

# **Tobacco Use in New Zealand**

Key findings from the 2009  
New Zealand Tobacco Use Survey

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**Please note:** Care must be taken when comparing smoking prevalences, as they may vary depending on the survey type, age range of respondents, definition used for smoking (ie, current or daily smokers) and statistical adjustments (eg, age standardisation).



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# Key Points

## Current smoking in New Zealand

In 2009 one in five (21.0%) adults aged 15–64 years were current smokers, with 19.2% of adults smoking daily. A current smoker is defined as someone who has smoked more than 100 cigarettes in their lifetime and at the time of the survey was smoking at least once a month (World Health Organization 1998). In this report, smoking refers to cigarettes, roll-your-own tobacco, cigars and pipes.

There was no difference in the age-standardised prevalence of current smoking between males and females.

Current smoking rates in New Zealand are continuing to decline. The age-standardised prevalence of current smoking in 15–64-year-olds fell significantly between 2006 (24.4%) and 2009 (21.8%).

The prevalence of current smoking differed by ethnic group and by neighbourhood deprivation. Māori females were twice as likely to be current smokers as females in the total population, and Māori and Pacific males were one and a half times as likely to be current smokers as males in the total population.

Following is a summary of current smoking in 15–64-year-olds, by ethnicity and sex:

- 49.3% of Māori females and 40.2% of Māori males were current smokers.
- 28.5% of Pacific females and 32.3% of Pacific males were current smokers.
- 18.9% of European/Other females and 20.6% of European/Other males were current smokers.
- 4.4% of Asian females and 16.3% of Asian males were current smokers.

After adjusting for age, it was found that people living in the most deprived areas were more likely to be current smokers than those in less deprived areas.

The age-standardised prevalence of current smoking for females fell significantly between 2006 (23.7%) and 2009 (20.8%), with no difference for males over this time period. There was also no significant change in the age-standardised prevalence of current smoking between 2006 and 2009 for Māori.

## Current smoking in youth

Around one in five (18.0%) youth aged 15–19 years were current smokers. There was no significant difference by sex. The prevalence of current smoking in youth has decreased significantly since 2006 (22.9%).

Māori youth were found to be more than twice as likely to be current smokers as youth in the total population, while Asian youth were significantly less likely to be current smokers. Youth living in the most deprived areas were significantly more likely than those in the least deprived areas to be current smokers.

## Regret and quitting behaviour

Overall, 8 out of 10 (80.0%) current smokers aged 15–64 years said that they would not smoke if they had their life over again. After adjusting for age, females (82.5%) were significantly more likely to say that they would not smoke if they had their life over again than males (76.2%).

Of the total New Zealand population aged 15–64 years, 0.8% had successfully quit smoking in the past 6–12 months.

Following is a selection of other quitting facts for those aged 15–64 years.

- 63.2% of current and casual<sup>1</sup> smokers had tried to quit smoking in the past five years.
- 23.8% of current and casual smokers had quit for at least a week in the past year. There were no significant differences by ethnic group or neighbourhood deprivation.
- The age-standardised prevalence for males who quit smoking in the past 12 months for at least a week increased significantly between 2008 and 2009. There was no difference in the age-standardised prevalence for females in the total population who quit smoking in the past 12 months for at least a week between 2008 and 2009, or for Māori males and females.
- The most common reasons that current smokers gave for their most recent quit attempt were their own health (78.1%), cost (40.8%), being sick of smoking (37.1%) and someone else's health (25.9%). These were the top four reasons given by all ethnic groups.

## Use of quitting support and products

More than a third (37.9%) of smokers who made a recent quit attempt used quitting products or advice in their most recent quit attempt. Among all smokers who made a recent quit attempt, 20.3% used nicotine replacement therapy (NRT) and 15.7% used the Quitline in their most recent quit attempt.

Of those people who used NRT in their most recent quit attempt, nearly three-quarters (74.7%) received subsidised NRT. NRT was more commonly used by older people than by younger people. After adjusting for age, there was found to be no significant difference between 2006 and 2009 in the use of NRT in smokers' most recent quit attempt.

Among smokers who made a recent quit attempt, the age-standardised prevalence of those who used the Quitline in their last attempt increased by over 6% between 2006 (10.1%) and 2009 (16.5%),<sup>2</sup> while the prevalence of those who sought support from family and friends decreased (10.4% versus 4.4%), after adjusting for age.

<sup>1</sup> Those who smoke less than once a month.

<sup>2</sup> Note that the age-standardised 2009 prevalence of use of the Quitline reported here differs from that reported in the first paragraph, because the former is a crude rate.

Of Pacific smokers who made a recent quit attempt, 15.6% used quitting products or advice in their most recent quit attempt. After adjusting for age, Pacific smokers who made a recent quit attempt were found to be only one-third as likely as all smokers who made a recent quit attempt to have used quitting products or advice in their most recent quit attempt.

Nearly one-third (32.2%) of Māori smokers who made a recent quit attempt used quitting products or advice in their most recent quit attempt, which, after adjusting for age, was not significantly different from all smokers who made a recent quit attempt.

## **Use of the ABC approach by health care workers**

The ABC approach for quitting smoking comprises the following steps: health care workers should **Ask** about smoking status, give **Brief** advice to stop smoking to all smokers, and provide evidence-based **Cessation** (quitting) support for those who wish to stop smoking.

Nearly half (47.5%) of all 15–64-year-olds reported that, at some time in the past 12 months, a health care worker had asked if they had ever been or currently were a smoker. After adjusting for age, European/Other and Māori were found to be significantly more likely than the total population to report that they had been asked by a health care worker in the past 12 months if they had ever been or currently were a smoker.

Approximately one-third (33.6%) of 15–64-year-old current smokers received the ABC approach from a health care worker in the past 12 months. Māori current smokers were slightly more likely to have received ABC from a health care worker in the past 12 months than the total population, after adjusting for age.

After adjusting for age, those living in the most deprived areas were found to be more likely than those living in the least deprived areas to have been asked their smoking status, and if a smoker, to have been provided with ABC support by a health care worker, in the past 12 months.

## **Exposure to second-hand smoke**

One in 16 (6.4%) non-smoking adults were exposed to second-hand smoke in their home in the past week. A similar proportion of non-smoking adults (6.1%) were exposed to second-hand smoke in the car they usually travel in during the past week. One in 22 (4.5%) non-smoking adults were exposed to second-hand smoke in the workplace in the past month.

Māori non-smokers were more likely to be exposed to second-hand smoke in the home, in the car and at the workplace than non-smokers in the total population.

Pacific non-smokers were more likely to be exposed to second-hand smoke in the car than non-smokers in the total population. There were no other differences for Pacific people in terms of exposure to second-hand smoke.

The 2009 New Zealand Tobacco Use Survey did not directly ask if children aged 0–14 years had been exposed to second-hand smoke at home. As a proxy for second-hand smoke exposure for children, the proportion of households where at least one resident (including the respondent) had smoked anywhere inside the house in the past week and that had at least one child aged 0–14 years living there has been used. In 1 in 10 (10.1%) households with one or more children aged 0–14 years living there, at least one resident had smoked anywhere inside the house in the past week.

Around one in five (21.3%) Māori and one in seven (14.1%) Pacific households with at least one child aged 0–14 years had at least one resident who had smoked anywhere inside the house in the past week. After adjusting for age, for Māori, this was twice the prevalence of the total population with one or more children aged 0–14 years living at home. There was no significant difference between Pacific people and the total population.





# Chapter 1: Introduction

This report provides an overview of tobacco use in New Zealand, predominantly for the year 2009. It includes findings from the 2009 New Zealand Tobacco Use Survey (NZTUS) and other relevant sources of data.

There have been three comprehensive national tobacco use surveys conducted in New Zealand: in 2006, 2008 and 2009. The New Zealand Tobacco Use Surveys are part of the New Zealand Health Monitor, an integrated programme of household surveys and cohort studies managed by the Health and Disability Intelligence Unit of the Ministry of Health (Ministry of Health 2005).

The 2009 NZTUS was carried out from January to May 2009. All New Zealanders aged 15–64 years who were usually resident in permanent, private dwellings at the time of the survey were eligible for selection in the 2009 NZTUS.

The report uses sources beyond the NZTUS to present the prevalence of daily smoking among New Zealanders over time, the supply of tobacco in New Zealand and tobacco-attributable mortality. Findings from the 2009 NZTUS on current smoking, tobacco consumption, quitting behaviour (including history of quit attempts and use of quitting programmes/services), support from health services and health professionals, and exposure to second-hand smoke are also presented. Where data allow, results are presented by sex, age group, ethnic group and neighbourhood deprivation. Where possible, findings from the 2009 NZTUS are compared with earlier Tobacco Use Surveys (2006 NZTUS and 2008 NZTUS) and the 2006/07 New Zealand Health Survey.

The information contained within this report will help in the evaluation of one of the six 2010/11 Health Targets: 'Better help for smokers to quit'. The report will be of interest to anyone involved in tobacco control research or policy, or the provision of quitting products or services.

## Chapter 2: Methodology

The 2008 NZTUS *Methodology Report* is available on the Ministry of Health's website (Ministry of Health 2009b). This report contains detailed information on the sample design and analysis. A 2009 NZTUS methodology report will not be produced, because there were very few differences between the two surveys in terms of methodology. Any changes from the 2008 NZTUS methodology are discussed in this section.

### Survey design and analysis

In order to be consistent with previous Tobacco Use Surveys, the target population for the 2009 NZTUS was the usually resident population aged 15–64 years living in permanent private dwellings in New Zealand.

A multi-stage, stratified, probability-proportional-to-size sampling design was used. The design included a Pacific stratum, as well as sampling by District Health Board area and a screen sample to boost the proportions of Māori, Pacific people and those aged 15–24 years.

Participation in the 2009 NZTUS was voluntary, relying on the good will of participants, and consent was obtained without coercion. The survey was carried out by trained interviewers from January to May 2009 using a face-to-face computer-assisted personal interview system.

A total sample size of 5222 people aged 15–64 years was achieved, with a weighted response rate of 71.3%. The total sample included 980 Māori, 522 Pacific people, 560 Asian people and 3202 European/Other people.<sup>3</sup>

The survey data were weighted so that estimates of population totals, averages and proportions are representative of the total resident population of New Zealand. Survey weights can be thought of as the number of members of the population represented by each survey participant. Using weights in analyses ensures that no population group is under- or over-represented in estimates from the survey. The process used to calculate the survey weights is described in more detail in the 2008 *Methodology Report* (Ministry of Health 2009b).

### What has been analysed and reported?

Data in this report have been presented for the total adult population aged 15–64 years, by sex. Analyses by age group, ethnic group and neighbourhood socioeconomic deprivation (NZDep2006) have also been reported, where possible.

Important information about the analyses presented in this report is set out below.

<sup>3</sup> Note that these sample sizes sum to more than 5222 because total response ethnicity was used.

## **Total response ethnicity**

Ethnicity is a self-defined concept. Participants in the 2009 NZTUS were able to report affiliation with multiple ethnicities, using the Statistics New Zealand standard ethnicity question and Level 4 response categories. For this report, participants' ethnicity was output to the following ethnic groups: European/Other, Māori, Pacific, Asian. The 'Other' ethnic group (comprising mainly Middle-Eastern, Latin-American and African ethnicities) was combined with 'European' to avoid small number problems. Because participants could be counted in one or more of the four ethnic groups, the sum of the ethnic group populations exceeds the total New Zealand population. This method is referred to as total response ethnicity. For more information on total response ethnicity, refer to Statistics New Zealand's classification for ethnicity output (Statistics New Zealand 2009), or see *Presenting Ethnicity: Comparing prioritised and total response ethnicity in descriptive analyses of New Zealand Health Monitor surveys* (Ministry of Health 2008).

In this report unadjusted prevalences by ethnic group for some indicators have been presented, to show the burden on different population groups, and include estimates of the number of people affected in each group.

Age-standardised rate ratios are presented after the unadjusted prevalence to allow comparisons of each ethnic group with a reference group. For example, Pacific male current smokers are compared with male current smokers in the total population. The reference group does not represent 'the best outcome group' but provides an indication of the current level in New Zealand for comparison.

Ethnic groups should not be compared with each other (eg, comparing Māori and Pacific data) using either the unadjusted rates or the standardised rate ratios. Instead, comparisons should be made with the reference population as explained in the following section on 'How to interpret graphs in this report'.

Ethnic groups have not been compared with independent comparison groups (ie, Māori/non-Māori, Pacific/non-Pacific and Asian/non-Asian) in this report. These will be available in online web tables in 2011.

## **Age standardisation**

Age is an important determinant of cigarette smoking, so populations with different age structures (such as males and females, due to females having a longer life expectancy) will have different rates of smoking due to these age differences. Age standardisation involves adjusting for the effects of any differences in the age distributions between population groups.

For this report, age standardisation was performed by the direct method using the World Health Organization (WHO) world population age distribution (Ahmad et al 2000). This statistical method of standardising for age has been used in analyses by sex, ethnic group and neighbourhood deprivation (NZDep2006), and for time-trend comparisons. Age standardisation is not used when data are presented by age group and for youth.

## **Neighbourhood deprivation: The New Zealand Index of Deprivation 2006**

The New Zealand Index of Deprivation 2006 (NZDep2006) is used in this report as a measure of neighbourhood socioeconomic deprivation and as a proxy for individual socioeconomic position. The NZDep2006 is an area-based index of deprivation that measures the level of socioeconomic deprivation for each neighbourhood (meshblock) using nine census variables (receiving a means-tested benefit, having a low household income, not owning the home a person lives in, being part of a single-parent family, unemployment, lacking school qualifications, living in an overcrowded household, lacking access to a telephone and lacking access to a car) (Salmond et al 2007).

In this report, NZDep2006 scores have been aggregated into five equally sized groups (quintiles), each containing approximately 20% of the population. The least deprived neighbourhoods (quintile 1 and sometimes also quintile 2) have been compared with the most deprived neighbourhoods (quintile 5 and sometimes also quintile 4).

### **Small numbers**

In order to ensure the reliability of the survey data presented, and to protect the confidentiality of the participants, data have only been presented when at least 30 respondents were in the population group being analysed. In some cases, to obtain an adequate sample size, data have been presented in an aggregated form. Care has been taken to ensure that no individual participant can be identified in the results.

### **What is the quality of these results?**

Best-practice survey techniques have been used throughout the 2009 NZTUS. Many steps have been taken to ensure that data collected are of high quality and are as robust as possible. This includes establishing advisory groups to advise on questionnaire content. External peer review of the sample design and this report has contributed to maintaining the high quality of the survey results. However, sampling errors can occur due to the selection of only some people in a population, or for other reasons (non-sampling errors). The quantifying of sampling errors and the prevention of non-sampling errors are discussed below.

### **Sampling error**

Sampling error results from selecting a small number of people (a sample) in the population to represent the entire population, and is influenced by the complex design of the survey (resulting in some people having a higher chance of selection than others). That is, the estimates in this survey may differ from the 'true' value that would have been produced if the information had been obtained for all the people in the population.

For example, the survey only covered the usually resident population aged 15–64 years living in permanent private dwellings. It did not include people living in institutions (such as prisons, hospitals, rest homes and boarding schools) and the homeless. Given that these groups are not included in the analyses, the estimated population numbers presented in this report will generally be slight underestimates of the numbers affected in the entire resident population of New Zealand. Table 2 in Chapter 4 presents an estimate of the undercount of the number of current smokers in New Zealand, as measured by 2009 NZTUS using data from the 2006 New Zealand Census (which includes private and non-private dwellings).

Sampling errors for survey estimates from this survey were calculated using a replicate method, called the delete-a-group jackknife method (Kott 1998).

### 95% confidence intervals for prevalence estimates

Ninety-five percent confidence intervals (95% CIs) have been used in this report to quantify the sampling errors for estimates. It should be noted that the confidence interval is influenced by the sample size of the group. When the sample size is small, the confidence interval becomes wider.

Ninety-five percent confidence intervals have been presented in brackets after estimates in the text and as error bars in graphs. When the confidence intervals of two groups do not overlap, the difference in rates between the groups is statistically significant at the 5% level.

Sometimes, even when there are overlapping confidence intervals, the difference between the groups being compared can still be statistically significant at the 5% level. In instances where there was a small overlap between groups (indicating possible significance), t-tests were conducted to determine whether the apparent difference between groups is significant. Statistically significant differences at the 5% level of significance are indicated in the text by 'p-value < 0.05'.

When a linear pattern was evident in a bar graph, but no significant differences were found between bars, the significance of the gradient was tested using logistic regression. No variables were controlled for in the logistic regression.

### 95% confidence intervals for rate ratios

In rate ratio graphs, the 95% CIs are presented as vertical lines on the graph. If the confidence interval includes 1, then there is no statistically significant difference between the rate ratio for that particular group and the reference group. If the 95% CI does not include 1, then the rate ratio is statistically significant (ie, there is a significant difference between the group of interest and the reference group). For more information, see the example rate ratio graph at the end of this chapter.

### Statistical significance

In this report the term 'significant' (or 'significance') is used to refer to statistical significance.

## Non-sampling errors

Non-sampling errors may occur in any enumeration, regardless of whether it is a sample or a full enumeration. Possible non-sampling errors include coverage errors, response bias and measurement errors. Although these elements cannot be measured, it is useful to be aware of them when interpreting the results of the survey.

Considerable effort has been made to reduce non-sampling errors by carefully designing and testing the survey, questionnaire and processes, and by ensuring quality control of procedures and data.

In the 2009 NZTUS, coverage errors may have occurred; for example, because a small proportion of the population could not be covered by the survey (including people living in meshblocks with fewer than nine occupied dwellings, and people not living in the North Island, South Island or Waiheke Island). Response bias may have occurred if there was differential non-response; that is, if the survey was less likely to be answered by certain people, such as a certain population group (eg, young males) or people who were not often home. The interview introduction was an important part of trying to ensure that people take part in the survey.

Measurement error might also have occurred in this survey. Many of the analyses in this report used self-reported information, which may have resulted in some inaccuracies. Measurement errors include recall error (eg, mistakes made when respondents recall how often they have done something over the last 12 months), under- and over-reporting (which may be influenced by the respondent's perception of what is socially desirable) and item non-response (if the respondent chooses not to answer certain questions).

## Time trend comparisons

Where possible, and relevant, time trend comparisons are made between the 2009 NZTUS, 2008 NZTUS, 2006 NZTUS and the 2006/07 New Zealand Health Survey (NZHS).<sup>4</sup>

Time trend analyses have been conducted for the total population by sex and for Māori by sex. Comparisons with earlier survey data for other ethnic groups have not been presented due to the limited space available. Where the sample size allows, time trend analyses for other ethnic groups will be presented in online web tables.

Due to differences in how data have been collected and presented over time, the results presented in this report may be slightly different from those in earlier publications and caution should be used when comparing data. Direct comparisons with data that are not included in the time trend analysis in this report need to be treated with caution.

In particular, the following should be noted.

- The 2006 NZTUS questionnaire comprised two sections: one for those aged 15–19 years and the other for those aged 20–64 years. There were some differences in the

<sup>4</sup> To ensure as much comparability as possible, the 2006/07 New Zealand Health Survey data set was re-weighted and limited to 15–64-year-olds.

questions asked of these groups. Given these differences, some time-trend comparisons presented in this report have been made for 20–64-year-olds only.

- There were some differences in question order and content between the 2006 NZTUS and the 2008 and 2009 NZTUS questionnaires. The 2008 and 2009 surveys had questions around quit attempts lasting 24 hours or more, prior to the questions about quit attempts lasting for more than a week. The 2006 NZTUS did not have questions about quit attempts lasting 24 hours or more. In the 2008 and 2009 NZTUS, participants who had quit for at least 24 hours but less than a week may have answered 'no' to the quit for at least a week question because they would have already answered questions about quit attempts lasting 24 hours or more in the past 12 months. In other words, the 24-hour quit attempt questions appear to have filtered out those people who tried to quit in the past 12 months, but couldn't stay quit for a week or more. The filtering process of the 2008 and 2009 NZTUS may mean that these surveys are a better estimate of the prevalence of smokers who quit smoking for at least a week in the past 12 months than the 2006 NZTUS. For this reason, the 2006 NZTUS data were excluded from the time-trend analysis of smokers who quit smoking in the past 12 months for at least a week. It is possible that the findings of some other time-trends analyses (eg, services or advice used in last quit attempt) may be confounded by this methodological issue.
- Total response ethnicity (see above) was used for the 2008 and 2009 NZTUS reports, whereas prioritised ethnicity was used for the 2006 NZTUS report.

## **How can readers access more survey results?**

Data for all analyses presented in this report will be available in data tables online in Excel format, on the publications web page (see [www.moh.govt.nz](http://www.moh.govt.nz)) from early 2011.

The analyses presented in this report are only a small proportion of those that could be undertaken, and in many ways pose more questions than they answer. Researchers are encouraged to use the 2009 NZTUS data set to explore topics of interest. The 2009 NZTUS CURF (confidentialised unit record file), with accompanying documentation and user guides, will be available in 2011.

Researchers may apply to access CURF data sets. CURFs have had all identifying information about individuals removed, and have been modified to protect individual information. Approval is subject to certain criteria, terms and conditions, and the researcher's organisation must sign a microdata access agreement with the Ministry of Health. For more information and to download the application form, refer to the Health and Disability Intelligence Unit's Microdata Access Protocol online (<http://www.moh.govt.nz/moh.nsf/indexmh/dataandstatistics-survey-access>).

## **How to interpret graphs in this report**

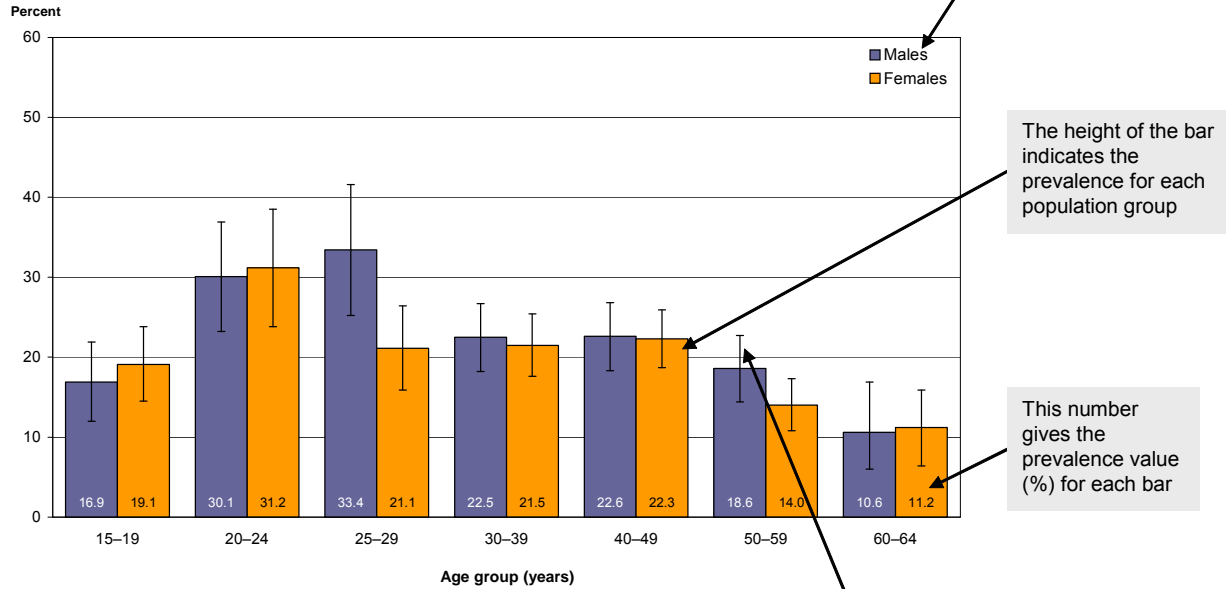
### **Bar graphs**

The bar graphs in this report show the proportions (or percentages) of people in different groups who demonstrated a particular smoking-related behaviour. The following diagram shows how to interpret the bar graphs presented in this report.

The caption gives information about what the graph is about, and indicates whether the data are age-standardised

The legend shows who or what is represented by the different colours in the graph

**Figure X:** Current smoking among 15–64-year-olds, by age group and sex, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

The vertical line indicates the 95% confidence interval for the prevalence estimate. If any two confidence intervals do not overlap, the difference between the two prevalence estimates is statistically significant. However, in some cases, the difference between two prevalence estimates can be statistically significant even if the confidence intervals overlap. In instances where there was a small overlap between groups (indicating possible significance), t-tests were conducted to determine whether there was a significant difference between groups.

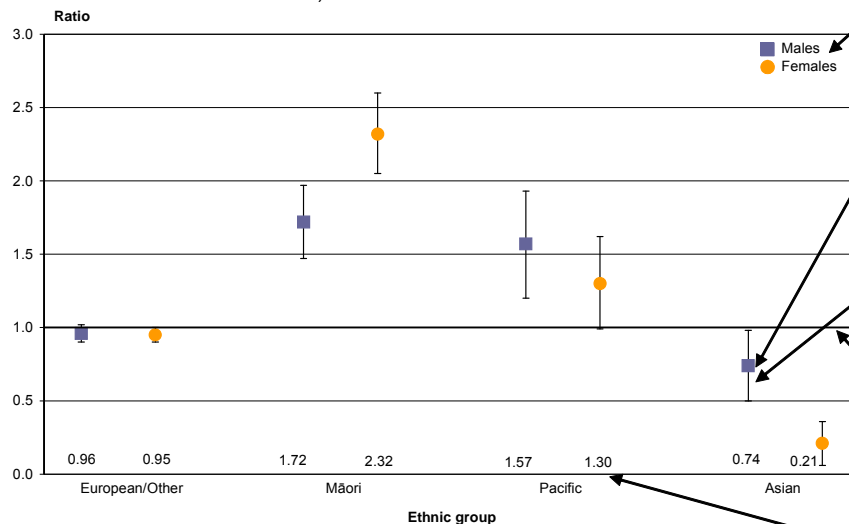


## Rate ratio graphs

The rate ratio graphs in this report show how the percentages in the different ethnic groups compare to that of a reference population (usually all current smokers aged 15–64). The following diagram shows how to interpret the rate ratio graphs presented in this report.

The caption gives information about what the graph is about, and indicates whether the data are age standardised.

**Figure Y:** Current smoking among 15–64-year-olds, by ethnic group and sex, 2009 (age-standardised rate ratio)



The legend shows who or what is represented by the different shapes and colours on the graph.

This point indicates where the data point lies, compared with the whole population relevant to that data point: in this case, all current smoking males aged 15–64 years.

This line is the 95% confidence interval. If this line does not cross the bold line at 1.0, there is a statistically significant difference between the rate for this group and the rate for all males or females in the total population.

The reference group is represented with a line at rate ratio = 1.

This number is the value for the standardised rate ratio for each data point. A value *less* than 1 means that the population group is *less* likely to have the outcome than the reference group, while a value *greater* than 1 means the population group is *more* likely to have the outcome.

Source: 2009 New Zealand Tobacco Use Survey

Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents the total male or female population aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

## Chapter 3: Smoking in New Zealand

This chapter covers the supply of tobacco, daily smoking and tobacco-attributable mortality over time. Many of the data reported in this chapter are from sources other than the 2009 NZTUS.

### Supply of tobacco

In New Zealand, estimation of the tobacco supply is based on both the annual tobacco products released for consumption and the annual tobacco returns.

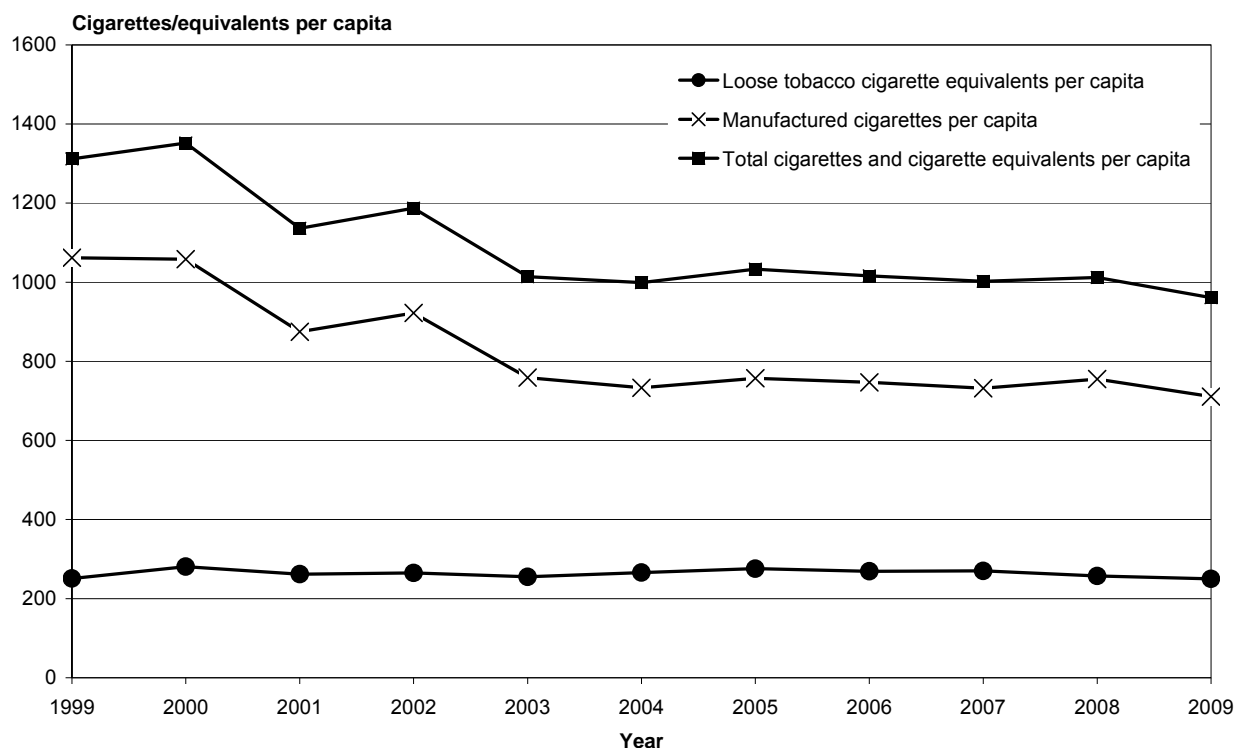
The annual tobacco products released for consumption include the amount of manufactured (tailor-made) cigarettes and loose tobacco, imported or locally manufactured for sale in New Zealand, on which duty has to be paid. This information is reported annually by Statistics New Zealand. The annual tobacco returns identify the amount of tobacco products, including manufactured and loose tobacco, sold to retailers each year. As required by the Smoke-free Environments Act 1990, the returns are reported to the Director-General of Health annually by individual tobacco product manufacturers.

When converting quantities of loose tobacco to the equivalent numbers of manufactured cigarettes, the standard measure used in this report was one gram of tobacco is equivalent to one manufactured cigarette.<sup>5</sup>

Actual consumption can only be inferred from the supply of tobacco in New Zealand. The supply is reported per capita to minimise the effect of the increasing population. The amount of tobacco products per person aged 15 years and over available for consumption in New Zealand in 2009 decreased compared with the previous year (Figure 1). The total cigarettes and cigarette equivalents available per capita decreased by 5% from 2008 to 2009. There was a 5.8% decrease in the number of manufactured cigarettes per capita available and a 2.8% decrease in the number of cigarette equivalents of loose tobacco (one gram of loose tobacco = one cigarette) available per capita.

<sup>5</sup> It has been argued that this standard for conversion from tobacco to cigarette equivalents may underestimate the true cigarette numbers. The equivalent may be as low as 0.5 grams (Laugesen 2009).

**Figure 1:** Annual number of tobacco products available for consumption in New Zealand per capita (15+ years), 1999–2009



Source: Statistics New Zealand 2009

Notes:

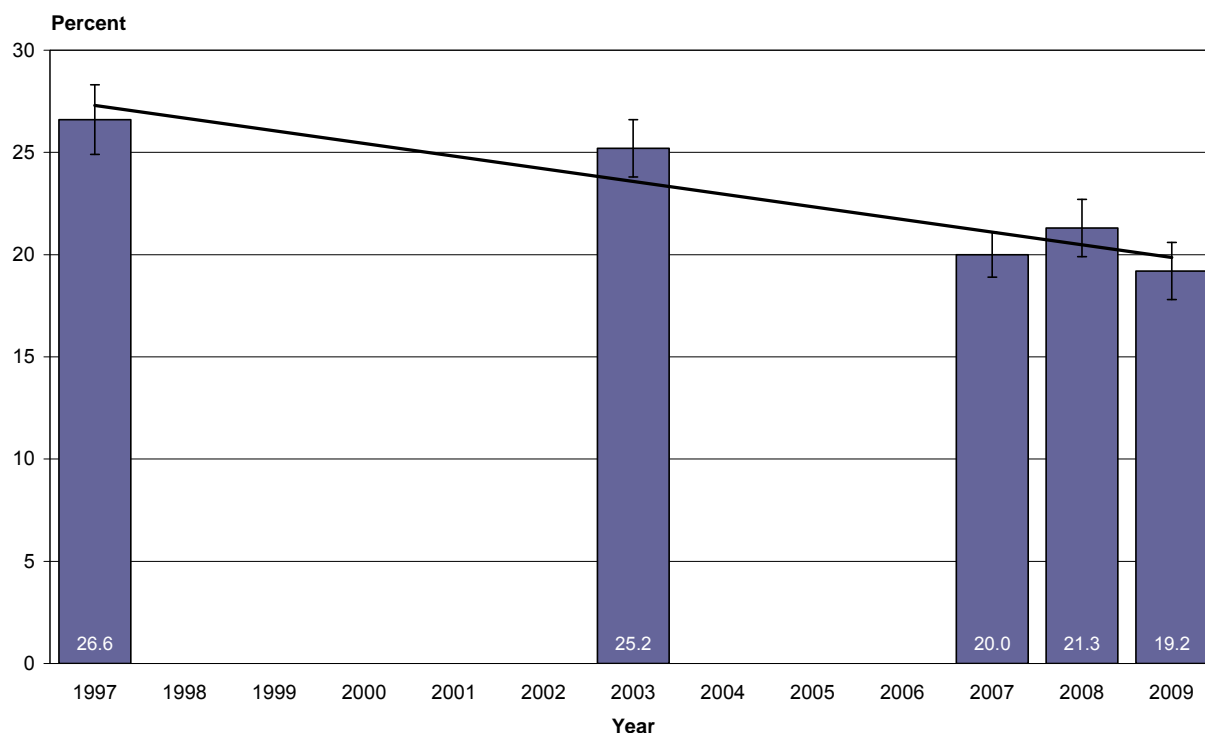
- 1 One cigarette equivalent equals one manufactured cigarette or one gram of loose tobacco.
- 2 Quantities of loose tobacco and manufactured cigarettes are based on the annual tobacco products released and annual tobacco returns.

## Daily smoking

A daily smoker is defined as someone who has smoked more than 100 cigarettes in their lifetime and currently smokes at least once a day. In this report, smoking refers to the use of cigarettes, roll-your-own tobacco, cigars and pipes.

There has been a significant decrease in daily smoking in New Zealand since 1996/97 (Figure 2). In 2009, 19.2% of New Zealanders aged 15–64 years were daily smokers, after adjusting for age. This latest daily smoking rate confirms the continuation of the general downward trend in the rate of daily smoking since 1976 (35.6% for those aged 15 years and over), when the Census first measured daily smoking.

**Figure 2:** Daily smoking among those aged 15–64 years, 1997–2009 (age-standardised prevalence)



Data sources: 1997 = 1996/97 New Zealand Health Survey (NZHS); 2003 = 2002/03 NZHS; 2007 = 2006/07 NZHS; 2008 = 2008 New Zealand Tobacco Use Survey (NZTUS); 2009 = 2009 NZTUS

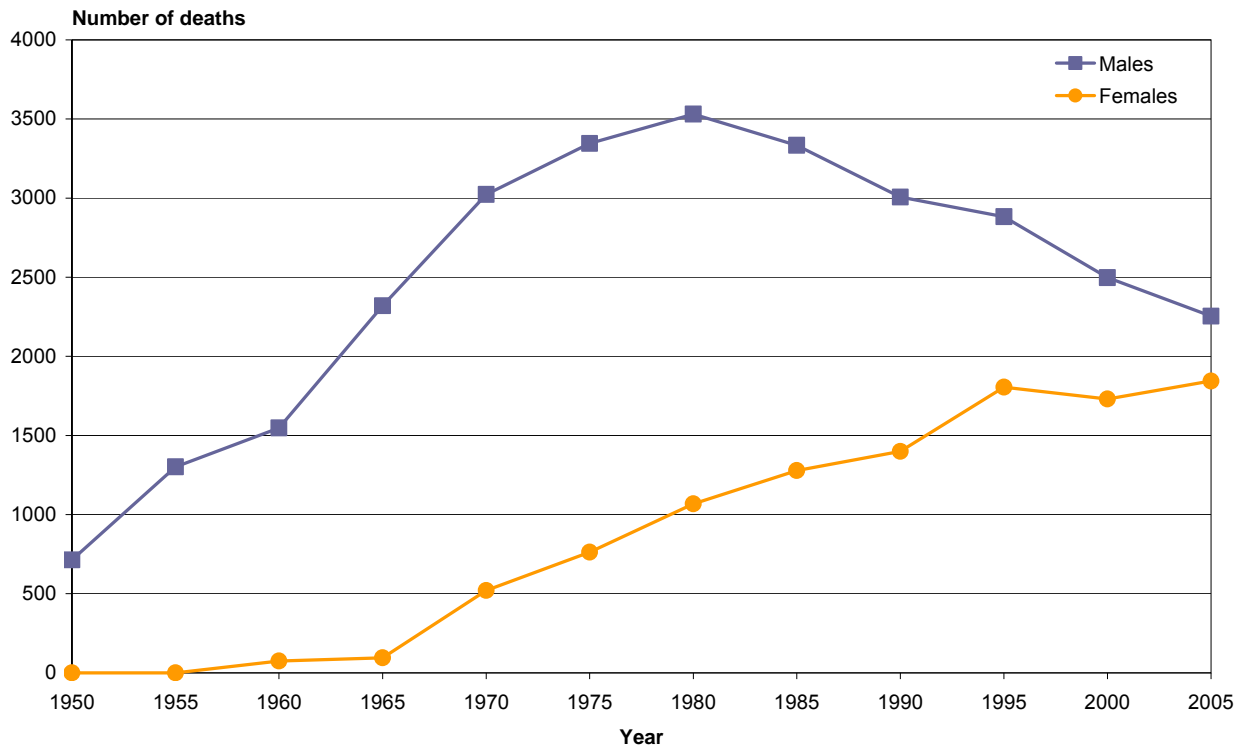
Note: Age standardised to the WHO world population.

## Tobacco-attributable mortality

It is estimated that smoking kills around 4500–5000 people in New Zealand every year (including deaths due to second-hand-smoke exposure). Around 1500 of these deaths occur in middle age.

In New Zealand there was a large overall increase in mortality attributable to smoking (all causes) up until the 1980s. The total number then remained fairly steady until the mid-90s, and since then the number of deaths has been decreasing. This decrease appears to be driven by a reduction in the number of deaths attributed to smoking for males, while the number of tobacco-attributable deaths among females increased steadily to the mid 1990s and has since stabilised (Figure 3). These sex differences in tobacco-attributable mortality (TAM) reflect differences in the timing and magnitude of the tobacco epidemic experienced by males and females (Ministry of Health 2002).

**Figure 3:** Annual number of deaths attributed to smoking (all causes), among those aged 35+ years,<sup>6</sup> by sex, 1950–2005



Data sources: Estimates for 1950–1995 were drawn from Peto et al 2006. Estimates for 2000 and 2005 have been derived by the Health and Disability Intelligence Unit from Ministry of Health mortality counts.

Notes:

- 1 The 2010 data point for this graph is not currently available.
- 2 Estimates have been calculated using the Peto method (World Health Organization 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 in New Zealand 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 1 presents the total number of deaths attributable to smoking, by disease grouping. 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.

<sup>6</sup> In considering TAM, the lower age group for inclusion is 35 years, reflecting the time that elapses between exposure (tobacco) and the development of diseases for which tobacco is a risk factor, and that lead to deaths that can be attributed to tobacco exposure (TAM).

**Table 1:** Estimated number of deaths attributable to tobacco smoking in New Zealand, by cause of death, among those aged 35+ years,<sup>7</sup> 2003–2007

Year	Lung cancer	COPD	CVD	Other cancer	Upper aerodigestive cancer	Other medical	All causes	
	Number of deaths	Number of deaths	Number of deaths	Number of deaths	Number of deaths	Number of deaths	Number of deaths	Rate per 100,000
2003	1217	1180	984	352	175	470	4377	214.9
2004	1298	1234	1062	368	168	514	4644	223.2
2005	1191	1048	907	335	162	455	4098	193.0
2006	1196	1085	909	323	162	509	4185	193.2
2007	1258	1095	962	367	191	545	4418	200.6
2003–07*	1232	1130	967	349	172	500	4350	204.8

Source: Estimates have been derived by the Health and Disability Intelligence Unit from Ministry of Health mortality counts.

Notes:

- 1 Tobacco-attributable mortality (TAM) for lung cancer is calculated differently to TAM for other diseases.
  - 2 All causes may not be the sum of specific causes, due to rounding.
  - 3 The 2003–07 calculation uses the Peto methodology (World Health Organization 1998). 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.
- \* This is a five-year moving average.

<sup>7</sup> In considering TAM, the lower age group for inclusion is 35 years, reflecting the time that elapses between exposure (tobacco) and the development of diseases for which tobacco is a risk factor, and that lead to deaths that can be attributed to tobacco exposure (TAM).

## Chapter 4: Current Smoking

A current smoker is defined as someone who has smoked more than 100 cigarettes in their lifetime and at the time of the survey was smoking at least once a month (World Health Organization 1998). As noted in the previous chapter, a daily smoker is someone who has smoked more than 100 cigarettes in their lifetime and currently smokes at least once a day.

### Current smoking, 15–64 years

In 2009, 21.0% (19.6–22.4) of people aged 15–64 years were current smokers, and 19.2% (17.8–20.6) of people aged 15–64 years were daily smokers (91.4% of current smokers were daily smokers).

There was no significant difference in the age-standardised prevalence of current smoking between males (22.8%, 20.6–25.1) and females (20.8%, 19.0–22.6).

### Number of current smokers in New Zealand in 2009

Based on the estimate that 21% of people aged 15–64 years were current smokers in 2009, the number of current smokers in New Zealand in 2009 was estimated to be 572,100.

However, the 2009 NZTUS only covered the usually resident population aged 15–64 years living in permanent private dwellings. It did not include people living in institutions (such as prisons, hospitals, rest homes and boarding schools) and the homeless. Given that these groups are not included in the analyses, the estimated number of current smokers in New Zealand in 2009 (and other estimated population numbers presented in this report) will generally be slight underestimates of the numbers affected in the entire resident population of New Zealand.

Using the 2006 New Zealand Census data (where two questions on smoking were asked, and where people living in non-private accommodation participated), the number of smokers in New Zealand in both private and non-private accommodation was able to be estimated. This involved calculating a ratio of smoking rates for the private and non-private populations at the time of the census and then using this ratio to estimate the smoking prevalence in 2009 for the non-private population.

The numbers of current smokers estimated by this method are shown in Table 2.

**Table 2:** Number of current smokers in New Zealand, by age group and dwelling type, 2009

Age group	NZTUS population (private dwellings)	All New Zealand (private and non-private dwellings)
15–64	572,100	605,796
65+	n/a	41,522
15+	n/a	647,318

This analysis illustrates that the NZTUS estimates of total current smokers are about 5% below a full population estimate. Consequently, the number of current smokers aged 15–64 years in New Zealand (private and non-private dwellings) in 2009 is estimated to be 605,796.

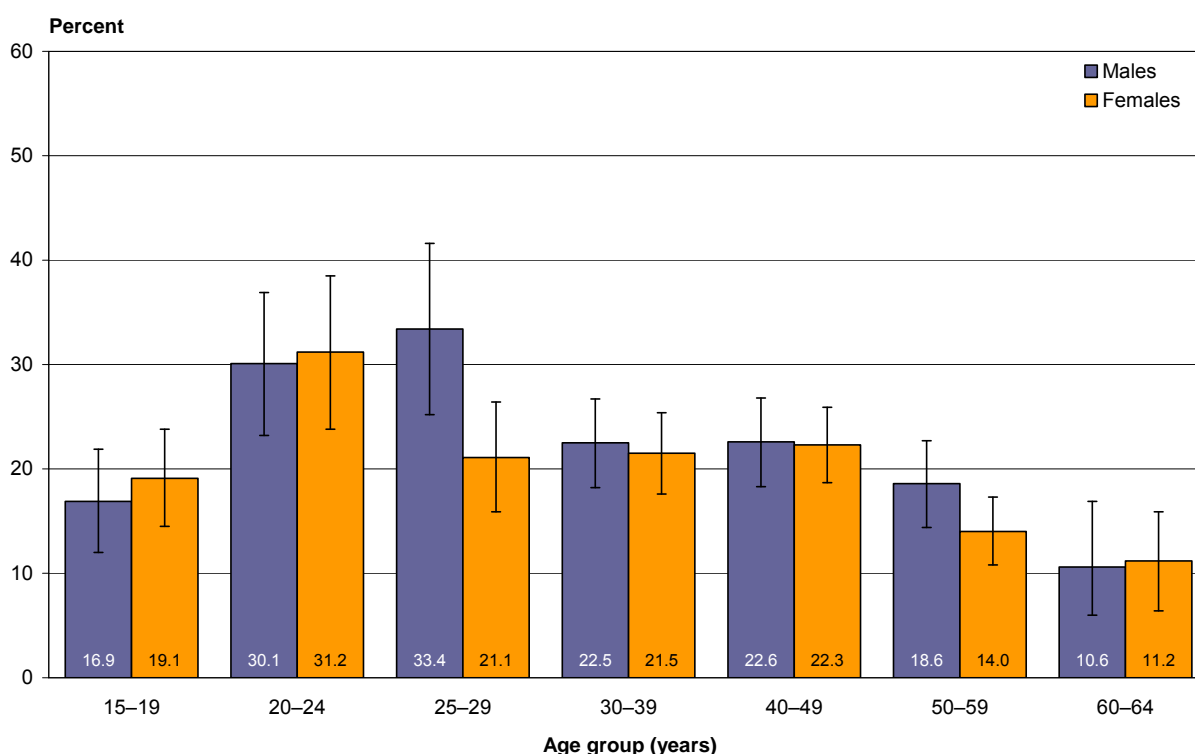
Note that similar calculations cannot be used to estimate the number of people affected by other smoking-related outcomes, because the relevant questions are not asked in the census.

### Current smoking, by age group

The prevalence of current smoking increased with age until 20–24 years for females and until 25–29 years for males, after which it declined (Figure 4). The lowest prevalences were in the 50–64-year-old age groups.

In the 25–29 years age group, males were significantly more likely to be current smokers than females ( $p$ -value < 0.05). There were no significant differences by sex in the other age groups.

**Figure 4:** Current smoking among 15–64-year-olds, by age group and sex, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey



## Current smoking, by ethnic group

Table 3 gives an indication of the prevalence of current smoking and the estimated numbers of current smokers in New Zealand in 2009, by ethnic group and sex.

**Table 3:** Current smoking among 15–64-year-olds, by ethnic group and sex, 2009 (unadjusted prevalence)

Ethnic group	Males		Females		Total	
	Prevalence (95% CI)	Estimated number	Prevalence (95% CI)	Estimated number	Prevalence (95% CI)	Estimated number
European/Other	20.6 (18.1–23.1)	204,200	18.9 (17.0–20.8)	207,600	19.7 (18.1–21.3)	411,700
Māori	40.2 (33.9–46.5)	63,300	49.3 (43.3–55.2)	90,500	45.1 (40.8–49.4)	153,800
Pacific	32.3 (24.7–40.0)	24,400	28.5 (22.2–34.9)	23,700	30.3 (25.5–35.1)	48,100
Asian	16.2 (11.0–21.4)	30,000	4.4 (1.9–8.5)	7200	10.7 (7.5–14.0)	37,100

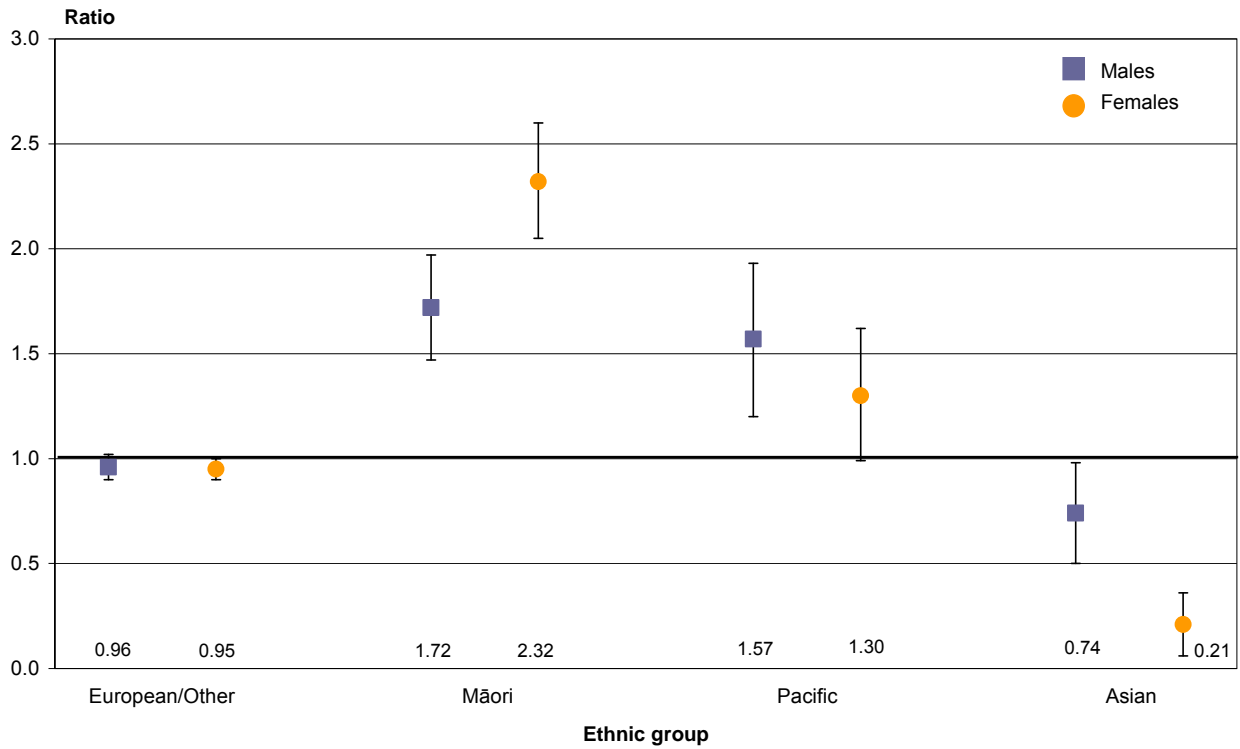
Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, Māori females were found to be more than twice as likely to be current smokers as females in the total population (Figure 5). Māori and Pacific males were significantly more likely to be current smokers than males in the total population. In contrast, Asian males and females were significantly less likely to be current smokers than males and females in the total population.

There was no significant difference in the age-standardised prevalence of current smoking between European/Other males and females, and males and females in the total population. Similarly, there was no significant difference in the age-standardised prevalence of current smoking between Pacific females and females in the total population.

**Figure 5:** Current smoking among 15–64-year-olds, by ethnic group and sex, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

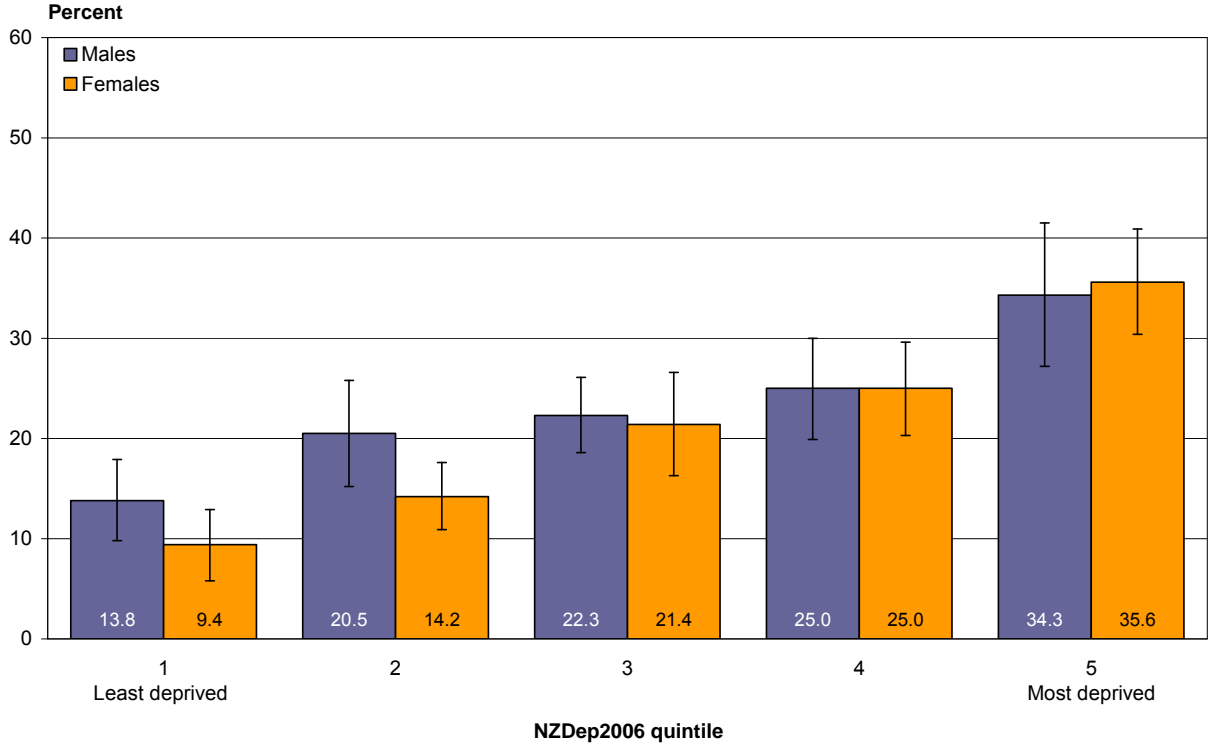
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents the total male or female population aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

### Current smoking, by neighbourhood deprivation

After adjusting for age, both males and females living in the most deprived neighbourhood areas (NZDep2006 quintiles 4 and 5) were found to be significantly more likely to be current smokers than males and females living in the least deprived neighbourhood areas (NZDep2006 quintile 1) (Figure 6).

**Figure 6:** Current smoking among 15–64-year-olds, by NZDep2006 quintile and sex, 2009 (age-standardised prevalence)



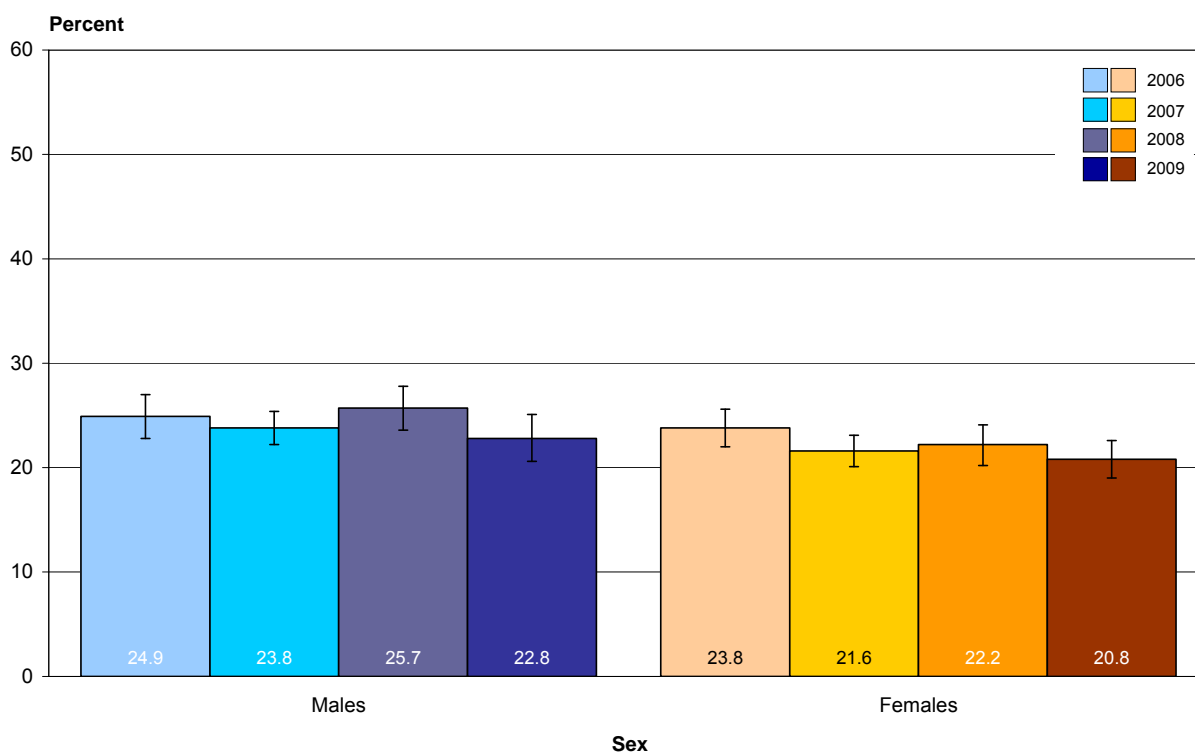
Source: 2009 New Zealand Tobacco Use Survey  
 Note: Age standardised to the WHO world population.

## Time trends in current smoking

Overall, the age-standardised prevalence of current smoking in 15–64-year-olds fell significantly between 2006 (24.4%, 22.9–25.9) and 2009 (21.8%, 20.3–23.3) (p-value < 0.05).

Among females, the age-standardised prevalence of current smoking fell significantly between 2006 and 2009 (p-value < 0.05) (Figure 7). There was no significant change in the age-standardised prevalence of current smoking for males between 2006 and 2009.

**Figure 7:** Current smoking among 15–64-year-olds, by sex, 2006–2009 (age-standardised prevalence)

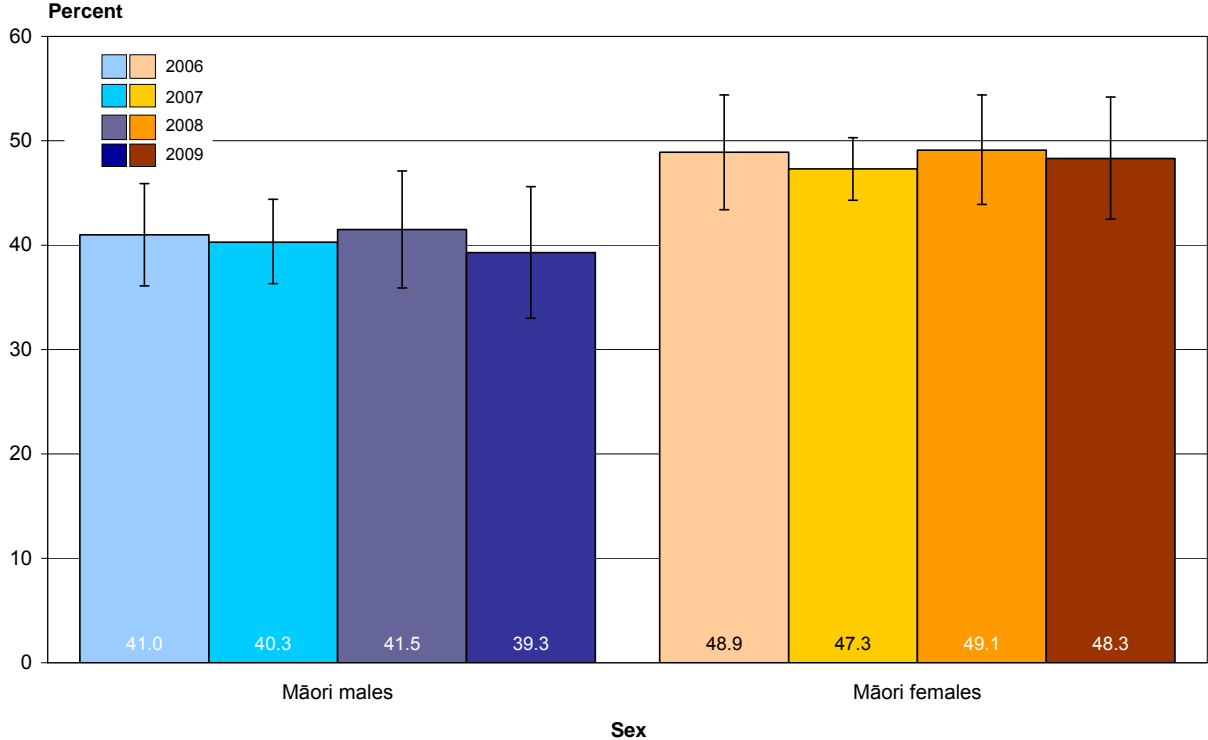


Sources: 2006 New Zealand Tobacco Use Survey (NJTUS); 2006/07 New Zealand Health Survey; 2008 NJTUS and 2009 NJTUS.

Note: Age standardised to the WHO world population.

For Māori, there was no change in the age-standardised current smoking rate for males or females between 2006 and 2009 (Figure 8).

**Figure 8:** Current smoking among 15–64-year-olds, for Māori, by sex, 2006–2009 (age-standardised prevalence)



Sources: 2006 New Zealand Tobacco Use Survey (NZTUS); 2006/07 New Zealand Health Survey; 2008 NZTUS and 2009 NZTUS.

Note: Age standardised to the WHO world population.

## Current smoking, youth (15–19 years)

In 2009, 18.0% (14.9–21.2) of youth aged 15–19 years were current smokers, and 16.0% (12.8–19.2) were daily smokers. There were no significant differences by sex for current or daily smoking.

Among youth, Māori females (47.1%, 33.4–60.7) had a much higher current smoking prevalence than Māori males (29.2%, 16.7–44.5), but this difference was not significant.

In 2009, the median age that 15–19-year-old ever smokers reported having had their first cigarette was 13.4 years. Ever smokers are defined as people who have ever smoked cigarettes or tobacco at all (including cigars and pipes), even just a few puffs.

Of all current smokers aged 15–19 years, 92.7% (87.5–97.8) had at least one family member<sup>8</sup> who smoked. In comparison, significantly fewer non-smokers had at least one family member who smoked (57.3%, 51.3–63.2).

## Current smoking in youth, by ethnic group

Table 4 shows the proportion of youth aged 15–19 years who are current smokers, by ethnic group.

**Table 4:** Current smoking in youth aged 15–19 years, by ethnic group, 2009 (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	16.9 (13.0–20.8)	38,100
Māori	38.2 (28.8–47.5)	19,700
Pacific	26.9 (15.7–40.7)	7400
Asian	4.2 (0.1–22.2)	1500

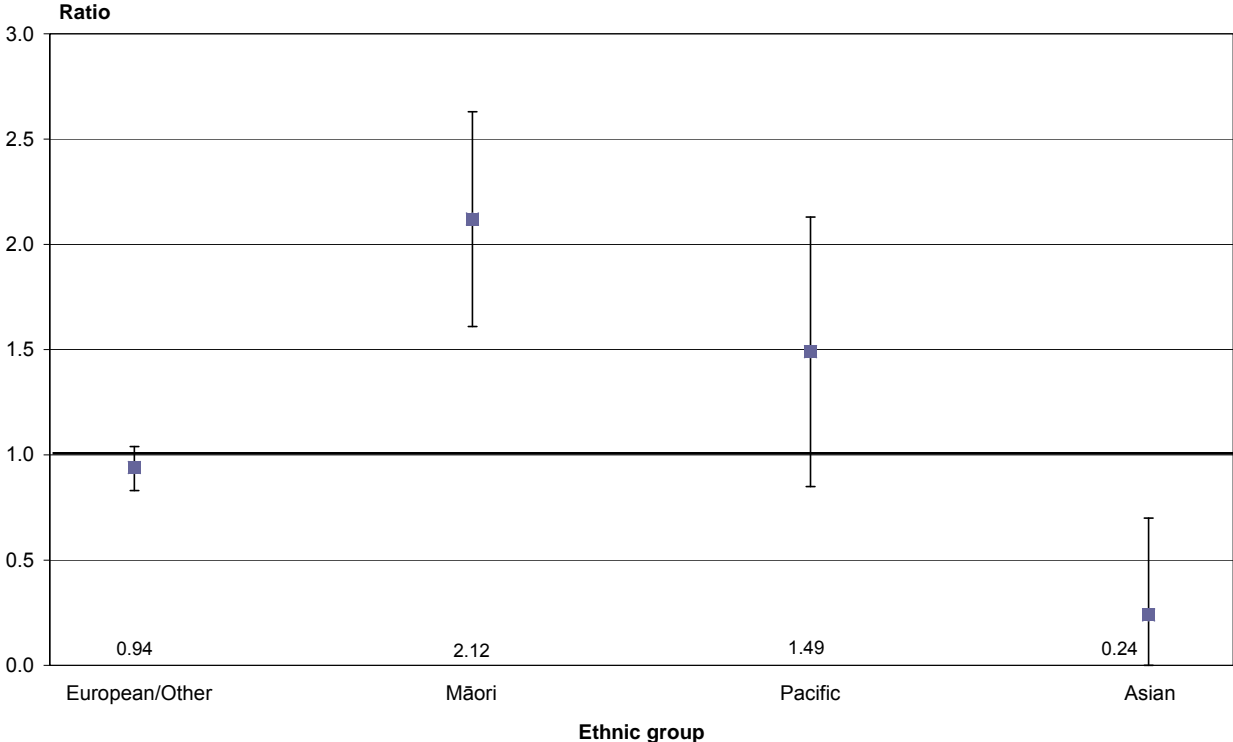
Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

<sup>8</sup> 'Family member' includes the respondent's mother, father, brothers/sisters and other family members, regardless of where they live.

Māori youth were more than twice as likely to be current smokers as youth in the total population, while Asian youth were about one-quarter as likely to be current smokers as youth in the total population (Figure 9). There was no significant difference in the prevalence of current smoking between European/Other and Pacific youth and youth in the total population.

**Figure 9:** Current smoking in youth aged 15–19 years, by ethnic group, 2009 (unadjusted rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

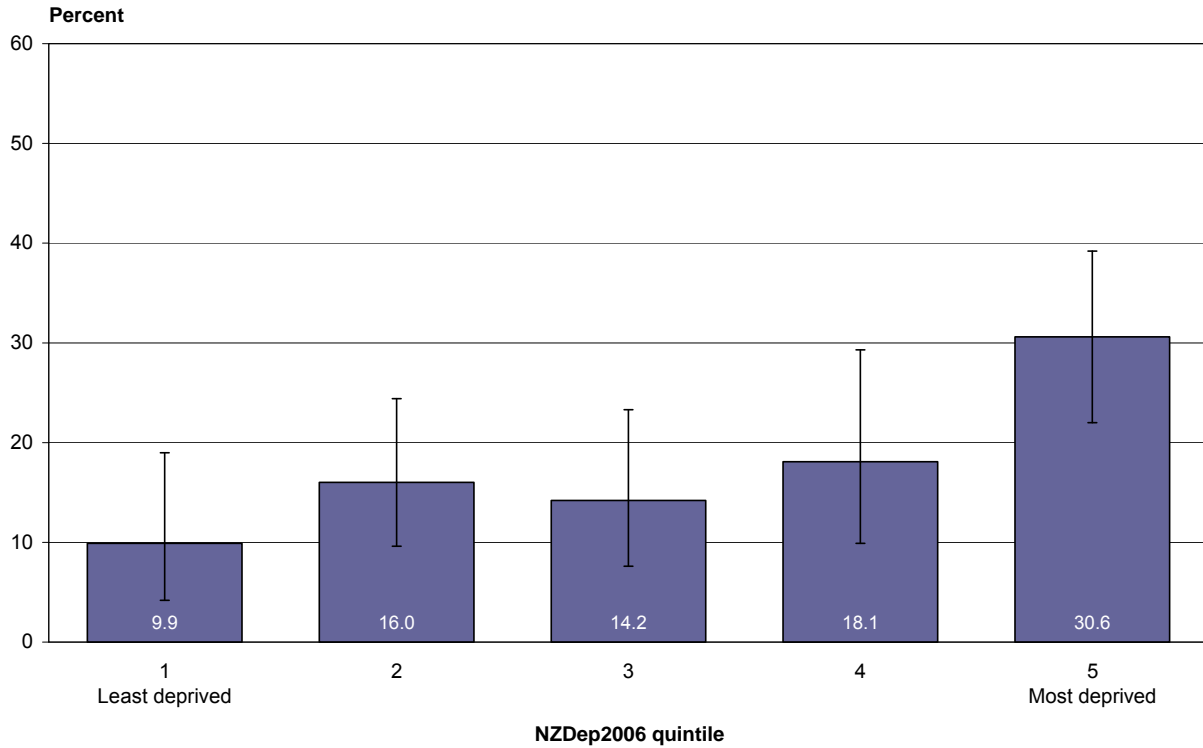
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents the total youth population aged 15–19 years.
2. Total response ethnicity has been used.

### Current smoking in youth, by neighbourhood deprivation

Youth living in the most deprived areas (NZDep2006 quintile 5) were significantly more likely than those in the least deprived areas (NZDep2006 quintile 1) to be current smokers (Figure 10).

**Figure 10:** Current smoking in youth aged 15–19 years, by neighbourhood deprivation, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

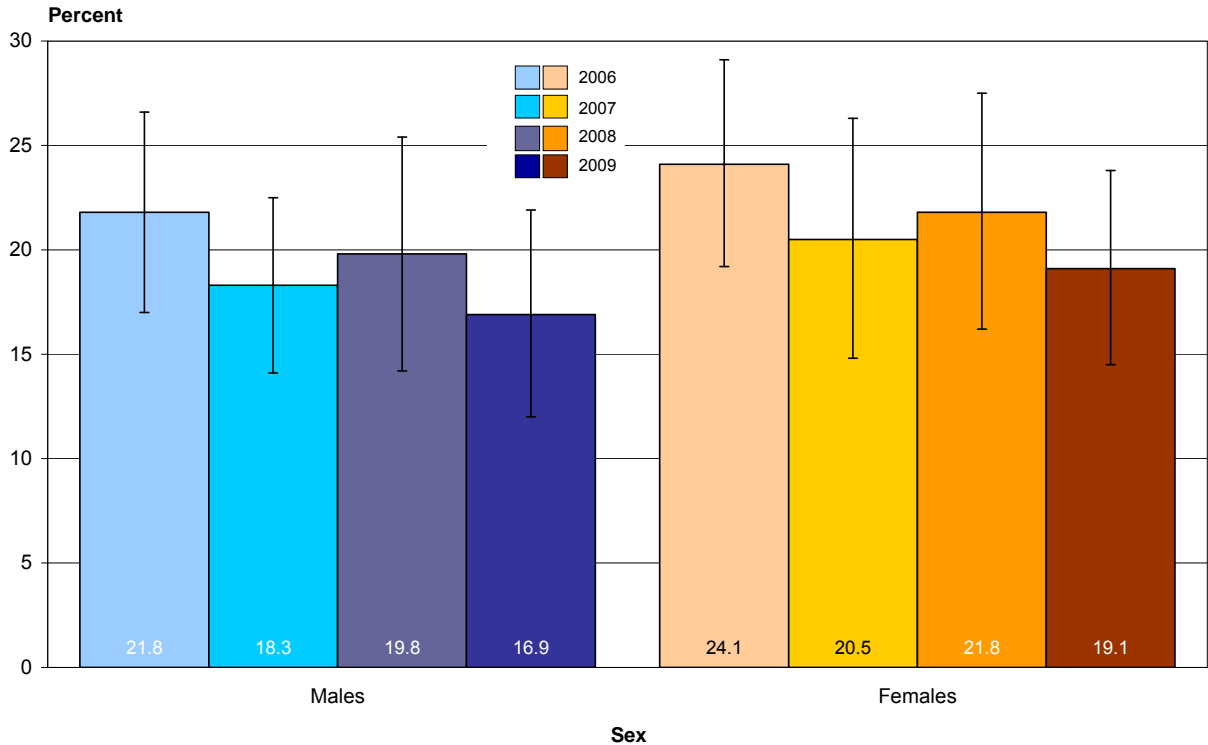


**Time trends in current smoking in youth**

In 2009 the prevalence of current smoking in youth aged 15–19 years (18.0%, 14.9–21.2) was significantly lower than the 2006 prevalence (22.9%, 19.8–26.1) (p-value < 0.05).

However, there was no significant change in the current smoking rate for males or for females aged 15–19 years between 2006 and 2009 (confirmed using logistic regression) (Figure 11).

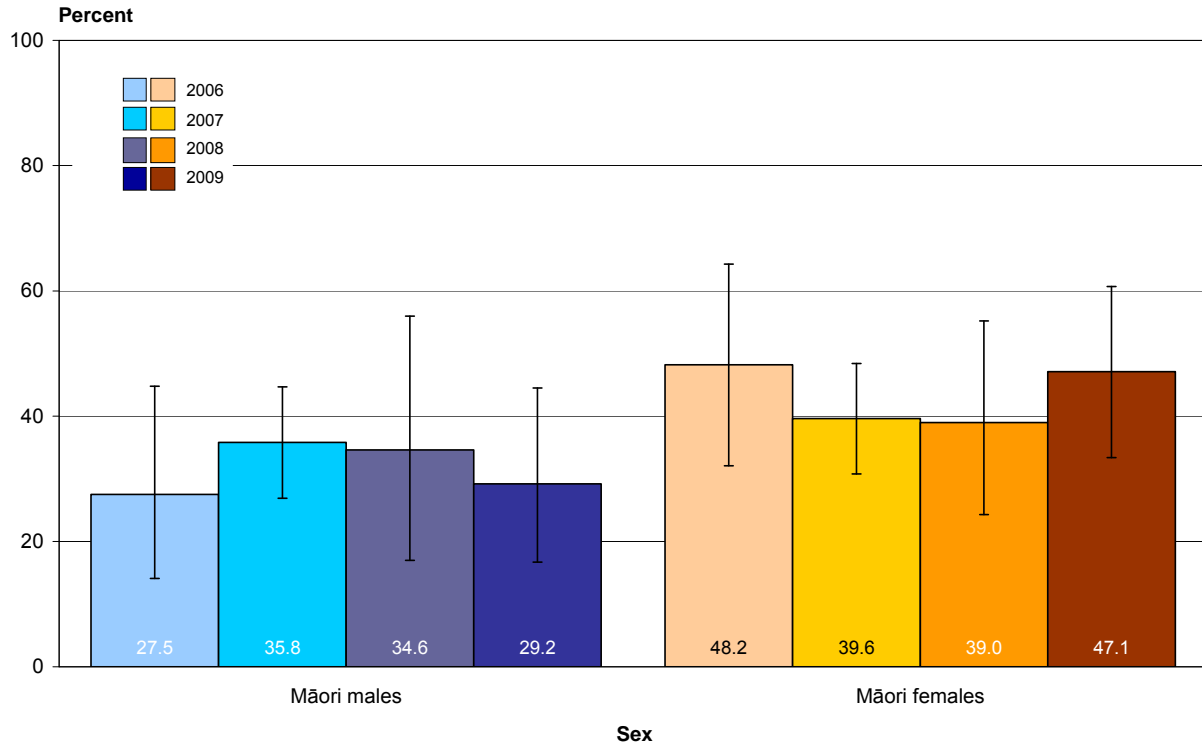
**Figure 11:** Current smoking in youth aged 15–19 years, by sex, 2006–2009 (unadjusted prevalence)



Sources: 2006 New Zealand Tobacco Use Survey (NZTUS); 2006/07 New Zealand Health Survey; 2008 NZTUS and 2009 NZTUS.

Among Māori youth, the prevalence of current smoking in males and females did not change significantly between 2006 and 2009 (Figure 12).

**Figure 12:** Current smoking in Māori youth aged 15–19 years, by sex, 2006–2009 (unadjusted prevalence)



Sources: 2006 New Zealand Tobacco Use Survey (Nztus); 2006/07 New Zealand Health Survey; 2008 Nztus and 2009 Nztus.

## Chapter 5: Type of Cigarette Consumption

This chapter looks at the two most common types of cigarettes consumed in New Zealand: roll-your-own cigarettes and factory-manufactured cigarettes. Research has found that both types of cigarettes carry the same risk for adverse health effects (Fowles 2008).

In the 2009 NZTUS, respondents were shown a list of products, including manufactured cigarettes, roll-your-owns, pipes and cigars. They were asked, 'Which of these products do you currently smoke?' and were able to select multiple responses.

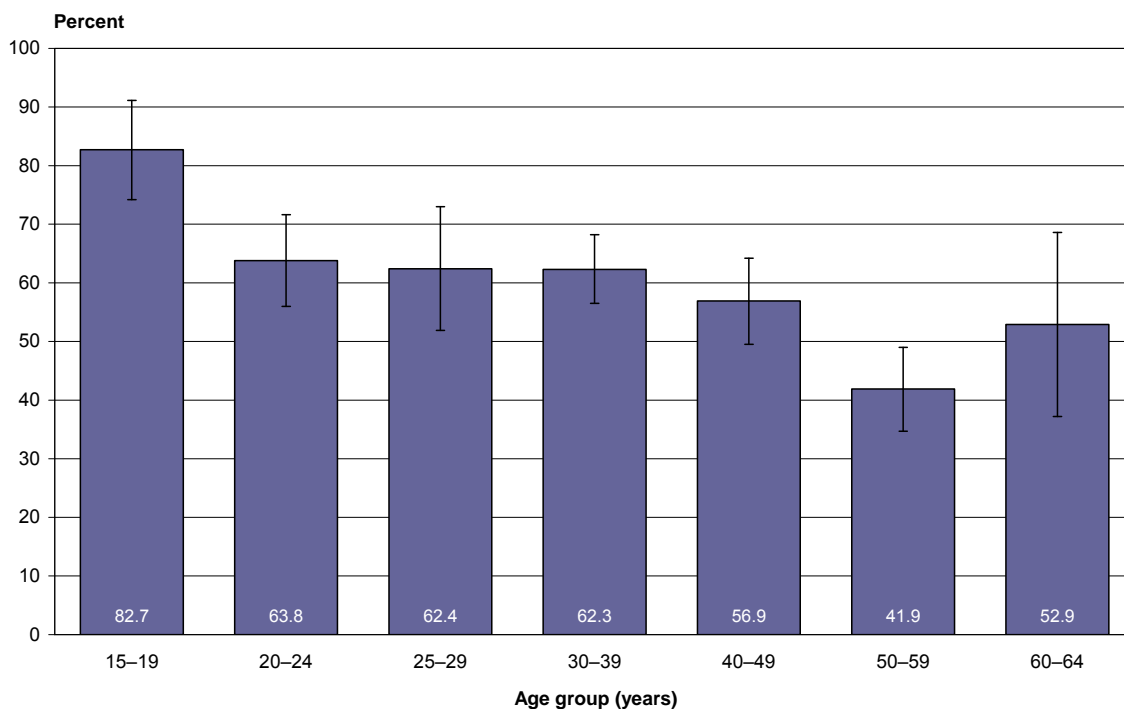
### Roll-your-own cigarette consumption

Among current smokers aged 15–64 years, 59.8% (56.8–62.8) smoked roll-your-own cigarettes. There was no significant difference by sex.

### Roll-your-own cigarette consumption, by age group

In general, the prevalence of smoking roll-your-own cigarettes was higher in younger age groups than in older age groups (confirmed by logistic regression) (Figure 13). Current smokers aged 15–19 years were significantly more likely than all other age groups to smoke roll-your-own cigarettes. Current smokers aged 50–59 years were significantly less likely than all other age groups (except 60–64-year-olds) to smoke roll-your-own cigarettes.

**Figure 13:** Roll-your-own cigarette consumption, among current smokers aged 15–64 years, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Respondents were able to select multiple types of tobacco products, and so the estimates reported in this figure do not represent exclusive use of roll-your-own cigarettes.

## Roll-your-own cigarette consumption, by ethnic group

Table 5 shows the proportion of 15–64-year-old current smokers who smoked roll-your-own cigarettes, by ethnic group.

**Table 5:** Roll-your-own cigarette consumption among current smokers aged 15–64 years, by ethnic group, 2009 (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	60.8 (57.1–64.6)	250,500
Māori	70.8 (66.3–75.4)	109,000
Pacific	50.3 (39.8–60.7)	24,200
Asian	31.3 (17.8–47.5)	11,600

Source: 2009 New Zealand Tobacco Use Survey

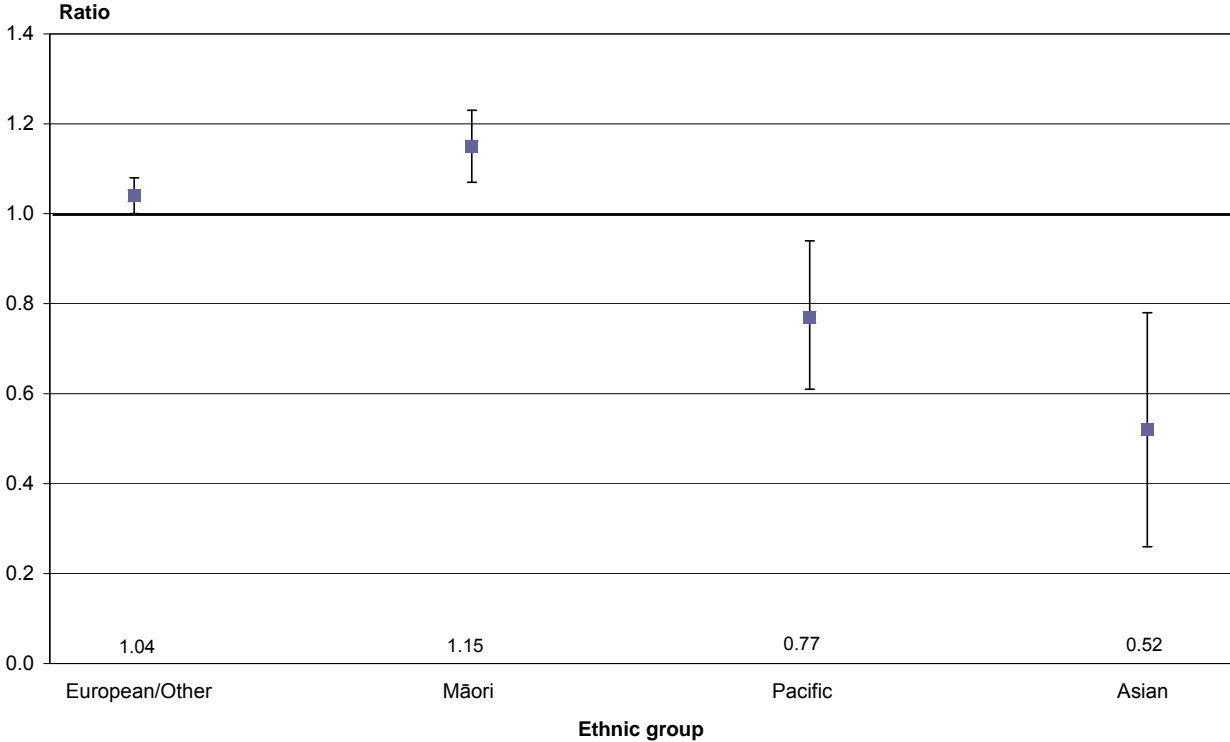
Notes:

1. Total response ethnicity has been used.
2. Respondents were able to select multiple types of tobacco products, and so the estimates reported in this table do not represent exclusive use of roll-your-own cigarettes.

After adjusting for age, Māori current smokers were found to be significantly more likely to smoke roll-your-own cigarettes than current smokers in the total population, while Pacific and Asian current smokers were found to be significantly less likely to smoke roll-your-own cigarettes than current smokers in the total population (Figure 14).

There was no significant difference in the age-standardised prevalence of smoking roll-your-own cigarettes between European/Other people and the total population.

**Figure 14:** Roll-your-own cigarette consumption, among current smokers aged 15–64 years, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

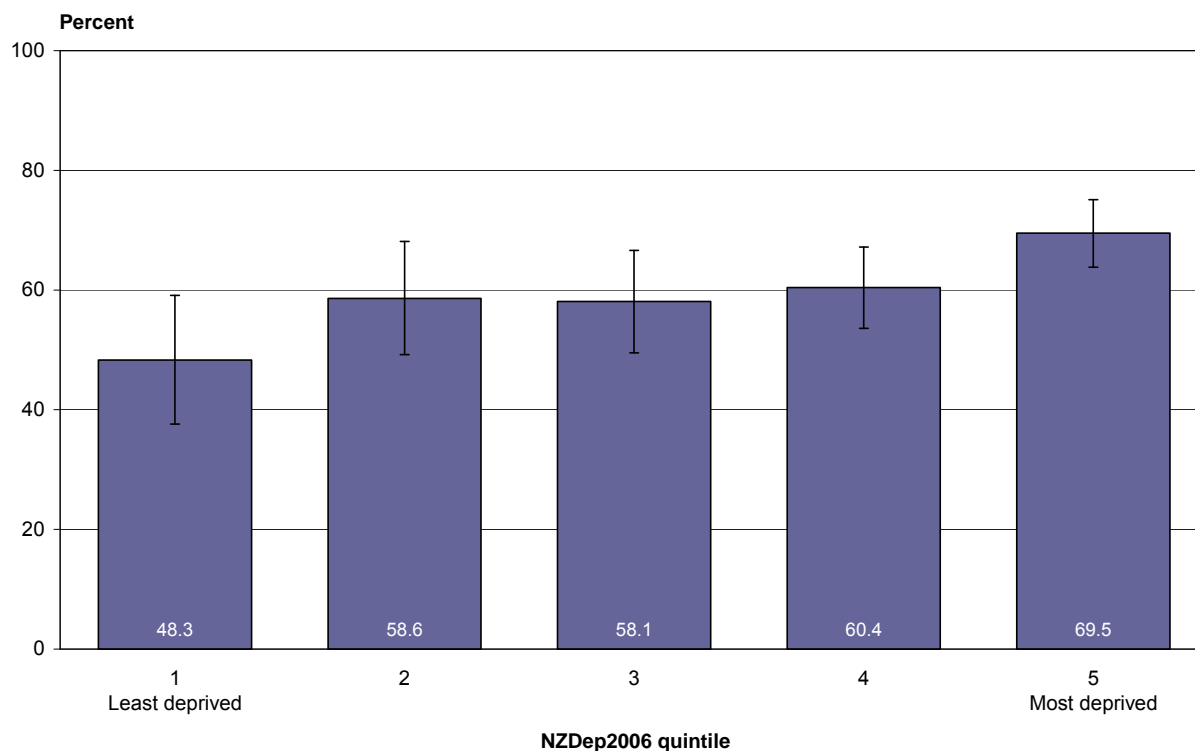
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents current smokers in the total population aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.
4. Respondents were able to select multiple types of tobacco products, and so the rate ratios reported in this figure do not represent exclusive use of roll-your-own cigarettes.

## Roll-your-own cigarette consumption, by neighbourhood deprivation

Current smokers in the most deprived areas (NZDep2006 quintile 5) were significantly more likely than those in the least deprived areas (NZDep2006 quintile 1) to smoke roll-your-own cigarettes (Figure 15).

**Figure 15:** Roll-your-own cigarette consumption, among current smokers aged 15–64 years, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

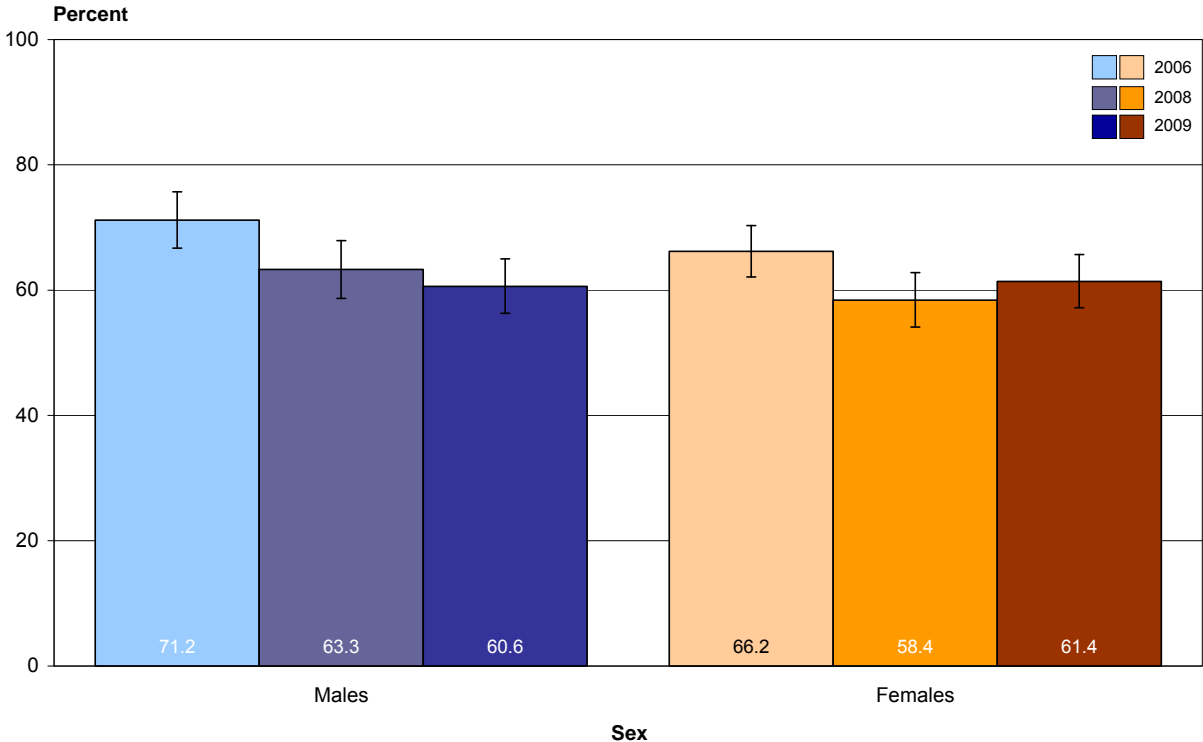
Notes:

1. Age standardised to the WHO world population.
2. Respondents were able to select multiple types of tobacco products, and so the estimates reported in this figure do not represent exclusive use of roll-your-own cigarettes.

### Time trends in roll-your-own cigarette consumption

The age-standardised prevalence of smoking roll-your-own cigarettes decreased significantly for 15–64-year-old males between 2006 and 2009 (p-value < 0.05) (Figure 16). There was no significant difference in the age-standardised prevalence of smoking roll-your-own cigarettes for 15–64-year-old females between 2006 and 2009.

**Figure 16:** Roll-your-own cigarette consumption, among current smokers aged 15–64 years, by sex, 2006–2009 (age-standardised prevalence)



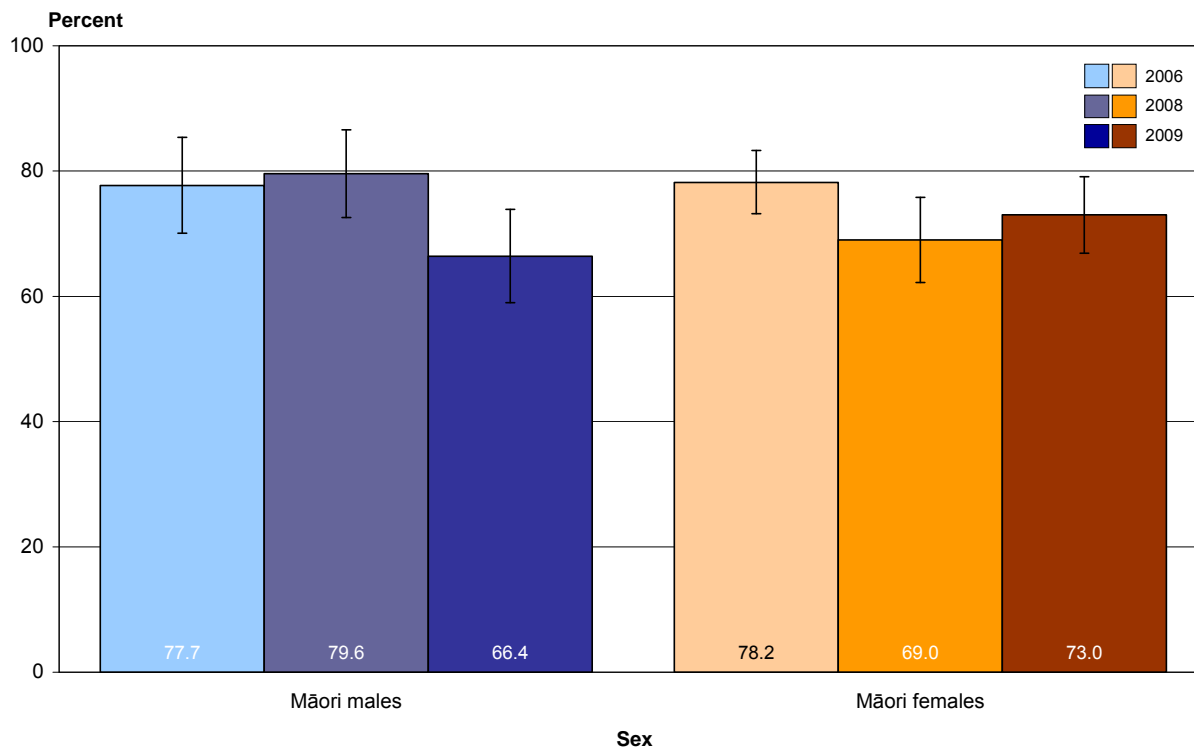
Sources: 2006, 2008 and 2009 New Zealand Tobacco Use Surveys

Notes:

1. Age standardised to the WHO world population.
2. Respondents were able to select multiple types of tobacco products, and so the estimates reported in this figure do not represent exclusive use of roll-your-own cigarettes.

The age-standardised prevalence of smoking roll-your-own cigarettes decreased significantly for 15–64-year-old Māori males between 2006 and 2009 (p-value < 0.05) (Figure 17). There was no significant difference in the age-standardised prevalence of smoking roll-your-own cigarettes for 15–64-year-old Māori females between 2006 and 2009.

**Figure 17:** Roll-your-own cigarette consumption, among Māori current smokers aged 15–64 years, by sex, 2006–2009 (age-standardised prevalence)



Sources: 2006, 2008 and 2009 New Zealand Tobacco Use Surveys

Notes:

1. Age standardised to the WHO world population.
2. Respondents were able to select multiple types of tobacco products, and so the estimates reported in this figure do not represent exclusive use of roll-your-own cigarettes.



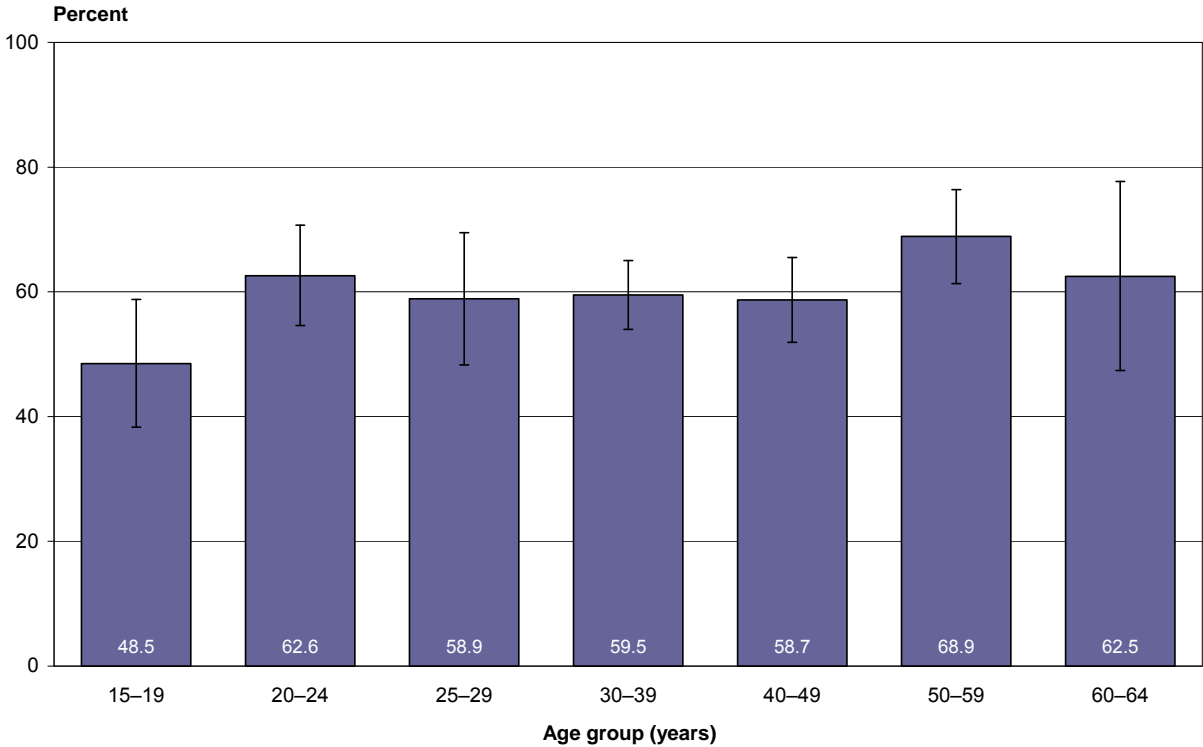
## Manufactured cigarette consumption

Among current smokers aged 15–64 years, 60.2% (57.0–63.3) smoked manufactured cigarettes (also known as tailor-made cigarettes). There was no significant difference by sex.

### Manufactured cigarette consumption, by age group

The prevalence of smoking manufactured cigarettes was higher in the older age groups than in the younger age groups (confirmed using logistic regression) (Figure 18). Current smokers aged 15–19 years were the least likely to smoke manufactured cigarettes, but this age group was not significantly different from all of the other age groups.

**Figure 18:** Manufactured cigarette consumption, among current smokers aged 15–64 years, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Respondents were able to select multiple types of tobacco products, and so the estimates reported in this figure do not represent exclusive use of manufactured cigarettes.

## Manufactured cigarette consumption, by ethnic group

Table 6 shows the proportion of 15–64-year-old current smokers who smoke manufactured cigarettes, by ethnic group.

**Table 6:** Manufactured cigarette consumption, among current smokers aged 15–64 years, by ethnic group, 2009 (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	60.1 (56.1–64.0)	247,300
Māori	51.4 (46.1–56.7)	79,100
Pacific	72.2 (62.9–81.4)	34,700
Asian	74.8 (60.2–89.4)	27,800

Source: 2009 New Zealand Tobacco Use Survey

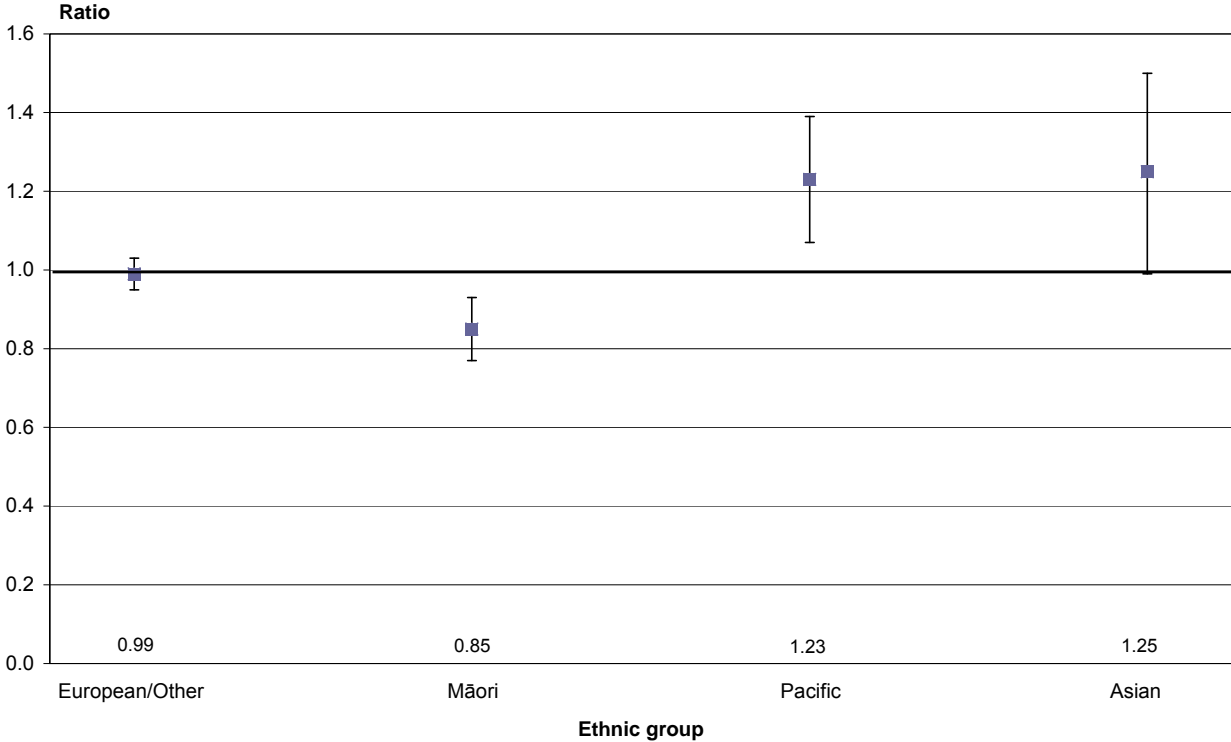
Notes:

1. Total response ethnicity has been used.
2. Respondents were able to select multiple types of tobacco products, and so the estimates reported in this table do not represent exclusive use of manufactured cigarettes.

After adjusting for age, Māori current smokers were found to be significantly less likely to smoke manufactured cigarettes than current smokers in the total population, while Pacific current smokers were found to be significantly more likely to smoke manufactured cigarettes than current smokers in the total population (Figure 19).

There was no significant difference in the age-standardised prevalence of smoking manufactured cigarettes between European/Other or Asian people and the total population.

**Figure 19:** Manufactured cigarette consumption, among current smokers aged 15–64 years, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

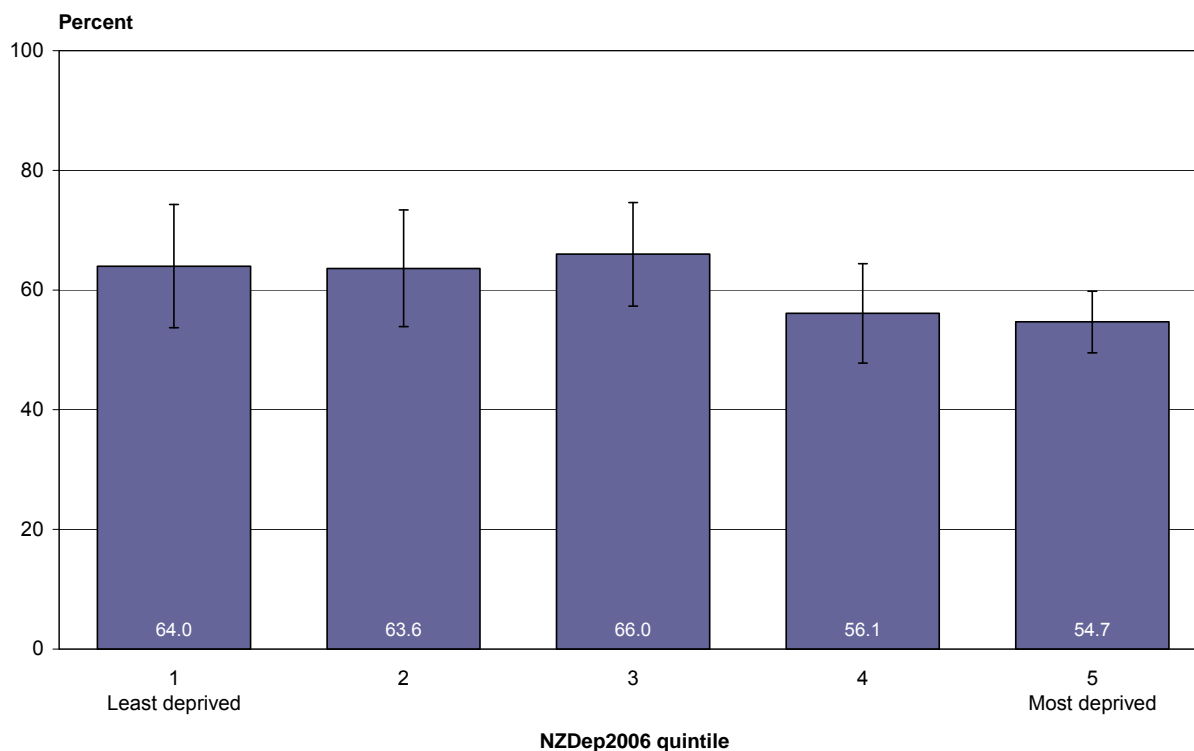
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents current smoking in the total population aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.
4. Respondents were able to select multiple types of tobacco products, and so the rate ratios reported in this figure do not represent exclusive use of manufactured cigarettes.

## Manufactured cigarette consumption, by neighbourhood deprivation

Current smokers in the most deprived areas were significantly less likely than those in less deprived areas to smoke manufactured cigarettes (confirmed using logistic regression) (Figure 20).

**Figure 20:** Manufactured cigarette consumption, among current smokers aged 15–64 years, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

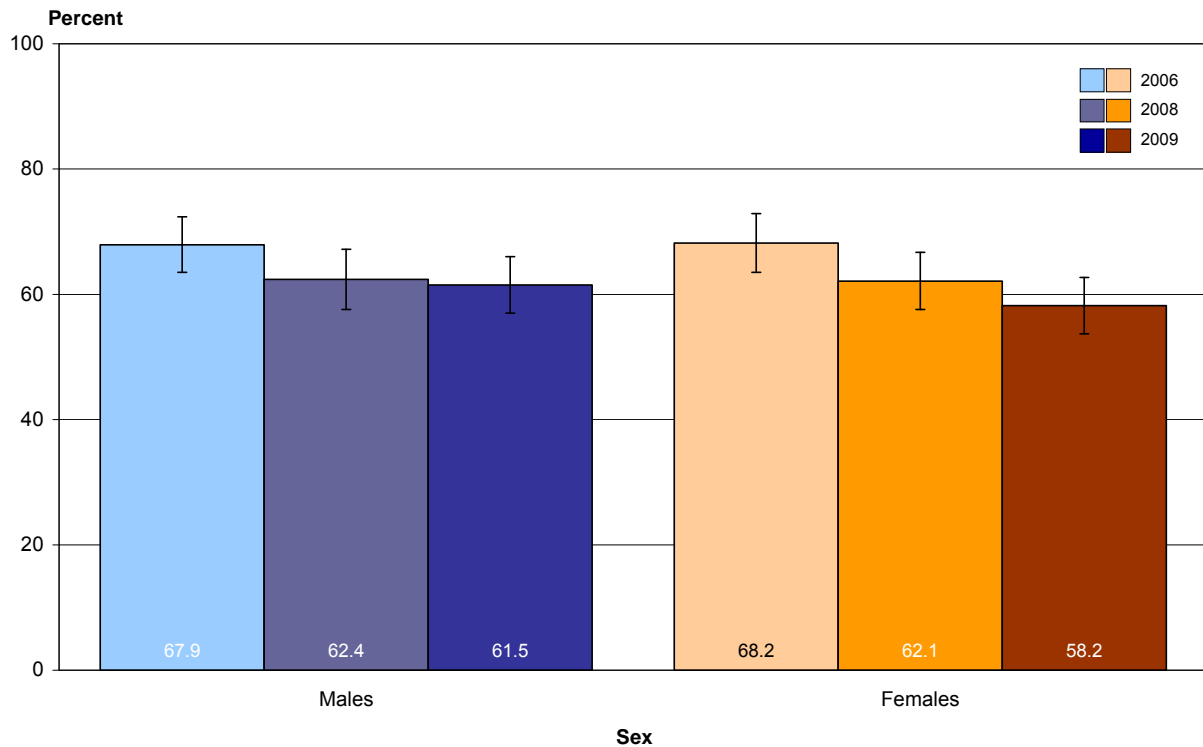
Notes:

1. Age standardised to the WHO world population.
2. Respondents were able to select multiple types of tobacco products, and so the estimates reported in this figure do not represent exclusive use of roll-your-own cigarettes.

## Time trends in manufactured cigarette consumption

The age-standardised prevalence of smoking manufactured cigarettes decreased significantly for 15–64-year-old males and 15–64-year-old females between 2006 and 2009 (p-values < 0.05) (Figure 21).

**Figure 21:** Manufactured cigarette consumption, among current smokers aged 15–64 years, by sex, 2006–2009 (age-standardised prevalence)



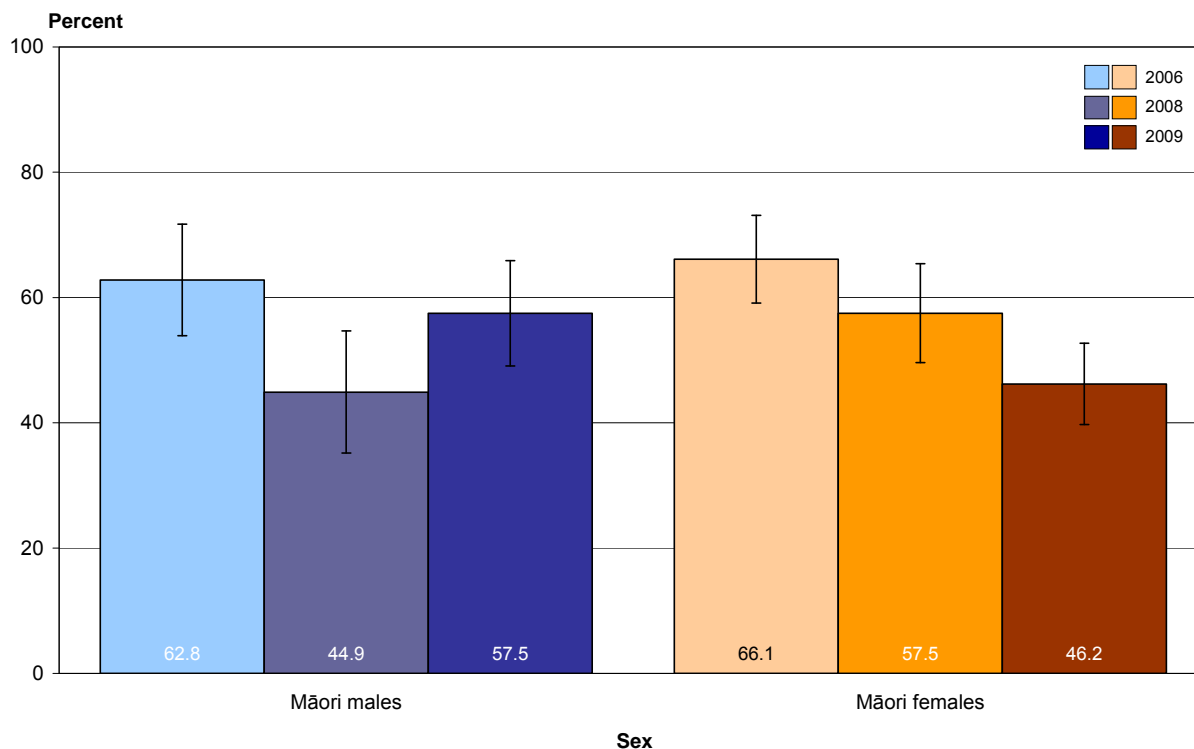
Sources: 2006, 2008 and 2009 New Zealand Tobacco Use Surveys

Notes:

1. Age standardised to the WHO world population.
2. Respondents were able to select multiple types of tobacco products, and so the estimates reported in this figure do not represent exclusive use of manufactured cigarettes.

The age-standardised prevalence of smoking manufactured cigarettes decreased significantly for 15–64-year-old Māori females between 2006 and 2009 (p-value < 0.05) (Figure 22). There was no significant change in the age-standardised prevalence of smoking manufactured cigarettes for 15–64-year-old Māori males over this time period.

**Figure 22:** Manufactured cigarette consumption, among Māori current smokers aged 15–64 years, by sex, 2006–2009 (age-standardised prevalence)



Sources: 2006, 2008 and 2009 New Zealand Tobacco Use Surveys

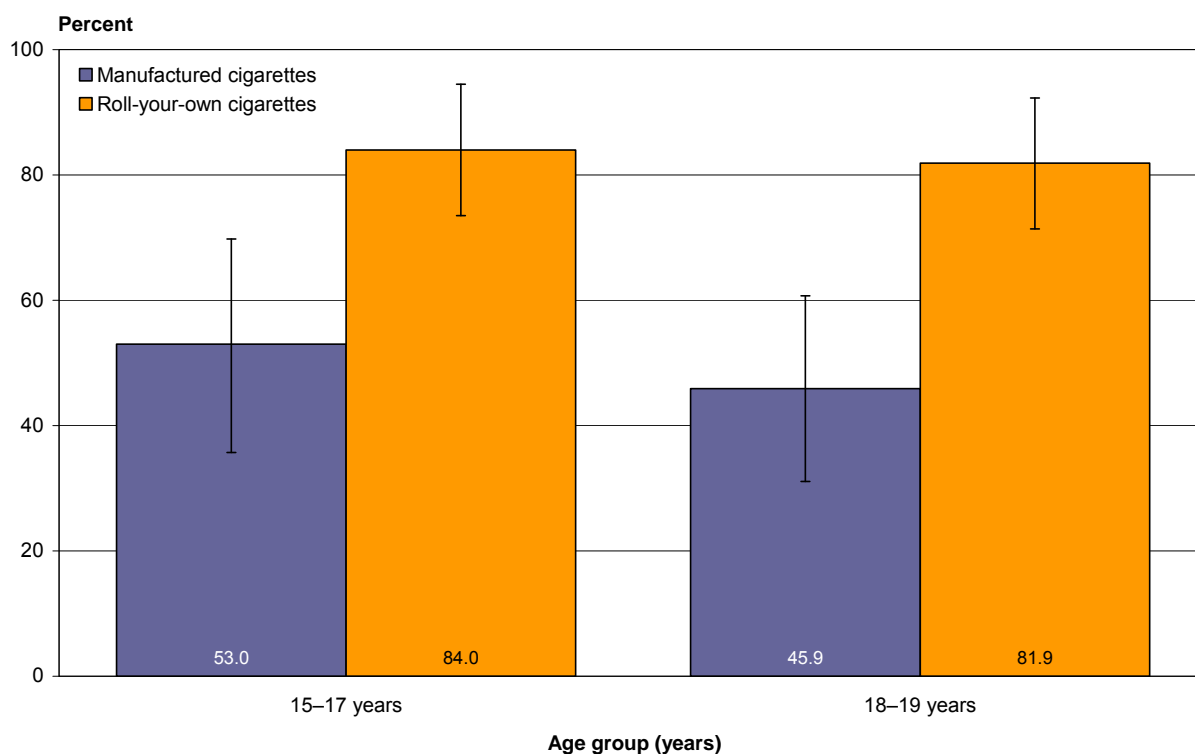
Notes:

1. Age standardised to the WHO world population.
2. Respondents were able to select multiple types of tobacco products, and so the estimates reported in this figure do not represent exclusive use of manufactured cigarettes.

## Type of cigarette consumption in youth

Youth aged 15–17 and 18–19 were significantly more likely to smoke roll-your-own cigarettes than manufactured cigarettes (Figure 23). The most common reason youth gave for smoking roll-your-own cigarettes was that they cost less than manufactured cigarettes. This reason was given by 41.8% (23.3–62.1) of 15–17-year-old and 70.5% (56.5–84.5) of 18–19-year-old current smokers.

**Figure 23:** Type of cigarette consumption, among youth current smokers aged 15–19 years, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Youth current smokers were able to report smoking both manufactured and roll-your-own cigarettes, and so may be included in both categories.

## Chapter 6: Source of Cigarettes/Tobacco Products

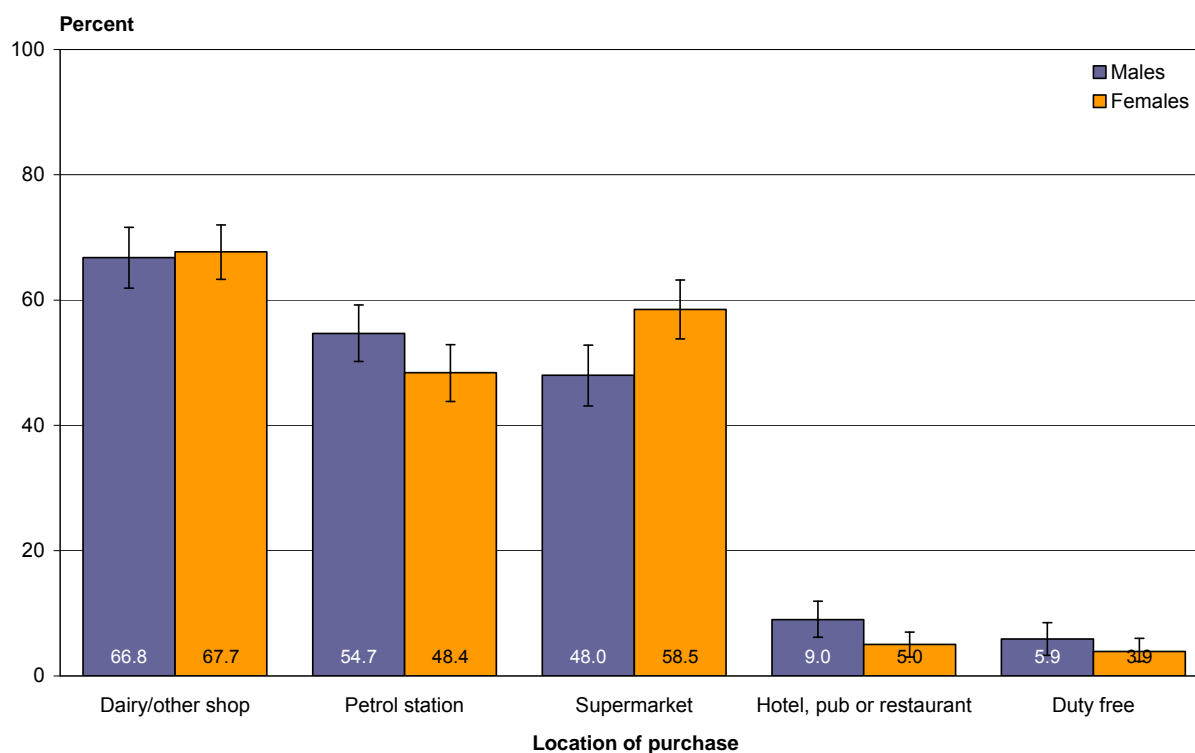
This section presents results on the type of places where smokers purchased or sourced cigarettes.

### Places of cigarette/tobacco purchase

Overall, around two-thirds (66.8%, 63.7–70.0) of current smokers aged 15–64 years purchased cigarettes or tobacco from a dairy or other shop in the month prior to the survey. Over half purchased cigarettes or tobacco from a supermarket (53.7%, 50.4–57.1) and half (50.5%, 47.4–53.6) made a purchase at a petrol station.

Females were significantly more likely than males to purchase cigarettes or tobacco from a supermarket, after adjusting for age (p-value < 0.05) (Figure 24). Males were significantly more likely than females to purchase cigarettes or tobacco from a hotel, pub or restaurant, after adjusting for age (p-value < 0.05). There were no other differences by sex.

**Figure 24:** Places of cigarette/tobacco purchase by current smokers aged 15–64 years in the past month, by sex, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Notes:

1. Age standardised to the WHO world population.
2. Smokers were able to report buying cigarettes from multiple locations in the past month, and so may be included in more than one category.

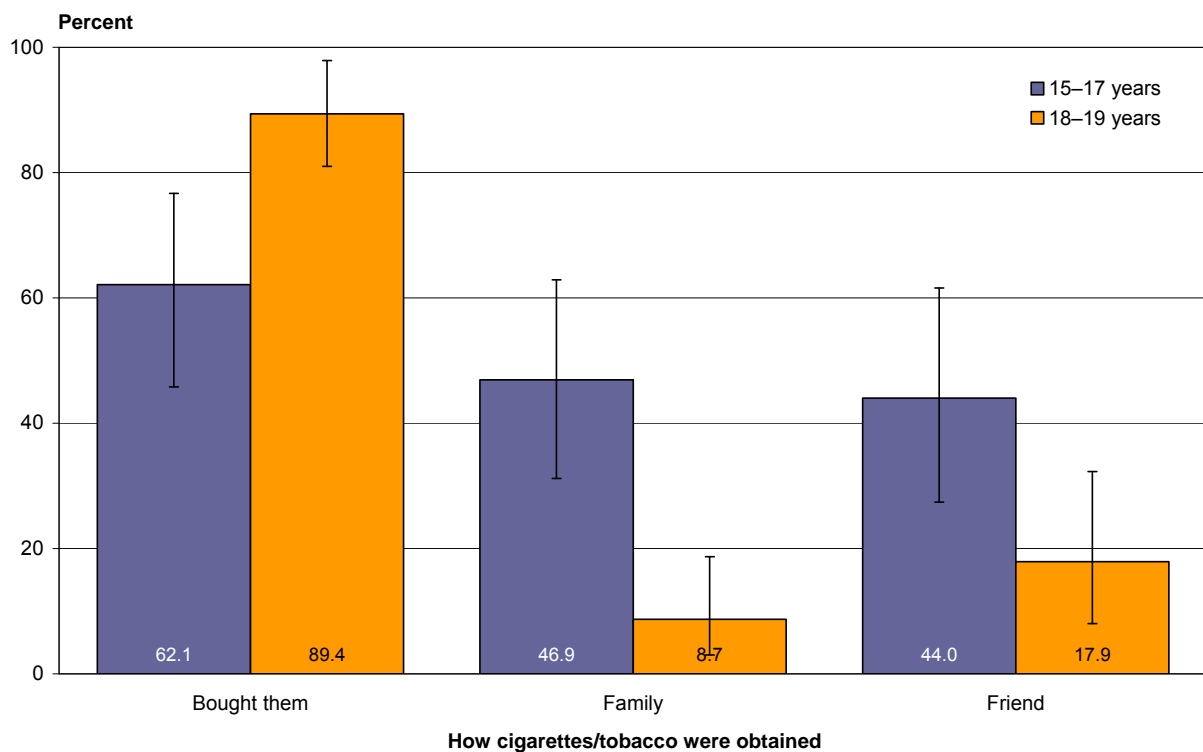


## Source of cigarettes/tobacco products among youth

In 1997, under an amendment to the Smoke-Free Environments Act 1990, the sale of cigarettes or other tobacco products to people under 18 became illegal in New Zealand.

Among youth current smokers, significantly more 18–19-year-olds than 15–17-year-olds bought their cigarettes or tobacco in the past month (Figure 25). The 15–17-year-olds were significantly more likely than 18–19-year-olds to get their cigarettes or tobacco from their friends or family.

**Figure 25:** Source of cigarettes/tobacco products in the past month, youth current smokers aged 15–19 years, by age group, 2009 (unadjusted prevalence)



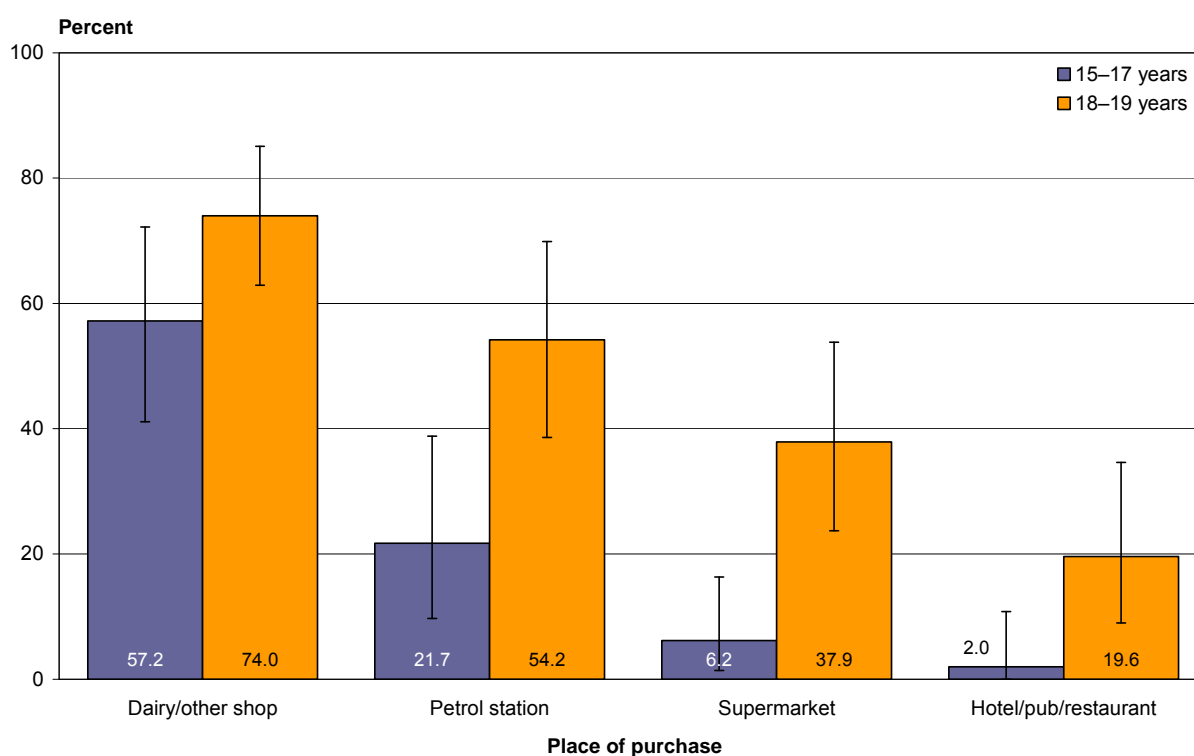
Source: 2009 New Zealand Tobacco Use Survey

Note: Youth smokers were able to report obtaining cigarettes from multiple locations in the past month, and so may be included in more than one category.

The most common place for youth current smokers to purchase their cigarettes in the month preceding the survey was from a dairy or other shop, followed by a petrol station (Figure 26). More than half of illegal sales of cigarettes to those under the age of 18 years took place in a dairy/other shop, while around one in five took place in a petrol station.

Youth were also asked about the purchase of cigarettes by mail order/Internet and duty free. These results are not shown on the graph, because no youth who took part in the survey purchased cigarettes or tobacco products by mail order or the Internet and very few purchased cigarettes duty free.

**Figure 26:** Place of purchase of cigarettes/tobacco products in the past month, youth current smokers aged 15–19 years, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Youth smokers were able to report buying cigarettes from multiple locations in the past month, and so may be included in more than one category.

## Chapter 7: Smoker Regret and Quitting Behaviour

This chapter presents information about the quit attempts of smokers and their reasons for quitting, as well as smoker regret. Quitting smoking has immediate health benefits: it reduces the risk of diseases caused by smoking and improves general health and wellbeing (US Department of Health and Human Services 2006).

The term 'recent quit attempter' is used in this report to refer to a person who has made a quit attempt in the past 12 months. A quit attempt is defined as a deliberate attempt to stop smoking and succeeding for at least 24 hours. This definition includes current smokers who have quit for more than 24 hours in the past 12 months, as well as people who have successfully quit smoking 6–12 months ago and have remained abstinent.

Results are also presented for those who have quit smoking for at least a week in the past 12 months, given that most relapses occur in the first eight days following a quit attempt (Hughes et al 2004).

Most of the analysis in this section focuses on current smokers and casual smokers. 'Casual smokers' are defined as smokers who smoke less than once per month.

### Smoker regret

Four out of five current smokers aged 15–64 years (80.0%, 77.2–82.8) said that they would not smoke if they had their life over again. After adjusting for age, females (82.5%, 79.1–85.9) were significantly more likely than males (76.2%, 71.5–80.9) to say that they would not smoke if they had their life over again (p-value < 0.05). There were no significant differences by age group, ethnic group or neighbourhood deprivation.

### Quit attempts

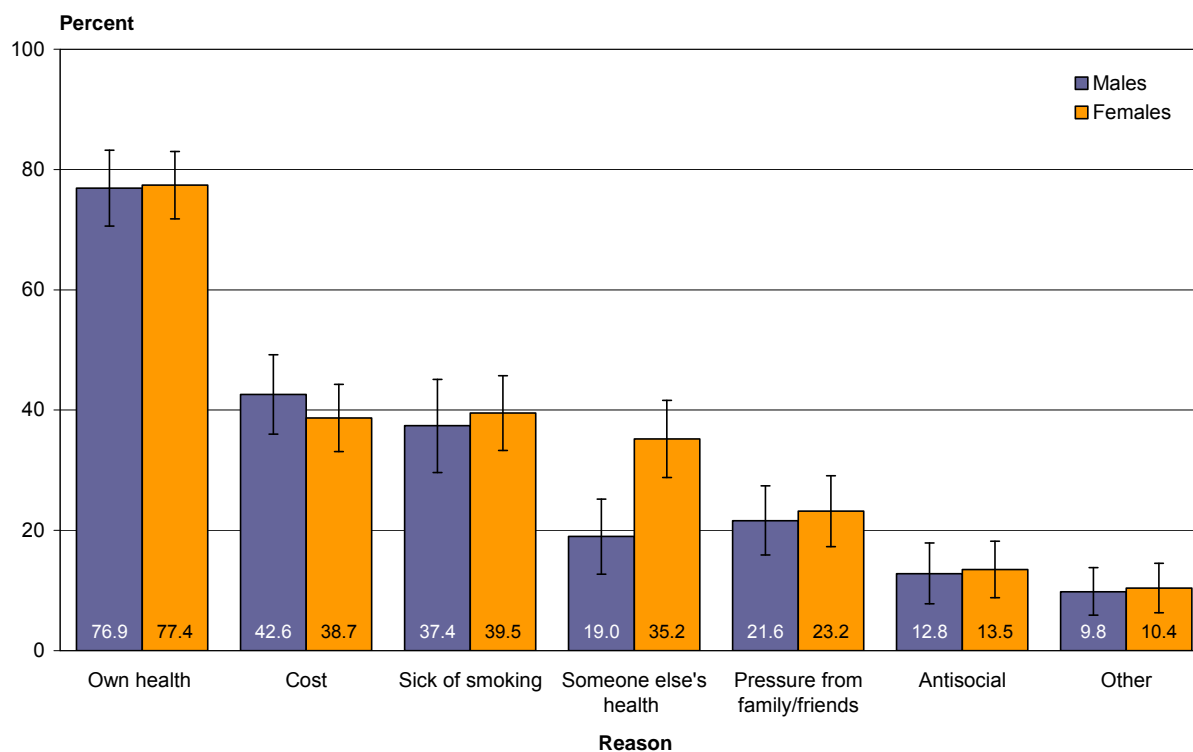
In the 2009 NZTUS, adult participants aged 15–64 years were asked a series of questions about whether they had considered quitting smoking, whether they had tried to quit smoking and, if they had, how long they had quit for. These questions were not asked of those who indicated that they 'don't smoke now'. Consequently, respondents who have successfully quit smoking are not included in the following analyses.

Three out of five (63.2%, 60.3–66.1) current and casual smokers had tried to quit smoking in the past five years.

## Reasons for quitting

The most common reason that recent quit attempters gave for their most recent quit attempt was their own health (Figure 27).

**Figure 27:** Reasons for most recent quit attempt, among recent quit attempters aged 15–64 years, by sex, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Notes:

1. Age standardised to the WHO world population.
2. Recent quit attempters were able to give multiple reasons for their most recent quit attempt, and so may be included in more than one category.

Younger recent quit attempters were more likely to cite cost as a reason for their most recent quit attempt than those in the older age groups.

After adjusting for age, recent quit attempters in the least deprived areas were found to be more likely than those in the most deprived areas to give the following reasons for their most recent quit attempt: their own health, sick of smoking, pressure from family/friends, smoking is antisocial/not socially acceptable.

All four ethnic groups (European/Other, Māori, Pacific, Asian) gave the same top four reasons for their most recent quit attempt, as follows: their own health, cost, sick of smoking, and someone else's health. After adjusting for age, European/Other recent quit attempters were found to be more likely than all recent quit attempters to give the following reasons for their most recent quit attempt: their own health, sick of smoking, and smoking is antisocial/not socially acceptable.

## Quit smoking for at least 24 hours in the past 12 months

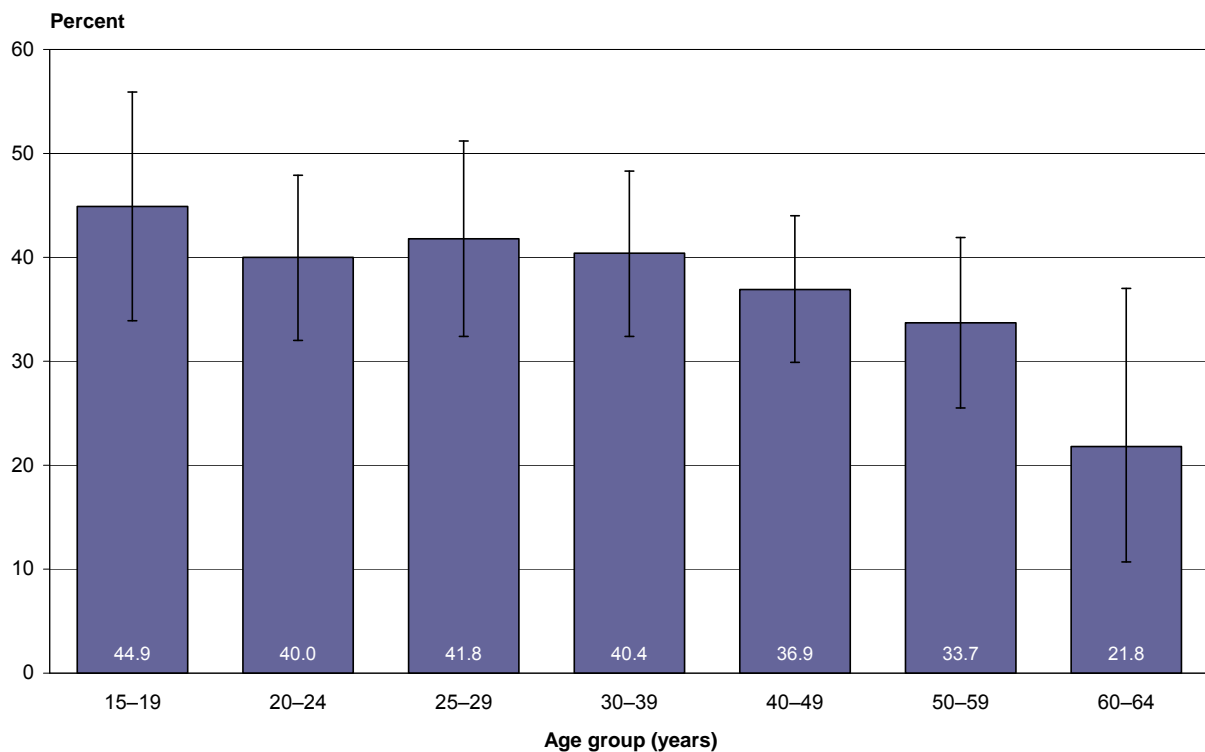
Nearly 4 in 10 current and casual smokers (38.4%, 35.5–41.3) had quit for more than 24 hours in the past 12 months. There were found to be no significant differences by sex, ethnic group, or neighbourhood deprivation, after adjusting for age.

Among current and casual smokers, 16.1% (13.7–18.5) had quit for more than 24 hours once in the past 12 months, 8.0% (6.1–9.8) twice, 3.2% (2.1–4.3) three times and 10.6% (8.5–12.6) four or more times. The median number of times current and casual smokers had quit for more than 24 hours in the past 12 months was two.

## Quit smoking for at least 24 hours in the past 12 months, by age group

In general, older current and casual smokers were less likely than their younger counterparts to have quit smoking for at least 24 hours in the past 12 months. Current and casual smokers aged 60–64 years were significantly less likely to have quit for more than 24 hours in the past 12 months than those aged 15–19, 20–24, 25–29 and 30–39 years ( $p$ -values < 0.05) (Figure 28).

**Figure 28:** Quit smoking for at least 24 hours in the past 12 months, among current and casual smokers aged 15–64 years, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

## **Quit smoking for at least a week in the past 12 months**

Nearly one in four current and casual smokers (23.8%, 21.1–26.4) had quit for at least a week in the past 12 months. Males (28.7%, 24.3–33.0) were significantly more likely than females (20.3%, 16.2–24.4) to have quit for at least a week in the past 12 months ( $p$ -value < 0.05), after adjusting for age.

There were no significant differences by ethnic group or neighbourhood deprivation.

Among current and casual smokers, 13.3% (11.2–15.3) had quit for at least a week once in the past 12 months, 4.5% (3.1–5.8) twice, 1.7% (1.0–2.7) three times and 4.3% (2.8–5.8) four or more times.

The median number of times current and casual smokers had quit for at least a week in the past 12 months was one.

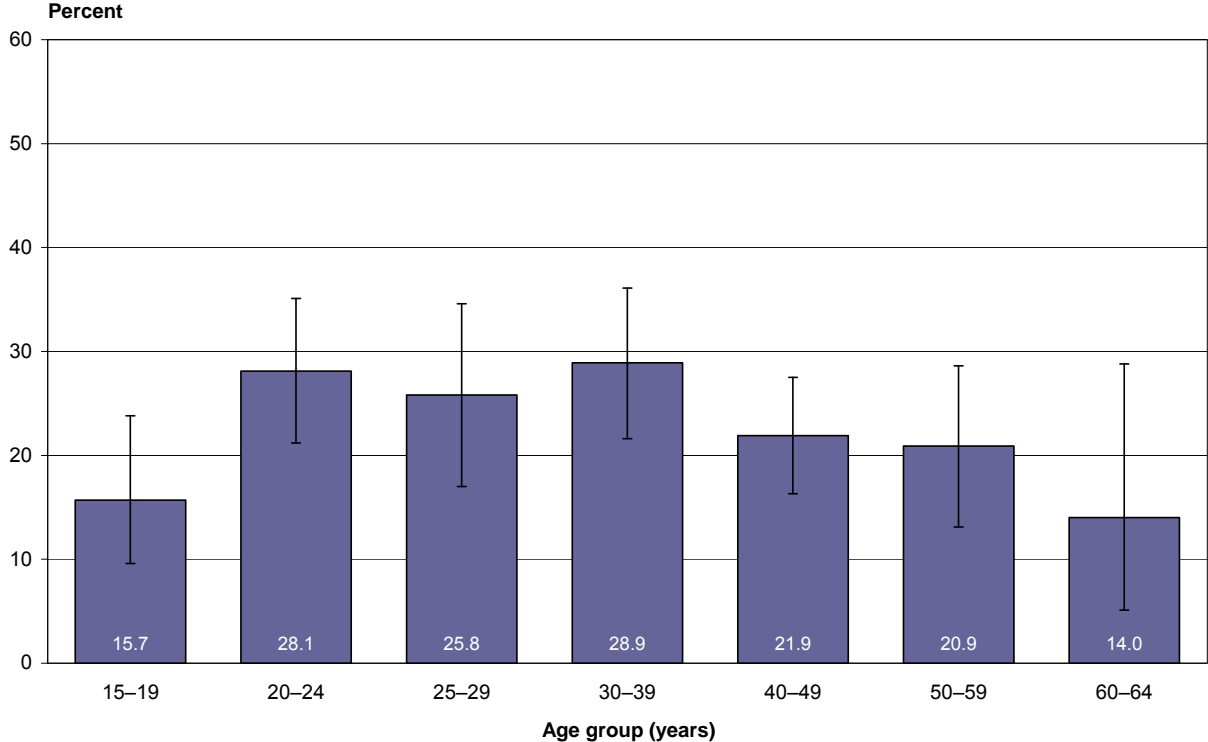
In 2008 and 2009, the average number of times current and casual smokers quit smoking for at least a week in the past 12 months was one for both males and females aged 20–64 years.

For Māori, in 2008 the average number of times current and casual smokers had quit for at least a week in the past 12 months was one for both males and females aged 20–64 years. In 2009, this number had increased to two for Māori males but remained at one for Māori females.

**Quit smoking for at least a week in the past 12 months, by age group**

Among current and casual smokers, significantly fewer 15–19-year-olds had quit smoking for at least a week in the past 12 months than 20–24 and 30–39-year-olds (p-values < 0.05) (Figure 29).

**Figure 29:** Quit smoking for at least a week in the past 12 months, among current and casual smokers aged 15–64 years, by age group, 2009 (unadjusted prevalence)



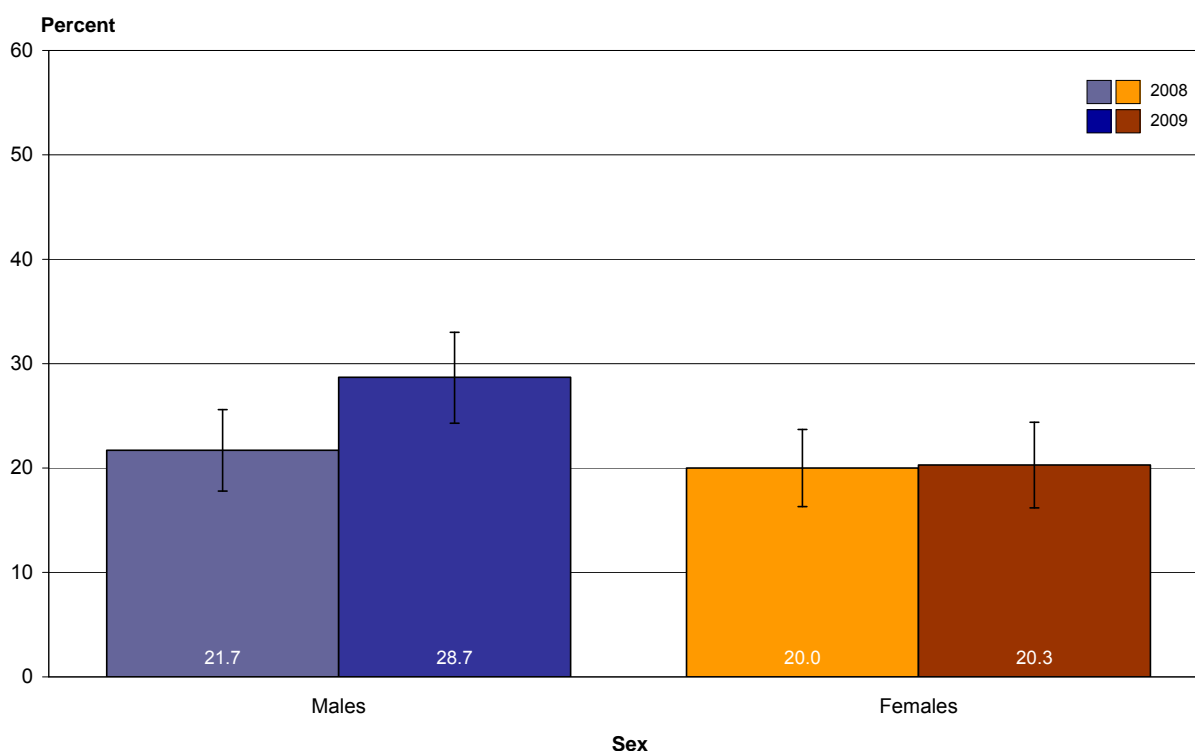
Source: 2009 New Zealand Tobacco Use Survey

### Time trends in quit smoking for at least a week in the past 12 months

The 2006 NZTUS data were excluded from the time trends analysis of current and casual smokers who quit smoking in the past 12 months for at least a week. This is because the 2006 NZTUS data are not comparable with the 2008 and 2009 NZTUS data due to differences in the questionnaire (refer to Chapter 2: Methodology for further details).

The age-standardised prevalence of males aged 15–64 years who quit smoking in the past 12 months for at least a week increased significantly between 2008 and 2009 (Figure 30). There was no difference in the proportion of females aged 15–64 years who quit smoking in past 12 months for at least a week between 2008 and 2009.

**Figure 30:** Quit smoking for at least a week in the past 12 months, among current and casual smokers aged 15–64 years, by sex, 2008–2009 (age-standardised prevalence)



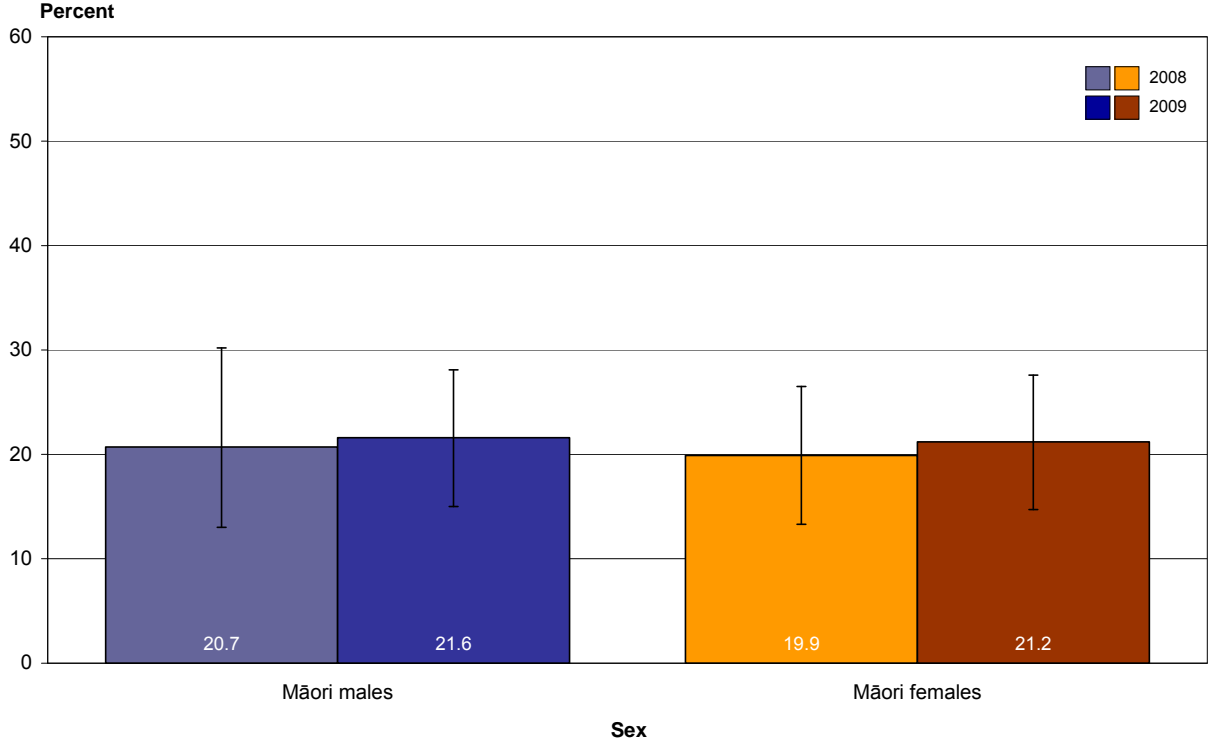
Sources: 2008 and 2009 New Zealand Tobacco Use Surveys

Note: Age standardised to the WHO world population.



For Māori, there was no change between 2008 and 2009 in the age-standardised prevalence of males or females aged 15–64 years who quit smoking in the past 12 months for at least a week (Figure 31).

**Figure 31:** Quit smoking for at least a week in the past 12 months, among Māori current and casual smokers aged 15–64 years, by sex, 2008–2009 (age-standardised prevalence)



Sources: 2008 and 2009 New Zealand Tobacco Use Surveys  
Note: Age standardised to the WHO world population.

## **Successful quitting**

Successful quitting can be defined as having quit smoking 6–12 months ago and remaining abstinent since then. Research has found that approximately 70–80% of smokers who quit for 6–12 months become lifelong ex-smokers (Stapleton 1998).

At the time of the survey, approximately 21,800 (0.8%, 0.5–1.1) New Zealanders aged 15–64 years had quit smoking in the past 6–12 months and had remained abstinent. There were no significant differences in the proportions who had successfully quit by sex, age, ethnic group or deprivation. This may be due to the fact that the number of survey respondents who had successfully quit smoking in the past 6–12 months was too small to enable the detection of significant differences.

## **Time trends in successful quitting**

There was no significant difference between 2006 and 2009 in the age-standardised prevalence of males or females aged 20–64 years in the total population who quit smoking 6–12 months ago and remained abstinent since then. Similarly, there was no significant difference between 2006 and 2009 in the age-standardised prevalence of Māori males or Māori females aged 20–64 years who successfully quit smoking 6–12 months ago (graphs not shown).

## Chapter 8: Use of Quitting Advice or Products

There are a number of products available in New Zealand to help people quit smoking. Survey respondents aged 15–64 years were asked to identify any help, advice, programmes or products they used to help them quit during their most recent quit attempt. Their responses were grouped into the following categories:

- nicotine replacement therapy (nicotine patches, nicotine gum, microtab<sup>9</sup> and nicotine inhalers)
- other medicinal therapy (lozenges,<sup>10</sup> Zyban<sup>11</sup> and Champix<sup>12</sup>)
- the Quitline
- GP
- other health care worker (doctor from a hospital, dentist, nurse, pharmacist or midwife)
- a friend or family member
- something else (another stop smoking programme, a school counsellor, some other advisor not mentioned elsewhere, the Internet, a texting service, a self-help book, some other product not mentioned elsewhere).

### Use of any quitting products or advice in most recent quit attempt

More than one-third (37.9%, 33.5–42.3) of recent quit attempters used quitting products or advice in their most recent quit attempt. There were no significant differences by sex.

<sup>9</sup> Microtab is a sublingual (under the tongue) nicotine replacement tablet. Nicotine is released and absorbed through the lining of the mouth.

<sup>10</sup> 'Lozenges' were not defined in the NZTUS 2009 questionnaire. Lozenges may or may not include nicotine, and as such have not been included in the nicotine replacement therapy category.

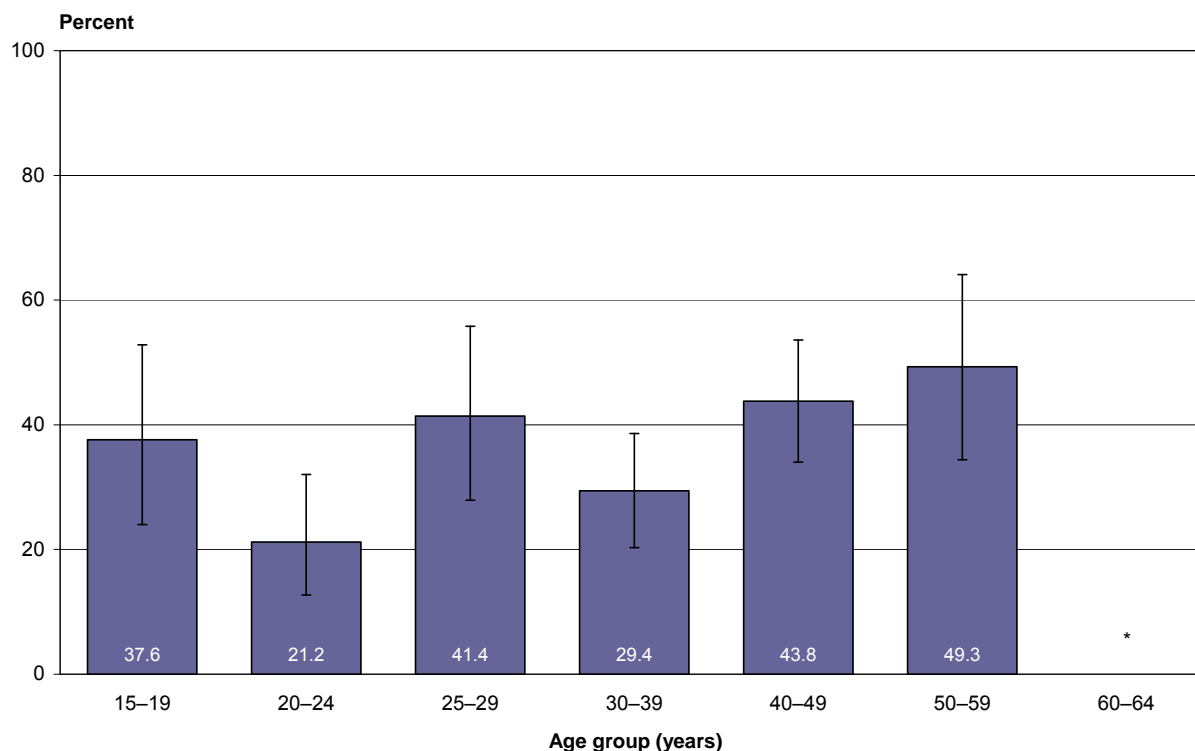
<sup>11</sup> Zyban is an antidepressant and smoking cessation aid. It reduces the severity of nicotine cravings and withdrawal symptoms.

<sup>12</sup> Champix is a medicine developed specifically as an aid to smoking cessation. It is a nicotinic receptor partial agonist, and as such reduces cravings for and decreases the pleasurable effects of cigarettes and other tobacco products.

### Use of any quitting products or advice in most recent quit attempt, by age group

Recent quit attempters aged 20–24 years were less likely to have used quitting products or advice in their most recent quit attempt than those in some of the older age groups (25–29, 40–49 and 50–59-year-olds) ( $p$ -values < 0.05) (Figure 32).

**Figure 32:** Used quitting products or advice in most recent quit attempt, among recent quit attempters aged 15–64 years, by age group (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

\* The value for 60–64-year-olds cannot be provided due to small numbers.

### Use of any quitting products or advice in most recent quit attempt, by ethnic group

Table 7 gives an indication of the proportion of 15–64-year-old recent quit attempters who used quitting products or advice in their most recent quit attempt, by ethnic group.

**Table 7:** Used quitting products or advice in most recent quit attempt, among recent quit attempters aged 15–64 years, by ethnic group (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	43.0 (37.2–48.7)	86,100
Māori	32.2 (24.5–40.0)	22,500
Pacific	15.6 (8.3–25.8)	4400
Asian	20.7 (5.6–46.0)	4600

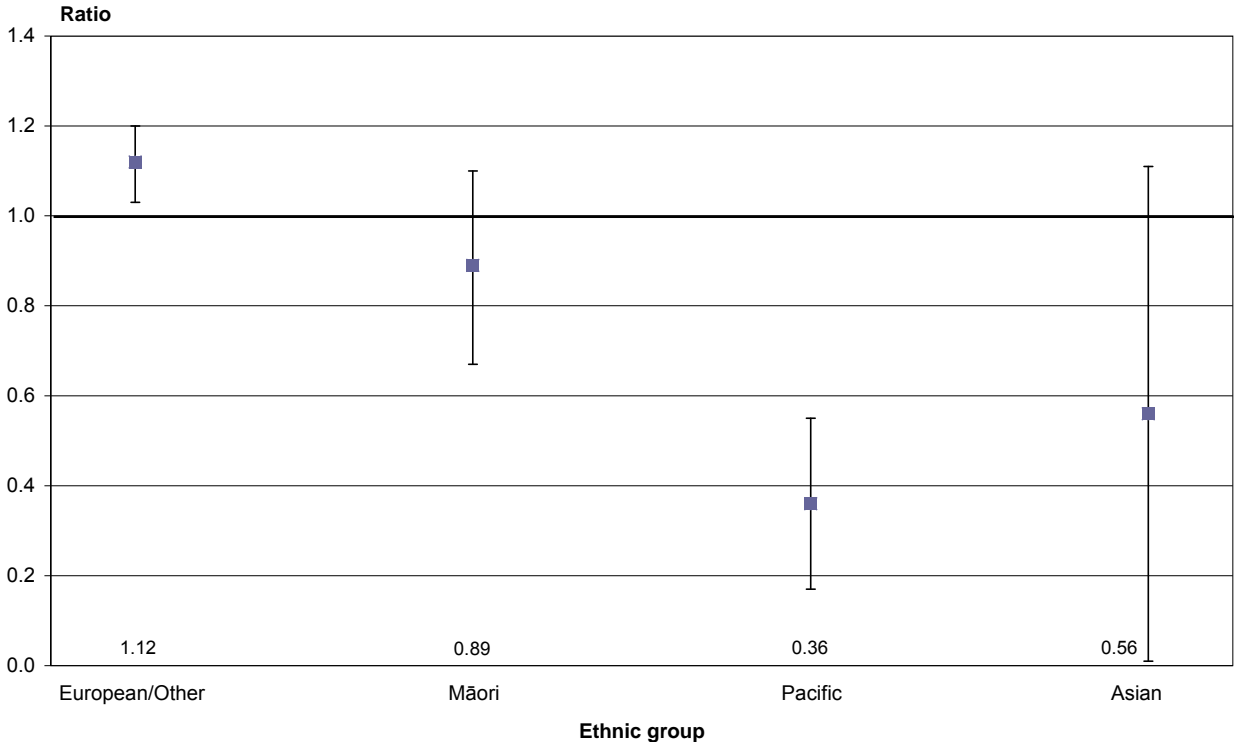
Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, 15–64-year-old Pacific recent quit attempters were found to be two-thirds less likely than all 15–64-year-old recent quit attempters to have used quitting products or advice in their most recent quit attempt (Figure 33). European/Other recent quit attempters were more likely to report using quitting products or advice in their most recent quit attempt than all 15–64-year-old recent quit attempters.

After adjusting for age, no significant difference was found between Māori or Asian 15–64-year-old recent quit attempters and all 15–64-year-old recent quit attempters in the use of quitting products or advice in their most recent quit attempt.

**Figure 33:** Used quitting products or advice in most recent quit attempt, among recent quit attempters aged 15–64 years, by ethnic group (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

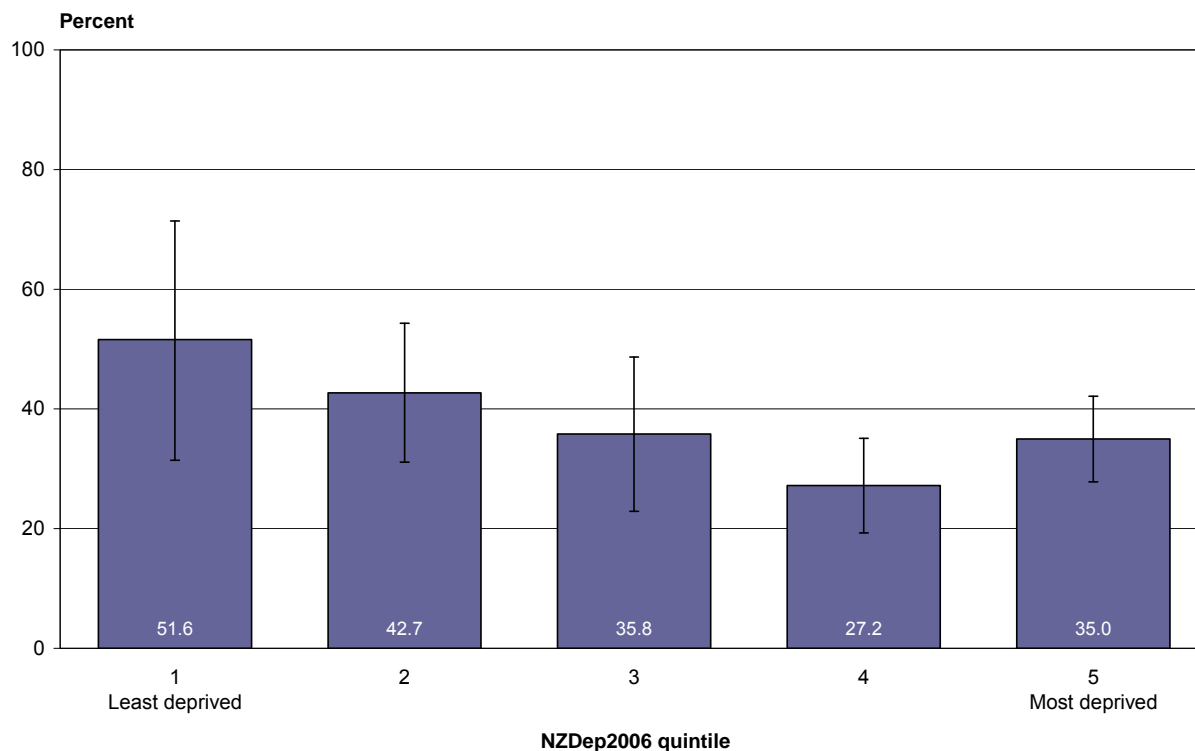
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents all recent quit attempters aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

### Use of any quitting products or advice in most recent quit attempt, by neighbourhood deprivation

Recent quit attempters aged 15–64 years in the least deprived areas were significantly more likely to have used quitting products or advice in their most recent quit attempt than those in the more deprived areas (confirmed using logistic regression) (Figure 34).

**Figure 34:** Used quitting products or advice in most recent quit attempt, among recent quit attempters aged 15–64 years, by neighbourhood deprivation (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

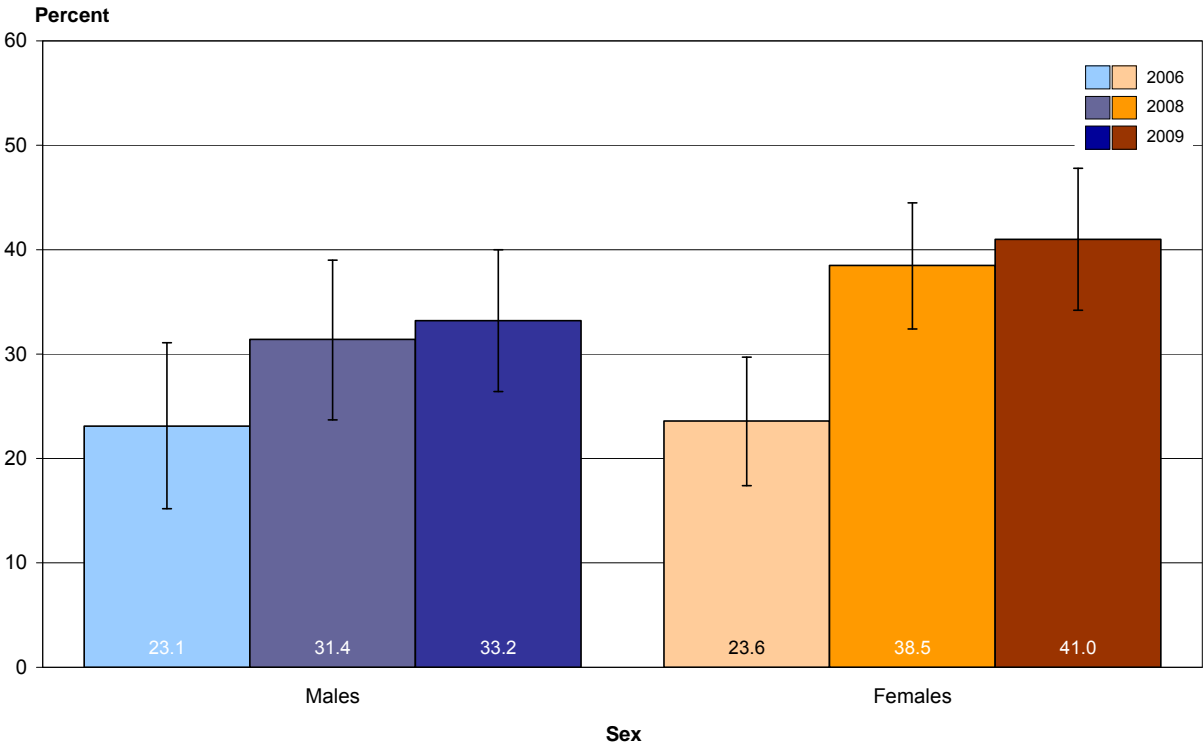
Note: Age standardised to the WHO world population.

**Time trends in the use of any quitting products or advice in most recent quit attempt**

As noted in the methodology chapter, caution is needed when comparing the proportion of people who used quitting products or advice in their most recent quit attempt between the 2006 NZTUS and the 2008 and 2009 NZTUS. It is possible that the observed increases between 2006 and 2008/2009 in the proportion of recent quit attempters receiving advice or using any products to help quit reflect methodological differences between the questionnaires.

After adjusting for age, female recent quit attempters were found to be have been significantly more likely to receive advice or use products to help quit in 2009 than in 2006. The pattern over time was similar for males, though not statistically significantly so (Figure 35).

**Figure 35:** Received advice or used any products to help quit, among recent quit attempters aged 20–64 years, by sex, 2006–2009 (age-standardised prevalence)



Sources: 2006, 2008 and 2009 New Zealand Tobacco Use Surveys

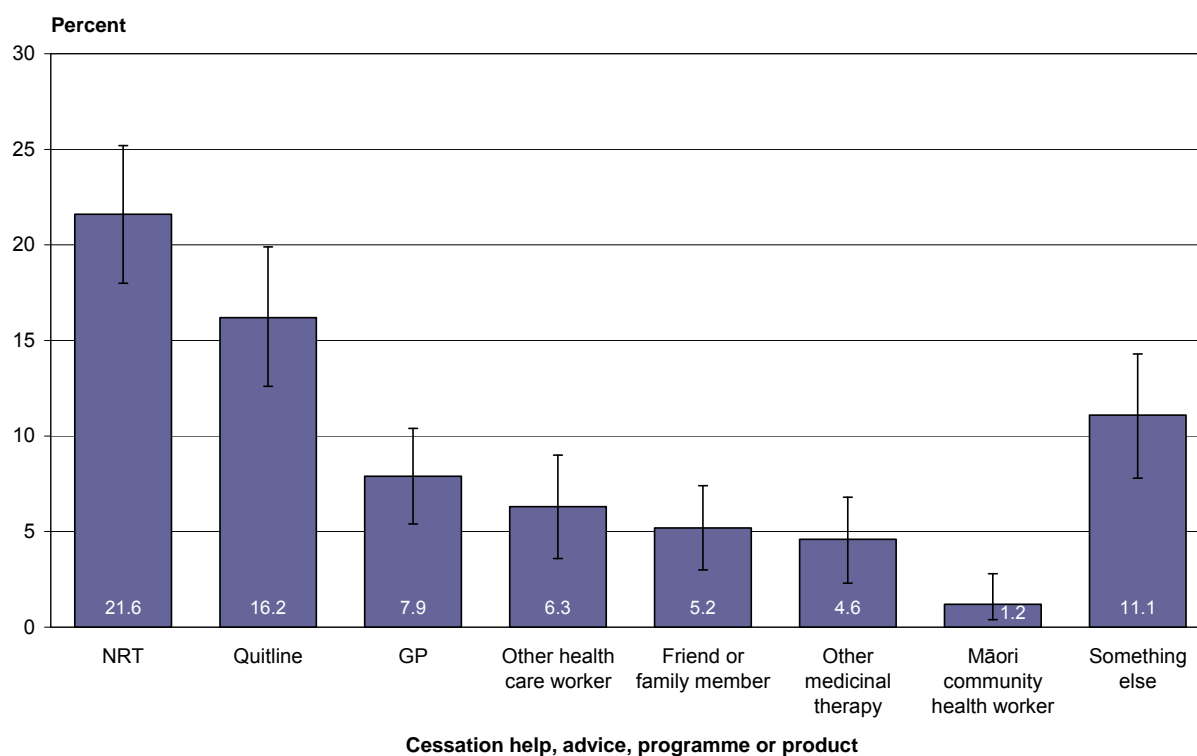
Note: Age standardised to the WHO world population.

For Māori, there was no significant difference between 2006 and 2009 for males or females in the age-standardised prevalence of recent quit attempters who received advice or products (graph not shown).

## Services and products used in most recent quit attempt

The most common quitting product or service recent quit attempters used in their most recent quit attempt was nicotine replacement therapy (NRT). The Quitline was used by around one in six recent quit attempters, while one in 13 received help from their general practitioner (GP) (Figure 36).

**Figure 36:** Services and products used in most recent quit attempt, among recent quit attempters aged 15–64 years (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

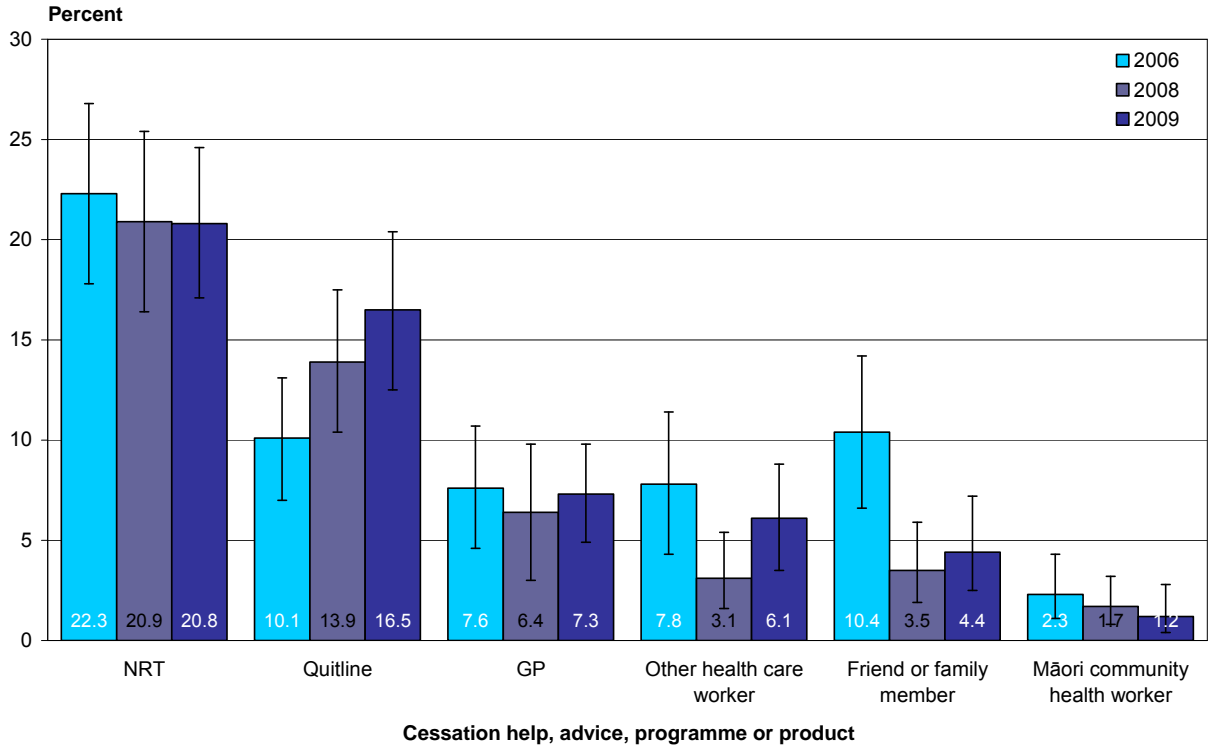
Note: Recent quit attempters were able to select multiple help, advice, programmes and products used in their most recent quit attempt, and so may be included in more than one category. For example, many Quitline users will also use NRT sourced from the Quitline in a quit attempt.



### Time trends in services and products used in most recent quit attempt

There was a significant increase between 2006 and 2009 in the proportion of people who used the Quitline in their last quit attempt, after adjusting for age (p-value < 0.05). In contrast, use of friends or family significantly decreased between 2006 and 2009 (p-value < 0.05). There were no other significant changes between 2006 and 2009 in the services or advice used by recent quit attempters in their last quit attempt (Figure 37).

**Figure 37:** Services and products used in most recent quit attempt, among recent quit attempters aged 20–64 years, 2006–2009 (age-standardised prevalence)



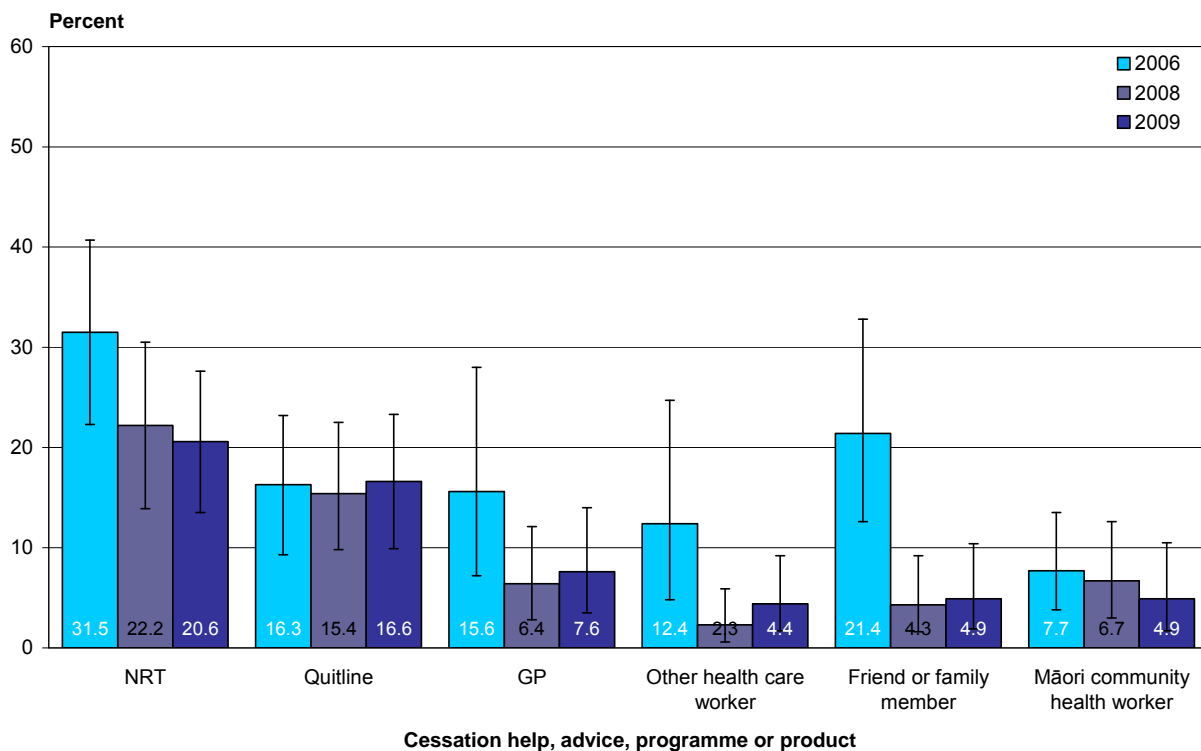
Sources: 2006, 2008 and 2009 New Zealand Tobacco Use Surveys

Notes:

1. Age standardised to the WHO world population.
2. Recent quit attempters were able to select multiple services or advice used in their most recent quit attempt, and so may be included in more than one category.

For Māori, the age-standardised prevalence of NRT use by recent quit attempters in their last quit attempt declined between 2006 and 2009, along with the use of most other cessation advice, services and products (Figure 38). However, only the decline in the use of friends or family between 2006 and 2009 was significant. Utilisation of the Quitline was the only exception to this decline, with usage rates remaining relatively stable.

**Figure 38:** Services and products used in most recent quit attempt, among Māori recent quit attempters aged 20–64 years, 2006–2009 (age-standardised prevalence)



Sources: 2006, 2008 and 2009 New Zealand Tobacco Use Surveys

Notes:

1. Age standardised to the WHO world population.
2. Recent quit attempters were able to select multiple services or advice used in their most recent quit attempt and so may be included in more than one category.

## Use of the Quitline

The National Quitline, run by the Quit Group, was launched in 1999 and is funded by the Ministry of Health. The Quitline is a free quit-smoking telephone helpline. Callers can:

- request a quit pack containing practical quit-smoking advice and information
- register on the Quitline programme for ongoing advice and support
- get exchange vouchers (Quitcards) for subsidised nicotine patches, lozenges or gum, where suitable.

Quitline was used by one in six (16.2%, 12.6–19.9) recent quit attempters in their most recent quit attempt. There were no significant differences in the use of the Quitline by sex, age group or neighbourhood deprivation, after adjusting for age.

### Use of the Quitline, by ethnic group

Table 8 gives an indication of the proportion of 15–64-year-old recent quit attempters who used the Quitline in their most recent quit attempt, by ethnic group.

**Table 8:** Use of the Quitline in most recent quit attempt, among recent quit attempters aged 15–64 years, by ethnic group (unadjusted prevalence)

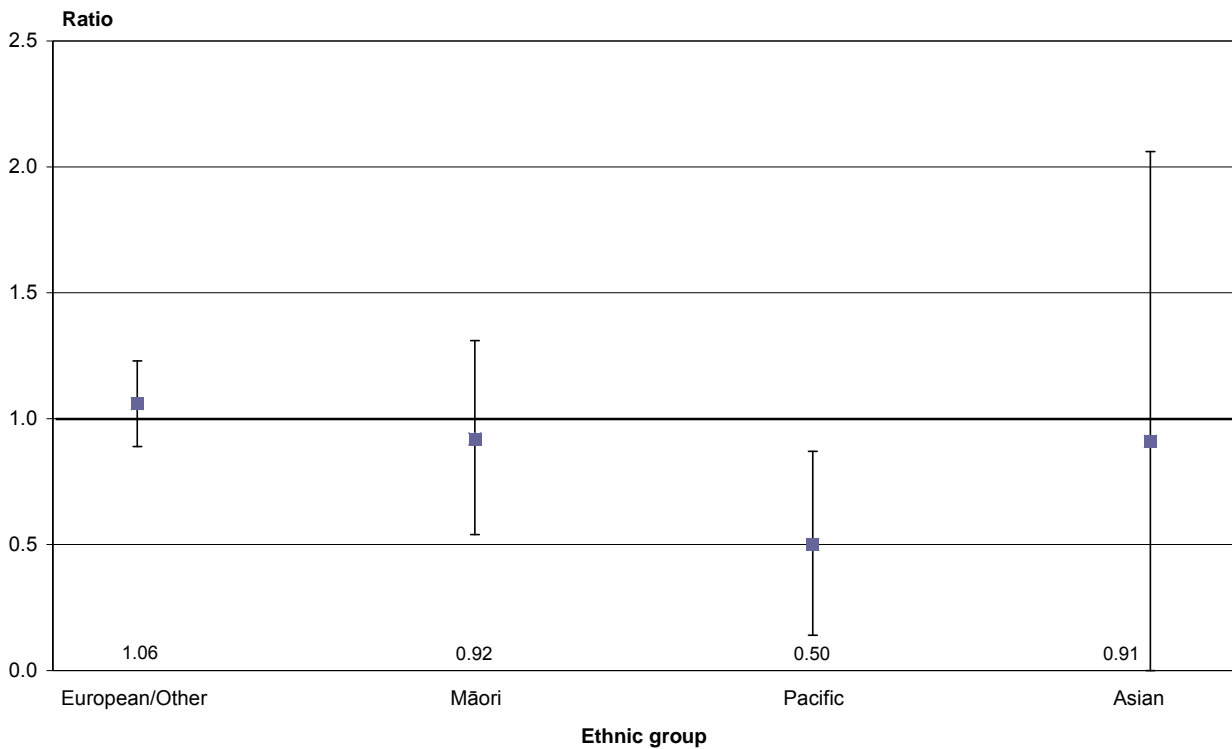
Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	17.4 (12.8–22.1)	34,900
Māori	14.0 (8.3–19.7)	9800
Pacific	8.9 (3.7–17.4)	2500
Asian	14.5 (2.4–40.0)	3300

Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, 15–64-year-old Pacific recent quit attempters were half as likely as all 15–64-year-old recent quit attempters to have used the Quitline in their most recent quit attempt (Figure 39). There were no other significant differences by ethnic group.

**Figure 39:** Use of the Quitline during most recent quit attempt, among recent quit attempters aged 15–64 years, by ethnic group (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents all recent quit attempters aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

## Use of nicotine replacement therapy

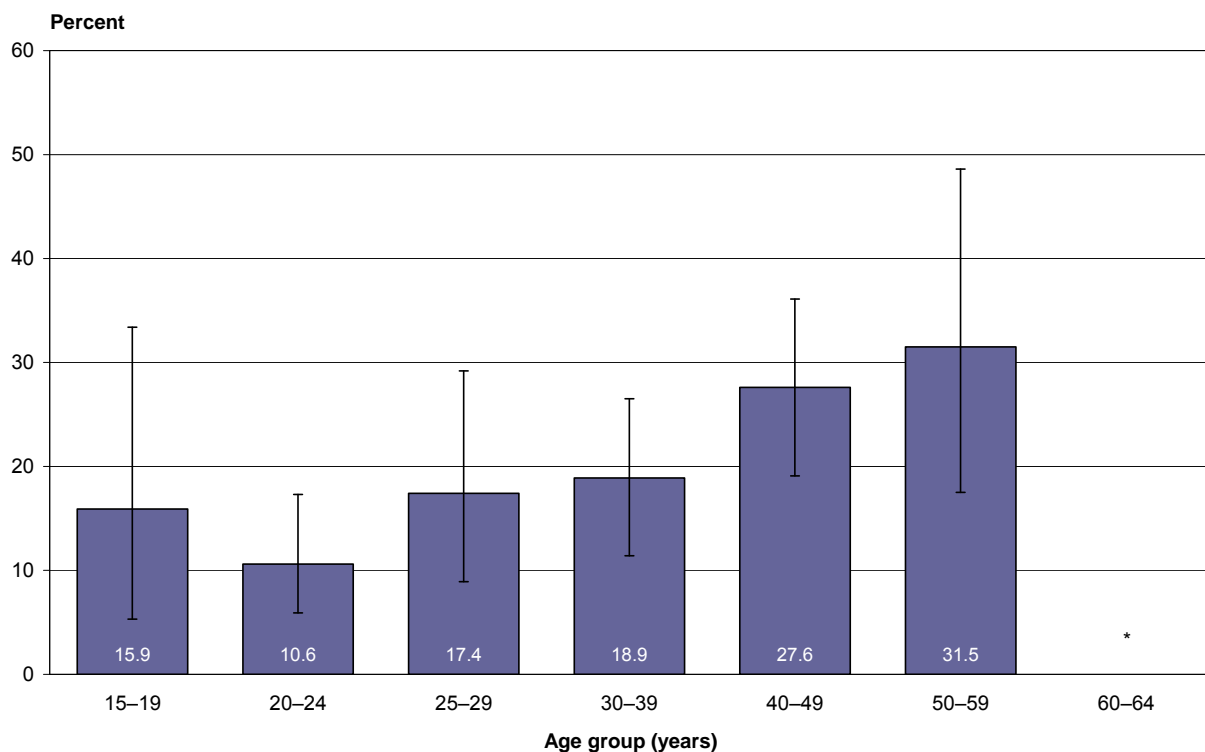
Nicotine replacement therapy (NRT) in the New Zealand setting includes patches, gum and lozenges. These products work by reducing the severity of nicotine withdrawal symptoms by replacing some of the nicotine a smoker usually gets from cigarettes. It is a safe and effective treatment that doubles the chances of long-term quitting success. NRT has not been shown to cause cancer or heart disease, and is much safer than smoking (The Quit Group 2009).

There were no significant differences in use of NRT by sex or neighbourhood deprivation.

### Use of nicotine replacement therapy, by age group

The recent quit attempters in the older age groups were more likely to use NRT in their most recent quit attempt than those in younger age groups (confirmed using logistic regression) (Figure 40).

**Figure 40:** Use of NRT during most recent quit attempt, among recent quit attempters aged 15–64 years, by age group (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

\* The value for 60–64-year-olds cannot be provided due to small numbers.

## Use of nicotine replacement therapy, by ethnic group

Table 9 gives an indication of the proportion of 15–64-year-old recent quit attempters who used NRT in their most recent quit attempt, by ethnic group.

**Table 9:** Use of NRT during most recent quit attempt, among recent quit attempters aged 15–64 years, by ethnic group (unadjusted prevalence)

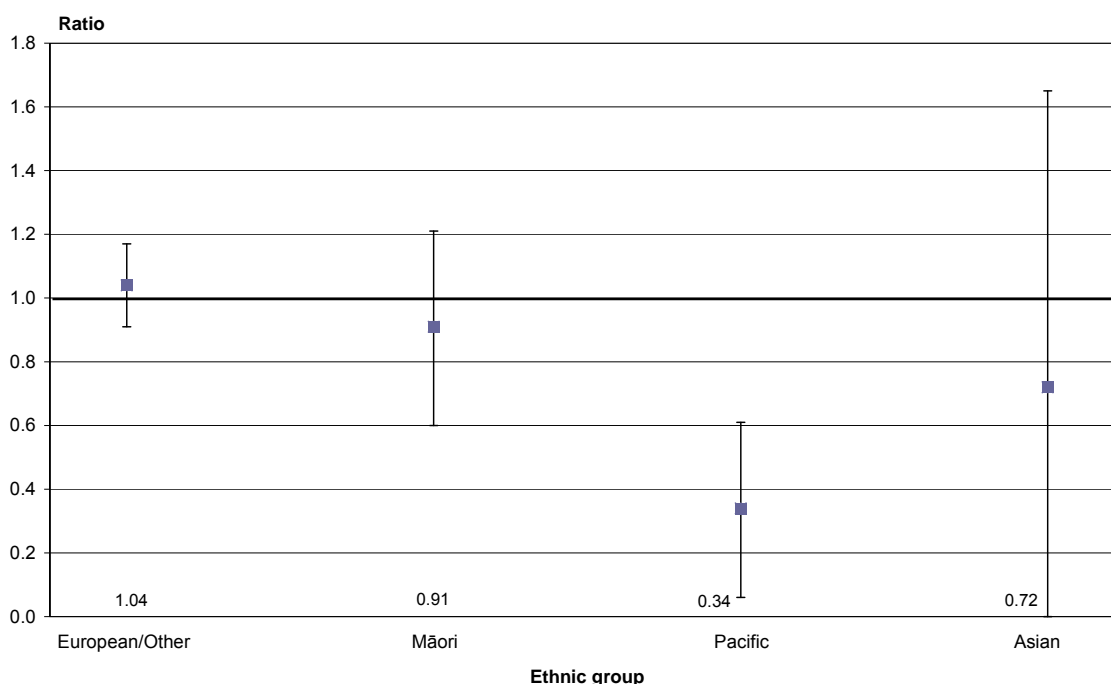
Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	23.6 (18.8–28.4)	47,300
Māori	18.3 (12.5–24.1)	12,800
Pacific	8.1 (2.6–18.1)	2300
Asian	12.4 (1.6–37.5)	2800

Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, 15–64-year-old Pacific recent quit attempters were only about one-third as likely as all 15–64-year-old recent quit attempters to have used NRT in their most recent quit attempt (Figure 41). There were no other significant differences by ethnic group.

**Figure 41:** Use of NRT during most recent quit attempt, among recent quit attempters aged 15–64 years, by ethnic group (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents all recent quit attempters aged 15–64 years.
2. Total response ethnicity has been used.

3. Age standardised to the WHO world population.

### **Source of nicotine replacement therapy**

In November 2000 a national subsidised NRT scheme commenced in New Zealand, aiming to support smokers to quit by providing access to low-cost nicotine patches or gum.

In February 2008 access to subsidised NRT was widened, with Quitcards being able to be distributed by all health professionals with prescribing rights, including GPs, and midwives, dentists, optometrists and nurse practitioners. Quitcards are vouchers given by trained health workers, or sent in the mail by the Quitline, to smokers who wish to quit. On presentation of the Quitcard to a community pharmacy, NRT patches, gum or lozenges are received for a small fee. Without a Quitcard, smokers wanting to quit can purchase selected NRT products over the counter at full price in supermarkets, pharmacies and other retail outlets.

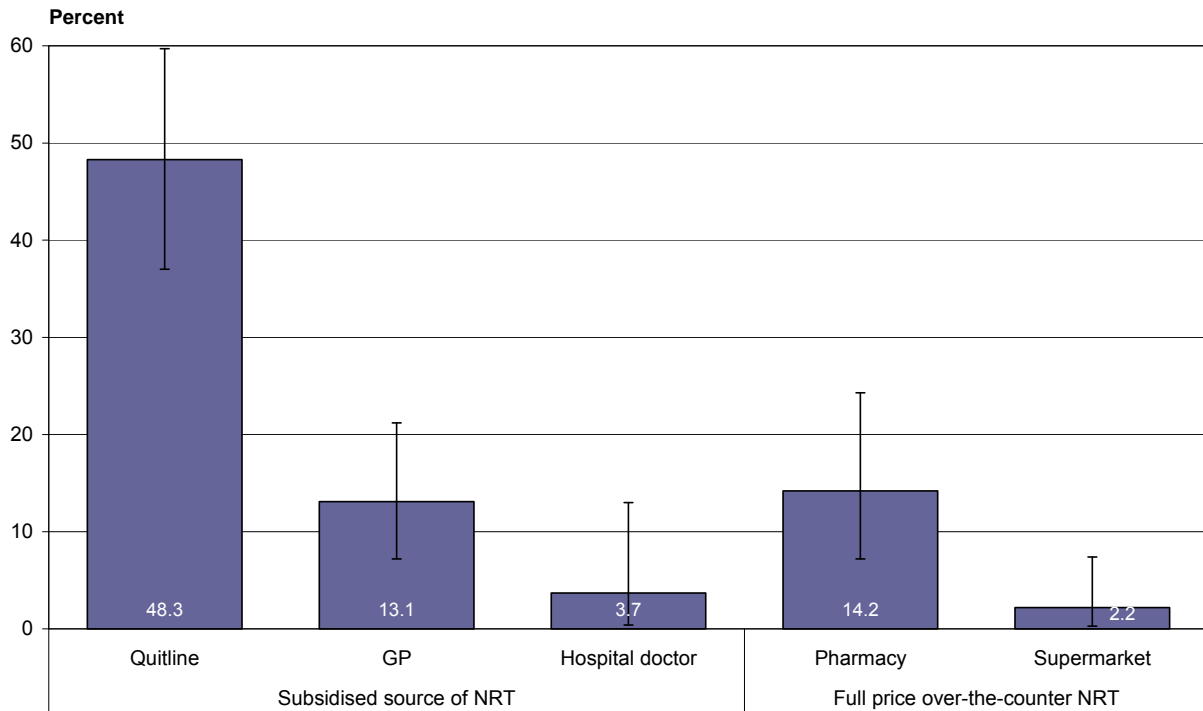
Increased access to subsidised NRT in February 2008 is expected to increase quit attempts, as well as the introduction of pictorial health warnings on cigarette packets, which were introduced at the same time. These new pictorial health warnings also included the Quitline telephone number in a far clearer format (and the Quitline is the major dispenser of Quitcards).

From 1 September 2009 nicotine patches, gum and lozenges were funded upon presentation of either a prescription or a Quitcard. This change enabled medical practitioners (and some other health care workers) to prescribe subsidised NRT on a prescription, as an alternative to Quitcards.

Respondents were asked where they got their NRT from and whether it was subsidised or not. Of those people who had used NRT in their most recent quit attempt, the majority (74.7%, 65.7–83.6) received subsidised NRT, while approximately one in six (16.4%, 9.0–26.4) bought it at full price over the counter.

Nearly half (48.3%, 37.0–59.7) of those who had used NRT received it from the Quitline (Figure 42), while around one in eight (13.1%, 7.2–21.2) got their prescription or Quitcard from their GP. Around one in seven (14.2%, 7.2–24.3) recent quit attempters who used NRT in their most recent quit attempt bought their NRT for full price at a pharmacy, while only 2.2% (0.3–7.4) bought their NRT for full price from a supermarket.

**Figure 42:** Source of NRT, among recent quit attempters aged 15–64 years who used NRT in their most recent quit attempt (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Recent quit attempters were able to select more than one subsidised source of NRT.

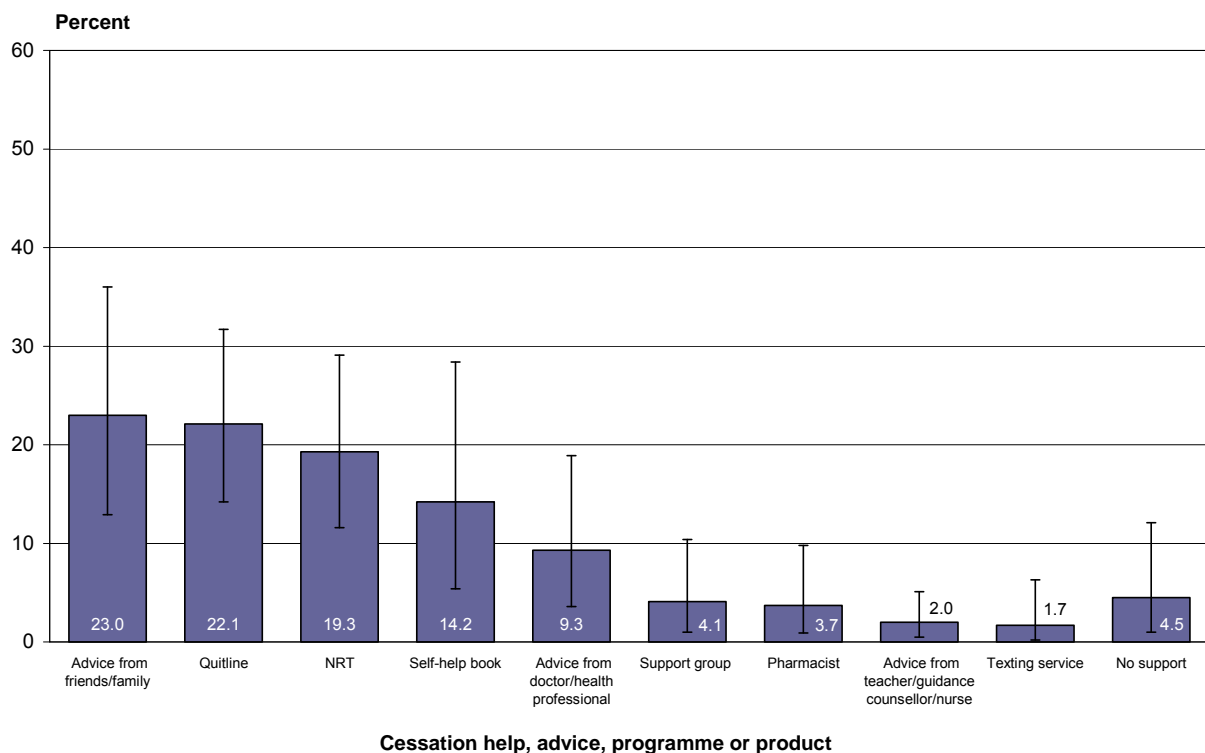


## Preferred choice of services and products among youth

New Zealand youth form a dynamic population who are guided by contemporary social norms, influences and technologies and are therefore a key population who may benefit from smoking cessation initiatives. Developing a better understanding of services and products that youth would consider using to help them quit will enable quitting initiatives to be developed that meet the needs of youth.

Youth current smokers aged 15–19 years were asked what services they would consider using to help them quit if they were thinking about quitting. Advice from friends or family, the Quitline and NRT were the most common sources of help that youth would consider using to help them quit (Figure 43). Around one in 20 youth said that if they were thinking of quitting, they would do it without support.

**Figure 43:** Services and products youth would consider using to help them quit, among current smokers aged 15–19 years, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Youth smokers were able to select multiple services they would consider using to help them quit if they were thinking about quitting and so may be included in more than one category.

## Chapter 9: Use of the ABC Approach by Health Care Workers

The *New Zealand Smoking Cessation Guidelines* provide guidance for health care workers in their contact with smokers (Ministry of Health 2007). The guidelines are structured around the ABC approach for quitting smoking: health care workers should **Ask** about smoking status, give **Brief** advice to stop smoking to all smokers and provide evidence-based **Cessation** (quitting) support for those who wish to stop smoking (Ministry of Health 2009a). Using this approach, health care workers will work towards achieving one of the six 2010/11 Health Targets, 'Better help for smokers to quit' (Ministry of Health 2010). The information contained within this chapter will help to evaluate the achievement of this target.

In 2008/09, District Health Boards (DHBs) were required, for the first time, to formulate a tobacco control plan, which outlined in detail how they were going to reorient current funding/services to provide broader access to cessation support across their services. Implementation of ABC had not begun at the time the 2009 NZTUS was in the field (January to May 2009). This report therefore provides baseline data on the proportion of people experiencing components of the ABC approach.

In September 2009, nicotine replacement therapy (NRT) became available on prescription, resulting in significantly reduced prices for lozenges, patches and gum – down from \$10 to \$3 for two months' supply. The availability of NRT on prescription may have an impact on the ability of general practitioners (GPs) and other health care workers with prescribing rights to provide evidence-based quitting support for those who wish to stop smoking. The baseline data contained within this report will facilitate the evaluation of this.

This chapter presents data relating to the use of the ABC approach by health care workers in general, and GPs in particular. The term 'health care worker' covers GPs, emergency department staff, specialist doctors, nurses, midwives, physiotherapists, counsellors, community support workers, cultural workers and oral health care workers.

Time-trend data relating to the use of the ABC approach by health care workers in general is not presented. This is because the questions asking respondents which health care workers they had seen about their own health differed between 2008 and 2009, making comparisons between the questionnaires unreliable. Consequently, data presented in this report should not be compared with that presented in the quitting report based on the 2008 Tobacco Use Survey data (Ministry of Health 2009c).

## Use of the ABC approach by health care workers

### Asked smoking status by a health care worker

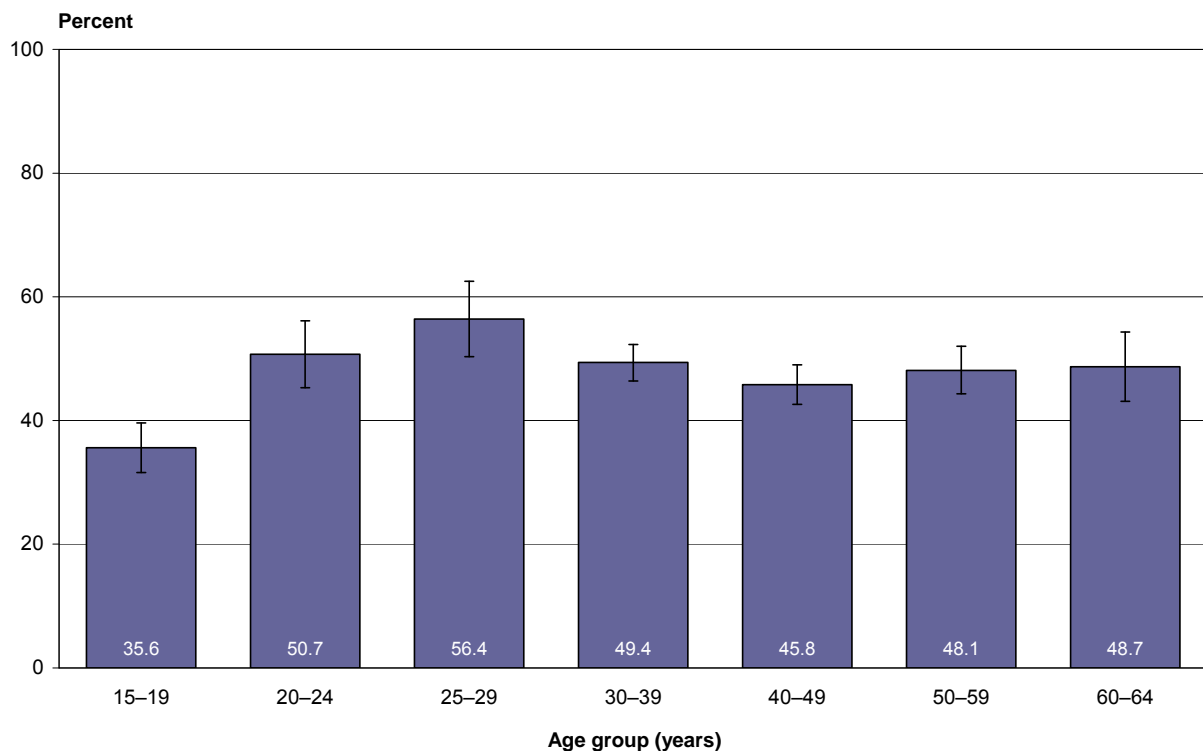
Nearly half (47.5%, 45.8–49.3) of all 15–64-year-olds and nearly three in five current smokers (57.7%, 54.4–61.0) reported that, at some time in the past 12 months, a health care worker had asked if they had ever been or currently were a smoker.

Among current smokers, females (65.0%, 60.4–69.6) were significantly more likely than males (49.8%, 45.1–54.4) to report that they had been asked if they ever had been or currently were a smoker by a health care worker in the past 12 months, after adjusting for age.

### Asked smoking status by a health care worker, by age group

Significantly fewer 15–19-year-olds (35.6%, 31.6–39.6) were asked by a health care worker in the past 12 months if they had ever been or currently were a smoker than all of the older age groups (Figure 44).

**Figure 44:** Asked smoking status by a health care worker in the past 12 months, 15–64-year-old total population, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

## Asked smoking status by a health care worker, by ethnic group

Table 10 gives an indication of the proportion of 15–64-year-olds who were asked if they had ever been or currently were a smoker by a health care worker in the past 12 months, by ethnic group.

**Table 10:** Asked smoking status by a health care worker in the past 12 months, 15–64-year-old total population, by ethnic group (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	48.2 (46.1–50.2)	1,006,100
Māori	56.3 (52.9–59.6)	192,100
Pacific	48.2 (42.8–53.7)	76,400
Asian	36.8 (32.2–41.5)	127,700

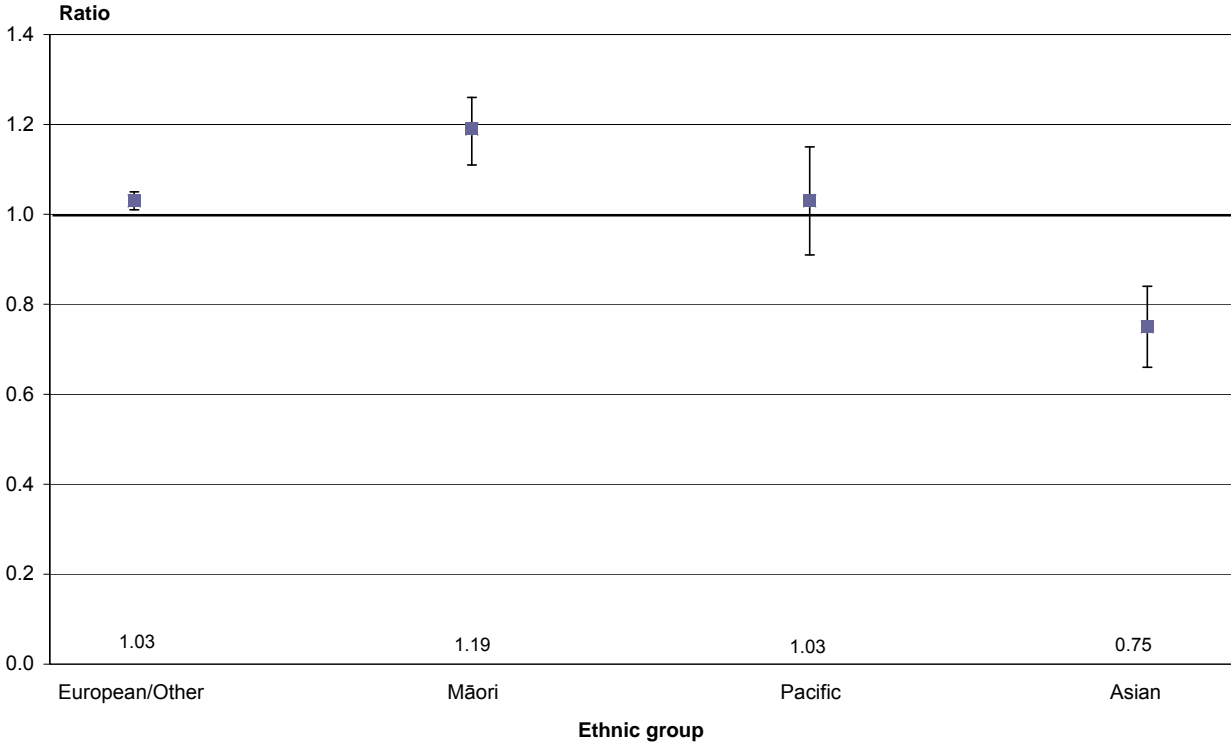
Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, 15–64-year-old European/Other and Māori were found to be significantly more likely than all 15–64-year-olds to report that they had been asked if they had ever been or currently were a smoker by a health care worker in the past 12 months (Figure 45). Asian people were significantly less likely to have been asked their smoking status by a health care worker in the past 12 months than the total 15–64-year-old population.

After adjusting for age, there was found to be no significant difference between 15–64-year-old Pacific people and 15–64-year-olds in the total population in terms of having being asked their smoking status by a health care worker in the past 12 months.

**Figure 45:** Asked smoking status by a health care worker in the past 12 months, 15–64-year-old total population, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

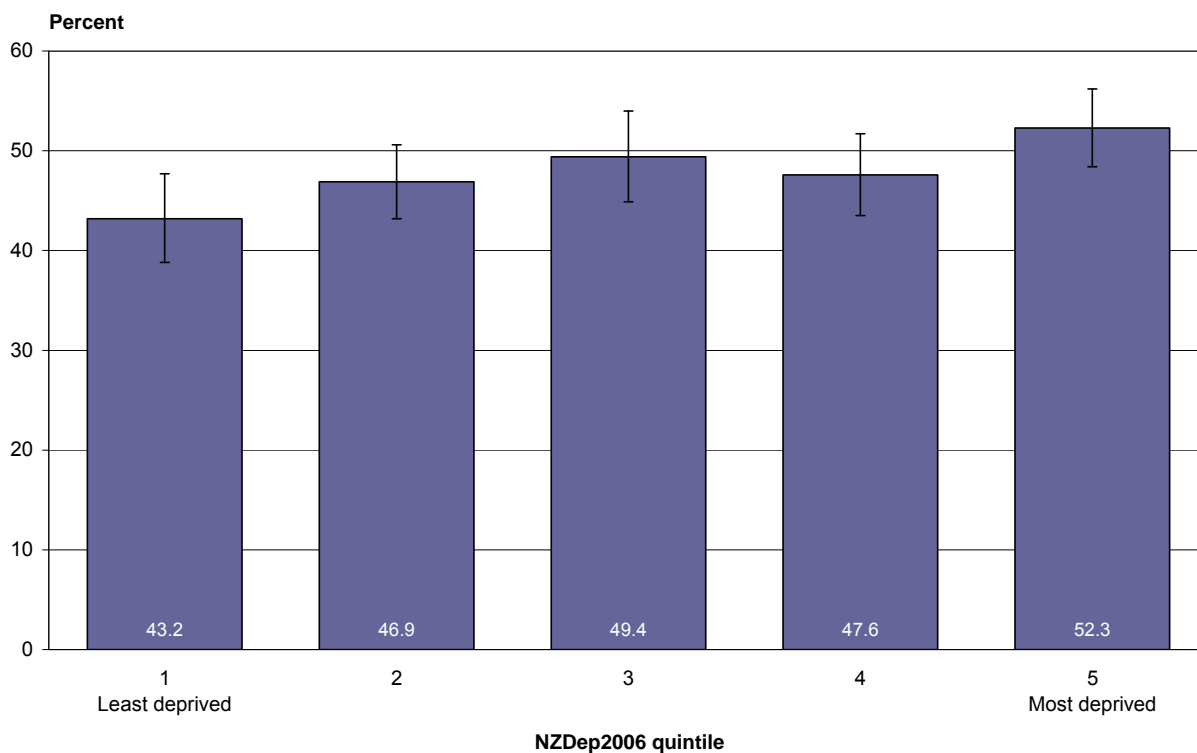
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents the total population aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

### Asked smoking status by a health care worker, by neighbourhood deprivation

People living in the most deprived areas (NZDep 2006 quintile 5) were significantly more likely to have been asked if they had ever been or currently were a smoker by a health care worker in the past 12 months than those living in the least deprived areas (NZDep 2006 quintile 1), after adjusting for age (Figure 46).

**Figure 46:** Asked smoking status by a health care worker in the past 12 months, 15–64-year-old total population, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Age standardised to the WHO world population.

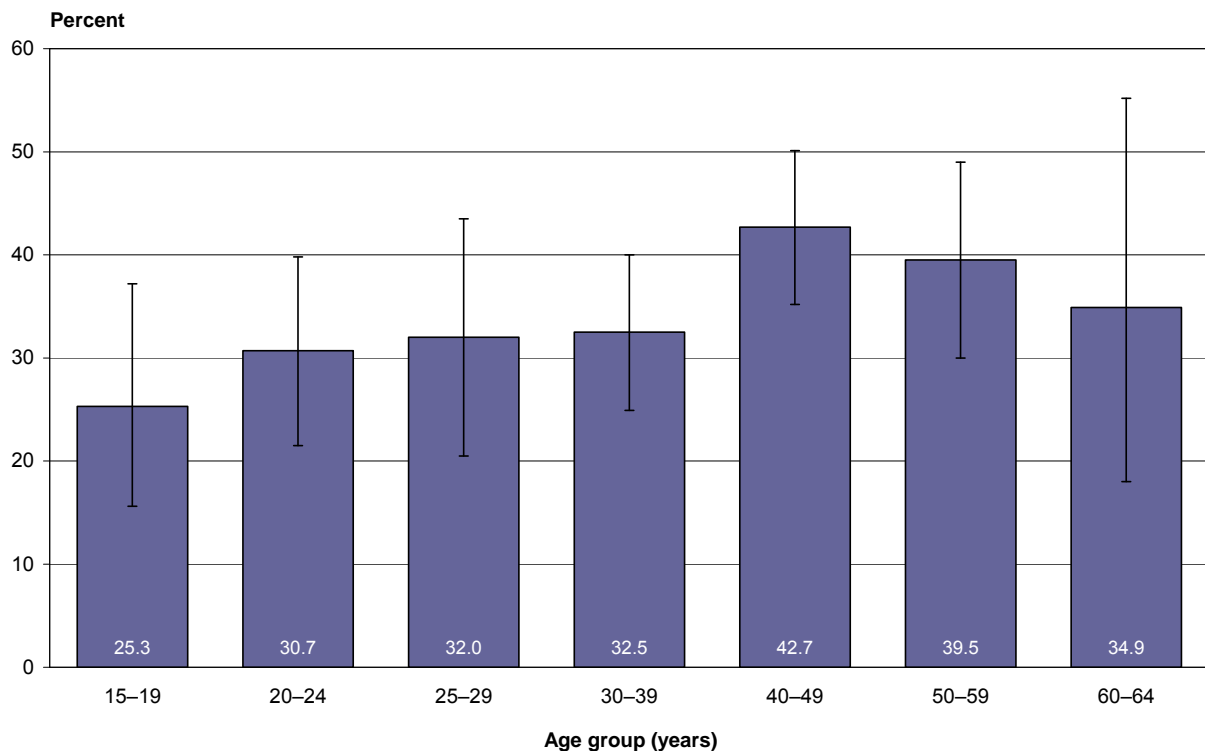
### Provided with quitting advice and referral by a health care worker

More than one-third (35.2%, 31.4–38.9) of 15–64-year-old current smokers who had seen a health care worker were provided with quitting advice or information, referred to quitting programmes or given quitting products by a health care worker in the past 12 months. There were no significant differences by sex or ethnic group, after adjusting for age.

### Provided with quitting advice and referral by a health care worker, by age group

Among current smokers, significantly fewer 15–19-year-olds than 40–49-year-olds were provided quitting advice or information, referred to quitting programmes or given quitting products by a health care worker in the past 12 months ( $p$ -value < 0.05) (Figure 47).

**Figure 47:** Provided with quitting advice and referral by a health care worker in the past 12 months, among 15–64-year-old current smokers who had seen a health care worker in the past 12 months, by age group, 2009 (unadjusted prevalence)

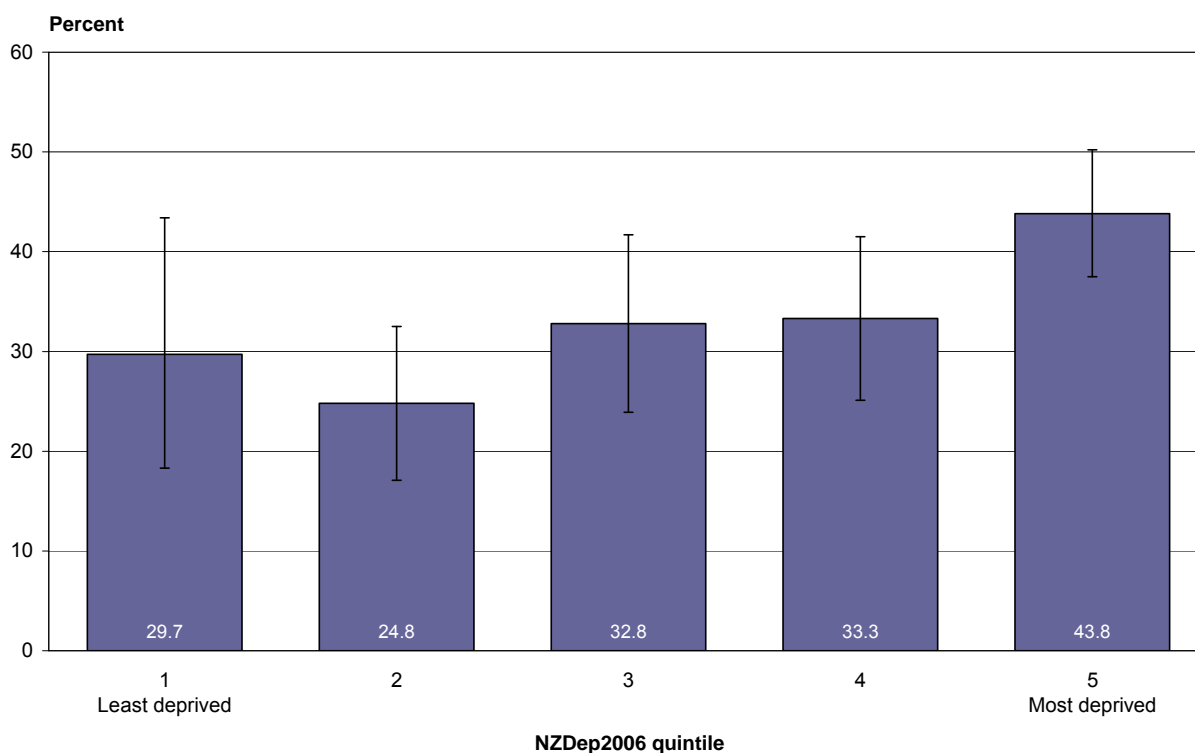


Source: 2009 New Zealand Tobacco Use Survey

## Provided with quitting advice and referral by a health care worker, by neighbourhood deprivation

Current smokers aged 15–64 years living in the most deprived areas (NZDep2006 quintile 5) who had seen a health care worker in the past 12 months were more likely than those in the least deprived areas (NZDep2006 quintiles 1 and 2) to have been provided with quitting advice or information and referred to quitting programmes or given quitting products by a health care worker in the past 12 months, after adjusting for age (p-values < 0.05) (Figure 48).

**Figure 48:** Provided with quitting advice and referral by a health care worker, among 15–64-year-old current smokers who had seen a health care worker in the past 12 months, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Age standardised to the WHO world population.



## Received the ABC approach from a health care worker

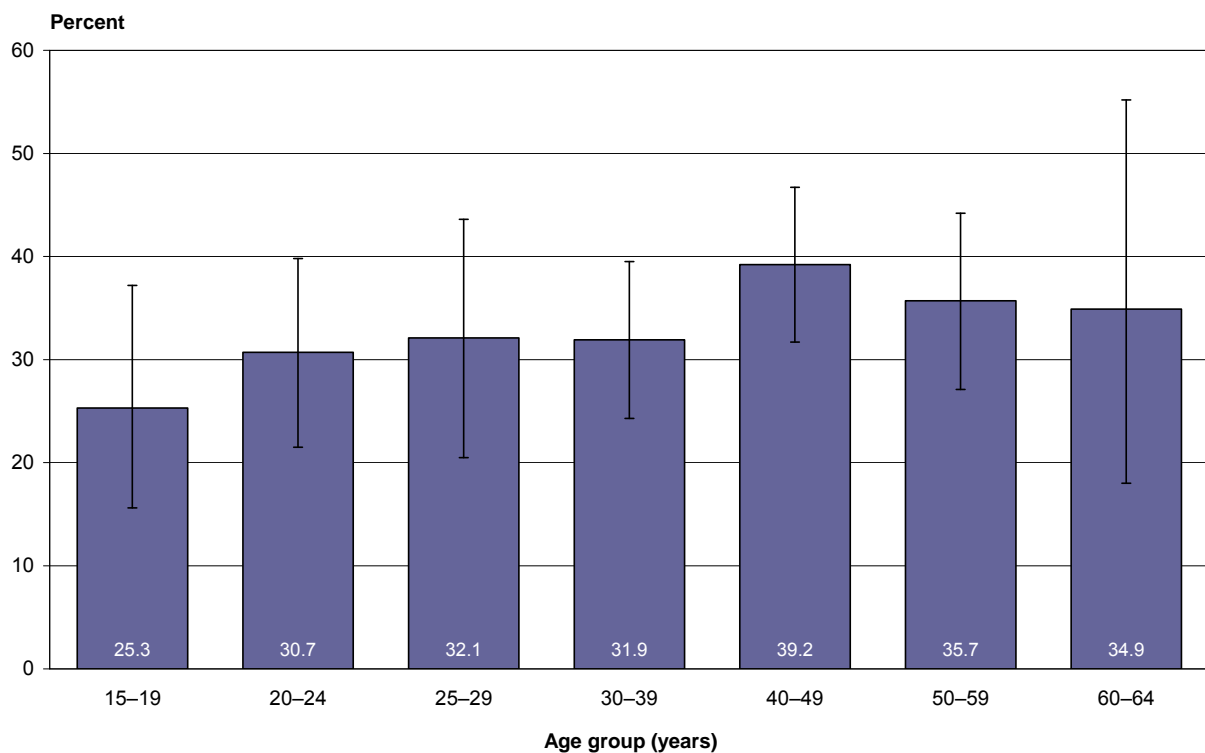
This section presents data for those who received all three components of the ABC approach from a health care worker: asked about their smoking status, given brief advice to stop smoking and provided evidence-based cessation support.

Approximately one-third (33.6%, 30.0–37.2) of 15–64-year-old current smokers who had seen a health care worker received ABC from a health care worker in the past 12 months. There was no significant difference by sex.

### Received the ABC approach from a health care worker, by age group

Among current smokers, significantly fewer 15–19-year-olds than 40–49-year-olds received ABC from a health care worker in the past 12 months (p-value < 0.05) (Figure 49).

**Figure 49:** Received the ABC approach from a health care worker in the past 12 months, among 15–64-year-old current smokers, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

## Received the ABC approach from a health care worker, by ethnic group

Table 11 gives an indication of the proportion of 15–64-year-old current smokers who received ABC from a health care worker in the past 12 months, by ethnic group.

**Table 11:** Received the ABC approach from a health care worker in the past 12 months, among 15–64-year-old current smokers, by ethnic group (unadjusted prevalence)

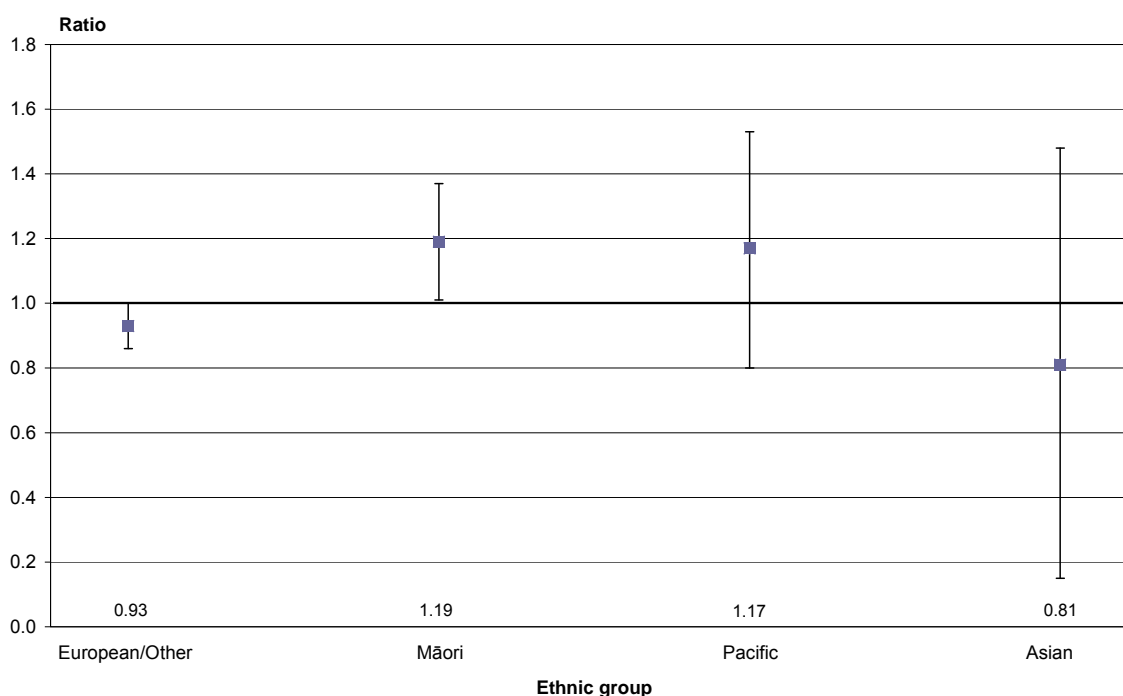
Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	31.5 (27.3–35.7)	98,700
Māori	38.7 (32.4–45.1)	46,100
Pacific	39.1 (27.7–50.6)	14,400
Asian	32.2 (11.8–59.3)	6800

Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, 15–64-year-old Māori current smokers were found to be more likely to receive ABC from a health care worker in the past 12 months than the total population (Figure 50). There were no other significant differences by ethnic group.

**Figure 50:** Received the ABC approach from a health care worker in the past 12 months, among 15–64-year-old current smokers, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

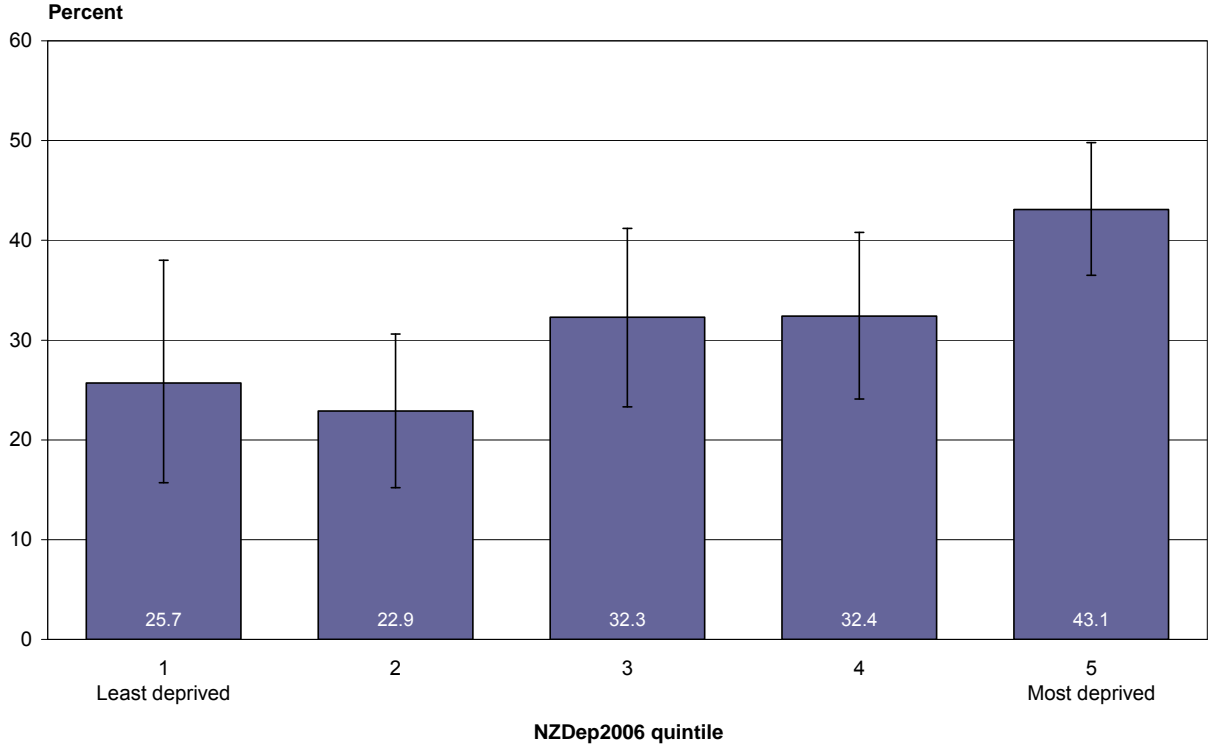
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents total current smokers aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

Received the ABC approach from a health care worker, by neighbourhood deprivation

Current smokers aged 15–64 years in the most deprived areas (NZDep2006 quintile 5) who had seen a health care worker in the past 12 months were more likely than those in the least deprived areas (NZDep2006 quintiles 1 and 2) to have been provided ABC by a health care worker in the past 12 months, after adjusting for age (p-values < 0.05) (Figure 51).

**Figure 51:** Received the ABC approach from a health care worker in the past 12 months, among 15–64-year-old current smokers, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey  
Note: Age standardised to the WHO world population.

## Use of the ABC approach by general practitioners

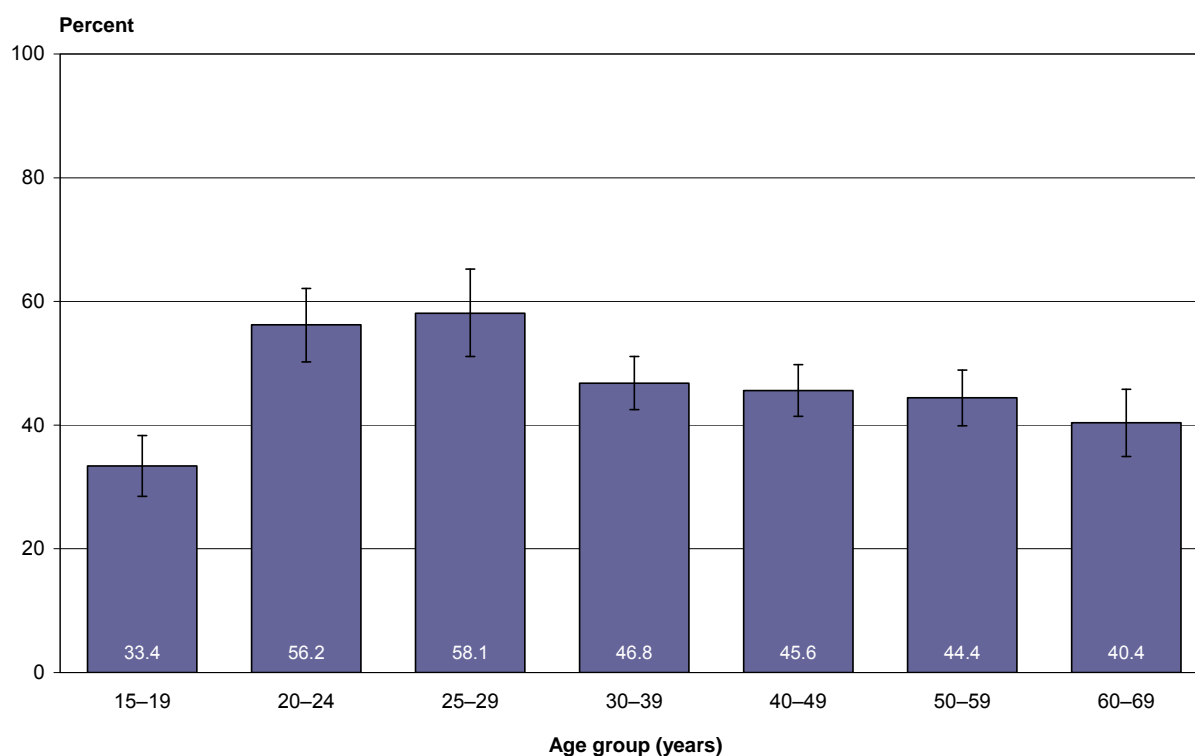
### Asked smoking status by a general practitioner

Nearly half (46.0%, 43.8–48.1) of all 15–64-year-olds and approximately seven in 10 current smokers (70.4%, 66.8–73.9) who had seen a GP in the previous 12 months reported that in the past 12 months a GP had asked if they had ever been or currently were a smoker. In the total 15–64-year-old population, there was no difference between males and females in terms of having been asked their smoking status by a GP in the past 12 months, after adjusting for age.

### Asked smoking status by a general practitioner, by age group

Of those who had seen a GP in the past 12 months, significantly fewer 15–19-year-olds were asked if they had ever been or currently were a smoker than all of the older age groups (Figure 52). In contrast, significantly more 20–24 and 25–29-year-olds who had seen a GP in the past 12 months were asked if they had ever been or currently were a smoker than all of the other age groups.

**Figure 52:** Asked smoking status by a GP in the past 12 months, among the 15–64-year-old total population who had seen a GP in the past 12 months, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

## Asked smoking status by a general practitioner, by ethnic group

Table 12 gives an indication of the proportion of 15–64-year-olds who had seen a GP in the past 12 months who were asked by a GP if they had ever been or currently were a smoker, by ethnic group.

**Table 12:** Asked smoking status by a GP in the past 12 months, among 15–64-year-old total population who had seen a GP in the past 12 months, by ethnic group (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	43.8 (41.3–46.4)	702,000
Māori	60.9 (56.7–65.2)	152,700
Pacific	58.0 (51.1–64.9)	66,000
Asian	44.0 (36.7–51.3)	98,000

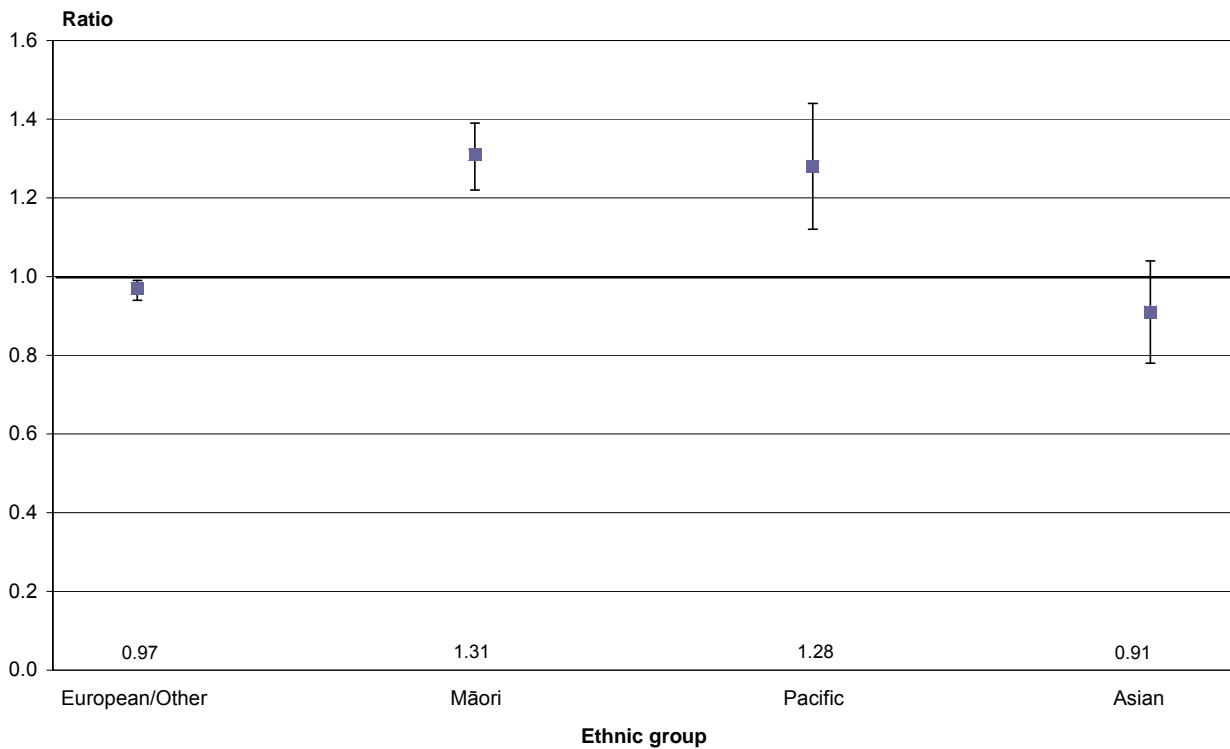
Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, 15–64-year-old Māori and Pacific people who had seen a GP in the past 12 months were found to be significantly more likely than all 15–64-year-olds to report that they had been asked if they had ever been or currently were a smoker by a GP in the past 12 months (Figure 53). European/Other people were significantly less likely to have been asked their smoking status by a GP in the past 12 months than the total 15–64-year-old population.

There was no significant difference between Asian people and the total population in the age-standardised prevalence of having being asked their smoking status by a GP in the past 12 months.

**Figure 53:** Asked smoking status by a GP in the past 12 months, among the 15–64-year-old total population who had seen a GP in the past 12 months, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

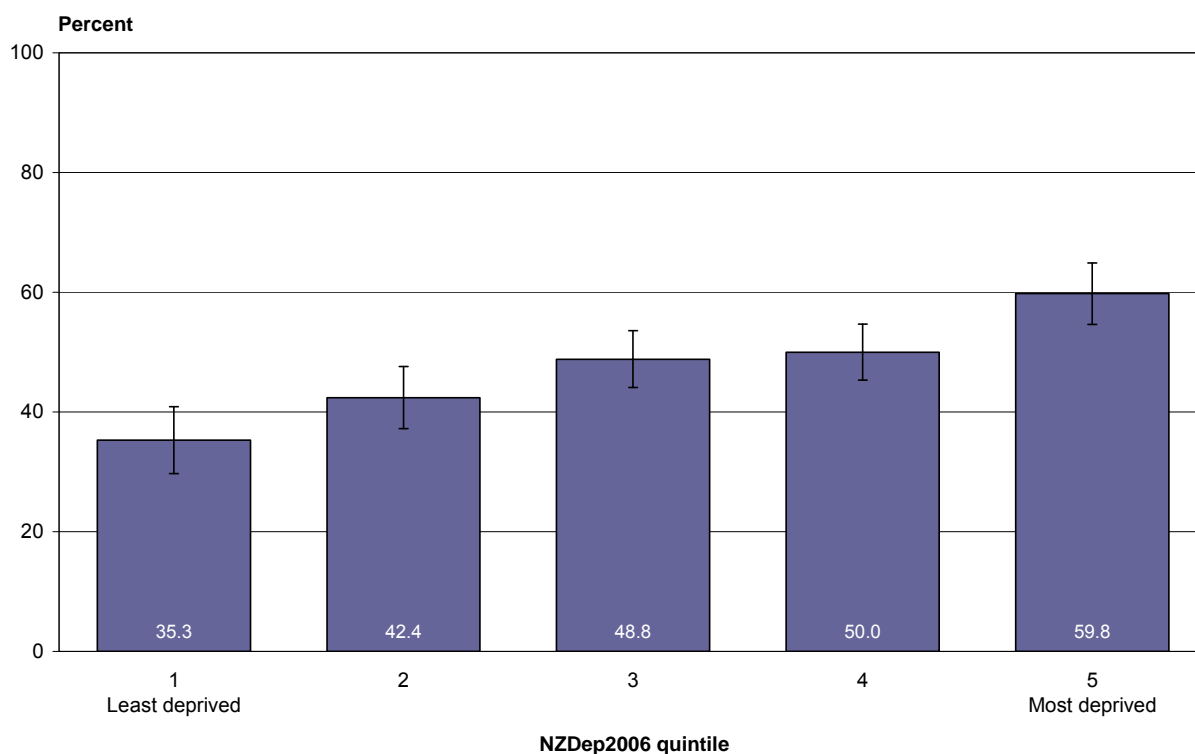
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents the total population aged 15–64 years who had seen a GP in the past 12 months.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

### Asked smoking status by a general practitioner, by neighbourhood deprivation

People living in the more deprived areas who had seen a GP in the past 12 months (NZDep2006 quintiles 4 and 5) were significantly more likely to have been asked if they had ever been or currently were a smoker by a GP in the past 12 months than those living in the least deprived areas (NZDep2006 quintiles 1 and 2) (p-values < 0.05) (Figure 54).

**Figure 54:** Asked smoking status by a GP, among the total population aged 15–64 years who had seen a GP in the past 12 months, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Age standardised to the WHO world population.

### Time trends in being asked smoking status by a general practitioner

There were no statistically significant differences between 2008 and 2009 in the age-standardised prevalence of being asked smoking status by a GP in the past 12 months (for those 15–64-year-olds who had seen a GP in past 12 months) (graphs not shown).

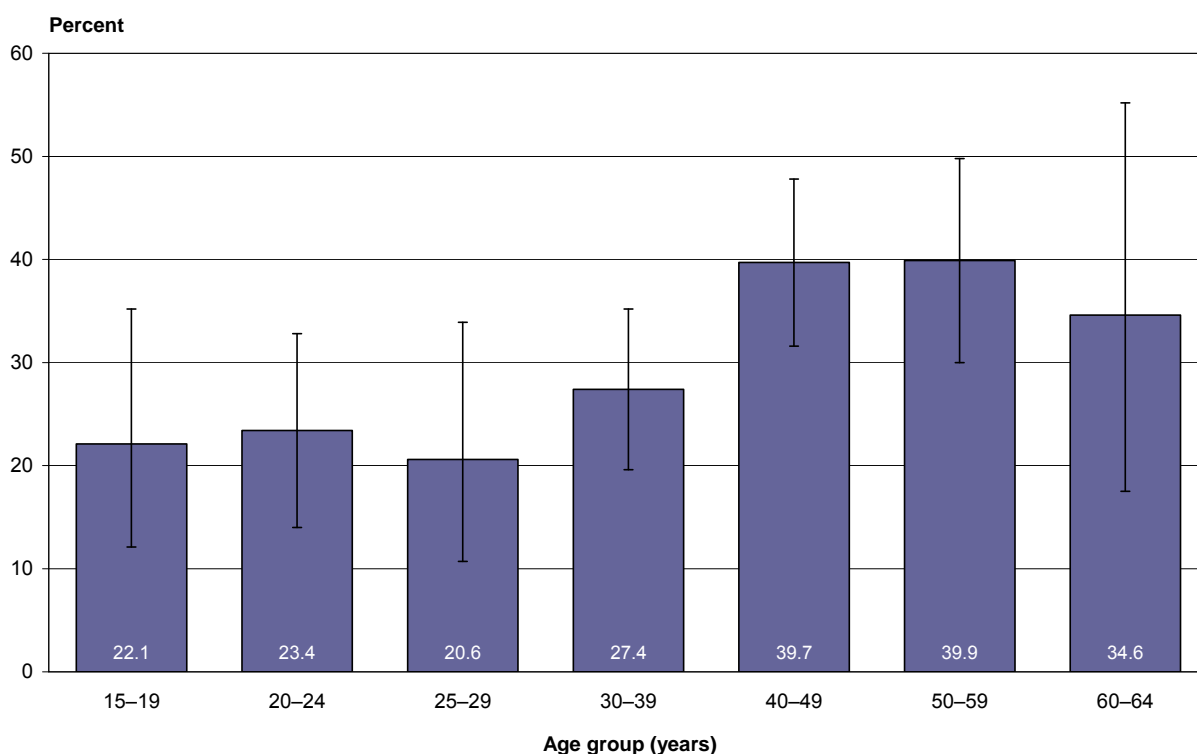
### Provided with quitting advice and referral by a general practitioner

Nearly one-third (30.9%, 27.0–34.8) of 15–64-year-old current smokers who had seen a GP in the past year were provided with quitting advice or information and referred to quitting programmes or given quitting products by a GP in the past 12 months. There was no significant difference by sex.

### Provided with quitting advice and referral by a general practitioner, by age group

Of those current smokers who had seen a GP in the past 12 months, those in the younger age groups (15–19, 20–24 and 25–29-year-olds) were significantly less likely to have been provided with quitting advice or information and referred to quitting programmes or given quitting products by a GP in the past 12 months than older people aged 40–49 and 50–59 years ( $p$ -values  $< 0.05$ ) (Figure 55). Those aged 30–39 were less likely to have been provided with quitting advice or information and referred to quitting programmes or given quitting products by a GP in the past 12 months than those aged 40–49 years-old ( $p$ -value  $< 0.05$ ).

**Figure 55:** Provided with quitting advice and referral by a GP in the past 12 months, among current smokers aged 15–64 years who had seen a GP in the past 12 months, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey



## Provided with quitting advice and referral by a general practitioner for current smokers, by ethnic group

Table 13 gives an indication of the proportion of 15–64-year-old current smokers who were provided with quitting advice or information and referred to quitting programmes or given quitting products by a GP in the past 12 months, by ethnic group.

**Table 13:** Provided with quitting advice and referral by a GP in the past 12 months, among current smokers aged 15–64 years who had seen a GP in the past 12 months, by ethnic group, 2009 (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	27.7 (23.2–32.2)	80,400
Māori	33.2 (26.2–40.3)	34,800
Pacific	37.1 (25.5–48.7)	13,000
Asian*	–	–

Source: 2009 New Zealand Tobacco Use Survey

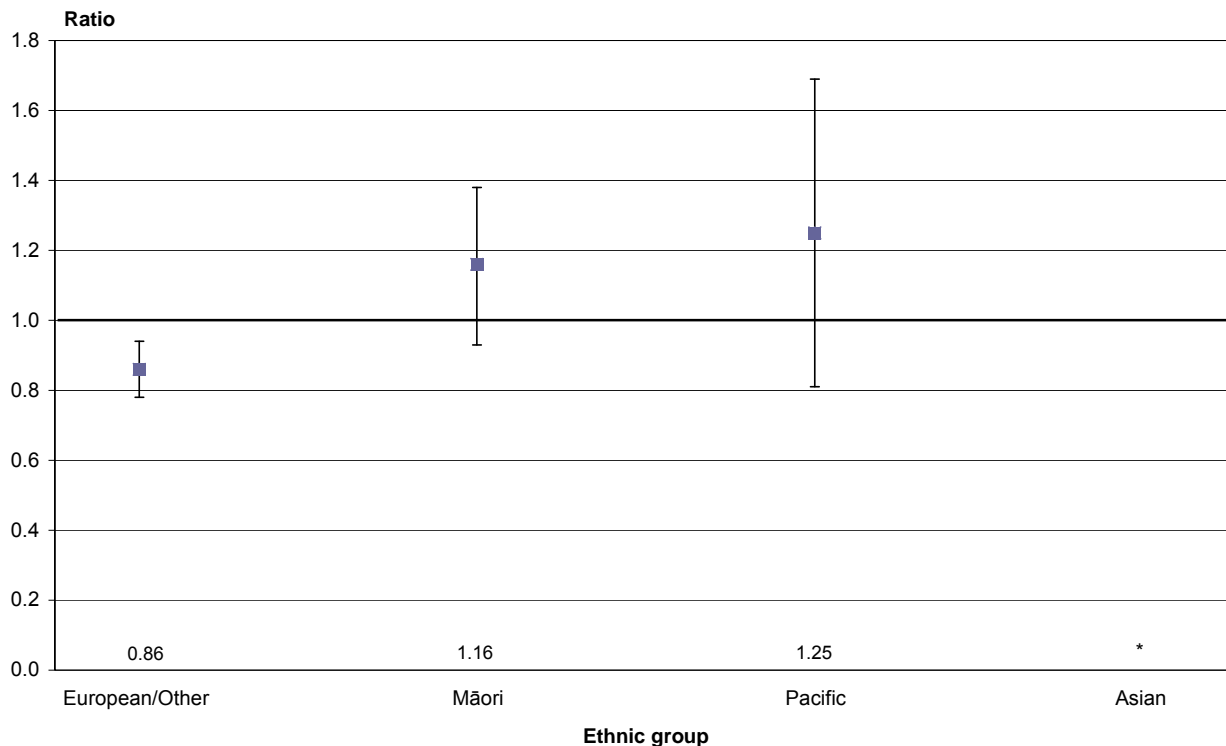
Note: Total response ethnicity has been used.

\* Figures for the Asian population cannot be provided due to small numbers.

After adjusting for age, 15–64-year-old European/Other current smokers were found to be less likely to have been provided with quitting advice and referral by a GP in the past 12 months than current smokers in the total population (Figure 56).

There was no difference between current smokers in the total population and Māori and Pacific current smokers in the age-standardised prevalence of having been provided with quitting advice and referral by a GP in the past 12 months.

**Figure 56:** Provided with quitting advice and referral by a GP in the past 12 months, among current smokers aged 15–64 years who had seen a GP in the past 12 months, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

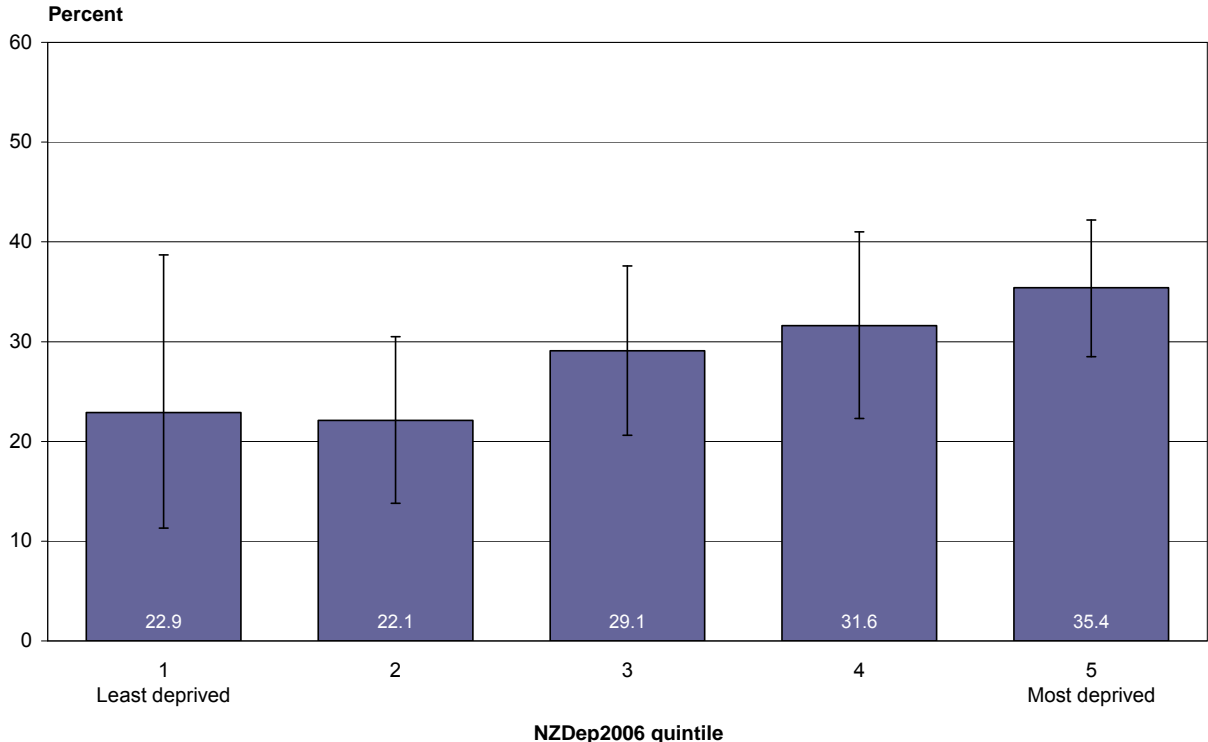
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents total current smokers aged 15–64 years who had seen a GP in the past 12 months.
  2. Total response ethnicity has been used.
  3. Age standardised to the WHO world population.
- \* Figures for the Asian population can not be provided due to small numbers.

### Provided with quitting advice and referral by a general practitioner, by neighbourhood deprivation

Current smokers aged 15–64 years living in the most deprived areas who had seen a GP in the past 12 months were more likely than those living in the less deprived areas to have been provided with quitting advice and referral by a GP in the past 12 months (Figure 57). These differences were only significant between NZDep2006 quintile 5 and NZDep2006 quintile 2 (p-value < 0.05).

**Figure 57:** Provided with quitting advice and referral by a GP in the past 12 months, among current smokers aged 15–64 years who had seen a GP in the past 12 months, by NZDep2006 quintile, 2009 (age-standardised prevalence)



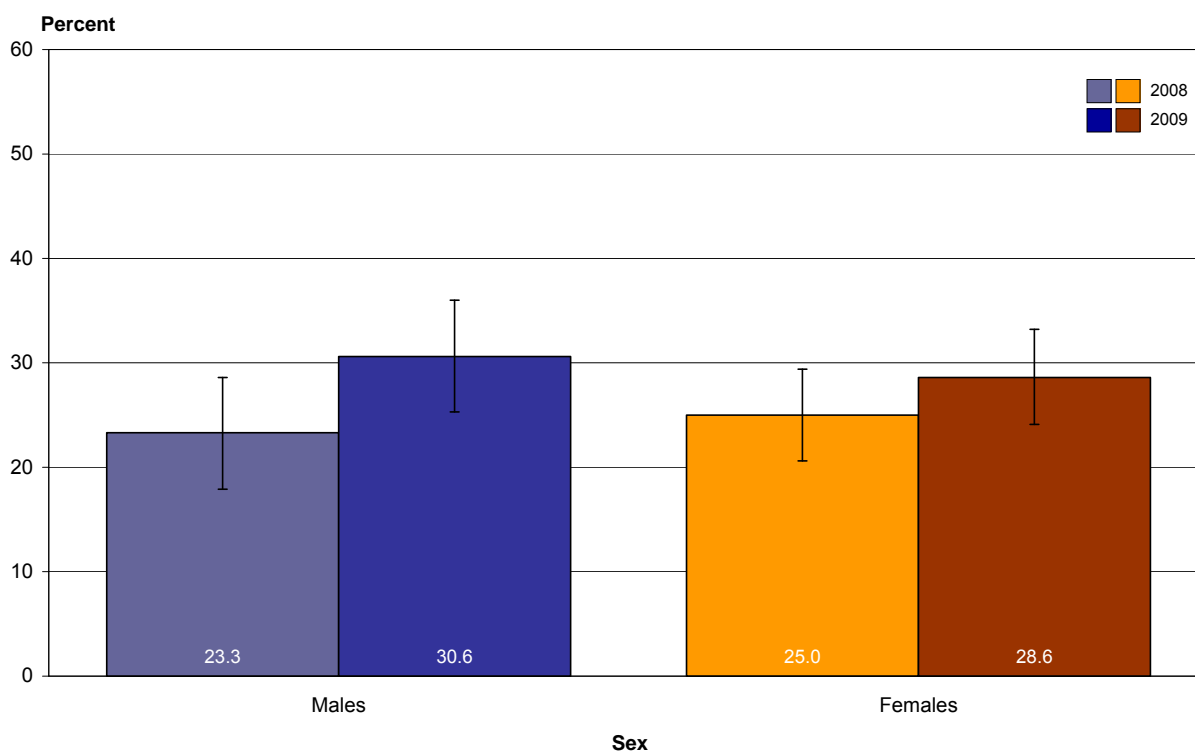
Source: 2009 New Zealand Tobacco Use Survey  
Note: Age standardised to the WHO world population.

### Provided with quitting advice and referral by a general practitioner, time trends

The age-standardised prevalence of 15–64-year-old current smokers who had seen a GP in the past 12 months being provided with advice/information and referred to quitting programmes/given quitting products in the past 12 months increased significantly between 2008 (24.2%, 20.9–27.5) and 2009 (29.5%, 25.7–33.3).

There were no significant differences in this indicator between 2008 and 2009 by sex (Figure 58).

**Figure 58:** Provided with quitting advice and referral by a GP in the past 12 months, among current smokers aged 15–64 years who had seen a GP in the past 12 months, by sex, 2008–2009 (age-standardised prevalence)

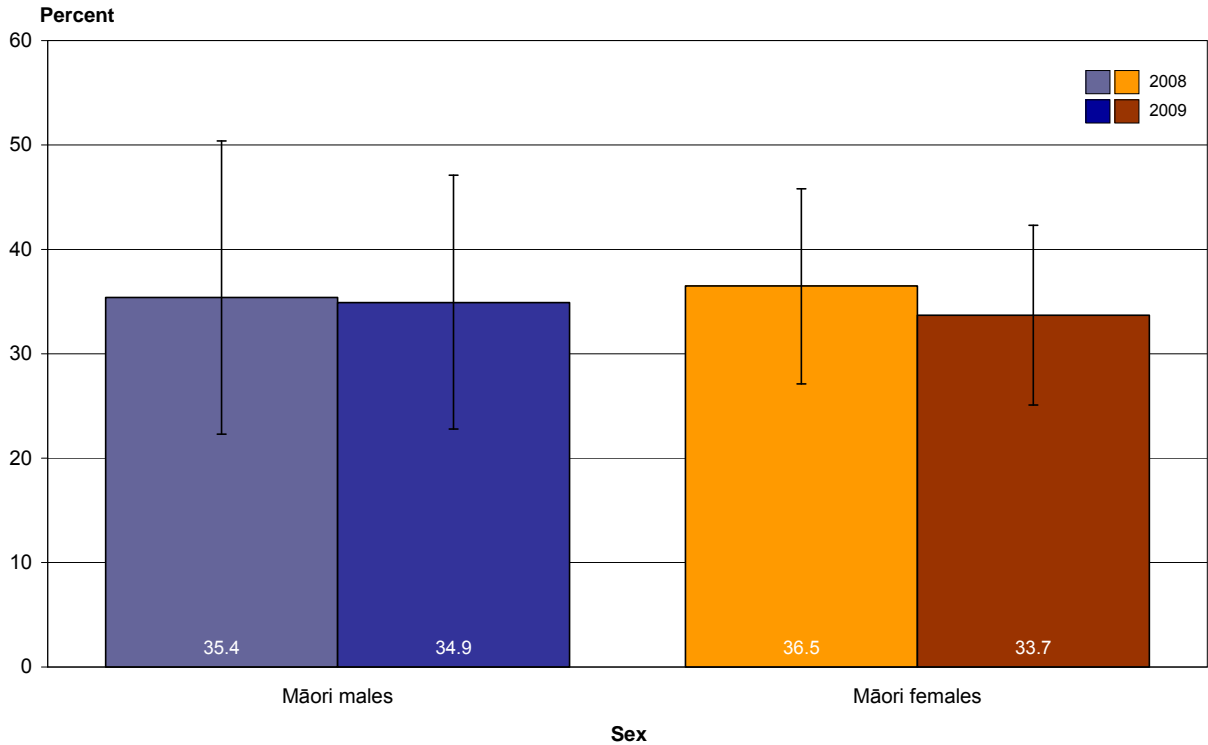


Sources: 2008 and 2009 New Zealand Tobacco Use Surveys

Note: Age standardised to the WHO world population.

For Māori, the age-standardised prevalence of 15–64-year-old current smokers who had seen a GP in past 12 months being provided with advice/information and referred to quitting programmes/given quitting products in the past 12 months did not change significantly between 2008 and 2009 (Figure 59).

**Figure 59:** Provided with quitting advice and referral by a GP in the past 12 months, among Māori current smokers aged 15–64 years who had seen a GP in the past 12 months, by sex, 2008–2009 (age-standardised prevalence)



Sources: 2008 and 2009 New Zealand Tobacco Use Surveys

Note: Age standardised to the WHO world population.

### Received the ABC approach from a general practitioner

Nearly three in 10 (29.1%, 25.4–32.9) 15–64-year-old current smokers who had seen a GP in the past 12 months were provided with all three components of the ABC approach. There were no significant differences by sex or age group.

### Received the ABC approach from a general practitioner, by ethnic group

Table 14 gives an indication of the proportion of 15–64-year-old current smokers who received ABC from a GP in the past 12 months, by ethnic group.

**Table 14:** Received the ABC approach from a GP in the past 12 months, among current smokers, by ethnic group, 2009 (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	25.8 (21.6–30.1)	74,900
Māori	32.3 (25.2–39.4)	33,700
Pacific	37.1 (25.5–48.7)	13,000
Asian*	–	–

Source: 2009 New Zealand Tobacco Use Survey

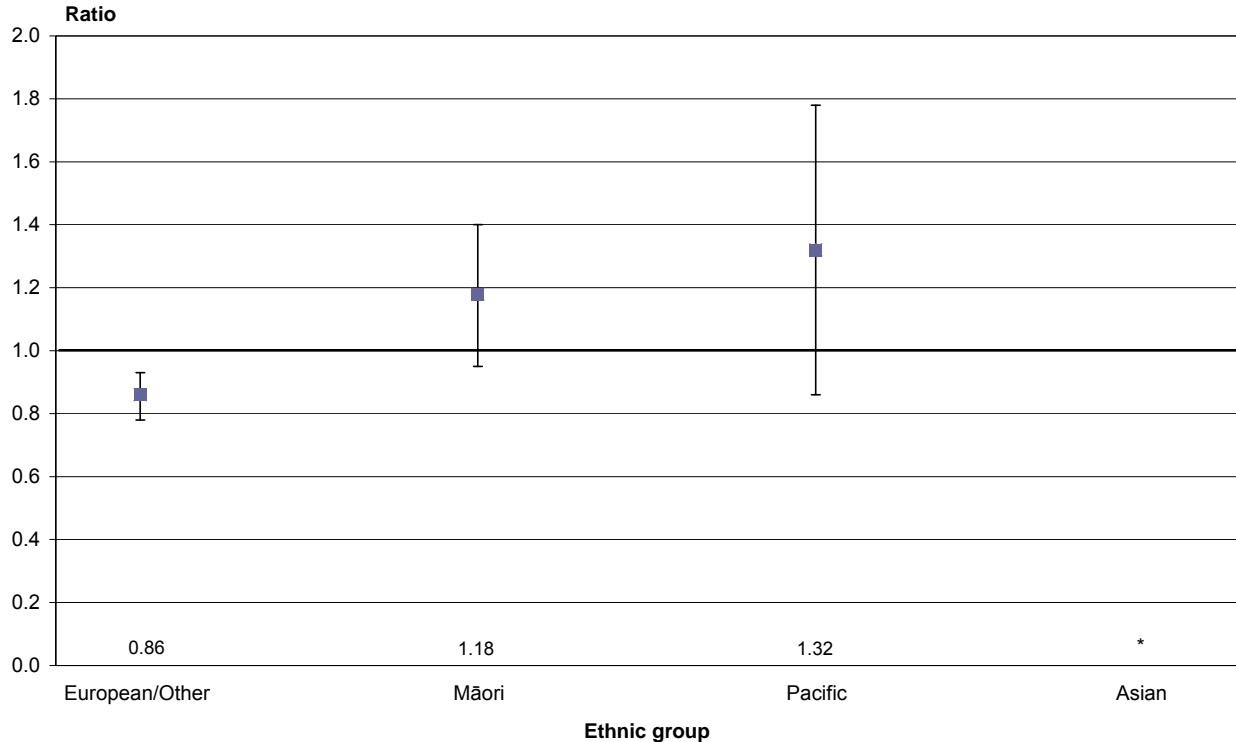
Note: Total response ethnicity has been used.

\* Figures for the Asian population cannot be provided due to small numbers.

After adjusting for age, 15–64-year-old European/Other current smokers were found to be less likely to report receiving ABC from a GP in the past 12 months than current smokers in the total population (Figure 60).

There was no difference between Māori and Pacific current smokers and current smokers in the total population in the age-standardised prevalence of having reported receiving ABC from a GP in the past 12 months.

**Figure 60:** Received the ABC approach from a GP in the past 12 months, among current smokers aged 15–64 years, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

\* Figures for the Asian population can not be provided due to small numbers.

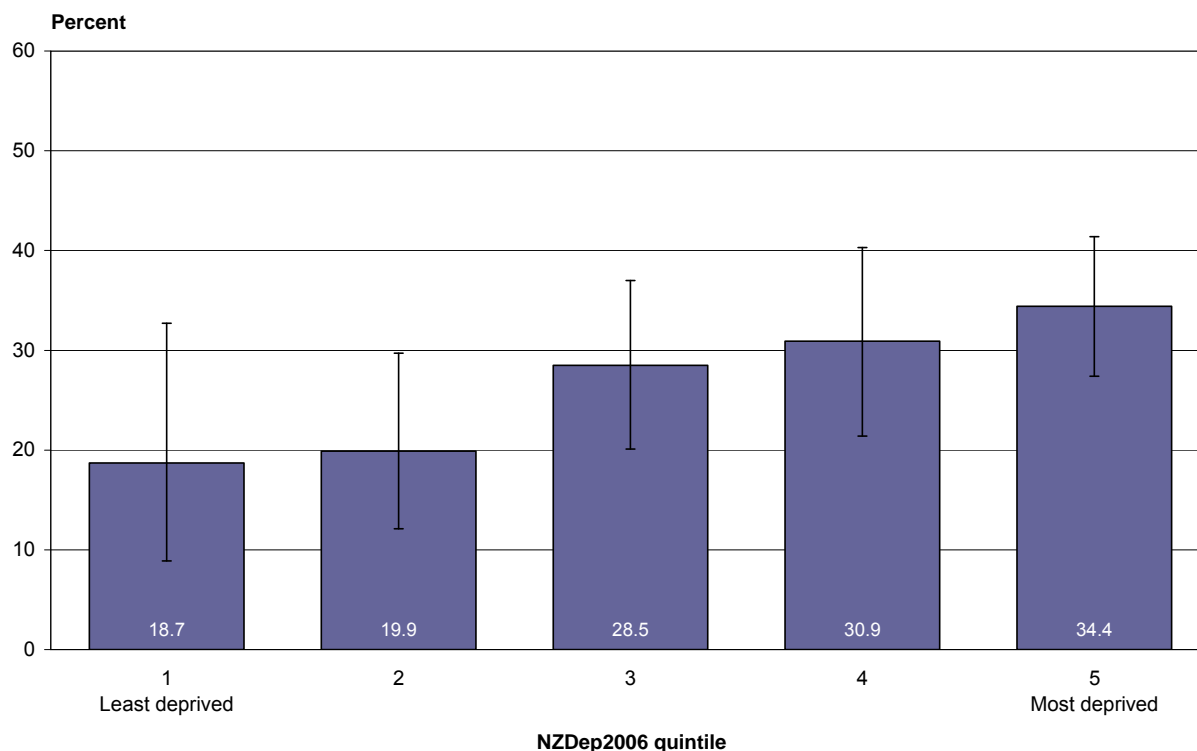
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents total current smokers aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

### Received the ABC approach from a general practitioner, by neighbourhood deprivation

Current smokers aged 15–64 years in the most deprived areas (NZDep2006 quintile 5) who had seen a GP in the past 12 months were significantly more likely than those in the least deprived areas (NZDep2006 quintiles 1 and 2) to have been provided with ABC by a GP in the past 12 months, after adjusting for age (Figure 61).

**Figure 61:** Received the ABC approach from a GP, among current smokers aged 15–64 years who had seen a GP in the past 12 months, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

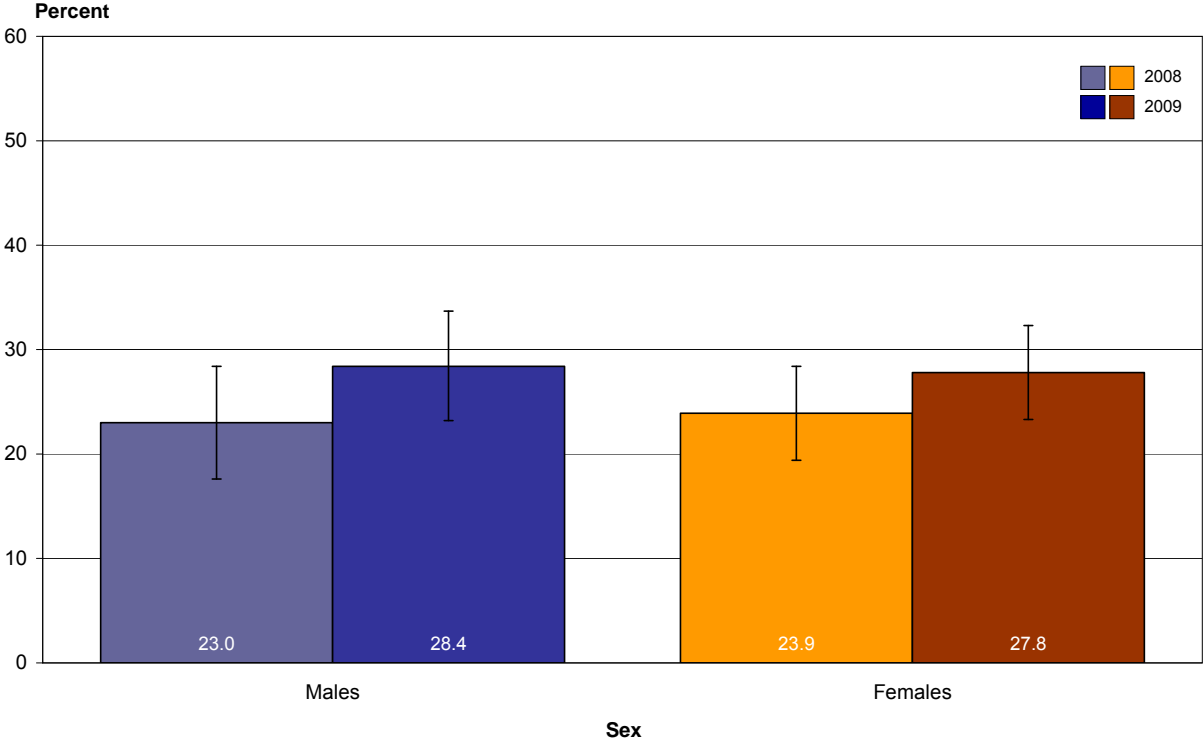
Note: Age standardised to the WHO world population.



### Time trends in receiving the ABC approach from a general practitioner

The age-standardised prevalence of 15–64-year-old current smokers who had seen a GP in the past 12 months being provided with ABC in the past 12 months did not change significantly between 2008 and 2009 (Figure 62).

**Figure 62:** Received the ABC approach from a GP in past 12 months, among current smokers aged 15–64 years who had seen a GP in the past 12 months, by sex, 2008–2009 (age-standardised prevalence)

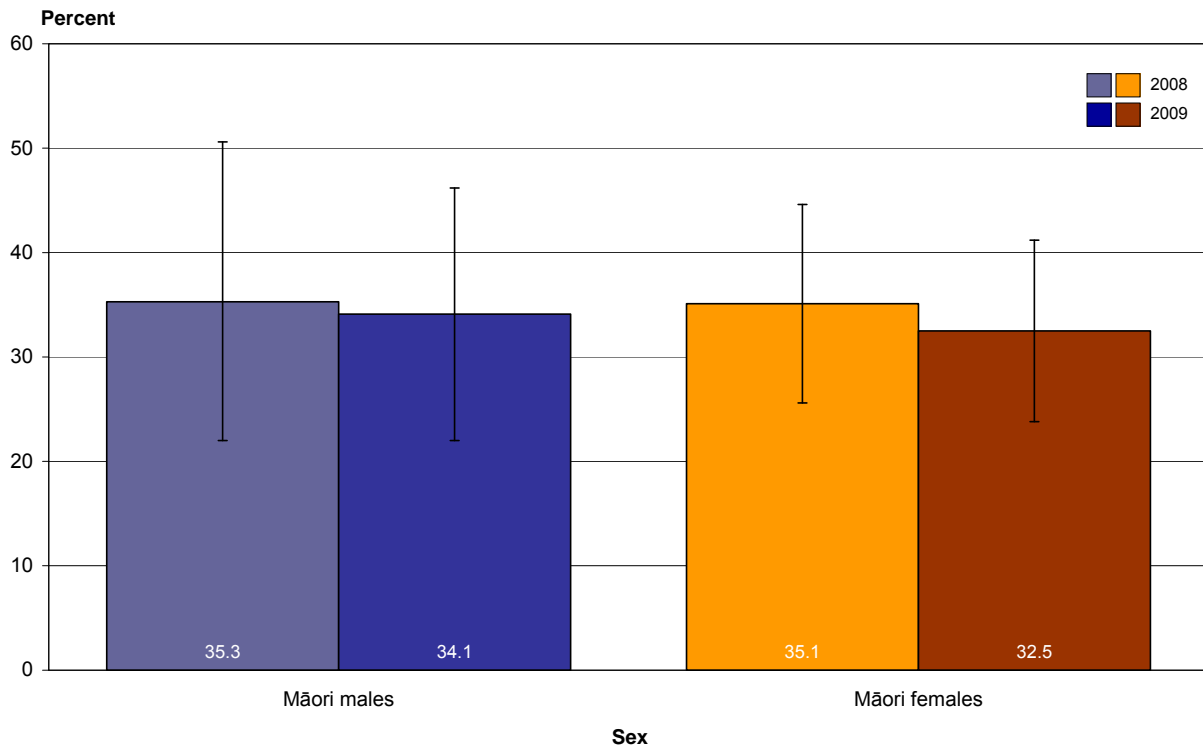


Sources: 2008 and 2009 New Zealand Tobacco Use Surveys

Note: Age standardised to the WHO world population.

For Māori, there was no significant difference between 2008 and 2009 in the age-standardised prevalence of current smokers aged 15–64 years who had seen a GP in the past 12 months being provided with ABC in the past 12 months (Figure 63).

**Figure 63:** Received the ABC approach from a GP in the past 12 months, among Māori current smokers aged 15–64 years who had seen a GP in the past 12 months, by sex, 2008–2009 (age-standardised prevalence)



Sources: 2008 and 2009 New Zealand Tobacco Use Surveys

Note: Age standardised to the WHO world population.

# Chapter 10: Exposure to Second-hand Smoke

## Introduction

The previous sections of this report focus on smokers and cover issues such as smoking prevalence, cigarette consumption, quitting, cessation and health service use. This section considers the exposure of non-smokers and children to second-hand smoke (SHS) in the home, car and workplace.

SHS comes from two places: smoke breathed out by the person who smokes, and smoke from the end of a burning cigarette. Although both smokers and non-smokers can inhale SHS, this section focuses on the inhalation of SHS by non-smokers. Non-smokers are people who at the time of the 2009 NZTUS did not smoke at all.

Exposure to SHS causes premature death and disease in both children and adults. There is evidence that children who are exposed to second-hand smoke are at an increased risk for sudden unexpected death in infancy (SUDI, or cot death), chest infections, ear problems, and more severe asthma (US Department of Health and Human Services 2006). In non-smoking adults, second-hand smoke causes lung cancer and ischaemic heart disease (US Department of Health and Human Services 2006). Research conducted in New Zealand also found that exposure to SHS leads to an increased risk of stroke (Woodward and Laugesen 2001).

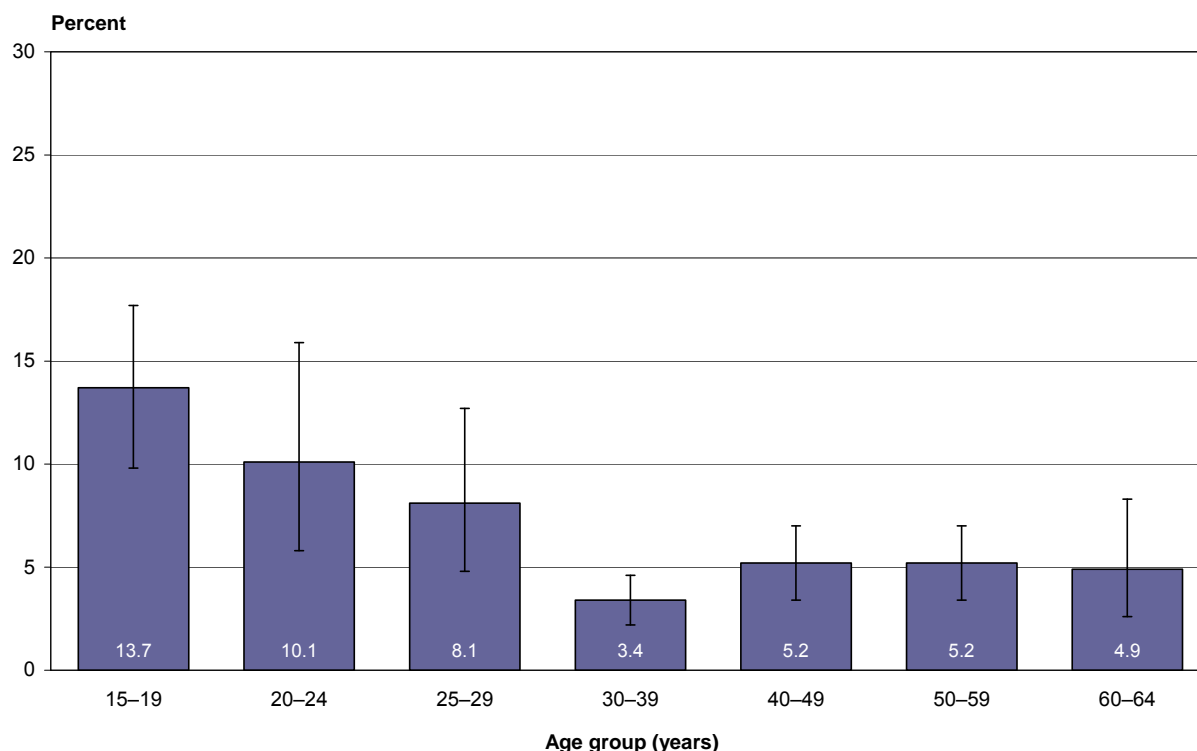
## Exposure to second-hand smoke at home

Overall, 6.4% (5.5–7.4) of non-smokers were exposed to second-hand smoke in their home in the past week. After adjusting for age, there was no significant difference in the prevalence of second-hand smoke exposure in the home by sex.

## Exposure to second-hand smoke at home in the past week, by age group

Exposure to second-hand smoke in the home in the past week was lower in the older age groups compared to the younger age groups (confirmed by logistic regression) (Figure 64).

**Figure 64:** Exposure to second-hand smoke at home in the past week, among non-smokers aged 15–64 years, by age group, 2009 (unadjusted prevalence)



Source: New Zealand Tobacco Use Survey 2009

### Exposure to second-hand smoke at home in the past week, by ethnic group

Table 15 gives an indication of the prevalence of second-hand smoke exposure among non-smokers in the home, by ethnic group.

**Table 15:** Exposure to second-hand smoke at home in the past week, among non-smokers aged 15–64 years, by ethnic group, 2009 (unadjusted prevalence)

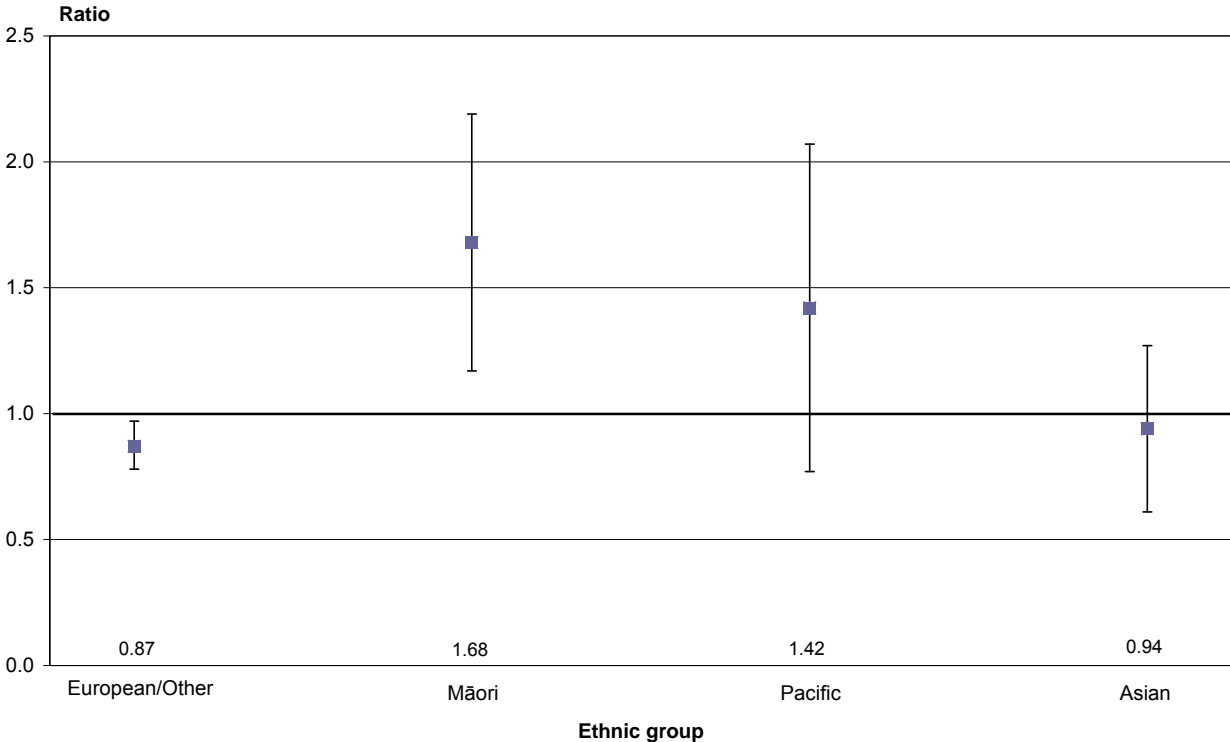
Ethnic group	Prevalence (95% CI)	Estimated number
European/Other	5.6 (4.6–6.7)	92,900
Māori	11.3 (8.1–14.4)	20,500
Pacific	9.9 (5.3–14.6)	10,900
Asian	7.1 (4.4–9.8)	21,900

Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, Māori non-smokers were found to be more likely to be exposed to second-hand smoke in the home compared with the total population (Figure 65). European/Other non-smokers were less likely to be exposed to second-hand smoke in the home compared with the total population. There were no other significant differences by ethnic group.

**Figure 65:** Exposure to second-hand smoke at home in the past week, among non-smokers aged 15–64 years, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

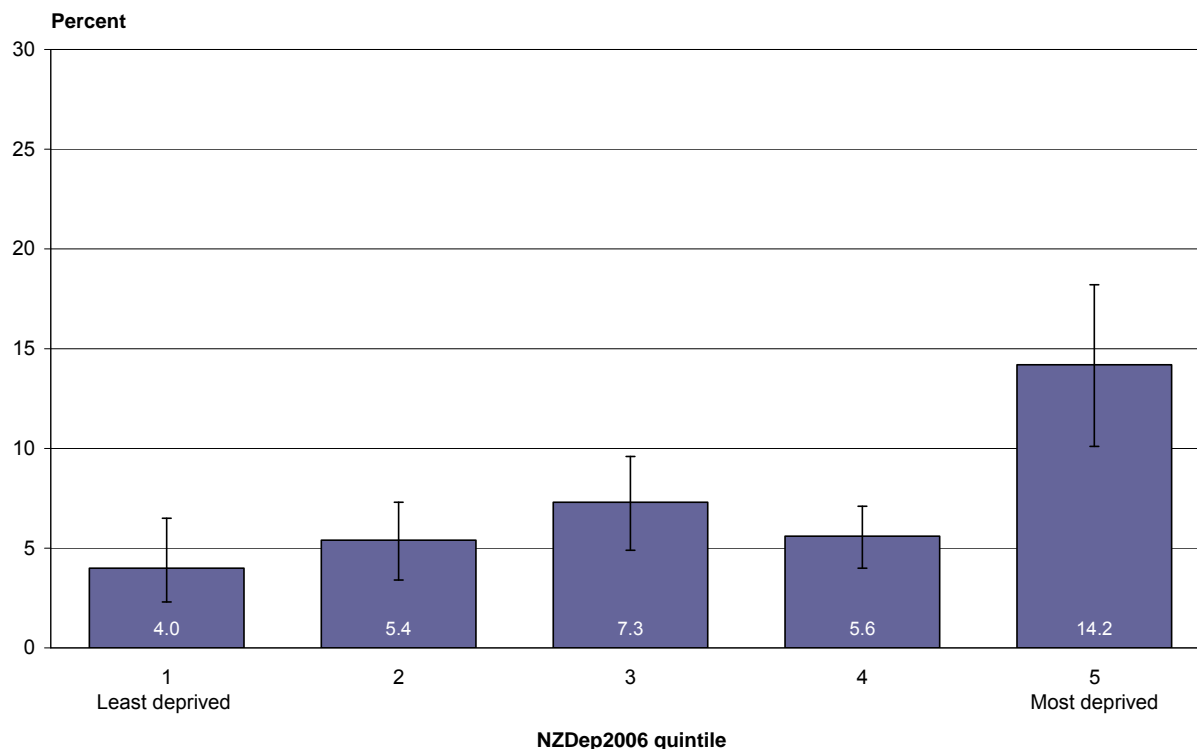
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents total non-smokers aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

## Exposure to second-hand smoke at home in the past week, by neighbourhood deprivation

Exposure to second-hand smoke exposure in the most deprived areas was over three times that in the least deprived areas (Figure 66).

**Figure 66:** Exposure to second-hand smoke at home in the past week, among non-smokers aged 15–64 years, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Age standardised to the WHO world population.

## Exposure to second-hand smoke at home in the past week in households with at least one child

The 2009 NZTUS did not directly ask if children aged 0–14 years had been exposed to second-hand smoke at home in the past week. As a proxy for second-hand smoke exposure for children, the proportion of households where at least one resident (including the respondent) had smoked anywhere inside the house in the past week and that had at least one child aged 0–14 years living there has been used.

It should be noted that as with any proxy measure, this indicator may under- or overestimate the true exposure of children to second-hand smoke.

In 10.1% (8.5–11.7) of households with one or more children aged 0–14 years living there, at least one resident had smoked anywhere inside the house in the past week.

### Exposure to second-hand smoke at home in the past week in households with at least one child, by respondents' ethnic group

Table 16 gives an indication of the prevalence of second-hand smoke exposure in homes with at least one child aged 0–14 years living there, by respondents' ethnic group.

**Table 16:** Exposure to second-hand smoke at home in the past week, households with at least one child aged 0–14 years, by respondents' ethnic group, 2009 (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Number
European/Other	8.9 (7.2–10.6)	70,600
Māori	21.3 (17.4–25.2)	39,000
Pacific	14.1 (8.8–19.4)	14,000
Asian	3.1 (1.1–6.7)	4100

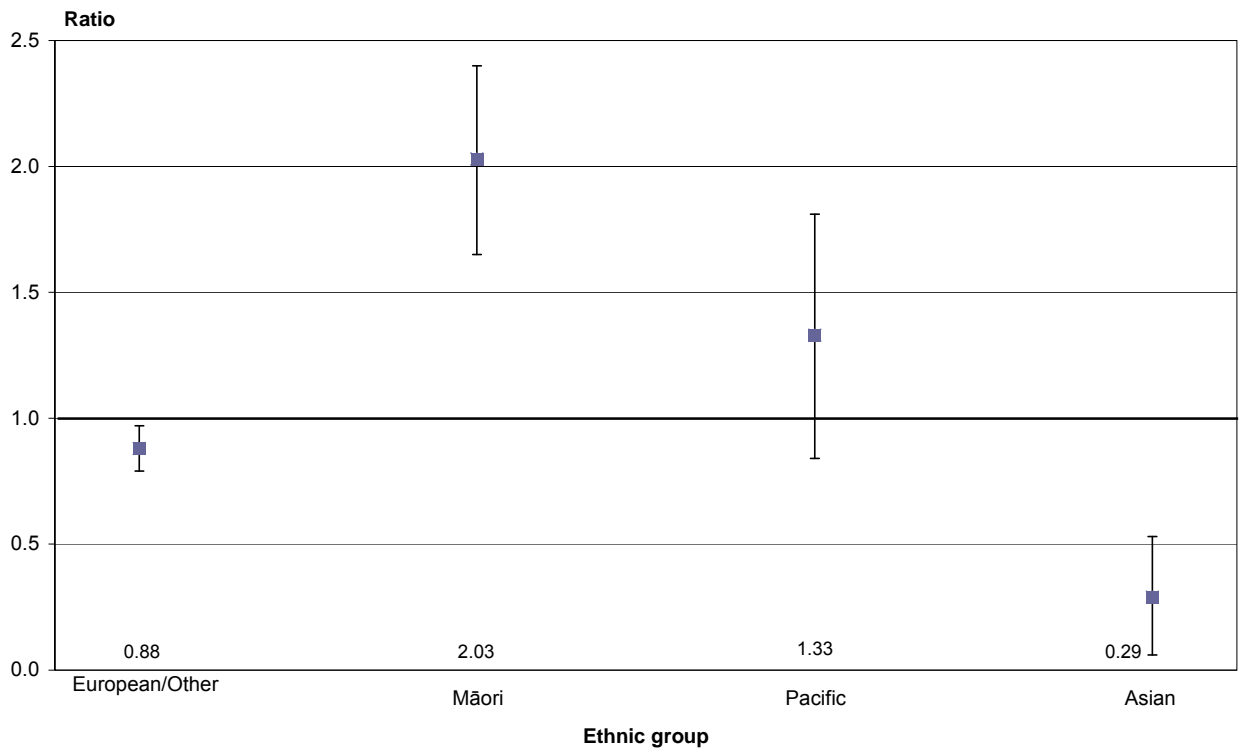
Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

The households of Māori respondents with at least one child aged 0–14 years living with them, were significantly more likely to have had at least one resident smoke anywhere inside the house in the past week compared with the total population, after adjusting for age (Figure 67). Conversely, the households of European/Other and Asian respondents with at least one child living with them were significantly less likely to have had at least one resident smoke anywhere inside the house in the past week than the total population.

There was no difference between the households of Pacific respondents with at least one child living with them and the total population in terms of the prevalence of having had at least one resident smoke anywhere inside the house in the past week.

**Figure 67:** Exposure to second-hand smoke at home in the past week, households with at least one child aged 0–14 years, by respondents' ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

Notes:

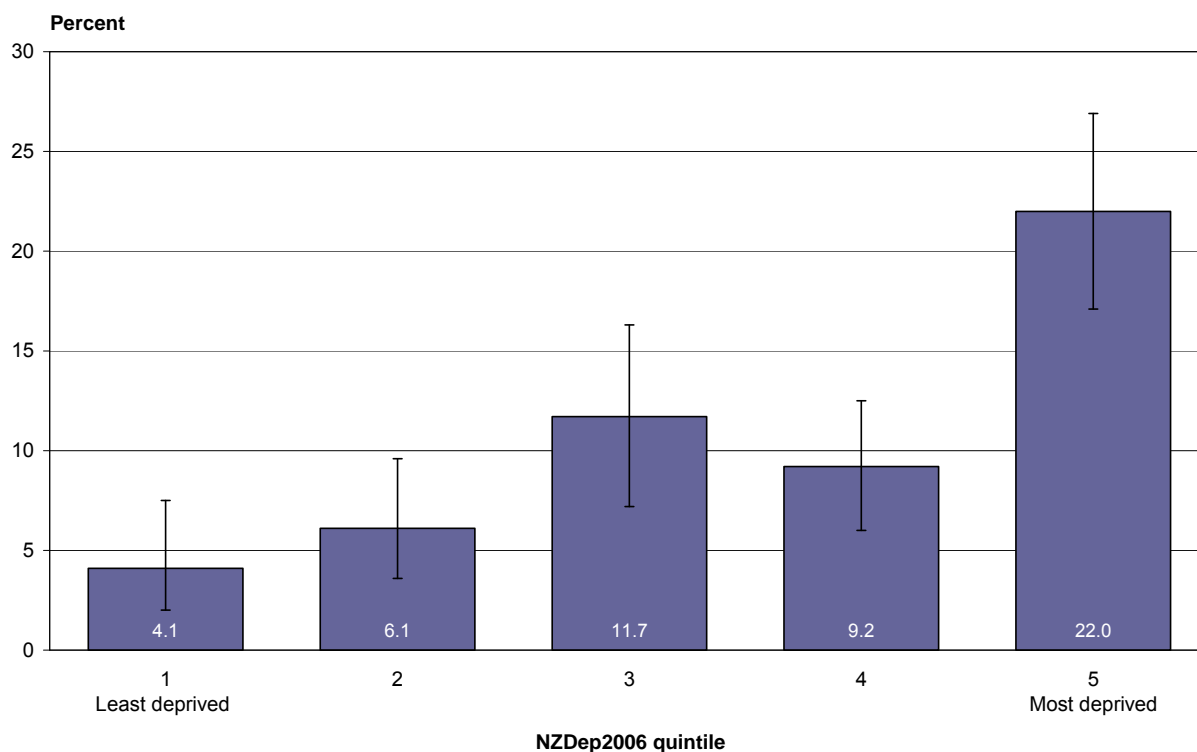
1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents the total population aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.



## Exposure to second-hand smoke at home in the past week in households with at least one child, by neighbourhood deprivation

In households in the most deprived areas with one or more children aged 0–14 years living there, the age-standardised prevalence of at least one resident having smoked anywhere inside the house in the past week was found to be over five times that in the least deprived areas (Figure 68).

**Figure 68:** Exposure to second-hand smoke at home in the past week, household with at least one child aged 0–14 years, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Age standardised to the WHO world population.

## Time trends for exposure to second-hand smoke at home in the past week in households with at least one child

There was no significant difference between 2008 (12.3%, 10.8–13.9) and 2009 (10.3%, 8.6–11.9) in the age-standardised prevalence of households with one or more children aged 0–14 years living there that had at least one resident who smoked anywhere inside the house in the past week.

For the households of Māori respondents with at least one child aged 0–14 years living with them, there was no significant difference between 2008 (22.3%, 17.3–27.2) and 2009 (20.9%, 16.8–24.9) in the age-standardised prevalence of having at least one resident smoke anywhere inside the house in the past week (graphs not shown).

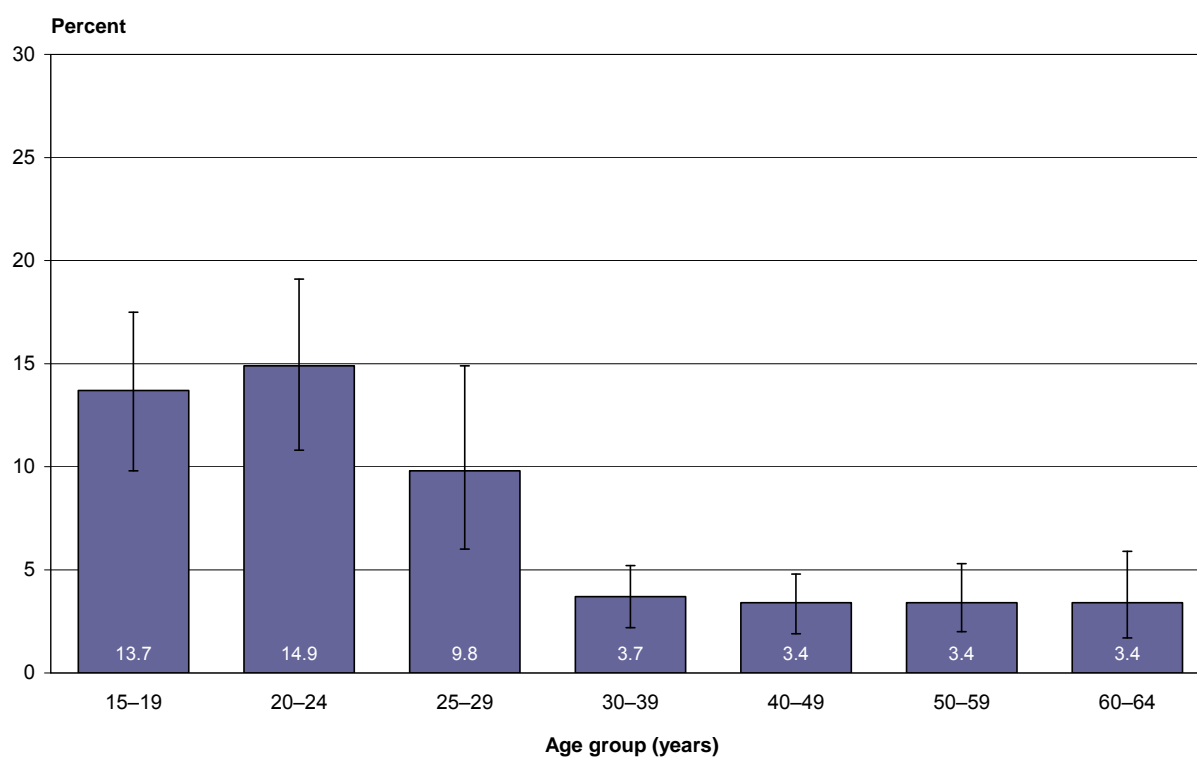
## Exposure to second-hand smoke in the car in the past week

Overall, 6.1% (5.3–7.0) of non-smoking adults were exposed to second-hand smoke in the car they usually travel in during the past week. There was no significant difference in the age-standardised prevalence of second-hand smoke exposure in the car among non-smoking adults, by sex.

### Exposure to second-hand smoke in the car, by age group

Non-smoking adults aged 15–29 years were at least two and half times more likely to be exposed to second-hand smoke in the car than adults over 30 years (Figure 69).

**Figure 69:** Exposure to second-hand smoke in the car usually travelled in, in the past week, among non-smokers aged 15–64 years, by age group, 2009 (unadjusted prevalence)



Source: 2009 New Zealand Tobacco Use Survey

## Exposure to second-hand smoke in the car, by ethnic group

Table 17 gives an indication of the prevalence of second-hand smoke exposure in the car, among non-smokers, by ethnic group.

**Table 17:** Exposure to second-hand smoke in the car they usually travel in, in the past week, among non-smokers aged 15–64 years, by ethnic group, 2009 (unadjusted prevalence)

Ethnic group	Prevalence (95% CI)	Number
European/Other	5.5 (4.5–6.5)	89,200
Māori	14.7 (10.9–18.6)	25,900
Pacific	12.4 (8.0–16.8)	13,300
Asian	4.9 (2.9–7.8)	14,800

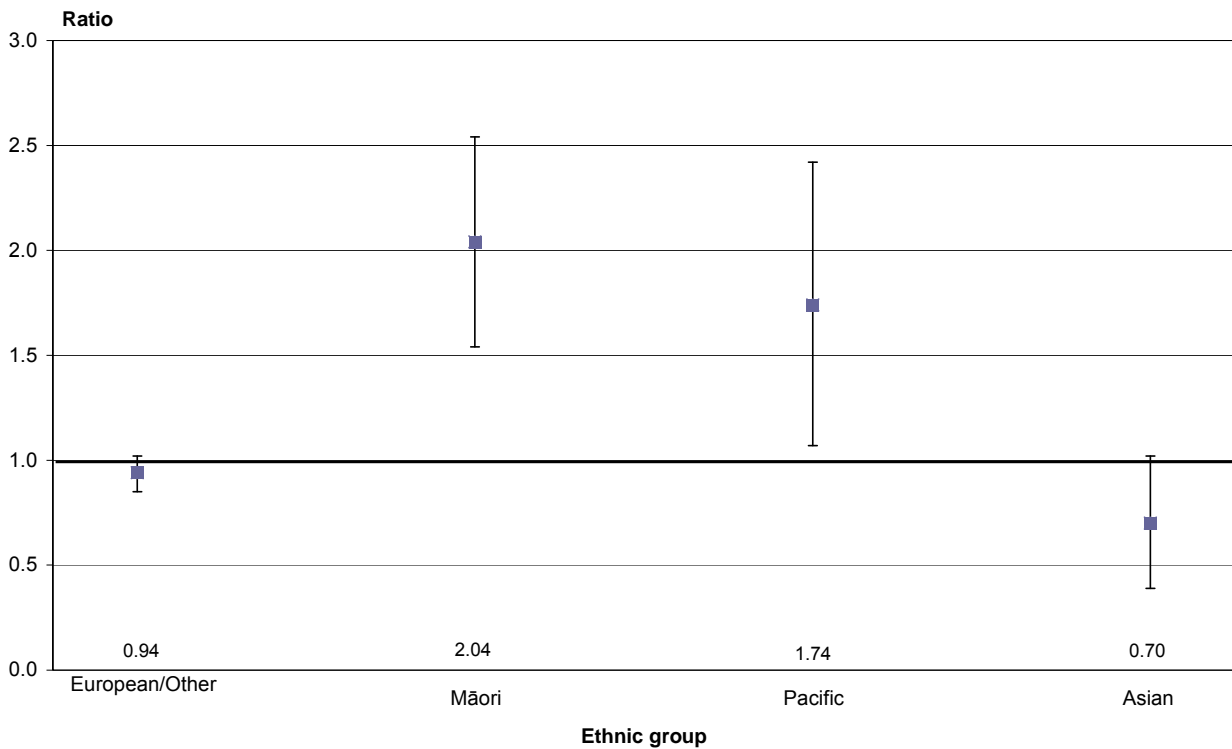
Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, Māori non-smokers were found to be approximately twice as likely to be exposed to second-hand smoke in the car compared with the total population of non-smokers (Figure 70). Pacific non-smokers were found to be almost 75% more likely to be exposed to second-hand smoke in the car compared with the total population of non-smokers.

There was no difference between European/Other and Asian non-smokers and non-smokers in the total population in terms of the age-standardised prevalence of having been exposed to second-hand smoke in the car they usually travel in, in the past week.

**Figure 70:** Exposure to second-hand smoke in the car usually travelled in, in the past week, among non-smokers aged 15–64 years, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

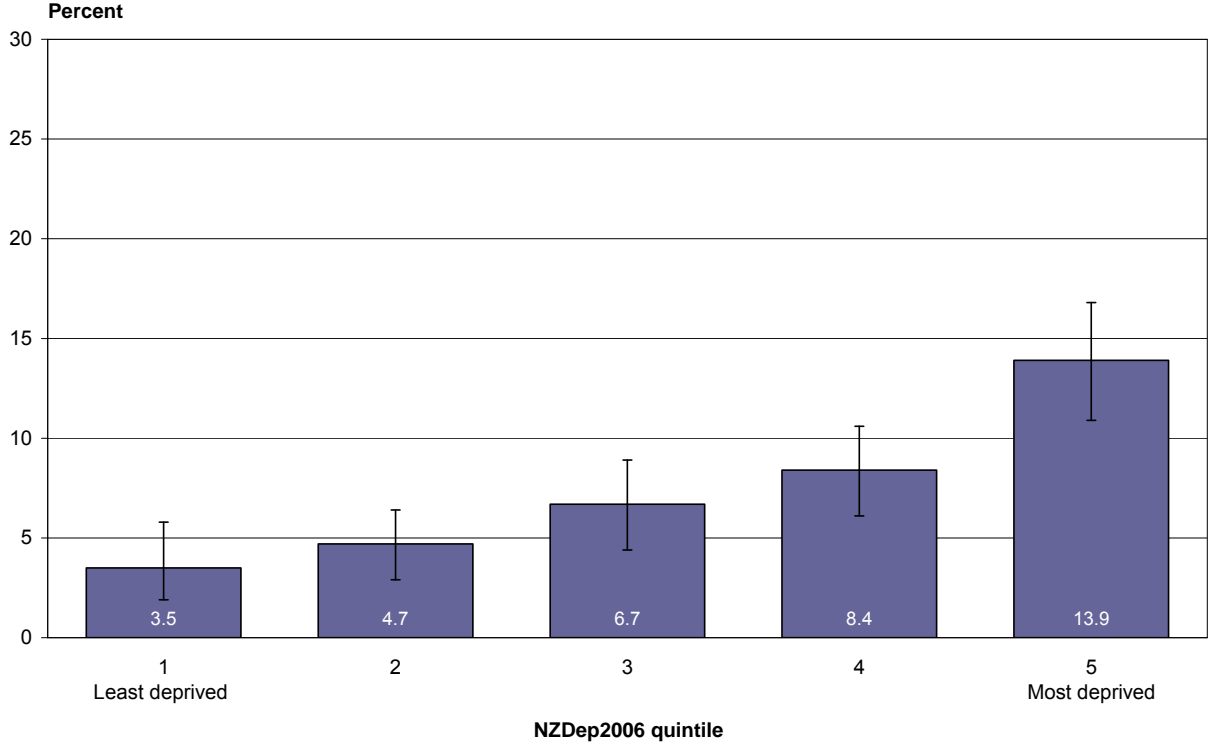
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents total non-smokers aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

### Exposure to second-hand smoke in the car, by neighbourhood deprivation

After adjusting for age, the prevalence of second-hand smoke exposure in the most deprived areas was nearly four times higher than in the least deprived areas (Figure 71).

**Figure 71:** Exposure to second-hand smoke in the car usually travelled in, in the past week, among non-smokers aged 15–64 years, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey  
Note: Age standardised to the WHO world population.

## Exposure to second-hand smoke at the workplace in the past month

Overall, 4.5% (3.7–5.4) of non-smokers were exposed to second-hand smoke indoors, at their workplace, in the past month. After adjusting for age, males were more than twice as likely (6.4%, 5.0–7.9) as females (2.6%, 1.6–3.6) to be exposed to second-hand smoke indoors at their workplace.

There were no significant differences by age group.

## Exposure to second-hand smoke at the workplace in the past month, by ethnic group

Table 18 gives an indication of the prevalence of second-hand smoke exposure indoors at the workplace in the past month, among non-smokers, by ethnic group.

**Table 18:** Exposure to second-hand smoke indoors at the workplace, in the past month, among non-smokers aged 15–64 years, by ethnic group, 2009 (unadjusted prevalence)

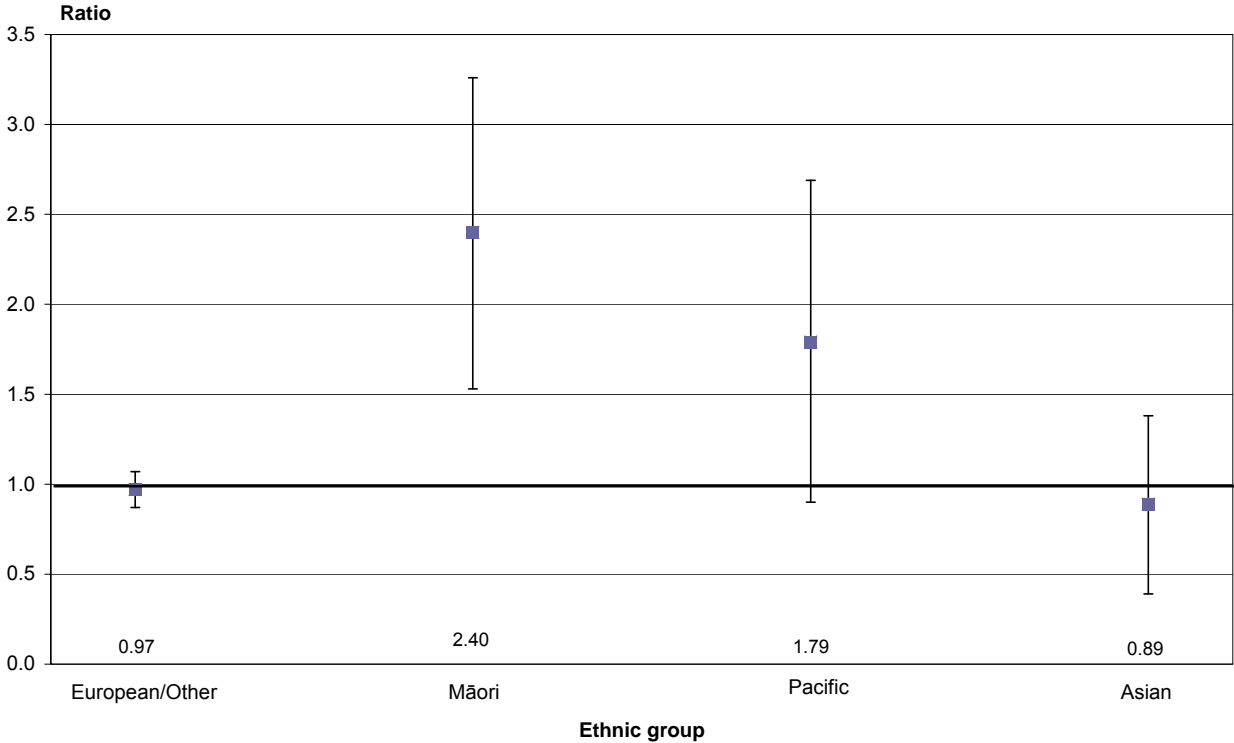
Ethnic group	Prevalence (95% CI)	Number
European/Other	4.4 (3.4–5.4)	56,500
Māori	9.9 (6.0–13.7)	12,500
Pacific	8.3 (5.0–13.0)	5200
Asian	4.0 (2.3–6.5)	7900

Source: 2009 New Zealand Tobacco Use Survey

Note: Total response ethnicity has been used.

After adjusting for age, Māori non-smokers were found to be nearly two-and-a-half times more likely to be exposed to second-hand smoke indoors at work in the past month than non-smokers in the total population (Figure 72). There were no other significant differences by ethnic group.

**Figure 72:** Exposure to second-hand smoke indoors at the workplace, in the past month, among non-smokers aged 15–64 years, by ethnic group, 2009 (age-standardised rate ratio)



Source: 2009 New Zealand Tobacco Use Survey

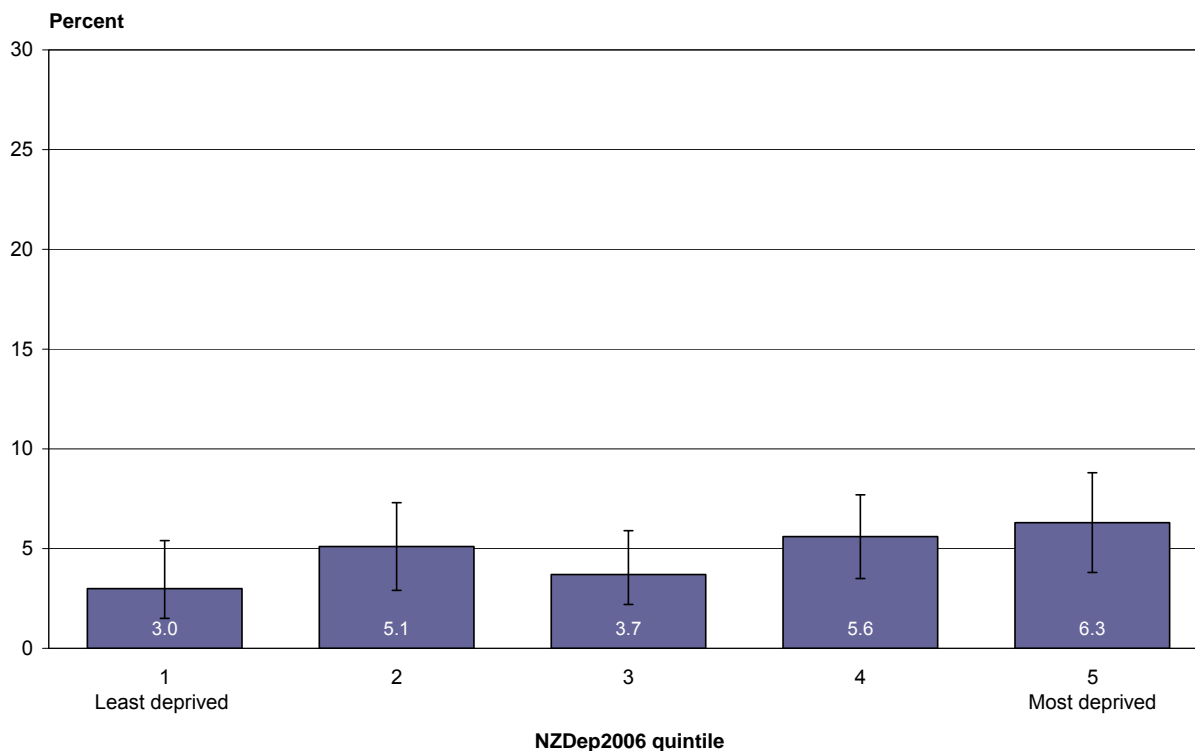
Notes:

1. The reference group is indicated by the bold line with a rate ratio of 1.0, which represents the total non-smoker population aged 15–64 years.
2. Total response ethnicity has been used.
3. Age standardised to the WHO world population.

## Exposure to second-hand smoke at the workplace in the past month, by neighbourhood deprivation

Non-smokers living in more deprived areas were more likely to be exposed to second-hand smoke indoors at the workplace in the past month than non-smokers living in less deprived areas (confirmed by logistic regression) (Figure 73).

**Figure 73:** Exposure to second-hand smoke indoors at the workplace, in the past month, among non-smokers aged 15–64 years, by NZDep2006 quintile, 2009 (age-standardised prevalence)



Source: 2009 New Zealand Tobacco Use Survey

Note: Age standardised to the WHO world population.



## Chapter 11: Discussion

The 2009 NZTUS is the final survey in a series of three New Zealand Tobacco Use Surveys conducted over a four-year period from 2006 to 2009. These surveys have been successful in providing up-to-date information for those involved in tobacco control research or policy and the provision of quitting products or services.

In 2009, 21.0% of adults aged 15–64 years were current smokers, with 19.2% of adults smoking daily. The prevalence of current smoking differed by ethnic group and by neighbourhood deprivation. After adjusting for age, Māori females were found to be twice as likely to be current smokers as females in the total population, and Māori and Pacific males were one and a half times as likely to be current smokers as males in the total population. People living in the most deprived areas were more likely to be current smokers than those in less deprived areas, after adjusting for age.

The long-term pattern is one of smoking prevalence declining over the decades, from 35.6% in 1976 for those aged 15 years and over.<sup>13</sup> A key finding from the NZTUS series is that there was a significant decline between 2006 (24.4%) and 2009 (21.8%) in the age-standardised prevalence of current smoking for the New Zealand population aged 15–64 years. It is of concern that despite there being a reduction in the prevalence of current smoking in the total population between 2006 and 2009, there was no change for Māori.

Looking at current smoking by sex, the prevalence of current smoking for females aged 15–64 years fell significantly between 2006 and 2009, but there was no significant change in current smoking rates over the same time period for males.

Encouragingly, there has also been a significant decline in youth smoking between 2006 and 2009 for the total population.

The reasons for declining adult and youth smoking prevalence are complex, but it is likely that a wide range of health sector interventions are playing an important role, including the Smoke-free Environments Act 1990 and subsequent amendments, high tobacco prices (due to tobacco tax), mass media campaigns and smoking cessation interventions. Smoking cessation interventions include the Quitline, provision of subsidised nicotine replacement therapy (NRT), the implementation of the ABC approach by health care workers, and culturally appropriate services such as Aukati KaiPaipa.

Although quitting smoking is difficult for the majority of smokers, data from this report illustrate that most smokers show regret at becoming a smoker, and many of them have tried to quit.

<sup>13</sup> Daily smoking rate obtained from the Census.

Nearly a quarter (23.8%) of current and casual smokers had quit for at least a week in the past year. The age-standardised prevalence of males aged 15–64 years who quit smoking in the past 12 months for at least a week increased significantly between 2008 and 2009. There was no difference in the proportion of females aged 15–64 years who quit smoking in past 12 months for at least a week between 2008 and 2009.

More than one-third (37.9%) of smokers who made a recent quit attempt used quitting products or advice in their most recent quit attempt, with 20.3% using NRT and 15.7% using the Quitline. After adjusting for age, there was a significant decrease between 2006 and 2009 in the prevalence of those who sought support from family and friends and a significant increase in the proportion of people who used the Quitline in their most recent quit attempt. Despite the increase in use of the Quitline for the total population, utilisation for Māori remained relatively stable.

Māori carry a greater burden of poor health outcomes related to tobacco exposure compared to the total population. Māori have a high prevalence of current smoking among adults and youth and a high prevalence of exposure to second-hand smoke. Given the higher prevalence of smoking in Māori, it was encouraging to find that Māori smokers were more likely to have received ABC from a health care worker in the past 12 months than the total population. Māori smokers made similar use of other quitting services and products (eg, use of the Quitline and NRT) to the total population.

Pacific males had a significantly higher prevalence of current smoking than males in the total population, but there was no difference for females. Pacific people who had seen a GP in the past 12 months were significantly more likely than the total population to have been asked their smoking status by a GP in the past 12 months than the total population. Pacific recent quit attempters were significantly less likely to have used the Quitline and NRT in their most recent quit attempt than recent quit attempters in the total population. Future research should investigate how the Quitline and NRT can be better targeted to meet the needs of Pacific people. Note that the small number of Pacific people in the sample meant that large differences between Pacific people and the total population were required to detect significant differences.

The information contained within this report will help in the evaluation of one of the six 2010/11 Health Targets, 'Better help for smokers to quit'. Of particular interest are the baseline data on the proportion of smokers experiencing components of the ABC approach. The population groups with the highest proportions of smokers appear more likely to be receiving guidance and referral to cessation services from health care workers, which is encouraging, as this is where the need is.

Although the Tobacco Use Surveys are methodologically sound, they are not without limitations. For instance, the target population did not include people living in institutions (such as prisons, hospitals, rest homes and boarding schools) and the homeless. Analysis presented in Chapter 4: Current Smoking (Table 2) showed that the prevalences and estimated populations presented in this and previous Tobacco Use Surveys are likely to underestimate the true total population figures by approximately 5%.

A further limitation is that differences across surveys in how data have been collected mean that time-trend analysis has not always been possible. Where time-trend analysis has been conducted, caution should be applied in interpreting the data.

From 2011 the Tobacco Use Survey (along with a number of other Ministry surveys, such as the Adult Nutrition Survey and the Alcohol and Drug Use Surveys) will be integrated into a single survey, the New Zealand Health Survey (NZHS). The NZHS will be in continuous operation and will comprise a set of core questions combined with a flexible programme of rotating thematic/topic modules. The core survey will include a number of key indicators of tobacco use and quitting behaviour. The first in-depth tobacco module is likely to be included in the NZHS for a period of time between 2012 and 2013.

The inclusion of tobacco questions in the core component of the NZHS will mean that it will be possible to monitor smoking rates annually, pool data across years, and obtain more accurate estimates for specific populations, including ethnic groups and DHB regions, than has been possible to date.

## Glossary

<b>Age standardisation</b>	A procedure for adjusting prevalence rates to minimise the effects of differences in age composition when comparing rates for different populations (Last 1988).
<b>Casual smoker</b>	Someone who smokes less often than once per month.
<b>Current smoker</b>	Someone who has smoked more than 100 cigarettes in their lifetime and at the time of the survey was smoking at least once a month (World Health Organization 1998).
<b>Daily smoker</b>	Someone who has smoked more than 100 cigarettes in their lifetime and currently smokes at least once a day.
<b>Ever smoker</b>	Someone who has ever smoked cigarettes or tobacco at all (including cigars and pipes), even just a few puffs.
<b>Ex-smoker</b>	Someone who has smoked more than 100 cigarettes in their lifetime and at the time of the survey had not smoked for at least a month.
<b>Logistic regression</b>	A statistical model describing an individual's risk (eg, of being a smoker) as a function of one or more risk factors (eg, age, ethnicity, neighbourhood deprivation).
<b>Manufactured cigarette</b>	A cylinder of finely cut tobacco rolled in paper using mechanical production line techniques and sold in packets of 20 or more. Also known as a tailor-made, ready-made or factory-made cigarette.
<b>Nicotine replacement therapy</b>	Nicotine replacement therapy (NRT) is the use of various forms of nicotine delivery methods intended to replace nicotine obtained from smoking or other tobacco usage. NRT includes patches, gum and lozenges. These products work by reducing the intensity of nicotine withdrawal symptoms through replacing some of the nicotine a smoker usually gets from cigarettes (The Quit Group 2009).
<b>Ninety-five percent confidence interval</b>	A range of values for a prevalence rate, which has a 95% probability of including the true value of the prevalence (Last 1988).
<b>Non-smoker</b>	Someone who at the time of the survey did not smoke at all. Non-smokers include: <ul style="list-style-type: none"><li>• ex-smokers (people who were formerly current smokers but at the time of the survey did not smoke at all)</li><li>• people who have not smoked more than 100 cigarettes in their lifetime</li><li>• never smokers.</li></ul>
<b>NZDep2006</b>	The New Zealand Index of Deprivation 2006 (NZDep2006) is used in this report as a measure of neighbourhood socioeconomic deprivation and as a proxy for individual socioeconomic position. The NZDep2006 is an area-based index of deprivation that measures the level of socioeconomic deprivation for each neighbourhood (meshblock) using nine census variables (Salmond et al 2007). More details can be found in the methodology section.

<b>P-value</b>	<p>A statement of probability that the difference observed could have occurred by chance (Last 1988).</p> <p>In this report, if a p-value is less than 0.05 (5%), the difference between two prevalence values is said to be statistically significant.</p>
<b>Prevalence</b>	<p>The proportion or percentage of the specified population at a given time (for the 2009 NZTUS this is 2009) demonstrating a particular health behaviour (eg, smoking).</p>
<b>Quintile</b>	<p>In this report, NZDep2006 scores have been aggregated into five equally sized groups (quintiles), each containing approximately 20% of the population. The least deprived neighbourhoods (quintile 1 and sometimes also quintile 2) have been compared with the most deprived neighbourhoods (quintile 5 and sometimes also quintile 4).</p>
<b>Recent quit attempter</b>	<p>Someone who has attempted to quit smoking in the past 12 months. This includes current smokers who have quit for more than 24 hours in the past 12 months, as well as people who have quit smoking in the past 12 months (that is, ex-smokers).</p>
<b>Roll-your-own cigarette</b>	<p>Loose tobacco, cigarette papers and (sometimes) filters are purchased separately and rolled either by hand or with the aid of a small portable rolling machine to form a roll-your-own cigarette (also known as a rollie).</p>
<b>Smoking</b>	<p>The active smoking of tobacco products such as manufactured or roll-your-own cigarettes, cigars or pipes. Smoking does not include:</p> <ul style="list-style-type: none"> <li>• the smoking of any other substances (eg, herbal cigarettes or marijuana)</li> <li>• the consumption of tobacco products by other means, such as chewing.</li> </ul>
<b>Standardised rate ratio</b>	<p>The ratio of the prevalence of one group compared with the prevalence of another group. In this report, rate ratios are used to compare each of the four ethnic groups with the total New Zealand population, and they have been age standardised.</p>
<b>Statistically significant</b>	<p>Differences between estimates are said to be statistically significant when the 95% confidence intervals for the estimates do not overlap. Sometimes, however, even when there are overlapping confidence intervals the difference between the groups can be statistically significant. In instances where there was a small overlap between groups (indicating possible significance), t-tests were conducted to determine whether the apparent difference between groups is significant. The significance of a t-test is represented by the p-value. If a p-value is below 0.05, then we are 95% confident the difference between the two estimates is statistically significant.</p>

**Total response ethnicity**

Total response ethnicity involves each person being allocated to all ethnic groups they have identified with. This means that if someone identifies as being Chinese and Māori, they are classified as both Asian and Māori for the purpose of analysis; in other words, they will appear in the estimates for both the Māori population and the Asian population. This results in overlapping groups, and so the sum of the ethnic group populations exceeds the total New Zealand population (Ministry of Health 2004).

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