

# **Tobacco use among Year 10 and 12 students in New Zealand: a report on the Global Youth Tobacco Survey data**

## **The New Zealand Youth Lifestyle Study 2002**

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## Foreword

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This report presents findings from the New Zealand Youth Lifestyle Study 2002 Survey (YLS). The purposes of the survey were to monitor smoking related behaviours and attitudes among young people; monitor any impacts of tobacco control interventions on young people; and be able to make international comparisons. The YLS is conducted biennially and plays an important role in the surveillance of tobacco use among young people in New Zealand.

To effectively address illness and premature death caused by tobacco use at national and international levels requires the sharing of accurate information. The questionnaire content, research methods and analytical procedures discussed in this report are comparable to the Global Youth Tobacco Survey (GYTS). The GYTS has been developed by the World Health Organisation and the Centres for Disease Control to track tobacco use among youth across countries. As such, this report contributes to New Zealand's responsibilities under Article 20 ("Research, surveillance and exchange of information") of the WHO's Framework Convention for Tobacco Control.

Tobacco consumption has been widely recognised as the leading preventable cause of premature mortality in developed countries. New Zealand studies have found that tobacco makes a major contribution to both socioeconomic and ethnic inequalities in health. A focus of this report has been to assess where smoking disparities exist among the youth population. Such a focus will aid in the development of programmes to avert future morbidity and mortality and, ultimately, contribute to a reduction of health inequalities in New Zealand.

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## Executive Summary

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The New Zealand Youth Lifestyle Study (YLS) is a biennial, school based survey of tobacco related attitudes, beliefs and behaviours. The YLS incorporates key measures from, and uses methods compatible with the international Global Youth Tobacco Survey (GYTS). This enables data from the YLS to be internationally comparable. The GYTS is currently used in over 150 countries (Centres for Disease Control, 2004).

The aim of the YLS is to monitor both the use of tobacco products by youth and youth beliefs and attitudes with respect to tobacco use. In addition, the surveys measure the exposure of young people to second-hand tobacco smoke (SHS); the implementation of prevention programmes, such as those that aim to restrict underage access to tobacco products; school-based education about tobacco; awareness of national programmes to de-normalize tobacco use; and smoking cessation behaviour.

The survey described here was conducted in 2002. The methods used for the YLS follow those recommended for the GYTS: multi-stage cluster sampling; trained interviewers to administer the survey during school class-time; and key questions drawn from both the core and optional GYTS templates. Unlike the GYTS, the YLS did not use proportional sampling in the 2002 survey. Primarily, this was to allow comparison with previous NZ surveys and to ensure that students from both rural and urban centres and both the North and South Islands of New Zealand were included. Data were weighted to allow for the cluster sample approach. The results represent the behaviour and attitudes of young New Zealanders mainly between the ages of 14 and 17 years.

The 2002 YLS was undertaken in May 2002 and coincided with a period of industrial action by NZ secondary school staff and students. Consequently, in some schools, high absence rates were reported when surveys were administered. Additionally, a small number of schools were affected by snow and flooding during the study period. Concerns about the generalisability of study results led to 10 further schools being surveyed in November 2002. The selection of these additional schools followed the same sampling protocol as the survey earlier in 2002. All data were collated and analysed using STATA<sup>1</sup>.

The total sample for whom full tobacco data were available was 3,434. Students were predominantly from Year 10 (2,520), with the remaining 914 from Year 12. In comparison with the NZ population: 15.4% of the sample self-identified as Maori (the indigenous peoples of NZ): slightly under-representative of Maori in the normally resident NZ population of 15 year olds. Similarly, students from lower socio-economic groups were slightly under-represented in the study. Socio-economic status was assessed using school decile ratings. School decile values are officially assigned to each NZ school and are calculated from Census and school data.

Smoking prevalence was measured using two questions. In response to the question “have you ever smoked, even just a few puffs”, around two thirds of the students

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<sup>1</sup> Stata Corporation. (2003) *Stata Version 8.0*. Texas

indicated that they had smoked tobacco (63% of boys, 67% of girls). The second measure of smoking status categorised students as being either non-smokers, monthly or more frequent smokers, or daily smokers. In response to the question “how often do you smoke now” 15.2% of girls and 10.3% of boys reported smoking daily. A greater proportion of Maori than European students were daily smokers. A positive association between low socio-economic status and high prevalence of smoking behaviours was evident for a number of measures, including the age when a cigarette was first tried, the prevalence of daily smoking, and exposure to second-hand smoke (SHS). In contrast, a greater proportion of students from higher socio-economic schools purchased cigarettes from shops and reported that exposure to SHS was harmful.

# 1. Introduction

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During the 1990s, New Zealand governments introduced legislation (the Smoke-free Environments Act 1990 and subsequent amendments) that removed tobacco industry sponsorship of sport, art, and cultural events; prohibited advertising of tobacco products other than at point of sale; and sought to ensure that non-smokers were protected from exposure to second hand tobacco smoke (SHS) in many workplaces and shared public places (Smoke-free Environments Act 1990).

One provision of the Smoke-free Environments Act 1990 was to establish the Health Sponsorship Council (HSC) as a crown entity, “*to promote health and to encourage healthy lifestyles*” (Smoke-free Environments Act 1990, p. 30). The HSC is described as a social change agent for marketing social messages to New Zealanders (Health Sponsorship Council, 2001).

The biennial Youth Lifestyle Study (YLS) surveys, managed by the HSC, provide ongoing monitoring of the tobacco related beliefs, attitudes and behaviours of young New Zealanders. In this document responses to selected YLS questions about the use of tobacco products and knowledge about harm from tobacco that are comparable to the Global Youth Tobacco Survey (GYTS) are reported.

## 1.1 The public health impact of tobacco use

Internationally, tobacco use continues to be a leading cause of preventable premature death and one of the greatest public health issues. A recent report by the World Health Organization attributed 8.8% of worldwide mortality to tobacco use. In comparison, mortality rates for alcohol and illicit drugs were 3.2% and 0.4% respectively (World Health Organization, 2004).

Most adult smokers start smoking during adolescence (Elders, Perry, Eriksen & Giovino, 1994). The progression to nicotine dependence occurs rapidly and, once established, it is estimated that most smokers will then continue to smoke for around 40 years (Tobacco Advisory Group of the Royal College of Physicians, 2000). Eventually, half of those who continue to smoke will die from smoking related illnesses (Mackay & Eriksen, 2002).

Programmes to prevent the use of tobacco products by youth can be categorised as either aiming to reduce supply or reduce demand for tobacco among youth. In New Zealand interventions to reduce supply include legislation to prohibit sale and supply of tobacco to people under 18 years of age and taxation of tobacco products. Interventions to reduce demand include legislation prohibiting tobacco advertising, implementation of mass communications campaigns promoting the benefits of smokefree lifestyles, smokefree policies in schools, school based programmes and community action around youth tobacco issues. To inform policy decisions and measure the impact that programmes have on youth smoking prevalence, regular monitoring surveys of youth smoking and associated beliefs and behaviours need to be undertaken.

## **1.2 Tobacco use in New Zealand**

Maori, the indigenous people of NZ, experience disproportionate levels of morbidity and mortality compared to non-Maori, non-Pacific Island New Zealanders. Tobacco use has been identified as a significant contributor to health inequalities experienced by Maori (Ministry of Health, 2001). The proportion of NZ adults who smoke at least daily is highest for Maori and this has been consistent through time and across age bands (Hill & Blakely, 2003). Prevalence rates are lowest for non-Maori, non-Pacific Island adults. Pacific adult prevalence lies between that of Maori and non-Maori, non-Pacific Island adults.

Smoking by most young New Zealanders (14 to 15 years) decreased between 1999 and 2001 (Ministry of Health, 2002). The prevalence in 2001 of smoking weekly or more frequently was 16.3% for males and 22% for females. Prevalence rates differed by ethnicity: 42% of Maori females and 23.8% of Maori males reported smoking at least weekly. Rates were also higher for Pacific Island young people: 26.0% of female and 19.9% of males reported smoking weekly (Ministry of Health, 2002).

## **1.3 The New Zealand context**

The Smoke-free Environments Act 1990 and subsequent amendments include provisions that help protect young people from exposure to SHS and to reduce access to tobacco products, these include:

1. Prohibition of smoking at schools and early childhood centres (from 1 January 2004)
2. A ban on all media advertising of tobacco products
3. Limited display of tobacco products at point of sale
4. A ban on sponsorship by tobacco companies
5. Prohibition of the sale of tobacco products to people under 18 years of age
6. Prohibition of the supply of tobacco products to people under 18 years of age
7. Requirements for labelling and health messages of tobacco products
8. Restricting the sale of toy tobacco products to those over the age of 18 years
9. A ban on smoking in enclosed workplace environments

On 27 January 2004 New Zealand ratified the World Health Organization's Framework Convention on Tobacco Control (FCTC). The objective of the FCTC is "to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke by providing a framework for tobacco control measures to be implemented by the Parties at the national, regional and international levels in order to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke".

## **1.4 The Global Youth Tobacco Survey (GYTS)**

The GYTS was developed by the World Health Organization (WHO) and US Centres for Disease Control and Prevention (CDC), and enables international surveillance and comparison of youth tobacco use. Three key features were incorporated into the GYTS study design:

- The surveys would be school-based.
- The focus was on students 13-15 years.
- The questionnaire contained 'core' questions for internationally comparable data; and 'optional' questions that were relevant to the specific country participating in the GYTS (Warren, Riley, et al. , 2000).

Two-stage cluster sampling is used to randomly select first schools, and secondly classes. Subsequent data are weighted to adjust for non-responses and the probability of an individual being selected into the sample.

Surveys are conducted using trained interviewers, and administered during school time (Warren, Riley, et al. , 2000).

## **2. The New Zealand Youth Lifestyle Study (YLS)**

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### **2.1 Objectives of the YLS**

The YLS was first conducted in 2000 and is a biennial, school-based survey of the tobacco smoking behaviours, beliefs and attitudes of young New Zealanders. Prior to 2000, the HSC and the Cancer Society of New Zealand had conducted independent surveys of youth smoking. Following the release of the report “Youth Smoking Surveillance: The Report of the Scientific Advisory Committee: New Zealand Youth Tobacco Survey” (Reeder, Waa & Scragg, 2000) the HSC and Cancer Society along with the Quit Group agreed to collaborate in the delivery of the YLS in order to reduce duplication and the burden on schools and enable both nationally and internationally comparable data to be collected.

A purpose of the YLS is to achieve national and international recognition of the survey as a valid and reliable measure of youth smoking and related factors in NZ. Specific aims of the YLS include:

To implement a high quality monitor of:

- Key smoking behaviours, attitudes and associated risk factors among the general year 10 population and other priority groups aged 13-17 years.
- Influences on youth lifestyles to aid tobacco programme development and implementation.
- Other relevant health behaviours and attitudes, where appropriate.

### **2.2 Content of the YLS**

The 2002 YLS comprised the five sections described below. The results from only two sections (1 and 4) are reported here.

#### *Section 1: About You*

This section included demographic data: age, self-reported ethnicity, income, spending, and a question about when students intended to leave school. The ethnicity question allowed students to identify with more than a single ethnic group. The analyses by ethnicity contained in this report are limited to New Zealand European and Maori. Many other ethnicities were identified, but amounted to small subgroups and it was inappropriate to include these in a broad, quantitative analysis.

#### *Section 2: Your Interests*

In this section of the questionnaire, information was sought about interests and leisure activities, including a measure of participation in a range of common physical activities.

#### *Section 3: You and the Media*

Data were collected on the use of the internet for seeking information on specific health questions; the popularity and accessibility of the national smoke-free brand website;

readership of age targeted magazines and newspapers; and frequency of listening to the radio.

#### *Section 4: About Smoking*

The section on smoking included questions from both the core and optional GYTS, in addition to questions that have been used in NZ surveys for a number of years. Since the only tobacco products commercially available in NZ are cigarettes and tobacco either for roll-your-own cigarettes or smoking in a pipe, some GYTS questions required slight modification to ensure relevance to NZ youth. The responses to these smoking questions are reported here.

#### *Section 5: Your Thoughts*

The measures included in this section were primarily used to measure youth perception and use of the HSC's smoke-free brands and products. A measure of self-concept was included in the 2002 YLS.

## **2.3 Methods**

### *Sampling*

Multistage cluster sampling was used in the 2002 YLS. In summary, six geographical regions were selected from the North and South islands of New Zealand. State or state-integrated secondary schools were randomly selected from a database of all NZ schools within the pre-selected geographical regions, and school classes randomly selected from within each selected school.

### *Questionnaire development*

The YLS uses a self-completion questionnaire that is designed to be administered in class. In 2002, the YLS was modified to include, for example, questions about specific Internet use, a full measure of self-concept, and a measure of influencing peers either to smoke, or not smoke. The modified questionnaire was piloted by the principal author during March 2002.

### *Data collection*

Selected school principals were mailed a letter inviting them to enroll their school in the YLS and informing them that a research representative would contact them. Research assistants employed by a market research company contacted each selected school, requesting consent to participate in the YLS. Schools that agreed to participate were asked to provide the name of a contact person. Generally, the contact person was the physical education or health educator for the school. Surveys were administered during a school period by a trained interviewer.

### *Data weighting*

Data were weighted to reflect the probability of a young person being selected, and weights were assigned at the individual student level. Weights were calculated from the total number of participants sampled in each geographic region (by school year) to the total number of students registered in that region (by school year). The reciprocal value was taken as the data weight (Carlin & Hocking, 1999).

*Data analysis*

Sample proportions were calculated using STATA software, and are presented along with 95% confidence intervals.

*Socioeconomic status*

New Zealand schools are assigned a school decile rating. Deciles are calculated from Census and school data, and include a measure of household income, parental qualifications, and the proportion of students within the school who identify with Maori and/or Pacific Island ethnicities. Schools range from 1 (the lowest socioeconomic level) through to 10 (the highest socioeconomic level).

### 3. Selected results

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#### 3.1 Study sample size and response rate

To recruit the 82 schools required to attain a sample of 3,500 students for the 2002 YLS, 141 secondary schools were contacted (response rate 58.2%). Among the reasons given by schools for not participating in the YLS were academic commitments, participation in other school-based surveys, being too busy, and administrative issues. At the time the YLS was conducted, NZ secondary schools were in the process of introducing a new qualification framework. The YLS was partially disrupted by industrial action by school staff and students, and snow or flooding which caused some school closures. These disruptions resulted in the survey being conducted in two waves: the first was during May 2002 (72 schools); the second during November 2002 (10 schools). The second wave followed the same protocol for selection and recruitment of schools and for data collection.

#### 3.2 Sample characteristics

The sample consisted of 51.7% males and 48.3% females (Table 1). Most (62.4%) of the sample was in school Year 10. Nearly the entire sample fitted within the range of 14-16 years (90.9%). Most of the sample self-identified as NZ European, 15.4% self-identified as Maori. Smaller percentages self-identified with Pacific Island (14.9%: Samoan, Cook Island Maori, Tongan, Nuiean, Tokelauan, Fijian, and Other Pacific Island ethnicity) and Asian ethnicities (11.1%: Chinese, Indian, South-East Asian, Other Asian ethnicity). The method of recording ethnicity allowed respondents to select multiple ethnic groups with which they identified.

**Table 1: Sample characteristics, 2002 YLS**

Demographic		N	% <sup>2</sup>
Sex	Male	1704	51.7
	Female	1730	48.3
School year	10	2520	59.6
	12	914	40.4
Age (years)	12	3	0.1
	13	32	0.8
	14	1901	44.8
	15	612	15.7
	16	703	30.4
	17	183	8.1
Ethnicity <sup>3</sup>	Total	3434	100
	NZ European	2324	62.4
	NZ Maori	637	15.4

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<sup>2</sup> Weighted proportions

<sup>3</sup> Participants could select more than one ethnicity

### 3.3 Prevalence of tobacco using behaviour

#### *'Ever' smoking*

Students were categorised as *'ever smokers'* if they responded 'yes' to the question: *Have you ever smoked, even just a few puffs?* The percentage of respondents who had ever smoked was 64.7% (Table 2) including a greater proportion of females than males. A greater proportion of older students (Year 12) had tried smoking than younger (Year 10) students. More students from lower decile (lower socio-economic) schools had tried smoking compared with higher decile schools, and a higher percentage of NZ Maori had tried smoking than European.

**Table 2: Characteristics of 'ever smokers', 2002 YLS**

Demographic		Ever smoked cigarettes % (95% CI)
Sex	Male	62.5 (58.2 - 66.7)
	Female	67.1 (62.9 - 71.0)
School year	10	62.3 (58.4 - 66.1)
	12	68.3 (63.0 - 73.1)
School decile	1-3 (low)	67.2 (60.1 - 73.5)
	4-6 (middle)	65.0 (56.5 - 72.6)
	7-10 (high)	63.2 (59.5 - 66.8)
Age (years)	12	28.6 (3.5 - 81.7)
	13	60.5 (34.8 - 81.5)
	14	61.8 (57.5 - 66.0)
	15	62.2 (55.2 - 68.7)
	16	70.0 (64.7 - 74.7)
	17	67.3 (58.8 - 74.8)
Ethnicity	Total	64.7 (61.3 - 68.1)
	NZ European	66.4 (63.5 - 69.3)
	NZ Maori	81.6 (77.5 - 85.0)

*Age first tried a cigarette*

There were clear socio-economic and ethnic differences for responses to the question “*How old were you when you first tried a cigarette*”. A greater proportion of Maori than non-Maori, and students from low than high decile schools were of a younger age when they first tried a cigarette. A consistent socio-economic gradient across all three school decile bands is evident from the greatest proportion of students trying cigarettes at a younger age in the lower decile schools through to the smallest proportion in the highest decile schools (Table 3).

**Table 3: Age first tried a cigarette, 2002 YLS**

Demographic		7 years and younger % (95% CI)	8-9 years % (95% CI)	10-11 years % (95% CI)
Sex	Male	6.9 (5.5 - 8.6)	8.4 (7.0 - 9.9)	15.2 (13.1 - 17.5)
	Female	5.8 (4.4 - 7.6)	9.3 (7.3 - 11.8)	14.6 (12.6 - 16.8)
School year	10	7.5 (6.2 - 9.0)	9.3 (7.6 - 11.2)	14.9 (13.1 - 16.8)
	12	4.7 (3.1 - 7.2)	8.2 (6.1 - 10.9)	14.9 (12.7 - 17.4)
School decile	1-3 (low)	9.8 (7.1 - 13.2)	11.2 (8.1 - 15.3)	16.0 (13.1 - 19.3)
	4-6 (middle)	5.7 (4.1 - 8.0)	10.4 (7.9 - 13.7)	15.2 (12.1 - 18.8)
	7-10 (high)	5.0 (3.8 - 6.5)	6.3 (5.0 - 7.9)	14.1 (12.1 - 16.2)
Ethnicity	Total	6.4 (5.3 - 7.7)	8.8 (7.4 - 10.5)	14.9 (13.4 - 16.6)
	NZ European	4.9 (3.9 - 6.1)	7.8 (6.5 - 9.4)	15.7 (13.8 - 17.8)
	NZ Maori	12.9 (10.0 - 16.6)	17.9 (14.8 - 21.5)	20.5 (17.1 - 24.3)

*Smoking frequency*

In table 4, student characteristics are presented in relation to responses to the question “*how often do you smoke now*”, with those responding either “*at least once a week*” or “*at least once a month*” classified as ‘occasional’ smokers, and those who responded with “*at least once a day*” as daily smokers. Greater proportions of Maori girls were daily smokers.

**Table 4: Characteristics of all current smokers, and for monthly and daily smokers, 2002 YLS**

Demographic		Daily Smoker % (95% CI)	Occasional Smoker % (95% CI)	All smokers (current) % (95% CI)
Sex	Male	10.3 (8.3 - 12.8)	8.6 (7.0 - 10.5)	18.9 (16.1 - 22.0)
	Female	15.2 (12.5 - 18.4)	11.7 (9.8 - 13.9)	26.9 (23.4 - 30.8)
School year	10	12.5 (9.9 - 15.6)	9.2 (7.8 - 10.9)	21.7 (18.3 - 25.5)
	12	13.0 (10.3 - 16.3)	11.4 (9.1 - 14.0)	24.3 (21.2 - 27.8)
School decile	1-3 (low)	16.9 (13.0 - 21.6)	7.4 (5.9 - 9.2)	24.3 (20.0 - 29.1)
	4-6 (middle)	12.3 (8.2 - 18.1)	10.8 (7.9 - 14.6)	23.1 (16.5 - 31.5)
	7-10 (high)	10.6 (8.3 - 13.4)	11.0 (9.4 - 12.9)	21.6 (19.0 - 24.5)
Age (years)	12	0	14.3 (1.2 - 70.0)	14.3 (1.2 - 70.0)
	13	17.4 (6.7 - 38.2)	5.0 (1.5 - 15.2)	22.4 (9.8 - 43.6)
	14	11.9 (9.1 - 15.3)	9.3 (7.7 - 11.2)	21.1 (17.5 - 25.3)
	15	12.8 (9.1 - 17.6)	9.6 (7.0 - 13.1)	23.4 (17.6 - 27.9)
	16	13.4 (10.4 - 17.2)	11.4 (9.0 - 14.4)	24.9 (21.3 - 28.7)
	17	14.1 (10.1 - 19.4)	10.7 (7.1 - 16.0)	24.9 (20.1 - 30.3)
Ethnicity	Total	12.7 (10.7 - 15.1)	10.1 (8.7 - 11.6)	22.8 (20.0 - 25.8)
	NZ European	12.8 (10.7 - 15.2)	11.6 (10.0 - 13.5)	24.4 (21.5 - 27.5)
	NZ Maori	25.7 (20.7 - 31.4)	9.6 (6.9 - 13.1)	35.2 (30.2 - 40.6)

### 3.4 Access to cigarettes

Among current smokers, more boys (38.5%) than girls (32.9%) purchased cigarettes from a commercial source. The percentage purchasing cigarettes from a shop increased with age (Table 5), as did the proportion that was able to purchase without being asked for identification. A greater proportion of students from higher decile schools purchased cigarettes from a shop (38.6%) compared with those from decile 1-3 schools (31.7%).

**Table 5: Sources of cigarettes for current smokers 2002 YLS**

Demographic		Bought own from shop % <b>(95% CI)</b>	Obtained from social source <sup>4</sup> % <b>(95% CI)</b>	Someone else bought them % <b>(95% CI)</b>	Bought at store: not asked for ID % <b>(95% CI)</b>
Sex	Male	38.5 <b>(31.1 - 45.9)</b>	30.3 <b>(25.6 - 35.0)</b>	8.0 <b>(5.3 - 10.7)</b>	24.7 <b>(17.1 - 32.3)</b>
	Female	32.9 <b>(27.6 - 38.2)</b>	36.3 <b>(31.4 - 41.2)</b>	15.1 <b>(11.8 - 18.4)</b>	22.9 <b>(18.6 - 27.2)</b>
School year	10	25.1 <b>(21.0 - 29.2)</b>	39.3 <b>(34.4 - 44.2)</b>	13.8 <b>(10.9 - 16.7)</b>	15.2 <b>(12.1 - 18.3)</b>
	12	48.7 <b>(40.7 - 56.7)</b>	26.4 <b>20.3, 32.5</b>	9.9 <b>(6.0 - 13.8)</b>	34.7 <b>(27.6 - 41.8)</b>
School decile	1-3 (low)	31.7 <b>(22.3 - 41.1)</b>	34.6 <b>(24.6 - 44.6)</b>	7.9 <b>(3.6 - 12.2)</b>	21.3 <b>(13.7 - 28.9)</b>
	4-6 (middle)	34.1 <b>(24.9 - 43.3)</b>	30.8 <b>(24.9 - 36.7)</b>	14.4 <b>(9.1 - 19.7)</b>	24.2 <b>(16.0 - 32.4)</b>
	7-10 (high)	38.6 <b>(32.1 - 45.1)</b>	35.6 <b>(30.3 - 40.9)</b>	12.8 <b>(9.7 - 15.9)</b>	24.7 <b>(19.4 - 30.0)</b>
Age (years)	12	0 0	0 0	0 0	0 0
	13	14.3 <b>(-12.0 - 40.6)</b>	44.8 <b>(10.5 - 79.1)</b>	5.9 <b>(-5.1 - 16.9)</b>	0 0
	14	23.7 <b>(20.0 - 27.4)</b>	41.0 <b>(34.5 - 47.5)</b>	13.1 <b>(9.6 - 16.6)</b>	15.6 <b>(12.5 - 18.7)</b>
	15	28.2 <b>(19.2 - 37.2)</b>	36.2 <b>(28.9 - 43.5)</b>	15.6 <b>(9.5 - 21.7)</b>	15.5 <b>(9.4 - 21.6)</b>
	16	48.7 <b>(40.3 - 57.1)</b>	28.3 <b>(20.9 - 35.7)</b>	11.4 <b>(6.7 - 16.1)</b>	33.7 <b>(26.6 - 40.8)</b>
	17	54.8 <b>(40.3 - 69.3)</b>	14.8 <b>(3.8 - 25.8)</b>	4.3 <b>(-1.0 - 9.6)</b>	40.5 <b>(23.4 - 57.6)</b>
Ethnicity	Total	35.3 <b>(30.6 - 40.0)</b>	33.7 <b>(30.0 - 37.4)</b>	12.1 <b>(9.9 - 14.3)</b>	23.6 <b>(19.5 - 27.7)</b>
	NZ European	35.7 <b>(29.6 - 41.8)</b>	35.9 <b>(31.6 - 40.2)</b>	14.0 <b>(11.3 - 16.7)</b>	25.2 <b>(19.9 - 30.5)</b>
	NZ Maori	30.9 <b>(21.9 - 39.9)</b>	39.8 <b>(31.0 - 48.6)</b>	13.7 <b>(8.0 - 19.4)</b>	18.9 <b>(12.6 - 25.5)</b>

### 3.5 Cessation and dependence

Most current smokers believed they would be able to quit smoking if they wanted to (Table 6), and around 40% of boys and girls wanted to quit smoking now. A large percentage of those who were current smokers had tried to quit in the year prior to the survey: 51% of boys and 62% of girls.

<sup>4</sup> Social source: that is, got cigarettes from parents / friends / siblings / others

**Table 6: Cessation attempts and beliefs about quitting among smokers, 2002 YLS**

Demographic		Want to stop smoking % <b>(95% CI)</b>	Tried to quit in past year % <b>(95% CI)</b>	Say they could quit if they wanted to % <b>(95% CI)</b>
Sex	Male	39.7 <b>(33.4 - 46.0)</b>	50.8 <b>(44.1 - 57.5)</b>	70.7 <b>(63.8 - 77.6)</b>
	Female	42.9 <b>(37.8 - 48.0)</b>	62.4 <b>(57.3 - 67.5)</b>	73.0 <b>(67.9 - 78.1)</b>
School year	10	40.2 <b>(35.5 - 44.9)</b>	57.8 <b>(53.1 - 62.5)</b>	71.2 <b>(66.5 - 75.9)</b>
	12	43.4 <b>(36.3 - 50.5)</b>	56.9 <b>(49.6 - 64.2)</b>	73.1 <b>(65.3 - 80.9)</b>
School decile	1-3 (low)	52.0 <b>(46.3 - 57.7)</b>	66.0 <b>(59.1 - 72.9)</b>	67.1 <b>(58.5 - 75.7)</b>
	4-6 (middle)	34.1 <b>(26.7 - 41.5)</b>	55.1 <b>(48.0 - 62.2)</b>	70.5 <b>(61.5 - 79.5)</b>
	7-10 (high)	41.0 <b>(34.9 - 47.1)</b>	53.8 <b>(47.1 - 60.5)</b>	76.4 <b>(71.7 - 81.1)</b>
Age (years)	12	0	100.0	100.0
	13	71.8 <b>(42.0 - 101.6)</b>	47.3 <b>(10.6 - 84.0)</b>	75.5 <b>(36.9 - 114.1)</b>
	14	38.9 <b>(32.6 - 45.2)</b>	56.1 <b>(50.8 - 61.4)</b>	72.7 <b>(67.6 - 77.8)</b>
	15	35.4 <b>(27.4 - 43.4)</b>	59.1 <b>(51.8 - 66.4)</b>	69.4 <b>(62.0 - 76.8)</b>
	16	45.9 <b>(37.9 - 53.9)</b>	58.3 <b>(50.5 - 66.1)</b>	70.9 <b>(62.3 - 79.5)</b>
	17	46.2 <b>(32.1 - 60.3)</b>	57.8 <b>(41.9 - 73.7)</b>	76.9 <b>(63.6 - 90.2)</b>
Ethnicity	Total	41.5 <b>(37.2 - 45.8)</b>	57.4 <b>(53.1 - 61.7)</b>	72.0 <b>(67.7 - 76.3)</b>
	NZ European	40.2 <b>(35.3 - 45.1)</b>	55.7 <b>(50.4 - 61.0)</b>	74.6 <b>(70.5 - 78.7)</b>
	NZ Maori	44.2 <b>(37.1 - 51.3)</b>	66.8 <b>(59.5 - 74.1)</b>	70.8 <b>(63.4 - 78.2)</b>

### 3.6 Exposure to second hand smoke (SHS)

The percentage of participants who were exposed to SHS at home for all seven days prior to the 2002 YLS are presented in Table 7. A greater proportion of daily smokers than current smokers and a greater proportion of smokers than non-smokers were exposed to SHS at home. A quarter of Maori non-smokers were exposed to SHS, nearly half of Maori who were daily smokers were exposed to SHS at home. A dose response effect was evident with increasing proportions exposed to SHS across all sex, school year, school decile, age, and ethnicity bands, as smoking frequency increased.

**Table 7: Perception of harm and exposure to second hand smoke, 2002 YLS**

Demographic		Do you think SHS is harmful?	Exposed to SHS at home, for all 7 days prior to survey		
		All Smokers % (95% CI)	Non Smokers % (95% CI)	All Smokers % (95% CI)	Daily Smokers % (95% CI)
Sex	Male	86.4 (82.5 - 90.3)	12.7 (10.0 - 15.4)	29.5 (24.0 - 35.0)	35.0 (27.2 - 42.8)
	Female	91.0 (88.1 - 93.9)	15.1 (12.4 - 17.8)	31.8 (26.3 - 37.3)	42.9 (36.4 - 49.4)
School year	10	87.2 (84.3 - 90.1)	15.2 (12.8 - 17.6)	35.0 (30.3 - 39.7)	43.7 (38.0 - 49.4)
	12	91.5 (87.4 - 95.6)	11.6 (7.9 - 15.3)	25.3 (19.8 - 30.8)	33.7 (24.7 - 42.7)
School decile	1-3 (low)	85.4 (79.9 - 90.9)	20.7 (15.6 - 25.8)	36.1 (28.8 - 43.4)	40.1 (33.4 - 46.8)
	4-6 (middle)	90.7 (87.4 - 94.0)	11.4 (6.7 - 16.1)	29.2 (22.9 - 35.5)	43.0 (35.4 - 50.6)
	7-10 (high)	90.0 (86.3 - 93.7)	11.8 (9.8 - 13.8)	28.8 (22.5 - 35.1)	36.1 (27.1 - 45.1)
Age (years)	12	100.0 (0)	0	0	0
	13	100.0 (0)	9.4 (-2.6 - 21.4)	49.3 (11.9 - 86.7)	42.4 (-0.3 - 85.1)
	14	87.6 (84.3 - 90.9)	16.4 (13.9 - 18.9)	33.4 (28.1 - 38.7)	42.9 (36.2 - 49.6)
	15	87.0 (81.3 - 92.7)	11.0 (7.1 - 14.9)	38.9 (19.7 - 38.1)	43.7 (32.7 - 54.7)
	16	91.1 (86.4 - 95.8)	12.3 (8.4 - 16.2)	25.4 (17.8 - 33.0)	36.7 (24.7 - 48.7)
	17	90.3 (80.7 - 99.9)	10.5 (4.4 - 16.6)	23.3 (9.4 - 37.2)	26.9 (8.3 - 45.5)
Ethnicity	Total	89.0 (86.6 - 91.4)	13.8 (11.4 - 16.2)	30.8 (27.1 - 34.5)	39.6 (34.9 - 44.3)
	NZ European	92.2 (89.5 - 94.9)	13.5 (11.1 - 15.9)	28.5 (24.0 - 33.0)	37.7 (32.0 - 43.4)
	NZ Maori	84.7 (79.4 - 90.0)	25.2 (20.7 - 29.7)	40.1 (32.7 - 47.5)	45.7 (37.1 - 54.3)

## 4. Discussion

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Measuring the prevalence of tobacco smoking among NZ secondary school students was a key objective of the YLS. Overall, around two thirds of students had tried smoking. However, it is likely that the estimates presented in this report are conservative. The less than optimal response rate from schools was 58%, that is, 141 schools were contacted to recruit the 82 schools that agreed to participate. This low response rate may be due, in part, to the recruitment method. The lower response rate may have contributed, in part, to the slight under-representation of lower decile schools. Low socioeconomic status has been widely identified as a risk factor for cigarette smoking (Hill, Blakely & Howden-Chapman, 2003). In addition, 15.4% of the sample self-identified as NZ Maori compared with around 22% of the general population of 15 year olds. This is consistent with the finding that around one quarter of those who self-identified as NZ Maori were daily smokers. Considerably less NZ European students were daily smokers. It must be noted that students were able to select more than one ethnicity and that, for this reason, there may be some overlap. Furthermore, most students (84%) in decile 1 schools were Maori or Pacific students, compared with only 5% of students in decile 10 schools (Ministry of Education, 1997).

The measure of socioeconomic status reported is based on NZ Census and school data. School deciles range from 1 (low decile, low socioeconomic status) through 10 (high decile, high socioeconomic status). The calculation of a school decile includes household income, parental qualifications for the community around the school, and the proportion of students who identify as Maori and/or Pacific Island.

A socioeconomic gradient appears consistently throughout the results. On the one hand, more students from lower decile (lower socioeconomic) than higher decile schools had ever smoked; were younger when they first tried a cigarette; were daily smokers; had tried to quit in the past year; and, were exposed to SHS at home. On the other hand, more students from higher decile (higher socioeconomic) than lower decile schools reported monthly smoking; purchasing cigarettes from a shop; not being asked for ID; and believing that they could quit if they wanted to.

There were clear differences in prevalence rates between NZ Maori and NZ European students. Compared with NZ European students a greater proportion of NZ Maori had tried smoking, had tried smoking at aged 7 years or younger, and obtained cigarettes from social sources. The daily smoking rate for NZ Maori (25.7%) was twice that of NZ Europeans (12.8%). Cessation behaviour among current smokers differed between ethnic groups. A greater proportion of NZ Maori than NZ European reported wanting to stop smoking and trying to quit in the preceding year. Slightly fewer NZ Maori than NZ European believed they could quit if they wanted to. Across all groups (all smokers, daily smokers, and non-smokers) a greater proportion of NZ Maori than NZ European were exposed to SHS at home. Nearly half of the daily smokers among NZ Maori were exposed to SHS at home on all 7 days prior to the YLS.

Around 7% of male and 6% of female students had tried smoking by age 7 years or younger, rising to around 15% by age 10 or 11 years. Education about tobacco products is provided in NZ schools and contained in the Health and Physical Education Curriculum, however, the way in which this is taught is at the discretion of individual schools. Some external providers also provide education about tobacco, although this is often 'packaged' with generic anti-drug education. The young age at which New Zealanders are experimenting with tobacco products raises a number of opportunities for interventions. For example, interventions that aim to decrease parental smoking, and thereby reduce the accessibility of tobacco products through social sources.

The Smoke-free Environments Act 1990 prohibits both the sale and the supply of tobacco products to those less than 18 years of age. Despite this, around one third of daily smokers purchased cigarettes from a shop, with nearly half of those aged 16 purchasing from a shop. Furthermore, many young smokers were not asked for identification when making a purchase. In general, it would appear that there is low retailer compliance with the current legislation, and, therefore, a potential to reduce prevalence through enforcement of legislation as part of a comprehensive tobacco use prevention strategy.

Data were collected for the 2002 YLS in two waves. Analyses of key variables (age first smoked, ever smoked, and current smoking status) revealed no significant difference between the samples. The samples did, however, vary considerably in size and socio-economic composition. The November sample was mostly comprised of students from higher decile schools (70.1%), whereas the larger May sample included 39.7% of students from the higher decile schools; lower decile schools were under-represented in both surveys: 24.4% of the May sample; and, 23.6% of the November sample were from decile 1-3 schools. The reasons that necessitated the second wave of schools were not foreseeable and it is unlikely that such a combination of events will provide challenges for future studies.

## 5. Conclusions and Recommendations

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The number of young New Zealanders who have ever tried smoking is comparable to rates from the United States and Australia (Pirkis, Irwin, Brindis, Patton & Sawyer, 2003), although it is considerably higher than that reported in South Africa (Swart, Reddy, Pitt, & Panday, 2001). Since 1997 New Zealand legislation has restricted access to tobacco products for those less than 18 years, however similar restricted access laws exist in the US, Australia, and South Africa. It does not seem likely that restricted access laws impact on young people first experimenting with tobacco, as it is probable that experimentation occurs with cigarettes obtained from social sources. Further reasons for the high rate of experimentation might include social acceptability of smoking or high rates of smoking within the home (and, therefore, access to cigarettes). A large proportion of the sample was exposed to SHS in the home and there was a clear gradient between exposure to SHS and smoking status. Of concern, only around one-third of participants were aware of the dangers of exposure to SHS. Recent health promotion has centred on reducing exposure to SHS. A mass-communications campaign was launched around World Smoke-free Day, 2004. This campaign is expected to continue into 2005 and highlights dangers associated with exposing children to SHS in homes and cars. Differences in student perceptions of the dangers of SHS will be monitored in the 2004 YLS.

The proportion of girls who smoked was consistently greater across all three smoking groups (daily, occasional, and all). This difference in smoking prevalence by sex is worthy of further investigation. Of note, young Maori females had the highest daily smoking prevalence rate.

New legislation which came into effect on January 1, 2004, prohibited smoking anywhere within school (primary, intermediate, and secondary) property at all times, by all people. This legislation will provide consistency between health messages taught at school and the smoking behaviour of teachers and other school staff. In light of all school environments becoming smoke-free, resources can now be focused on achieving smoke-free homes and cars.

The young age at which New Zealand children are first trying cigarettes is of concern. As prevention strategies are currently aimed at older children, it would be timely to review prevention efforts to include children from seven years of age (O'Loughlin, Paradis, Renaud & Gomez, 1998). This would require a shift in the current educational focus on older primary school children and children at intermediate and secondary school.

The NZ YLS should be repeated biennially to allow monitoring of key tobacco-use related behaviours. Future surveys could be improved by stratification by ethnicity to ensure that a sufficient number of Maori students are included in the sample. The ethnicity of each student is recorded by the Ministry of Education, and therefore stratification could occur at the school level.

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