

**SMOKING AMONG SOUTH AUSTRALIAN SECONDARY SCHOOL
STUDENTS – RESULTS FROM THE 2005 ASSAD SURVEY**

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EXECUTIVE SUMMARY

Smoking prevalence and smoking behaviour were investigated amongst South Australian school children in 2005 as part of the triennial Australian School Students' Alcohol and Drugs (ASSAD) Survey. In total, 2887 students from 50 schools participated, and 2873 students aged from 12 to 17 years were used in the analyses.

Key Findings from 2005

- Experience with smoking and regular smoking increased significantly with age, and in general was similar for boys and girls:
 - Among 12 year olds, 89% of boys and 91% of girls had never smoked at all. By the age of 17, 46% of boys and 49% of girls had at least tried smoking.
 - Among 12-15 year olds, 4% of boys and 5% of girls were regular smokers (smoked in the past week).
 - Among 16-17 year olds, 14% of boys and 15% of girls were regular smokers.
- In general, since the last survey year in 2002, adolescent smoking prevalence rates have continued the downward trend observed over the past two decades:
 - In the 12-15 age group, 13% of all students reported having smoked in the past 12 months (compared with 26% in 2002); and 5% reported smoking in the past week (compared with 12% in 2002). These differences were significant.
 - Amongst 16-17 year olds, 32% of students had smoked in the past 12 months (compared with 41% in 2002); and 15% were current smokers (compared with 19% in 2002). These differences were not statistically significant.
 - The number of cigarettes smoked by 16-17 year olds has returned to levels observed in the 1999 survey after an increase observed in the 2002 survey.
- Smoking rates varied significantly with familial and social influences, such that students who had a parent who smoked, or a sibling or a close friend who smoked were significantly more likely to smoke than those who did not. Those with total household smoking restrictions were significantly less likely to smoke compared to those with partial or no restrictions; this effect was only present for younger students (12-13 year olds and 14-15 year olds).
- Smoking rates varied significantly with demographic variables such as:
 - School denomination - Students from Independent schools were less likely to be current smokers compared to their counterparts in Government and Catholic schools.
 - Area of residence - Similar to adult populations, students in rural areas were more likely to be current smokers than students in metropolitan areas in the 16-17 year age group.
 - Weekly disposable income - Students with more spending money per week were also more likely to smoke.
- Those students who reported above average ability at school were less likely to be current smokers.

- Significantly more young students (aged 12-15 years) reported not having a cigarette due to pack warnings compared to older students (16-17 years). Significantly more male students reported not having a cigarette due to pack warnings compared to female students.
- Escort (55%) was clearly the most popular cigarette brand amongst South Australian school students. This is a result restricted to South Australia only.
- Similar proportions of students in 2005 (19%) reported buying or purchasing their last cigarette compared to proportions reported in 2002 (23%). These underage students reported being able to buy their own cigarettes from various sources including retailers.
- Self-reported projected likelihood of smoking the same time the following year was significantly lower in 2005 when compared to 2002 reports for both 12-15 year olds and 16-17 year olds.
- The majority of students (87%) reported receiving at least part of one lesson about smoking in the year prior to the survey. Older students and students from Government schools however, were significantly less likely to have received at least one lesson in the previous year (2004-05).
- Knowledge questions about tobacco-related harms such as lung cancer, heart disease and other tobacco-related diseases were asked of students. Non-smokers were significantly more likely to score higher on the knowledge questions than smokers. Analysis of those who had received some form of tobacco education revealed these same distinctions.

In conclusion, smoking prevalence has decreased since the last survey period, especially for the 12-15 year old age group. The spike in current smoking rates seen amongst young girls in 2002 data has returned to previous levels. It is most likely that this represented no more than the long observed trend of girls' smoking rates peaking earlier than boys', a difference which disappears in older adolescents and reverses in adulthood. It is encouraging to see overall declines in smoking prevalence for both age groups and a decline in cigarette consumption for 16-17 year olds. A sustained effort in all areas of tobacco control including cessation interventions targeting parents is necessary to maintain the decline in smoking rates in school-aged people.

INTRODUCTION

The Australian School Students' Alcohol and Drugs Survey

The Australian School Students' Alcohol and Drugs 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, The Cancer Council of Victoria. South Australia participated in the surveys in 1984, 1990, 1993, 1996, 1999, 2002 and 2005.

This report presents results from the 2005 survey for South Australia only. It presents smoking rates and statistics on other smoking behaviour among students of all age groups, and examines trends over time.

METHOD

Respondents

During the 2005 school year, 2887 South Australian students in year levels 7-12 at Government, Independent and Catholic schools participated in the survey. Analyses reported here are restricted to students aged 12-17 years, leaving a sample of 2873 students. Details of the sampling and survey methodology are outlined elsewhere.¹

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. Where a secondary school's sample stipulated the inclusion of Year 7 students, a 'feeder' primary school was selected, and Year 7 students were sampled from that school.

Initially, 50 secondary (32 lower and 18 upper secondary) and 22 feeder schools were selected, each with a replacement school to be approached if the school declined. Forty of the 72 schools approached agreed to participate, yielding an initial school response rate of 56%. Thirty-nine replacement secondary schools (14 lower and 25 upper secondary) and 19 replacement feeder schools were selected, of which 21 secondary and 10 feeder accepted. The overall sample consisted of 50 secondary schools (32 lower and 18 upper secondary) and 21 feeder schools (overall response rate of 55%).

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 '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' (as opposed to active consent which requires 'opting in'). Students also had the option not to participate if they did not wish to. Four thousand student surveys were expected to be returned, and 3002 were returned (overall student participation rate of 75%). However, this does not take into account surveys which were unusable or had missing fields.

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 (62%) the teacher was absent at the time of surveying in order to encourage true responses from the students. The survey was completed within the time taken for one normal lesson. The tobacco-related questions asked in this survey were 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.

Analyses

Overall, 12.4% of students said that they had been absent from school the day before the survey. Students who reported being absent were more likely to have smoked in the seven days prior to the survey (18.9%) compared to those students who had not been absent on that day (5.8%) ($\chi^2=77.2$, $df=1$, $p<0.001$). Students who were absent the day prior to the survey were also significantly more likely to be 'committed smokers', that is had smoked on 6 or 7 days of the past week (9.3%) compared to those students who reported attending school on that day (2.4%; $\chi^2=47.9$, $df=1$, $p<0.001$). It is likely then that smoking rates in the current report are somewhat underestimated because students absent on the day of the survey may be more likely to smoke. However, this rate of absence (12.4%) is virtually the same as to the rate observed in 2002 (12.0%), and in the previous survey years.

Data were split into two age groups (12-15 years and 16-17 years) for much of the analyses. This was to contain the influence on the data from changing school retention rates among Year 11 and 12 students.

In 2005 the apparent retention rate of full-time school students from Year 7 and 8 to Year 12 in South Australia was 71%, similar to previous years (67% in 2002; 67% in 1999; and 68% in 1996). Like previous years, the apparent retention rate for females (78%) was significantly higher than the rate for males (64%). Retention rates for older full-time students (Years 10 to 12) in 2005, are higher for non-Government schools (86%) than Government schools (64%).²

Data were weighted to bring the sample in line with the state distribution of Government, Catholic and Independent schools. Where appropriate and available, results are compared in this report to those observed in 2002.³⁻⁵

Basic comparisons between groups were done using chi-square tests and t-tests. Logistic regression analyses (using weighted data and controlling for age, school type and sex) were conducted to investigate whether smoking prevalence in 2005 was significantly different to the prevalence of each previous year, and all previous years combined.

RESULTS

Smoking Prevalence in 2005

Reported prevalence of various levels of smoking experience is presented in Table 1, for each age and gender grouping. Consistent with findings from previous years, the likelihood of having any smoking experience increased with age for each of the recency periods listed. This trend emerged in both sexes. For example, at age 12, the majority of male (89%) and female (91%) students had never smoked, but experience of smoking increased progressively with each increment in age to 17. This trend was significant for both males (χ^2 trend=131.0, $p<0.001$) and females (χ^2 trend=139.6, $p<0.001$)., significant trends were observed in having smoked in the past 12 months among for both males (χ^2 trend=90.8, $p<0.001$) and females (χ^2 trend=112.3, $p<0.001$) as well as for smoking in the past 4 weeks (males: χ^2 trend=65.9, $p<0.001$; females: χ^2 trend=63.6, $p<0.001$).

Table 1: Past and current cigarette smoking in 2005, by age and sex

Age (years)	12	13	14	15	16	17
Sample Size (n)						
Males	268	269	270	261	232	163
Females	254	255	251	251	223	175
Never Smoked						
Males	88.7%	80.8%	73.3%	64.0%	56.3%	45.6%
Females	90.7%	78.9%	68.8%	61.8%	50.7%	48.7%
Smoked in Past 12 months						
Males	5.1%	10.5%	14.0% ^b	15.9% ^a	25.2% ^a	35.7%
Females	4.3%	10.3%	21.1% ^b	25.8% ^a	36.8% ^a	32.9%
Smoked in Past 4 weeks						
Males	2.0%	5.2%	4.8% ^b	8.4%	13.8% ^b	21.3%
Females	1.3%	6.9%	9.8% ^b	12.6%	21.3% ^b	18.0%
Smoked in Past 7 days (current smoker)						
Males	2.0%	4.1%	4.4%	6.2%	11.9%	17.6%
Females	0.6%	4.2%	7.3%	8.5%	16.3%	13.7%
Smoked on 6 or 7 Days in Past Week (committed smokers)						
Males	1.6%	2.8%	1.5%	2.1%	5.1%	6.8%
Females	0.0%	1.7%	2.3%	4.5%	7.3%	5.7%
Mean Number of Cigarettes Per Week[†]						
Males	7.3	27.2	16.0	24.4	24.0	26.2
Females	2.0	10.1	21.8	23.5	23.4	22.4

[†] Unweighted data for current smokers smoking less than 40 cigarettes per day

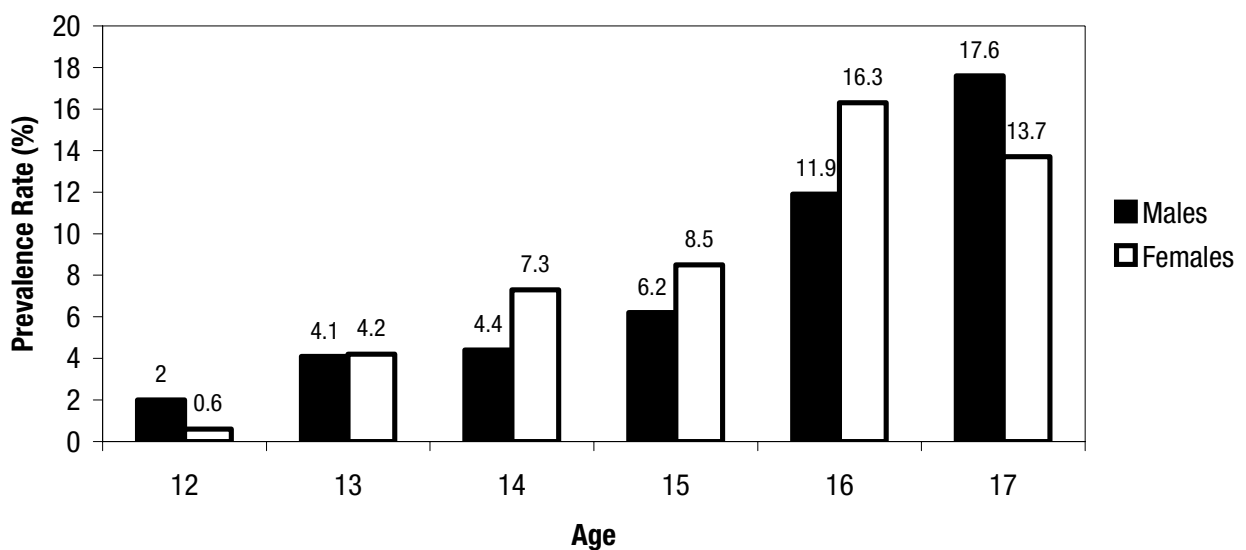
^a Significant within age between gender at $p<0.01$

^b Significant within age between gender at $p<0.05$

In keeping with the protocol established in previous surveys, students who reported smoking in the past 7 days were classified as 'current smokers'. Again, the proportion of current smokers increased significantly with age (males: χ^2 trend=55.6, $p<0.001$; females: χ^2 trend=51.3, $p<0.001$) as did the proportion classified as 'committed smokers' because they smoked on 6 or 7 days of the past week (males: χ^2 trend=16.8, $p<0.001$; females: χ^2 trend=12.6, $p<0.001$).

Statistically significant within-age gender differences were only observed in smoking in the past 12 months (14, 15 and 16 year olds) and smoking in the past 4 weeks (14 and 16 year olds only). Current smoking rates (smoking in the past 7 days) appear slightly higher among girls than boys at 14, 15 and 16 (Table 1 and Figure 1), but these differences are not statistically significant. In addition, smoking rates appear slightly higher among the 17 year old boys than girls, this difference was not however statistically significant.

Figure 1: Current smokers (smoked in past week) in 2005, by age and sex



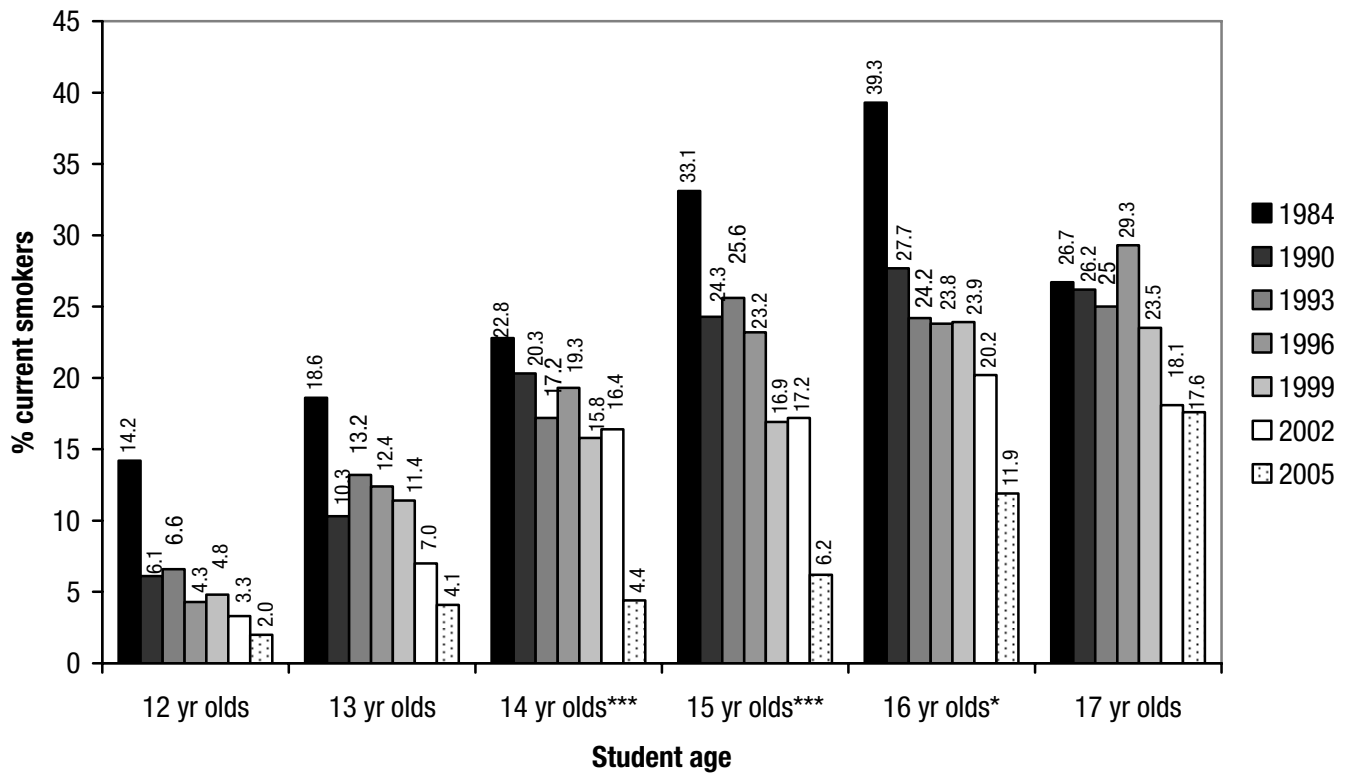
Amongst current smokers, patterns of consumption, as indicated by mean number of cigarettes smoked per week, did not differ by sex, only age (see Table 1). Unlike results from previous surveys, males of all ages no longer smoked on average more cigarettes per week than females. Patterns of girls' cigarette consumption were equivalent to that of boys, across all age groups.

When broken down by age group, significant differences were found between 12-15 year olds and 16-17 year olds for all recency periods: those who had smoked in the past 12 months ($\chi^2=297.0$, $df=1$, $p<0.001$), the past 4 weeks ($\chi^2=248.9$, $df=1$, $p<0.001$) and the past 7 days ($\chi^2=245.1$, $df=1$, $p<0.001$).

Comparison of Smoking Behaviour in 2005 with Earlier Years

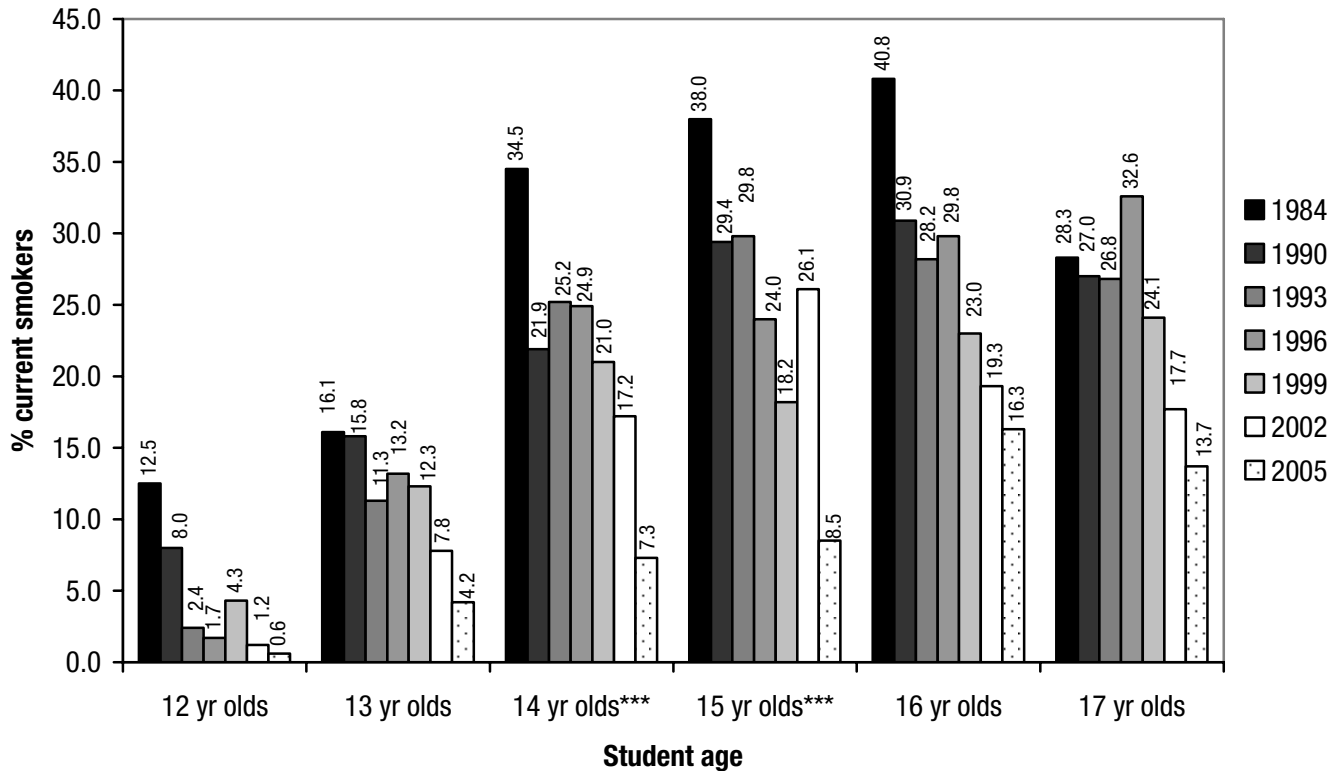
The proportion of male and female students who reported smoking in the past 7 days are presented in Figure 2 and Figure 3 along with data from the previous six survey periods. In general, prevalence has decreased since 2002 amongst all ages, for both males and females.

Figure 2: Male current smokers, by age and survey year



* Significant difference between 2005 and 2002 for age group at $p < 0.05$ level
 ** Significant difference between 2005 and 2002 for age group at $p < 0.01$ level
 *** Significant difference between 2005 and 2002 for age group at $p < 0.001$ level

Figure 3: Female current smokers, by age and survey year



*** Significant difference between 2005 and 2002 for age group at $p < 0.001$ level

Table 2 and Table 3 below divide respondents into two age-groupings (12-15 years old and 16-17 year olds) for the purposes of comparisons across survey years. In the tables, 2005 data are compared with each survey year separately, but also with all previous survey years combined.

In 2005, there was no significant gender difference in current smoking among 12-15 year olds or among 16-17 year olds.

Table 2: Smoking among 12-15 year olds across survey years

Survey Year	1984 %	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	p value*
Boys								
Smoked in the past 12 months	41.0 ^a	31.2 ^a	31.5 ^a	33.6 ^a	26.3 ^a	24.2 ^a	11.4	p<0.001
Smoked in the past 4 weeks	24.5 ^a	18.5 ^a	19.2 ^a	18.5 ^a	15.4 ^a	13.8 ^a	5.1	p<0.001
Smoked in the past 7 days (current smoker)	20.5 ^a	15.2 ^a	15.5 ^a	14.9 ^a	12.2 ^a	10.7 ^a	4.2	p<0.001
Smoked on 3 or more days	12.1 ^a	9.5 ^a	8.4 ^a	9.1 ^a	8.6 ^b	5.5	3.5	p<0.001
<i>Mean cigarettes smoked per wk[‡]</i>	26.9	22.1	19.8	24.8	23.0	14.5	21.1	NS
Girls								
Smoked in the past 12 months	44.0 ^a	35.3 ^a	37.5 ^a	35.3 ^a	32.9 ^a	27.0 ^a	15.3	p<0.001
Smoked in the past 4 weeks	29.3 ^a	22.7 ^a	22.9 ^a	19.7 ^a	18.5 ^a	16.3 ^a	7.6	p<0.001
Smoked in the past 7 days (current smoker)	23.5 ^a	18.7 ^a	17.0 ^a	15.8 ^a	13.9 ^a	13.1 ^a	5.1	p<0.001
Smoked on 3 or more days	15.0 ^a	10.5 ^a	9.9 ^a	8.7 ^a	8.6 ^a	6.7 ^b	3.0	p<0.001
<i>Mean cigarettes smoked per wk[‡]</i>	20.7	17.8	17.8	16.9	15.4	18.5	19.2	NS
All Students								
Smoked in the past 12 months	42.4 ^a	33.2 ^a	34.4 ^a	34.4 ^a	29.5 ^a	25.6 ^a	13.3	p<0.001
Smoked in the past 4 weeks	26.8 ^a	20.5 ^a	21.0 ^a	19.1 ^a	16.9 ^a	15.2 ^a	6.3	p<0.001
Smoked in the past 7 days (current smoker)	21.9 ^a	16.9 ^a	16.3 ^a	15.3 ^a	13.1 ^a	12.0 ^a	4.6	p<0.001
Smoked on 3 or more days	13.4 ^a	10.0 ^a	9.1 ^a	8.9 ^a	8.6 ^a	6.3 ^b	3.2	p<0.001
<i>Mean cigarettes smoked per wk[‡]</i>	23.6	19.9	18.8	21.0	18.9	16.7	20.0	NS

[‡] Unweighted data for current smokers who smoke less than 40 cigarettes per day

* Main effect of year significant at: p<0.001

^a Difference between 2005 and year significant at p<0.001

^b Difference between 2005 and year significant at p<0.01

^c Difference between 2005 and year significant at p<0.05

Table 3: Smoking among 16-17 year olds across survey years

Survey Year	1984 %	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	p value*
Boys								
Smoked in the past 12 months	53.7 ^a	43.1 ^b	43.6 ^b	47.4 ^a	46.3 ^b	39.2	29.6	p<0.001
Smoked in the past 4 weeks	39.7 ^a	31.1 ^a	27.8 ^b	29.3 ^b	30.4 ^b	23.1	16.8	p<0.001
Smoked in the past 7 days (current smoker)	35.7 ^a	27.2 ^b	24.5 ^c	25.7 ^b	23.7 ^c	19.2	14.2	p<0.001
Smoked on 3 or more days	28.7 ^a	20.6 ^a	19.8 ^b	18.5 ^b	15.6 ^c	13.9	9.1	p<0.001
<i>Mean cigarettes smoked per wk[‡]</i>	36.0	38.6	39.2	28.7	27.0	31.8	25.1	p<0.05
Girls								
Smoked in the past 12 months	53.7 ^b	51.3 ^c	51.7 ^b	53.1 ^b	42.9	42.6	35.1	p<0.05
Smoked in the past 4 weeks	40.8 ^b	35.9 ^c	33.9 ^c	36.1 ^c	29.1	24.2	19.8	p<0.05
Smoked in the past 7 days (current smoker)	37.6 ^a	29.7 ^c	27.7	31.9 ^b	23.4	18.6	15.3	p<0.001 ^a
Smoked on 3 or more days	27.0 ^b	21.8 ^b	20.3 ^c	22.3 ^c	13.0	13.8	9.3	p<0.05
<i>Mean cigarettes smoked per wk[‡]</i>	37.1	28.2	36.4	36.1	19.7	31.9	23.0	p<0.01
All Students								
Smoked in the past 12 months	53.7 ^a	47.1 ^a	47.6 ^a	50.3 ^a	44.6 ^b	41.4	32.3	p<0.001
Smoked in the past 4 weeks	40.2 ^a	33.5 ^a	30.8 ^b	32.8 ^a	29.7 ^b	23.8	18.4	p<0.001
Smoked in the past 7 days (current smoker)	36.6 ^a	28.4 ^a	26.1 ^b	28.8 ^a	23.6 ^c	18.8	14.8	p<0.001
Smoked on 3 or more days	27.9 ^a	21.2 ^a	20.0 ^a	20.4 ^a	14.3	13.8	9.1	p<0.001
<i>Mean cigarettes smoked per wk[‡]</i>	36.6 ^c	33.3	37.8 ^c	32.0	23.6	31.6	24.4	p<0.001

[‡] Unweighted data for current smokers who smoke less than 40 cigarettes per day

* Main effect of year significant at: p<0.001, p<0.01, p<0.05

^a Difference between 2005 and year significant at p<0.001

^b Difference between 2005 and year significant at p<0.01

^c Difference between 2005 and year significant at p<0.05

Likelihood of Future Smoking

Students were asked to indicate the likelihood that they would be smoking in 12 months time, by choosing a number between 1 ('Extremely unlikely to smoke') and 7 ('Extremely likely to smoke'). In 2005, the mean score, was 1.45 (SD=1.01) for 12-15 year olds, and 1.77 (SD=1.39) for 16-17 year olds. These scores are significantly lower, for both age groups, than that reported in 2002, (1.82 (SD=1.38) and 2.02 (SD=1.54), respectively), (t(3916)=-9.5, p<0.001); (t(1504)=-3.3, p<0.01).

Smoking Behaviour by Social and Demographic Indicators

The following analyses explore the 2005 data in detail, including social influences known to influence smoking, demographic influences and other smoking-related behaviour such as brand preference and source of cigarettes. Data have been broken down and analysed in 3 age groups; 12-13 year olds, 14-15 year olds, and 16-17 year olds. Where appropriate, data have been compared to reported prevalence observed in 2002.⁴

Parental and Social Influence

Overall, 44% of students who smoked had a mother who smoked (28% of whole sample), and 49% of students who smoked had a father who smoked (30% of whole sample), 54% of students who smoked (who had siblings) had a sibling who smoked (19% of whole sample who had siblings), and 86% of students who smoked had one or more close friends who smoked (32% of whole sample). Of households containing at least one current smoker (mother, father, sibling or self-reported smoker; n=1141) 72% of students reported having a total smoking ban inside the home (smoking allowed outside house); 6% had partial smoking restrictions, 19% had no smoking restrictions, and 3% did not know.

Table 4 shows that for each age group, students who smoked were significantly more likely to have a mother, father, sibling or close friend who smoked than those who did not have these parental or social influences.

For students aged 12-13 years and 14-15 years, those with total smoking restrictions in the home were significantly less likely to smoke than those with partial or no household smoking restrictions (combined).

Table 4: Smoking prevalence (smoked in the past week) and familial and social influences

Age Group	12-13 year olds % (n smokers)	14-15 years old % (n smokers)	16-17 years old % (n smokers)
Maternal influence			
Mother smokes	5.0 (16) ^b	11.1 (30) ^a	23.0 (42) ^a
Mother does not smoke	1.5 (10) ^b	4.8 (35) ^a	11.1 (66) ^a
Paternal influence			
Father smokes	4.7 (15) ^b	11.1 (32) ^a	23.4 (47) ^a
Father does not smoke	1.7 (11) ^b	4.4 (31) ^a	10.4 (59) ^a
Influence of sibling			
Sibling(s) smoke(s)	7.7 (11) ^a	16.2 (32) ^a	28.9 (89) ^a
Sibling(s) do(es) not smoke(s)	1.5 (12) ^a	4.4 (33) ^a	10.2 (59) ^a
Influence of close friend(s)			
One or more close friends smoke	13.7 (17) ^a	15.6 (56) ^a	24.4 (95) ^a
Close friend(s) do(es) not smoke(s)	1.0 (9) ^a	1.3 (8) ^a	2.6 (10) ^a
Household smoking restrictions			
Partial / no smoking restrictions	7.0 (13) ^a	11.2 (20) ^b	17.2 (25)
Total smoking restrictions	1.5 (11) ^a	5.4 (42) ^b	13.1 (79)

^a Difference within age group significant at p<0.001

^b Difference within age group significant at p<0.01

^c Difference within age group significant at p<0.05

Socio-Demographic Indicators

Table 5 presents smoking prevalence rates by socio-demographic and geographic variables. Among older students, school denomination ($\chi^2=6.1$, $df=2$, $p<0.05$) and area of residence ($\chi^2=4.4$, $df=1$, $p<0.05$) predicted smoking status. This does not control for the well-established relationship between socio-economic status and smoking status. Higher weekly disposable income was also a significant predictor of smoking behaviour, in all age groups, as was having lower self-reported ability at school. These findings are consistent with 2002 results.

Table 5: Smoking prevalence (smoked in the past week) and socio-demographic influences

Age Group	12-13 year olds % (n smokers)	14-15 years old % (n smokers)	16-17 years old % (n smokers)
Gender			
Male	3.0 (16)	5.3 (28)	14.2 (56)
Female	2.4 (12)	8.0 (40)	15.3 (61)
School denomination			
Government	3.7 (25)	7.1 (46)	17.0 (80) ^c
Catholic	1.0 (2)	7.0 (14)	13.2 (21)
Independent	1.2 (2)	4.4 (8)	9.3 (15) ^c
Area of Residence			
Rural	2.8 (8)	7.2 (23)	18.1 (54) ^c
Metropolitan	2.7 (20)	6.5 (44)	12.7 (60) ^c
Weekly Disposable Income			
More than \$40	9.5 (9) ^a	10.5 (22) ^{a,b}	19.7 (77) ^c
\$21-\$40	4.7 (5)	10.4 (20) ^{a,b}	11.4 (18) ^c
Less than \$20	1.8 (15) ^a	4.0 (25) ^a	8.8 (21) ^c
Self-Reported Ability			
Below Average	7.4 (4)	18.1 (13) ^a	35.0 (14) ^{a,b}
Average	3.5 (21) ^b	8.0 (44) ^a	16.8 (76) ^b
Above Average	0.8 (3) ^b	2.3 (9) ^a	8.8 (26) ^{a,b}
Total	2.7 (28)	6.6 (68)	14.7 (117)

^a Difference within age group significant at $p<0.001$

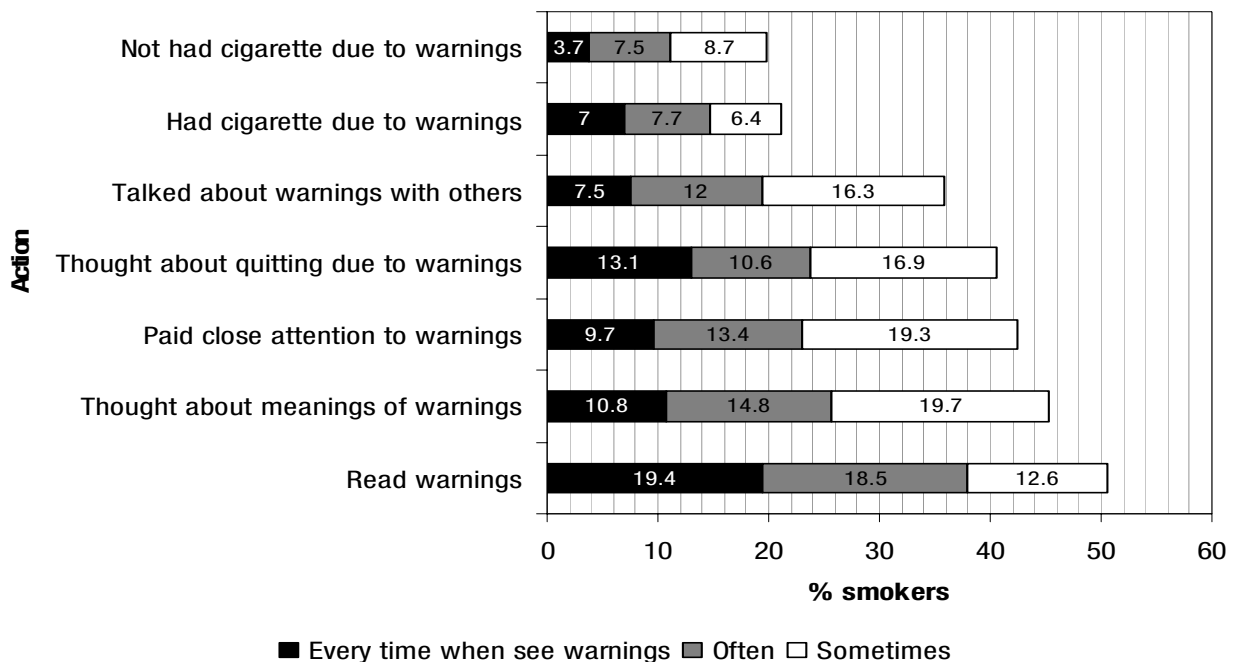
^b Difference within age group significant at $p<0.01$

^c Difference within age group significant at $p<0.05$

Cigarette pack warnings

Students who had smoked in the past week (current smokers) were asked if cigarette pack warnings affected their smoking behaviour in any way. Figure 4 below shows that just over half of smokers read the warnings on the cigarette packets (51%). A large proportion of smokers 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, and talked about the warnings with others.

Figure 4: Overall effects of cigarette pack warnings on smoking behaviour of current smokers



There was a significant difference between age groups for students not having a cigarette due to the pack warnings, such that significantly more 12-13 (28%) and 14-15 year old students (28%) did not have a cigarette when compared to 16-17 year old students (13%) ($\chi^2=6.5$, $df=2$, $p<0.05$). Significantly more male students (28%) reported actively smoking a cigarette either “sometimes / often / always” as a result of the pack warnings when compared to females (15%) ($\chi^2=4.3$, $df=1$, $p<0.05$). In contrast, significantly more male students (30%) also reported *not* having a cigarette at “sometimes / often / always” due to the pack warnings when compared to females (11%) ($\chi^2=9.9$, $df=1$, $p<0.01$).

Brand Preference

Students who were classified as current smokers (i.e. smoked in the past 7 days), were asked to name the brand they usually smoked. Multiple responses were accepted. Figure 5 shows the ten most frequently reported cigarette brands smoked in 2005. Similar to findings from previous years, Escort was the most popular brand among South Australian school children (55%), followed by Benson & Hedges (15%).

Brand preference did not change markedly from 2002. The top ten preferred brands changed order of preference but remained the same ten brands. The proportion of students preferring Escort decreased slightly from 2002 (57%) to 2005 (55%).

Figure 5: Brand preference among current smokers (smoked in the past 7 days) aged 12-17 year olds

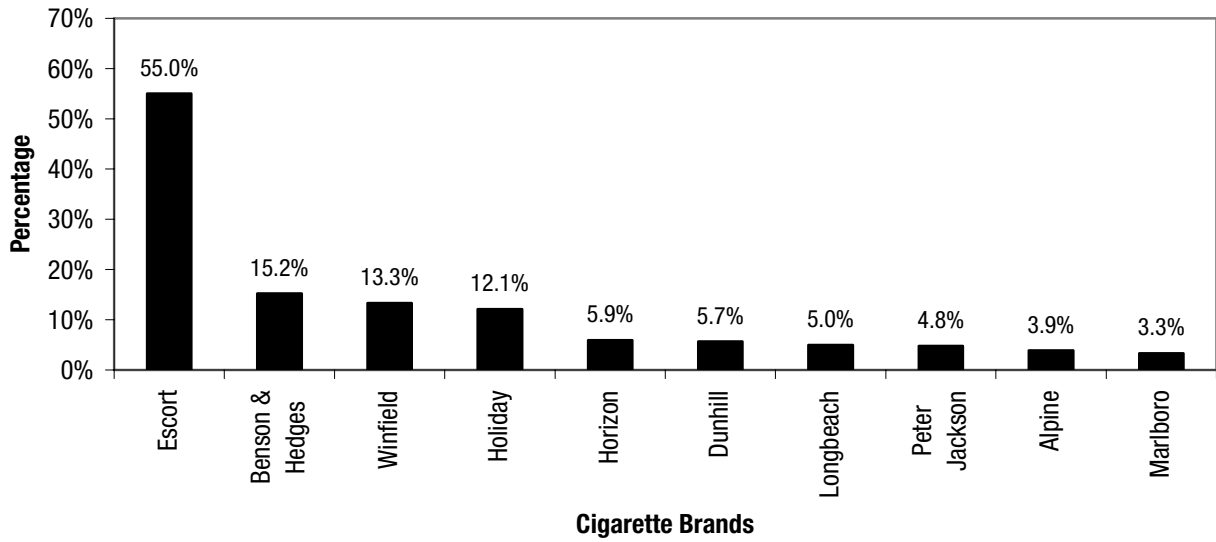


Table 6 presents brand preference between groups based on sex, age and area of residence for the top six most popular brands only. There was a significant gender difference for the brand Holiday, such that significantly more females preferred this brand ($\chi^2=9.9$, $df=1$, $p<0.001$). A significant age group difference for the brand preference of Horizon existed such that younger students (12-13 and 14-15 year olds) preferred this brand more than 16-17 year olds ($\chi^2=11.3$, $df=2$, $p<0.01$). Students in the 14-15 year age group reported more diversity in their brand preference, as shown by preference levels above 10% for 5 out of the 6 brands listed, compared to students in the other age groupings who reported brand preference over 10% for only 3 out of the 6 brands listed.

Students in rural areas were more likely to smoke Escort cigarettes than students in metropolitan areas ($\chi^2=13.9$, $df=1$, $p<0.001$), which also reflects findings from the 2002 survey.

Table 6: Brand preference among current smokers (smoked in the past 7 days) in different socio-demographic groups

	n	Escort %	Benson & Hedges %	Winfield %	Holiday %	Horizon %	Dunhill %
Sex							
Males	92	52.1	20.1	16.4	4.0 ^a	6.8	7.4
Females	111	57.4	11.1	10.8	18.9 ^a	5.1	4.3
Age Group							
12-13 year olds	26	49.1	8.2	0.0	19.2	13.0 ^b	0.0
14-15 year olds	65	54.5	14.7	17.7	12.9	11.8 ^b	3.1
16-17 year olds	112	56.7	17.0	13.8	10.1	0.8 ^b	8.5
Area of Residence							
Metropolitan	120	45.0 ^a	19.3	12.0	13.1	7.3	6.1
Rural	81	71.2 ^a	9.6	15.7	9.9	4.0	4.6

^a Difference within 'brand' group significant at $p < 0.001$

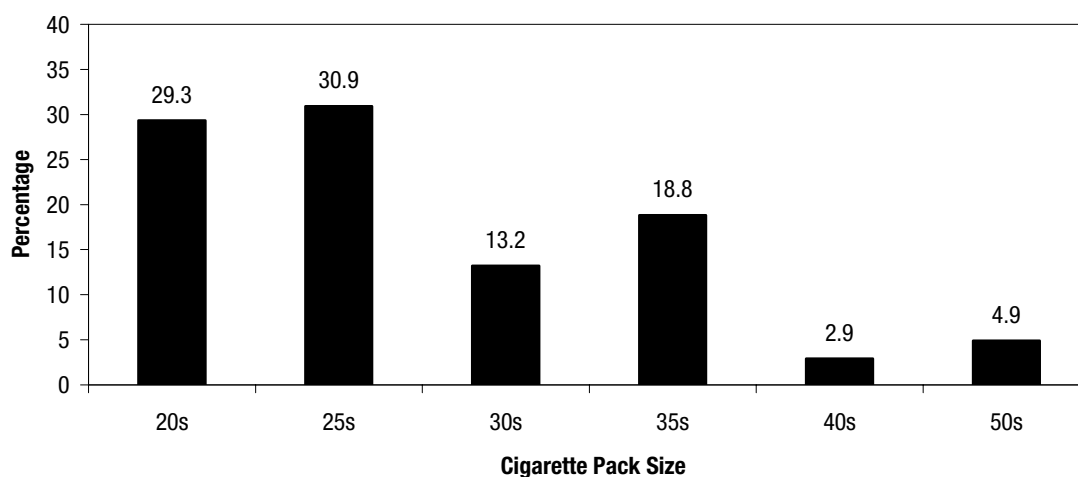
^b Difference within 'brand' group significant at $p < 0.01$

^c Difference within 'brand' group significant at $p < 0.05$

Cigarette pack size

Students who had smoked in the past week (current smokers) were 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, with Escort also available in packets containing 35 cigarettes. Figure 6 below shows that the most popular pack size amongst current smokers contained 25 cigarettes (31%). These data obviously relate to brand preference. Only a limited number of the most popular brands, Longbeach, Horizon and Holiday, are actually available in pack sizes of 40 or more.

Figure 6: Cigarette pack size preference amongst current smokers



Source of Cigarettes

Students who had smoked in the past week were asked to indicate from where they had acquired their last cigarette.

Table 7 shows that 19% of students had purchased their last cigarette, and 81% reported acquiring it by other means. Among students who purchased their last cigarette, and consistent with findings from 2002, the most common place of purchase was a petrol station. The second most frequent source of purchase in 2005 was a supermarket as reported in 2002. Among students who did not buy their last cigarette, most were given the cigarette by friends or got someone else to buy them for them, as in 2002 also.

The proportion of students who purchased or bought their last cigarette was not significantly different from 2002 proportions. Any changes in reported acquisition of last cigarette is necessarily accompanied by an exact increase in the proportion of students who report getting their cigarette from another source.

Table 7: Source of last cigarette (data collected from current smokers only) in 2005

(n=196)			
Bought (total) :	19.1%	Not Bought (total) :	80.9%
Petrol Station	5.4%	Given by friends	48.7%
Supermarket	3.7%	Got someone else to buy for them	14.6%
Milk Bar/delicatessen	2.5%	Given by parents	10.3%
Newsagency	2.2%	Given by brother or sister	3.4%
Bottle Shop	1.2%	Took from home (without permission)	2.3%
Tobacconist	1.2%	Other adult	1.0%
Convenience Store	1.1%	Found it or stole it	0.6%
Internet	0.7%		
Other	0.6%		
Friends	0.5%		

The likelihood that students bought their own cigarettes varied significantly by age and weekly disposable income, but not by gender or area of residence. In 2005, older students in the 16-17 year age group were more likely (25%) to have purchased their last cigarette compared to 12-13 year olds (14%) and students in the 14-15 year age group (8%) ($\chi^2=8.0$, $df=2$, $p<0.05$). There were no age or gender differences for students reporting that their friends gave them their last cigarette.

Students with a disposable income of greater than \$40 per week were more likely to purchase their last cigarette (26%) compared to those with less than \$20 per week (16%) or those with between \$21 and \$40 per week ($\chi^2=8.6$, $df=2$, $p<0.05$). Further analysis revealed that this effect was compounded by age, such that when age was controlled for the association between available spending money and source of last cigarette was not significant.

Amongst current smokers, 16% (n=33) reported that they had bought cigarettes, not in a full packet, in the past four weeks with most (67%) stating that they had purchased it from a friend or a relative. Over a quarter (30%) had bought it from someone else, with 3% reporting that they had purchased it from a shop. Significantly more younger students (12-13 year old and 14-15 year olds) compared to older students (16-17 year olds) reported having purchased a single cigarette in the past four weeks ($\chi^2=6.4$, $df=2$, $p<0.05$). The overall proportion of current smokers, aged 12–17 years, who report purchasing single cigarettes has remained stable and has not changed since 2002.

Among current smokers, 4 students (9%) reported that they bought their last cigarette from a vending machine. The proportion of students buying their last cigarette from a vending machine has not changed significantly since 2002 (4% of current smokers).

Lessons about smoking

Students were asked whether they had received any lessons at their school about smoking in the year prior to the survey. Overall 87% of all students reported receiving at least part of one lesson about smoking in the past year. Specifically, 19% said that they received part of one lesson, 23% said that they received one whole lesson, and 45% said that they had received more than one lesson.

Table 8 shows that a significantly higher proportion of younger students, aged 12-13 years and 14-15 year olds, received at least one lesson about smoking in the past year, compared to older students (16-17 year olds) ($\chi^2=151.4$, $df=2$, $p<0.001$).

Students enrolled in Catholic and Independent schools were more likely to have received at least one lesson about smoking than those from Government schools ($\chi^2=21.7$, $df=2$, $p<0.001$).

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

There was an overall significant increase in the proportion of the total sample that received at least one lesson about smoking in 2005 (68%) compared to 2002 (63%) ($\chi^2=14.3$, $df=1$, $p<0.001$).

Table 8: Received at least one lesson about smoking in the past year (valid percent)

	% received one lesson	n
Age Group		
12-13 years	76.6 ^{ab}	1022
14-15 years	72.1 ^{ab}	1022
16-17 years	50.6 ^a	783
School Denomination		
Government	64.9 ^{ac}	1767
Catholic	75.1 ^a	550
Independent	69.9 ^c	509
Gender		
Males	66.7	1432
Females	68.9	1394
Area of Residence		
Metropolitan	68.1	1861
Rural	67.2	894
Total	67.8	2826

^a Difference between-groups significant at $p<0.001$

^b Difference between-groups significant at $p<0.01$

^c Difference between-groups significant at $p<0.05$

Knowledge of health effects of smoking

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 9. Student knowledge was high around tobacco-related circulatory problems (over 90%), lung cancer and other well-publicised health effects. Knowledge was consistently and significantly lower among smoking than non-smoking students. These significant differences persisted after controlling for students having received lessons or partial lessons on tobacco and smoking, age, sex and school denomination.

Table 9: Knowledge regarding health effects of smoking (% correct)

Question	Current smoker (smoked in past 7 days)	Non-smoker	All students	p value
Smoking clogs your arteries	90.2	95.9	95.5	p<0.001
Smoking causes lung cancer	89.1	95.9	95.4	p<0.001
Smoking harms unborn babies	90.4	95.6	95.1	p<0.01
Smoking is addictive	87.3	94.8	94.2	p<0.001
Smoking increases risk of heart attack	85.3	93.8	93.1	p<0.001
Smoking doubles your risk of stroke	85.5	93.7	93.0	p<0.001
Tobacco smoke is toxic	81.9	90.7	90.0	p<0.001
Smoking can cause emphysema	83.2	90.7	89.9	p<0.01
Smoking is a leading cause of death	75.6	89.7	88.7	p<0.001
Smoking can cause mouth cancer	75.3	83.8	83.1	p<0.01
Smoking can cause blindness	71.9	82.6	81.7	p<0.01
Smoking can cause diseases in your toes and fingers	55.3	67.9	66.7	p<0.01
Smoking can cause arthritis*	46.1	58.4	57.4	p<0.01

Note: Responses recorded for answers "Strongly agree" and "Agree"

* Control question

DISCUSSION

Survey results revealed that in 2005 (as with previous years), any experience of smoking and regular smoking increased significantly between the ages of 12 and 17 years. While some gender differences presented themselves, as in previous years, there were no statistically significant differences in current smoking by gender. Despite the lack of statistical significance, rates of current smoking appear higher in 14, 15 and 16 year old girls than boys. By 17 this trend has disappeared. The higher rate of occasional or experimental smoking among females has been a pattern observed for a number of years, indicating that girls' start smoking at younger ages than boys but there has never been and remains no evidence of higher rates of smoking in girls into later adolescence or adulthood.⁶ In contrast to previous surveys, males (who smoke regularly) no longer reported smoking more cigarettes per week than females at any age.

Overall, comparison of the 2005 results with previous years' surveys demonstrated continued progress in smoking rates in South Australian school students. Significant decreases were maintained or improved since 1984. Among the 12-15 year age group there were significant decreases in the proportions of students who reported that they had tried smoking in the past year, past month, past week, and who had smoked on 3 or more days in the past week. In the 16-17 year age group, there were no significant decreases from rates reported in 2002 for any recency period.

The predictive influence of parental smoking on youth smoking has been well-established.⁷ In this study, familial smoking was observed to influence smoking behaviour in students of all ages. If the student's mother or father was a smoker, they were more likely to be a current smoker themselves. Also, if the student had a sibling or a close friend who smoked, they were more likely to be a current smoker. Household smoking bans may also influence adolescent smoking. This study only observed a significant relationship between household smoking bans and student smoking among 14-15 year olds. Despite household smoking restrictions being voluntary, a large proportion of families (with at least one current smoker) were reported to have them in place (70% total bans, 8% partial bans).

There are many likely contributors to the observed decline in adolescent 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 and elsewhere.^{8,9}

Quit SA continued to deliver effective adult targeted, cessation focussed mass media campaigns. In the three years since the previous survey, amendments to the South Australian *Tobacco Products Regulation Act 1997* led to phased-in 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. Licensed bars and gaming rooms were provided with a 3-year phase-in period, ending in October 2007. Both adult targeted cessation campaigns and smoke-free laws have been shown to correlate with reduced adolescent smoking rates.⁸⁻¹⁰ In addition, Quit SA and a number of community agencies have delivered youth-focussed tobacco control interventions during this time.

New graphic cigarette packets had not been implemented at the time of this survey; however the effect of 10 year old text-based warnings on current smokers was examined as a baseline. There was evidence of some impact with over half of the students read the warnings, paid close attention to the warnings and/or thought about their meanings. Over 40% thought about quitting due to the warnings. Younger students reported to have purposely not smoked due to pack warnings.

In terms of the still unacceptably high rates of smoking observed in this survey no new patterns have emerged. Like patterns among adults, smoking prevalence in young people varies with

sociodemographic measures such as area of residence, school denomination (likely to be a function of socioeconomic status) and self-reported ability at school.

The finding observed in previous surveys, persisted that students with less available money to spend were significantly less likely to be current smokers, suggesting that price may be prohibitive, consistent with research about the higher price flexibility of children.¹¹

Although most students reported that they received at least one full lesson about tobacco and smoking in the year prior to the survey, just under one-third (32%) of students reported not receiving a whole tobacco lesson. Older students, (the group with the highest prevalence of current tobacco use) were also least likely to report having any tobacco content in their lessons. Students enrolled in Government schools were significantly less likely to have received at least one lesson about smoking in the year prior to the survey, compared to students enrolled at Independent or Catholic schools and significantly more likely to smoke.

Basic student knowledge about the harms of tobacco was high for both current smokers and non-smokers; but higher among non-smokers (after controlling for age, sex, school type, and previous lessons on tobacco), such that significantly more non-smokers answered the questions relating to tobacco harms correctly when compared to 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.¹² 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 very least promote informed consumer decision-making. This should also include structural support for schools to implement policies, which maintain smoke-free environments and empower schools to manage student smoking behaviour in a constructive manner. In South Australia there have been a number of school-based tobacco control programs and resources which have specifically targeted young people and school community members.

Consistent with results from the 2002 survey, Escort and Benson & Hedges have remained the 2 most popular cigarette brands amongst South Australian school students, an effect which is unusual to South Australia and which has persisted since the time of the Escort Cup pre-season football.

When asked about where they got their last cigarette, a similar proportion of students in 2005 (19%) reported purchasing or buying the cigarette, compared to proportions reported in 2002 (23%), and a higher proportion of students reported that they obtained their last cigarette from other sources (81%), such as friends, family members, or they got someone else to buy it for them. Purchase of last cigarette was higher with increasing age. While a minor decrease in reported incidence of students buying their own cigarettes is encouraging, a large proportion of underage students were still being sold cigarettes illegally. Obviously, compliance by retailers, especially in petrol stations, needs to be continuously monitored, other sources of supply emerge as purchase declines.

In conclusion, the progress observed in declining smoking rates overall is encouraging and matches declines seen in adult populations. The key to continued progress is comprehensive and sustained tobacco control combining 'adult' focussed strategies' known to impact on young people such as mass-media campaigns, smoke-free public places laws, regulation of price, advertising, display and sale. In addition, specific young people targeted strategies such as comprehensive support for schools and other relevant activities also have a role to play.

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