

Tobacco Trends 2006

Monitoring tobacco use in New Zealand

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Foreword

It is estimated that tobacco causes around 5000 deaths in New Zealand every year (both through active smoking and through exposure to second-hand smoke), over half of which occur in middle age. Smoking is a major contributor to inequalities in health, is the main cause of lung cancer and chronic obstructive pulmonary disease and is a major cause of heart disease, stroke and a variety of other cancers, including mouth, larynx, oesophagus and kidney.

Monitoring behaviours relating to tobacco use in New Zealand is vital for the development and evaluation of effective tobacco control policies, programmes and services. With the development of the New Zealand Tobacco Use Survey (NZTUS) and the redevelopment of the New Zealand Youth Tobacco Monitor (NZYTM), New Zealand now has a world class tobacco monitoring system.

This report presents information about the following indicators:

- prevalence and smoking history
- consumption and supply
- tobacco use and youth
- cessation programmes and services
- mortality attributable to tobacco
- use and consumption of roll-your-own tobacco as compared with manufactured cigarettes.

The data presented in this report have been derived from a range of sources, most notably the NZTUS, Statistics New Zealand data on tobacco products released for consumption, annual tobacco returns submitted to the Ministry of Health by the tobacco industry, the Year 10 Smoking Survey and the ACNielsen omnibus survey.

Comments on this report should be sent to Public Health Intelligence, Ministry of Health, PO Box 5013, Wellington.

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Executive Summary

The prevalence of smoking has decreased in New Zealand since the 1970s, yet approximately one in every four New Zealanders remains a current smoker. Around 19% of people identify themselves as being ex-smokers, a high proportion of whom are over the age of 40 years. The Quitline provides a national cessation service within New Zealand, each year attracting large numbers of smokers wanting to quit.

The prevalence of smoking continues to be high among Māori (46%) and Pacific peoples (36%) compared with the prevalence among Asian people (12%) and European/Other ethnic groups (20%).

The prevalence of smoking among adolescents aged 15–19 years is currently around 25% for males and 29% for females. Among 14- and 15-year-olds, the prevalence is much lower; 10.7% in girls and 7.2% in boys. Estimates across age groups may not be directly comparable as they are derived from different data sources. The average age of smoking initiation in youth is 14.6 years of age.

Compared with 2004, tobacco consumption per capita increased by 3% in 2005 to 1033 cigarette equivalents per adult (15+), although the overall trend is downward. A large proportion of current smokers in New Zealand identify themselves as 'light' smokers, smoking from 1–15 cigarettes per day.

A special descriptive section comparing roll-your-own tobacco use with manufactured cigarette use has been included in this year's report. Roll-your-own tobacco use is becoming increasingly popular in New Zealand and the results presented indicate that approximately 50% of smokers now use roll-your-own tobacco cigarettes.

Prevalence and Smoking History

The prevalence of current tobacco use is an important measure of the tobacco burden in a given population. It also provides a means to evaluate the effectiveness of tobacco control policies over time.

In New Zealand, prevalence measures refer to smoked tobacco products only – that is, manufactured cigarettes, roll-your-own tobacco, cigars, cigarillos and pipes. Prevalence measures of current smoking include daily and non-daily smokers, as consistent with World Health Organization (WHO) definitions (WHO 1998). Estimates of the prevalence of smoking presented in this report are derived from the New Zealand Tobacco Use Survey (NZTUS) and data purchased from ACNielsen (NZ) Ltd. All prevalence estimates relate to the adult (15+ years) population unless otherwise specified.

The NZTUS is a nationally representative, face-to-face survey, administered using computer assisted personal interview of one adult per selected household. The survey was conducted during the first quarter of 2006. All estimates are based on people currently resident in New Zealand, aged 15 to 64 years. The achieved sample size for 2006 was 5703. (For further information regarding methodology, please refer to Appendix A, Section 1.)

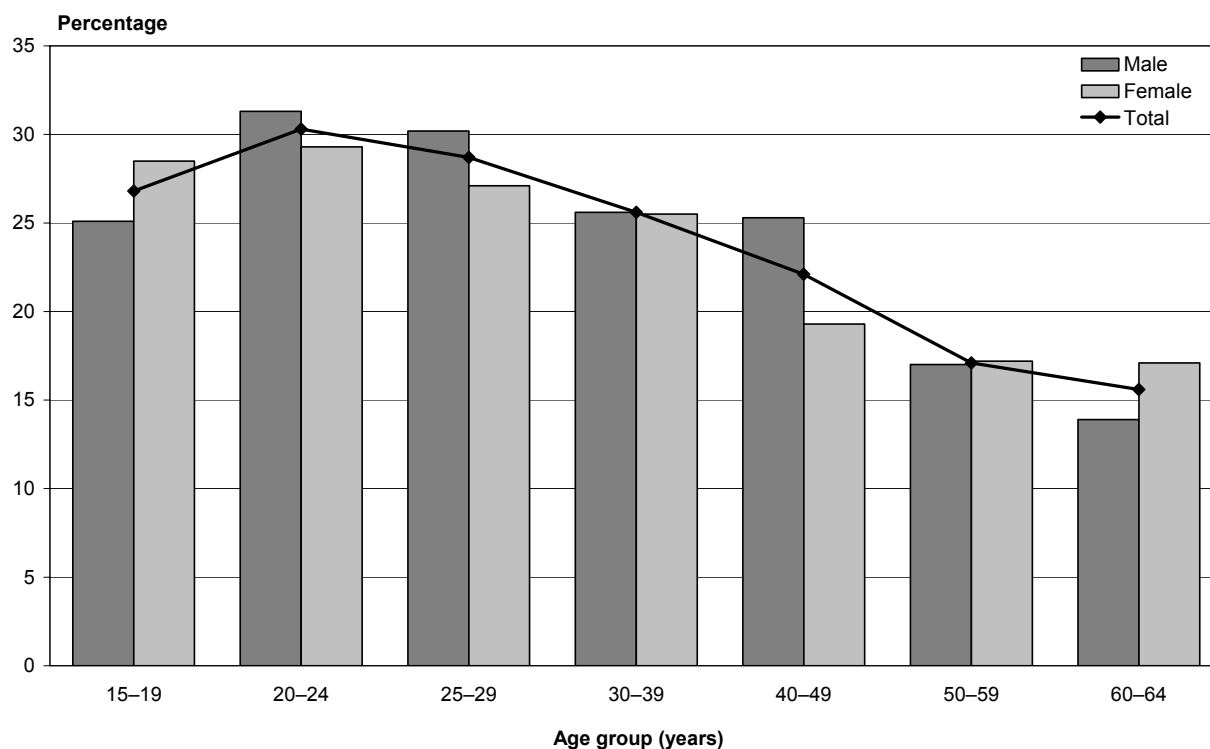
Prevalence

The prevalence¹ of current smokers in 2006 was 23.5% (CI=22.0, 25.0).

Higher smoking prevalence is seen among young to middle age groups (ie, 15 to 49 years) compared with older people. In contrast, the prevalence of smoking is much lower in those aged 50+ years (see Figure 1). This difference reflects a mixture of age and cohort effects.

¹ This is the crude prevalence. For some analyses, age standardised prevalence is used. For age standardisation, the age distribution of the survey is adjusted to match the WHO world standard population (see Appendix A, Section 4 for more information on standardisation).

Figure 1: Prevalence of current smokers (15+ years) (%), overall and by age group and sex



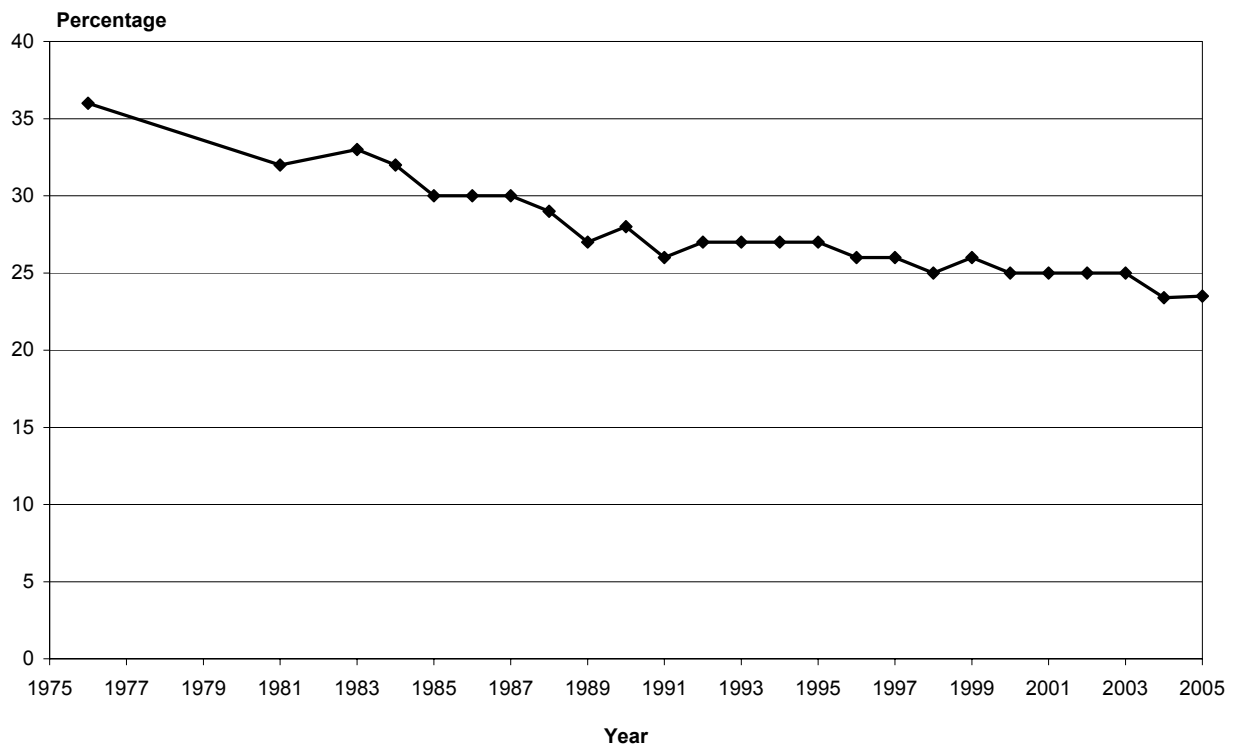
Source: NZTUS (2006)

The prevalence of smoking tends to be higher in males across all age groups within the 15–69 years range, except for 15–19- and 60–64-year-olds. In males, the prevalence of smoking (daily and non-daily) is around 24% (CI=22.0, 26.2) compared with 23% (CI=21.0, 24.7) in females (see Appendix B: Table B1).

Changes in smoking prevalence over time

ACNielsen (NZ) Ltd collects information about prevalence and average number of cigarettes smoked per day through ongoing omnibus consumer surveys. Figure 2 below represents a time series for people aged 15 years and over from 1976 to 2005. (For further information regarding methodology, please refer to Appendix A: Section 2.)

Figure 2: Prevalence of current cigarette smoking (%), 1976–2005



Source: 1996 Census of Population and Dwellings, Department of Statistics; 1976–2005 ACNielsen (NZ) Ltd

Note:

1. In 2003, prevalence of cigarette smoking was collected for 18+ years.

The prevalence estimate of 23.5% (CI=22.3, 24.7) produced from ACNielsen 2005 data is the same as that derived from the 2006 NZTUS. However, it is important to note that these estimates from the two data sources are not strictly comparable. Both give an independent estimate of national prevalence, based on the different methods used for each survey.

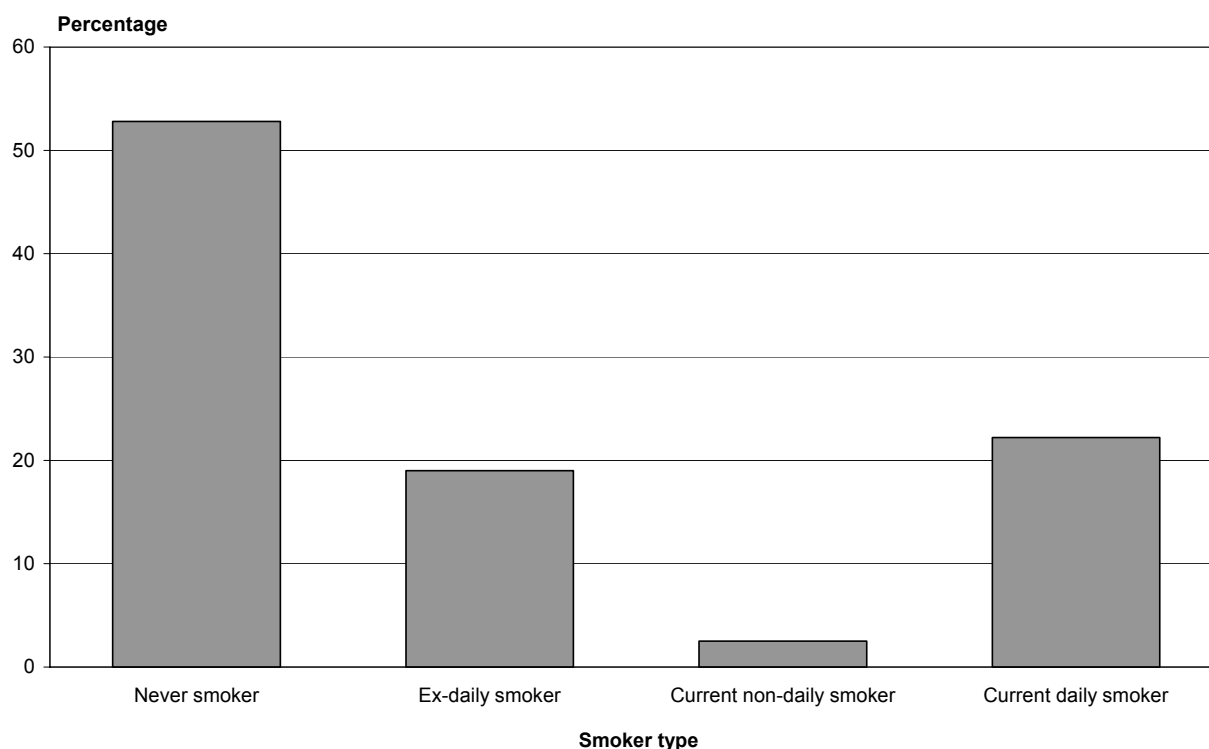
From the time series provided by the ACNielsen survey, it can be seen that the prevalence of current smokers has continued to decline since the 1970s at an average annual rate of approximately 0.1–0.2 percentage points (see Figure 2 and Appendix C: Table C1).

ACNielsen data previously presented in *Tobacco Facts 2005* (Ministry of Health 2005b) has been included in the appendices (see Appendix C: Table C2, Table C3, Figure C1 and Figure C2).

Population distribution by smoking status

Accurate breakdowns of the distribution of the New Zealand population by smoking status have not been available in the past. The NZTUS provides this information for the first time, including breakdowns by age, sex and ethnicity. Distribution of the total population by smoking status is presented in Figure 3 below. (For detailed rates on smoker type, by sex, ethnicity and age group, please refer to Appendix B: Table B5, Table B6, Table B7, Table B8 and Table B9.)

Figure 3: Distribution of smokers and non-smokers in New Zealand, age-standardised prevalence (15+ years) (%), by smoker type



Source: NZTUS (2006)

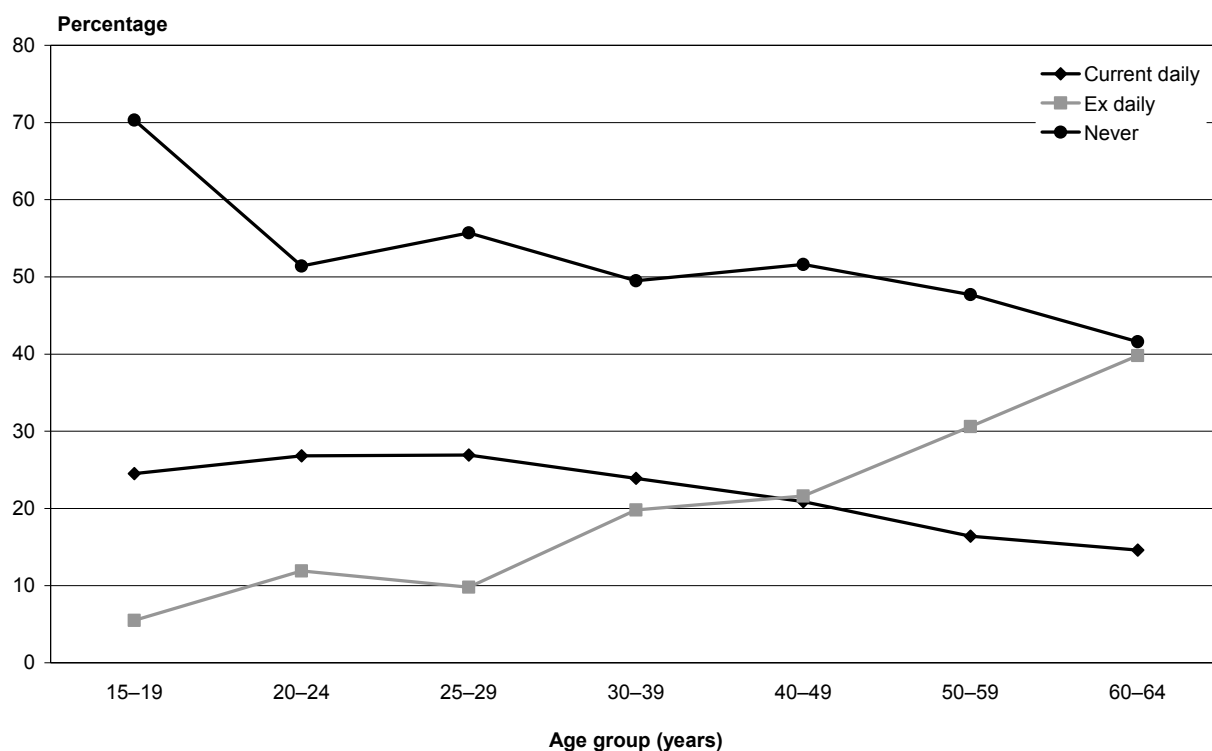
Note:

1. Ex non-daily smokers have not been represented here due to counts lower than five.

There is a high prevalence of people who have never smoked daily across all age groups. In the 15–19 years age group, around 70% identify themselves as never having smoked daily.

Of note is the higher prevalence of ex daily smokers older than 29 years and the correspondingly lower prevalence of current daily smokers over 40 years old (see Figure 4).

Figure 4: Prevalence of smoker types (15+ years) (%), by age group



Source: NZTUS (2006)

Ethnic differences in smoking rates

Consistent with previous estimates of prevalence (eg, Ministry of Health 2005b), smoking remains high among Māori and Pacific peoples, at around 45% and 37% respectively, compared with European/Other and Asian ethnic groups (see Table 1).

Table 1: Age-standardised prevalence of current smokers (15+ years) (%), by sex and ethnicity

	European/Other	Māori	Pacific	Asian	Total
Female	20.0 (17.6, 22.4)	50.0 (44.6, 55.4)	33.8 (26.9, 40.7)	4.7 (2.2, 7.2)	23.3 (21.5, 25.2)
Male	21.3 (18.6, 24.0)	40.0 (35.0, 45.0)	41.3 (33.7, 49.0)	18.6 (13.0, 24.2)	24.6 (22.4, 26.8)
Total	20.6 (18.7, 22.6)	45.2 (41.4, 48.9)	37.4 (32.4, 42.5)	12.3 (8.9, 15.7)	24.0 (22.5, 25.5)

Source: NZTUS (2006)

Note:

1. 95% confidence intervals are given in brackets underneath each rate.

Among Māori, the prevalence of smoking in females is significantly higher than that of males. The reverse is evident among Pacific and Asian populations. Specifically, among Pacific peoples around 41% of males are classified as daily smokers, compared with approximately 34% of females (see Table 1). Among Asians, the smoking prevalence among males is approximately three times higher than it is among females.

Māori have the lowest prevalence of never smoking daily, at around 33%, compared with all other ethnicities. In other words, around two-thirds of Māori people smoke at some stage in their lifetime. The prevalence of ex daily smokers is similar among Māori and European/Other ethnic groups, at around 20% and 21% respectively (see Table 2).

Table 2: Age-standardised prevalence of smoking status (15+ years) (%), by ethnicity

	European/Other	Māori	Pacific	Asian	Total
Current daily	19.1 (17.1, 21.0)	43.4 (39.6, 47.2)	34.1 (29.3, 39.0)	10.7 (7.5, 13.9)	22.2 (20.7, 23.7)
Current non-daily	2.4 (1.9, 3.0)	2.5 (1.2, 3.7)	3.8 (2.1, 5.6)	1.8 (0.2, 3.4)	2.5 (2.0, 2.9)
Ex daily	20.9 (19.1, 22.6)	19.7 (17.1, 22.3)	14.5 (11.1, 17.9)	9.0 (5.9, 12.1)	19 (17.7, 20.3)
Never	53.7 (51.8, 55.6)	33.2 (29.5, 36.9)	45.5 (40.0, 51.0)	75.1 (70.5, 79.7)	52.8 (51.4, 54.3)

Source: NZTUS (2006)

Note:

1. 95% confidence intervals are given in brackets underneath each rate.

Tobacco Use and Youth

Most adults begin smoking before the age of 18 years, and there is ample evidence to show that the younger people begin smoking, the more likely they are to become strongly addicted to nicotine (CDC 2006).

Information on tobacco use among New Zealand's youth is available through a range of surveys (as detailed in Ministry of Health 2005a). The majority of these surveys are primarily funded by the Ministry of Health while being managed by other organisations such as the Health Sponsorship Council (HSC) and Action on Smoking and Health (ASH). Surveys previously administered that have been aimed at youth include the Year 10 Smoking Survey (see Appendix A: Section 3), Youth Lifestyle Study & Pre-teen Survey (HSC) and Youth 2000/2007 (University of Auckland).

The New Zealand Tobacco Use Survey (see Appendix A: Section 1) is the most recent addition, containing a youth module with a wide range of questions about tobacco use along with several youth-specific questions, such as exposure to media. In addition, the NZTUS over-samples for 15- to 19-year-olds in order to produce reliable estimates in this age group. The Year 10 Smoking Survey is a national census survey of Year 10 students (14- and 15-year-olds) conducted in approximately three-quarters of all New Zealand schools annually since 1999. Data presented for youth in this report are derived from the Year 10 Smoking Survey and the NZTUS (youth module).

Prevalence

The prevalence of current smoking in youth aged 15 to 19 years is around 27%. This proportion is similar for males (approximately 25%) and females (approximately 29%) (see Appendix B: Table B1). In this age group, approximately 25% of the population are daily smokers. Approximately 70% identify themselves as being never smokers – that is, as never having smoked daily (see Table 3).

Among daily smokers and ex daily smokers in this age group, the average age of smoking initiation is 14.6 (CI=14.2, 14.9) years.

Table 3: Prevalence of smoker type (15–19 years) (%), by sex

	Female	Male	Total
Current daily	25.4 (20.0, 30.8)	23.6 (18.4, 28.7)	24.5 (21.0, 28.0)
Current non-daily	4.0 (1.7, 6.4)	2.0 (0.6, 3.4)	3.0 (1.6, 4.4)
Ex daily	6.7 (3.7, 9.6)	4.4 (1.9, 6.9)	5.5 (3.6, 7.5)
Never	67.5 (62.1, 72.8)	73.1 (68.4, 77.8)	70.3 (66.8, 73.8)

Source: NZTUS (2006)

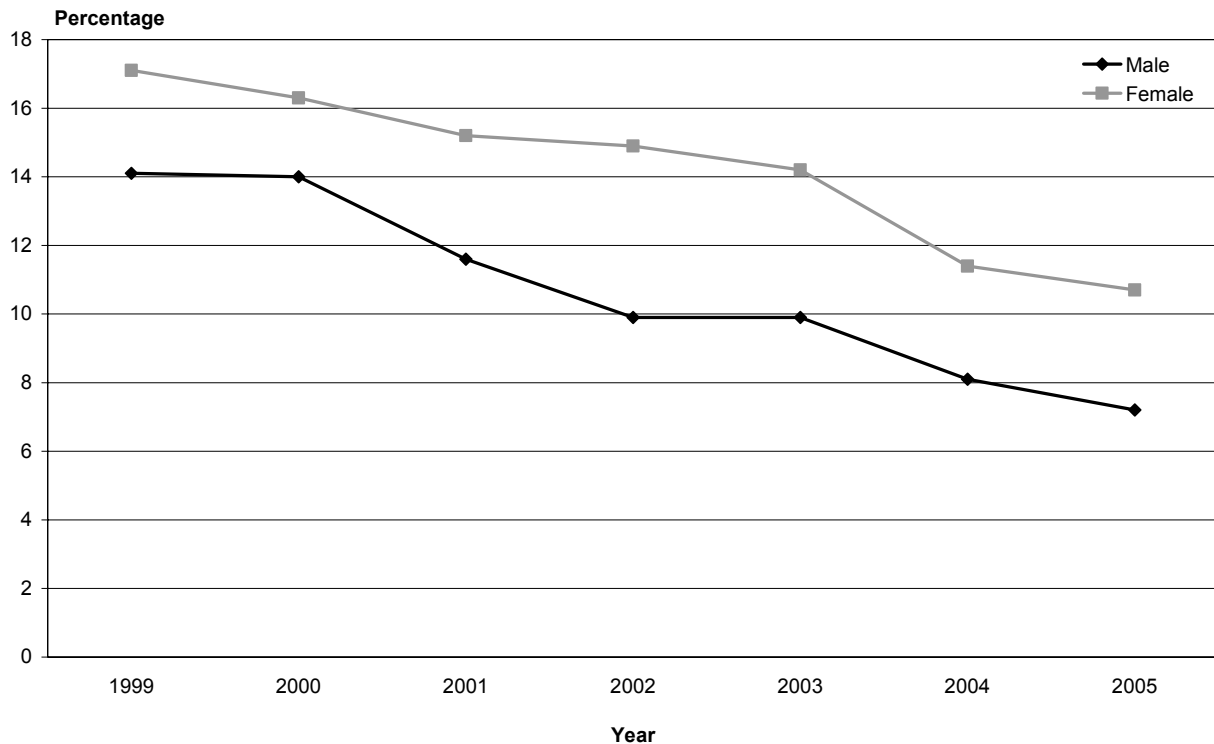
Note:

1. 95% confidence intervals are given in brackets underneath each rate.

According to the Year 10 Smoking Survey, the prevalence of smoking in Year 10 students (approximately 14–15 years old) has decreased from 11.4% to 10.7% in girls and from 8.1% to 7.2% in boys over 2004 and 2005. This fall is consistent with a continuing downward trend since 2000, when the prevalence was 16.3% among girls and 14.0% among boys.

Over the six-year period 2000–2005, prevalence has declined by approximately 40% in Year 10 girls and 50% in Year 10 boys (see Figure 5).

Figure 5: Prevalence of daily smoking (Year 10 students) by sex, 1999–2005

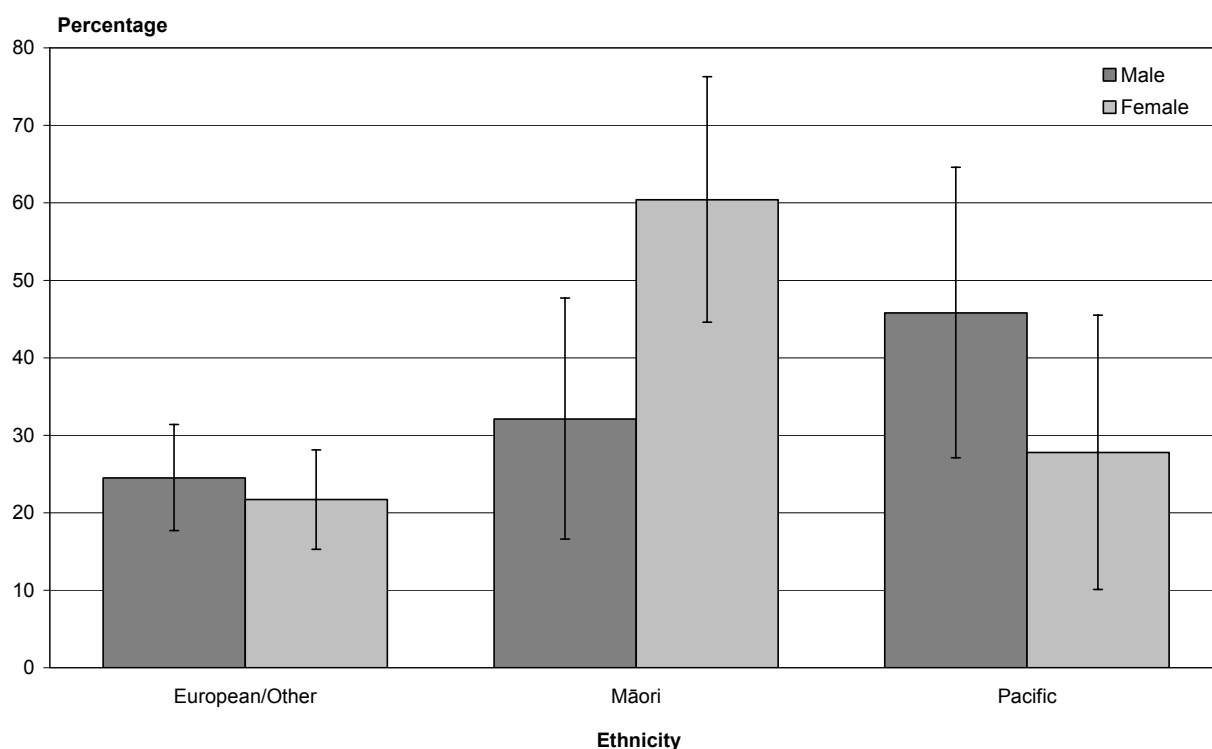


Source: Year 10 Smoking Survey

Ethnic differences in smoking rates

There is a high prevalence of smoking among Māori and Pacific peoples aged 15 to 19 years, around 46% and 36% respectively (see Figure 6 and Appendix B: Table B2). Among Māori in this age group, females have a higher smoking prevalence (60%) than males (32%). The reverse is true among Pacific peoples however, with around 28% of females currently smoking, compared with 46% of males (see Appendix B: Table B5).

Figure 6: Prevalence of current smoking (15–19 years) (%), by sex and ethnicity



Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are given for each bar.
2. Data for Asian ethnicity have been suppressed due to counts lower than five.

The Year 10 Smoking Survey indicates a decreasing trend in the prevalence of daily smoking across all ethnic groups from 1999 or 2000 to 2005 (see Table 4).

Table 4: Prevalence of daily smoking (%) Year 10 students, by sex and ethnicity, 1999–2005

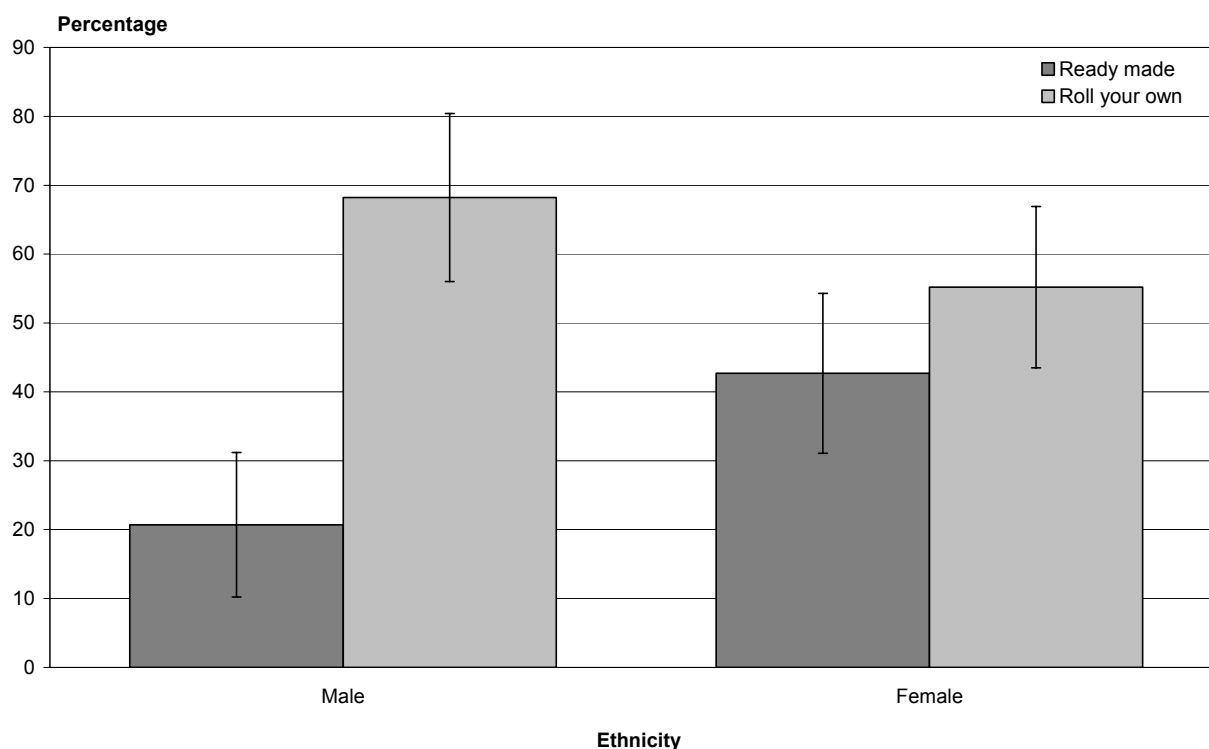
	1999	2000	2001	2002	2003	2004	2005
Female							
Māori	36.2	37.1	34.3	34.3	34.2	29.1	26.5
Pacific	23.0	19.4	19.5	17.6	18.1	13.2	14.5
Asian	5.9	5.1	3.2	3.9	4.5	2.9	2.9
European/Other	13.1	12.2	11.4	10.8	9.8	7.2	7.3
Male							
Māori	23.6	24.2	19.1	16.8	19.4	16.2	14.0
Pacific	16.6	16.8	14.3	10.8	12.5	11.8	10.2
Asian	7.9	9.4	7.2	7.5	6.4	3.8	5.3
European/Other	12.6	12.1	10.0	8.6	7.6	5.9	5.4

Source: Year 10 Smoking Survey

Consumption of tobacco among youth

In youth aged 15 to 19 years, around 61% of smokers use roll-your-own tobacco compared with 32% who use manufactured cigarettes.² The higher use of roll-your-own tobacco is evident for both sexes. The highest use is among male youth, who use 68% of roll-your-own compared with 21% of manufactured cigarettes (see Figure 7).

Figure 7: The use of manufactured vs roll-your-own tobacco (15–19 years) (%), by sex, 2006



Source: NZTUS (2006)

Note:

1. 95% confidence intervals are given for each bar.

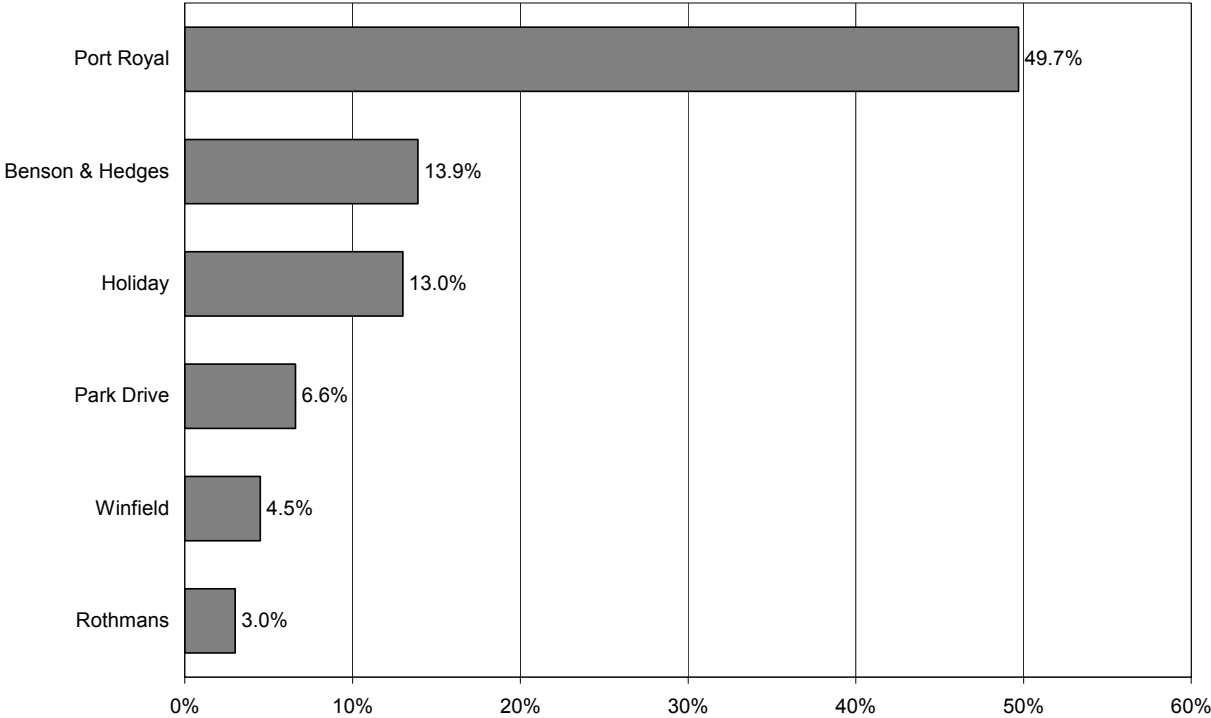
Females in this age group who use manufactured cigarettes smoke 7.0 cigarettes and those who use roll-your-own tobacco smoke the equivalent of 10.5 roll-your-own tobacco cigarettes on average per day.

Males in this age group who use manufactured cigarettes smoke 8.1 cigarettes and those who use roll-your-own tobacco smoke the equivalent of 15.1 roll-your-own tobacco cigarettes on average per day.

² However, as many use both roll-your-own and manufactured cigarettes, it is important not to interpret these percentages as being mutually exclusive.

Among those aged 15 to 19 years, Port Royal, a roll-your-own brand,³ is clearly the most popular tobacco brand, used by 50% of current smokers (see Figure 8). The next most popular brands are Benson and Hedges and Holiday.

Figure 8: Brand use of current smokers (15–19 years) (%), 2006



Source: NZTUS (2006)

³ Note that in the NZTUS (youth module), roll-your-own and manufactured cigarette brands are not differentiated. Therefore there is no way to ascertain from the data which brands are roll-your-own and which are manufactured cigarette brands.

Consumption and Supply

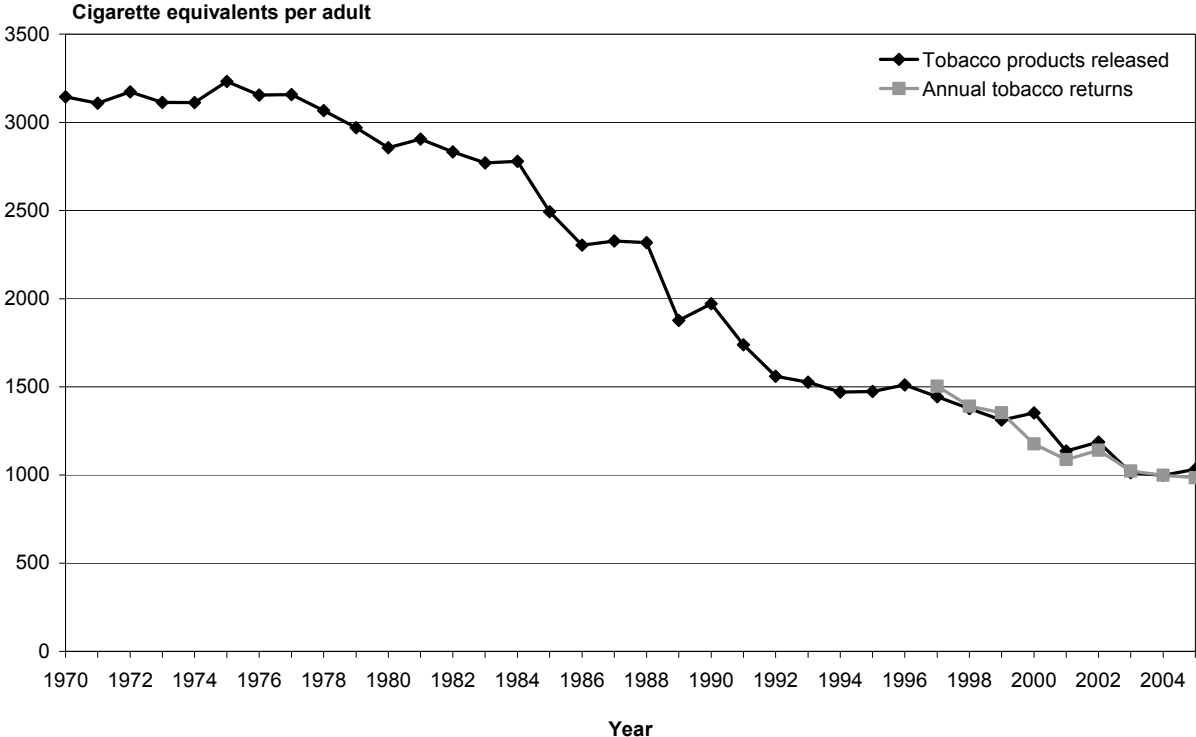
Measuring the consumption and supply of tobacco is a good way to understand the patterns of tobacco use over time. In New Zealand, tobacco consumption and supply are measured through weekly supermarket sales (ACNielsen (NZ) Ltd), annual tobacco products released (Statistics New Zealand), annual tobacco returns (Laugesen 2006) and the NZTUS.

Information about the quantity of manufactured cigarettes and loose tobacco released for consumption on the New Zealand market is collected and reported annually by Statistics New Zealand. Information about the amount of tobacco products, including manufactured and loose tobacco, sold to retailers each year is reported to the Director-General of Health annually by the tobacco industry, as required by the Smoke-free Environments Act 1990. Both of these data sources provide estimates of consumption that are independent of self-reports. The NZTUS utilises measures of self-report, relying on smokers' self-reporting of consumption, enabling approximate comparisons⁴ to be made between actual and self-reported consumption.

There has been a downward trend in consumption since the 1970s, with steep decreases around 1985. During 2005 the number of cigarette equivalents released per adult increased by 3% over 2004 to 1033 per capita, following from year-on-year decreases of 1% and 17% in 2004 and 2003 respectively (see Figure 9 and Appendix D: Table D1 and Table D2).

⁴ As three separate and independent data sources are involved here, interpret these comparisons with caution. In addition, there is a lag between the time when tobacco is cleared (ie, when excise tax is paid) and eventual consumption by smokers.

Figure 9: Tobacco consumed per adult (15+ years): tobacco products released (1970–2005) and annual tobacco returns (1997–2005)



Source: Statistics New Zealand, Ministry of Health

Notes:

1. One cigarette equivalent equals one manufactured cigarette or one gram of loose tobacco.
2. The volume of cigarettes and tobacco available for consumption represents products cleared for local consumption on which duty has been paid.
3. Loose tobacco includes a small amount of pipe tobacco. Cigars are excluded.

It is estimated that each smoker smokes an average of 12.1 cigarette equivalents per day, assuming a prevalence of 23.5%.

Information derived from the NZTUS about the number of cigarettes and cigarette equivalents smoked per day is categorised as follows:⁵

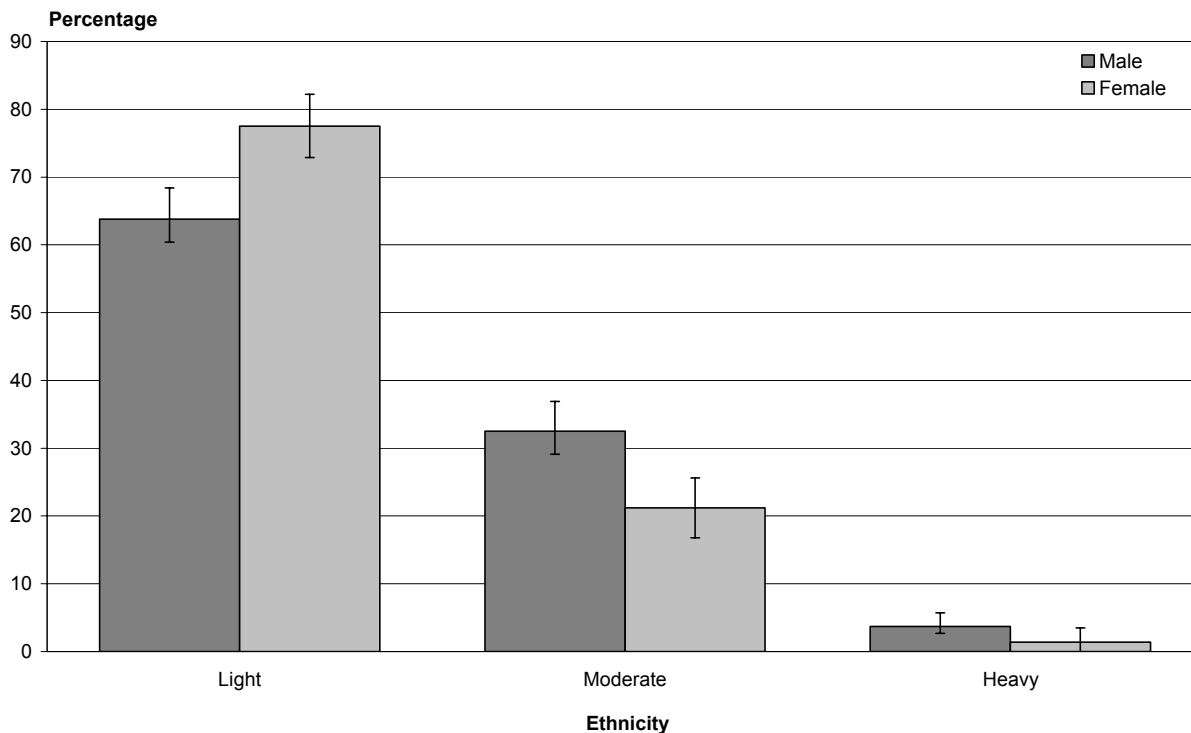
- light smoker – 1 to 15 cigarettes smoked daily
- moderate smoker – 16 to 30 cigarettes smoked daily
- heavy smoker – more than 30 cigarettes smoked daily.

Note: cigarette consumption includes the equivalent number of roll-your-own tobacco smoked daily.

⁵ The definitions used for light, moderate and heavy smokers are consistent with those used in other tobacco use surveys (eg, see Department of Health, UK 2003 and WHO 1998).

Based on the above definitions, approximately 71% of smokers were light smokers, 27% were moderate and 3% were heavy smokers in 2006 (see Figure 10 and Appendix B: Table B3).

Figure 10: Age-standardised individual daily consumption (15+ years) (%), by sex



Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are given for each bar.

Those who use roll-your-own tobacco (males and females) smoke around three more cigarettes on average per day, compared with those who use manufactured cigarettes only (see Table 5).

Table 5: Age-standardised self-reported average individual daily consumption (15+ years) (%), by tobacco type and sex

	Female	Male	Total
Manufactured cigarettes	9.8 (9.1, 10.5)	11.8 (10.4, 13.3)	10.8 (10.0, 11.6)
Roll-your-own tobacco	12.2 (11.2, 13.3)	15.2 (13.8, 16.7)	13.7 (12.9, 14.6)
Both	11.7 (7.7, 15.6)	10.3 (6.1, 14.6)	10.9 (7.6, 14.2)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are presented in brackets below each rate.

2. Average rates represent those who smoke only manufactured cigarettes, those who smoke only roll-your-own tobacco and those who smoke both manufactured cigarettes and roll-your-own tobacco. Some caution is necessary when interpreting self-reported consumption data because it tends to involve under-reporting. Research indicates that cigarette consumption is generally under-reported by around 10% (Easton 1999). Comparisons of average individual consumption per day between annual tobacco returns data (12.1) and self-reported data (10.9) are consistent with this research, indicating under-reporting by around 8% of average consumption.

Within each ethnic group, the majority of smokers report smoking between 1 and 15 cigarettes per day. Of note are similar rates of daily consumption between European/Other and Māori (see Table 6).

Table 6: Self-reported rates of daily consumption (15+ years) (%), by ethnicity

Consumption level	European/Other	Māori	Pacific	Asian	Total
Light (1–15)	65.4 (61.1, 69.6)	66.7 (61.4, 72.1)	83.1 (77.1, 89.1)	97.1 (94.0, 100.0)	69.0 (66.1, 71.9)
Moderate (16–30)	31.9 (27.7, 36.1)	29.2 (23.8, 34.6)	16.1 (10.5, 21.6)	– –	28.2 (25.4, 31.0)
Heavy (30+)	2.8 (1.2, 4.3)	4.1 (1.0, 7.1)	– –	– –	2.8 (1.5, 4.1)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are presented in brackets below each rate.
2. Empty boxes indicate rates that have been suppressed due to counts lower than five.

Smoking Cessation Programmes and Services

Reducing the prevalence of smoking in New Zealand through cessation services is a key priority, as identified in the Ministry of Health's five-year plan, *Clearing the Smoke* (Ministry of Health 2004). Smoking cessation initiatives funded by the Ministry in order to achieve this goal include the Quitline, the Quit mass media campaign, Aukati Kai Paipa and health providers providing cessation support in their role as Quit Cards providers for the provision of heavily subsidised nicotine replacement therapy. The Ministry also funds a variety of research around smoking and cessation so that all initiatives implemented are evidence based and relevant to New Zealand.

The Quitline is a tollfree, nationally available telephone helpline service for smokers to call for information and advice to help them in their quit attempt. The Quitline offers three main services: providing information packs; offering telephone support and advice from trained Quit Advisors; and issuing exchange cards for subsidised nicotine patches and gum.

The data reported below are from the Quitline and reflect caller information from July 2005 through to June 2006. It is important to note that these data do not reflect the number of people who quit annually; rather, they show the number who register to quit through the Quitline. Aukati Kai Paipa data are unavailable currently, but will be incorporated into next year's edition of *Tobacco Trends*.

Over the 2005/06 financial year, the Quitline received a total of 77,340 incoming calls.⁶ Of this total, 31,035 callers registered to make a quit attempt and were offered support, advice, quit packs and/or nicotine replacement therapy (see Table 7).

Incoming calls between January and June 2006 increased by 27% compared with January to June 2005.

Of all callers who registered with the Quitline in 2005/06, 59.5% were new callers and 26.7% were relapsed callers making another quit attempt.

⁶ Note that 'total calls' refers to all incoming phone calls, including those that are abandoned or involve no contact.

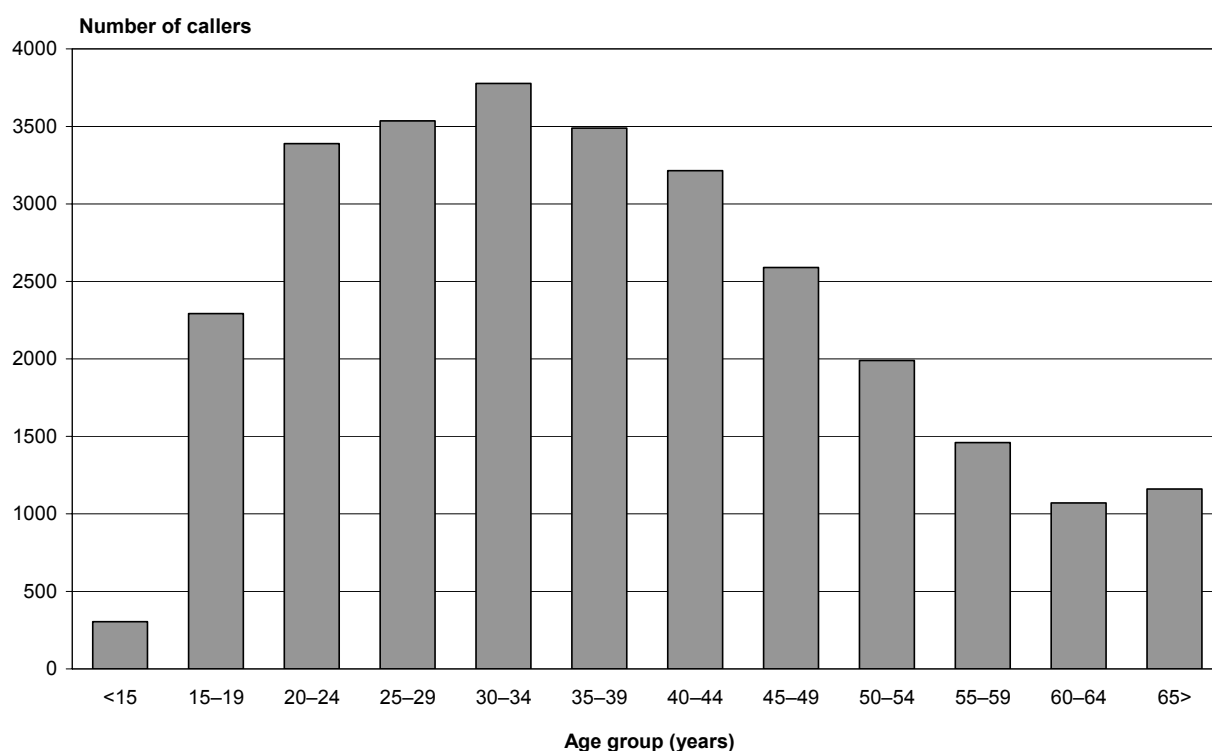
Table 7: Total number of callers registering with the Quitline, July 2005–June 2006

Month	New callers	Relapsed callers	Quit pack callers	Total callers
July 2005	1327	621	281	2229
August 2005	1669	676	445	2790
September 2005	1397	613	319	2329
October 2005	1353	558	321	2232
November 2005	1083	529	228	1840
December 2005	683	481	105	1269
January 2006	2035	875	452	3362
February 2006	1936	822	422	3180
March 2006	1986	860	505	3351
April 2006	1467	650	316	2433
May 2006	2009	879	474	3362
June 2006	1515	728	415	2658
Total	18,460	8292	4283	31,035

Source: The Quit Group

There is fairly good representation of new callers from all age groups registering with the Quitline, with 61.6% of callers in the 20–44 years age band (see Figure 11). Given that the Quitline is primarily targeted towards 25- to 44-year-olds, these data indicate that campaigns and communication strategies are reaching their priority audience.

Figure 11: New callers registered with the Quitline, by age group, July 2005–June 2006



Source: The Quit Group

There were 6293 Māori callers in total to the Quitline in 2005/06, of whom around 66% were new callers (see Table 8). Māori callers represented around 20% of all callers to the Quitline.

Over this period, 1371 callers to the Quitline were Pacific peoples, of whom around 63% were new callers. Pacific callers represented around 4% of all callers to the Quitline.

Table 8: New callers to the Quitline, by ethnicity, July 2005–June 2006

Ethnicity	New	%	Total	%
New Zealand Māori	4127	22.4	6293	20.3
New Zealand European/Other European	12,628	68.4	20,936	67.5
Pacific	867	4.7	1371	4.4
Asian	411	2.2	599	1.9
Other	783	4.2	1090	3.5
Refused to identify	97	0.5	282	0.9
Total registered	18,460		31,035	

Source: The Quit Group

Note:

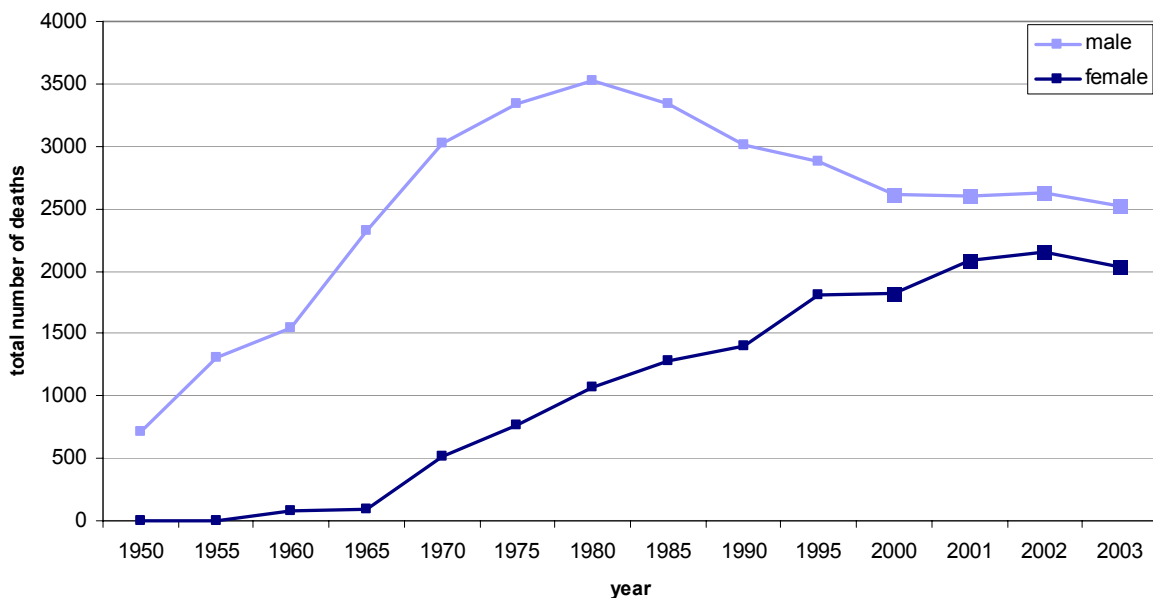
1. Total ethnicity exceeds the number of callers as some callers identify with more than one ethnic group.

Mortality Attributable to Tobacco

It is estimated that smoking kills around 5000 people in New Zealand every year (including deaths due to second-hand-smoke exposure), with around 1500 of these deaths occurring in middle age.

In New Zealand, there has been a large overall increase in mortality attributable to smoking (all causes) since 1965 (see Figure 12). There is a clear sex difference in the number of deaths, with many more male than female deaths being attributed to smoking. An important trend to note is the decrease in tobacco attributable mortality (TAM) among males from 1980 onwards. In contrast, female TAM has been steadily increasing since 1965 but may have peaked (as there has been little change since 2001). These sex differences in TAM reflect differences in the timing and magnitude of the tobacco epidemic experienced by males and females.

Figure 12: Total number of deaths attributed to smoking (all causes), 1950–2003



Source: NZHIS; Peto et al (2006)

Notes:

1. Estimates for 2000, 2001, 2002 and 2003 have been derived from NZHIS mortality counts.
2. Estimates for 1950–1999 were drawn from Peto et al 2006.
3. Estimates have been calculated using the Peto method (WHO 1998), which is used internationally. Analysis of linked New Zealand census and mortality data suggests that the Peto method may overestimate TAM when applied to ethnic groups such as Māori (Blakely et al 2006). Ethnic-specific estimates have therefore not been presented here.

Smoking is the main cause of lung cancer, and is a prominent risk factor for chronic obstructive pulmonary disease (COPD), cardiovascular disease (CVD), upper aerodigestive cancers (includes cancers of the mouth, oesophagus, pharynx and larynx), and many other cancers and chronic diseases.

Table 9 presents the total number of deaths attributable to smoking, broken down by disease type. The highest proportions of deaths from smoking are due to lung cancer, COPD and CVD, which together account for more than three-quarters of deaths attributable to smoking.

Table 9: Number of deaths attributable to tobacco smoking in New Zealand, by cause of death, 2000–2003

Year	CVD	COPD	Lung cancer	Upper aerodigestive cancer	Other cancer	Other medical	All causes
2000	1158	1065	1185	181	383	467	4439
2001	1154	1269	1210	183	384	487	4686
2002	1206	1213	1242	169	392	548	4770
2003	1061	1211	1233	183	382	487	4556
Total	4579	4758	4870	716	1541	1989	18,451

Source: NZHIS

Notes:

1. Estimates have been derived from NZHIS mortality data.
2. TAM for lung cancer is calculated differently to TAM for other diseases.

A Comparison of the Use of Roll-your-own Tobacco and Manufactured Cigarettes

Roll-your-own tobacco – also referred to as hand-rolled cigarettes, rollies, or hand-made cigarettes – have grown in popularity in New Zealand over the past 15 years. The proportion of loose tobacco released for consumption since 1990 has increased by 126% per capita. In 2005 loose tobacco represented around 27% of total tobacco products released per capita, compared with around 12% in 1990.

The use of roll-your-own tobacco varies internationally, with around 28% of smokers reporting roll-your-own tobacco use in the United Kingdom, 17% in Canada, 24% in Australia and 7% in the United States (Young et al 2006). Young et al used data from the International Tobacco Control (ITC) Four Country Survey⁷ to investigate characteristics of smokers who use roll-your-own tobacco compared with those who use manufactured (ready-made) cigarettes. Findings demonstrated that roll-your-own smoker characteristics varied across countries. Roll-your-own smokers from the United Kingdom tended to use roll-your-own tobacco exclusively, whereas in the United States, Australia and Canada roll-your-own smokers used both roll-your-own tobacco and manufactured cigarettes.

From the ITC study, findings also indicated that roll-your-own smokers tended to be of lower socioeconomic status and younger, and were more likely to be more male than female. This section presents descriptive data from Statistics New Zealand and the NZTUS, comparing manufactured and roll-your-own tobacco use in New Zealand.

Between 2004 and 2005 the estimated number of cigarettes released for consumption increased by about 5% to 2,436 million; the amount of loose tobacco available for consumption has increased by about 6% to 889 tonnes (see Figures 13 and 14).

⁷ The four countries compared in this study were the United Kingdom, Australia, Canada and United States. New Zealand will be joining this study from 2007 onwards.

Figure 13: Manufactured cigarettes available for consumption, 1985–2005

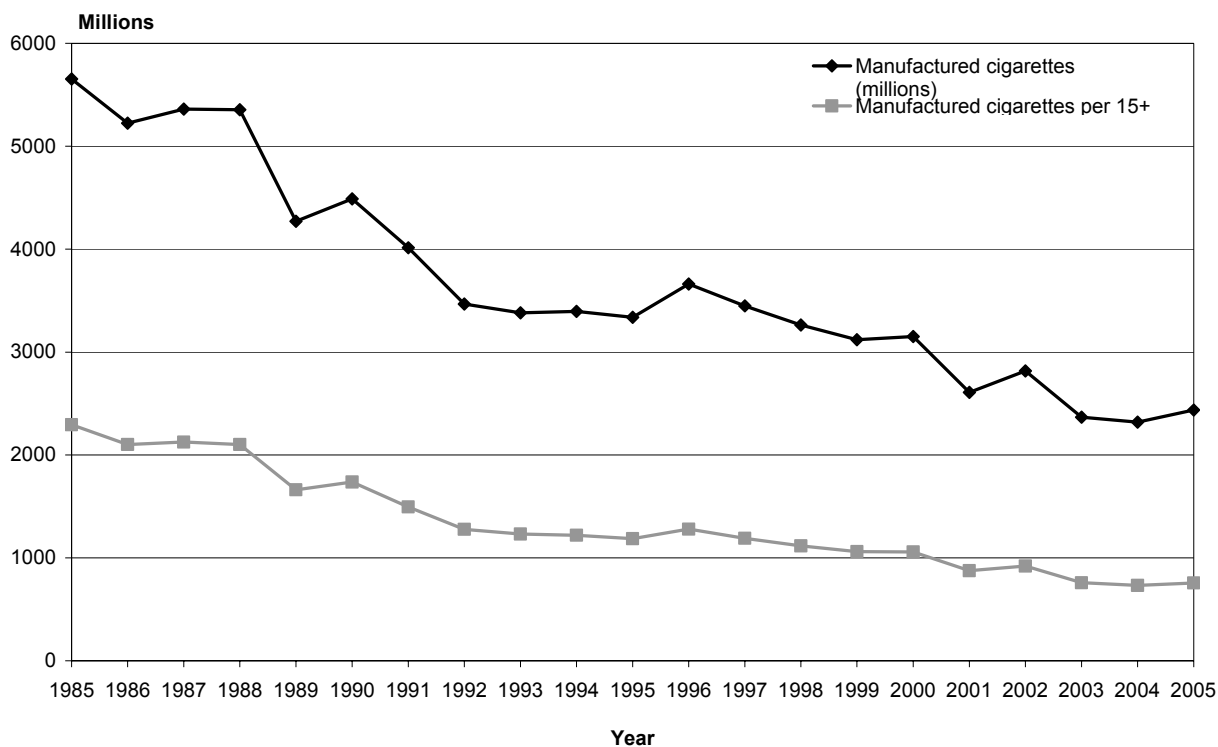
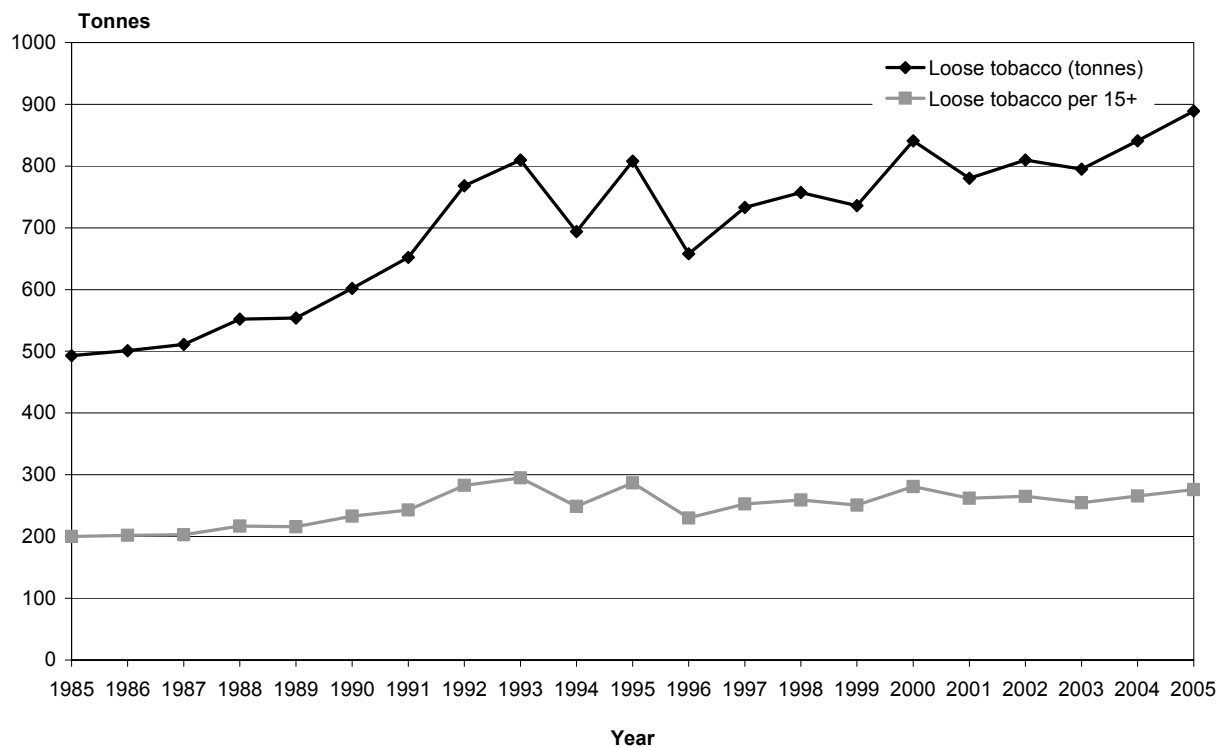


Figure 14: Loose tobacco available for consumption, 1985–2005



Source: Statistics New Zealand

Notes:

1. One cigarette equivalent equals one manufactured cigarette or one gram of loose tobacco.
2. Loose tobacco includes a small amount of pipe tobacco. Cigars are excluded.

Self-reported consumption of manufactured cigarettes and roll-your-own tobacco is of relatively equal proportion for males and females (see Table 10). It is important to note, however, that many people smoke both roll-your-own tobacco and manufactured cigarettes and therefore these prevalence rates should not be interpreted as being mutually exclusive.

Table 10: Age-standardised proportions of current smokers reporting manufactured cigarette and/or roll-your-own tobacco use (15+ years) (%), by sex

	Female	Male	Total
Manufactured cigarettes	48.8 (44.5, 53.2)	45.0 (40.2, 49.7)	46.9 (43.3, 50.5)
Roll-your-own tobacco	47.4 (42.9, 51.9)	48.6 (43.6, 53.5)	48.0 (44.4, 51.5)

Source: NZTUS (2006)

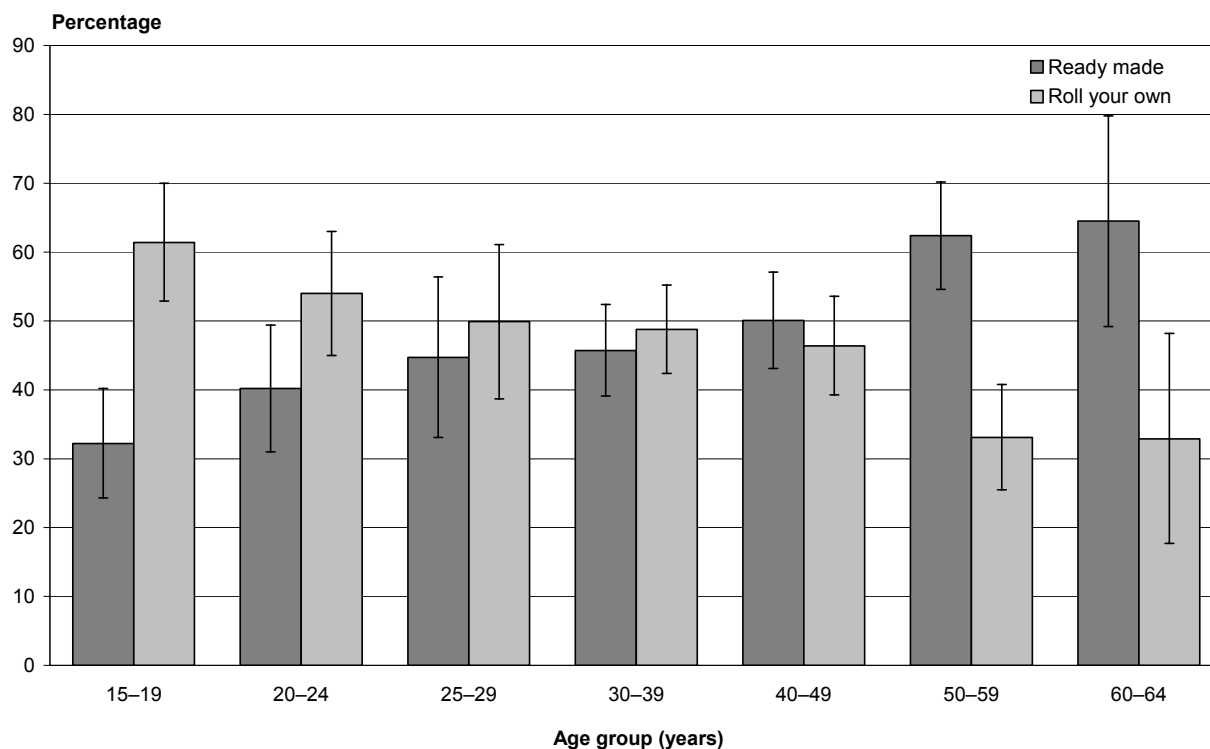
Note:

1. 95% confidence intervals are presented in brackets below each rate.

The use of roll-your-own tobacco is higher among younger age groups; of 15- to 19-year-old smokers, about 61% use roll-your-own tobacco (see Figure 15). On the other hand, only around 33% of 60- to 64-year-old smokers report such use. The decrease in use with age is likely to be a cohort effect.

In contrast, the use of manufactured cigarettes appears to be higher among older age groups. Around 65% of 60- to 64-year-old smokers use manufactured cigarettes, compared with approximately 32% of 15- to 19-year-old smokers.

Figure 15: Self-reported rates for roll-your-own tobacco and/or manufactured cigarette use (15+ years) (%), by age group



Source: NZTUS (2006)

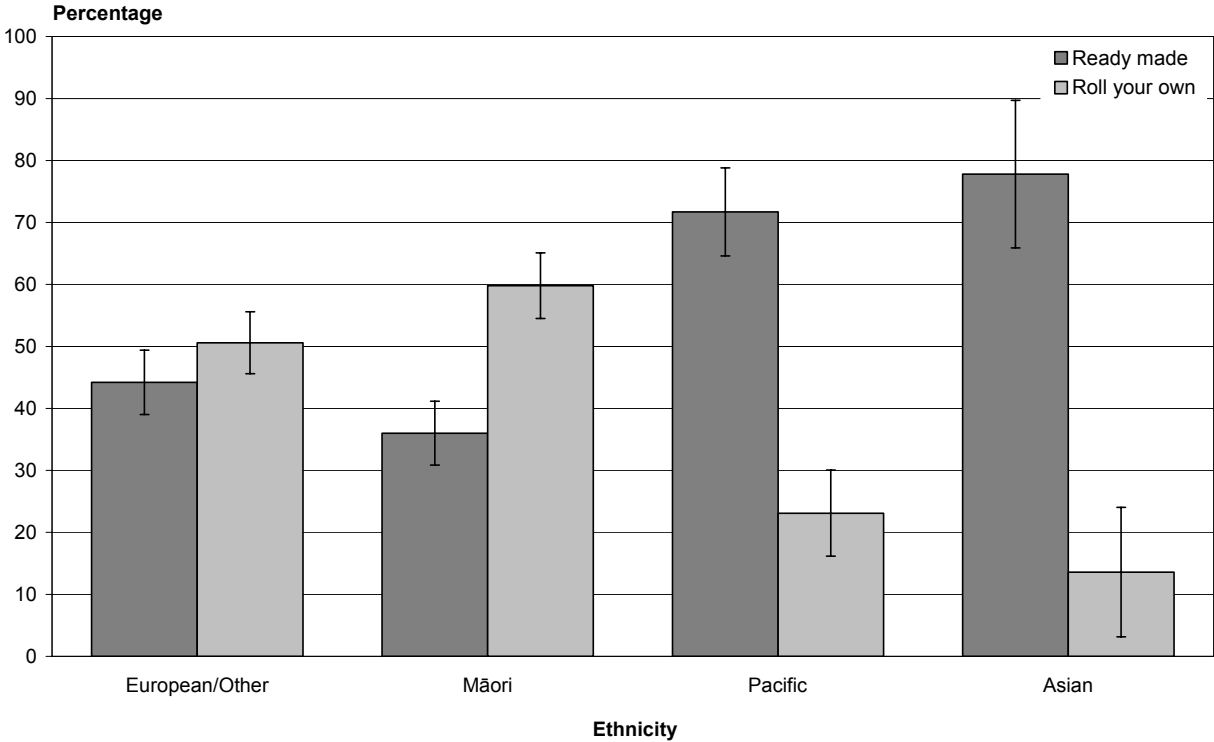
Note:

1. 95% confidence intervals are presented for each bar.

There is a clear preference for the use of manufactured cigarettes by Asian (78%) and Pacific smokers (72%) rather than roll-your-own tobacco (14% and 23%, respectively) (see Figure 16).

Among Māori and European/Other ethnic groups, there is higher use of roll-your-own tobacco. This preference is particularly evident among Māori smokers, of whom approximately 60% use roll-your-own tobacco.

Figure 16: Age-standardised proportions of smokers reporting manufactured cigarette and/or roll-your-own tobacco use (15+ years) (%), by ethnicity



Source: NZTUS (2006)

Note:

1. 95% confidence intervals are presented for each bar.

In New Zealand, the most popular brand of roll-your-own tobacco is Port Royal, which is used by around 35% of smokers (see Figure 17). Park Drive is the second most popular, used by around 30% of smokers, followed by Holiday with 12% of smokers.

The most popular manufactured cigarette brand smoked in New Zealand is Holiday, which is used by approximately 30% of smokers (see Figure 18). The second most popular is Benson and Hedges (13%), followed by Horizon (11%).

Figure 17: Roll-your-own tobacco brand use of current smokers (20+ years) (%)

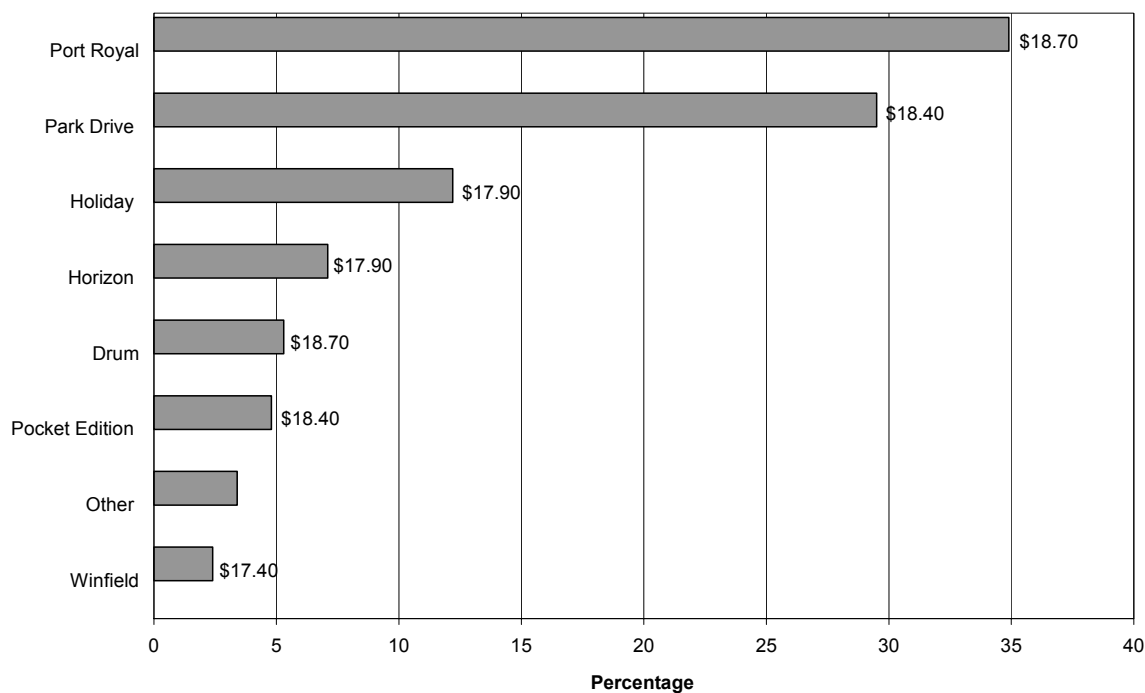
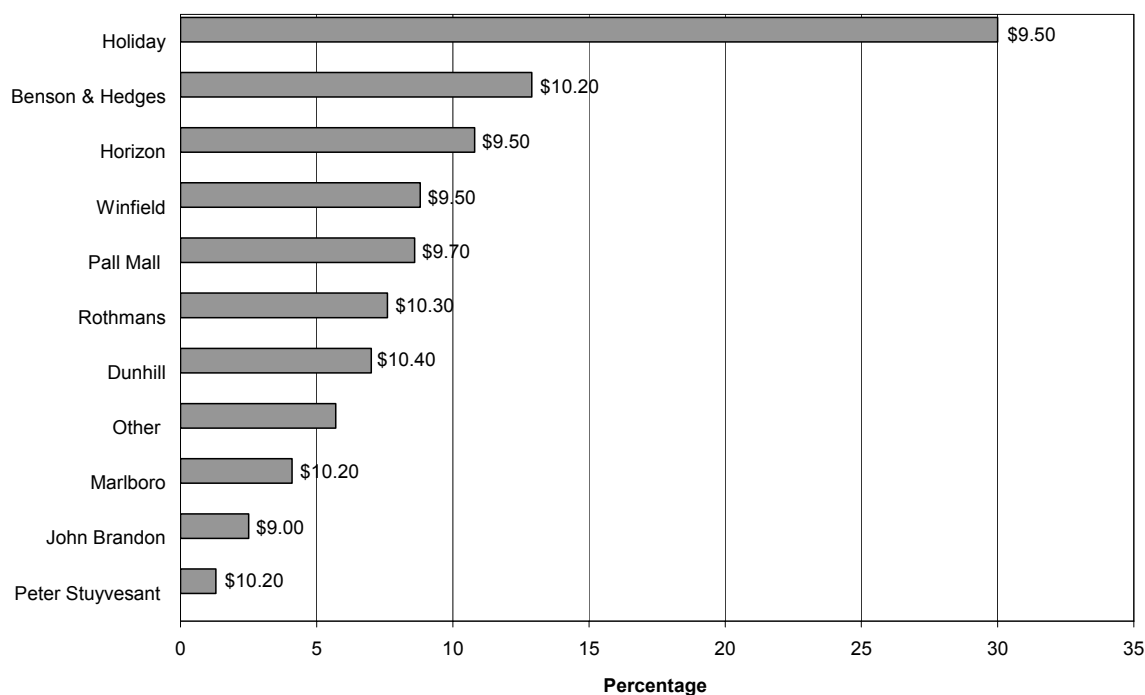


Figure 18: Manufactured cigarette use of current smokers (20+ years) (%)



Source: NZTUS; New Zealand Tobacco Returns (Ministry of Health)

Notes:

1. Rates are not age standardised.
2. Prices are updated as of December 2005.
3. Prices are based on average weight of 30 grams per pack for loose tobacco and 20 per pack for manufactured cigarettes.

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Appendix A: Methodology

1. NZTUS methodology

The New Zealand Tobacco Use Survey is a face-to-face survey, administered using computer assisted personal interview. The NZTUS collects information about the New Zealand population aged 15 to 64 years and living in permanent private dwellings. It was first fielded in 2006.

The NZTUS will be conducted two out of every three years. Data will be collected over a three-month period, with the New Zealand Health Survey supplying core tobacco use data for the 'third' year. Data may be aggregated across waves as required to achieve adequate statistical power for population subgroups.

The 2006 NZTUS aimed to produce reasonably precise estimates nationally by age group (15–19, 20–24, 25–44 and 45–64 years), sex (male, female) and ethnic group (Māori, Pacific peoples, Asian and European/Other, including New Zealand European).

The achieved sample size (completed interviews) for 2006 was 5703. The total sample consisted of a main sample (approximately 4400 people) and screened sample (approximately 900 people). The purpose of the screened sample was to boost the sample sizes for key age and ethnic groups (15–24 years, Māori, Pacific peoples and Asian). This survey will not be fielded in 2007 as the New Zealand Health Survey will be conducted in that year.

2. ACNielsen (NZ) Ltd methodology

ACNielsen (NZ) Ltd administers consumer omnibus surveys annually to approximately 11,000 households. Surveys are conducted face-to-face, with one respondent per household. There are two tobacco-related questions in the survey, from which prevalence estimates are derived.

Show cards itemising manufactured cigarettes, roll-your-own tobacco, pipes, cigars and cigarillos are used in conjunction with questions. Respondents are asked, 'Which of these products, if any, do you ever smoke?' and 'How many manufactured/roll-your-own tobacco cigarettes do you smoke in an average day?'

Cigarette smokers are defined as those who smoke any manufactured or roll-your-own tobacco cigarettes.

Data obtained from ACNielsen are weighted to reflect age, sex and household characteristics of the 2001 Census population. Confidence intervals are provided where possible. Data are analysed using SAS (Version 9.1).

3. Year 10 Smoking Survey methodology

The Year 10 Smoking Survey is a national survey administered to Year 10 students (14- to 15-year-olds) annually. The first objective of the survey is to investigate trends in the last five years (1999–2005) in relation to: adolescent smoking prevalence, parental smoking prevalence and smoking in the home. The second objective is to provide information on sex, ethnic and socioeconomic inequalities within youth populations. Action on Smoking and Health manages data collection of this survey, utilising Research Solutions to process the data. The Year 10 Smoking Survey is funded by the Ministry of Health.

In 2004 and 2005 the Health Sponsorship Council assisted with the collection of data with analytical support from the University of Auckland. Information derived from these surveys is important for initiating tobacco control programmes to reduce smoking among New Zealand youth. Participating schools receive their individual data and, if a school consents, its particular data are forwarded to its local Public Health Unit.

Methods

The Year 10 Smoking Survey employs a census-style approach to measure smoking prevalence and smoking-related behaviour over time. Students answer anonymous, self-administered questionnaires. Data are analysed using SAS (Version 9.1).

In 2005 the total number of questionnaires returned was 33,219. Of this total, 32,761 were analysed; the other questionnaires were not used due to missing variables such as sex, ethnicity and cigarette smoking information. Over the period of 1999 to 2005, a total of 214,654 Year 10 students answered an anonymous self-administered questionnaire as part of this annual survey. Note that the order of possible responses to the question, 'How often do you now smoke', was reversed in 2004 and 2005. Analysis of data has not shown any huge deviations as a result of this change.

4. Age standardisation

Age standardisation was performed by the direct method, using WHO world population age distributions. For the NZTUS, each prioritised ethnic group (Māori, non-Māori), sex and age group (15–24, 25–34, 35–44, 45–54, 55–64 years) was adjusted to match the WHO world standard population distribution (WHO 1998).

Age standardisation is a useful way to summarise age-specific rates into a cross-comparable summary index, which is not affected by differing population size and age structure. Age standardisation involves a standard (reference) population and a study population. Direct standardisation uses the age structure of the standard population as a weight to apply to the age-specific rates of the study group. The directly standardised rate can be readily compared with other directly standardised rates using the same standard population.

Appendix B: NZTUS Data Tables

Table B1: Prevalence of current smokers, by sex and age group

Age group (years)	Female	Male	Total
15–19	28.5 (22.9, 34.1)	25.1 (19.9, 30.3)	26.8 (23.1, 30.4)
20–24	29.3 (24.2, 34.4)	31.3 (25.3, 37.3)	30.3 (26.6, 34.1)
25–29	27.1 (20.3, 33.8)	30.2 (21.1, 39.3)	28.7 (22.8, 34.5)
30–39	25.5 (21.8, 29.3)	25.6 (21.6, 29.6)	25.6 (22.8, 28.3)
40–49	19.3 (15.7, 22.9)	25.3 (20.8, 29.7)	22.1 (19, 25.3)
50–59	17.2 (13.7, 20.8)	17.0 (13.4, 20.5)	17.1 (14.4, 19.8)
60–64	17.1 (10.7, 23.5)	13.9 (8.5, 19.3)	15.6 (11.4, 19.8)
Total	22.9 (21.0, 24.7)	24.1 (22.0, 26.2)	23.5 (22.0, 25.0)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are presented in brackets below each rate.
2. Rates are age specific.

Table B2: Prevalence of current smoking (%) (15+ years), by age and ethnicity

Age group (years)	European/Other	Māori	Pacific	Asian	Total
15–19	23.1 (18.4, 27.8)	45.9 (36.2, 55.7)	36.1 (23.3, 48.9)	6.2 (0.8, 11.5)	26.8 (23.1, 30.4)
20–24	25.0 (20.4, 29.7)	57.0 (46.0, 68.1)	38.7 (25.8, 51.6)	20.3 (9.8, 30.7)	30.3 (26.6, 34.1)
25–29	28.1 (19.6, 36.6)	40.0 (31.3, 48.6)	53.1 (36.7, 69.5)	9.7 (2.8, 16.6)	28.7 (22.8, 34.5)
30–39	21.7 (17.8, 25.7)	50.6 (43.2, 58.1)	38.0 (27.0, 49.0)	11.4 (5.9, 16.8)	25.6 (22.8, 28.3)
40–49	19.4 (15.6, 23.2)	46.0 (37.7, 54.3)	27.2 (17.9, 36.5)	10.1 (4.1, 16.1)	22.1 (19.0, 25.3)
50–59	14.3 (11.1, 17.4)	40.1 (29.9, 50.3)	34.3 (20.0, 48.5)	11.8 (4.7, 19.0)	17.1 (14.4, 19.8)
60–64	15.3 (10.5, 20.1)	21.1 (9.2, 33.0)	20.5 (0, 41.1)		15.6 (11.4, 19.8)
Total	20.0 (18.1, 22.0)	45.8 (42.2, 49.5)	36.2 (31.3, 41.1)	12.0 (8.9, 15.0)	23.5 (22.0, 25.0)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are given in brackets underneath each rate.
2. Rates are age specific.
3. Grey boxes are rates that have been suppressed due to counts lower than five.

Table B3: Age-standardised self-reported daily smoking consumption, by sex

Consumption level	Female	Male	Total
Light	77.5 (74.0, 80.9)	63.8 (59.1, 68.4)	70.6 (67.8, 73.5)
Moderate	21.2 (17.8, 24.6)	32.5 (28.1, 36.9)	26.8 (24.1, 29.6)
Heavy	1.4 (0.4, 2.4)	3.7 (1.7, 5.8)	2.5 (1.4, 3.7)

Source: NZTUS (2006)

Note:

1. 95% confidence intervals are presented in brackets below each rate.

Table B4: Age-standardised prevalence of current smokers, Māori and non-Māori, by sex

	Māori	Non-Māori	Total
Female	50.0 (44.6, 55.4)	19.4 (17.4, 21.3)	23.3 (21.5, 25.2)
Male	40.0 (35.0, 45.0)	22.4 (19.9, 24.9)	24.6 (22.4, 26.8)
Total	45.2 (41.4, 48.9)	20.9 (19.1, 22.6)	24 (22.5, 25.5)

Source: NZTUS (2006)

Note:

1. 95% confidence intervals are presented in brackets below each rate.

Table B5: Prevalence of current smokers (15+ years), by age group, sex and ethnicity

Age group (years)	Female					Male				
	European/ Other	Māori	Pacific	Asian	Total	European/ Other	Māori	Pacific	Asian	Total
15–19	21.7 (15.3, 28.1)	60.4 (44.6, 76.3)	27.8 (10.1, 45.5)		28.5 (22.9, 34.1)	24.5 (17.6, 31.3)	32.1 (16.6,47.7)	45.8 (27.0, 64.5)	25.1 (19.9,33.7)	25.1 (19.9, 30.3)
20–24	26.1 (19.5, 32.7)	60.9 (46.9, 74.9)	38.5 (21.7, 55.3)		29.3 (24.2, 34.4)	24 (16.9, 31.1)	53.0 (36.3, 69.6)	39.0 (15.2, 62.9)	31.3 (17.1, 50.4)	31.3 (25.3, 37.3)
25–29	27.2 (17.8, 36.6)	39.1 (26.5, 51.6)	46.8 (22.6, 70.9)		27.1 (20.3, 33.8)	29.0 (15.3, 42.6)	40.9 (24.4,57.5)	60.0 (36.8, 83.2)	16.0 (5.2, 26.7)	30.2 (21.1, 39.3)
30–39	22.0 (17.1, 26.9)	56.8 (47.3, 66.3)	30.8 (20.4, 41.3)	9.3 (2.5, 16.0)	25.5 (21.8, 29.3)	21.5 (15.6, 27.3)	44.0 (33.3, 54.8)	43.2 (26.2, 60.2)	13.9 (4.7, 23.1)	25.6 (21.6, 29.6)
40–49	17.3 (13.1, 21.6)	42.0 (30.4, 53.6)	23.5 (11.2, 35.7)		19.3 (15.7, 22.9)	21.7 (16.6, 26.9)	51.0 (40.4, 61.6)	30.1 (17.3, 42.9)	21.3 (7.8, 34.8)	25.3 (20.8, 29.7)
50–59	13.4 (9.6, 17.3)	49.8 (36.9, 62.6)	40.1 (17.5, 62.7)		17.2 (13.7, 20.8)	15.1 (10.7, 19.5)	30.4 (17.8, 42.9)	28.3 (11.6, 45.0)	16.5 (6.1, 26.9)	17.0 (13.4, 20.5)
60–64	15.4 (8.3, 22.6)	35.5 (15.6, 55.4)			17.1 (10.7, 23.5)	15.1 (9.0, 21.2)				13.9 (8.5, 19.3)
Total	19.3 (17.0, 21.7)	50.6 (45.2, 55.9)	33.3 (26.7, 39.8)	4.5 (2.2, 6.8)	22.9 (21.0, 24.7)	20.8 (18.3, 23.3)	40.7 (35.6, 45.8)	39.2 (31.8,46.5)	18.3 (13.1, 23.5)	24.1 (22.0, 26.2)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are presented in brackets below each rate.
2. Rates are age specific.
3. Grey boxes are rates that have been suppressed due to counts lower than five.

Table B6: Current daily smokers (15+ years), by sex, ethnicity and age group

Age group (years)	Female					Male				
	European/ Other	Māori	Pacific	Asian	Total	European/ Other	Māori	Pacific	Asian	Total
15–19	18.6 (12.5, 24.8)	55.5 (38.7, 72.4)	25.6 (8.3, 42.9)		25.4 (20.0, 30.8)	23.7 (16.9, 30.5)	30.0 (14.6, 45.4)	41.1 (21.8, 60.3)		23.6 (18.4, 28.7)
20–24	20.2 (14.0, 26.5)	54.8 (40.1, 69.5)	38.5 (21.7, 55.3)		25.1 (20.3, 29.8)	21.6 (14.3, 28.8)	51.2 (34.3, 68.1)	28.2 (8.5, 47.9)	31.8 (15.2, 48.4)	28.5 (22.3, 34.6)
25–29	24.1 (14.6, 33.6)	37.6 (25.3, 49.9)	46.8 (22.6, 70.9)		24.9 (18.0, 31.8)	28.7 (15.1, 42.4)	38.6 (22.3, 55.0)	60.0 (36.8, 83.2)	11.9 (2.3, 21.5)	28.9 (19.9, 38.0)
30–39	20.8 (16.1, 25.6)	55.6 (46.3, 64.9)	29.7 (19.5, 39.9)	9.3 (2.5, 16.0)	24.5 (20.9, 28.1)	20.0 (14.2, 25.8)	41.7 (30.4, 53.0)	37.3 (20.0, 54.5)	8.4 (2.0, 14.8)	23.2 (18.9, 27.5)
40–49	16.4 (12.2, 20.7)	40.5 (29.0, 52.0)	20.3 (9.8, 30.8)		18.3 (14.7, 22.0)	20.2 (15.0, 25.4)	50.3 (39.6, 61.0)	27.8 (15.0, 40.6)	19.7 (6.2, 33.2)	23.8 (19.2, 28.3)
50–59	12.9 (9.2, 16.7)	49.8 (36.9, 62.6)	40.1 (17.5, 62.7)		16.8 (13.4, 20.3)	14.4 (10.1, 18.7)	30.4 (17.8, 42.9)	19.5 (4.8, 34.2)	16.5 (6.1, 26.9)	16.1 (12.6, 19.6)
60–64	15.1 (7.9, 22.3)	35.5 (15.6, 55.4)			16.8 (10.4, 23.2)	13.4 (7.6, 19.2)				12.2 (7.0, 17.3)
Total	17.7 (15.4, 20.1)	48.4 (42.9, 53.8)	32.2 (25.6, 38.7)	4.5 (2.2, 6.8)	21.4 (19.6, 23.1)	19.5 (17.0, 22.0)	39.2 (34.2, 44.3)	33.7 (26.4, 41.0)	15.7 (10.6, 20.7)	22.4 (20.3, 24.5)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are presented in brackets below each rate.
2. Rates are age specific.
3. Grey boxes are rates that have been suppressed due to counts lower than five.

Table B7: Prevalence of current non-daily smokers (15+ years), by ethnicity, sex and age group

Age group (years)	Female					Male				
	European/ Other	Māori	Pacific	Asian	All	European/ Other	Māori	Pacific	Asian	Total
15–19	4.3 (1.4, 7.1)				4.0 (1.7, 6.4)					2.0 (0.6, 3.4)
20–24	7.4 (3.1, 11.7)				5.8 (2.9, 8.6)	2.9 (0, 5.8)				3.1 (1.0, 5.1)
25–29	5.2 (0.7, 9.7)				3.6 (0.8, 6.5)					4.1 (0.5, 7.6)
30–39	2.5 (0.8, 4.1)				2.0 (0.8, 3.3)					2.5 (0.9, 4.1)
40–49	1.2 (0.3, 2.2)				1.2 (0.5, 2.0)	2.3 (0.7, 3.9)				2.1 (0.9, 3.3)
50–59					0.8 (0.1, 1.5)	1.4 (0.1, 2.7)				1.4 (0.3, 2.6)
60–64										
Total	2.5 (1.8, 3.2)	2.4 (1.0, 3.9)	2.1 (0.6, 3.6)		2.3 (1.7, 2.8)	1.9 (1.1, 2.7)	2.6 (0.4, 4.8)	5.5 (2.4, 8.6)	2.7 (0.2, 5.2)	2.3 (1.6, 3.0)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are presented in brackets below each rate.
2. Rates are age specific.
3. Grey boxes are rates that have been suppressed due to counts lower than five.

Table B8: Prevalence of ex daily smokers (15+ years), by ethnicity, sex and age group

Age group (years)	Female					Male				
	European/ Other	Māori	Pacific	Asian	All	European/ Other	Māori	Pacific	Asian	Total
15–20	5.8 (2.4, 9.3)	9.3 (0.6, 17.9)			6.7 (3.7, 9.6)		9.2 (0.3, 18.1)			4.4 (1.9, 6.9)
20–25	14.9 (8.8, 21.1)	7.4 (1.8, 13.0)	20.8 (6.2, 35.4)		12.6 (8.8, 16.3)	9.9 (5.4, 14.5)	13.0 (1.6, 24.3)		16.1 (0.7, 31.5)	11.2 (6.3, 16.1)
25–30	12.2 (5.9, 18.4)	9.5 (2.6, 16.5)			10.7 (6.7, 14.8)	9.1 (2.3, 15.9)	13.6 (1.5, 25.7)			8.9 (4.0, 13.8)
30–40	25.0 (20.1, 29.8)	19.5 (12.4, 26.7)	17.2 (7.0, 27.4)		21.4 (17.7, 25.1)	20.1 (14.2, 26.0)	13.1 (6.8, 19.4)	19.1 (8.9, 29.2)	9.9 (1.7, 18.2)	17.9 (13.8, 22.0)
40–50	22.6 (17.4, 27.7)	22.0 (13.0, 31.0)	17.1 (3.1, 31.1)	6.7 (0.8, 12.6)	21.0 (16.8, 25.2)	22.9 (16.9, 28.8)	24.7 (15.7, 33.8)	10.2 (2.9, 17.5)	21.3 (8.5, 34.1)	22.2 (17.5, 27.0)
50–60	28.8 (22.4, 35.1)	31.1 (18.3, 43.9)	20.0 (4.9, 35.1)		26.9 (21.7, 32.1)	36.1 (30.2, 42.0)	29.6 (15.8, 43.4)	28.4 (8.9, 47.9)	22.3 (7.6, 37.1)	34.2 (29.0, 39.4)
60–65	33.0 (24.3, 41.8)	37.1 (19.3, 54.9)			32.3 (24.7, 39.9)	46.7 (37.3, 56.0)	65.7 (42.5, 88.9)		51.5 (8.6, 94.4)	48.1 (40.1, 56.1)
Total	22.2 (19.7, 24.7)	18.0 (14.8, 21.2)	15.8 (10.8, 20.7)	3.9 (1.7, 6.1)	19.6 (17.7, 21.5)	22.6 (20.2, 24.9)	19.0 (15.1, 23.0)	14.5 (10.2, 18.8)	14.5 (9.3, 19.8)	20.7 (19.0, 22.5)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are presented in brackets below each rate.
2. Rates are age specific.
3. Grey boxes are rates that have been suppressed due to counts lower than five.

Table B9: Prevalence of never daily smokers (15+ years), by ethnicity, sex and age group

Age group (years)	Female					Male				
	European/ Other	Māori	Pacific	Asian	Total	European/ Other	Māori	Pacific	Asian	Total
15–20	73.9 (67.5, 80.4)	38.3 (23.9, 52.8)	67.8 (50.8, 84.7)	84.9 (70.5, 99.2)	67.5 (62.1, 72.8)	76.4 (70.2, 82.6)	62.5 (48.6, 76.5)	47.7 (29.5, 65.8)	91.2 (79.7, 100.0)	73.1 (68.4, 77.8)
20–25	48.9 (40.5, 57.4)	29.7 (15.6, 43.7)	34.0 (12.9, 55.2)	96.4 (91.0, 100.0)	50.9 (44.6, 57.1)	57.3 (48.4, 66.1)	33.3 (17.3, 49.2)	57.6 (32.1, 83.1)	48.5 (32.8, 64.3)	52 (45.6, 58.4)
25–30	55.8 (45.9, 65.6)	47.8 (33.7, 61.9)	42.3 (22.6, 62.0)	94.6 (85.6, 100.0)	58.5 (51.8, 65.2)	54.3 (42.0, 66.5)	37.2 (20.0, 54.3)	33.7 (9.6, 57.9)	67.8 (53.6, 82.0)	52.9 (44.6, 61.3)
30–40	46.9 (41.1, 52.7)	23.0 (15.0, 30.9)	46.1 (33.6, 58.7)	85.9 (78.0, 93.8)	48.1 (43.6, 52.6)	53.4 (46.9, 59.9)	40.9 (29.9, 52.0)	24.8 (12.1, 37.4)	70.9 (58.3, 83.6)	51.2 (46.4, 55.9)
40–50	55.4 (50.1, 60.7)	30.7 (18.1, 43.2)	56.3 (42.1, 70.4)	89.9 (83.1, 96.7)	55.2 (50.8, 59.6)	50.4 (43.6, 57.1)	18.9 (9.8, 27.9)	59.8 (45.5, 74.0)	48.7 (34.4, 63.0)	47.5 (41.8, 53.2)
50–60	53.3 (47.2, 59.4)	17.0 (8.0, 26.0)	37.6 (15.7, 59.4)	89.6 (79.6, 99.6)	51.6 (46.5, 56.7)	43.5 (37.5, 49.4)	38.3 (21.8, 54.8)	43.3 (24.2, 62.3)	54.5 (35.6, 73.4)	43.9 (38.7, 49.0)
60–65	47.2 (38.6, 55.7)	27.5 (9.8, 45.1)	65.2 (27.7, 100.0)	90.5 (69.7, 100.0)	46.8 (39.3, 54.2)	37.3 (27.6, 47.0)	22.0 (2.2, 41.8)			35.9 (27.8, 44.1)
Total	53.6 (51.1, 56.2)	30.2 (25.5, 35.0)	48.3 (40.5, 56.0)	89.9 (86.5, 93.3)	53.5 (51.5, 55.6)	52.1 (49.3, 54.8)	38.0 (32.4, 43.6)	43.4 (35.4, 51.5)	61.8 (54.2, 69.3)	50.8 (48.7, 52.9)

Source: NZTUS (2006)

Notes:

1. 95% confidence intervals are presented in brackets below each rate.
2. Rates are age specific.
3. Grey boxes are rates that have been suppressed due to counts lower than five.

Appendix C: ACNielsen (NZ) Ltd Data

Table C1: Prevalence of smoking (%) (15+ years), by tobacco product category and age, 2005

Age group (years)	Manufactured cigarettes	Roll-your-own tobacco	Any cigarettes	Daily cigarette smoking	All smokers
15–19	9.1 (6.1, 12.1)	15.4 (11.7, 19.1)	20.9 (16.7, 25.1)	20.2 (16, 24.4)	21.1 (16.9, 25.3)
20–24	20.7 (16.6, 24.8)	20.3 (16.2, 24.3)	34.0 (29.2, 38.8)	32.0 (27.3, 36.7)	34.9 (30.1, 39.8)
25–29	21.7 (17.5, 26)	20.9 (16.7, 25.1)	35.9 (30.9, 40.9)	33.6 (28.7, 38.5)	35.9 (30.9, 40.9)
30–34	14.2 (11, 17.4)	18.2 (14.7, 21.8)	29.0 (24.8, 33.1)	27.2 (23, 31.3)	29.5 (25.3, 33.7)
35–39	17.3 (13.8, 20.7)	17.1 (13.7, 20.5)	29.8 (25.7, 34)	29.7 (25.5, 33.8)	30.1 (25.9, 34.3)
40–44	14.6 (11.3, 17.8)	15.4 (12.1, 18.7)	26.2 (22.2, 30.2)	25.2 (21.2, 29.1)	26.9 (22.8, 30.9)
45–49	16.3 (12.4, 20.1)	13.6 (10, 17.2)	26.7 (22.1, 31.3)	25.5 (20.9, 30.0)	27.1 (22.5, 31.8)
50–54	11.9 (8.6, 15.2)	7.3 (4.7, 9.9)	17.7 (13.8, 21.6)	17.2 (13.3, 21.0)	17.8 (14, 21.7)
55–59	12.7 (9.1, 16.4)	8.9 (5.8, 12)	19.6 (15.3, 23.9)	19.3 (15, 23.6)	19.7 (15.4, 24.0)
60–64	9.7 (6.4, 12.9)	6.0 (3.4, 8.6)	14.6 (10.7, 18.5)	13.9 (10.1, 17.7)	15.6 (11.6, 19.6)
65–69	7.5 (4.7, 10.4)	4.7 (2.4, 6.9)	11.9 (8.4, 15.3)	11.9 (8.4, 15.3)	11.9 (8.4, 15.3)
70–74	6.6 (3.6, 9.5)	3.4 (1.3, 5.5)	10.0 (6.4, 13.5)	10.0 (6.4, 13.5)	10.3 (6.7, 13.9)
75–79	5.2 (2.6, 7.9)	2.3 (0.5, 4.1)	7.3 (4.2, 10.5)	7.0 (4, 10.1)	7.5 (4.4, 10.6)
80+	3.5 (1.4, 5.7)		4.1 (1.8, 6.4)	3.8 (1.5, 6.0)	4.8 (2.3, 7.3)
Total	13.6 (12.7, 14.6)	13.1 (12.1, 14)	23.4 (22.2, 24.6)	22.5 (21.3, 23.6)	23.8 (22.6, 25.0)

Source: ACNielsen (NZ) Ltd

Notes:

1. 95% confidence intervals are presented below each rate.
2. 'All smokers' (column 6) includes those who smoke cigars and pipes.
3. 'Any cigarettes' (column 4) includes those who smoke less than one per day.

Table C2: Prevalence of cigarette smoking (%) (15+ years), by age, sex and ethnicity, 1976–2005

	Year																									
	1976	1981	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003 (18–24 years)	2004	2005	
Males																										
15–24 years	35	33	34	35	31	31	32	27	28	30	28	25	28	28	25	27	27	27	30	28	31	32	32	25	24.4	
25–34 years	43	38	38	39	35	32	34	38	30	32	35	34	35	36	35	33	30	34	33	35	33	31	36	34	34.8	
35–54 years	44	38	37	35	31	29	34	31	28	30	27	29	30	30	29	26	28	28	27	27	26	27	26	28	26.0	
55+ years	35	30	29	27	24	24	22	20	20	18	18	18	19	17	19	19	16	16	16	12	13	14	13	14	12.8	
Total	40	35	35	34	30	29	31	29	27	28	27	27	28	28	27	26	26	26	26	25	25	25	25	24	23.7	
Females																										
15–24 years	34	35	40	40	40	37	36	39	37	34	33	33	30	34	33	36	35	30	33	31	32	33	35	29	30.7	
25–34 years	38	34	35	34	34	34	35	35	33	32	30	36	34	33	36	35	36	31	32	37	34	32	35	30	29.8	
35–54 years	35	32	31	29	29	32	26	28	25	28	24	27	26	25	25	26	26	26	26	25	25	25	25	24	25.1	
55+ years	21	19	21	22	19	21	19	16	16	16	16	14	16	16	14	13	14	12	13	13	13	11	12	13	12.6	
Total	32	29	31	31	30	31	28	29	27	27	26	27	26	26	26	26	27	24	25	25	25	24	25	22	23.3	
Both sexes																										
Māori	58	56	–	–	–	–	–	–	–	51	50	52	54	52	51	49	51	49	51	49	51	49	52	47	50.9	
Pacific	35	33	–	–	–	–	–	–	–	32	30	33	33	34	34	32	34	33	30	34	31	35	33	29	33.1	
European/Other	–	–	–	–	–	–	–	–	–	25	24	24	24	24	24	23	23	22	22	22	21	21	20	20	19.3	
Total	36	32	33	32	30	30	30	29	27	28	26	27	27	27	27	26	26	25	26	25	25	25	25	23	23.5	

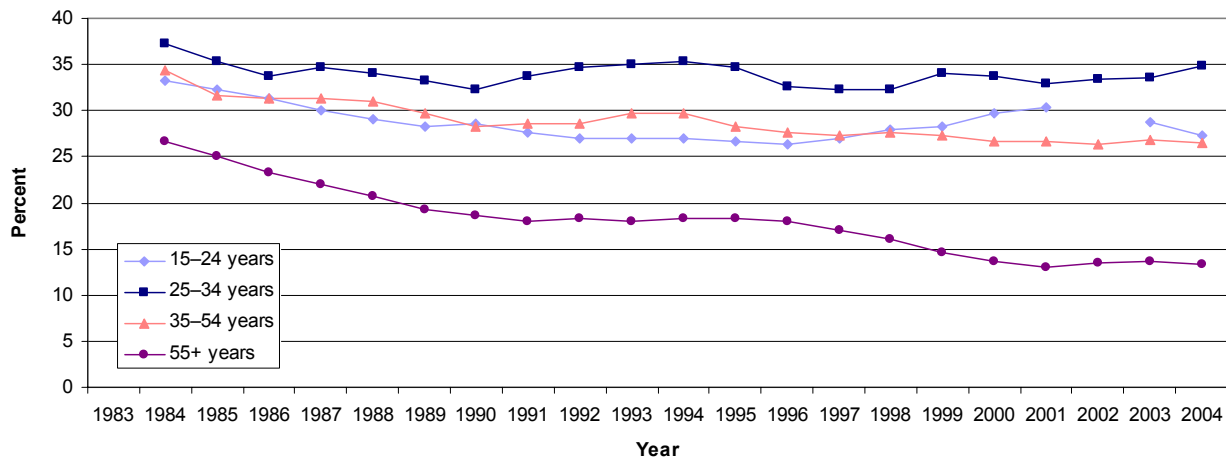
Source: 1996 Census of Populations and Dwellings, Department of Statistics; ACNielsen (NZ) Ltd

Notes:

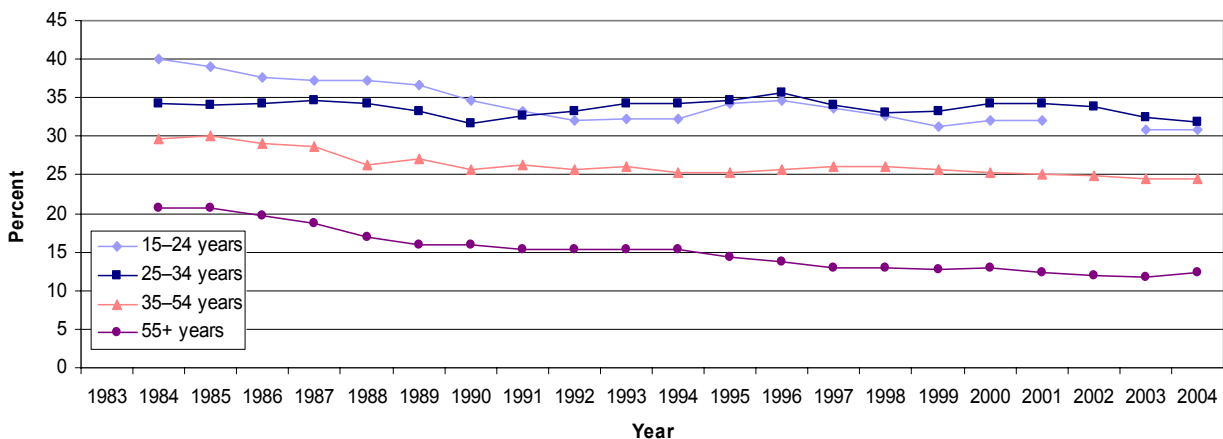
1. From July 1989 to March 1996, the youngest age group was 16–24 years. Adjustment for the expected proportion of smokers aged 15–24 years from those aged 18–24 years has been made.
2. Annual ACNielsen (NZ) Ltd estimates have been calculated from the average of the quarterly results until 1999. From 2000 annual estimates are derived from the year's pooled data.
3. In 2003 age data were collected only for those aged 18+ years. Adjustment for the expected proportion of smokers aged 15–24 years from those aged 18–24 years has been made.
4. Smoking prevalence figures include the smoking of both manufactured cigarettes and roll-your-own tobacco.

Figure C1: Three-year rolling average prevalence of cigarette smoking (%), by age and sex, 1984–2004

Male



Female

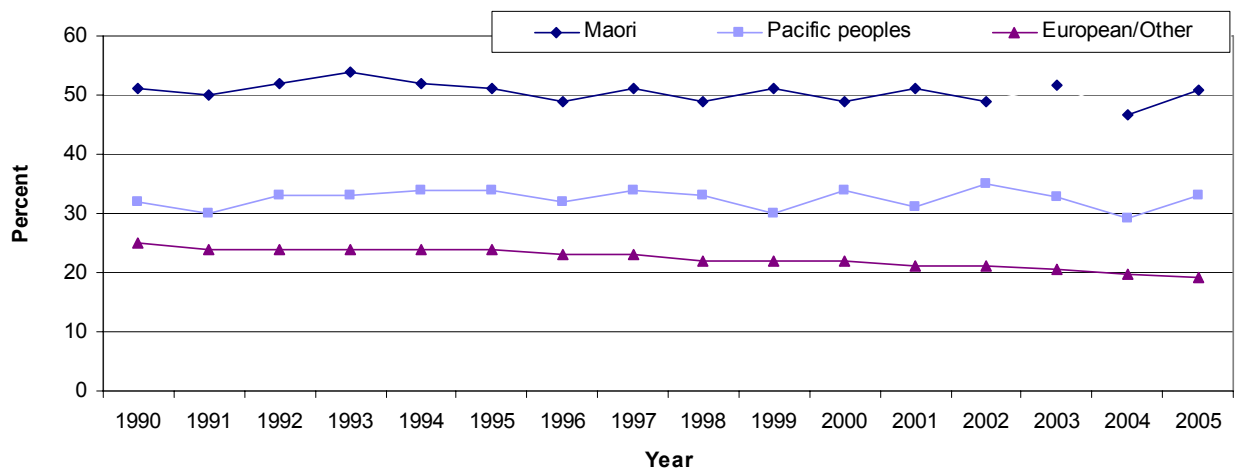


Source: ACNielsen (NZ) Ltd

Notes:

1. The use of the three-year rolling average means that the data points for 2004 are the average values for the three-year period 2003–2005.
2. The data point for 15–24 years for 2003 is the average of the values for 2002 and 2004.
3. The missing data point for 15–24 years for 2002 is due to the missing data in 2003.

Figure C2: Prevalence of cigarette smoking (%), by ethnicity, 1990–2005



Source: ACNielsen (NZ) Ltd

Notes:

1. The classification of ethnic grouping changed from 1997 onwards, so ethnic specific data before and after 1997 may not be comparable.
2. 1990–2002 data points represent the prevalence of cigarette smoking (%) (15+ years).
3. 2003 data points represent the prevalence of cigarette smoking (%) (18+ years).
4. 2004 data points represent the prevalence of cigarette smoking (%) (15+ years).

Table C3: Age-standardised cigarette smoking prevalence (%) (15+ years), by sex and ethnicity, 2005

	Māori	European/Other	Pacific	Total
Male	41.6 (34.8, 48.3)	21.7 (19.6, 23.8)	29.7 (20.7, 38.7)	24.7 (22.7, 26.7)
Female	51.8 (46.6, 57.0)	19.5 (17.7, 21.3)	28.1 (20.5, 35.6)	24.9 (23.2, 26.6)
Total	47.9 (43.7, 52.0)	20.6 (19.2, 22.0)	29.6 (23.7, 35.5)	24.7 (23.5, 26.0)

Source: ACNielsen (NZ) Ltd

Note:

1. Rates are age standardised using WHO population.

Appendix D: Data on Tobacco Products Released and Tobacco Returns

Table D1: Tobacco products released for consumption in New Zealand, 1970–2005

Year	Tobacco products released		Number of cigarette equivalents released per adult (15+ years)		
	Loose tobacco (tonnes)	Manufactured cigarettes (millions)	Loose tobacco per 15+	Manufactured cigarettes per capita	Total per capita
1970	1024	4952	534	2581	3144
1971	965	5118	493	2615	3108
1972	934	5405	468	2705	3173
1973	853	5526	416	2697	3113
1974	782	5769	371	2740	3112
1975	749	6229	347	2885	3232
1976	702	6230	319	2835	3154
1977	666	6346	300	2857	3157
1978	610	6268	272	2794	3066
1979	575	6130	255	2715	2970
1980	548	5991	239	2617	2856
1981	553	6168	239	2666	2905
1982	539	6112	230	2603	2832
1983	546	6089	228	2541	2769
1984	534	6236	219	2560	2779
1985	493	5654	200	2293	2493
1986	501	5223	202	2102	2304
1987	511	5361	203	2125	2327
1988	552	5355	217	2101	2317
1989	554	4270	216	1662	1877
1990	602	4489	233	1738	1971
1991	652	4014	243	1495	1738
1992	768	3466	283	1277	1560
1993	810	3381	295	1232	1527
1994	694	3396	249	1221	1470
1995	808	3338	287	1187	1474
1996	658	3660	230	1280	1511
1997	733	3449	253	1191	1444
1998	757	3263	259	1118	1377
1999	736	3119	251	1062	1312
2000	841	3152	281	1058	1352
2001	780	2608	262	875	1136
2002	810	2817	265	922	1187
2003	795	2367	255	759	1014
2004	841	2320	266	733	999
2005	889	2436	276	757	1033

Source: Statistics New Zealand

Notes:

1. One cigarette equivalent equals one manufactured cigarette or one gram of loose tobacco.
2. One tonne equals 1000 kg.
3. It is assumed that one cigarette equals one gram of loose tobacco and one tonne of loose tobacco equals one million manufactured cigarettes.
4. Calculations of cigarette equivalents are based on excise data on manufactured cigarettes and loose tobacco released for sale.
5. 'Per capita' means for each individual (15+ years) in the population.

Table D2: Annual tobacco returns, 1997–2005

Year	Loose cigarette tobacco (tonnes)	Manufactured cigarettes (millions)	Cigar tobacco (tonnes)	Pipe tobacco (tonnes)	Total per capita
1997	699	3622	15	17	1504.1
1998	724	3300	17	16	1390.0
1999	727	3215	18	13	1353.4
2000	721	2722	24	9	1176.6
2001	698	2545	14	9	1087.5
2002	742	2723	16	9	1140.9
2003	798	2367	17	8	1022.8
2004	809	2329	16	7	999.1
2005	811	2336	17	6	1037.1

Source: Statistics New Zealand; Ministry of Health

Note:

1. 'Per capita' means for each individual (15+ years) in the population.

Appendix E: Future Directions

Year 10 Smoking Survey

For the first time in 2006, the ASH Year 10 Survey (renamed the Year 10 Snapshot) is being administered in conjunction with the Year 10 In-depth Survey (formerly known as the Youth Lifestyle Study and undertaken by the Health Sponsorship Council). These surveys along with the youth module of the NZTUS form the New Zealand Youth Tobacco Monitor. The NZYTM will also contribute to WHO's Global Youth Tobacco Survey.

The Year 10 In-depth Survey and Global Youth Tobacco Survey use the same in-depth questionnaire, which is administered in person by a trained fieldworker. The Year 10 In-depth Survey surveys one Year 10 class, and the Global Youth Tobacco Survey surveys a sample of Year 9, 10 and 11 classes in participating schools. All other Year 10 classes in participating schools are given the Year 10 Snapshot questionnaire, which is presented on a two-sided A4 page and administered by a teacher or another staff member.

Combining all the national youth tobacco surveys into the NZYTM minimises any inconvenience for schools.

International Tobacco Control Policy Evaluations Survey

Public Health Intelligence is currently collaborating with the University of Otago in the New Zealand arm of the International Tobacco Control Policy Evaluations Survey. This longitudinal follow-up study of smokers will start producing publication outputs of relevance to tobacco epidemiology and tobacco control in 2008.

Impact of smokefree law

The following report is due for release shortly and will document the impact of the new smokefree law on smoking behaviour and use:

- Edwards R, Bullen C, Thomson G, Waa A, Wilson N. 2006. *After the Smoke Has Cleared: Evaluation of the impact of a new smokefree law (a report commissioned by the New Zealand Ministry of Health)*. Wellington: University of Otago, Auckland University and the Health Sponsorship Council.

Tobacco policy model

A system dynamics model of the 'tobacco system' is being developed by Public Health Intelligence with technical assistance from Victoria University of Wellington. This model will shortly be available to assist policy makers and their advisors when developing future tobacco control strategies.