

**National Year 10 ASH Snapshot Survey, 1999-2007: 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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## **Summary**

The Year 10 Snapshot Survey is a census-style survey of around 25,000 14-15 year olds investigating trends in teenage smoking. Parental smoking and smoking in the home as reported by students are also measured because they increase the risk of a teenager smoking. This survey has been conducted annually since 1999.

Trends in prevalence of daily, regular, and of students who've never smoked are reported by gender, ethnicity, school decile and District Health Board.

### **National trends**

- Prevalence of smoking in all smoking categories, *i.e.* daily through to- less than monthly decreased in 2007 (Table 1).
- This is consistent with a trend of decreasing smoking prevalence in 14-15 year olds since 1999.
- Daily smoking prevalence amongst 14-15 year olds in 2007 was 7% compared to 12% in 2003 and 16% in 1999. Students are significantly less likely to be a smoker in 2007 compared to 2003 and 1999.
- The percentage of 14-15 years olds who smoked regularly decreased by almost half; from 21% in 2003 to 13% in 2007.
- The proportion of students who've never smoked in 2007 has continued to increase. 57% of 14-15 year olds have never smoked, not even a puff.
- Smoking in the home as reported by students has decreased for all ethnicities by about a third from 33% down to 22%, despite only a small decline (1%) in student reported parental smoking.

### **Trends by ethnicity**

- Smoking by Māori girls and boys continues to decrease.
- Decreases in smoking rates, from 2003 – 2007, have been larger for girls of all ethnicities compared to boys (Table 2).
- Prevalence of regular smoking among Pasifika girls and boys has also decreased but by about one third compared to a decrease of almost half for NZ European/Other and Maori.
- Smoking prevalence among Asian boys has not changed since 2003 but the proportion of Asian boys who smoke is lower (8%) than the proportion of Maori (19%) and Pacific (14%) boys who smoke.

## ***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 4700 deaths per annum are attributable to smoking. More than 700,000 New Zealanders smoke on a regular basis (Ministry of Health 2007) 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.

Reducing smoking initiation is a key objective for tobacco control in New Zealand (Health Sponsorship Council, 2005). In order to gauge whether or not New Zealand is meeting this objective the Ministry of Health and District Health Boards (DHB) have health sector targets. Two important health sector targets are increasing the number of Year 10 students who have never smoked and increasing the proportion of homes that have a no smoking inside policy (Ministry of Health, 2008). The National ASH Year 10 Snapshot survey monitors these targets.

This is a report on the trends in smoking prevalence and determinants of smoking for Year 10 students (14 – 15 years old) from 1999 to 2007. Trends in never smoked, daily smoking, regular smoking *i.e.* daily, weekly and monthly and smoking in the home are reported by gender, ethnicity, decile and DHB groups.

## ***Method***

### **Survey**

Annual national surveys of tobacco smoking by Year 10 (predominantly 14-15 year old) students have been carried out yearly since 1999 (Scragg *et al.* 2003). Each year, all New Zealand schools with Year 10 students have been invited to participate in the survey. The survey has had 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 and 47% ( $n = 241$ ) in 2007. 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. Students answered whether their mother, father or best friend smoked. This order of prioritization is also used for reporting of results from the New Zealand Tobacco Use Survey (Ministry of Health 2007).

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, while those who answered, “yes” to the first question and “no” to the second were classified as experimenters. Categories of current smoking were *at least once a day, at least once a week, at least once a month, less often than once per month*.

The total number of completed questionnaires returned by schools was 27,110 in 2007 and 253,891 during the whole 8-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 (25,921).

### 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). 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 are 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 2007 divided by the odds of daily smoking in 2003. If the odds ratio is less than one e.g. 0.53 then the odds of daily smoking in 2007 are about half the odds of daily smoking in 2003 and therefore risk of a student being a daily smoker is reduced in 2007. If the odds ratio is more than 1 e.g. 2.0 then the odds in 2007 are double the odds in 2003 and hence the risk has increased in 2007. Adjusted odds ratios are required because the characteristics of the Year 10 students, that have an impact on smoking rates, are likely to change from year to year e.g. the numbers of Pasifika students have been increasing. 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 2003 in order to focus on trends subsequent to the introduction of the Smokefree Environments Amendments Act 2003. Other analyses, e.g. of DHB's compare 2007 with 1999 because sample sizes for some DHBs are small and more vulnerable to random variation. Analysis of student smoking by smoking in the home and parental smoking compares 2007 with 2001 because this data also has small sample sizes and data was collected from 2001 onwards.

## **Results**

### **Sample Characteristics**

There were about 62, 018 Year 10 students in 2007. The 27,110, 14-15 year olds who completed questionnaires in 2007, were representing about 42% of the total Year 10 population. The proportion of males (52%) in the 2007 sample is slightly higher than the national proportion of males (51%) and the proportion of females is slightly lower (Table 1). NZ European and Asian students are slightly over represented in the 2007 sample compared to the national population. Māori and Pasifika students are underrepresented. The sample distribution by District Health Board reflects the national distribution. A major concern is the participation of low decile schools. Decile one and two schools make up about 21% of all schools, however the proportion of decile 1 & 2 schools in the sample is 13%. Consequently some odds ratios have been adjusted for decile.

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

| <b>Demographic Group</b> | <b>ASH Year 10<br/>Snapshot 2007<br/>Sample (%)</b> | <b>2007 National<br/>Year 10<br/>Population (%)</b> |
|--------------------------|---|---|
| Female                   | 48  | 49  |
| Male                     | 52  | 51  |
| NZ European              | 65  | 58  |
| Māori                    | 18  | 22  |
| Pasifika                 | 7   | 9   |
| Asian                    | 9   | 8   |
| Other                    | 1   | 3   |



## Overall

Prevalence of smoking in all smoking categories, *i.e.* daily, weekly, monthly, less than monthly decreased in 2007 (Table 2a). This is consistent with the trend of decreasing smoking prevalence in 14-15 year olds since 1999. Daily smoking prevalence amongst 14-15 year olds in 2007 was 7% compared to 12% in 2003 and 16% in 1999. Odds of a Year 10 student being a daily smoker in 2007 compared to 2003 were 0.57 (95% CI 0.53 to 0.60,  $p<0.001$ ) after adjusting for age, ethnicity and gender. The percentage of 14-15 years olds who smoked regularly in 2003 has decreased by almost half from 21% in 2003 to 13% in 2007. Odds of being a monthly smoker (OR 0.58, 95% CI 0.53 to 0.64,  $p<0.001$ ) or a less than monthly smoker (OR 0.56, 95% CI 0.53 to 0.60,  $p<0.001$ ) also decreased in the same period, after adjusting for age, ethnicity and gender (Table 2b).

The proportion of Year 10 students who have experimented in the past with, but do not currently smoke decreased slightly in 2007 and odds of a student experimenting (0.88, 95% CI 0.84 to 0.91,  $p<0.001$ ) were lower in 2007 compared to 2003 (Table 2b).

Students were more likely to have never smoked in 2007 compared with previous years and increased by 3.4% to 57% compared to 2006 and by 15% compared to 2003.

**Table 2a: Trends in smoking and never smoked for all students in the Year 10 Snapshot surveys 1999-2007**

|                    | 1999<br>% | 2000<br>% | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% | 2006<br>% | 2007<br>% |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <i>Smoking</i>     |           |           |           |           |           |           |           |           |           |
| Daily              | 15.6      | 15.2      | 13.5d     | 12.4d     | 12.1d     | 9.8d      | 9.0d      | 8.2d      | 7.3a      |
| Weekly             | 6.7       | 6.3       | 5.7d      | 4.7d      | 4.3d      | 4.0d      | 3.6d      | 3.3d      | 3.0a      |
| Monthly            | 6.3       | 6.4       | 5.6c      | 4.9d      | 4.3d      | 3.8d      | 4.1d      | 2.8d      | 2.5a      |
| < Monthly          | 14.3      | 13.6c     | 14.8      | 11.2d     | 10.1d     | 7.7d      | 7.7d      | 6.3d      | 5.9a      |
| Regular            | 28.6      | 27.9      | 24.8d     | 22.1d     | 20.7d     | 17.6d     | 16.8d     | 14.2d     | 12.8a     |
| <i>Not smoking</i> |           |           |           |           |           |           |           |           |           |
| Experimenter       | 25.5      | 25.5      | 24.5c     | 28.3d     | 26.8d     | 27.7d     | 26.1b     | 25.7      | 24.1a     |
| Never smoked       | 31.6      | 33.0d     | 35.9d     | 38.4d     | 42.5d     | 47.0d     | 49.4d     | 53.8d     | 57.2a     |
| (N)                | (29,032)  | (29,330)  | (29,398)  | (29,285)  | (32,927)  | (31,921)  | (32,761)  | (32,954)  | (25,921)  |

b p<0.05, c p<0.01, d p<0.001, compared with 1999, adjusted for gender, age and ethnicity, a p<0.001, compared with 2003, adjusted for gender, age and ethnicity.

**Table 2b: Table of odds ratios comparing 2007 with 2003 adjusted for gender, age and ethnicity.**

| Smoking Category   | OR   | 95% CI      | p      |
|--------------------|------|-------------|--------|
| <i>Smoking</i>     |      |             |        |
| Daily              | 0.57 | 0.53 – 0.60 | <0.001 |
| Weekly             | 0.71 | 0.65 – 0.78 | <0.001 |
| Monthly            | 0.58 | 0.53 – 0.64 | <0.001 |
| < Monthly          | 0.56 | 0.53 – 0.60 | <0.001 |
| Regular            | 0.56 | 0.53 – 0.59 | <0.001 |
| <i>Not smoking</i> |      |             |        |
| Experimenter       | 0.88 | 0.84 – 0.91 | <0.001 |
| Never Smoked       | 1.85 | 1.94 – 2.14 | <0.001 |

### Trends by Sex

Smoking prevalence in all categories, *i.e.* daily, weekly, monthly etc continued to decline for girls. The daily smoking prevalence for girls was 8% in 2007. There was a 2% decrease in daily smoking. Prevalence of regular smoking by girls has decreased by 3% to 15% between 2006 and 2007 (Table 3a). The prevalence of girls who have never smoked (56%) has increased by 5% compared to 2006 and almost 17% since 2003. Decreases in prevalence of weekly, monthly and less than monthly smoking were smaller than the decrease in daily smoking. However, odds ratios indicate that only weekly smoking did not decrease at a similar rate to daily smoking (Table 3b). Odds of girls experimenting in 2007 were only slightly lower than in 2003 (OR 0.92).

Prevalence of smoking in 2007 among boys (6.2%) is lower than among girls (8.4%) but did not change for most categories compared to 2006 (Table 3a). There was a small decrease in monthly, and less than monthly smoking. The percentage of boys in 2007 that have experimented (25%) decreased by 2% from 2006-2007. Odds of a boy daily or regularly smoking, adjusted for age and ethnicity were significantly lower in 2007 compared to 2003 (Table 3c). The prevalence of boys who've never smoked continues to increase, reaching 59% in 2007.

The decline in daily and regular smoking prevalence has been slightly greater for girls since 2003; in particular, regular smoking (Tables 3b & 3c). The increase among girls who've never smoked has also been greater since 2003, OR  $2 \pm 0.1$ , compared to  $1.7 \pm 0.08$  among boys.

**Table 3a: Trends in percentage of smoking, experimenting and never smoked for 14-15 year old boys and girls, 1999-2007.**

|                    | 1999<br>% | 2000<br>% | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% | 2006<br>% | 2007<br>% |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Girls</b>       |           |           |           |           |           |           |           |           |           |
| <i>Smoking</i>     |           |           |           |           |           |           |           |           |           |
| Daily              | 17.1      | 16.3      | 15.2f     | 14.9f     | 14.2f     | 11.4f     | 10.7f     | 10.1f     | 8.4a      |
| Weekly             | 8.1       | 7.6       | 6.7f      | 5.8f      | 5.5f      | 5.2f      | 4.5f      | 4.0f      | 3.5a      |
| Monthly            | 7.2       | 7.5       | 6.5c      | 6.0f      | 5.2f      | 4.6f      | 5.2f      | 3.5f      | 3.0a      |
| < Monthly          | 14.7      | 13.8c     | 14.8      | 11.5f     | 11.1f     | 8.9f      | 8.7f      | 7.0f      | 6.3a      |
| Regular            | 32.4      | 31.3      | 28.4f     | 26.6f     | 24.9f     | 21.2f     | 20.4f     | 17.6f     | 14.9a     |
| <i>Not smoking</i> |           |           |           |           |           |           |           |           |           |
| Experimenter       | 23.1      | 23.4      | 22.5      | 26.2f     | 24.9f     | 25.6f     | 24.3f     | 24.7f     | 23.0b     |
| Never smoked       | 29.9      | 31.5e     | 34.3      | 35.8f     | 39.1f     | 44.3f     | 46.6f     | 50.6f     | 55.7a     |
| (n)                | (14,564)  | (14,471)  | (14,987)  | (14,936)  | (16,575)  | (16,323)  | (17,043)  | (16,590)  | (13,487)  |
| <b>Boys</b>        |           |           |           |           |           |           |           |           |           |
| <i>Smoking</i>     |           |           |           |           |           |           |           |           |           |
| Daily              | 14.1      | 14.0      | 11.6f     | 9.9f      | 9.9f      | 8.1f      | 7.2f      | 6.2f      | 6.2a      |
| Weekly             | 5.2       | 5.0       | 4.6c      | 3.6f      | 3.2f      | 2.8f      | 2.7f      | 2.5f      | 2.5c      |
| Monthly            | 5.4       | 5.3       | 4.8c      | 3.8f      | 3.4f      | 2.9f      | 3.0f      | 2.1f      | 1.9a      |
| < Monthly          | 14.0      | 13.3      | 14.7      | 10.9f     | 9.0f      | 6.5f      | 6.6f      | 5.5f      | 5.4a      |
| Regular            | 24.7      | 24.4      | 21.1f     | 17.4f     | 16.4f     | 13.8f     | 12.9f     | 10.8f     | 10.6a     |
| <i>Not smoking</i> |           |           |           |           |           |           |           |           |           |
| Experimenter       | 28.0      | 27.7      | 26.6e     | 30.6f     | 28.7      | 29.9f     | 28.1      | 26.7e     | 25.2a     |
| Never smoked       | 33.3      | 34.6c     | 37.6f     | 41.2f     | 46.0f     | 49.9f     | 52.5f     | 57.0f     | 58.7a     |
| (n)                | (14,468)  | (14,559)  | (14,411)  | (14,349)  | (16,352)  | (15,598)  | (15,718)  | (16,364)  | (12,434)  |

c p<0.05, e p<0.01, f p<0.001, compared with 1999, adjusted for gender, age and ethnicity, a p<0.001, b p<0.01 compared with 2003, adjusted for age, ethnicity and decile.

**Table 3b: Table of odds ratios comparing 2007 with 2003 for girls adjusted for age, decile and ethnicity.**

| Smoking Category   | OR   | 95% CI      | p      |
|--------------------|------|-------------|--------|
| <i>Smoking</i>     |      |             |        |
| Daily              | 0.54 | 0.49 - 0.58 | <0.001 |
| Weekly             | 0.66 | 0.58 – 0.74 | <0.001 |
| Monthly            | 0.57 | 0.50 – 0.65 | <0.001 |
| < Monthly          | 0.54 | 0.49 – 0.59 | <0.001 |
| Regular            | 0.52 | 0.49 – 0.55 | <0.001 |
| <i>Not smoking</i> |      |             |        |
| Experimenter       | 0.92 | 0.87 – 0.97 | <0.01  |
| Never Smoked       | 2.07 | 1.96 – 2.17 | <0.001 |

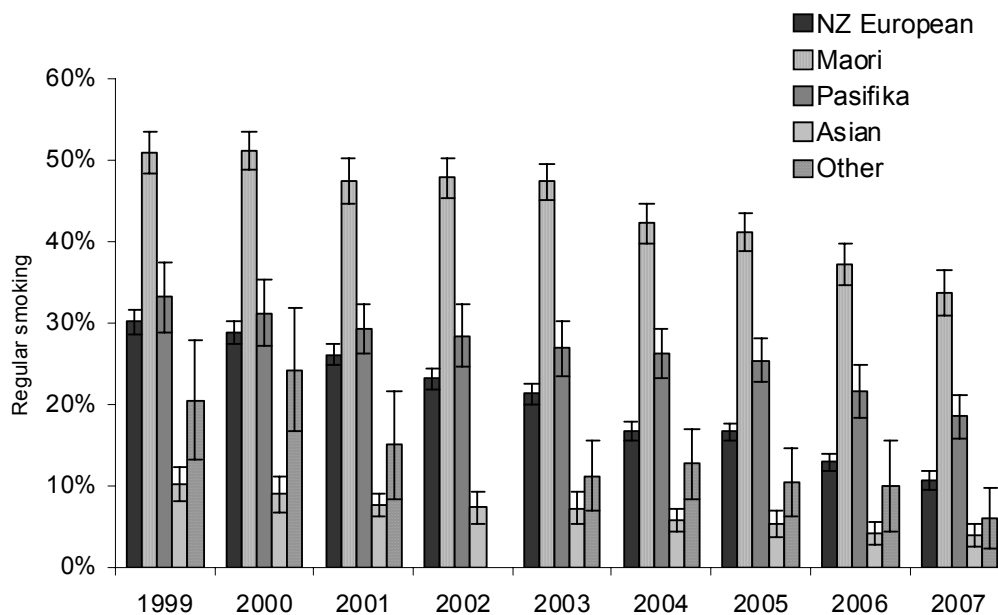
**Table 3c: Table of odds ratios comparing 2007 with 2003 for boys adjusted for age, decile and ethnicity.**

| Smoking Category   | OR   | 95% CI      | p      |
|--------------------|------|-------------|--------|
| <i>Smoking</i>     |      |             |        |
| Daily              | 0.64 | 0.58 – 0.70 | <0.001 |
| Weekly             | 0.85 | 0.73 – 0.99 | <0.05  |
| Monthly            | 0.57 | 0.48 – 0.67 | <0.001 |
| < Monthly          | 0.59 | 0.53 – 0.65 | <0.001 |
| Regular            | 0.64 | 0.59 – 0.69 | <0.001 |
| <i>Not smoking</i> |      |             |        |
| Experimenter       | 0.83 | 0.78 – 0.88 | <0.001 |
| Never Smoked       | 1.66 | 1.59 – 1.75 | <0.001 |

### Trends by Ethnicity – Girls

From 1999 to 2003 there was very little change in the prevalence of smoking by Māori girls (Figure 1, Table 4a). Since 2003, daily and regular smoking prevalence has decreased steadily and the downward trend continues with a decrease in daily smoking from 25% in 2006 to 22% in 2007. Prevalence of regular smoking by Pacific girls was slightly lower (18%) than among Maori girls in 2007. About 11% of NZ European/Other girls smoke regularly.

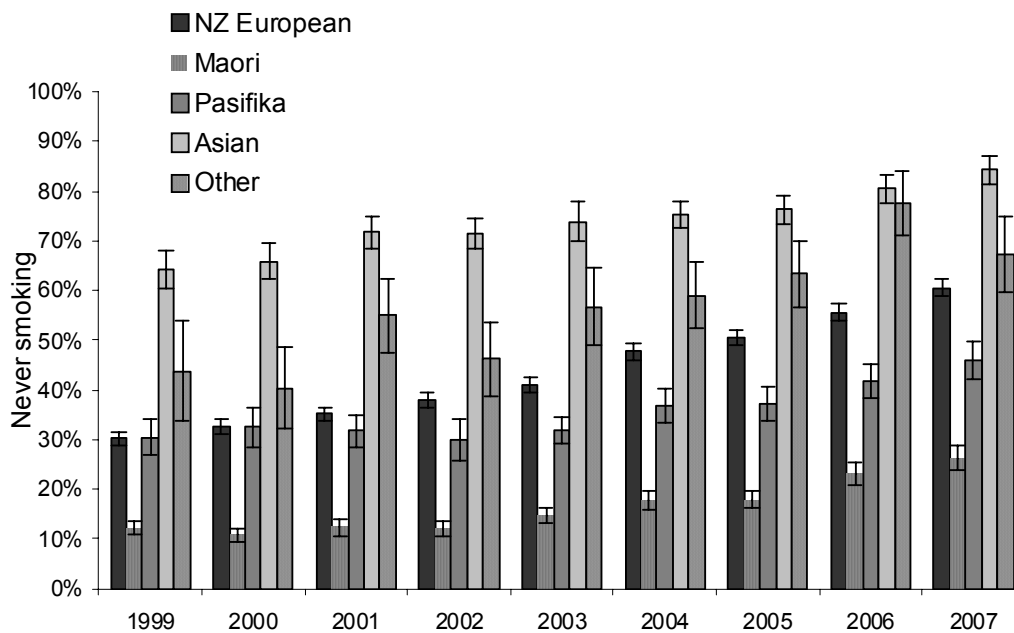
**Figure 1: Prevalence of Year 10 girls who smoke regularly from 1999 – 2007 by ethnicity.**



Prevalence of daily smoking was lower in 2007 compared to 2006 for Māori, Pasifika and NZ European/Other girls (Table 4a). Daily smoking prevalence has not changed for girls of Asian ethnicity however they have the lowest prevalence of regular smoking (4%). Odds of daily smoking for all ethnicities are lower in 2007 than in 2003 when adjusted for age and decile (Table 4b). Daily smoking prevalence among NZ European/Other girls has decreased more than daily smoking prevalence among Māori and Pasifika girls (two thirds).

Prevalence of girls who've never smoked has continued to increase among all ethnicities (Figure 2, Table 4a). Twenty seven percent of Māori girls were never smokers in 2007 compared to 84% prevalence of Asian girls who've never smoked and 61% for NZ European/Other girls. The 2007 prevalence of Pasifika girls who've never smoked was 46%. The increase in adjusted odds of never smoked when comparing 2007 to 2003 is similar for girls of Māori, Asian and NZ European/Other girls. Māori girls have the highest relative increase in never smokers (almost double) and Pasifika have the lowest (1.5).

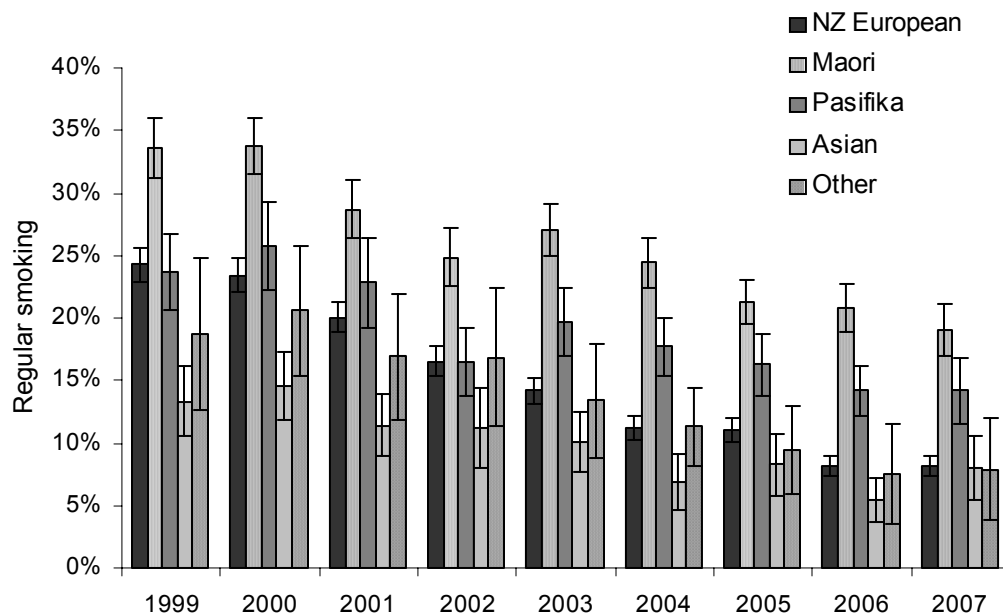
**Figure 2: Prevalence of Year 10 girls who have never smoked from 1999 – 2007 by ethnicity.**



### Trends by Ethnicity – Boys

Prevalence of daily and regular smoking by Māori boys continued to decrease (Figure 3, Table 4d). There was a decrease of daily smoking from 13.5% in 2006 to 12.4% in 2007. The prevalence of regular smoking by Māori boys has also decreased by 1.7% from 2006 to 19% in 2007. Never smoked among Māori boys has also increased from 37.4% in 2006 to 39.1% in 2007. Regular smoking prevalence was 14% among boys of Pasifika ethnicities. Regular smoking prevalence was 8% for boys of Asian and NZ European/Other ethnicities. Never smoked prevalence for Pasifika boys has increased by 3.7% to 52% from 2006-2007 and by 1.9% to 63% for NZ European/Other boys. Never smoked prevalence remains at 76% among Asian boys. Odds of daily and regular smoking, adjusted for age (Table 4c) have decreased significantly in 2007 compared to 2003 for Māori, NZ European/Other ethnicities. Odds of daily smoking among boys of Asian and Pasifika ethnicities, adjusted for age and decile, have not changed significantly since 2003.

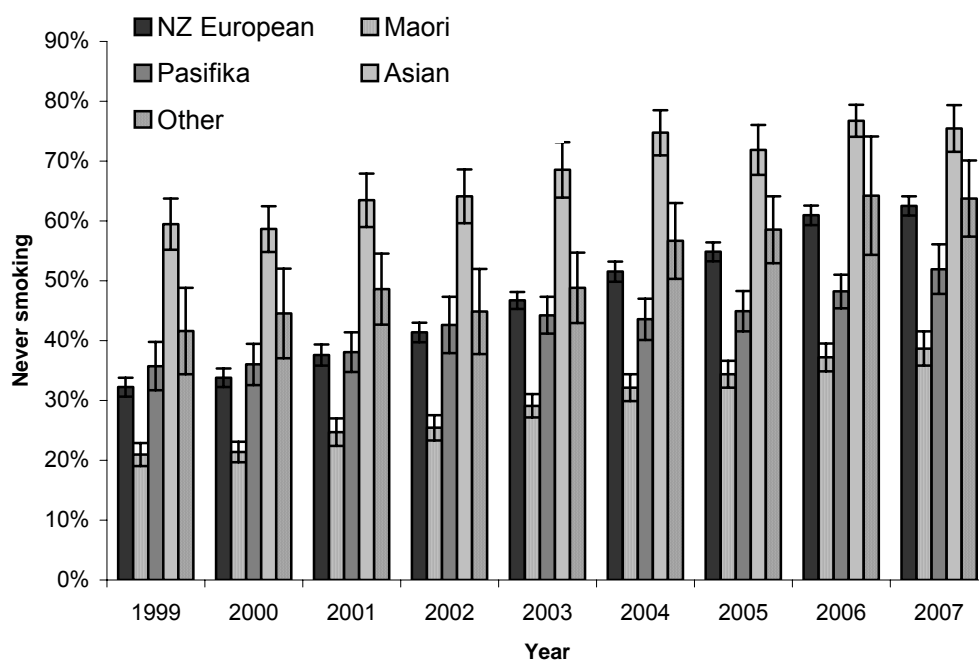
**Figure 3: Prevalence of Year 10 boys who smoke regularly from 1999 – 2007 by ethnicity.**





Odds of boys having never smoked are significantly higher in 2007 than in 2003 for all ethnicities (Table 4c). Odds of having never smoked have increased more for NZ European/Other boys than odds of never smoked for Māori, Pasifika and Asian boys since 2003.

**Figure 4: Prevalence of Year 10 boys who have never smoked from 1999-2007 by ethnicity**



#### Comparative Smoking Prevalence for different Pasifika and Asian Ethnicities

Prevalence data for different Pasifika ethnicities are shown in Table 5a. Results from 2004-2007 have been combined. Daily smoking prevalence is highest for girls of Cook Island ethnicity (22.8%). Daily smoking prevalence is also high for Cook Island boys (12.9%), Niuean boys (14.1%) and Tongan girls (12.9%). Samoan boys and girls have medium smoking prevalence, 8.2% smoke daily for boys and 10.2% smoke daily for girls. Lowest smoking prevalence occurs for those who identify as other Pasifika ethnicity (6.5% boys, 8.9% girls).

Data from 2004-2007 show low smoking prevalence for boys and girls of Chinese, Indian and other Asian ethnicities (Table 5b). Other Asian girls have the lowest daily smoking

prevalence (1.5%) and Indian boys have the highest (5.8%). Indian girls have the highest regular and daily smoking prevalence amongst Asian girls. Chinese girls have the highest never smoked prevalence (80.1%) but only marginally higher than other Asians (79.6%).

**Table 5a: Proportion of 2004-2007 Pasifika students smoking daily, regularly (daily, weekly or monthly) and never smoked by Pasifika ethnicity.**

|              | <b>Samoa</b> | <b>Cook Island</b> | <b>Tongan</b> | <b>Niuean</b> | <b>Other Pasifika</b> |
|--------------|--------------|--------------------|---------------|---------------|-----------------------|
|              | <b>%</b>     | <b>%</b>           | <b>%</b>      | <b>%</b>      | <b>%</b>              |
| <i>Boys</i>  |              |                    |               |               |                       |
| Daily        | 8.2          | 12.9               | 11.7          | 14.1          | 6.5                   |
| Regular      | 13.2         | 18.9               | 18.1          | 27.0          | 9.3                   |
| Never        | 51.2         | 40.2               | 44.1          | 38.0          | 54.0                  |
| (n)          | (2,004)      | (895)              | (753)         | (255)         | (463)                 |
| <i>Girls</i> |              |                    |               |               |                       |
| Daily        | 10.2         | 22.8               | 12.9          | 10.2          | 8.9                   |
| Regular      | 18.8         | 36.2               | 23.3          | 22.7          | 18.1                  |
| Never        | 45.9         | 26.8               | 40.1          | 38.7          | 42.5                  |
| (n)          | (2,169)      | (868)              | (673)         | (225)         | (471)                 |

**Table 5b: Proportion of 2004-2007 Asian students smoking daily, regularly (daily, weekly or monthly) and never smoked by Asian ethnicity.**

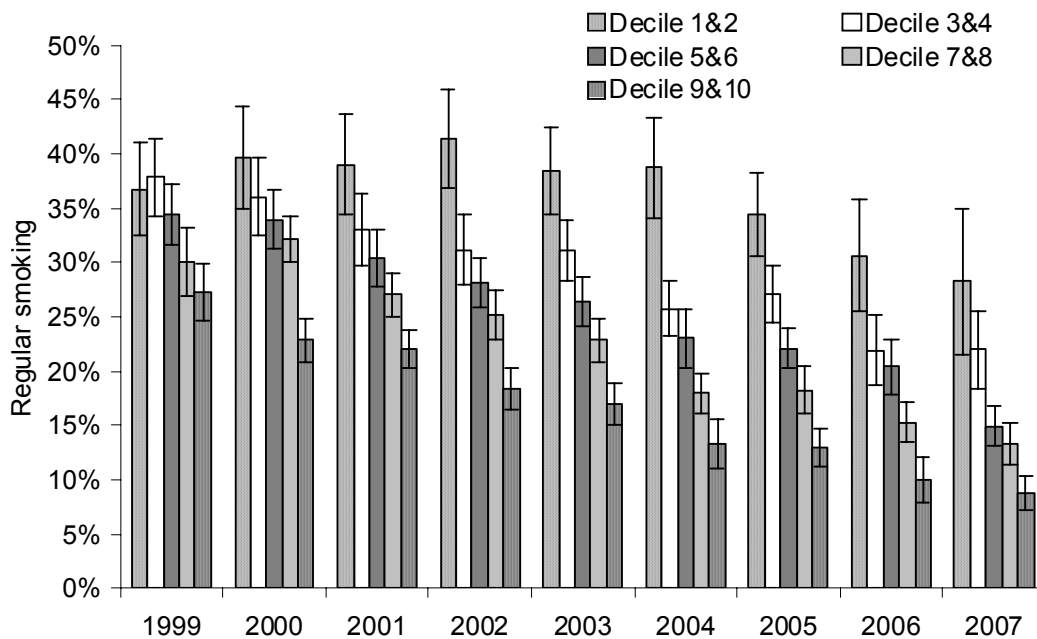
|              | <b>Chinese</b> | <b>Indian</b> | <b>Other Asian</b> |
|--------------|----------------|---------------|--------------------|
|              | <b>%</b>       | <b>%</b>      | <b>%</b>           |
| <i>Boys</i>  |                |               |                    |
| Daily        | 5.17           | 5.79          | 2.86               |
| Regular      | 7.62           | 8.59          | 5.59               |
| Never        | 76.45          | 72.90         | 74.93              |
| (n)          | (1,915)        | (1,605)       | (2,381)            |
| <i>Girls</i> |                |               |                    |
| Daily        | 2.94           | 3.87          | 1.48               |
| Regular      | 5.18           | 6.37          | 3.73               |
| Never        | 80.08          | 77.26         | 79.60              |
| (n)          | (1,737)        | (1,601)       | (2,628)            |

### Trends by Decile (SES) - Girls

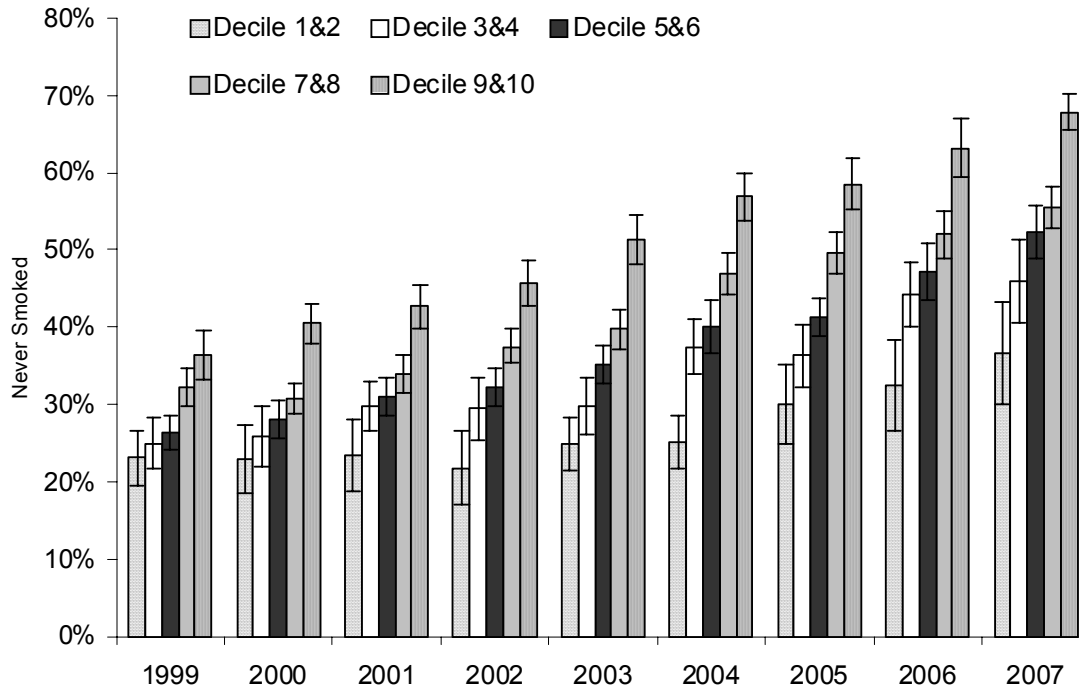
Daily smoking prevalence amongst girls from all deciles has decreased in 2007 compared to 2006 (Table 6a). Regular smoking prevalence has decreased for girls of all deciles except 3-4; which stayed at 22%. Daily and regular smoking prevalence has been highest (daily 20% in 2007, regular 28%) for girls attending lower decile (most deprived) schools (Figure 5) since 1999. Daily smoking prevalence (4%) and regular smoking (9%) prevalence was much lower among girls from the highest decile schools. Inequality in

smoking prevalence by decile has been increasing for girls since 1999. Low decile schools also had the lowest prevalence of girls who've never smoked (37%) compared to high decile schools (68%). Odds of daily and regular smoking, adjusted for age and ethnicity, by girls since 2003 have decreased for all deciles (Table 6b). Prevalence of girls who've never smoked has increased for all deciles by 2-5% during 2006-2007. Odds of girls having never smoked, adjusted for age and ethnicity, were also higher in 2007 compared to 2003 for all deciles. Relative changes (decreases in smoking and increases in prevalence of those who've never smoked) are generally greater for girls from higher decile schools.

**Figure 5. Trends in prevalence of regular smoking amongst Year 10 girls by decile.**



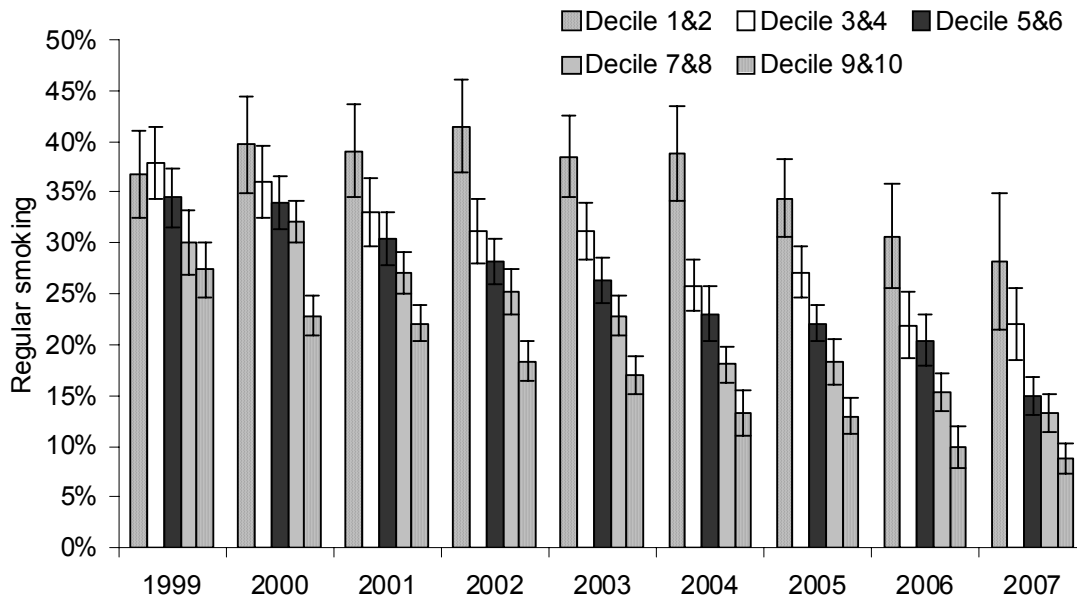
**Figure 6. Trends in prevalence of never smoked amongst Year 10 girls by decile**



#### Trends by Decile (SES) - Boys

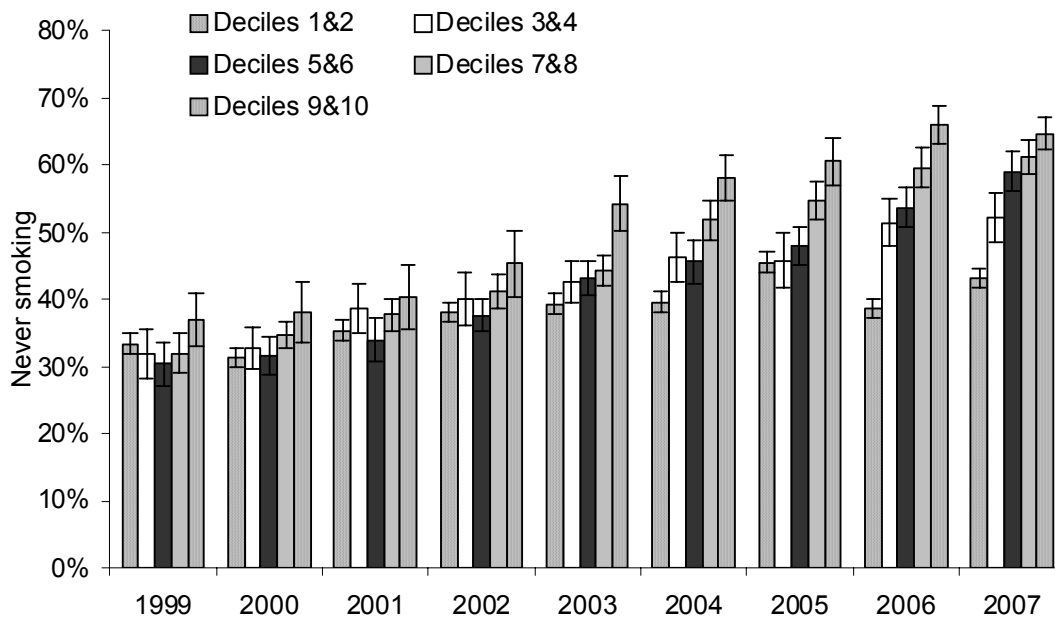
From 1999 onwards inequality in smoking prevalence amongst boys by decile has increased. Regular smoking prevalence amongst boys from the lowest decile schools was 19% in 2007 compared to 8% for boys from the highest decile schools. Daily and regular smoking prevalence amongst boys decreased in 2007 compared to 2006 for most deciles except 3&4 and 9&10. However, prevalence of boys who've never smoked increased for all deciles except 9 & 10. Prevalence of boys who've never smoked was highest among boys from the highest decile schools in 2007 (65%) compared to 43% for the lowest deciles. Odds of daily smoking in 2007 compared to 2003 adjusted for age and ethnicity indicate that the decreases in daily and regular smoking have been notably greater for boys of deciles 7&8 (Table 6c).

**Figure 7: Trends in prevalence of regular smoking amongst Year 10 boys by decile**



There has been no significant increase in odds of boys having never smoked in deciles 1&2 since 2003. Odds of boys having never smoked for deciles 3&4 have increased less than most other deciles. Odds of boys having never smoked for deciles 9&10 increased in 2007 compared to 2003.

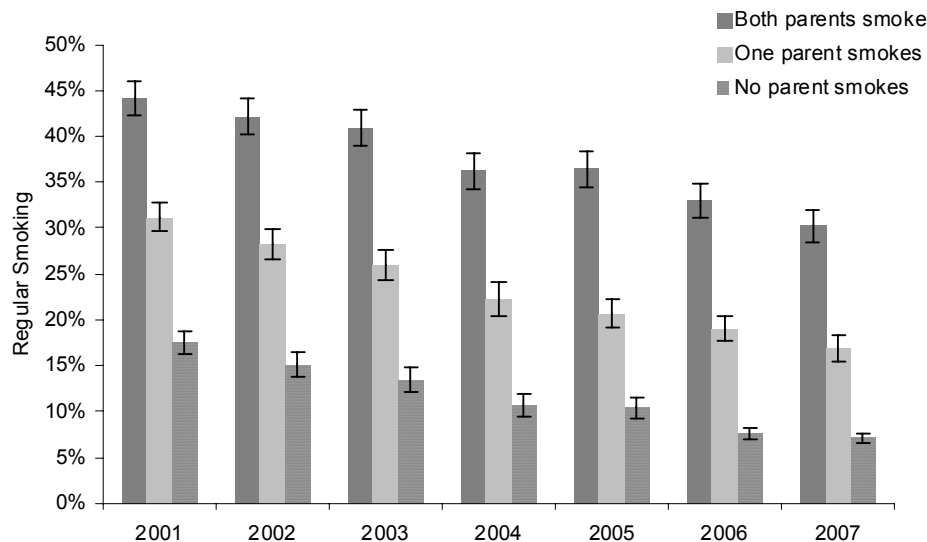
**Figure 8: Trends in prevalence of never smoked amongst Year 10 boys by decile**



### Trends in Student Smoking by Parental Smoking and Smoking in the Home

Daily and regular smoking prevalence is highest for students who have both parents smoking (Table 7a). However smoking prevalence has declined among students who reported one or both parents smoke. For example, daily smoking decreased from 23.3% in 2006 to 21.1% in 2007 among students whose parents both smoked. Regular smoking prevalence has decreased by almost 3% to 30% in the same period among these students. Prevalence of regular smoking for Year 10 students with only one parent smoking is about half that of students with both parents smoking and has also decreased by about 2% between 2006 and 2007 to 17%. A decrease in smoking prevalence of less than 1% occurred between 2006 and 2007 (daily and regular) amongst students with no smoking parents. Smoking prevalence for students whose parents do not smoke is low; 3% daily smoking and 7% regular smoking in 2007 (Figure 9).

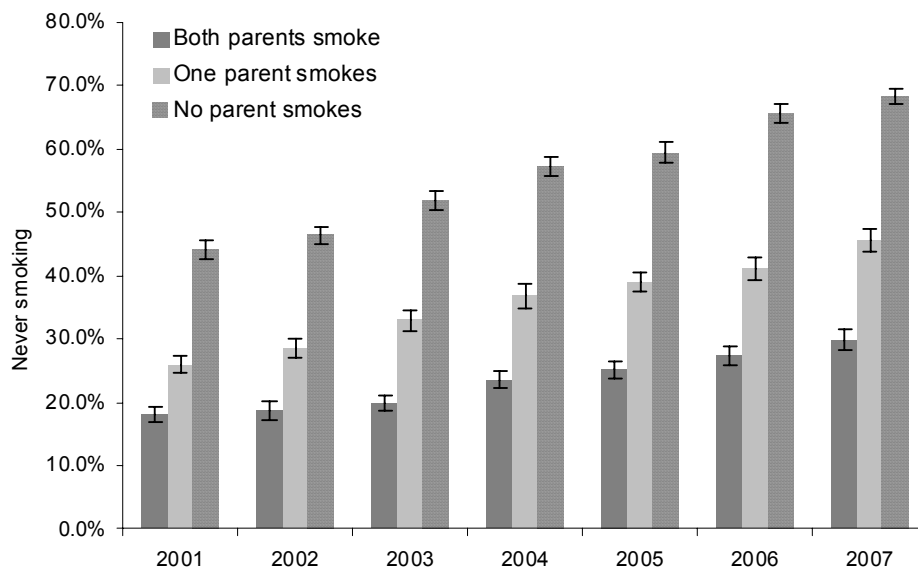
**Figure 9: Trends in regular smoking from 2001-2007 by parental smoking.**



Changes in odds, adjusted for age, ethnicity and sex, of daily and regular smoking by Year 10 students in 2007 compared with 2001 indicate that relative decline in smoking prevalence is greatest for students with no parents smoking and least for students with both parents smoking (Table 7b).

The proportion of students who've never smoked (Figure 10) has increased from 2006-2007 for students with both, one or neither parent smoking, but prevalence of never smoked is lowest (30.3%) for students with both parents smoking and is highest for students whose parents do not smoke (68.4%). Changes in adjusted odds of never smoked, comparing 2007 with 2001, indicate that relative increases in never smoked are greater for students with neither parent smoking (Table 7b).

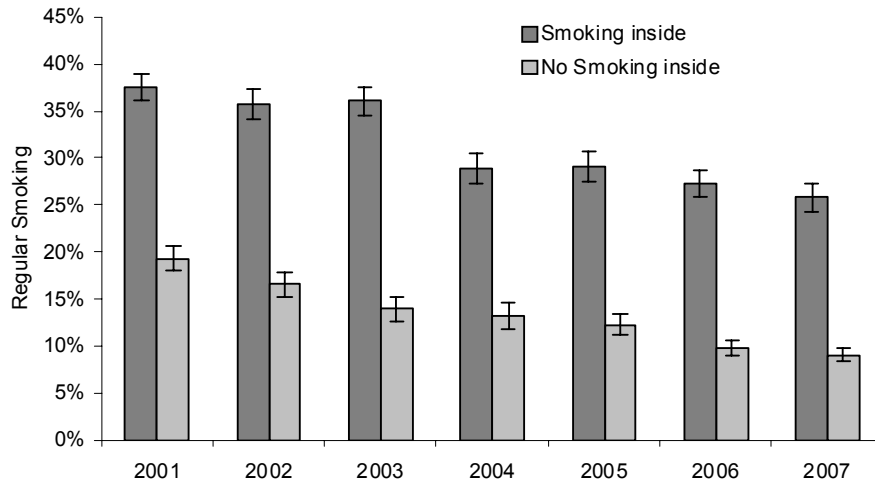
**Figure 10: Trends in never smoked by Year 10 students from 2001-2007 by parental smoking.**



Daily and regular smoking prevalence continued to decrease in 2007 for students who live in homes with or without smoking (Table 8a). The smoking prevalence is much higher for Year 10 students who live in homes with smoking inside (Figure 11). Daily smoking rate is 17% and regular smoking is 26% compared to a daily smoking prevalence of 5% and regular smoking prevalence of 9% for students in homes without smoking inside. Relative decreases in smoking prevalence are greater for students living in homes without smoking inside. Odds of daily and regular smoking, adjusted for age, gender and ethnicity, are lower in 2007 compared to 2001 in homes with or without smoking, but the decrease was greatest among students living in homes without smoking

(Table 8b).

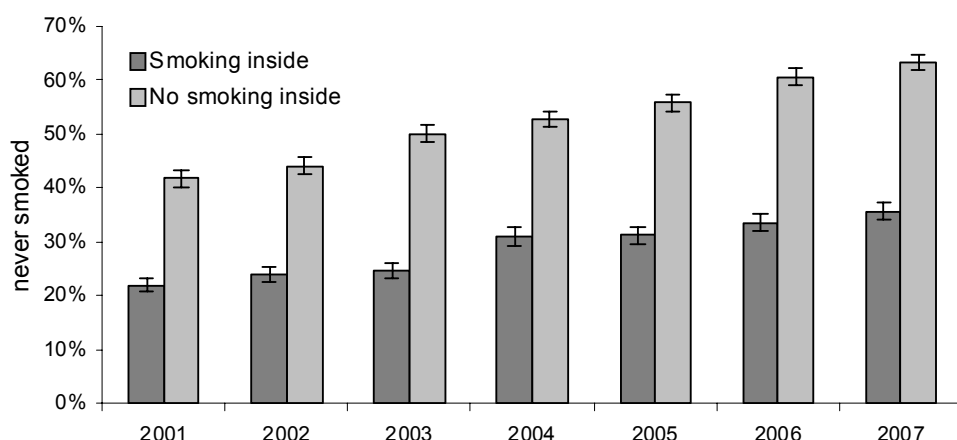
**Figure 11: Trends in regular smoking from 2001-2007 by smoking inside**



Prevalence of students who've never smoked (Figure 12) is higher in homes (64% in 2007) without smoking inside compared to homes allowing smoking inside (30% in 2007). There was an increase of about 2.5% in prevalence of students who've never smoked with and without smoking inside between 2006 and 2007 (Table 8a). Odds of students having never smoked, adjusted for age, gender and ethnicity, are significantly greater in 2007 compared to 2001 (Table 8b). The relative increase in students who've never smoked is greater for students who report living in homes without smoking, so inequality in prevalence of never smoked has increased since 2001 when comparing prevalence of smoking by students who report being from homes with smoking to prevalence of smoking by students who report no smoking inside their homes.



**Figure 12: Trends in prevalence of never smoking from 2001-2007 by smoking inside.**



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

The proportion of students with one or both parents smoking changed little from 2001 to 2007 (Table 9). Prevalence of smoking by parents has decreased slightly for Māori and Pasifika students between 2006 and 2007. Prevalence of smoking by parents of European/Other and Asian students has not changed greatly from 2006 to 2007. Odds of a parent smoking, adjusted for age, sex and ethnicity in 2007 are slightly lower compared to odds of a parent smoking in 2001 (OR 0.93, 95% CI 0.90 – 0.97,  $p < 0.001$ ). There were only small differences in changes of parental smoking from 2001-2007 between deciles (Table 9). Odds of having a parental smoker, adjusted for age, sex and ethnicity are significantly but only slightly lower in 2007 compared to 2001 for students at decile 9&10 schools (OR 0.92, 95% CI 0.86-0.99,  $p = 0.03$ ), students in medium decile (5&6) schools (OR 0.90, 95% CI 0.84-0.97,  $p = 0.005$ ). Odds of having a parental smoker are not significantly different for students from low decile schools (OR 0.94, 95% CI 0.83-1.1,  $p = 0.3$ ).

In contrast, there has been a much greater change in the proportion of homes that have no smoking inside. Prevalence of homes with smoking inside continues to decrease for all ethnicities and decreased by 3% during 2006-2007. The absolute decrease in percent of

smoking in the home between 2006 and 2007 was greatest for Māori compared to other ethnicities, 3.2% versus 1.4-2.6%. Odds of a student being in a home with smoking inside, adjusted for age, sex and ethnicity have decreased significantly since 2001 (OR 0.64, 95% CI 0.62-0.67,  $P < 0.001$ ). There were no significant differences between ethnicities. Smoking in the home has also decreased for students from all deciles (Table 10a). Odds of a student living in a home with smoking inside (Table 10b), adjusted for age, sex and ethnicity, are lower in 2007 for all deciles compared to 2001. Of interest, the largest reduction in odds of smoking in the home as reported by students was for students from deciles 3&4.

### Trends by District Health Board (DHB)

Regular smoking prevalence among 14-15 year olds was about 10-11% in Auckland, Waitemata and Taranaki DHBs (Table 11). In Counties Manukau, Bay of Plenty, Mid-Central, Nelson-Marlborough and West Coast DHBs regular smoking prevalence ranges from 12-13%. District Health Boards with higher regular smoking prevalence (14-19%) among students are Northland, Waikato, Tairāwhiti, Hawkes Bay, Whanganui, Hutt Valley and Wairarapa.

From 2006-2007, daily and regular smoking prevalence for 14-15 year olds continued to decrease in 15/21 DHBs (Table 11). The prevalence of students who've never smoked increased from 2006 to 2007 in 19/21 DHBs. Never smoking prevalence by DHB ranges from 46% in Lake District DHB to 64% in Waitemata DHB. Absolute increases, from 2006 to 2007 in prevalence of students who've never smoked of 2% or more occurred in: Northland, Waitemata, Counties-Manukau, Lake District, Bay of Plenty, Tairāwhiti, Taranaki, Whanganui, Mid-Central, Hutt Valley, Nelson-Marlborough, West Coast, Canterbury, South Canterbury, Otago and Southland.

The highest increase in proportion of students who have never smoked occurred in Mid-Central DHB. In addition the absolute prevalence of daily smoking decreased by 5.7% and regular smoking prevalence decreased from 22.3 to 13.1%, almost half.

Odds of daily and regular smoking adjusted for age, sex and ethnicity in 2007 compared to 1999 are significantly lower for all district health boards (Table 12). Adjusted (age, sex and ethnicity) odds of students having never smoked in 2007 have increased significantly for all DHBs since 1999.

Trends in parental smoking and smoking in the home by DHB give only a general impression of trends because the random variation from year to year is high for DHBs due to smaller samples. The prevalence of parental smoking has not changed much since 2001. There is a small downward trend for some DHBs; Waitemata, Auckland, Lakes District, Tairāwhiti, Mid-Central, Capital –Coast, Wairarapa and Southland. For Whanganui, odds (adjusted for age, sex and ethnicity) of a student having a parental smoker in 2007 compared to 2001 have increased slightly.

In contrast to parental smoking trends, there is a consistent downward trend in smoking in the home (Table 13). Odds of a student living in a home with smoking inside have decreased since 2001 for all DHBs except Whanganui. However from 2006-2007, absolute prevalence of students living in a home with smoking inside has decreased by 2.5% in Whanganui.

## ***Discussion***

Prevalence of smoking continues to decrease for all ethnicities. The proportion of students that have never smoked also continues to increase for all ethnicities. Prevalence of smoking amongst girls is higher than smoking amongst boys. Prevalence of smoking is highest amongst Māori followed by Pasifika students then NZ European/Other. Asian students have the lowest prevalence of smoking and the prevalence of smoking by Asian girls is significantly lower than prevalence of smoking among Asian boys. Smoking prevalence decreases with increasing school decile. Declines in student smoking have been greater among students whose parents do not smoke and have a no smoking in the home rule. Prevalence of households that have a rule banning smoking inside, as reported by students, has been increasing since 2001.

Inequality in smoking prevalence by ethnicity and decile has increased from 1999-2007. Since 2003, relative decreases in smoking prevalence have been greater for NZ European/Other girls compared to Māori and Pasifika girls. Both relative and absolute decreases in smoking uptake need to be greater amongst Māori and Pasifika to reduce the disparity. Relative increases in girls who've never smoked are slightly greater for NZ European/Other compared to Māori and Pasifika. Relative increases in never smoked prevalence is considerably greater for NZ European/Other boys. If this trend continues there will be an increasing disparity between ethnicities. Asian smoking rates are much lower than other ethnicities but the lack of change in daily and regular smoking prevalence by Asian boys since 2003 suggests trends needs monitoring.

Disparity in smoking prevalence by decile has increased greatly since 1999 amongst boys and girls. Comparison of odds for girls between 2003 and 2007 indicates that relative decreases in smoking prevalence and increases in never smoked are similar across deciles. For reduction of current disparity, greater decreases in smoking prevalence among boys and girls from lower deciles is required.

This survey is a valuable tool for determining areas for policy development and further research. For example, parental smoking has retarded the decline in student smoking

prevalence from 1999 -2007. In addition, exposure to parental smoking predicted current smoking in a 20 year cohort study of Australian 9-15 year olds (Paul *et al* 2008).

However, there has only been a small change in parental smoking rates as reported by students in this New Zealand Year 10 Survey. Policy initiatives that focus on reducing the number of adults who smoke have the potential to increase the number of teenagers who have never smoked. Significant reductions in households that allow smoking inside have occurred, at the same time mass media promotions have encouraged people to “take the smoke outside” (Health Sponsorship Council 2005b). Recent research indicates that increasing the numbers of quit attempts smokers make will result in a significant increase in population cessation rates (Zhu 2007). Therefore mass media and messages that have been proven to prompt more quit attempts such as graphic, visceral health messages (Hammond *et al* 2004, Hammond *et al* 2003, Hyland *et al* 2006) will reduce parental smoking and therefore teenage smoking uptake.

Current anomalies in restrictions on the promotion and marketing of tobacco will be inconsistent with a strong mass media campaigns focusing on the devastating personal and family impacts caused by tobacco. Removing tobacco from its current prominent position beside food (Paynter & Edwards In press) and removing the eye-catching packaging (Freeman *et al* 2008) are important steps to make a strong, unambiguous statement that tobacco is deadly.

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## Additional Tables

**Table 4a: Trends in percentage of daily, regular (which is daily, weekly or monthly) and never smoked by girls for 1999-2007, by ethnicity**

|                             | 1999<br>% | 2000<br>% | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% | 2006<br>% | 2007<br>% |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <i>Māori</i>                |           |           |           |           |           |           |           |           |           |
| Daily                       | 36.2      | 37.1      | 34.3      | 34.3      | 34.2      | 29.1      | 26.5      | 25.2      | 22.4a     |
| Regular                     | 50.9      | 51.1      | 47.5      | 47.8      | 47.4      | 42.2      | 41.2      | 37.0      | 33.7a     |
| Never                       | 12.4      | 11.1      | 12.4      | 12.3      | 15.0      | 18.0      | 18.1      | 23.5      | 26.7a     |
| (n)                         | (2,448)   | (2,480)   | (2,574)   | (2,653)   | (2,934)   | (3,142)   | (2,958)   | (3,397)   | (2,551)   |
| <i>Pasifika</i>             |           |           |           |           |           |           |           |           |           |
| Daily                       | 23.0      | 19.4      | 19.5      | 17.6      | 18.1      | 13.2      | 14.5      | 13.0      | 11.0a     |
| Regular                     | 33.3      | 31.3      | 29.4      | 28.5      | 26.9      | 26.3      | 25.5      | 21.4      | 18.4a     |
| Never                       | 31.2      | 33.0      | 31.8      | 30.2      | 32.2      | 37.1      | 37.4      | 41.8      | 46.1a     |
| (n)                         | (881)     | (792)     | (952)     | (880)     | (1,168)   | (1,108)   | (1,139)   | (1,172)   | (993)     |
| <i>Asian</i>                |           |           |           |           |           |           |           |           |           |
| Daily                       | 5.9       | 5.1       | 3.2       | 3.9       | 4.5       | 2.9       | 2.9       | 2.0       | 2.3b      |
| Regular                     | 10.4      | 9.0       | 7.7       | 7.3       | 7.3       | 5.9       | 5.3       | 4.1       | 4.0a      |
| Never                       | 64.4      | 66.2      | 71.9      | 71.7      | 74.1      | 75.5      | 76.4      | 80.7      | 84.4a     |
| (n)                         | (1,014)   | (965)     | (1,176)   | (1,158)   | (1,531)   | (1,575)   | (1,516)   | (1,511)   | (1,366)   |
| <i>European &amp; Other</i> |           |           |           |           |           |           |           |           |           |
| Daily                       | 13.06     | 12.2      | 11.4      | 10.8      | 9.8       | 7.2       | 7.3       | 6.1       | 4.8a      |
| Regular                     | 30.02     | 28.8      | 25.9      | 23.2      | 21.1      | 16.7      | 16.6      | 12.9      | 10.6a     |
| Never                       | 30.55     | 33.0      | 35.7      | 38.2      | 41.4      | 48.2      | 50.9      | 56.0      | 61.0a     |
| (n)                         | (10,221)  | (10,534)  | (10,285)  | (10,245)  | (10,942)  | (10,498)  | (11,430)  | (10,510)  | (8,601)   |

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2003, adjusted for age and decile.



**Table 4b: Odds ratios comparing 2007 with 2003 for girls by ethnicity adjusted for age.**

| Category            | OR   | 95% CI      | p      |
|---------------------|------|-------------|--------|
| <i>Daily</i>        |      |             |        |
| Māori               | 0.58 | 0.51 - 0.66 | <0.001 |
| Pasifika            | 0.60 | 0.46 - 0.78 | <0.001 |
| Asian               | 0.46 | 0.29 - 0.73 | <0.01  |
| NZ European & Other | 0.49 | 0.44 - 0.56 | <0.001 |
| <i>Regular</i>      |      |             |        |
| Māori               | 0.60 | 0.53 - 0.67 | <0.001 |
| Pasifika            | 0.64 | 0.52 - 0.80 | <0.001 |
| Asian               | 0.50 | 0.36 - 0.72 | <0.001 |
| NZ European & Other | 0.47 | 0.43 - 0.51 | <0.001 |
| <i>Never</i>        |      |             |        |
| Māori               | 1.93 | 1.68 - 2.22 | <0.001 |
| Pasifika            | 1.80 | 1.50 - 2.11 | <0.001 |
| Asian               | 1.98 | 1.62 - 2.41 | <0.001 |
| NZ European & Other | 2.13 | 1.75 - 2.89 | <0.001 |

**Table 4c: Odds ratios comparing 2007 with 2003 for boys by ethnicity adjusted for age.**

| Category            | OR   | 95% CI      | p      |
|---------------------|------|-------------|--------|
| <i>Daily</i>        |      |             |        |
| Māori               | 0.64 | 0.55 - 0.75 | <0.001 |
| Pasifika            | 0.75 | 0.55 - 1.01 | 0.06   |
| Asian               | 0.82 | 0.58 - 1.15 | 0.25   |
| NZ European & Other | 0.59 | 0.51 - 0.67 | <0.001 |
| <i>Regular</i>      |      |             |        |
| Māori               | 0.68 | 0.59 - 0.78 | <0.001 |
| Pasifika            | 0.76 | 0.59 - 0.97 | <0.05  |
| Asian               | 0.78 | 0.59 - 1.3  | 0.08   |
| NZ European & Other | 0.57 | 0.52 - 0.63 | <0.001 |
| <i>Never</i>        |      |             |        |
| Māori               | 1.46 | 1.30 - 1.65 | <0.001 |
| Pasifika            | 1.25 | 1.04 - 1.50 | <0.05  |
| Asian               | 1.41 | 1.18 - 1.68 | <0.001 |
| NZ European & Other | 1.81 | 1.71 - 1.93 | <0.001 |

**Table 4d: Trends in percentage of daily, regular (which is daily, weekly or monthly) and never smoked by boys for 1999-2007, by ethnicity**

|                             | 1999     | 2000     | 2001     | 2002    | 2003     | 2004    | 2005     | 2006     | 2007    |
|-----------------------------|----------|----------|----------|---------|----------|---------|----------|----------|---------|
|                             | %        | %        | %        | %       | %        | %       | %        | %        | %       |
| <i>Māori</i>                |          |          |          |         |          |         |          |          |         |
| Daily                       | 23.6     | 24.2     | 19.1     | 16.8    | 19.4     | 16.2    | 14.0     | 13.5     | 12.4a   |
| Regular                     | 33.6     | 33.7     | 28.7     | 24.9    | 27.0     | 24.4    | 21.3     | 20.7     | 19.0a   |
| Never                       | 21.4     | 21.9     | 24.9     | 25.8    | 29.4     | 32.3    | 34.6     | 37.4     | 39.1a   |
| (n)                         | (2,199)  | (2,208)  | (2,462)  | (2,241) | (2,844)  | (2,905) | (2,719)  | (3,243)  | (2,335) |
| <i>Pasifika</i>             |          |          |          |         |          |         |          |          |         |
| Daily                       | 16.6     | 16.8     | 14.3     | 10.8    | 12.5     | 11.8    | 10.2     | 8.5      | 8.9     |
| Regular                     | 23.7     | 25.8     | 23.0     | 16.5    | 19.7     | 17.7    | 16.3     | 13.9     | 14.1c   |
| Never                       | 36.3     | 37.0     | 38.5     | 42.8    | 44.7     | 44.0    | 45.1     | 48.5     | 52.2c   |
| (n)                         | (873)    | (892)    | (904)    | (1,010) | (1,128)  | (1,192) | (1,107)  | (1,177)  | (899)   |
| <i>Asian</i>                |          |          |          |         |          |         |          |          |         |
| Daily                       | 7.9      | 9.4      | 7.2      | 7.5     | 6.4      | 3.8     | 5.3      | 3.4      | 5.4     |
| Regular                     | 13.4     | 14.6     | 11.4     | 11.2    | 10.2     | 6.9     | 8.3      | 5.4      | 8.0     |
| Never                       | 59.9     | 59.2     | 63.7     | 64.4    | 69.1     | 75.1    | 72.0     | 76.8     | 75.6a   |
| (n)                         | (1,138)  | (1,112)  | (999)    | (1,225) | (1,645)  | (1,502) | (1,601)  | (1,635)  | (1,167) |
| <i>European &amp; Other</i> |          |          |          |         |          |         |          |          |         |
| Daily                       | 12.6     | 12.1     | 10.0     | 8.6     | 7.6      | 5.9     | 5.4      | 4.1      | 4.2a    |
| Regular                     | 24.2     | 23.3     | 20.0     | 16.6    | 14.2     | 11.2    | 11.0     | 8.1      | 8.2a    |
| Never                       | 32.7     | 34.5     | 38.0     | 41.6    | 46.9     | 51.9    | 55.1     | 61.0     | 62.9a   |
| (n)                         | (10,258) | (10,347) | (10,046) | (9,873) | (10,735) | (9,999) | (10,291) | (10,309) | (8,066) |

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2003, adjusted for age and decile.

**Table 6a: Trends in daily, regular (daily, weekly or monthly) smoking for girls by decile from 1999-2007**

| SES    |         | 1999    | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    | 2006    | 2007    |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|        |         | %       | %       | %       | %       | %       | %       | %       | %       | %       |
| 1 & 2  | Daily   | 28.1    | 26.7    | 27.5    | 29.7    | 29.4    | 26.7    | 22.2    | 22.0    | 19.5a   |
|        | Regular | 36.8    | 39.6    | 39.0    | 41.5    | 38.5    | 38.7    | 34.4    | 30.4    | 28.2a   |
|        | Never   | 23.5    | 23.4    | 23.8    | 22.1    | 25.0    | 25.3    | 30.2    | 32.8    | 37.2a   |
|        | (n)     | (1235)  | (1153)  | (1245)  | (1368)  | (1375)  | (1391)  | (1497)  | (1444)  | (989)   |
| 3 & 4  | Daily   | 23.4    | 22.3    | 21.6    | 20.0    | 20.5    | 16.2    | 16.4    | 14.4    | 14.1a   |
|        | Regular | 37.9    | 36.1    | 33.0    | 31.1    | 31.1    | 25.8    | 27.1    | 21.9    | 22.0a   |
|        | Never   | 25.3    | 26.1    | 29.9    | 29.6    | 30.0    | 37.6    | 36.5    | 44.3    | 46.5a   |
|        | (n)     | (2363)  | (2418)  | (2432)  | (2347)  | (2906)  | (3086)  | (2550)  | (2829)  | (2328)  |
| 5 & 6  | Daily   | 17.9    | 19.3    | 17.0    | 16.1    | 15.0    | 12.4    | 12.3    | 11.8    | 8.6a    |
|        | Regular | 34.4    | 33.9    | 30.3    | 28.2    | 26.4    | 23.0    | 22.1    | 20.3    | 14.9a   |
|        | Never   | 26.6    | 28.4    | 31.0    | 32.3    | 35.4    | 40.2    | 41.3    | 47.3    | 52.6a   |
|        | (n)     | (3,850) | (3,689) | (3,708) | (3,742) | (4,131) | (3,724) | (3,997) | (4,044) | (3,147) |
| 7 & 8  | Daily   | 14.9    | 14.9    | 12.2    | 12.8    | 12.3    | 8.3     | 8.6     | 7.5     | 6.5a    |
|        | Regular | 30.0    | 32.2    | 27.1    | 25.2    | 22.8    | 18.0    | 18.3    | 15.2    | 13.3a   |
|        | Never   | 32.4    | 30.9    | 34.1    | 37.7    | 39.9    | 47.0    | 49.6    | 52.2    | 55.8a   |
|        | (n)     | (3,640) | (3,621) | (3,404) | (3,585) | (3,529) | (3,949) | (4,008) | (4,265) | (2,964) |
| 9 & 10 | Daily   | 10.3    | 8.0     | 8.9     | 7.1     | 6.5     | 4.6     | 4.8     | 3.9     | 3.5a    |
|        | Regular | 27.4    | 22.9    | 22.1    | 18.4    | 17.0    | 13.3    | 13.0    | 10.0    | 8.7a    |
|        | Never   | 36.5    | 40.7    | 42.8    | 45.9    | 51.6    | 57.0    | 58.6    | 63.3    | 68.1a   |
|        | (n)     | (3,415) | (3,821) | (4,080) | (3,807) | (4,519) | (4,019) | (4,857) | (3,998) | (4,083) |

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2003, adjusted for age and ethnicity.

**Table 6b: Odds ratios comparing 2007 with 2003 for girls by school decile adjusted for age and ethnicity.**

| Smoking        | SES    | OR   | 95% CI      | p      |
|----------------|--------|------|-------------|--------|
| <i>Daily</i>   | 1 & 2  | 0.56 | 0.45 – 0.69 | <0.001 |
|                | 3 & 4  | 0.61 | 0.52 – 0.71 | <0.001 |
|                | 5 & 6  | 0.52 | 0.45 – 0.62 | <0.001 |
|                | 7 & 8  | 0.48 | 0.40 – 0.58 | <0.001 |
|                | 9 & 10 | 0.50 | 0.41 – 0.62 | <0.001 |
| <i>Regular</i> | 1 & 2  | 0.62 | 0.51 – 0.75 | <0.001 |
|                | 3 & 4  | 0.60 | 0.52 – 0.68 | <0.001 |
|                | 5 & 6  | 0.47 | 0.42 – 0.54 | <0.001 |
|                | 7 & 8  | 0.52 | 0.45 – 0.59 | <0.001 |
|                | 9 & 10 | 0.46 | 0.40 – 0.53 | <0.001 |
| <i>Never</i>   | 1 & 2  | 1.74 | 1.44 – 2.10 | <0.001 |
|                | 3 & 4  | 2.20 | 1.93 – 2.49 | <0.001 |
|                | 5 & 6  | 2.13 | 1.92 – 2.36 | <0.001 |
|                | 7 & 8  | 1.93 | 1.73 – 2.14 | <0.001 |
|                | 9 & 10 | 2.07 | 1.88 – 2.28 | <0.001 |

**Table 6c: Odds ratios comparing 2007 with 2003 for boys by school decile adjusted for age and ethnicity.**

| Smoking        | SES    | OR   | 95% CI      | p      |
|----------------|--------|------|-------------|--------|
| <i>Daily</i>   | 1 & 2  | 0.77 | 0.62 – 0.97 | 0.023  |
|                | 3 & 4  | 0.66 | 0.54 – 0.80 | <0.001 |
|                | 5 & 6  | 0.68 | 0.57 – 0.81 | <0.001 |
|                | 7 & 8  | 0.46 | 0.37 – 0.58 | <0.001 |
|                | 9 & 10 | 0.61 | 0.48 – 0.76 | <0.001 |
| <i>Regular</i> | 1 & 2  | 0.80 | 0.66 – 0.97 | <0.05  |
|                | 3 & 4  | 0.70 | 0.60 – 0.83 | <0.001 |
|                | 5 & 6  | 0.61 | 0.53 – 0.71 | <0.001 |
|                | 7 & 8  | 0.48 | 0.40 – 0.56 | <0.001 |
|                | 9 & 10 | 0.66 | 0.56 – 0.78 | <0.001 |
| <i>Never</i>   | 1 & 2  | 1.12 | 0.95 – 1.31 | 0.17   |
|                | 3 & 4  | 1.43 | 1.26 – 1.62 | <0.001 |
|                | 5 & 6  | 1.92 | 1.74 – 2.12 | <0.001 |
|                | 7 & 8  | 1.96 | 1.76 – 2.18 | <0.001 |
|                | 9 & 10 | 1.60 | 1.46 – 1.77 | <0.001 |

**Table 6d: Trends in daily, regular (daily, weekly or monthly) smoking for boys by decile from 1999-2007**

| SES    |         | 1999<br>% | 2000<br>% | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% | 2006<br>% | 2007<br>% |
|--------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 & 2  | Daily   | 19.0      | 17.6      | 16.9      | 15.0      | 16.9      | 15.3      | 11.3      | 13.6      | 13.0c     |
|        | Regular | 27.4      | 24.6      | 25.0      | 20.3      | 23.5      | 21.8      | 16.4      | 19.6      | 18.8c     |
|        | Never   | 34.0      | 32.0      | 35.8      | 38.5      | 39.7      | 40.0      | 45.9      | 38.1      | 43.4      |
|        | (n)     | (1204)    | (1066)    | (1379)    | (1361)    | (1535)    | (1612)    | (1510)    | (1233)    | (1,152)   |
| 3 & 4  | Daily   | 15.4      | 16.1      | 12.9      | 11.8      | 13.3      | 10.4      | 10.3      | 8.3       | 8.7a      |
|        | Regular | 24.0      | 24.8      | 20.7      | 18.5      | 19.0      | 16.1      | 16.4      | 12.6      | 13.6a     |
|        | Never   | 32.4      | 33.3      | 38.9      | 40.5      | 43.0      | 46.6      | 46.0      | 51.6      | 52.9a     |
|        | (n)     | (2324)    | (2814)    | (2600)    | (2581)    | (2426)    | (2555)    | (2702)    | (2758)    | (2,087)   |
| 5 & 6  | Daily   | 15.5      | 14.9      | 13.3      | 10.7      | 9.9       | 7.8       | 8.0       | 6.7       | 6.6a      |
|        | Regular | 26.0      | 25.7      | 22.5      | 19.2      | 17.2      | 13.4      | 15.0      | 11.9      | 11.0a     |
|        | Never   | 30.7      | 32.1      | 34.1      | 37.8      | 43.4      | 45.7      | 48.1      | 53.9      | 60.0a     |
|        | (n)     | (3562)    | (3234)    | (3289)    | (2898)    | (4086)    | (3641)    | (3513)    | (3723)    | (3,251)   |
| 7 & 8  | Daily   | 13.6      | 12.6      | 10.1      | 9.6       | 9.2       | 7.0       | 6.0       | 5.0       | 4.3a      |
|        | Regular | 25.0      | 23.3      | 20.0      | 17.3      | 16.2      | 12.1      | 11.4      | 9.6       | 8.1a      |
|        | Never   | 32.3      | 35.2      | 37.9      | 41.3      | 44.5      | 52.0      | 55.0      | 59.8      | 61.6a     |
|        | (n)     | (3735)    | (4123)    | (3625)    | (4299)    | (4290)    | (4124)    | (3888)    | (4640)    | (2,451)   |
| 9 & 10 | Daily   | 10.9      | 12.3      | 8.4       | 6.1       | 5.6       | 4.7       | 4.1       | 3.3       | 3.4a      |
|        | Regular | 22.9      | 24.2      | 19.3      | 13.8      | 11.3      | 10.7      | 8.8       | 7.1       | 7.6a      |
|        | Never   | 37.3      | 38.7      | 40.6      | 45.4      | 54.5      | 58.5      | 60.7      | 66.2      | 65.0a     |
|        | (n)     | (3568)    | (3259)    | (3447)    | (3194)    | (3908)    | (3528)    | (4044)    | (4006)    | (3,526)   |

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2003, adjusted for age and ethnicity.

**Table 7a: Trends in proportion of Year 10 student daily, regular (daily, weekly or monthly) smoking or never smoked during 2001-2007 by parental smoking (Data collected on parental smoking and smoking in the home from 2001 onwards)**

| Parental Smoking |         | 2001     | 2002     | 2003     | 2004     | 2005     | 2006     | 2007     |
|------------------|---------|----------|----------|----------|----------|----------|----------|----------|
|                  |         | %        | %        | %        | %        | %        | %        | %        |
| <i>Both</i>      | Daily   | 31.6     | 31.4     | 29.7     | 24.8     | 25.1     | 23.3     | 21.1a    |
|                  | Regular | 44.1     | 42.1     | 40.9     | 36.2     | 36.4     | 33.0     | 30.2a    |
|                  | Never   | 18.2     | 18.9     | 20.1     | 23.7     | 25.4     | 27.5     | 30.3a    |
|                  | (n)     | (3,977)  | (3,971)  | (4,656)  | (4,764)  | (4,636)  | (4,833)  | (3,619)  |
| <i>One</i>       | Daily   | 18.3     | 16.5     | 15.7     | 12.8     | 11.2     | 11.2     | 9.9a     |
|                  | Regular | 31.2     | 28.2     | 25.9     | 22.2     | 20.7     | 19.0     | 16.9a    |
|                  | Never   | 26.1     | 28.8     | 33.2     | 37.0     | 39.1     | 41.3     | 45.9a    |
|                  | (n)     | (7,807)  | (7,331)  | (8,526)  | (8,185)  | (8,243)  | (8,129)  | (6,334)  |
| <i>None</i>      | Daily   | 7.2      | 6.5      | 6.2      | 4.6      | 4.3      | 3.1      | 3.0a     |
|                  | Regular | 17.5     | 15.1     | 13.4     | 10.7     | 10.4     | 7.6      | 7.1a     |
|                  | Never   | 44.3     | 46.5     | 52.0     | 57.4     | 59.5     | 65.6     | 68.4a    |
|                  | (n)     | (17,487) | (17,387) | (19,300) | (18,627) | (19,497) | (19,552) | (15,596) |

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2001, adjusted for gender, age and ethnicity.

**Table 7b: Odds ratios comparing smoking or never smoked in 2007 with 2001 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         | 0.57 | 0.51-0.63 | <0.001 | Both           | 0.54 | 0.49-0.60 | <0.001 | Both         | 2.22 | 2.08-2.36 | <0.001 |
| One          | 0.49 | 0.44-0.55 | <0.001 | One            | 0.45 | 0.42-0.49 | <0.001 | One          | 2.41 | 2.23-2.60 | <0.001 |
| None         | 0.40 | 0.35-0.45 | <0.001 | None           | 0.36 | 0.33-0.39 | <0.001 | None         | 2.74 | 2.61-2.88 | <0.001 |

**Table 8a: Trends in proportion of Year 10 student daily, regular (daily, weekly or monthly) smoking or never smoked during 2001-2007 by smoking in the home (Data collected on parental smoking and smoking in the home from 2001 onwards)**

|                                       |         | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% | 2006<br>% | 2007<br>% |
|---------------------------------------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <i>Smoking<br/>allowed<br/>inside</i> | Daily   | 24.2      | 24.2      | 24.4      | 18.2      | 18.20     | 17.8      | 17.0a     |
|                                       | Regular | 37.5      | 35.7      | 36.1      | 28.9      | 29.09     | 27.3      | 25.8a     |
|                                       | Never   | 22.1      | 24.1      | 24.8      | 31.0      | 31.37     | 33.7      | 36.1a     |
|                                       | (n)     | (8,848)   | (7,656)   | (9,619)   | (8,651)   | (8,689)   | (8,182)   | (5,704)   |
| <i>No smoking<br/>inside home</i>     | Daily   | 8.8       | 7.7       | 6.7       | 6.6       | 5.72      | 4.8       | 4.5a      |
|                                       | Regular | 19.3      | 16.6      | 14.0      | 13.3      | 12.35     | 9.8       | 9.1a      |
|                                       | Never   | 41.9      | 44.3      | 50.2      | 53.0      | 55.94     | 60.6      | 63.5a     |
|                                       | (n)     | (20,127)  | (20,549)  | (22,556)  | (23,270)  | (24,072)  | (24,529)  | (20,033)  |

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2001, adjusted for gender, age and ethnicity.

**Table 8b: Odds ratios comparing smoking or never smoked in 2007 with 2001 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      |
|--------------|------|-----------|--------|----------------|------|-----------|--------|--------------|------|-----------|--------|
| Yes          | 0.63 | 0.57-0.68 | <0.001 | Yes            | 0.57 | 0.53-0.62 | <0.001 | Yes          | 2.00 | 1.85-2.16 | <0.001 |
| No           | 0.48 | 0.44-0.52 | <0.001 | No             | 0.41 | 0.39-0.44 | <0.001 | No           | 2.48 | 2.37-2.59 | <0.001 |

**Table 9: 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 ethnicity (Data collected on parental smoking and smoking in the home from 2001 onwards)**

|                        | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% | 2006<br>% | 2007<br>% |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <i>All ethnicities</i> |           |           |           |           |           |           |           |
| Parental Smoker        | 40.4      | 39.5      | 40.7      | 41.1      | 39.8      | 39.9      | 39.1a     |
| Smoking in home        | 30.6      | 27.2      | 30.0      | 27.1      | 26.6      | 25.1      | 22.3a     |
| <i>Māori</i>           |           |           |           |           |           |           |           |
| Parental Smoker        | 66.1      | 64.9      | 64.5      | 64.2      | 65.3      | 65.1      | 62.8b     |
| Smoking in home        | 47.6      | 44.4      | 48.1      | 39.6      | 41.9      | 39.8      | 36.6a     |
| <i>Pasifika</i>        |           |           |           |           |           |           |           |
| Parental Smoker        | 50.1      | 45.6      | 47.1      | 49.6      | 49.0      | 49.2      | 47.6      |
| Smoking in home        | 34.7      | 27.4      | 34.5      | 25.3      | 28.5      | 27.4      | 25.5a     |
| <i>Asian</i>           |           |           |           |           |           |           |           |
| Parental Smoker        | 29.8      | 29.3      | 32.1      | 30.3      | 29.2      | 25.8      | 26.4      |
| Smoking in home        | 20.0      | 19.7      | 20.5      | 20.3      | 19.0      | 15.2      | 13.8a     |
| <i>European/Other</i>  |           |           |           |           |           |           |           |
| Parental Smoker        | 34.2      | 33.8      | 35.0      | 34.9      | 33.8      | 33.0      | 33.1      |
| Smoking in home        | 27.2      | 24.0      | 26.2      | 24.6      | 23.4      | 21.6      | 19.0a     |

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  2007 compared with 1999, adjusted for gender, age and ethnicity.



**Table 10a: 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 decile (Data collected on parental smoking and smoking in the home from 2001 onwards)**

|                                | 2001<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% | 2006<br>% | 2007<br>% |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <i>SES 1-2 (most deprived)</i> |           |           |           |           |           |           |           |
| Parental smoker                | 59.4      | 58.5      | 57.4      | 60.1      | 56.7      | 62.1      | 58.1      |
| Smoking in home                | 42.2      | 41.4      | 43.9      | 34.3      | 36.6      | 39.9      | 32.6a     |
| <i>SES 3-4</i>                 |           |           |           |           |           |           |           |
| Parental smoker                | 50.8      | 47.7      | 50.5      | 49.9      | 50.2      | 48.7      | 51.8      |
| Smoking in home                | 37.9      | 33.3      | 39.0      | 32.5      | 33.6      | 30.6      | 30.1a     |
| <i>SES 5-6</i>                 |           |           |           |           |           |           |           |
| Parental smoker                | 43.7      | 43.3      | 44.2      | 44.8      | 44.2      | 45.9      | 41.9b     |
| Smoking in home                | 34.7      | 31.9      | 33.4      | 29.9      | 30.5      | 29.2      | 24.2a     |
| <i>SES 7-8</i>                 |           |           |           |           |           |           |           |
| Parental smoker                | 36.3      | 35.4      | 38.6      | 38.2      | 36.5      | 36.4      | 36.0      |
| Smoking in home                | 27.9      | 24.3      | 27.9      | 26.5      | 24.8      | 22.5      | 20.3a     |
| <i>SES 9-10</i>                |           |           |           |           |           |           |           |
| Parental smoker                | 27.4      | 26.7      | 27.0      | 26.2      | 27.4      | 24.5      | 26.3c     |
| Smoking in home                | 20.6      | 16.7      | 18.5      | 18.5      | 17.4      | 15.1      | 14.7a     |

a p<0.001, b p<0.01, c p<0.05 compared with 2001, adjusted for gender, age and ethnicity.

**Table 10b: Odds ratios for smoking in the home by decile, comparing 2007 with 2001 adjusting for age, ethnicity and gender.**

| <i>Smoking in the Home</i> | OR   | 95% CI      | p      |
|----------------------------|------|-------------|--------|
| SES 1&2                    | 0.66 | 0.58 – 0.75 | <0.001 |
| SES 3&4                    | 0.71 | 0.65 – 0.78 | <0.001 |
| SES 5&6                    | 0.59 | 0.54 – 0.63 | <0.001 |
| SES 7&8                    | 0.66 | 0.60 – 0.72 | <0.001 |
| SES 9&10                   | 0.65 | 0.60 – 0.71 | <0.001 |

**Table 11: 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. (Data collected on parental smoking and smoking in the home from 2001 onwards)**

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

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2001, adjusted for gender, age and ethnicity.

|                           | 1999    | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    | 2006    | 2007    |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                           | %       | %       | %       | %       | %       | %       | %       | %       | %       |
| <i>Waikato DHB</i>        |         |         |         |         |         |         |         |         |         |
| Daily                     | 13.9    | 15.6    | 15.3    | 14.2    | 13.2    | 10.3    | 8.6     | 8.2     | 8.6a    |
| Regular                   | 27.0    | 29.8    | 28.1    | 25.6    | 23.0    | 18.2    | 17.6    | 14.0    | 14.8a   |
| Never                     | 28.7    | 30.6    | 33.0    | 35.4    | 39.5    | 45.6    | 48.2    | 55.0    | 56.3a   |
| (n)                       | (2,786) | (2,784) | (2,613) | (2,982) | (3,432) | (3,181) | (2,693) | (3,057) | (1,711) |
| <i>Lakes District DHB</i> |         |         |         |         |         |         |         |         |         |
| Daily                     | 21.1    | 26.2    | 19.9    | 21.0    | 18.5    | 12.1    | 11.7    | 15.6    | 7.5a    |
| Regular                   | 31.9    | 35.9    | 29.3    | 30.8    | 31.3    | 20.8    | 20.9    | 22.4    | 15.0a   |
| Never                     | 22.7    | 21.9    | 27.7    | 27.9    | 31.0    | 41.1    | 39.8    | 41.8    | 46.0a   |
| (n)                       | (797)   | (657)   | (782)   | (756)   | (693)   | (679)   | (708)   | (949)   | (548)   |
| <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    |
| Regular                   | 30.1    | 30.5    | 23.1    | 23.2    | 24.9    | 21.3    | 19.2    | 14.1    | 13.0a   |
| Never                     | 29.6    | 26.9    | 36.2    | 34.7    | 35.5    | 41.1    | 44.4    | 49.5    | 56.7a   |
| (n)                       | (1,282) | (1,186) | (1,608) | (1,683) | (1,170) | (1,960) | (2,133) | (2,001) | (1,396) |
| <i>Tairāwhiti DHB</i>     |         |         |         |         |         |         |         |         |         |
| Daily                     | 25.7    | 20.1    | 20.3    | 21.2    | 19.6    | 19.2    | 10.5    | 12.7    | 9.7a    |
| Regular                   | 39.7    | 28.7    | 29.7    | 30.4    | 28.6    | 24.4    | 20.5    | 19.6    | 18.9a   |
| Never                     | 22.3    | 21.1    | 30.3    | 22.6    | 35.5    | 37.0    | 37.1    | 43.7    | 49.4a   |
| (n)                       | (292)   | (279)   | (360)   | (358)   | (276)   | (308)   | (420)   | (362)   | (413)   |

a p<0.001, b p<0.01, c p<0.05 compared with 1999, adjusted for gender, age and ethnicity.

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

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 1999, adjusted for gender, age and ethnicity.

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

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 1999, adjusted for gender, age and ethnicity.

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

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 1999, adjusted for gender, age and ethnicity.

**Table 12: Relative changes in daily, regular (daily, weekly, monthly) smoking and never smoked measured as odds ratios adjusted for age, sex and ethnicity by District Health Board.**

| District Health Board | N (2007) | Daily |           |        | Regular |           |        | Never |         |        |
|-----------------------|----------|-------|-----------|--------|---------|-----------|--------|-------|---------|--------|
|                       |          | OR    | 95% CI    | p      | OR      | 95% CI    | p      | OR    | 95% CI  | p      |
| Northland             | 585      | 0.56  | 0.39-0.78 | <0.001 | 0.51    | 0.38-0.67 | <0.001 | 2.7   | 2.1-3.4 | <0.001 |
| Waitemata             | 2,956    | 0.28  | 0.23-0.35 | <0.001 | 0.29    | 0.25-0.34 | <0.001 | 3.1   | 2.7-3.5 | <0.001 |
| Auckland              | 1,839    | 0.41  | 0.32-0.52 | <0.001 | 0.42    | 0.35-0.50 | <0.001 | 2.3   | 2.0-2.6 | <0.001 |
| Counties-Manukau      | 1,808    | 0.4   | 0.32-0.50 | <0.001 | 0.37    | 0.31-0.44 | <0.001 | 2.2   | 1.9-2.6 | <0.001 |
| Waikato               | 1,726    | 0.53  | 0.43-0.66 | <0.001 | 0.44    | 0.37-0.52 | <0.001 | 3.4   | 3.0-4.0 | <0.001 |
| Lakes District        | 559      | 0.26  | 0.18-0.39 | <0.001 | 0.35    | 0.26-0.48 | <0.001 | 3.1   | 2.4-4.0 | <0.001 |
| Bay of Plenty         | 1,406    | 0.45  | 0.35-0.59 | <0.001 | 0.34    | 0.27-0.42 | <0.001 | 3.3   | 2.8-3.9 | <0.001 |
| Tairāwhiti            | 416      | 0.25  | 0.15-0.40 | <0.001 | 0.29    | 0.20-0.44 | <0.001 | 3.8   | 2.5-5.6 | <0.001 |
| Taranaki              | 936      | 0.49  | 0.34-0.70 | <0.001 | 0.41    | 0.31-0.55 | <0.001 | 2.8   | 2.2-3.4 | <0.001 |
| Hawkes Bay            | 1,290    | 0.68  | 0.54-0.86 | <0.01  | 0.41    | 0.34-0.50 | <0.001 | 3     | 2.5-3.6 | <0.001 |
| Wanganui              | 402      | 0.43  | 0.28-0.65 | <0.001 | 0.44    | 0.31-0.63 | <0.001 | 3.1   | 2.3-4.1 | <0.001 |
| Mid-Central           | 1,276    | 0.44  | 0.33-0.57 | <0.001 | 0.36    | 0.29-0.45 | <0.001 | 3     | 2.5-3.6 | <0.001 |
| Hutt Valley           | 978      | 0.46  | 0.34-0.63 | <0.001 | 0.42    | 0.33-0.53 | <0.001 | 2.9   | 2.4-3.5 | <0.001 |
| Capital-Coast         | 1,919    | 0.45  | 0.34-0.59 | <0.001 | 0.45    | 0.36-0.55 | <0.001 | 2.9   | 2.5-3.4 | <0.001 |
| Wairarapa             | 400      | 0.53  | 0.26-0.70 | <0.001 | 0.36    | 0.25-0.54 | <0.001 | 2.4   | 1.7-3.4 | <0.001 |
| Nelson-Marlborough    | 1,123    | 0.41  | 0.30-0.56 | <0.001 | 0.36    | 0.28-0.46 | <0.001 | 2.8   | 2.3-3.4 | <0.001 |
| West Coast            | 164      | 0.25  | 0.12-0.53 | <0.001 | 0.24    | 0.13-0.44 | <0.001 | 3.3   | 2.1-5.2 | <0.001 |
| Canterbury            | 3,610    | 0.35  | 0.28-0.40 | <0.001 | 0.28    | 0.25-0.32 | <0.001 | 3.3   | 3.0-3.7 | <0.001 |
| South Canterbury      | 489      | 0.49  | 0.31-0.78 | 0.002  | 0.36    | 0.25-0.52 | <0.001 | 4.2   | 3.1-5.7 | <0.001 |
| Otago                 | 1,471    | 0.37  | 0.28-0.48 | <0.001 | 0.3     | 0.24-0.37 | <0.001 | 3.4   | 2.9-4.0 | <0.001 |
| Southland             | 794      | 0.46  | 0.33-0.64 | <0.001 | 0.36    | 0.27-0.46 | <0.001 | 3.5   | 2.8-4.5 | <0.001 |

Table 13: 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<br>% | 2002<br>% | 2003<br>% | 2004<br>% | 2005<br>% | 2006<br>% | 2007<br>% |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <i>Northland DHB</i>        |           |           |           |           |           |           |           |
| Parental smoker             | 48        | 45        | 50        | 53        | 51        | 54        | 51        |
| Smoking in home             | 37        | 34        | 38        | 34        | 36        | 36        | 30b       |
| <i>Waitemata DHB</i>        |           |           |           |           |           |           |           |
| Parental smoker             | 36        | 38        | 36        | 38        | 35        | 34        | 33b       |
| Smoking in home             | 27        | 25        | 27        | 25        | 21        | 22        | 19a       |
| <i>Auckland DHB</i>         |           |           |           |           |           |           |           |
| Parental smoker             | 37        | 33        | 33        | 31        | 30        | 30        | 31a       |
| Smoking in home             | 28        | 21        | 24        | 19        | 21        | 19        | 19a       |
| <i>Counties-Manukau DHB</i> |           |           |           |           |           |           |           |
| Parental smoker             | 42        | 42        | 39        | 41        | 41        | 42        | 45        |
| Smoking in home             | 30        | 29        | 28        | 25        | 26        | 27        | 22a       |
| <i>Waikato DHB</i>          |           |           |           |           |           |           |           |
| Parental smoker             | 43        | 42        | 41        | 42        | 42        | 41        | 45        |
| Smoking in home             | 33        | 29        | 31        | 28        | 28        | 26        | 26a       |

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2001, adjusted for gender, age and ethnicity.



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

a  $p < 0.001$ , b  $p < 0.01$ , c  $p < 0.05$  compared with 2001, adjusted for gender, age and ethnicity.

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

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.

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