Hayman 2004). These drinks are often packaged similarly to soft drinks but may contain more than 1 1/2 standard drinks in every serve. Some evidence suggests that their consumption is linked to an increase in drunkenness (ADGP 2004).

Risky drinking

Risky drinking in the short-term, which may also be referred to as binge drinking or 'drinking to get drunk' is when a person drinks heavily over a short period of time, resulting in immediate and severe intoxication. This behaviour can have several undesirable effects on the health and wellbeing of children.

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 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.

In addition, drinking alcohol in binge quantities is a risk factor for future hazardous patterns of alcohol consumption (Grant & Dawson 1997). 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 2004).

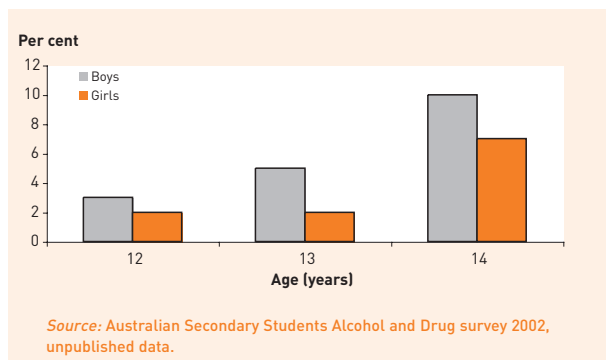
'Long-term excessive use of alcohol can lead to a number of physical, emotional and social problems'

Alcohol use

Data from the Australian Secondary Students Alcohol and Drug survey (ASSAD) show that most children have drunk alcohol at least once by the time they are 12 years of age. For example, in 2002, 51% of 12 year olds, 61% of 13 year olds and 74% of 14 year olds reported they had consumed alcohol in the previous year.

Levels of risky drinking among children in Australia in 2002 are presented in Figure 15.1. Risky drinking is defined as the consumption of five or more drinks in a row. Trend data from the ASSAD survey demonstrate that the proportion of children aged 12–14 years engaging in risky drinking was relatively constant over the period 1984 to 2002, ranging between 3% and 5%.

Figure 15.1: Students aged 12–14 years drinking five or more drinks in a row in the 2 weeks prior to the survey, 2002 (per cent)



- In 2002, 5% of 12–14 year old children had participated in risky drinking in the 2 weeks prior to the survey. The proportion of children drinking at this level was highest for the older age groups and also among boys.
- Approximately 3% of boys and 2% of girls aged 12 years had drunk five or more drinks in a row in the 2 weeks prior to the survey. The percentages were higher for older children—5% of 13 year old and 10% of 14 year old boys had participated in risky drinking at least once in the previous 2 weeks, while the percentages for 13 and 14 year old girls were 2% and 7%, respectively.

Indicator

- **Proportion of children aged 12–14 who engaged in high-risk (5 or more drinks in a row) drinking at least once in the last 2 weeks.**