

**National Year 10 ASH Snapshot Survey, 1999-2008: Trends in
tobacco use by students aged 14-15 years**

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**On behalf of Action on Smoking and Health, Health Sponsorship Council and the
Ministry of Health**

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Table of Contents

Acknowledgements	2
Table of Contents	3
Summary	5
Introduction	6
Method	6
Survey	6
Data Analysis	7
Results	8
Sample Characteristics	8
Overall Results	9
Trends by Sex	11
Trends by Ethnicity – Girls	14
Trends by Ethnicity – Boys	15
Pasifika in detail	17
Asian in detail	19
Trends by School Decile – Girls	20
Trends by School Decile - Boys	22
Trends in Student Smoking by Parental Smoking and Smoking in the home	24
Trends in Parental Smoking and Smoking in the Home as reported by Students	25

Trends by District Health Board (DHB).....	26
Discussion.....	27
Strengths and limitations.....	28
Conclusion	28
References.....	29
Additional Tables.....	30

Summary

The Year 10 Snapshot Survey is a short census style (all schools with Year 10 students are invited to participate) survey completed by Year 10 students across New Zealand. This survey is a component of the New Zealand Youth Tobacco Monitor. The responses of 30,702 14-15 year old New Zealanders are analysed in this report. This represents about half of all New Zealand Year 10 students.

- Daily and regular smoking prevalence continue to decrease but not as rapidly in recent years compared to 2003-2005.
- Daily smoking prevalence amongst New Zealand 14-15 year olds is 7%
- Regular (daily, weekly or monthly) smoking prevalence amongst New Zealand 14-15 year olds is 12%.
- The number of students who reported that they have never smoked in 2008, not even a puff, is 61% which has increased from 57% in 2007.
- The likelihood of a student being a smoker in 2008 (about 1 in every 14) is significantly lower compared to 2004 (about 1 in every 10).
- Daily smoking prevalence for boys is 6% and is lower than daily smoking prevalence for girls (8%).
- Daily and regular smoking prevalence continue to decline for girls of all ethnic groups, except Asian who have the lowest smoking prevalence (regular 2 percent)
- Comparing ethnicities, Māori girls have the highest smoking prevalence (regular 22%) and Asian girls have the lowest smoking prevalence (regular 2%).
- Comparing ethnicities, Māori boys have the highest smoking prevalence (regular 18%) and Asian boys have the lowest (regular 3%).
- Prevalence of regular smoking declined in 2008 compared to 2007 for Māori, Pasifika and Asian boys but not New Zealand European/other ethnicities boys.

In general, smoking rates continue to decline but the rate of decline has slowed. The reduction in smoking rates which occurred from 2006-2008 is smaller than the reduction which occurred from 2003-2005. New effective policy and regulations are essential to keep reducing smoking uptake by New Zealand teenagers.

Introduction

New Zealand has been a leader in tobacco control and smoking prevalence and consumption have declined steadily in the past 10 years. Nevertheless smoking remains the single biggest cause of preventable illness and death in New Zealand. Approximately 5000 deaths per annum are attributable to smoking. More than 700,000 New Zealanders smoke on a regular basis¹ and people generally begin smoking as teenagers (14.5 years is the average).

The National ASH Year 10 Snapshot survey, which monitors 14-15 year old students, has been conducted in New Zealand since 1999. This survey measures smoking prevalence and key factors associated with smoking uptake for this age group from 1999 to 2008. Trends in the percentage of students who've never smoked, percentage of students who smoke daily or regularly, *i.e.* daily, weekly and monthly, trends in the percentages of students who report smoking is allowed in the home or parental smoking are reported by gender, ethnicity, school decile and District Health Board (DHB).

Method

Survey

Annual national surveys of tobacco smoking by Year 10 (predominantly 14-15 year old) students have been carried out yearly since 1999.² Each year, all New Zealand schools with Year 10 students have been invited to participate in the survey. The survey includes demographic questions (age, gender and ethnicity) and questions about smoking and factors influencing smoking. The annual school response rate was 67% in 2002 ($n = 309$), 66% in 2003 ($n = 312$), 65% in 2004 ($n = 319$), 58% ($n = 278$) in 2005, 57% ($n = 291$) in 2006, 47% ($n = 241$) in 2007 and 54% ($n = 288$) in 2008. School principals gave permission for teachers to supervise students while they completed the anonymous self-administered questionnaires in class. To maintain confidentiality, teachers did not examine the surveys for completeness.

Students answered a two-page questionnaire, which included questions on age, sex and

ethnicity (self-assigned). Students may choose more than one ethnic group, therefore a priority system was used to classify any student choosing Māori as such, then any Pasifika student as such, followed by any Asian student as such, followed by European then Other. This order of prioritisation is also used for reporting of results from the New Zealand Tobacco Use Survey.¹ Students answered whether their mother, father or best friend smoked. School decile is used as an estimate of socio-economic status (SES). Decile-1 schools comprise the 10% of New Zealand schools with the highest proportion of students from low-SES communities, whereas decile-10 schools are the 10% of schools with the lowest proportion of those students.³ Most schools have rigorously maintained zones so the numbers of students that live in different areas or that might have a different socio-economic status compared to the school decile are low.

With regard to their own smoking status, students were asked, “Have you ever smoked a cigarette, even just a few puffs?” Another question asked, “How often do you smoke now?” Those who answered “no” to both questions were classified as never smokers or students who’ve never smoked, while those who answered, “yes” to the first question and “no” to the second were classified as experimenters. Categories of smoking were *at least once a day, at least once a week, at least once a month, less often than once per month*. Students who reported smoking daily, weekly or monthly are termed regular smokers or students who smoke regularly.

The total number of completed questionnaires returned by schools was 31,188 in 2008 and 312,273 during the whole 9-year period. Analyses were restricted to students who were 14 and 15 years old and who provided information on age, sex, ethnicity and smoking status (30,702).

Data Analysis

Smoking prevalence, smoking in the home and parental smoking data as reported by students from consecutive annual surveys of Year 10 students are presented as tables of percentages and number in the total sample (N) by sex, ethnicity, decile and DHB. To facilitate comparison of changes over time between subgroups some data is also

presented as graphs with robust 95% confidence intervals calculated taking into account clustering of data by school (STATA 10 IC). Daily, weekly, monthly, less than monthly, regular smoking (daily, weekly or monthly), experimenter and never smoked prevalence is reported for all students and by gender. Daily, regular and never smoked prevalence is reported for all other subgroups.

Relative changes in smoking behaviour are expressed as odds ratios (OR) adjusted for confounders such as age, sex and ethnicity (Mantel-Haenszel, STATA 10). For example, the odds of daily smoking is the proportion of daily smokers (ds) divided by the proportion that is not daily smokers (1-ds).

This report examines trends in smoking or non-smoking rates so the odds ratios will be in one instance the odds of daily smoking in 2008 divided by the odds of daily smoking in 2004. If the odds ratio is less than one e.g. 0.53 then the odds of daily smoking in 2008 are about half the odds of daily smoking in 2004 and therefore risk of a student being a daily smoker is reduced in 2008. If the odds ratio is more than 1 *e.g.* 2.0 then the odds in 2008 are double the odds in 2004 and hence the risk has increased in 2008. Odds ratios can be used to compare the increases or decreases in trends in the various different groups. Previous reports compared current results with 1999; most of this year's results were compared with 2004 in order to focus on trends subsequent to the introduction of the Smokefree Environments Amendments Act 2003.

Results

Sample Characteristics

There were about 61,485 Year 10 students in 2008.⁴ The responses of 30,702, 14-15 year olds included in the 2008 analysis, represents about 50% of the total Year 10 population. Males are slightly under represented in the sample (Table 1). Māori are underrepresented while NZ European, Pasifika and Asian students are over-represented in the sample.

Table 1. Comparison of the sample with the National Year 10 Population

Demographic Group	ASH Year 10 Snapshot 2008 Sample (%)	2008 National Year 10 Population (%)
Female	49	48
Male	51	52
NZ European	59	58
Māori	20	22
Pasifika	10	9
Asian	11	8
Other	1	3

Low decile schools are slightly underrepresented in the sample from deciles 1-3 and medium decile schools (4-7) are slightly over-represented. The proportion of high decile schools in the sample matches the national proportion of high decile schools. All DHBs are represented in the sample.

Overall Results

The proportion of students who smoke daily (7%) in 2008 continues to decline (Table 2a). The proportion of students who've never smoked has also increased. In 2008, 61% of students reported never having smoked a cigarette, slightly up from 57% in 2007. The percentage of students who smoke daily is higher than the percentages of students who smoke weekly (3%), monthly (3%) and less than monthly (5%). Twenty two percent of students had experimented with smoking in 2008. The odds of a student smoking regularly, intermittently (<monthly) or experimenting with smoking are significantly lower in 2008 compared to 2004 (Table 2b) after adjusting for age, sex and ethnicity. However, the relative decrease in daily smoking (15%) in the period 2006-2008 is almost half that of the relative decrease (25%) which occurred from 2003-2005.

Table 2a. Overall percentages of tobacco smoking or never having smoked amongst 14 -15 year olds from 1999 -2008

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total (N)	29,032	29,330	29,398	29,285	32,927	31,921	32,761	33,556	25,921	30,702
<i>Smoking</i>	%	%	%	%	%	%	%	%	%	%
Daily	15.6	15.2	13.5	12.4	12.1	9.8	9.0	8.2	7.3	6.9
Weekly	6.7	6.3	5.7	4.7	4.3	4.0	3.6	3.3	3.0	2.6
Monthly	6.3	6.4	5.6	4.9	4.3	3.8	4.1	2.8	2.5	2.5
Regular*	28.6	27.9	24.8	22.1	20.7	17.6	16.8	14.2	12.8	12.0
<Monthly	14.3	13.5	14.8	11.2	10.1	7.7	7.7	6.3	5.9	5.4
<i>Not smoking</i>										
Experimented▲	25.5	25.5	24.5	28.3	26.8	27.7	26.1	25.7	24.1	22.1
Never smoked	31.6	33.0	35.9	38.4	42.5	47.0	49.4	53.7	57.2	60.5

* Is percent who smoke daily plus weekly plus monthly

▲ Is those who have tried smoking but do not currently smoke

Table 2b: Table of odds ratios comparing 2008 with 2004 adjusted for gender, age and ethnicity.

Smoking Category	OR	95% CI	p
<i>Smoking</i>			
Daily	0.66	0.62 – 0.70	<0.001
Weekly	0.63	0.58 – 0.69	<0.001
Monthly	0.66	0.60 – 0.72	<0.001
<Monthly	0.70	0.65 – 0.74	<0.001
Regular	0.62	0.59 – 0.65	<0.001
<i>Not smoking</i>			
Experimenter	0.77	0.71 – 0.76	<0.001
Never Smoked	1.83	1.77 – 1.89	<0.001

Trends by Sex

Percentages of daily, weekly, monthly and less than monthly smoking continue to be higher amongst girls compared to boys (Table 3a,). Significantly more girls reported smoking regularly in 2008 compared to boys (OR 1.5, $p < 0.001$, 95% CI 1.4-1.7) after adjusting for age, ethnicity and school decile. Eight percent of 14-15 year old girls are daily smokers compared to about 6% of boys who are daily smokers. The percentages of boys and girls who experimented with smoking but reported not currently smoking in 2008 are similar, boys 23% and girls 22%. The percent of boys who were never smokers in 2008 (63%) has increased since 2007 (59%). The percent of girls who were never smokers in 2008 (58%) has also increased since 2007 (56%). The decrease in smoking rates was higher amongst girls compared to boys from 2004-2008 (OR girls 0.59 95% CI 0.55 – 0.62, OR boys 0.69 95% CI 0.64-0.74, Tables 3b, 3c). Odds of both girls and boys smoking have significantly ($P < 0.001$) decreased in 2008 compared to 2004 adjusting for age, ethnicity and school decile. The odds of never smoking a cigarette have significantly increased in 2008 compared to 2004 for both boys and girls.

Table 3a Prevalence of smoking amongst 14-15 year olds comparing boys with girls

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Boys										
Total (N)	14,468	14,559	14,411	14,349	16,352	15,598	15,718	16,364	12,434	15,028
<i>Smoking</i>	%	%	%	%	%	%	%	%	%	%
Daily	14.1	14.1	11.6	9.9	9.9	8.1	7.2	6.2	6.2	5.8
Weekly	5.2	5.0	4.6	3.6	3.2	2.8	2.7	2.5	2.5	2.0
Monthly	5.4	5.3	4.8	3.8	3.4	2.9	3.0	2.1	1.9	2.0
Regular*	24.7	24.4	21.1	17.4	16.5	13.8	12.9	10.8	10.6	9.8
<Monthly	14.0	13.3	14.7	10.9	9.0	6.5	6.6	5.5	5.4	4.8
<i>Not smoking</i>										
Experimented▲	28.0	27.7	26.6	30.6	28.7	29.9	28.1	26.7	25.2	22.5
Never smoked	33.3	34.6	37.6	41.2	46.0	49.9	52.5	57.0	58.7	63.0
Girls										
Total (N)	14,564	14,793	14,987	14,936	16,575	16,323	17,043	16,590	13,487	15,674
<i>Smoking</i>	%	%	%	%	%	%	%	%	%	%
Daily	17.1	16.3	15.2	14.9	14.2	11.4	10.7	10.1	8.4	7.9
Weekly	8.1	7.6	6.7	5.8	5.5	5.2	4.5	4.0	3.5	3.1
Monthly	7.2	7.5	6.5	6.0	5.2	4.6	5.2	3.5	3.0	3.1
Regular*	32.4	31.4	28.4	26.6	24.9	21.2	20.4	17.6	14.9	14.1
<Monthly	14.7	13.8	14.8	11.5	11.1	8.9	8.7	7.0	6.3	6.0
<i>Not smoking</i>										
Experimented▲	23.1	23.3	22.5	26.2	24.9	25.6	24.3	24.7	23.0	21.8
Never smoked	29.9	31.5	34.3	35.8	39.1	44.3	46.6	50.6	55.7	58.1

* Is percent who smoke daily plus weekly plus monthly

▲ Is those who have tried smoking but do not currently smoke

Table 3b: Table of odds ratios comparing 2008 with 2004 for girls adjusted for age, decile and ethnicity.

Smoking Category	OR	95% CI	p
<i>Smoking</i>			
Daily	0.65	0.60 - 0.70	<0.001
Weekly	0.59	0.52 – 0.66	<0.001
Monthly	0.65	0.57 – 0.73	<0.001
< Monthly	0.66	0.60 – 0.72	<0.001
Regular	0.59	0.55 – 0.62	<0.001
<i>Not smoking</i>			
Experimenter	0.80	0.77 – 0.85	<0.001
Never Smoked	1.88	1.79 – 1.97	<0.001

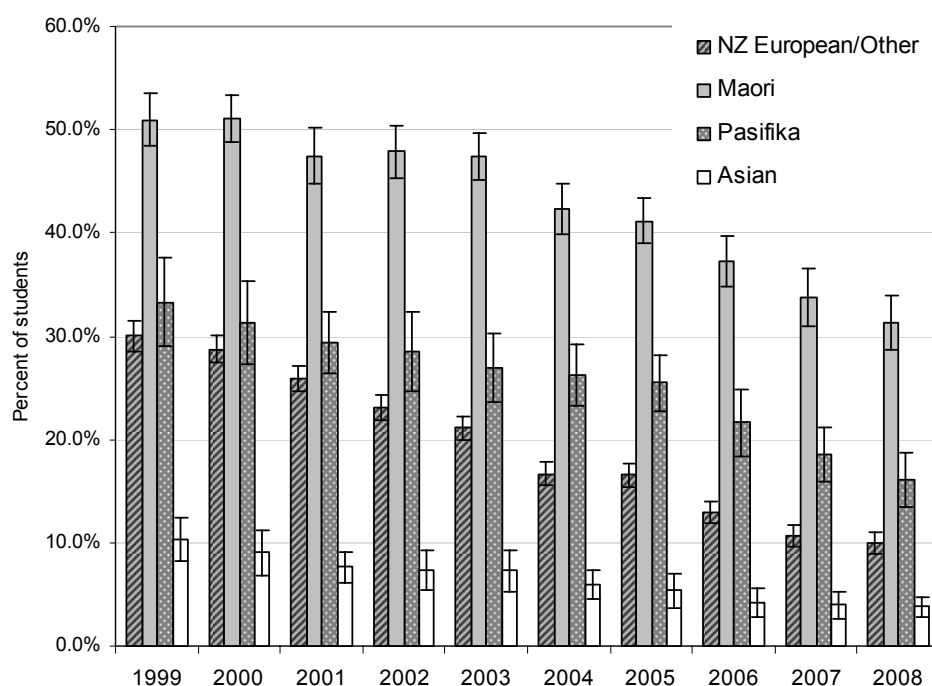
Table 3c: Table of odds ratios comparing 2008 with 2004 for boys adjusted for age, decile and ethnicity.

Smoking Category	OR	95% CI	p
<i>Smoking</i>			
Daily	0.71	0.66 – 0.78	<0.001
Weekly	0.72	0.62 – 0.84	<0.001
Monthly	0.68	0.59 – 0.79	<0.001
< Monthly	0.75	0.68 – 0.82	<0.001
Regular	0.68	0.64 – 0.74	<0.001
<i>Not smoking</i>			
Experimenter	0.69	0.65 – 0.72	<0.001
Never Smoked	1.72	1.65 – 1.81	<0.001

Trends by Ethnicity – Girls

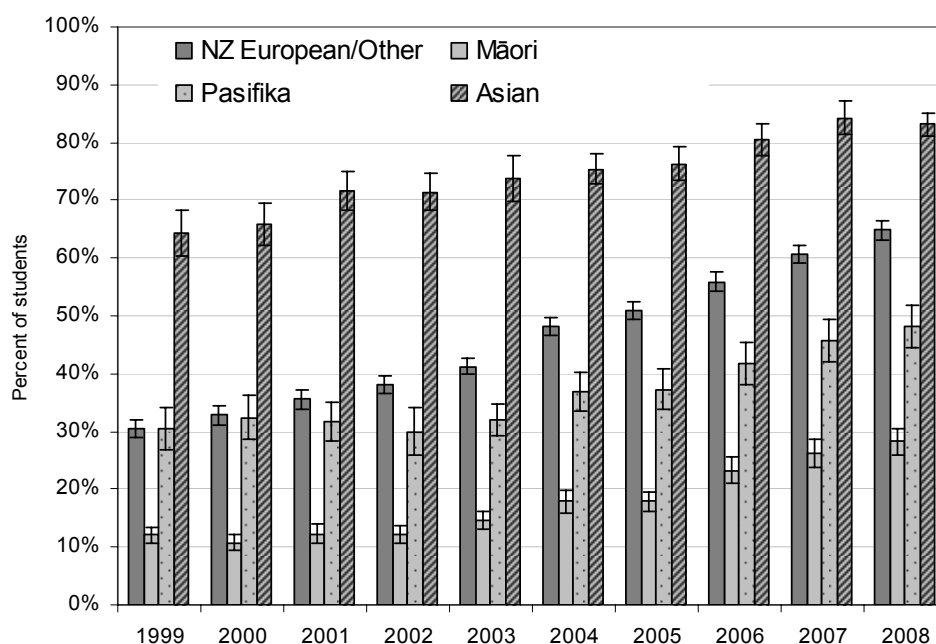
Regular (31%) and daily (22%) smoking rates are highest amongst Māori girls compared to NZ European/Other, Pasifika and Asian girls (Figure 1, Table 6a). Sixteen percent of Pasifika girls, 10% of NZ European/Other and 4% of Asian girls reported smoking regularly in 2008. Daily smoking rates are also highest amongst Māori (22%) compared to other ethnicities. There is also a higher percentage of Pasifika girls who smoke daily (11%) compared to New Zealand European (4%) and Asian girls (2%). Odds of regular smoking have decreased significantly in 2008 compared to 2004 for all ethnicities after adjusting for age and school decile (Table 6b).

Figure 1 Percentage of 14-15 year old girls who smoke regularly by ethnicity from 1999-2008



The percentage of Māori girls who report having never smoked (28%) is less than half the percentage of NZ European/Other girls who've never smoked (65%, Figure 2, Table 4a). Nearly 50% of Pasifika girls reported that they've never smoked and 83% of Asian girls have never smoked. The odds of a girl having never smoked has increased significantly in 2008 compared to 2004 for all ethnicities after adjusting for age and school SES (Table 6b).

Figure 2 Percent of 14-15 year old girls who've never smoked by ethnicity from 1999-2008



Trends by Ethnicity – Boys

Regular (18%) and daily (13%) smoking rates for boys are highest amongst Māori (Figure 3, Table 6d). The percentage of Māori boys who reported smoking daily 2008 has not changed compared to 2007 (Table 6d). Regular and daily smoking rates are also high amongst Pasifika boys compared to New Zealand European and Asian boys. The highest relative decreases in regular smoking rates from 2007-2008 were amongst Pasifika (13%) and Asian boys (43%) and lowest for Māori (7%) and NZ European/Other (5%). Adjusted odds of regular and daily smoking have decreased significantly for Māori, Pasifika and NZ European/Other boys in 2008 compared to 2004 (Table 6c). Adjusted odds of daily smoking in 2008 by Asian boys have not changed significantly since 2004.

The percentage of Māori boys who reported having never smoked (Figure 4) in 2008 is 41%, which has increased slightly from 39% in 2007. The percentage of Māori boys who've never smoked is much lower than the percentage of NZ European/Other (68%), Pasifika (56%) and Asian (80%) boys who've never smoked. Odds of having never smoked have increased significantly in 2008 compared to 2004 for all ethnicities (Table 4c) but the rate of increase has been higher for NZ European/Other

and is lowest for Māori and Asian boys.

Figure 3 Percent of 14-15 year old boys who smoke regularly by ethnicity from 1999-2008

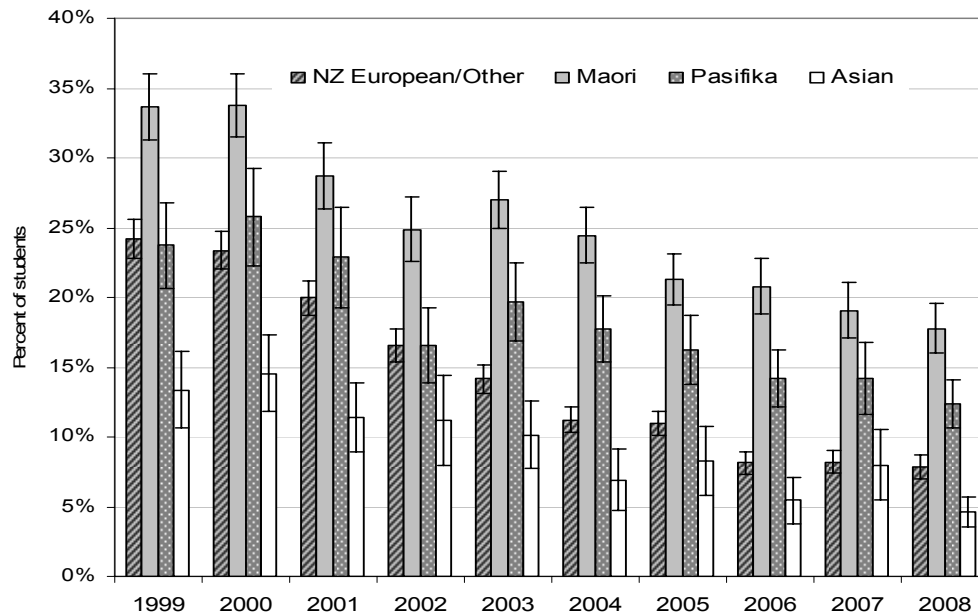
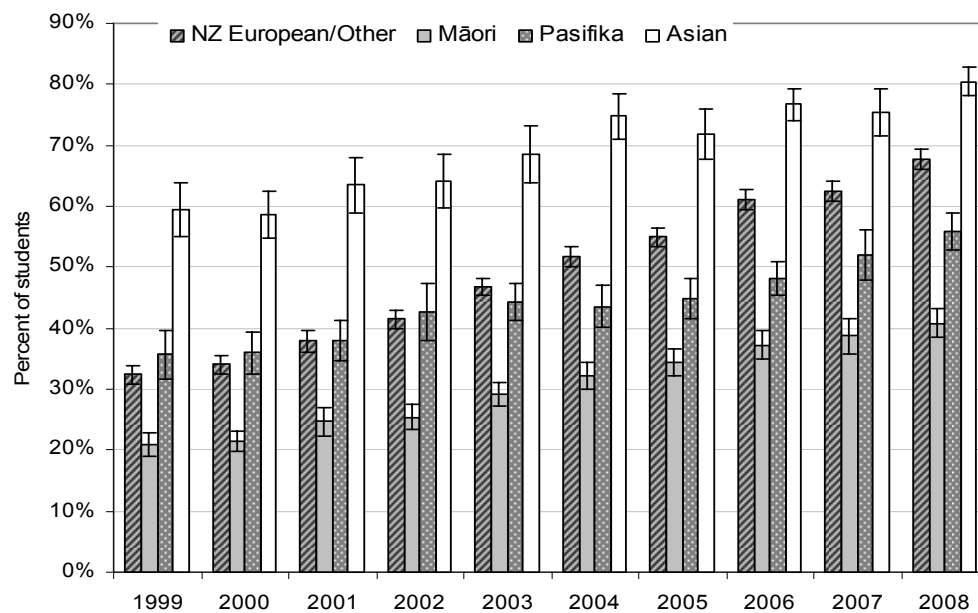


Figure 4 Percent of boys who've never smoked by ethnicity from 1999-2008



Pasifika in detail

Daily smoking prevalence (18%, data from 2007-2008 combined, Table 4) is highest amongst Cook Island girls and lowest amongst other Samoan girls (8%) and other Pasifika ethnicities (8%). In contrast, reported daily smoking is highest amongst Tongan boys (15%, data from 2007-2008 combined). Samoan (7%) and other Pasifika (7%) boys have the lowest daily smoking rates.

Table 4 Daily, regular and never smoked percentages for different Pasifika ethnicities. Data is combined results from 2007-2008.

	Girls	Boys		Girls	Boys
<i>Samoan</i>			<i>Tongan</i>		
daily %	8.1	7.0	daily %	12.7	14.9
regular %	12.9	10.1	regular %	19.6	18.8
never %	55.3	59.8	never %	45.5	47.7
(N)	1,014	1,018	(N)	440	442
<i>Cook Island</i>			<i>Niuean</i>		
daily %	17.5	9.8	daily %	11.6	7.8
regular %	25.9	15.3	regular %	18.4	14.4
never %	32.8	46.6	never %	37.9	53.3
(N)	405	399	(N)	190	167
			<i>Other Pasifika</i>		
			daily %	7.9	7.3
			regular %	15.3	11.3
			never %	47.2	55.8
			(N)	392	400

Examining trends over time (Figures 5 and 6), odds of never smoking have slightly but significantly increased for Samoan teenagers in 2008 compared to 2004 (OR 1.15, $p < 0.001$, 95% CI 1.1-1.2, adjusted for age, sex and school SES). Odds of never smoking have also increased slightly but significantly in 2008 compared to 2004, for Cook Island (OR 1.1, 95% CI 1.0-1.2, $p = 0.001$) and Niuean (OR 1.1, 95% CI 1.0-1.3, $p = 0.03$) teenagers. The odds were adjusted for age, gender, and socio-economic status.

Figure 5 Percentage of girls who've never smoked by Pacific Island ethnicity 2004-2008

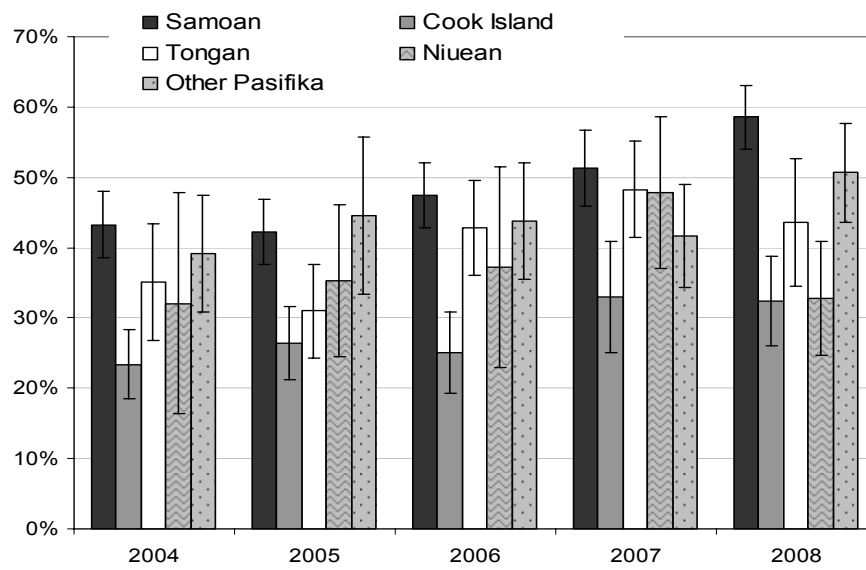
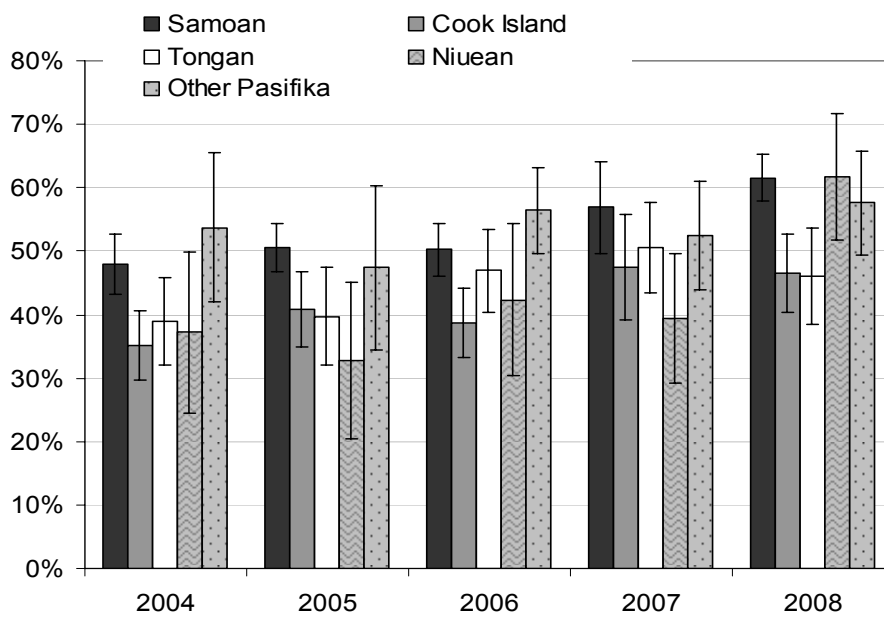


Figure 6 Percent of 14-15 year old boys who've never smoked by Pacific Island ethnicity from 2004-2008



Asian in detail

The lowest 14-15 year old smoking rates in New Zealand are amongst Asian girls (2%, Table 5, 2007-2008 combined) of Chinese girls reported daily smoking and 4% of Indian girls and only 2% of other Asian ethnicities report daily smoking. Reported daily smoking is slightly higher amongst Chinese (5%), Indian (4%) and other Asian (4%) boys. Odds of reporting never smoking have increased slightly (ORs 1.1-1.2) but significantly ($p<0.001$) for all Asian ethnicities in 2008 compared to 2004 (Figures 7 & 8).

Table 5 Daily, regular and never smoked percentages for different Asian ethnicities.
Data is combined results from 2007-2008.

	Girls	Boys
<i>Chinese</i>		
daily %	2.4	3.1
regular %	3.2	4.9
never %	84.6	82.1
(N)	712	733
<i>Indian</i>		
daily %	3.7	4.1
regular %	5.0	6.5
never %	82.7	78.7
(N)	736	750
<i>Other Asian</i>		
daily %	1.7	4.1
regular %	3.7	6.2
never %	83.7	76.3
(N)	1,564	1,449

Figure 7 Percent of girls who've never smoked by Asian ethnicity 2004-2008

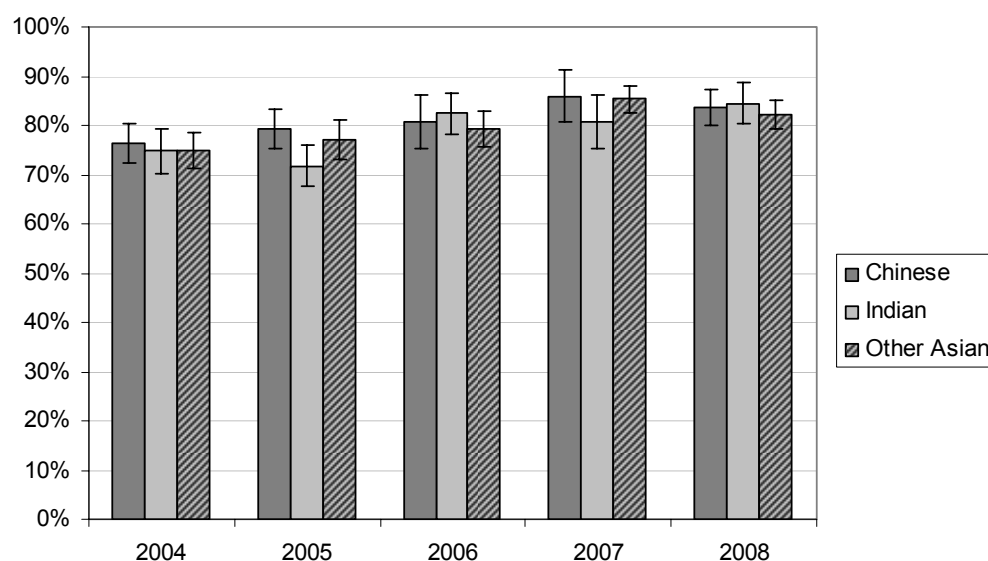
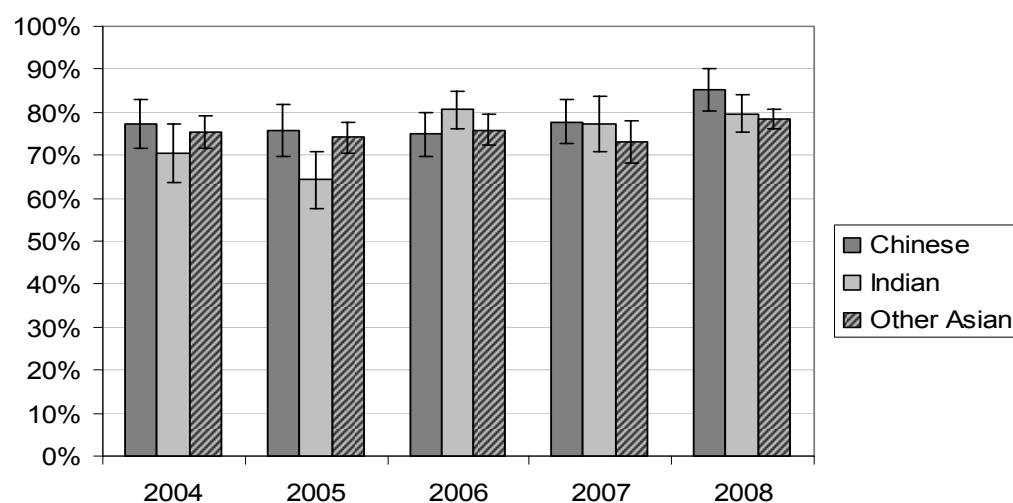


Figure 8 Percent of boys who've never smoked by Asian ethnicity 2004-2008.

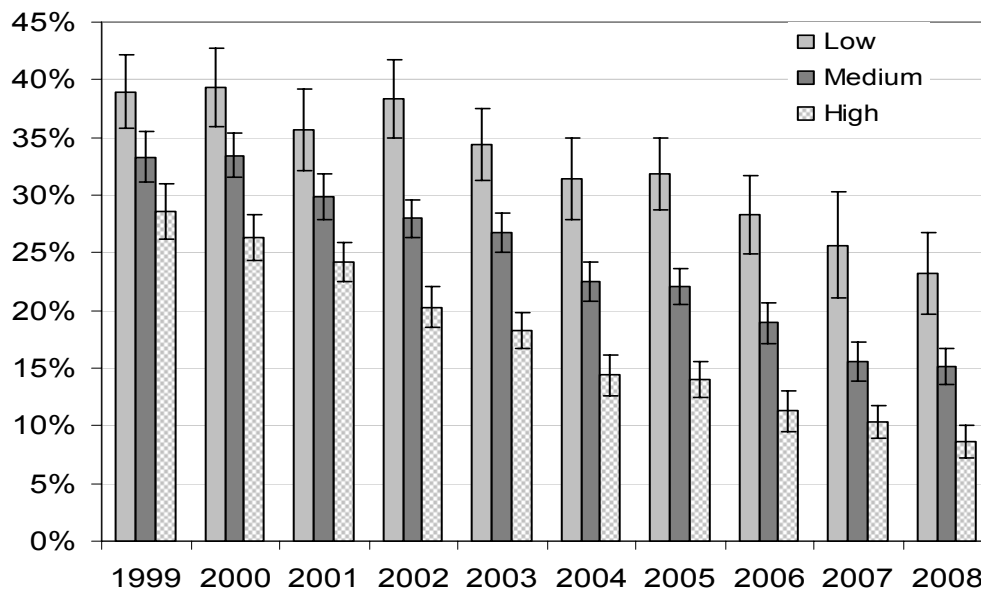


Trends by School Decile – Girls

Risk of daily smoking, 16%, is much higher amongst girls attending low decile schools compared to medium (8%) and high (4%) decile schools (Figure 9, Table 7a). Girls attending low decile schools are also three times more likely to report being regular smokers (23%) compared to girls attending high decile (9%) schools (Figure 9). Adjusted odds of daily smoking in 2008 are significantly lower compared to odds of daily smoking in 2004 for low, medium and high decile schools but the decrease in

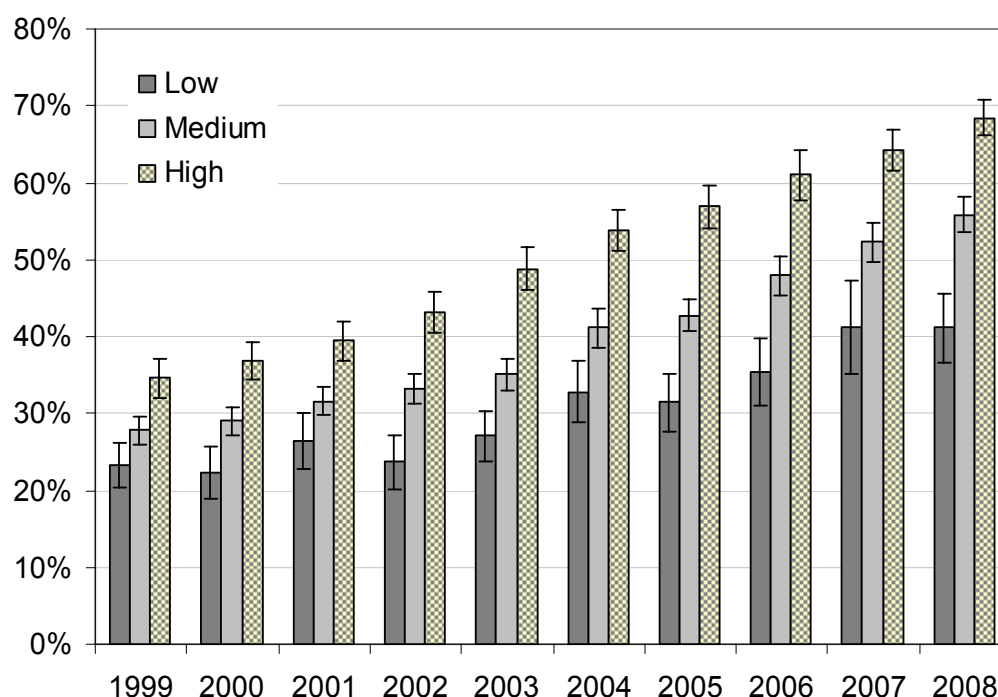
daily smoking is much less amongst girls from low decile schools compared to medium and high (Table 7b).

Figure 9 Percent of girls who smoke regularly (daily, weekly or monthly) by school socio-economic status



The percentage of girls from low decile schools who've never smoked has not changed from 2007 - 2008 (Figure 10). The percentages of girls from medium and high decile schools who've never smoked have increased slightly (absolute increases of 3-5%) during 2007-2008. Odds of not smoking, not even a puff are significantly higher in 2008 compared to 2004 for low, medium and high decile students but the increase has not been as great for low decile students (Table 7b).

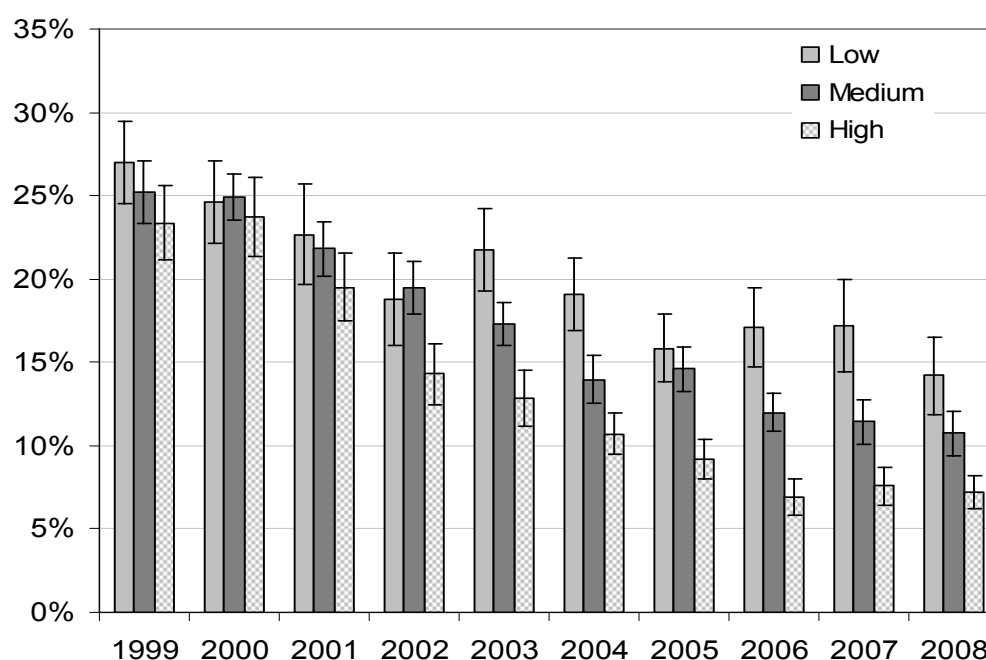
Figure 10 Percent of girls who've never smoked by school socio- economic status



Trends by School Decile - Boys

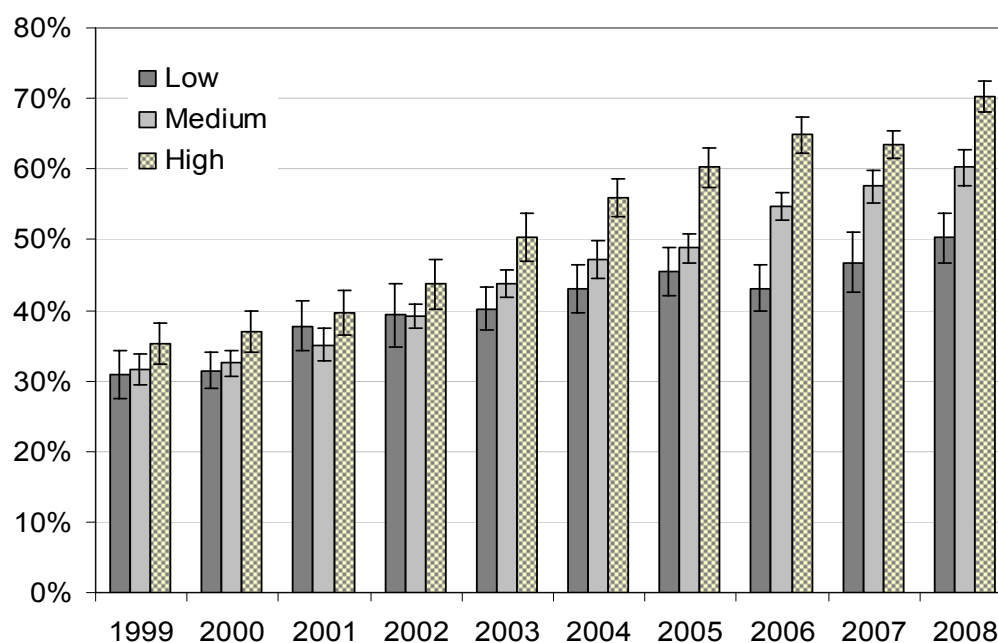
The percentage of boys who are from high decile schools and report daily smoking (3%, Table 7d) is almost a quarter of the percentage of boys at low decile schools who report smoking daily (11%). There is also significant inequality in regular smoking rates by decile (Figure 11). Odds of being a regular smoker for boys who attend high decile schools are lower compared to the odds of being a regular smoker at a low decile school (OR 0.66, $p=0.003$, 95% CI 0.51-0.87, see also Table 7c). Daily and regular smoking rates by boys at low, medium and high decile schools decreased during 2007-2008. Odds of daily and regular smoking by boys are also significantly lower in 2008 compared to 2004 for all high, medium and low deciles (Table 7c).

Figure 11 Percent of boys who smoke regularly by school socio economic status 1999-2008



In 2008, the percentage of boys at high decile schools who've never smoked was 70%, at medium decile schools 60% and low decile schools 50% (Figure 12, Table 7d). The percentage of boys who've never smoked continues to increase for all deciles. Although the relative increase in percentage of never smokers (2007-2008) was more for high decile schools (10%) compared to low (6%) and medium decile schools (3%). Compared to 2004 the adjusted odds of being a boy who's never smoked were significantly higher in 2008 (Table 7c). However the relative increase in percentage of never smokers from 2004-2008 was much lower for amongst boys from low decile schools.

Figure 12 Percent of boys who've never smoked by school socio-economic status 1999-2008

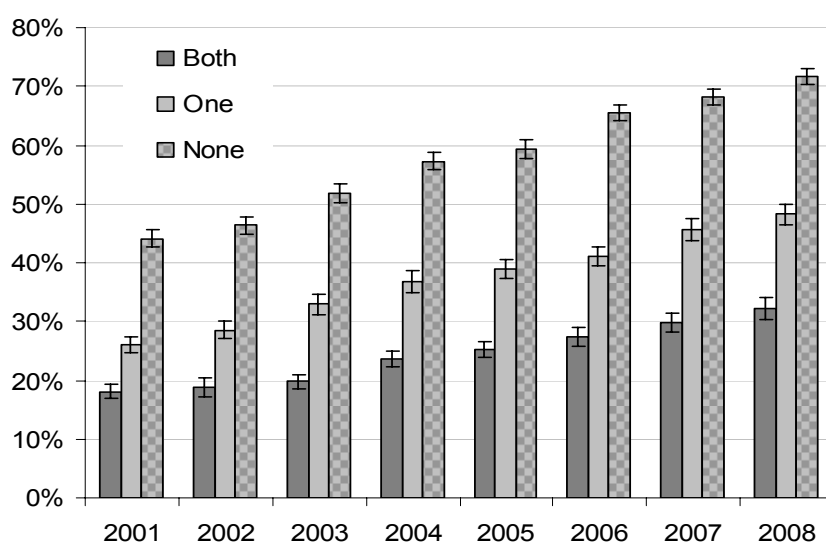


Trends in Student Smoking by Parental Smoking and Smoking in the home

Teenagers are more likely to smoke if one or both parents smoke. The proportion of students who smoke daily but report that neither parent smokes is 3% (Table 8a) or 3 out of every 100 students. This is in stark contrast to the proportion of students who smoke daily if both parents smoke (20%) or one in every five students. The risk of student smoking if both parents smoke is almost seven times greater compared to the risk of a student whose parents don't smoke. Even having just one parent who smokes triples the risk of a student being a daily smoker, 10% of students who report one parent is a smoker are daily smokers.

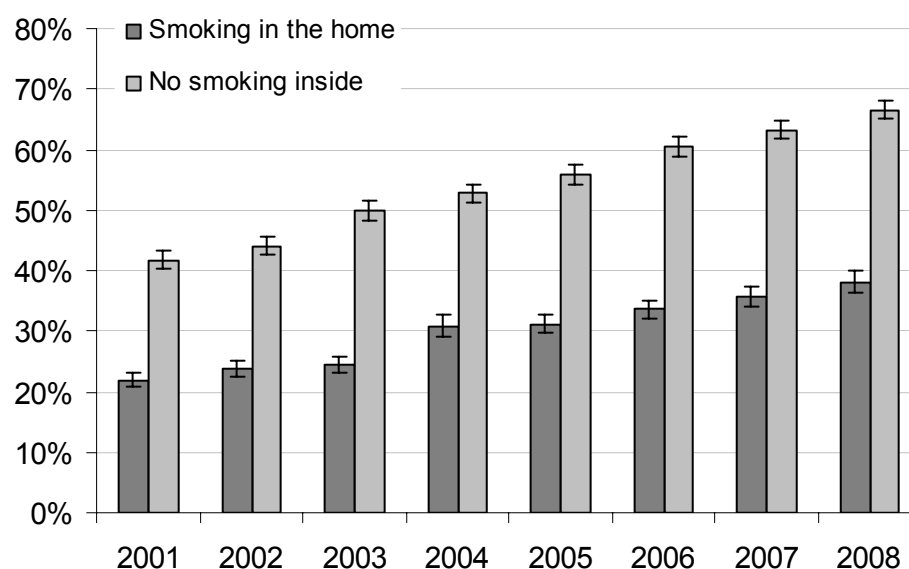
Only 32% of students who report having two parents who smoke are never smokers (Figure 13) yet 72% of students who report neither of their parents smoke have never smoked.

Figure 13 Trends in percent of 14-15 year old students who've never smoked from 2001-2008 by parental smoking



Students are less likely to smoke if they live in a smoke free home *i.e.* smoking is not allowed inside at home (Figure 14, Table 9a).

Figure 14 Trends in percent of 14-15 year old students who've never smoked from 2001-2008 by whether or not smoking inside is reported



Trends in Parental Smoking and Smoking in the Home as reported by Students

Māori students report the highest parental smoking (62%) and smoking in the home

(36%, Table 10). Almost half (45%) of Pasifika students report that one or both parents smoke and 22% report smoking in their home. Twenty seven percent of Asian students report one or both parents who smoke and 15% report smoking in their home. Change in parental smoking rates as reported by children has been small. Absolute decreases occurring from 2004-2008 ranged from two to five percent. The relative decreases were very similar for NZ European and other, Pasifika and Asian (about 10%) but much lower for Māori, only 3%. Odds (adjusted for school decile) of a Pasifika or Asian student reporting that one or both parents smoke have decreased significantly in 2008 compared to 2004 (OR Pasifika 0.82, 95% CI 0.73-0.91, $p<0.001$, OR Asian 0.85, 95% CI 0.76-0.94, $p<0.01$). For NZ European and other there was a significant decrease in odds (2008 vs 2004) for students from high and medium decile schools but not students from low decile schools.

Students attending low decile schools report the highest percentage of parents who smoke (55%, Table 11). Students from low decile schools also have the highest risk of being exposed to smoking in the home, about one in three students report smoking in their home. In contrast about one in seven students from high decile schools report smoking in their home. When comparing 2008 with 2004 only students from medium and high decile schools have significantly lower odds of reporting parental smoking or smoking in the home.

Trends by District Health Board (DHB)

Auckland has the lowest percentage of regular smokers (8%) and the highest percentage of students who've never smoked (67%, Table 10a). Other District Health Boards with relatively low regular smoking rates are West Coast, Waitemata, Taranaki, Capital & Coast, Canterbury, South Canterbury and Otago which all have regular smoking rates of 10-11%. District Health Boards with the highest regular smoking rates are Southland, Hawkes Bay, Northland, Tairāwhiti, Mid Central and Wairarapa (15-22%).

When comparing odds of a student never smoking in 2008 compared to 2004 and adjusting for age, gender and ethnicity; West Coast, South Canterbury, Northland, Canterbury and Otago have had the greatest change in proportion of students who've never smoked (OR 2.2-2.4, Table 10b). District Health Boards with less change since

2004 include Hawkes Bay, Counties Manukau, Hutt Valley and Lakes. The change in odds (2008 compared to 2004) for Wairarapa was not significant but this is most likely because the sample from Wairarapa is small (n=189) and therefore the power to detect a change is lower than larger District Health Boards.

Parental smoking and exposure to smoking in the home as reported by students has changed significantly since 2004 for Bay of Plenty, Hutt Valley, Canterbury and Capital & Coast District Health Boards. Significant changes in 2008 compared to 2004 in reported exposure to smoking in the home occurred in Hawkes Bay, Whanganui, Nelson-Marlborough, South Canterbury and Southland.

Discussion

In general smoking rates continue to decline and odds of a 14-15 year old boy or girl being a smoker are significantly lower in 2008 compared to 2004. However the rate of decline has slowed and the drop occurring from 2006-2008 is not as heart warming as the drop which occurred from 2003-2005. Māori, Pasifika, Asian and NZ European teenagers are increasingly likely to have never smoked. Prevalence of smoking is highest amongst Māori and Pasifika students and lowest amongst NZ European & Other and Asian teenagers. Students at low decile schools are more likely to smoke than students at medium and high decile schools.

Comparing New Zealand with the rest of the world⁵, youth smoking rates are low. Smoking amongst 13-15 year old boys is over 30% in Malaysia, Germany, the Cook Islands, Belarus and Timor-Leste compared to 10% in New Zealand. The percentage of 13-15 year old girls in the Cook Island who smoke is 50% but the percentage of 14-15 year of girls of Pasifika ethnicity in New Zealand who report smoking regularly is 16%.

There are still considerable inequalities in smoking prevalence between different ethnicities with Māori teenagers having an unacceptably high proportion of smoking compared to NZ European/Other, Pasifika and Asians. Pasifika teenagers also have higher smoking rates than Asian or NZ European & Other. There is also significantly higher smoking prevalence amongst teenagers from lower decile schools.

Parental smoking, as reported by teenagers, has not changed much since 2004. The

percentage of students who report being exposed to smoking in the home is lower than the percentage of students who report parental smoking. This indicates that some smoking parents are making an effort to, “take the smoke outside”.

Strengths and limitations

The survey has a very large sample size and the data has been collected using consistent methods throughout the survey period, 1999-2008. Limitations of the survey are that no specific effort was made to have a representative sample and the sampling is not structured or randomised. The response rate is modest; about half the schools which are invited participate. However analysis of the results adjusts for possible changes in demographic factors which influence smoking rates e.g. age, gender and ethnicity. The sample includes students from all District Health Boards in New Zealand, all deciles and the main ethnic categories considered in other important measures of smoking in New Zealand such as the New Zealand Tobacco Use Survey.¹

Conclusion

Strong new policy and regulatory measures are essential to ensure continuing significant declines in smoking uptake by New Zealand teenagers. Tobacco industry propaganda (BAT website) emphasises that smoking their addictive, deadly product is an adult choice. However this survey indicates that at least 4,242 New Zealanders per year start smoking addictive, deadly cigarettes daily while they are still children.

References

1. Ministry of Health. New Zealand Tobacco Use Survey 2006. Wellington, New Zealand: Ministry of Health, 2007.
2. Scragg R, Laugesen M, Robinson E. Parental smoking and related behaviours influence adolescent smoking: results from the 2001 New Zealand national survey of 4th form students. *New Zealand Medical Journal* 2003;116(1187):U707.
3. Ministry of Education. Deciles information, 2009.
4. Ministry of Education. Education Counts. 2008.
5. Shafey O, Eriksen M, Ross H, Mackay J. *The Tobacco Atlas*. Third ed. Atlanta, United States of America: American Cancer Society, 2009.

Additional Tables

Table 6a Trends in percentage of daily, regular (which is daily, weekly or monthly) and never smoked by girls for 1999-2008, by ethnicity

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<i>NZ European/Other</i>										
daily (%)	13.1	12.2	11.4	10.8	9.8	7.2	7.3	6.1	4.8	4.1
regular (%)	30.0	28.7	25.9	23.2	21.1	16.7	16.6	12.9	10.6	10.0
never (%)	30.6	33.0	35.7	38.2	41.4	48.2	50.9	56.0	61.0	64.9
(N)	10,221	10,534	10,285	10,245	10,942	10,498	11,430	10,510	8,601	9,525
<i>Māori</i>										
daily (%)	36.2	37.1	34.3	34.3	34.2	29.1	26.5	25.2	22.4	21.6
regular (%)	50.9	51.1	47.5	47.8	47.4	42.2	41.2	37.0	33.7	31.4
never (%)	12.4	11.1	12.4	12.3	15.0	18.0	18.1	23.5	26.7	28.3
(N)	2,448	2,480	2,574	2,653	2,934	3,142	2,958	3,397	2,551	3,046
<i>Pasifika</i>										
daily (%)	23.0	19.4	19.5	17.6	18.1	13.2	14.5	13.1	11.0	10.5
regular (%)	33.3	31.3	29.4	28.5	26.9	26.3	25.5	21.6	18.5	16.1
never (%)	31.2	33.0	31.8	30.2	32.2	37.1	37.4	41.6	45.9	48.0
(N)	881	793	952	880	1,168	1,108	1,139	1,157	988	1,453
<i>Asian</i>										
daily (%)	5.9	5.1	3.2	3.9	4.5	2.9	2.9	2.0	2.4	2.4
regular (%)	10.4	9.0	7.7	7.4	7.3	5.9	5.3	4.2	4.0	3.8
never (%)	64.4	66.2	71.9	71.7	74.1	75.5	76.4	80.6	84.4	83.1
(N)	1,014	965	1,176	1,158	1,531	1,575	1,516	1,493	1,362	1,650

Table 6b: Odds ratios comparing 2008 with 2004 for girls by ethnicity adjusted for age and school SES.

Category	OR	95% CI	p
<i>Daily</i>			
Māori	0.69	0.62 - 0.78	<0.001
Pasifika	0.77	0.61 - 0.98	0.04
Asian	0.79	0.51 – 1.2	0.29
NZ European & Other	0.56	0.50 – 0.64	<0.001
<i>Regular</i>			
Māori	0.64	0.58 – 0.71	<0.001
Pasifika	0.53	0.44 – 0.65	<0.001
Asian	0.63	0.45 – 0.87	0.005
NZ European & Other	0.56	0.51 – 0.61	<0.001
<i>Never</i>			
Māori	1.76	1.55 – 1.98	<0.001
Pasifika	1.60	1.37 – 1.89	<0.001
Asian	1.62	1.36 – 1.92	<0.001
NZ European & Other	1.99	1.88 – 2.11	<0.001

Table 6c: Odds ratios comparing 2008 with 2004 for boys by ethnicity adjusted for age and school SES.

Category	OR	95% CI	p
<i>Daily</i>			
Māori	0.79	0.68 – 0.92	<0.01
Pasifika	0.75	0.59 – 0.97	0.03
Asian	0.79	0.53 – 1.2	0.22
NZ European & Other	0.64	0.56 - 0.73	<0.001
<i>Regular</i>			
Māori	0.69	0.61 – 0.79	<0.001
Pasifika	0.66	0.54 – 0.82	<0.001
Asian	0.68	0.50 – 0.92	0.01
NZ European & Other	0.69	0.62 – 0.76	<0.001
<i>Never</i>			
Māori	1.42	1.28 – 1.59	<0.001
Pasifika	1.63	1.40 – 1.90	<0.001
Asian	1.36	1.15 – 1.61	<0.001
NZ European & Other	1.95	1.83 – 2.06	<0.001

Table 6d Trends in percentage of daily, regular (which is daily, weekly or monthly) and never smoked by boys for 1999-2008, by ethnicity

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<i>NZ European/Other</i>										
daily (%)	12.6	12.1	10.0	8.6	7.6	5.9	5.4	4.1	4.2	3.7
regular (%)	24.2	23.3	20.0	16.6	14.2	11.2	11.0	8.1	8.2	7.8
never (%)	32.7	34.5	38.0	41.6	46.9	51.9	55.1	61.0	62.9	67.7
(N)	10,258	10,347	10,046	9,873	10,735	9,999	10,291	10,309	8,066	8,924
<i>Māori</i>										
daily (%)	23.6	24.2	19.1	16.8	19.4	16.2	14.0	13.5	12.4	12.6
regular (%)	33.6	33.7	28.7	24.9	27.0	24.4	21.3	20.7	19.1	17.8
never (%)	21.4	21.9	24.9	25.8	29.4	32.3	34.6	37.4	39.0	40.8
(N)	2,199	2,208	2,462	2,241	2,844	2,905	2,719	3,243	2,335	2,805
<i>Pasifika</i>										
daily (%)	16.6	16.8	14.3	10.8	12.5	11.8	10.2	8.5	8.9	9.0
regular (%)	23.7	25.8	23.0	16.5	19.7	17.7	16.3	13.9	14.1	12.4
never (%)	36.3	37.0	38.5	42.8	44.7	44.0	45.1	48.5	52.2	55.7
(N)	873	892	904	1,010	1,128	1,192	1,107	1,177	899	1,530
<i>Asian</i>										
daily (%)	7.9	9.4	7.2	7.5	6.4	3.8	5.3	3.4	5.4	2.8
regular (%)	13.4	14.6	11.4	11.2	10.2	6.9	8.3	5.4	8.0	4.6
never (%)	59.9	59.2	63.7	64.4	69.1	75.1	72.0	76.8	75.6	80.3
(N)	1,138	1,112	999	1,225	1,645	1,502	1,601	1,635	1,167	1,769

Table 7a Trends in percentage of daily, regular (which is daily, weekly or monthly) and never smoked by girls for 1999-2008, by school SES

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<i>Low SES</i>										
daily (%)	28.1	26.8	24.6	27.3	24.8	20.8	20.6	19.9	16.9	15.9
regular (%)	39.0	39.4	35.7	38.4	34.4	31.4	31.8	28.3	25.7	23.2
never (%)	23.6	22.6	26.7	24.0	27.3	33.0	31.7	35.5	41.7	41.2
(N)	2,274	2,058	2,468	2,249	2,773	3,178	2,390	2,368	1,917	2,700
<i>Medium SES</i>										
daily (%)	17.5	18.2	16.4	15.7	15.8	12.1	11.9	10.8	9.2	8.4
regular (%)	33.3	33.4	29.9	28.0	26.8	22.5	22.1	18.9	15.6	15.2
never (%)	28.0	29.3	31.7	33.3	35.2	41.2	42.9	47.9	52.5	55.9
(N)	6,784	6,780	6,237	6,967	7,614	7,060	8,216	8,648	6,138	7,041
<i>High SES</i>										
daily (%)	12.1	10.6	10.5	8.8	7.4	5.5	5.5	4.9	4.4	3.7
regular (%)	28.6	26.3	24.2	20.3	18.3	14.4	14.0	11.3	10.3	8.6
never (%)	34.9	37.0	39.6	43.3	49.0	53.9	57.0	61.1	64.3	68.5
(N)	5,445	5,864	6,164	5,633	6,073	5,931	6,303	5,441	5,432	5,933

Table 7b: Odds ratios comparing 2008 with 2004 for girls by school decile adjusted for age and ethnicity.

Smoking	SES	OR	95% CI	p
<i>Daily</i>	Low	0.70	0.60 – 0.80	<0.001
	Medium	0.62	0.52 – 0.70	<0.001
	High	0.62	0.52 – 0.74	<0.001
<i>Regular</i>	Low	0.63	0.56 – 0.71	<0.001
	Medium	0.58	0.54 – 0.64	<0.001
	High	0.54	0.48 – 0.61	<0.001
<i>Never</i>	Low	1.53	1.37 – 1.72	<0.001
	Medium	1.95	1.82 – 2.09	<0.001
	High	1.96	1.81 – 2.12	<0.001

Table 7c: Odds ratios comparing 2008 with 2004 for boys by school decile adjusted for age and ethnicity.

Smoking	SES	OR	95% CI	p
<i>Daily</i>	Low	0.80	0.68 – 0.96	0.01
	Medium	0.70	0.61 – 0.80	<0.001
	High	0.65	0.55 – 0.78	<0.001
<i>Regular</i>	Low	0.70	0.60 – 0.82	<0.05
	Medium	0.71	0.64 – 0.80	<0.001
	High	0.64	0.56 – 0.72	<0.001
<i>Never</i>	Low	1.31	1.18 – 1.47	<0.001
	Medium	1.77	1.65 – 1.90	<0.001
	High	1.90	1.77 – 2.06	<0.001

Table 7d Trends in percentage of daily, regular (which is daily, weekly or monthly) and never smoked by boys for 1999-2008, by school SES

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Low SES										
daily %	18.8	17.6	15.2	13.4	15.4	13.0	10.6	11.8	11.6	10.8
regular %	27.0	24.6	22.6	18.8	21.8	19.1	15.9	17.1	17.2	14.2
never %	31.4	32.0	38.2	39.7	40.6	43.5	45.7	43.3	47.0	50.2
(N)	2,210	2,129	2,725	2,442	2,804	3,003	2,536	2,299	1,840	2,302
Medium SES										
daily %	14.9	14.6	12.5	11.3	10.5	8.5	8.1	6.7	6.9	6.4
regular %	25.2	24.9	21.8	19.5	17.3	14.0	14.6	12.0	11.4	10.7
never %	31.9	33.1	35.3	39.4	44.1	47.3	49.0	54.9	58.0	60.2
(N)	6,408	6,756	5,718	6,452	7,297	6,714	7,514	7,799	5,295	6,345
High SES										
daily %	11.5	12.2	9.0	6.8	6.5	5.0	4.5	3.4	3.6	3.4
regular %	23.4	23.7	19.5	14.3	12.8	10.7	9.2	7.0	7.6	7.2
never %	35.5	37.6	39.8	43.8	50.6	56.2	60.3	65.0	63.7	70.3
(N)	5,775	5,611	5,897	5,439	6,144	5,743	5,607	6,093	5,299	6,381

Table 8a Trends in percentage of daily, regular and never smoked by reported parental smoking 2001-2008 (Data on parental smoking was not collected in 1999)

	2001	2002	2003	2004	2005	2006	2007	2008
<i>Both parents smoke</i>								
daily %	31.6	31.4	29.7	24.8	25.1	23.3	21.1	19.7
regular %	44.1	42.1	41.0	36.2	36.4	33.0	30.3	28.8
never %	18.2	18.9	20.1	23.7	25.4	27.5	30.2	32.1
(N)	3,977	3,971	4,656	4,764	4,636	4,833	3,611	4,085
<i>One parent smokes</i>								
daily %	18.3	16.5	15.7	12.8	11.2	11.1	9.9	9.5
regular %	31.2	28.2	25.9	22.2	20.7	19.0	16.9	16.0
never %	26.1	28.8	33.2	37.0	39.1	41.3	45.8	48.2
(N)	7,807	7,331	8,526	8,185	8,243	8,129	6,317	7,399
<i>No parent smokes</i>								
daily %	7.2	6.5	6.2	4.6	4.3	3.1	3.0	3.0
regular %	17.5	15.1	13.4	10.7	10.4	7.6	7.1	6.6
never %	44.3	46.5	52.0	57.4	59.5	65.6	68.4	71.8
(N)	17,487	17,387	19,300	18,627	19,497	19,552	15,567	18,803

Table 8b: Odds ratios comparing smoking or never smoked in 2008 with 2004 by parental smoking, adjusted for gender, age and ethnicity

<i>Daily</i>	OR	95%CI	p	<i>Regular</i>	OR	95% CI	p	<i>Never</i>	OR	95% CI	p
Both	0.71	0.64-0.79	<0.001	Both	0.69	0.63-0.76	<0.001	Both	1.6	1.5-1.8	<0.001
One	0.68	0.62-0.76	<0.001	One	0.65	0.59-0.70	<0.001	One	1.7	1.6-1.8	<0.001
None	0.61	0.54-0.68	<0.001	None	0.57	0.53-0.61	<0.001	None	2.0	1.9-2.1	<0.001

Table 9a Trends in percentage of daily, regular and never smoked by whether or not smoking occurs inside the home 2001-2008 (Data on smoking in the home was not collected in 1999)

	2001	2002	2003	2004	2005	2006	2007	2008
<i>No smoking inside</i>								
daily %	8.8	7.7	6.7	6.6	5.7	4.8	4.5	4.3
regular %	19.3	16.6	14.0	13.3	12.4	9.8	9.1	8.5
never %	41.9	44.3	50.2	53.0	55.9	60.6	63.5	66.6
(N)	20,127	20,549	22,556	23,270	24,072	24,529	20,033	24,017
<i>Smoking in home</i>								
daily %	24.2	24.2	24.4	18.2	18.2	17.8	17.0	16.4
regular %	37.5	35.7	36.1	28.9	29.1	27.3	25.8	24.8
never %	22.1	24.1	24.8	31.0	31.4	33.7	36.1	38.1
(N)	8,848	7,656	9,619	8,651	8,689	8,182	5,704	6,422

Table 9b Odds ratios comparing smoking or never smoked in 2008 with 2004 by parental smoking, adjusted for gender, age and ethnicity

<i>Daily</i>	OR	95%CI	p	<i>Regular</i>	OR	95% CI	p	<i>Never</i>	OR	95% CI	p
No smoking inside	0.60	0.56-0.66	<0.001		0.58	0.55-0.62	<0.001		1.8	1.8-1.9	<0.001
Smoking in home	0.82	0.75-0.90	<0.001		0.76	0.70-0.82	<0.001		1.5	1.4-1.6	<0.001

Table 10 Parental smoking and smoking in the home as reported by students by ethnicity 2001-2008

Ethnicity	2001	2002	2003	2004	2005	2006	2007	2008
<i>NZ European & Other</i>								
Parent who smokes %	34.2	33.8	35.0	34.9	33.8	33.0	33.1	31.3
Smoking in the home%	27.2	24.0	26.2	24.6	23.4	21.6	19.0	17.7
<i>Maori</i>								
Parent who smokes %	66.1	64.9	64.5	64.2	65.3	65.1	62.8	62.4
Smoking in the home%	47.6	44.4	48.1	39.6	41.9	39.8	36.6	35.6
<i>Pasifika</i>								
Parent who smokes %	50.1	45.6	47.1	49.6	49.0	49.6	47.6	44.6*
Smoking in the home%	34.7	27.4	34.5	25.3	28.5	27.4	25.5	22.1*
<i>Asian</i>								
Parent who smokes %	29.8	29.3	32.1	30.3	29.2	25.8	26.4	26.8*
Smoking in the home%	20.0	19.7	20.5	20.3	19.0	15.2	13.8	14.8*

*Odds of a student reporting a parental smoker in 2008 are significantly ($p<0.05$) lower compared to 2004, adjusted for school decile. OR's available from author on request.

Table 12 Parental smoking and smoking in the home as reported by students by school decile 2001-2008

School decile	2001	2002	2003	2004	2005	2006	2007	2008
<i>Low</i>								
Parent who smokes %	55.9	55.2	54.5	54.7	55.8	58.4	55.8	54.8
Smoking in the home %	40.0	39.2	41.7	32.6	35.6	37.3	31.9	31.0
<i>Medium</i>								
Parent who smokes %	43.6	42.3	44.5	44.5	43.2	43.6	43.3	42.3*
Smoking in the home %	34.0	30.0	33.3	30.4	29.8	27.4	24.9	23.5*
<i>High</i>								
Parent who smokes %	30.6	29.3	30.0	29.9	28.9	27.4	28.8	26.6*
Smoking in the home %	23.3	18.9	20.8	20.6	18.7	16.7	16.2	14.7*

*Odds of a student reporting a parental smoker in 2008 are significantly lower ($p<0.05$) compared to 2004, adjusted for ethnicity. ORs available from author on request.

Table 13a: Trends in proportion of Year 10 students (boys and girls) daily, regular (daily, weekly or monthly) smoking or never smoked from 1999-2007, by District Health Board.

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	%	%	%	%	%	%	%	%	%	%
<i>Northland DHB</i>										
Daily	17.0	18.4	16.8	14.5	15.9	14.2	13.3	12.2	10.4a	9.1
Regular	29.2	31.1	28.0	24.7	25.9	23.2	20.1	19.1	16.4a	14.9
Never	26.7	28.1	28.4	30.3	32.1	35.9	40.3	44.2	48.2a	52.4
N	1,147	1,326	1,288	1,044	1,200	1,241	1,165	1,492	585	1,390
<i>Waitemata DHB</i>										
Daily	14.4	12.8	11.9	9.5	8.7	7.0	6.0	6.2	4.5a	5.4
Regular	28.2	26.1	22.1	17.7	17.2	13.6	12.5	12.2	10.3a	10.2
Never	36.0	38.5	41.8	45.2	49.3	54.1	56.4	59.6	63.9a	64.8
N	3,083	2,978	2,826	2,875	3,496	3,114	3,618	4,006	2,944	3,444
<i>Auckland DHB</i>										
Daily	12.6	10.6	11.1	7.7	8.3	4.3	5.9	3.2	5.5a	4.6
Regular	24.0	23.3	24.4	16.6	16.1	11.0	13.4	8.5	10.6a	7.8
Never	40.2	39.3	40.8	47.0	51.1	55.8	57.4	65.4	62.5a	66.9
N	3,028	2,231	2,327	2,337	3,301	2,312	2,366	2,778	1,831	2,414
<i>Counties-Manukau DHB</i>										
Daily	17.2	13.2	12.2	14.2	12.3	9.5	8.8	9.0	8.1a	8.2
Regular	27.2	24.5	21.5	24.0	19.2	16.2	16.0	14.6	12.6a	12.1
Never	37.7	38.7	42.2	41.6	51.5	52.4	53.0	53.4	56.0a	60.0
N	2,311	2,567	2,784	2,618	3,100	3,487	3,018	2,810	1,799	3,609

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	%	%	%	%	%	%	%	%	%	%
<i>Waikato DHB</i>										
Daily	13.9	15.6	15.3	14.2	13.2	10.3	8.6	8.2	8.6a	9.0
Regular	27.0	29.8	28.1	25.6	23.0	18.2	17.6	14.0	14.8a	14.3
Never	28.7	30.6	33.0	35.4	39.5	45.6	48.2	55.0	56.3a	56.7
N	2,786	2,784	2,613	2,982	3,432	3,181	2,693	3,057	1,711	2,266
<i>Lakes District DHB</i>										
Daily	21.1	26.2	19.9	21.0	18.5	12.1	11.7	15.6	7.5a	8.2
Regular	31.9	35.9	29.3	30.8	31.3	20.8	20.9	22.4	15.0a	13.6
Never	22.7	21.9	27.7	27.9	31.0	41.1	39.8	41.8	46.0a	52.6
N	797	657	782	756	693	679	708	949	548	523
<i>Bay of Plenty DHB</i>										
Daily	16.5	19.7	12.6	12.9	16.8	12.8	11.2	9.5	8.5a	7.7
Regular	30.1	30.5	23.1	23.2	24.9	21.3	19.2	14.1	13.0a	13.1
Never	29.6	26.9	36.2	34.7	35.5	41.1	44.4	49.5	56.7a	58.7
N	1,282	1,186	1,608	1,683	1,170	1,960	2,133	2001	1,396	1,614
<i>Tairāwhiti DHB</i>										
Daily	25.7	20.1	20.3	21.2	19.6	19.2	10.5	12.7	9.7a	9.3
Regular	39.7	28.7	29.7	30.4	28.6	24.4	20.5	19.6	18.9a	16.0
Never	22.3	21.1	30.3	22.6	35.5	37.0	37.1	43.7	49.4a	47.2
N	292	279	360	358	276	308	420	362	413	432

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	%	%	%	%	%	%	%	%	%	%
<i>Taranaki DHB</i>										
Daily	12.3	13.8	15.0	7.4	10.6	7.1	9.8	7.2	6.3a	4.2
Regular	22.4	25.7	25.2	12.6	18.0	15.0	16.2	13.1	10.3a	10.2
Never	34.4	31.4	34.7	50.2	43.8	49.1	51.4	55.0	58.6a	63.9
N	796	1,047	727	707	1,170	1,147	1,271	1,271	932	850
<i>Hawkes Bay DHB</i>										
Daily	16.4	16.5	18.5	15.1	12.3	13.1	11.4	9.7	11.9b	7.9
Regular	33.1	31.0	29.9	28.0	22.8	21.9	22.5	16.6	17.2a	14.8
Never	23.5	28.0	29.0	30.6	35.9	39.7	39.8	46.2	48.1a	50.2
N	1,376	1,288	1,209	1,180	1,154	1,272	1,227	1,156	1,277	1,073
<i>Whanganui DHB</i>										
Daily	18.8	19.5	10.9	13.1	14.7	14.9	9.7	17.5	11.9a	6.4
Regular	30.2	31.7	20.5	19.7	23.1	24.4	16.8	23.3	18.8a	13.9
Never	28.4	28.6	36.4	35.5	38.4	37.1	51.8	45.2	51.5a	51.2
N	602	441	341	259	756	377	554	365	394	639
<i>Mid-Central DHB</i>										
Daily	16.0	14.5	13.2	10.7	13.0	9.9	11.7	13.7	8.0a	10.6
Regular	28.0	24.3	24.1	19.8	22.0	20.0	20.8	22.3	13.1a	16.5
Never	31.7	34.6	33.8	38.2	37.5	43.7	44.3	42.9	55.6a	53.6
N	1,391	1,384	1,148	1,220	1,382	1,301	1,503	1,013	1,269	1,130

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	%	%	%	%	%	%	%	%	%	%
<i>Hutt Valley DHB</i>										
Daily	16.7	15.2	13.9	13.8	15.5	10.7	10.0	9.9	9.4a	7.3
Regular	28.9	26.4	24.0	20.7	22.4	18.0	15.2	14.9	15.4a	11.8
Never	31.8	35.3	37.9	37.9	39.3	51.4	50.3	49.6	56.3a	62.4
N	1,057	1,178	1,336	1,047	1,074	1,425	1,220	972	968	969
<i>Capital-Coast DHB</i>										
Daily	13.9	12.7	12.8	9.8	11.9	9.0	7.5	6.8	6.4a	5.3
Regular	24.0	24.6	23.5	18.2	19.8	17.4	13.5	12.8	12.6a	10.4
Never	34.2	38.5	38.5	43.4	43.4	50.3	54.9	59.9	60.5a	66.4
N	1,205	1,855	1,749	2,026	1,905	1,967	2,417	2,171	1,911	2,475
<i>Wairarapa DHB</i>										
Daily	18.8	16.7	16.3	16.5	13.3	13.4	10.8	6.2	10.1a	11.6
Regular	33.3	31.6	31.6	27.3	19.7	22.5	18.3	16.4	16.7a	21.7
Never	27.2	30.2	28.8	33.0	36.6	35.5	46.4	46.0	47.3a	39.7
N	393	490	393	370	483	521	591	422	395	189
<i>Nelson-Marlborough DHB</i>										
Daily	13.9	15.1	10.5	9.7	8.9	8.1	10.3	7.6	6.1a	6.4
Regular	25.9	28.3	24.0	19.8	17.7	14.5	18.5	14.1	11.3a	12.6
Never	33.4	32.7	37.3	39.8	42.3	52.0	48.2	51.8	58.2a	62.4
N	1,244	1,137	1,145	1,355	1,552	1,082	1,089	1,413	1,116	1,243

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	%	%	%	%	%	%	%	%	%	%
<i>West Coast DHB</i>										
Daily	22.1	16.1	17.7	11.9	13.4	12.0	7.1	8.8	7.9a	3.2
Regular	35.4	32.9	27.4	18.1	22.9	19.4	15.6	13.7	12.8a	9.7
Never	26.2	18.7	25.1	35.0	32.9	39.1	49.1	49.8	54.3a	58.1
N	263	155	299	243	292	299	224	329	164	124
<i>Canterbury DHB</i>										
Daily	16.3	14.4	12.3	12.8	11.1	9.7	8.2	6.6	6.1a	5.8
Regular	32.3	27.8	25.3	22.9	20.4	18.4	16.9	12.8	11.6a	10.6
Never	29.1	31.9	34.3	35.5	42.2	44.9	48.6	56.0	58.4a	63.9
N	3,055	3,331	3,660	3,293	3,741	3,520	3,920	3,628	3,596	3,629
<i>South Canterbury DHB</i>										
Daily	13.7	16.2	12.0	13.6	12.8	10.4	7.3	5.8	7.4b	5.7
Regular	27.1	27.3	25.0	23.5	20.4	17.3	14.2	13.7	12.1a	10.9
Never	27.6	30.6	38.7	35.2	39.3	44.1	50.0	54.7	61.8a	64.1
N	424	556	517	514	603	565	562	446	487	368
<i>Otago DHB</i>										
Daily	15.8	18.1	12.5	12.9	12.5	9.2	10.4	8.1	6.7a	5.1
Regular	30.5	33.6	23.8	24.5	21.5	16.5	18.5	13.3	12.0a	11.4
Never	29.6	29.2	33.3	36.1	39.3	43.0	46.1	54.1	58.4a	61.7
N	1,621	1,731	1,686	1,607	1,473	1,472	1,451	1,440	1,460	1,488
<i>Southland DHB</i>										
Daily	16.7	18.2	14.7	16.2	18.0	11.6	12.9	9.6	8.3a	9.8
Regular	31.9	32.1	23.5	26.8	26.4	19.8	22.6	17.2	13.8a	14.5
Never	23.9	29.6	31.0	34.4	32.5	40.2	39.9	46.0	51.9a	55.8
N	879	730	600	811	674	691	611	848	782	833

Table 10b: Relative changes in daily, regular smoking and never smoked measured as odds ratios adjusted for age, sex and ethnicity by District Health Board comparing 2008 with 2004.

District Health Board	N (2008)	Daily			Regular			Never		
		OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Northland	1,390	0.57	0.45-0.74	<0.001	0.54	0.43-0.66	<0.001	2.2	1.8-2.6	<0.001
Waitemata	3,444	0.72	0.59-0.89	<0.01	0.69	0.59-0.81	<0.001	1.7	1.5-1.8	<0.001
Auckland	2,414	0.82	0.61-1.11	NS	0.57	0.46-0.71	<0.001	1.9	1.7-2.2	<0.001
Counties-Manukau	3,609	0.79	0.67-0.94	<0.01	0.66	0.57-0.76	<0.001	1.5	1.3-1.6	<0.001
Waikato	2,266	0.76	0.63-0.93	<0.01	0.68	0.59-0.80	<0.001	1.8	1.6-2.0	<0.001
Lakes District	523	0.65	0.43-0.97	<0.05	0.61	0.44-0.85	<0.01	1.6	1.3-2.1	<0.001
Bay of Plenty	1,614	0.58	0.46-0.74	<0.001	0.56	0.46-0.68	<0.001	2.0	1.7-2.3	<0.001
Tairāwhiti	432	0.36	0.22-0.57	<0.001	0.52	0.35-0.77	<0.001	1.8	1.3-2.6	<0.001
Taranaki	850	0.54	0.36-0.80	<0.01	0.61	0.46-0.81	<0.001	2.0	1.6-2.4	<0.001
Hawkes Bay	1,073	0.57	0.42-0.76	<0.001	0.58	0.46-0.73	<0.001	1.5	1.3-1.8	<0.001
Wanganui	639	0.44	0.27-0.71	<0.001	0.52	0.36-0.75	<0.001	1.7	1.3-2.2	<0.001
Mid-Central	1,130	0.99	0.76-1.3	NS	0.73	0.59-0.91	<0.01	1.7	1.4-2.0	<0.001
Hutt Valley	969	0.67	0.49-0.91	<0.01	0.61	0.47-0.78	<0.001	1.6	1.4-1.9	<0.001
Capital-Coast	2,475	0.62	0.48-0.78	<0.001	0.59	0.50-0.71	<0.001	1.9	1.6-2.1	<0.001
Wairarapa	189	0.78	0.46-1.32	NS	0.93	0.61-1.42	NS	1.3	0.88-1.8	NS
Nelson-Marlborough	1,243	0.71	0.51-0.97	<0.05	0.78	0.61-0.99	<0.05	1.7	1.4-2.0	<0.001
West Coast	124	0.23	0.07-0.72	<0.01	0.42	0.21-0.84	<0.05	2.4	1.5-3.8	<0.001
Canterbury	3,629	0.55	0.46-0.66	<0.001	0.51	0.44-0.58	<0.001	2.2	2.0-2.5	<0.001
South Canterbury	368	0.48	0.28-0.82	<0.01	0.56	0.37-0.85	<0.01	2.4	1.8-3.2	<0.001
Otago	1,488	0.50	0.37-0.68	<0.001	0.64	0.51-0.79	<0.001	2.2	1.9-2.6	<0.001
Southland	833	0.89	0.64-1.25	NS	0.72	0.55-0.95	<0.05	1.9	1.6-2.4	<0.001

Table 11: Trends in proportion of Year 10 students (boys and girls) with parents who smoke and who live in a home with smoking inside, from 2001-2007, by district health board (Data collected from 2001 onwards)

	2001 %	2002 %	2003 %	2004 %	2005 %	2006 %	2007 %	2008 %
<i>Northland DHB</i>								
Parental smoker	48	45	50	53	51	54	51	52
Smoking in home	37	34	38	34	36	36	30	28*
<i>Waitemata DHB</i>								
Parental smoker	36	38	36	38	35	34	33b	35*
Smoking in home	27	25	27	25	21	22	19a	20*
<i>Auckland DHB</i>								
Parental smoker	37	33	33	31	30	30	31a	35
Smoking in home	28	21	24	19	21	19	19a	18
<i>Counties-Manukau DHB</i>								
Parental smoker	42	42	39	41	41	42	45	38
Smoking in home	30	29	28	25	26	27	22a	21*
<i>Waikato DHB</i>								
Parental smoker	43	42	41	42	42	41	45	45
Smoking in home	33	29	31	28	28	26	26a	25*

a $p < 0.001$, b $p < 0.01$ compared with 2001, adjusted for gender, age and ethnicity. * Significant reduction < 0.05 of odds of a student reporting parental smoking or smoking in the home in 2008 compared to 2004 and have been adjusted for school decile and ethnicity.

	2001 %	2002 %	2003 %	2004 %	2005 %	2006 %	2007 %	2008 %
<i>Lakes District DHB</i>								
Parental smoker	52	50	51	47	49	50	46b	47
Smoking in home	37	36	34	31	31	30	26a	28
<i>Bay of Plenty DHB</i>								
Parental smoker	43	46	46	45	44	43	41	37*
Smoking in home	29	30	32	32	29	24	24a	20*
<i>Tairāwhiti DHB</i>								
Parental smoker	58	54	56	55	54	53	49b	53
Smoking in home	41	41	40	30	29	29	25a	28
<i>Taranaki DHB</i>								
Parental smoker	44	37	44	44	39	45	43	39
Smoking in home	39	30	35	32	33	32	28a	24
<i>Hawkes Bay DHB</i>								
Parental smoker	51	46	50	47	50	47	48	43
Smoking in home	36	32	39	32	34	28	26a	25*

a p<0.001, b p<0.01 compared with 2001, adjusted for gender, age and ethnicity. * Significant reduction <0.05 of odds of a student reporting parental smoking or smoking in the home in 2008 compared to 2004 and have been adjusted for gender, age and ethnicity.

	2001	2002	2003	2004	2005	2006	2007	2008
	%	%	%	%	%	%	%	%
<i>Whanganui DHB</i>								
Parental smoker	37	47	46	51	40	51	50c	46
Smoking in home	30	37	38	34	32	36	34	28*
<i>Mid-Central DHB</i>								
Parental smoker	47	42	45	42	46	53	43c	44
Smoking in home	35	28	34	28	32	36	25a	26
<i>Hutt Valley DHB</i>								
Parental smoker	39	42	46	40	39	41	43	33*
Smoking in home	28	27	33	26	25	25	24b	19*
<i>Capital-Coast DHB</i>								
Parental smoker	35	34	39	37	34	34	32d	30*
Smoking in home	27	23	28	25	21	19	17a	16*
<i>Wairarapa DHB</i>								
Parental smoker	48	38	47	47	44	45	42b	44
Smoking in home	42	31	37	32	29	30	27a	28

a p<0.001, b p<0.01, c p<0.05, d p=0.06 compared with 2001, adjusted for gender, age and ethnicity. * Significant reduction <0.05 of odds of a student reporting parental smoking or smoking in the home in 2008 compared to 2004 and have been adjusted for gender, age and ethnicity.

	2001 %	2002 %	2003 %	2004 %	2005 %	2006 %	2007 %	2008 %
<i>Nelson-Marlborough DHB</i>								
Parental smoker	35	36	38	35	38	36	36	36
Smoking in home	26	23	26	21	23	23	20a	17*
<i>West Coast DHB</i>								
Parental smoker	51	40	51	49	43	47	49	45
Smoking in home	42	37	43	31	34	38	31c	31
<i>Canterbury DHB</i>								
Parental smoker	33	34	37	38	36	37	35	33*
Smoking in home	24	23	26	25	23	21	19a	17*
<i>South Canterbury DHB</i>								
Parental smoker	38	38	40	42	37	43	40	37
Smoking in home	34	27	32	29	30	27	24b	19*
<i>Otago DHB</i>								
Parental smoker	35	36	40	40	40	39	38	38
Smoking in home	29	26	30	27	29	23	23a	22*
<i>Southland DHB</i>								
Parental smoker	46	43	47	45	46	38	38c	39
Smoking in home	44	38	40	35	38	28	22a	24*

a $p<0.001$, b $p<0.01$, c $p<0.05$, d $p=0.06$ compared with 2001, adjusted for gender, age and ethnicity. * Significant reduction <0.05 of odds of a student reporting parental smoking or smoking in the home in 2008 compared to 2004 and have been adjusted for ethnicity and school decile.