

2012 Youth Insights Survey Methodology Report

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Any queries regarding this report should be directed to the HPA at the following address:

Health Promotion Agency

Level 4, ASB House

101 The Terrace

Wellington 6011

research@hpa.org.nz

PO Box 2142

Wellington 6140

New Zealand

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AUTHOR

This report was written by Joanna White, Research and Evaluation Unit, Health Promotion Agency. The report has been updated for the 2012 Youth Insights Survey based on the 2010 methodology report, and the author acknowledges all previous versions.

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- Professor Rob McGee (Professor, Cancer Society Social and Behavioural Research Unit, Preventative and Social Medicine, Dunedin School of Medicine, University of Otago).
- Anaru Waa (Lecturer/Research Fellow, Wellington School of Medicine and Health Science, University of Otago).
- Dr Simon Denny (Paediatrician and Senior Lecturer in Youth Health at the University of Auckland).
- Ben Youdan (Director, ASH).
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INTRODUCTION

The Youth Insights Survey (YIS) forms part of the New Zealand Youth Tobacco Monitor (NZYTM), a collaborative effort by the Health Promotion Agency (HPA¹) and Action on Smoking and Health (ASH). The YIS is a nationwide paper-based survey of Year 10 students conducted in schools every two years. The YIS was first carried out in its current form in 2006, and the 2012 YIS is the fourth in this series.²

The YIS collects data on smoking-related knowledge, attitudes and behaviour, as well as students' interests, lifestyles, activities and media use, and responses to tobacco control initiatives. It monitors the broad spectrum of risk and protective factors that relate to smoking uptake among young people.

This methodology report details the procedures and protocols followed to ensure the YIS produces high quality, robust data. Specific analysis, such as short fact sheets, can be accessed at <http://www.hpa.org.nz/research-library/research-publications>.

BACKGROUND

THE BURDEN OF TOBACCO USE IN NEW ZEALAND

Tobacco use is the leading preventable cause of premature death in New Zealand. Around 5,000 deaths a year are attributable to tobacco-related illness, in a population of just over 4 million (Minister of Health, 2005). Around one in five New Zealanders (18%) aged 15 years and over are current smokers (Ministry of Health, 2012).

The cost of tobacco use to the health system and New Zealand society has resulted in the Government health target of "better help for smokers to quit" (Ministry of Health, 2011). The Ministry of Health also aims to reduce smoking initiation and exposure to second-hand smoke (Ministry of Health, 2010). Most adults who smoke start the behaviour in their youth, before reaching the age of 18 (Centers for Disease Control and Prevention, 1994). As such, young people are a focus of tobacco control strategies and health promotion in New Zealand.

In 2012, 8% of all 14 and 15-year-old school students reported that they smoked regularly (at least daily, weekly or monthly) (Action on Smoking and Health, 2012a). There has been a reduction in smoking among this age group since 1999, when around three in 10 (29%) reported that they

¹ The HPA is a New Zealand Crown entity formed in 2012 by the merger of the Health Sponsorship Council (HSC) and the Alcohol Advisory Council (ALAC), and some health promotion programmes previously delivered by the Ministry of Health.

² The 2006 and 2008 surveys were known as the 'Year 10 In-depth Survey'. The name was changed to the 'Youth Insights Survey' in 2010.

smoked regularly. However, ethnic disparities in smoking rates still remain in 2012, as nearly two in 10 (18%) Māori students of this age reported that they smoked regularly (Action on Smoking and Health, 2012b). Continuing to monitor youth attitudes and behaviours is critical to understanding and reaching this audience and preventing uptake in later adolescent years.

MONITORING YOUTH TOBACCO USE IN NEW ZEALAND

National adult smoking prevalence data has been routinely collected through the Census of Population and Dwellings and the New Zealand Tobacco Use Survey (Ministry of Health, 2006, 2009). In-depth information about tobacco-related knowledge, attitudes and behaviour was collected by the Health Sponsorship Council through the Smokefree/Auahi Kore Adult Monitor up until 2006 (Health Sponsorship Council, 2006). The continuation of this monitor is now in the form of the tobacco section of HPA's biennial Health and Lifestyles Survey (HLS), which was first carried out in 2008 (Health Promotion Agency, 2013).

Information on youth smoking and tobacco control has traditionally been collected and managed by a range of agencies in New Zealand. In 2006, the NZYTM was established to bring three youth surveys - the Global Youth Tobacco Survey (GYTS), the ASH Year 10 Snapshot Survey, and the YIS - together under one partnership.

The ASH Year 10 Snapshot is an annual cross-sectional census of 14 and 15-year-old school students' smoking prevalence, which achieves high student participation nationwide. Understanding how and why some young people start smoking is a key driver for tobacco research and evaluation. The biennial YIS collects in-depth information on tobacco-related knowledge, attitudes and behaviour, exposure to second-hand smoke and role-modelling of smoking behaviour, as well as a wide range of information on youth culture, lifestyles, and risk and protective factors related to smoking uptake. The YIS informs and helps to evaluate the HPA's Smokefree/Auahi Kore programme, the wider HPA in terms of its commitment to encouraging New Zealanders to adopt and maintain healthy lifestyles, and the wider tobacco control and youth sectors.

OBJECTIVES OF THE YIS

The YIS was developed to improve the understanding of students' attitudes, knowledge, beliefs and behaviours related to smoking, exposure to role models who smoke, and exposure to second-hand smoke. The survey also aims to build understanding of the social environment of young people in New Zealand, particularly youth culture, sport and extra-curricular activities, media use and connectedness to family, peers, and school.

ETHICAL APPROVAL

The NZYTM project was granted ethical approval from the Ministry of Health's Multiregional Ethics Committee in 2007.

QUESTIONNAIRE CONTENT DEVELOPMENT

The 2012 YIS questionnaire was developed by the NZYTM Research Coordinating Group (RCG) to collect high-quality, in-depth information using validated questions. The questionnaire was also designed to maintain comparability with previous surveys, such as the 2006, 2008 and 2010 YIS surveys, the Youth Lifestyle Survey (YLS), the Global Youth Tobacco Survey (GYTS), and the ASH Snapshot Survey.

In addition to questions about smoking, the 2012 questionnaire also included questions on alcohol use, attitudes to healthy eating, and a question each on marijuana use and sun safety attitudes. This information will help inform and evaluate other HPA programmes.

Table 1 outlines the topic areas in the 2012 YIS questionnaire. The questionnaire itself can be found online at <http://www.hpa.org.nz/research-library/research-publications>.

Table 1: Summarised content of the 2012 YIS questionnaire

Topic area	Output details
Demographics	<ul style="list-style-type: none">• Age, sex, ethnicity
Smoking	<ul style="list-style-type: none">• Smoking behaviours• Susceptibility of smoking uptake• Access to tobacco• Attitudes and beliefs about smoking• Addiction and cessation• Exposure to second-hand-smoke and role models who smoke• Health promotion and smokefree messages
Other health behaviours	<ul style="list-style-type: none">• Alcohol use, marijuana use, attitudes to healthy eating, and sun safety
Youth culture and lifestyles	<ul style="list-style-type: none">• Youth culture/lifestyles/interests
Connectedness	<ul style="list-style-type: none">• To school, friends, and family

SAMPLE DESIGN AND SELECTION

Year 10 students (14 to 15-year-olds) represent a critical age group when smoking behaviour increases rapidly, and this group has been treated as the standard population to monitor youth smoking in New Zealand (Reeder, Waa & Scragg, 2000). All schools (state and private) with Year 10 students were eligible to participate in the YIS. Correspondence school students were excluded from the sample list, primarily to maintain student anonymity. The YIS employed a two-stage cluster sample design - school selection, then class selection. This method is consistent with the GYTS sample selection procedure, and produces a nationally representative sample of Year 10 students. This procedure involved three steps:

Step one – School sample selection with probability proportional to school enrolment size

A list of all eligible schools with Year 10 students and their total Year 10 enrolments was compiled. A random sample of schools was selected from this list using Stata/IC 12.0. The probability of selection was proportional to the 2011 mid-year roll size, and classes within schools are selected so that the overall probability of selection of each student was equal. Every eligible Year 10 student in New Zealand had a chance of being selected.

Step two – Recruiting schools

All 530 eligible schools in New Zealand were informed of the upcoming NZYTM through a letter sent to school principals. Of these, the schools selected for the YIS sample list were sent a second letter and principals, or a nominated member of staff, were contacted by phone to explain the survey, its purpose and objectives. Consent forms were sent to schools to be completed and returned. Schools that participated were given a \$50 voucher for Learning Media (an education resource provider) as a small token of appreciation.

Step three – Class selection as a systematic equal probability sample with a random start

For each school that consented, one Year 10 class was randomly selected from a list of all mutually exclusive Year 10 classes. Each eligible student had only one chance to participate and an equal opportunity of selection. All students in a selected Year 10 class were invited to participate.

DATA COLLECTION

The 2012 YIS was administered in schools during the second term of the school year (between 21 May and 29 June 2012). Fieldwork was scheduled for the last six weeks of the term because many questions in the YIS refer to behaviour 'in the last month', and this 'last month' reference period needed to fall within term time to avoid any differences in behaviour undertaken during term as compared to holiday time.

The survey was administered by experienced research fieldworkers from Research New Zealand. To train these fieldworkers for the YIS, a national training session was held using discussion and role-plays to build understanding of the survey administration guidelines. Fieldworkers managed the

distribution and collection of questionnaires at their allocated schools. Responsibilities when administering the survey included:

- ensuring adequate student attendance for the survey
- explaining the purpose, anonymity and voluntary nature of the survey to students
- establishing 'test' conditions in the classroom, and asking students to refrain from talking or interacting while completing the survey
- collecting completed surveys from students, and returning surveys to the research company.

One Year 10 class in each school participated in the YIS survey, which took one full class period to complete.

Participants selected responses using a self-administered paper questionnaire booklet. The front cover of the booklet included the instruction "Please confirm that you agree to take part in this survey. Your answers will be grouped with other students' answers and nobody will be able to know your individual answers in the survey reports". No identifying information was collected from participants to ensure anonymity. However each questionnaire had a unique serial number for tracking during survey administration and data preparation.

Completed questionnaires for the YIS were sent to a research company (Canterbury Business Solutions) for collation, data entry and dataset production. Electronic datasets were submitted to a series of range and consistency checks, and 10% of the data entered by each operator were checked for accuracy.

RESPONSE RATES

A key measure used to assess the overall quality of a survey is the response rate. The response rate is a measure of how many people who were selected to take part in the survey actually participated. The response rate reflects the proportion of people surveyed from those who were selected into the sample, and describes the success of the study in terms of achieving cooperation from the population being measured. A high response rate means the survey results are more representative of the target population.

Of the 186 schools in the sample list, 144 participated in the 2012 YIS, giving a school response rate of 77%. One Year 10 class at each school participated in the survey, and 82% of students in the participating schools completed questionnaires for the survey (Table 2). The YIS uses a response rate formula that estimates and accounts for non-response due to student absenteeism, and students who refuse to participate. Overall, the 2012 YIS achieved a 65% response rate.

Table 2: YIS 2012 school, student, and overall response rates (RR)

School RR		Student RR		Overall RR (%)
Participation (n)	RR (%)	Participation ³ (n)	RR (%)	
<u>144</u> 186	77	<u>3171</u> 3846	82	65

Three schools had fewer than the agreed 75% of students in class when the survey was administered, as the students were absent and no back up appointment was available. In addition, two schools who had initially consented to take part later decided not to participate, although they still participated in the shorter ASH Year 10 Snapshot.

SAMPLE CHARACTERISTICS

The survey collected information from 3,143 students. Sixteen students were then excluded from the sample because they did not give their gender or ethnicity (needed for weighting), leaving a sample size of 3,127. As shown in Table 3, the sample characteristics closely resemble those of the Year 10 student population in New Zealand.

Table 3: Characteristics of 2012 YIS sample population (excluding missing gender and ethnicity)

		Unweighted sample population		National Y10 population*
		n	%	%
Total	Total	3,127	100.0	
Gender	Male	1,648	52.7	51.4
	Female	1,479	47.3	48.6
Age	13 years or younger	91	2.9	
	14 years	2,547	81.5	
	15 years	470	15.0	
	16 years or older	13	0.4	
	No response	6	0.2	
Ethnicity (prioritised)	Māori	704	22.5	22.9
	Pacific	295	9.4	9.5

³ This includes all students who completed the survey, regardless of whether they ticked the consent box on the front of the questionnaire. Those who did not tick the consent box were later excluded.

	Unweighted sample population		National Y10 population*
	n	%	%
Asian	340	10.9	9.7
Other**	199	6.4	8.4
NZ European/Pākehā	1,589	50.8	49.5

* Source: Information Officer, Data Management Unit, New Zealand Ministry of Education, November 2012.

** 'Other' category includes NZAID/Foreign Fee paying students, and 'European' student categories.

WEIGHTING

To ensure that no population group is under- or over-represented in estimates from the survey, 'weights' are calculated for every survey participant. The weight can be thought of as the number of people in the population represented by a given survey participant.

Data were weighted to adjust for sample selection (school and class-level), non-response (school, class and student-level), and post-stratification of the sample population relative to the gender and ethnicity distribution of Year 10 students in New Zealand (Ministry of Education Information Officer, 2012). Students who had not given a response to two critical demographic questions (gender and ethnicity) were excluded from the analysis.

The YIS weighting factor (W) uses the following formula:

$$W = W1 * W2 * f1 * f2 * f3 * f4$$

Where:

- W1= the inverse of the probability of selection for each school
- W2= the inverse of the probability of selection of each classroom within each selected school
- f1= a school-level, non-response adjustment calculated by school enrolment size category (small, medium, large); school non-response is calculated within each tertile
- f2= a class-level, non-response adjustment factor calculated for each school
- f3= a student-level, non-response adjustment factor calculated for each class
- f4= a post-stratification factor to adjust the sample gender and ethnicity distributions to those of the national Year 10 student population

TECHNICAL NOTES FOR ANALYSIS

Descriptive 2012 YIS analyses are presented in a series of fact sheets (available at <http://www.hpa.org.nz/research-library/research-publications>). Analyses for these fact sheets were undertaken using Stata/IC 12.0 statistical analysis software, and technical techniques used are discussed below.

SUPPRESSION DUE TO SMALL NUMBERS

To ensure the survey data presented are reliable and that the confidentiality of the participants is protected, data are only presented when there are at least 30 people in the denominator (the population group being analysed). This ensures that no participant can be identified from the results.

CONFIDENCE INTERVALS

Ninety-five percent confidence intervals are used to represent the sample error for estimates. A 95% confidence interval means there is a 95% chance the true value of the estimate (if the whole population was sampled) lies between the lower and upper confidence values.

Differences between estimates are said to be 'statistically significant' when the confidence intervals for each group do not overlap. However, even when there are overlapping confidence intervals the difference between the groups can be statistically significant when the variance is sufficiently small.

Any differences between two groups where the confidence intervals overlap are tested using the most appropriate statistical test for that data. The significance of many different statistical tests is represented by a probability value, or p-value. If a p-value is below 0.05, then we are 95% confident the difference between the two groups is not due to chance.

REPLICATE WEIGHTS

Standard errors are a measure of the precision of an estimate and replicate weights are a method for obtaining standard errors for any weighted estimates. To remove bias in the estimate arising from any particular school, jack-knife replicate weights are used. This means that the estimate is first calculated from a sample of all respondents except those in a particular school, and then this calculation is repeated excluding a different school each time. The standard error of the population estimate is based on the variation of the replicate estimates.

CREATION OF DERIVED VARIABLES

YIS analysis often includes a range of derived socio-demographic variables, and the most common of these are presented in Table 4.

Table 4: Common derived socio-demographic variables

Variable	Creation	Levels
Gender	Self-identified	Male, Female
Prioritised ethnicity	Multiple responses from list, coded, and prioritised in the order indicated (see Ministry of Health, 2004, for further information on the prioritisation method)	Māori, Pacific, Asian, Other, NZ European
Gender by ethnicity	Prioritised ethnicity by gender	Māori male, Māori female, Pacific male, Pacific female, Asian male, Asian female, Other male, Other female, NZ European male, NZ European female
Māori or non-Māori	Multiple responses from list, coded, and categorised as to whether respondent identified as Māori or not	Māori, Non-Māori
Socio-economic status (SES)	School decile is used as a measure of each student's SES. Decile 1 to 10 as provided by the Ministry of Education for participating schools reclassified as 1 to 4, 5 to 7, and 8 to 10. For further information, see Ministry of Education (2009).	Low: School decile 1 to 4 Mid: School decile 5 to 7 High: School decile 8 to 10, 'private'
Smoking status	Determined by answers to the questions <i>"Have you ever smoked a cigarette, even just a few puffs?"</i> and <i>"How often do you smoke now?"</i>	Never smoker (answered 'no' when asked if they had ever smoked) Current smoker (smoked at least once a day, at least once a week, or at least once a month when asked how often they smoked)
Early smoking initiation	Determined by answers to the question <i>"How old were you when you first tried a cigarette?"</i>	Before 10 years; 10 years or older
Smoking susceptibility	Determined by answers to the questions <i>"If one of your best friends offered you a cigarette, would you smoke it?"</i> and <i>"At any time during the next year (12 months) do you think you will smoke a cigarette?"</i>	Non-susceptible never smoker (answered 'definitely not' to both questions) Susceptible never smoker (answered anything <i>except</i> 'definitely not' to both questions – including non-response)

Exposure to second-hand-smoke (SHS) at home	Determined by answers to the question <i>“During the past 7 days, on how many days have people smoked around you in your home?”</i>	No home exposure (0 days); Any home exposure (1 to 7 days)
Parental smoking status	Determined by whether respondents answered ‘mother’ and ‘father’ when asked <i>“Which of the following people smoke?”</i> ⁴	Neither parents (answered that neither ‘mother’ or ‘father’ smoked) Single parent (answered that either ‘mother’ and ‘father’ smoked) Both parents (answered that both ‘mother’ and ‘father’ smoked)
Friends’ smoking status	Determined by answers to the question <i>“How many of your 5 closest friends smoke?”</i>	None of five closest friends smoke; Some of five closest friends smoke

REPORTING

Descriptive reports were produced to report on YIS data in 2006 and 2008. For 2010 and 2012 descriptive data, a series of smaller fact sheets were produced by topic area. Comparisons by subgroups – smoking status, ethnicity, gender, and other subgroups where appropriate, are presented in the fact sheets. Time trend analysis, where appropriate, is also conducted and reported on.

Further analysis, reporting, and dissemination will be carried out by the HPA and the RCG in 2012 and beyond, through a variety of formats such as fact sheets, journal articles, and media articles.

The HPA’s YIS publications can be accessed at <http://www.hpa.org.nz/research-library/research-publications>.

⁴ The parental smoking status banner was derived like this for simplicity. This approach is consistent with ASH analysis of parental smoking.

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