



**Tobacco Control**

RESEARCH + EVALUATION

**SMOKING AMONG SOUTH AUSTRALIAN SECONDARY SCHOOL  
STUDENTS – RESULTS FROM THE 2008 ASSAD SURVEY**

September 2009

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## EXECUTIVE SUMMARY

This report presents smoking prevalence and smoking behaviour amongst South Australian school children in 2008 as part of the triennial Australian School Students' Alcohol and Drugs (ASSAD) Survey. In total, 2984 students from 61 schools participated, and 2870 students aged from 12 to 17 years were used in the analyses.

### Key findings from 2008

- Experience with smoking and regular smoking increased with age, and in general was similar for boys and girls:
  - Among 12-year-olds, 85% of boys and 91% of girls had never smoked in their lifetime. By the age of 17, 40% of boys and 34% of girls had at least tried smoking.
  - Among 12-15 year olds, 4% of boys and 4% of girls were current smokers (smoked in the past week).
  - Among 16-17 year olds, 9% of boys and 7% of girls were current smokers.
- In general, since the last survey in 2005, student smoking rates have continued the downward trend observed over the past two decades:
  - The proportion of school students aged 12 to 17 years deemed current smokers has decreased significantly since 2005 (5% in 2008 compared with 7% in 2005).<sup>1</sup>
  - In the 12 to 15 age group, 9% of all students reported having smoked in the past 12 months (13% in 2005); and 4% reported smoking in the week preceding the survey (5% in 2005). Only the decline of those who had smoked in the past 12 months was statistically significant.
  - Amongst 16- to 17-year-olds, 23% reported smoking in the last year (32% in 2005); and 8% were current smokers (15% in 2005). Both these differences were statistically significant.
- As in previous survey years, smoking rates varied with familial and social influences such that students who reported having friends or a family member who smoked were significantly more likely to smoke than those who did not.
- Students aged 12 to 15 years were significantly less likely to smoke if they came from households containing a total ban on smoking inside the house. Bans on household smoking did not appear to impact smoking prevalence amongst 16- to 17-year-olds.
- Unlike past surveys, area of residence (Adelaide Metropolitan and SA Country) had no effect on smoking prevalence among students in 2008, both overall and within specific age groups. Higher weekly disposable income and lower self-reported ability at school were both found to be significantly associated with smoking behaviour in the middle (14 to 15) and older (16 to 17) age groups.

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<sup>1</sup> Changing school retention rates amongst Year 11 and 12 students can affect the comparison of smoking rates amongst 12- to 17-year-olds over time

- Escort remained the most popular brand among South Australian students aged 12 to 17 years (29%), followed by Benson & Hedges (19%) and Winfield (13%). While the overall top ten preferred brands remained the same as in 2005, the proportion of students preferring Escort has decreased dramatically from 2005 (53%).
- The two most common means for students to access their cigarettes were through friends (50%) or from someone else buying them (17%). A similar proportion of students reported buying their last cigarette (15%) as for 2005 (19%). Consistent with findings from the 2005 survey, the most common places that students purchased cigarettes were supermarkets and petrol stations.
- The influence of cigarette pack warnings on students who smoked was mixed. While 39% of student smokers indicated the warnings made them think about quitting and 20% reported not having a cigarette due to the warnings, 20% reported having a cigarette because of the warnings. There was no significant difference in these results for males and females, nor across age groups.
- Self-reported projected likelihood of smoking the same time the following year revealed a significant strengthening in the resolve of students to not smoke whereby 94% of students surveyed in 2008 indicated a positive intention (unlikely/very unlikely/certain) to not be smoking in 12 months time compared with 91% in 2005.
- Around one-third of current student smokers indicated they were undecided about their smoking future, suggesting many students currently smoking may yet be open to influences discouraging them from smoking.
- Almost two-thirds (61%) of students reported receiving at least one lesson about smoking in the year prior to the survey, with younger students (12 to 15) and students living in country SA more likely to have received them. The proportion of students receiving a minimum of one lesson was significantly less than in 2005 (68%).
- Overall student knowledge surrounding tobacco-related circulatory problems, lung cancer and other well-publicised health effects was high in 2008 with knowledge consistently, and in some cases significantly higher among non-smoking students. Knowledge surrounding the adverse health effects associated with tobacco smoking was only slightly higher (but not statistically significant) among students who reported having received lessons or partial lessons on tobacco smoking in the previous school year.

## **Conclusion**

Smoking prevalence amongst school students has decreased significantly since the last survey period, especially within the 16- to 17-year-old age group. The continued decline in smoking prevalence is encouraging and highlights a strengthening in the resolve of school-age adolescents to not smoke. With a significant number of students still undecided about their smoking futures, continued effort in all areas of tobacco control including cessation interventions targeting parents is crucial in order to maintain the decline in smoking rates amongst South Australia's school-aged people.

# INTRODUCTION

## **The Australian School Students' Alcohol and Drugs (ASSAD) Survey**

The Australian School Students' Alcohol and Drugs (ASSAD) Survey is conducted triennially in each Australian state and territory. The survey targets secondary school students, and asks questions about a range of issues relating to their tobacco, alcohol and other drug use. Since its inception in 1984, when it was called the School Students Alcohol and Smoking Survey, the range of issues addressed by the questionnaire has expanded to include questions about the use of a broad range of drugs (licit and illicit), sun-related behaviour, physical activity and diet.

The survey is conducted by cancer organisations in each Australian state and territory and is co-ordinated by the Centre for Behavioural Research in Cancer, Cancer Council Victoria. South Australia participated in the surveys in 1984, 1990, 1993, 1996, 1999, 2002, 2005 and 2008.

The ASSAD survey was not designed to evaluate any particular tobacco control campaign or strategy. Rather it was designed to provide estimates of current smoking prevalence among Australian secondary school students and to examine trends in smoking prevalence among this group over time.

This report presents results from the 2008 survey for South Australia. It presents smoking rates and statistics on smoking behaviour among students of all age groups, and examines general trends in smoking prevalence over time.

## **METHODS**

The target population was all students in years 7 to 12 across Australia. Population estimates were based on the most up-to-date figures available from state and federal education departments at the time, and schools with fewer than 100 enrolled students were excluded from the study.

### **Sample selection**

Within each state and territory, schools were selected using a random sampling methodology designed to represent students from the three main education sectors: Government, Catholic and Independent. A stratified two-stage probability sample design was employed, with schools selected at the first stage of sampling, and students selected within schools at the second stage.

Schools were grouped according to three education sectors (Government, Catholic and Independent) and randomly selected from each. As in previous years, two samples were drawn to reflect the distinction between junior secondary (up to Year 10) and senior secondary (Years 11 and 12) students.

In South Australia secondary school commences at Year 8, with Year 7 students enrolled in primary schools. In order to maintain national consistency whereby students from Year 7 were included in the sample, several primary schools were included in South Australian sample.

A total of 61 South Australian schools participated in the 2008 survey; 42 secondary (upper and/or lower) and 19 feeder (primary) schools. Of those schools selected, 60 schools refused (44 secondary and 16 feeder schools), giving an overall response rate of just over 50%.

Consistent with standard survey protocols, participating schools provided the roll for each of the year levels for which they were selected (either junior or senior secondary), and random samples of 20 students (plus 6 replacement students) were chosen for each year level as in other years. The survey employed a mix of 'passive consent', whereby all parents were informed of the survey by the school and parents who did not wish their child to participate 'opted out', and 'active consent' which required specific parental permission. Students also had the option not to participate if they did not wish to.

Further details pertaining to the sampling and survey methodology for the ASSAD surveys are outlined in White and Hayman, 2006.<sup>1</sup>

### **Procedure**

The same procedure was used as in previous survey years. Students completed the written survey themselves in assembled 'classes' of up to 20. The surveys were conducted on school grounds, with students of different years being surveyed together. Students answered the questionnaires anonymously, and in most cases the teacher was absent at the time of surveying in order to encourage true responses from the students. The survey was completed within one lesson.

The tobacco-related questions asked in this survey were essentially the same as those asked in previous years, and included questions about lifetime experience of smoking, smoking in the past twelve months, the past four weeks and the past seven days. Students were also asked to specify on which of the past seven days they had smoked, and how many cigarettes they had smoked. Students who reported smoking in the past week were classified as 'current smokers'. Questions were also included about brand preference, source of last cigarette (including purchasing cigarettes), cigarette pack warnings, the number of lessons about tobacco or smoking received at school in the year prior to the survey, and knowledge about the health effects of smoking.

## **Data analyses**

All analyses in this report cover school students aged from 12 to 17 years.

To contain the influence of changing school retention rates amongst Year 11 and 12 students over the course of the surveys, data was often split into two age groups: 12 to 15 years and 16 to 17 years. For example, in 2008, the apparent retention rate of full-time school students from Year 8 to Year 12 in South Australia was 74%, slightly higher than in past survey years (71% in 2005; 67% in 2002; 67% in 1999; and 68% in 1996). Grade progression rates in South Australia ranged from 99% between years 8 and 9, and 9 and 10, to 91% between year 10 and year 11, and 75% between years 11 to 12. Breaking down the data by gender is also important in this context, with grade progression rates between years 10, 11 and 12 higher for females than for males.<sup>2</sup>

To ensure that disproportionate sampling of any school type, age level and gender grouping did not bias prevalence estimates, data were weighted to bring the achieved sample into line with the population distribution. As in past years, all estimates reported in this report are based on these weighted data.

Where appropriate and available, 2008 results have been compared with those observed in 2005 and previous years.<sup>3,4,5,6</sup> To examine whether the proportion of students in 2008 who had used tobacco in different recency periods differed significantly from that found in 2005 and 2002, logistic regression analyses were used.

As this report is based on data from a sample and not a census of all South Australian students, it is necessary to consider sampling errors. Because this report deals primarily with percentages or proportions, sampling errors are generally indicated by associated intervals of confidence surrounding the estimates, usually set at 95%. These confidence intervals are based on both the number of students in a specific group (i.e. 17-year-old boys) and the percentage reported (i.e. 25%), and are larger when the sample size is small and the estimate is close to 50%. For the 2008 survey, the largest confidence interval will be found for 17-year-old boys as this group has the smallest sample size (n=177). The 95% confidence interval for 17-year-old boys associated with an estimate of 50% is 50% ± 7.5%, meaning the true percentage in the population is very likely to lie between 42.5% and 57.5%.

Because the ASSAD surveys use a two-stage sampling procedure with sampled students clustered by school, the final samples are less efficient than simple random samples, and cause the standard errors associated with prevalence estimates to be underestimated. To overcome this, and in accordance with practices used at the national level, only those results associated with a  $p$  value of  $\leq 0.01$  were taken to be statistically significant.

Fifteen per cent of students surveyed reported they had been absent from school the day before the survey. Students who reported being absent were more likely to have smoked in the week preceding the survey compared with those students who had not been absent ( $\chi^2=24.4$ ,  $df=1$ ,  $p<0.001$ ). Students who were absent were also more likely to be 'committed smokers' (smoked on 3 or more days of the past week) ( $\chi^2=14.0$ ,  $df=1$ ,  $p<0.001$ ). These differences suggest that this report is likely to underestimate the true prevalence of smoking among secondary school students, as those students absent on the day of the survey were more likely to smoke. However, the rate of absence observed in this survey was at a level similar to that of previous surveys.

Finally, to overcome potential spurious responses in cigarette consumption, only students indicating that they smoked less than 40 cigarettes on each day of the week preceding the survey were included when calculating average weekly consumption.

### Sample size

A total of 2984 South Australian students in year levels 7-12 at Government, Independent and Catholic schools participated in the survey, with 2870 students aged between 12 and 17 answering the questionnaire. Data from 114 students outside this age range were excluded from the analysis as numbers in each age and gender group were considered too small to ensure reliable estimates. The weighted number of students in each gender and age group between 12 and 17 years are presented in Table 1.

**Table 1:** Number of SA students surveyed in 2008, by age and gender

Age (years)	12	13	14	15	16	17
<b>Sample Size (n*)</b>						
Males	270	278	273	273	243	177
Females	256	260	261	260	243	189

\* Counts shown are weighted sample counts

## Definitions of frequency of tobacco use

Students were asked about their use of cigarettes, and whether they had ever smoked cigarettes in their lifetime, in the past twelve months, in the last 4 weeks, and in the week preceding the survey. Those who indicated they had smoked cigarettes in the week preceding the survey were then asked to indicate the number of cigarettes smoked on each of the seven days preceding the day of the survey. Based on this information, and in accordance with national definitions, the following categories of tobacco use are defined and used in this report:

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Never:	Those who had not even had a puff of a cigarette
Ever:	Those who had indicated they had had at least a puff of a cigarette in their lifetime (ever use)
Year:	Those who had smoked cigarettes within the last 12 months (prior to completing the survey)
Month:	Those who had smoked cigarettes within the last four weeks (prior to completing the survey)
Current smokers:	Those who had smoked cigarettes within the last seven days (prior to completing the survey)
Occasional smokers:	Those who had smoked cigarettes on only one or two days of the last seven days (prior to completing the survey)
Committed smokers:	Those who had smoked cigarettes on at least three days of the week preceding the survey
Very committed smokers:	Those who had smoked cigarettes on at least six days of the week preceding the survey
Daily smokers:	Those who had smoked on each of the seven days prior to the day of the survey

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These categories are not mutually exclusive and a student who reported having smoked a cigarette in the past week was included in the estimates of all other time periods, that is, in estimates of lifetime use, smoked in the last year, and smoked in the past month.

## RESULTS

### SA smoking prevalence in 2008

Understanding the prevalence of smoking among young South Australians allows an assessment of the extent to which smoking has permeated the adolescent culture. More importantly, understanding which adolescents smoke can aid in setting appropriate tobacco control policies/programs. Reported prevalence of various levels of smoking experience is presented in Table 2, for each age and gender grouping.

**Table 2:** Lifetime experience and current cigarette smoking in SA in 2008, by age and gender

<b>Age (years)</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>Total</b>
	%	%	%	%	%	%	%
<b>Never smoked</b>							
Males	84.9	84.5	80.8	71.5	55.6	59.6	74.0
Females	91.2	89.5	78.9	69.4	65.7	65.6	77.3
Total	87.9	86.9	79.8	70.5	60.7	62.7	75.6
<b>Smoked in past year</b>							
Males	3.6	6.5	9.6	15.6	28.1	21.1	13.3
Females	3.1	4.6	13.6	18.6	21.9	21.1	13.4
Total	3.4	5.6	11.6	17.1	25.0	21.1	13.4
<b>Smoked in past month</b>							
Males	2.0	4.4	4.9	7.6	16.7	13.9	7.7
Females	1.6	2.1	7.2	10.8	12.1	8.2	6.9
Total	1.8	3.3	6.0	9.1	14.4	11.0	7.3
<b>Smoked in past week (current smokers)</b>							
Males	1.5	3.3	3.7	6.3	10.4	8.3	5.3
Females	1.0	1.7	4.5	7.0	9.0	4.3	4.6
Total	1.3	2.5	4.1	6.7	9.7	6.2	4.9
<b>Smoked on 3 or more days in past week (committed smokers)</b>							
Males	0.0	0.8	0.7	3.2	5.3	3.6	2.1
Females	0.5	1.2	2.7	3.7	4.3	2.2	2.4
Total	0.3	1.0	1.7	3.4	4.8	2.9	2.3
<b>Smoked on 6 or 7 days in past week (very committed smokers)</b>							
Males	0.0	0.0	0.0	1.3	3.1	3.1	1.1
Females	0.5	0.4	0.9	2.5	2.2	1.3	1.3
Total	0.3	0.2	0.4	1.9	2.7	2.2	1.2
<b>Mean number of cigarettes smoked in past week<sup>#</sup></b>							
Males	3.0	2.0	6.0	16.5	20.2	27.8	17.1
Females	4.0	8.8	8.7	13.9	12.0	21.6	13.0
Total	3.4	4.5	7.4	14.9	16.3	25.3	15.1

<sup>#</sup> Unweighted data for current smokers who indicated they smoked less than 40 cigarettes on each day of the preceding week

Consistent with findings from previous surveys, experience with smoking becomes more common as students progress through their schooling. For example, in 2008, around 88% of all 12-year-old students had no experience with smoking, and this proportion decreased with age, to reach a low of 61% among 16-year-olds and 63% among 17-year-olds. Furthermore, this trend is observed in both males and females. For example, at the age of 12, 15% of boys and 9% of girls had tried smoking whereas at age 17, 40% of boys and 34 % of girls had tried it.

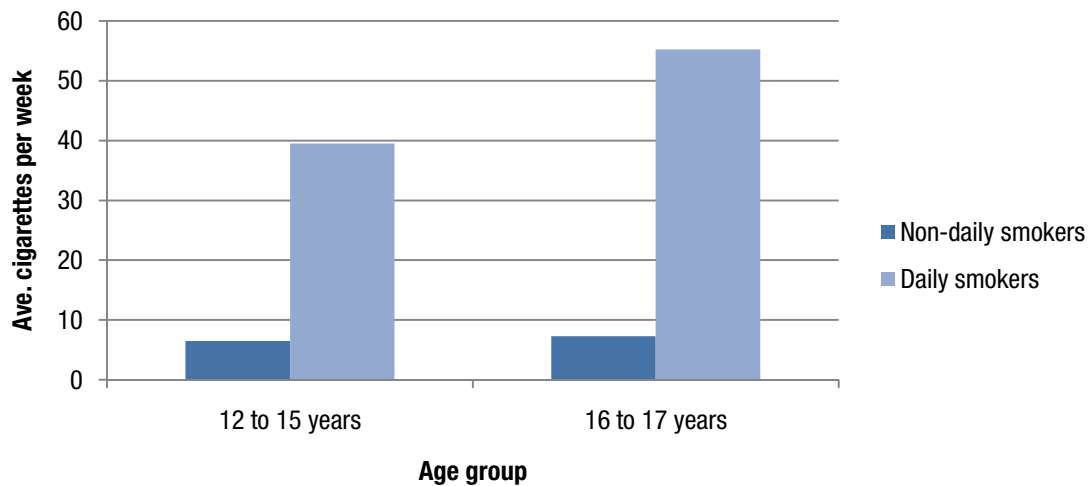
Table 2 also indicates the proportion of students who have smoked in the past year, month and week before the survey. These sections show the recency of involvement with smoking by 12-to17-year-old students in 2008. All reflect a pattern similar to that discussed above, with the proportion of students who smoked in each of the time periods increasing from age 12 up to the age of 16. Fewer students had smoked in the month before the survey than in the previous 12 months. Again, no significant differences in the proportions of males and females were found at any age point.

Students who smoked in the week before the survey were classified as 'current smokers' and are a major focus of this report. Looking closely at the proportion of male and female students who were current smokers in 2008, Table 2 highlights the rapid increase in smoking between the ages of 12 and 16, followed by a decline at age 17.

In line with national reporting, students who smoked on three or more days of the week preceding the survey were defined as committed smokers. As shown in Table 2, fewer students smoked on three or more days in the previous week than had smoked in the past week. The proportion of committed smokers increased with age from a low of less than 1% at age 12 to a high of almost 5% at age 16, before declining to around 3% at age 17. A similar trend is observed for those students who smoked on 6 or 7 days of the previous week (classified as 'very committed smokers').

The average number of cigarettes smoked per week by current smokers in each age and gender group is shown at the bottom of Table 2. In line with findings that older students were more involved with smoking than were younger students, cigarette consumption increased with age, from an average of 3 to 4 cigarettes at age 12 up to an average of 25 cigarettes at age 17. While there was a tendency for female smokers to consume more cigarettes a week than males at younger ages (12 to 14), and for males to consume more cigarettes a week than females at older ages (15 to 17), the differences were not significant at any age.

Figure 1 shows that while there was only a slight increase in the number of cigarettes consumed per week with age among non-daily smokers, the number of cigarettes consumed per week by daily smokers increased substantially with age; from almost 40 cigarettes among 12- to 15-year-olds to 55 cigarettes among 16- and 17-year-olds. No statistical significant within-age gender differences were found in any of the recency periods. This is despite the seemingly larger smoking rates for male students at age 17. Furthermore, when data was broken down by age groupings, no significant differences were found between 12-15-year-olds and 16-17-year-olds for any recency periods.



**Figure 1:** Average no. of cigarettes consumed per week by smoking status and age, SA, 2008<sup>2</sup>

### Smoking behaviour by social and demographic indicators

The following analysis explores the 2008 data in more detail, including social influences known to influence smoking behaviour, demographic indicators, and other smoking-related behaviour such as brand preference and where students obtain their cigarettes.

#### Demographic indicators

Table 3 presents smoking prevalence by various socio-economic and geographic variables. Due to the relatively small number of current smokers within individual age groups, data have been broken down and analysed in three age groups; 12- to 13-year-olds, 14- to 15-year-olds and 16- to 17-year-olds.

Unlike past surveys, area of residence had no effect on smoking prevalence among students aged 12 to 17 years in 2008, both overall and within any specific age group. However, higher weekly disposable income and lower self-reported ability at school were both found to be significantly associated with smoking behaviour in the middle and older age groups.

<sup>2</sup> Students indicating they had smoked more than 40 cigarettes on any day of the preceding week were excluded. Mean scores based on unweighted data

**Table 3:** Smoking prevalence (smoked in past week), by age and socio-demographic groups, SA, 2008

	<b>12-13 years</b>	<b>14-15 years</b>	<b>16-17 years</b>	<b>Total</b>
	%	%	%	%
<b>Area of residence</b>				
Metropolitan Adelaide	1.2	4.9	8.0	4.8
SA Country	3.2	6.3	7.7	5.1
<b>Weekly disposable income</b>				
\$20 or less	1.6	3.4 <sup>b</sup>	4.4 <sup>b</sup>	2.7 <sup>a</sup>
\$21 - \$40	1.7	6.8	9.5	5.9 <sup>a</sup>
More than \$40	3.7	8.2 <sup>b</sup>	10.0 <sup>b</sup>	8.6 <sup>a</sup>
<b>Self-reported ability at school</b>				
Below / A lot below average	3.5	11.2 <sup>ab</sup>	8.8	8.0 <sup>a</sup>
Average	2.5	6.5 <sup>b</sup>	10.4 <sup>b</sup>	6.2 <sup>a</sup>
Above / A lot above average	0.8	2.0 <sup>a</sup>	5.2 <sup>b</sup>	2.5 <sup>a</sup>
<b>Total</b>	<b>1.9</b>	<b>5.4</b>	<b>8.2</b>	<b>4.9</b>

<sup>a</sup> Difference within age group significant at  $p \leq 0.001$

<sup>b</sup> Difference within age group significant at  $p \leq 0.01$

### Parental and social influences

In 2008, 44% of students aged 12 through 17 who smoked in the past week (current smokers) had a mother who smoked, 46% had a father who smoked, 42% of those with siblings had a sibling who smoked, and 86% had one or more close friends who smoked. This compares with 26% of all students aged 12 through 17 indicating they have a mother who smokes, 29% having a father who smokes, 16% of those students with siblings having a sibling who smokes, and 24% having one or more close friends who smoke. These figures suggest students are much more likely to smoke if they have a mother, father, sibling, or close friend who smokes.

Household smoking bans also play a role in determining the likelihood of a student smoking. While 86% of all student households have a total ban on smoking within their home, only 74% of students classified as current smokers have a total ban on smoking in their home.

Table 4 presents smoking prevalence by age and various parental and social influences associated with smoking. The results further confirm the notion that students are more likely to smoke if they have friends or family members who smoke.

In general, students are less likely to smoke if they come from households containing a total ban on smoking inside the house however further analysis revealed this result is being driven solely by a significant difference in smoking prevalence amongst 14- to 15-year-olds. Household smoking bans have no impact on smoking prevalence among 16- to 17-year-olds, and only very minor impact on prevalence amongst 12- to 13-year-olds.

**Table 4:** Smoking prevalence (smoked in past week), by age and parental / social influences, SA, 2008

	<b>12-13 years</b>	<b>14-15 years</b>	<b>16-17 years</b>	<b>Total</b>
	%	%	%	%
<b>Maternal influence</b>				
Mother smokes	3.4	9.8 <sup>a</sup>	15.0 <sup>a</sup>	8.4 <sup>a</sup>
Mother does not smoke	1.3	3.8 <sup>a</sup>	6.6 <sup>a</sup>	3.8 <sup>a</sup>
<b>Paternal influence</b>				
Father smokes	3.2	9.9 <sup>a</sup>	11.5 <sup>a</sup>	7.8 <sup>a</sup>
Father does not smoke	1.2	3.4 <sup>a</sup>	7.1 <sup>a</sup>	3.7 <sup>a</sup>
<b>Influence of sibling(s)</b>				
Sibling(s) smoke(s)	4.9 <sup>b</sup>	17.0 <sup>a</sup>	16.9 <sup>a</sup>	13.2 <sup>a</sup>
Sibling(s) do(es) not smoke	1.6 <sup>b</sup>	3.3 <sup>a</sup>	6.3 <sup>a</sup>	3.5 <sup>a</sup>
<b>Influence of close friend(s)</b>				
Close friend(s) smoke(s)	9.0 <sup>a</sup>	14.0 <sup>a</sup>	19.0 <sup>a</sup>	15.5 <sup>a</sup>
Close friend(s) do(es) not smoke	0.6 <sup>a</sup>	1.0 <sup>a</sup>	0.8 <sup>a</sup>	0.8 <sup>a</sup>
<b>Household smoking restrictions</b>				
Partial / No smoking restrictions	3.0	12.8 <sup>a</sup>	7.3	8.1 <sup>a</sup>
Total ban on smoking	1.6	3.2 <sup>a</sup>	7.9	3.9 <sup>a</sup>
<b>Total</b>	<b>1.9</b>	<b>5.4</b>	<b>8.2</b>	<b>4.9</b>

<sup>a</sup> Difference within age group significant at  $p \leq 0.001$

<sup>b</sup> Difference within age group significant at  $p \leq 0.01$

### Brand preference

Students who were classified as current smokers (i.e. smoked in the week prior to the survey) were asked to name the brand of cigarettes they usually smoked. Table 5 shows the most popular cigarette brands among these smokers. Those students indicating they smoked multiple brands were excluded from these analyses.

Escort remained the most popular brand among South Australian students aged 12 to 17 years (29%), followed by Benson & Hedges (19%) and Winfield (13%). While the overall top ten preferred brands remain the same as in 2005, the proportion of students preferring Escort has decreased dramatically since 2005 ( $\chi^2=14.9$ ,  $df=1$ ,  $p<0.001$ ). This decline was offset by increases in most other preferred brands, although none of the increases were statistically significant.

Despite some seemingly large differences in the proportions for males and females, and for 12-15-year-olds and 16-17-year-olds, there was neither a significant gender difference nor a significant age difference for any of the preferred brands. Further analysis failed to find any significant difference between students living in the Adelaide metropolitan area and those living in country regions. It should be noted that these results may simply be a reflection of the relatively small number of students who smoke.

**Table 5:** Cigarette brands preferred by students who smoked in the past week<sup>#</sup>, SA, 2008 and 2005 for comparison

Brand	Males	Females	2008 12-15 years	16-17 years	Total	2005 Total
	%	%	%	%	%	%
Escort	26.8	31.7	32.1	26.2	29.1 <sup>a</sup>	53.4 <sup>a</sup>
Benson & Hedges	18.7	20.2	15.9	22.6	19.3	12.7
Winfield	17.1	8.0	12.0	13.9	13.0	8.4
Longbeach	7.1	8.1	14.1	1.5	7.5	3.2
Marlboro	8.0	5.9	7.5	6.7	7.1	2.1
Peter Jackson	10.6	2.7	10.7	3.7	7.0	2.1
Holiday	1.4	13.2	5.1	8.3	6.7	8.1
Dunhill	1.7	7.4	0.0	8.2	4.3	3.5
Peter Stuyvesant	5.2	0.0	0.0	5.4	2.8	0.6
Horizon	3.4	0.0	0.0	3.6	1.9	0.6
Alpine	0.0	2.8	2.7	0.0	1.3	2.5

Note: Percentages may not add to 100 due to other preferred brands not being listed and/or rounding

<sup>#</sup> All figures shown exclude responses from students giving more than a single brand whereas previously published figures included multiple responses

<sup>a</sup> Difference between years significant at  $p \leq 0.001$

### Pack size

Students classified as current smokers (i.e. smoked in the past week) were asked to identify the size of the packet from which their last cigarette came. Table 6 shows the cigarette pack sizes among these smokers. Those students indicating they smoked from multiple packet sizes were excluded from these analyses.

Current smokers were also asked to identify the size of the packet from which their cigarettes usually came. The top two brands, Escort and Benson & Hedges, come in pack sizes of 20 and 25 cigarettes, with Escort also available in packs of 35. It is not surprising therefore to see the most popular pack sizes (almost two-thirds) being those containing 20 or 25 cigarettes.

With only a few of the most popular brands (Longbeach, Horizon and Holiday) available in pack sizes of 40 or more, large pack sizes are naturally less popular.

**Table 6:** Size of cigarette pack from which current smokers usually smoke cigarettes<sup>#</sup>, SA, 2008 and 2005 for comparison

Pack size	Males	Females	2008 12-15 years	16-17 years	Total	2005 Total
	%	%	%	%	%	%
20	28.8	35.6	46.3 <sup>b</sup>	19.3 <sup>b</sup>	31.8	29.3
25	39.7	26.5	29.9	37.3	33.9	30.9
30	11.4	10.1	5.8	15.2	10.8	13.2
35	6.4	14.7	9.0	10.9	10.0	18.8
40	8.8	7.5	5.5	10.6	8.2	2.9
50	4.9	5.6	3.5	6.7	5.2	4.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note: Percentages may not add to 100 due to rounding

<sup>#</sup> Excludes responses from students indicating more than one pack size

<sup>b</sup> Difference between age groups significance at  $p \leq 0.01$

### Source of cigarettes

Current smokers were then asked to identify how they accessed their last cigarette. Table 7 shows that 15% of students purchased their last cigarette and 85% acquired it by other means.

The two most common means for adolescents to access cigarettes were through their friends (50% of all current smokers) and getting someone else to buy them (17%). Accessing cigarettes through friends was more common among 16- to 17-year-olds than it was for 12- to 15-year-olds. Not surprisingly, a greater proportion of 12- to 15-year-olds got other people to purchase their cigarettes than 16- to 17-year-olds who, being older, were more likely to buy the cigarettes themselves.

Consistent with findings from 2005, the most common places to purchase cigarettes were supermarkets and petrol stations.

The likelihood that students bought their own cigarettes varied significantly by age and weekly disposable income, but not by gender or area of residence.

As shown in Table 7, older students aged 16 to 17 years were more likely to have purchased their last cigarette than those aged 12 to 15 years. Further analysis revealed those students with a disposable weekly income of more than \$40 were more likely to have purchased their last cigarette (24%) compared with those having less than \$20 per week (3%), or those having between \$21 and \$40 per week (8%) ( $\chi^2=8.4$ ,  $df=2$ ,  $p=0.01$ ). This effect was found to be primarily driven by younger students aged 12 to 15 years and not by 16- and 17-year-olds.

**Table 7:** Source of last cigarette smoked by current smokers, SA, 2008 and 2005 for comparison

	<b>Males</b>	<b>Females</b>	<b>2008 12-15 years</b>	<b>16-17 years</b>	<b>Total</b>	<b>2005 Total</b>
<b>Did not buy cigarette:</b>	%	%	%	%	%	%
Friends	49.2	50.8	44.9	54.8	49.9	48.7
Someone else bought it	15.2	20.0	20.7	14.1	17.4	14.6
Took from home without permission	2.2	8.2	10.0	0.0	4.9	2.3
Sibling(s)	3.9	5.9	7.1	2.6	4.8	3.4
Parent(s)	3.0	3.8	3.8	3.0	3.4	10.3
Other source	8.2	0.0	6.5	2.5	4.5	2.1
<b>Total not bought</b>	<b>81.8</b>	<b>88.8</b>	<b>93.0<sup>b</sup></b>	<b>77.1<sup>b</sup></b>	<b>84.9</b>	<b>81.4*</b>
<b>Bought cigarette:</b>	%	%	%	%	%	
Supermarket	5.1	5.5	4.5	6.0	5.3	3.7
Petrol station	6.4	1.9	1.4	7.2	4.3	5.4
Convenience store	3.5	1.4	0.0	5.1	2.6	1.1
Other source	3.2	2.5	1.1	4.6	2.9	8.4
<b>Total bought</b>	<b>18.2</b>	<b>11.2</b>	<b>7.0<sup>b</sup></b>	<b>22.9<sup>b</sup></b>	<b>15.1</b>	<b>18.6*</b>
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note: Percentages may not add to 100 due to rounding

<sup>b</sup> Difference between age group significant at  $p \leq 0.01$

\* Figures have been revised since 2005 report

There were no age or gender differences for any of the individual source responses (i.e. students reporting that their friends gave them their last cigarette, someone else bought it, etc).

Amongst current smokers, 14% reported that they had bought cigarettes in an incomplete packet in the past four weeks. While a higher proportion of younger students aged 12 to 15 years reported that they did this (19%) than older students (8%), the difference was not statistically significant due to the small sample size.

## **Influence of health warnings on cigarette packs**

Current legislation requiring graphic health warnings on cigarette packs took full effect from 1 March 2006, with the aim of providing a strong and confronting message to smokers about the harmful health consequences of tobacco products, and conveying the 'quit' message every time a person reaches for a cigarette.

Students who had smoked in the past week (current smokers) were asked if cigarette pack warnings affected their smoking behaviour in any way. The results are summarised in Table 8 below.

Forty-three per cent of current smokers read the warnings on cigarette packets, while between 32% and 40% either 'sometimes', 'often' or 'always' thought about the meanings of the warnings, paid close attention to the warnings, thought about quitting due to the warnings, or talked about the warnings with others. However, the influence of pack warnings on smokers was mixed. While pack warnings influenced 20% of smokers to not have a cigarette, a similar proportion were influenced to have a cigarette.

There was no significant difference in results for males and females, nor across age groups.

While the proportion of smokers indicating a positive influence by pack warnings were generally lower than in 2005, none of the decreases were found to be statistically significant.

**Table 8:** Impact of cigarette pack warnings on smoking behaviour of current smokers, SA, 2008 and 2005 for comparison

	<b>2008</b>		<b>2005</b>
	<b>Sometimes/ often/always</b>	<b>Never/rarely</b>	<b>Sometimes/ often/always</b>
	<b>%</b>	<b>%</b>	<b>%</b>
Read warnings	42.7	57.3	50.6
Thought about meanings of warning	39.6	60.4	45.3
Thought about quitting due to warnings	39.2	60.8	40.7
Talked about warnings with others	38.8	61.2	35.8
Paid close attention to warnings	32.2	67.8	42.4
Not had a cigarette due to warnings	19.9	80.1	19.9
Had a cigarette due to warnings	19.8	80.2	21.0

## Likelihood of future smoking

Students were asked to indicate whether they thought they would be smoking in 12 months time.

Table 9 shows the results for (i) all students aged 12 to 17 regardless of smoking status, (ii) those who smoked in the week preceding the survey (current smokers), and (iii) those who smoked on each of the 7 days preceding the survey (daily smokers).

The most commonly chosen category, and the category that captured more than 80% of all students, was 'certain not to be smoking'.

Around 2% of all students expressed a positive intention to be smoking in 12 months time, with less than 1% of all students indicating they were 'certain to be smoking' in 12 months time.

**Table 9:** Likelihood of students smoking in 12 months time, SA, 2008 and 2005 for comparison

			2008			2005
	Males	Females	12-15	16-17	Total	Total
All students:	%	%	%	%	%	%
Certain not to be smoking	81.5	80.0	83.3	74.3	80.7	74.3
Unlikely/Very unlikely to be smoking	12.3	14.2	11.9	16.5	13.2	16.9
Undecided	4.2	3.9	3.3	6.0	4.1	5.4
Likely/Very likely to be smoking	1.5	1.4	1.0	2.5	1.5	2.6
Certain to be smoking	0.6	0.5	0.5	0.7	0.5	0.7
Current smokers:	%	%	%	%	%	%
Certain not to be smoking	13.0	12.9	16.7	8.8	13.0	8.9
Unlikely/Very unlikely to be smoking	25.3	19.8	21.7	24.0	22.8	21.0
Undecided	34.8	31.5	30.5	36.3	33.3	36.3
Likely/Very likely to be smoking	16.7	27.6	20.8	22.7	21.7	25.8
Certain to be smoking	10.2	8.2	10.3	8.1	9.3	8.1
Daily smokers:	%	%	%	%	%	%
Certain not to be smoking	6.4	13.9	12.9	9.1	10.3	3.0
Unlikely/Very unlikely to be smoking	6.4	9.9	0.0	12.3	8.2	8.3
Undecided	40.2	29.5	34.1	34.9	34.6	33.3
Likely/Very likely to be smoking	40.0	31.2	40.8	32.8	35.4	38.3
Certain to be smoking	7.1	15.3	12.3	10.9	11.4	17.0

While 9% of current smokers were certain they would be smoking in 12 months time, 13% were certain they would not be smoking in 12 months time. Furthermore, 23% thought it was very unlikely or unlikely they would be smoking. While the proportion of smokers certain they would not be smoking in 12 months time was lower for 16-17-year olds than for 12-15-year-olds, the proportion indicating they were undecided about their smoking future was higher amongst the older students. With a third of all current smokers undecided of their smoking futures, and this proportion higher for 16-17-year-olds than for 12-15-year-olds, many older smokers may be open to influences discouraging them from smoking.

Almost 47% of all daily smokers thought they would be smoking in 12 months time and 10% indicated they would not be smoking in 12 months time. Just over one third of daily smokers indicated they were undecided about their smoking futures. Combining this undecided proportion with those daily smokers who thought it was very unlikely or unlikely that they would be smoking in 12 months time, suggests that more than 40% of daily smokers might be open to influences discouraging them from smoking.

Further analysis revealed a strengthening in the resolve of students to not smoke whereby 94% of students surveyed in 2008 indicated a positive intention (unlikely/very unlikely/certain) to not be smoking in 12 months time compared with 91% in 2005 ( $\chi^2=14.2$ ,  $df=1$ ,  $p<0.001$ ).

No significant difference between males and females was evident.

### **Lessons about smoking**

All students participating in the survey were asked whether they had received any lessons at their school about smoking in the year prior to the survey. Overall, more than 82% of all students reported receiving at least part of one lesson about smoking in the past year. Specifically, 21% said that they received part of one lesson, almost 23% said that they received one whole lesson, and just under 39% said that they had received more than one lesson.

Table 10 shows that a significantly higher proportion of younger students, aged 12 to 13 years and 14 to 15 years, received at least one lesson about smoking in the past year, compared to older students (16-17-year-olds) ( $\chi^2=176.5$ ,  $df=2$ ,  $p<0.001$ ).

Students living in country SA were more likely to have received at least one lesson about smoking than those living in Metropolitan Adelaide ( $\chi^2=25.9$ ,  $df=1$ ,  $p<0.001$ ).

There was no difference in the proportions of males and females who reported receiving at least one lesson about smoking.

Overall in 2008, there was a significant decrease in the proportion of students receiving at least one lesson about smoking (61.4%) compared with the 2005 survey (67.8%) ( $\chi^2=25.8$ ,  $df=1$ ,  $p<0.001$ ).

**Table 10:** Proportion of students receiving at least one lesson about smoking in the past year, SA, 2008 and 2005

	<b>2008</b>	<b>2005</b>
	%	%
<b>Age group</b>		
12 – 13 years	67.9 <sup>a</sup>	76.6 <sup>a,b</sup>
14 – 15 years	69.9 <sup>a</sup>	72.1 <sup>a,b</sup>
16 – 17 years	42.6 <sup>a</sup>	50.6 <sup>a</sup>
<b>Gender</b>		
Males	61.3	66.7
Females	61.6	68.9
<b>Area of residence</b>		
Metropolitan Adelaide	58.4 <sup>a</sup>	68.1
SA Country	68.5 <sup>a</sup>	67.2
<b>All students</b>	<b>61.4</b>	<b>67.8</b>

<sup>a</sup> Difference between groups significant at  $p \leq 0.001$

<sup>b</sup> Difference between groups significant at  $p \leq 0.01$

### Knowledge of health effects

Students were asked a series of questions about their knowledge of the health effects and consequences of smoking. Responses broken down by current smoking status are presented in Table 11.

As was the case in 2005, student knowledge around tobacco-related circulatory problems, lung cancer and other well-publicised health effects was high in 2008. Knowledge was consistently, and in some cases significantly lower among smoking than non-smoking students. There was no significant difference in knowledge surrounding adverse health effects associated with tobacco smoking between those students who received lessons on tobacco and smoking in the previous school year and those who didn't.

**Table 11:** Knowledge about health effects associated with cigarette smoking, SA, 2008

	<b>Current smoker</b>	<b>Non-smoker</b>	<b>All students</b>	<b>p value*</b>
	% correct	% correct	% correct	
Smoking causes lung cancer	92.4	96.9	96.7	0.007 <sup>b</sup>
Smoking clogs your arteries	91.8	96.1	95.9	0.023
Smoking harms unborn babies	93.7	95.9	95.8	0.245
Smoking can cause diseases in your toes and fingers	84.3	95.2	94.7	0.000 <sup>a</sup>
Smoking is addictive	88.7	94.9	94.6	0.003 <sup>b</sup>
Smoking can cause mouth cancer	89.5	94.6	94.4	0.019
Smoking can cause emphysema	92.9	94.5	94.4	0.485
Smoking doubles your risk of stroke	86.4	94.4	94.0	0.000 <sup>a</sup>
Smoking increases risk of heart attack	89.8	94.1	93.9	0.054
Tobacco smoke is toxic	89.0	93.7	93.5	0.040
Smoking is a leading cause of death	81.7	91.0	90.6	0.001 <sup>b</sup>
Smoking can cause blindness	68.5	72.5	72.3	0.397

Note: Responses considered 'correct' equate to "Agreeing / Strongly agreeing" with the statement

\* See notes regarding statistical significance under Data analyses of the Method section

<sup>a</sup> Difference between smokers and non-smokers is statistically significant at  $p \leq 0.001$

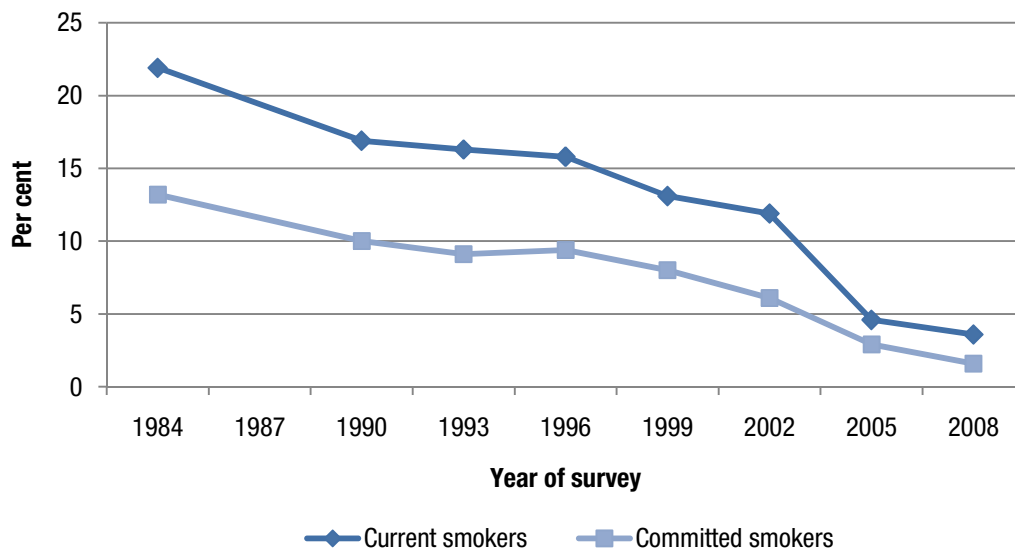
<sup>b</sup> Difference between smokers and non-smokers is statistically significant at  $p \leq 0.01$

### Comparison of smoking behaviour over time

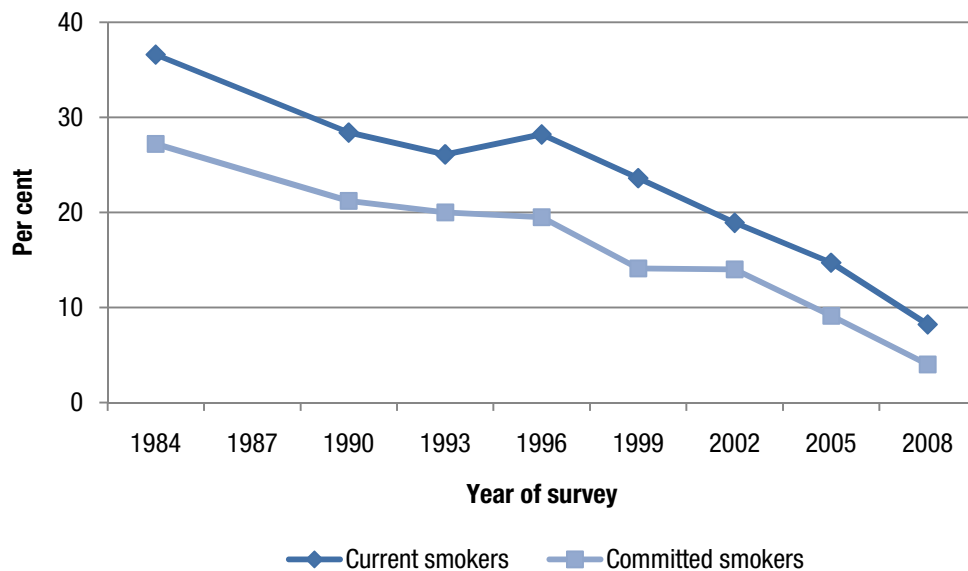
In this section, changes in smoking prevalence amongst two groups of students, those aged 12 to 15 years and those aged 16 to 17 years, are examined. Students have been divided into these two groups for a number of reasons. First, the legal age for leaving school has always been 15 and retention rates amongst Year 11 and Year 12 students have increased over the course of surveys. This suggests the student profile of 16- and 17-year olds has probably changed over the years, with students who may have previously left school before Year 12 in the 1980s and early 1990s being more likely to have stayed in school in the late 1990s and 2000s. Furthermore, the legal age for buying cigarettes used to be 16, whereas it is now 18.

The key indicator of smoking involvement has always been smoking in the past week (current smoking), and smoking on three or more days of that week (committed smoking). These measures are used because they give an indication of the proportion of students actively engaged in smoking at two important levels: (i) ongoing regular involvement (committed smoking) and (ii) recent use of tobacco (smoking in the past week).

Figures 2 and 3 show the proportions of all 12- to 15-year-olds and 16- to 17-year-olds surveyed in each year that had (i) smoked in the week prior to the survey (current smokers) and (ii) smoked on three or more days of the week preceding the survey (committed smokers).



**Figure 2:** Trends in proportion of current smokers (smoked in past week) and committed smokers (smoked on 3 or more days of past week) among 12- to 15-year-old students, SA, 1984 to 2008<sup>3</sup>



**Figure 3:** Trends in proportion of current smokers (smoked in past week) and committed smokers (smoked on 3 or more days of past week) among 16- to 17-year-old students, SA, 1984 to 2008<sup>4</sup>

Since the survey began in 1984, there have been several marked changes in the prevalence of smoking among South Australian students aged 12 to 17 years. Despite no data being available from 1987, both series highlight a marked decrease in smoking prevalence between 1984 and 1993. While the years between 1993 and 1996 saw a slight decline in prevalence amongst 12- to 15-year-olds, prevalence amongst 16- to 17-year-olds increased. From 1996 onwards, smoking prevalence amongst both age groups has declined.

<sup>3 4</sup> Data for SA not available for 1987

Turning attention to changes in the proportion of students smoking in various recency periods over recent years, Table 12 shows the proportion of 12- to 15-year-olds, 16- to 17-year-olds and 12- to 17-year-olds who had ever smoked, smoked in the past month, smoked in the past week, smoked on three or more days in the past week, or smoked on six or seven days of the past week in 2002, 2005 and 2008 for males, females and total students.

**Table 12:** Percentage of students involved with tobacco use at different levels in 2002, 2005 and 2008, by age and gender, SA

Recency period of tobacco use	Gender	12-15-year-olds			16-17-year-olds			12-17-year-olds		
		2002 %	2005 %	2008 %	2002 %	2005 %	2008 %	2002 %	2005 %	2008 %
<b>Lifetime</b>	Male	40.4 <sup>a</sup>	23.3	19.6	57.8 <sup>b</sup>	48.1	42.7	45.1 <sup>a</sup>	30.0	26.0
	Female	39.9 <sup>a</sup>	24.9 <sup>a</sup>	17.8	62.6 <sup>a</sup>	50.2 <sup>a</sup>	34.3	46.3 <sup>a</sup>	32.0 <sup>a</sup>	22.7
	Total	40.2 <sup>a</sup>	24.0 <sup>a</sup>	18.7	60.3 <sup>a</sup>	49.2 <sup>a</sup>	38.5	45.7 <sup>a</sup>	31.0 <sup>a</sup>	24.4
<b>Year</b>	Male	24.5 <sup>a</sup>	11.4	8.8	39.2 <sup>b</sup>	29.6	25.1	28.4 <sup>a</sup>	16.3	13.3
	Female	26.7 <sup>a</sup>	15.3 <sup>a</sup>	10.0	42.5 <sup>a</sup>	35.1 <sup>a</sup>	21.6	31.2 <sup>a</sup>	20.9 <sup>a</sup>	13.4
	Total	25.6 <sup>a</sup>	13.3 <sup>a</sup>	9.4	40.9 <sup>a</sup>	32.3 <sup>a</sup>	23.3	29.8 <sup>a</sup>	18.6 <sup>a</sup>	13.4
<b>Month</b>	Male	14.0 <sup>a</sup>	5.1	4.8	23.2	16.9	15.5	16.5 <sup>a</sup>	8.3	7.7
	Female	16.1 <sup>a</sup>	7.6	5.4	24.2 <sup>a</sup>	19.9 <sup>a</sup>	10.4	18.4 <sup>a</sup>	11.1 <sup>a</sup>	6.9
	Total	15.1 <sup>a</sup>	6.3	5.1	23.7 <sup>a</sup>	18.4 <sup>b</sup>	12.9	17.4 <sup>a</sup>	9.7 <sup>a</sup>	7.3
<b>Week</b>	Male	10.8 <sup>a</sup>	4.2	3.7	19.3 <sup>b</sup>	14.2	9.5	13.1 <sup>a</sup>	6.9	5.3
	Female	13.0 <sup>a</sup>	5.1	3.6	18.6 <sup>a</sup>	15.2 <sup>a</sup>	6.9	14.6 <sup>a</sup>	8.0 <sup>a</sup>	4.6
	Total	11.9 <sup>a</sup>	4.6	3.6	18.9 <sup>a</sup>	14.7 <sup>a</sup>	8.2	13.8 <sup>a</sup>	7.4 <sup>a</sup>	4.9
<b>Smoked on 3+ days in past week</b>	Male	5.6 <sup>a</sup>	2.7	1.2	14.0 <sup>a</sup>	8.9	4.6	7.9 <sup>a</sup>	4.4 <sup>a</sup>	2.1
	Female	6.6 <sup>a</sup>	3.0	2.0	13.9 <sup>a</sup>	9.2 <sup>a</sup>	3.4	8.7 <sup>a</sup>	4.8 <sup>a</sup>	2.4
	Total	6.1 <sup>a</sup>	2.9 <sup>b</sup>	1.6	14.0 <sup>a</sup>	9.1 <sup>a</sup>	4.0	8.3 <sup>a</sup>	4.6 <sup>a</sup>	2.3
<b>Smoked on 6 or 7 days in past week</b>	Male	3.0 <sup>a</sup>	1.3	0.3	8.2	5.7	3.1	4.4 <sup>a</sup>	2.5 <sup>b</sup>	1.1
	Female	4.1 <sup>a</sup>	2.1	1.1	11.8 <sup>a</sup>	6.6 <sup>a</sup>	1.8	6.3 <sup>a</sup>	3.4 <sup>a</sup>	1.3
	Total	3.5 <sup>a</sup>	1.7 <sup>b</sup>	0.7	10.0 <sup>a</sup>	6.2 <sup>a</sup>	2.5	5.3 <sup>a</sup>	2.9 <sup>a</sup>	1.2

Note: Significance testing is based on logistic regression analysis

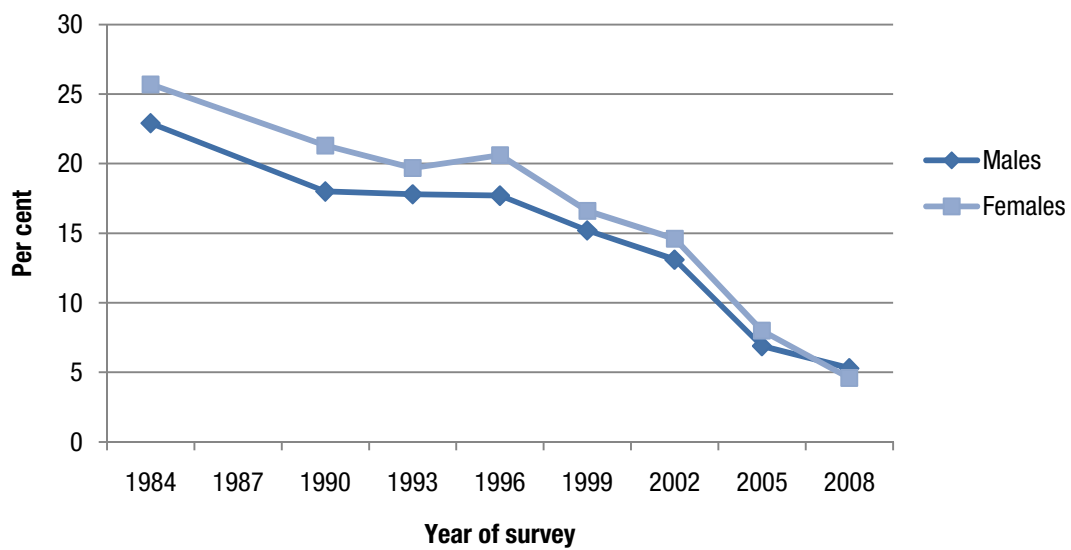
<sup>a</sup> Significantly different from 2008 at  $p \leq .001$

<sup>b</sup> Significantly different from 2008 at  $p \leq .01$

Looking firstly at 12- to 15-year-olds, Table 12 shows that the proportion of students smoking in each of the recency periods in 2008 was significantly lower than that found in 2002, with the results consistent for both males and females. Despite the 2008 proportions were lower than 2005 for each of the recency periods, only the declines in the proportion of lifetime smoking, smoked in the past year, committed smoking, and very committed smoking were statistically significant. While no significant declines were observed in the proportion of 12- to 15- year-old males for any recency period between 2005 and 2008, significant declines were found among 12- to 15- year-old female students for lifetime smoking and smoked in the past year.

Turning attention to 16- to 17-year-olds, Table 12 shows significant declines in the proportion of students smoking in each of the recency periods occurred between 2002 and 2008, and between 2005 and 2008. Significant declines in female smoking were also observed for all recency periods between 2002 and 2008, and between 2005 and 2008. While no significant declines in male smoking were seen between 2005 and 2008, significant declines among males occurred for lifetime smoking, smoked in the past year, smoked in the last week, and committed smoking between 2002 and 2008.

As a result, the proportion of female students defined as current smokers in 2008 was at the same level as males (Figure 4).



**Figure 4:** Trends in proportion of current smokers (smoked in past week) among male and female students aged 12 to 17 years, SA, 1984 to 2008<sup>5</sup>

<sup>5</sup> Data for SA not available for 1987

## DISCUSSION

Survey results reveal that the proportion of South Australia's school students aged 12 to 17 years involved in tobacco smoking was lower in 2008 than it was in 2005. In 2008, less than 19% of students aged between 12 and 15 had tried a cigarette compared to 24% in 2005. Among 16 and 17 year olds, the proportion of students who had experimented with tobacco smoking decreased from 49% in 2005 to less than 39% in 2008. These results suggest that experimenting with cigarettes has gradually become less of a normative behaviour among school students. Furthermore, the proportion of students who had smoked in the week preceding the survey has also decreased since 2005. In 2008, 4% of students aged 12 to 15 and 8% of students aged 16 to 17 had smoked in the week prior to the survey compared with 5% and 15% respectively in 2005. Despite these substantial decreases in proportions of students smoking, there are still substantial student numbers involved in smoking. Based on population weighting of the 2008 survey data, it is estimated that around 6000 South Australian students smoked on average 85,000 cigarettes between them in the week preceding the survey, which represents substantial revenue for the tobacco industry.

Closer examination of the number of cigarettes consumed per week revealed consumption was heavily dependent on whether the student smoked on a daily basis. Non-daily smokers consumed considerably fewer cigarettes on average per week than did daily smokers. Whereas the number of cigarettes consumed was not related to age among non-daily smokers, the number of cigarettes consumed by daily smokers increased substantially with age.

As found in previous surveys, smoking experience increased significantly between the ages of 12 and 17 years. For example, while 88% of 12-year-old students had no experience with smoking, only 61% of 16-year-olds and 63% of 17-year-olds had never smoked. Furthermore, this trend is observed in both males and females. As in previous years, there were no statistically significant differences in current smoking by gender.

The predictive influence of peer smoking on youth smoking has been well-established.<sup>7,8</sup> Results from this study clearly show those students having close friends who smoke are much more likely to smoke themselves. Familial smoking by a parent or sibling was also found to influence smoking behaviour among students, but to a lesser extent. While household smoking bans were found to have some influence on early adolescent smoking, they have no impact on smoking behaviour among older students.

In terms of rates of smoking observed among school students, no new patterns seem to have emerged although, unlike patterns seen among adult smokers, smoking prevalence in students no longer appears to vary with socio-demographic measures such as area of residence. a. As found in previous surveys, those students with less available money to spend were significantly less likely to be current smokers suggesting price may be prohibitive. This finding is consistent with research about the higher price flexibility of children.<sup>9</sup>

There are many likely contributors to the decline in student smoking rates. The recently observed decline in prevalence rates amongst the adult population, and the factors in the broader tobacco control environment which drive those prevalence rates, are very likely to be major contributors to declining smoking rates in young people observed here.

The last 5 years have seen significant amendments to the South Australian *Tobacco Products Regulation Act* 1997 with the phasing-in of smoke-free laws. The first phase took effect on 6 December 2004 prohibiting smoking in all workplaces and public places except bars and gambling venues while licensed bars and gaming rooms were provided with a 3-year phase-in period, which ended in October 2007. These changes in legislation are significant as they indicate both an acceptance by the public that environmental smoke is hazardous to non-smokers and send a message that smoking is no longer socially acceptable. In addition, Quit SA have continued to deliver effective adult targeted, cessation focussed mass media campaigns. Both adult targeted cessation campaigns and smoke-free laws have been shown to correlate with reduced adolescent smoking rates.<sup>10,11,12</sup> Furthermore, Quit SA and a number of community agencies have continued to deliver youth-focussed tobacco control interventions during this time.

Current legislation requiring graphic health warnings on cigarette packs took full effect from 1 March 2006, with the aim of providing a strong and confronting message to smokers about the harmful health consequences of tobacco products, and conveying the 'quit' message every time a person reaches for a cigarette. The graphic images, in combination with the health warnings and explanatory messages, are intended to increase consumer knowledge of health effects relating to smoking, to encourage cessation and to discourage uptake or relapse. The 2008 survey presented evidence of some impact on SA's student population, with 42% of the students surveyed reporting they had read the warnings, 40% reporting they had thought about the warnings, 39% saying they had talked about the warnings with others, and 32% saying they paid close attention to the warnings. Furthermore, almost 40% indicated they'd thought about quitting due to the warnings and 20% indicated they had not had a cigarette due to the warnings. While these results are consistent with recent research showing that graphic health warnings are achieving their intended purpose<sup>13</sup>, their impact on the student population was mixed, with 20% of students surveyed saying the pack warnings caused them to have a cigarette.

Escort remains the most popular brand among South Australian students aged 12 to 17 years, followed by Benson & Hedges and Winfield. While the top ten preferred brands in 2008 remained the same as in 2005, the proportion of students preferring Escort almost halved.

While the most common way for students to obtain their cigarettes was from friends, 15% of students who smoked in the week preceding the survey indicated that they had bought their last cigarette. Not surprisingly, purchasing cigarettes was more common among older students. As it is illegal in South Australia to sell cigarettes to people under the age of 18, these results suggest that many retailers may not be complying with these regulations and compliance by retailers, especially in petrol stations and supermarkets, needs to be continuously monitored.

Research has suggested that regardless of a student's current smoking status, those who do not express a firm intention to not smoke in future are more likely to smoke in the future.<sup>14</sup> While 83% of students aged 12 to 15 years indicated a positive intent to not be smoking in 12 months time, 74% of older students had this intent. As these older students may be confronted with increased opportunities to smoke once they leave secondary school, these results suggest that around one in four 17 year olds may still be vulnerable to smoking experimentation. Examining the smoking intentions of current and daily smokers revealed around 10 to 13% were firm in their intention to not smoke in the future, indicating the vast majority of students who were current smokers in 2008 are likely to continue smoking into their adulthood.

While the majority of students reported that they had received at least one full lesson about tobacco and smoking in the year prior to the survey, more than one-third (39%) of students surveyed reported they had not received a full lesson. Older students, the group with the highest prevalence of current tobacco use, were also the least likely to have received any tobacco content in their lessons, as were students living in metropolitan Adelaide.

Basic student knowledge about the harms of tobacco was high among all students, but slightly higher among non-smokers with significantly more non-smokers answering some questions relating to tobacco harms correctly when compared with current smokers. Although the evidence about the capacity of school-based programs to directly prevent uptake of smoking is scarce, some evidence does exist that school-based programs can delay uptake.<sup>15</sup> From a broader perspective, it is fundamental that schools be encouraged and assisted to implement a comprehensive approach to tobacco control. This includes addressing tobacco and health in the curriculum at all levels to reach students when they are initiating and consolidating smoking behaviour, to at the very least promote informed consumer decision-making. This should also include structural support for schools to implement policies which help maintain smoke-free environments.

In conclusion, the progress observed in declining smoking rates among school students aged 12 to 17 years is encouraging. Comprehensive and sustained tobacco control combining 'adult' focussed strategies' known to impact on young people are still required to maintain progress, including mass-media campaigns, smoke-free public places laws, regulation of price, and advertising and display at point of sale. In addition, specific strategies targeted at young people such as comprehensive school support programs also have a role to play.

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