

# Victorian Population Health Survey 2003

Selected findings



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Department of Human Services

Published by Rural and Regional Health and Aged Care Services, Victorian  
Government Department of Human Services, Melbourne, Victoria.

June 2004

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Authorised by the State Government of Victoria, 120 Spencer Street, Melbourne.

Printed by Kosdown Printing Company Pty Ltd, 63–69 Rouse Street, Port Melbourne.

Also published on [www.dhs.vic.gov.au/phd/healthsurveillance/](http://www.dhs.vic.gov.au/phd/healthsurveillance/)

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## Foreword

The Victorian Population Health Survey is an important component of the population health surveillance capacity of the Department of Human Services. The department initiated this surveillance program in 1998 after a rigorous process of technical evaluation and review. It conducted the first major health survey of adult Victorians in 2001.

This report contains the key findings from the Victorian Population Health Survey 2003 (the third in an ongoing annual series). Information is presented on health and lifestyle, including asthma, diabetes, musculoskeletal disorders, alcohol and tobacco consumption, fruit and vegetable consumption, physical activity, adult obesity, psychological distress and social networks. Time series data for some survey estimates are also presented with selected data items from the 2001 and 2002 surveys. Future reports will continue to present time series data, allowing for comment on trends in aspects of population health.

The findings in this report have a direct bearing on State Government policies aimed at tackling social inequalities in health, and they pave the way for a new approach to monitoring determinants of preventable chronic disease. In section 8 on social networks, Dr David Adams from the Department for Victorian Communities outlines how the Victorian Population Health Survey has provided an ongoing set of social capital related indicators that are now being used to report on key aspects of social capital for policy debates. These indicators are already signalling the need for a paradigm shift in public policy to account for social capital related interventions.

The survey series is an ongoing source of high quality information on the health of Victorians. This information continues to underpin our public health efforts in controlling chronic diseases.



**Dr Robert Hall**

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## Summary

### Background

The Victorian Population Health Survey is an important component of the population health surveillance capacity of the Department of Human Services. The annual survey series is an ongoing source of high quality information on the health of Victorians. Information in the report is presented on health and lifestyle, including physical activity, smoking, alcohol consumption, intake of fruit and vegetables, selected health screening, adult obesity, asthma and diabetes prevalence, psychological distress and social networks.

### Purpose

The aim of this report is to provide high quality, timely indicators of population health that are intended to have direct application to evidence-based policy development and strategic planning across the department and the wider community. The Victorian Population Health Survey is based on a core set of question modules that are critical to informing decisions about public health priorities. It fills a significant void in the accessible data that are required to ensure public health programs are relevant and responsive to current and emerging health issues.

### Methods

Computer-assisted telephone interviewing was undertaken between August and December 2003. A representative statewide sample of adults aged 18 years or over was randomly selected from households in each of the nine departmental health regions. Approximately 7500 interviews were completed during the fieldwork period.

The department determined the content of the survey after reviewing the determinants of chronic disease states that are most likely to have an impact on Victorians. Priority has been given to areas in which a public health response is likely to be effective in improving health and, importantly, reducing inequalities in health for all Victorians.

### Key results

This report presents information that is compared to selected data items from the 2001 and 2002 surveys. Future survey reports will continue to present time series information, along with changes over time in the health of Victorians and the determinants of that health, such as obesity patterns among adult Victorians.

In the section on health and lifestyle, the report contains information on the prevalence of major risk-taking behaviours across the Victorian population—for example, the prevalence of smoking, nutrition,

alcohol consumption and levels of physical activity. Data on self-reported height and weight are now collected as permanent core items. These data will be vital for targeting public health interventions and evaluating outcomes. Questions on asthma and diabetes provide indicators for the selected national health priority areas, which are the subject of public health programs in Victoria and nationwide. These data complement the department's Victorian Burden of Disease Study and Victorian Ambulatory Care Sensitive Conditions Study, and they describe aspects of clinical management and prevention that are amenable to public health interventions.

A particular interest is the module of questions on the social determinants of health. New information presented in the report is based on measures of the extent and diversity of social networks in the Victorian population. Policy makers now have Victorian data that link preventable risk-taking behaviours, their 'upstream' determinants (such as levels of social networks) and health status.

The Victorian Population Health Survey 2003 collected a wide range of information relating to the health of the adult Victorian population and the determinants of that health. The following table presents the key results from the survey—that is, the health and lifestyle of Victorians in 2003 at a glance.

## The health and lifestyle of Victorians, 2003—selected findings

<b>Lifestyle related</b>	<b>Measure</b>	<b>Males (%)*</b>	<b>Females (%)*</b>	<b>Persons (%)*</b>
Fruit intake	<i>Proportion meeting recommended intake levels</i>	43.7	57.6	50.9
Vegetable intake	<i>Proportion meeting recommended intake levels</i>	9.2	13.5	11.4
Milk consumption	<i>Proportion of persons drinking low fat, skim or soya milk</i>	47.0	61.1	54.3
Alcohol consumption	<i>Proportion drinking weekly at levels for short-term risk from alcohol consumption</i>	47.0	61.0	54.2
Abstainers from alcohol	<i>Persons who had not had an alcoholic drink in the past 12 months or who no longer drink</i>	12.6	22.8	17.9
Smoking	<i>Prevalence of current smokers</i>	24.8	20.3	22.5
Smoking in the home	<i>Proportion of smoke-free homes</i>	..	..	83.9
Physical activity	<i>Adequacy of physical activity—sufficient time and sessions</i>	61.4	57.6	59.5
<b>Health status</b>				
Self-rated health	<i>Proportion reporting excellent/very good/good health</i>	83.9	85.4	84.7
Obesity/overweight	<i>Proportion of persons obese/overweight according to body mass index</i>	54.3	37.9	45.9
Asthma	<i>Current asthma prevalence</i>	9.5	13.8	11.7
Diabetes	<i>Diabetes prevalence</i>	4.5	3.8	4.2
Psychological distress	<i>Proportion having high scores (<math>\geq 22</math> on Kessler 10 score)</i>	9.5	12.6	11.1
<b>Screening</b>				
Blood pressure check	<i>Proportion aged 50 years or over who had had a test in the past two years</i>	91.0	91.6	91.4
Cholesterol check	<i>Proportion aged 50 years or over who had had a test in the past two years</i>	76.2	73.2	74.6
Blood sugar test	<i>Proportion aged 50 years or over who had had a test in the past two years</i>	64.6	63.2	63.8
Bowel examination	<i>Proportion aged 50 years or over who had had a test in the past two years</i>	31.2	19.7	25.1
Skin examination	<i>Proportion who had had a skin examination for lesions/cancers in the past 12 months</i>	25.5	21.6	23.5
Prostate check	<i>Proportion of males aged 50 years or over who had had a check in the past two years</i>	25.4	..	..
Dental check-up	<i>Proportion of persons who had had a check in the past two years</i>	61.3	67.4	64.5

## The health and lifestyle of Victorians, 2003—selected findings (continued)

<i>Measure</i>		<b>Males (%)*</b>	<b>Females (%)*</b>	<b>Persons (%)*</b>
<b>Social networks and participation</b>				
Attended a local community event in the past six months	<i>Proportion of persons</i>	50.4	54.9	52.7
Member of a sports group	<i>Proportion of persons</i>	35.2	21.8	28.3
Member of a church group	<i>Proportion of persons</i>	14.1	20.7	17.5
Member of a school group	<i>Proportion of persons</i>	11.4	17.9	14.8
Member of a community or action group	<i>Proportion of persons</i>	20.9	22.4	21.7
Member of a professional group or academic society	<i>Proportion of persons</i>	24.2	19.5	21.8
Helping out a local group as a volunteer	<i>Proportion of persons</i>	32.8	35.9	34.4
Not being able to get help from friends or family when needed	<i>Proportion of persons</i>	9.6	7.8	8.7
Agree that most people can be trusted	<i>Proportion of persons</i>	80.2	78.5	79.3

\* Aged 18 years or over unless otherwise specified.

.. Not applicable.

# 1. The Victorian Population Health Survey 2003

## 1.1 Background

Population health surveys based on computer-assisted telephoner interviews (CATI) are used to collect key population health surveillance data because they provide time series data, use collection procedures that are acceptable to respondents, use an adequate sample size, use current technology and provide high quality data (especially through greater supervision of interviewers, computer data entry and question sequencing). Further, they allow for data collection that is timely, cost-effective (especially in rural and urban areas) and adaptable to changing and emerging information needs. CATI surveys also fill strategic information gaps—that is, they can be used to gather information not available from other sources—and provide data files for further analysis and interpretation.

## 1.2 Method

The Victorian Population Health Survey 2003 followed a method developed over several years to collect relevant, timely and valid health information for policy, planning and decision making. The survey team administered CATI on a representative sample of persons aged 18 years or over who resided in private dwellings in Victoria. The Department of Human Services Human Research Ethics Committee approved the survey method and questionnaire content.

Figure 1.1: Rural regions, Victoria



Figure 1.2: Urban regions, Victoria



Figure 1.1

Region	Number of respondents
Barwon South West	828
Grampians	800
Loddon-Mallee	1011
Hume	892
Gippsland	918

Figure 1.2

Region	Number of respondents
Western Metropolitan	709
Northern Metropolitan	676
Eastern Metropolitan	835
Southern Metropolitan	831

The department outsourced the fieldwork data collection to a market research organisation, which department staff supervised. All data were self-reported and stored directly in the CATI system.

### Survey design

Random digit dialling was used to generate a sample of telephone numbers that formed the household sample for CATI. All residential households with land-line telephone connections were considered in-scope for the survey. A telephonic mode of survey delivery excludes various population groups, such as people who are homeless or itinerant, people in hospitals or institutions, the frail and aged, and people with disabilities who cannot participate in an interview.

### 1.3 Stratification

Five rural and four metropolitan Department of Human Services regions cover Victoria. The survey sample included a total of 7500 households and was stratified by departmental region. The rural regions were oversampled because inequalities in health between urban and rural Victoria were a major interest.

### 1.4 Sampling frame

The department generated an electronic listing of Victorian six-digit telephone exchange prefixes and localities to form the basis of the sampling frame. It mapped exchange localities to one of the nine departmental regions, then divided the sampling frame into two groups: (i) telephone numbers belonging to a

block of 100 numbers without a prefix match in an electronic directory of Victorian household telephone numbers (referred to as 'empty blocks') and (ii) telephone numbers belonging to blocks with one or more prefix matches in the directory.

### Sample generation

The 'no empty blocks' approach excluded from the sampling frame those blocks of 100 consecutive telephone numbers known to be less likely than other blocks of 100 consecutive telephone numbers to result in private dwelling contact. This approach maximised fieldwork efficiency and minimised costs. That is, blocks that were likely to be less productive than others were excluded, so as to prevent the costs of pure random digit dialling from being prohibitive.

The department appended randomly generated suffixes to current eligible six-digit telephone number prefixes. It 'washed' these numbers against current electronic business listings to remove known business numbers. Matching the randomly generated telephone numbers to an electronic directory produced a file of matched telephone numbers, names and addresses. The department used that file to produce the primary approach letters.

### Primary approach letter

Primary approach letters were mailed to all households where the randomly selected telephone number matched a listing in an electronic directory of Victorian household telephone

numbers. Approximately 12,600 primary approach letters were mailed. The letter informed the households that the department was conducting the Victorian Population Health Survey to collect information about health, lifestyle and wellbeing in the community, and outlined the importance of the survey. It also introduced market research company I-view Pty Ltd (formerly NCS Pearson Pty Ltd) as the agency appointed to conduct the survey.

After contacting a household, an interviewer would select for interview the person (usually a resident) aged 18 years or over with the most recent birthday. Seventy-four per cent of the 7500 interviews conducted were from the matched sample. The proportion of interviews from the unmatched sample was lower in the metropolitan areas (36.0 per cent) than in the rural areas (46.2 per cent).

Call outcomes from the unmatched sample were characterised by:

- a lower proportion of interviews from eligible telephone numbers
- a higher proportion of non-contacts from eligible telephone numbers
- a higher refusal rate as a proportion of in-scope contacts
- a higher proportion of numbers reaching the end of the call cycle without result.

Throughout the survey period, the department operated a 1800 number, which was identified in the primary approach letter. Individuals contacted about the survey could call this number for further information. The majority of

calls received were to arrange an interview time or verify the nature of the survey.

### 1.5 Data collection

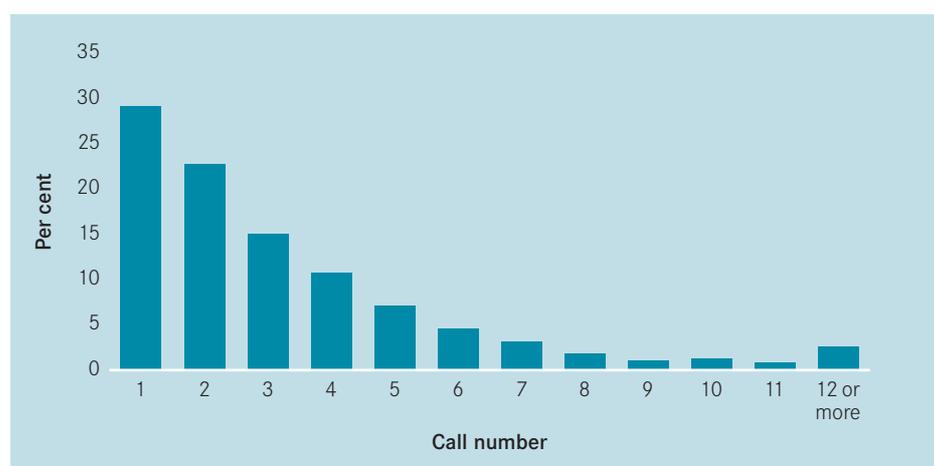
The interviewers achieved over two-thirds of completed interviews within the first three calls. This proportion is consistent with national experience on similar projects. More experienced interviewers were chosen to work on refusal conversions, to increase the participation of selected respondents in the survey. This effort ensured respondents were a more representative sample of the population.

### 1.6 Call routine

The interviewers made up to six call attempts to establish contact with a household and up to another nine call attempts to complete an interview where required. Further attempts were made only when there was a clear opportunity for interview at the end of the 15th call. Over two-thirds of interviews were achieved within the first three calls.

Call attempts were spread over different times of the day and different days of the week, and were controlled by a customised call algorithm in the survey management system. Except for engaged numbers at the first call attempt, a non-contact in any specific time block was automatically scheduled for call back in a different time block as per the call back routine. A scripted message was left at the first and second calls to an answering machine, encouraging respondents to contact the 1800 number. After

**Figure 1.3: Completed interviews, by number of calls**



establishing contact, interviewers could make calls, by appointment, outside the time block hours.

### 1.7 Interviewing in languages other than English

The interviewing used six community languages. An external agency translated questionnaires into Mandarin, Cantonese, Vietnamese, Italian, Greek and Macedonian. CATI interviewers were recruited to undertake the interviews in these other languages as required. Respondents who received a primary approach letter, which was also translated into these languages, could nominate to be interviewed in their preferred language.

### 1.8 Fieldwork period

The main interviewing occurred during August–November 2003 over 11 weeks. This followed two pilot tests of the questionnaire during June–July 2003, a debriefing of interviewers and the modification of the questionnaire as required.

### 1.9 Participation

The participation rate, defined as the proportion of households where contact was made and an interview was then completed, was 64 per cent.

### 1.10 Weighting

The department's project team weighted the survey data to reflect (i) the probability of selection of the respondent within the household and (ii) the age/sex/geographic distribution of the population. Although a single respondent was randomly selected from within a household, the size of any household can vary upwards from one person. To account for this variation, the project team treated each respondent as representing the whole household, so his or her weight factor included a multiplier of the number of persons in the household.

Further, a household may have more than one telephone line (that is, land lines used primarily for contact with the household), which would increase that

household's probability of selection over those households with only one telephone line. To ensure the probability of contacting any household was the same, the project team divided the weight factor by the number of telephone lines connected to the household. The formula for this component is  $n_{ah}/n_{pl}$ , where:

$n_{ah}$  = the number of adults aged 18 years or over in the household

$n_{pl}$  = the number of telephone lines in the household.

### Population benchmark components

Further to the selection weight component, the project team applied a population benchmark component to ensure the adjusted sample distribution matched the population distribution for the combined cross-cells of age group and gender by region (for example, males aged 18–24 years in Barwon South West). The categories used for each of the variables were:

- *age groups*: 18–24 years, 25–34 years, 35–44 years, 45–54 years, 55–64 years and 65 years or over
- *sex*: male, female
- *region*: Barwon South West, Grampians, Loddon–Mallee, Hume, Gippsland, Eastern Metropolitan, Northern Metropolitan, Western Metropolitan and Southern Metropolitan.

The department's project team calculated the population benchmark component by dividing the population of each cross-cell by the sum of the selection weight components for all the respondents in the sample within that

cross-cell. For each cross-cell, the formula for this component is:

$$pbmark_i = N_i / \sum sw_{ij}$$

where:

$i$  = the  $i$ th cross-cell

$j$  = the  $j$ th person in the cross cell

$N_i$  = the population of the  $i$ th cross-cell

$\sum sw_{ij}$  = the sum of selection weights for all respondents (1 to  $j$ ) in the  $i$ th cross-cell.

### Calculating the person weight to be applied

The project team assigned respondent records a weight factor ( $pwt$ ) by multiplying the selection weight ( $sw$ ) value by the population benchmark value ( $pbmark$ ):

$$pwt_{ij} = sw_{ij} * pbmark$$

where:

$i$  = the  $i$ th cross-cell

$j$  = the  $j$ th person in the cross-cell.

## 1.11 Profile of survey respondents

Known population benchmarks for selected data items may be used to assess the representativeness of the sample. Table 1.1 shows the benchmark data and weighted and unweighted estimates obtained from the survey.

A comparison between benchmark and survey data indicates the following:

- Females were more likely than males to participate in the survey.
- Persons younger than 65 years were less likely to participate than persons aged 65 years or over.

- Persons born in Australia were more likely to participate than those born overseas, perhaps as a result of those who do not speak English or any of the six languages offered for interview.
- The survey included a higher proportion of persons not in the labour force.

A small proportion of respondents (0.9 per cent) identified themselves as being Aboriginal or Torres Strait Islander.

#### Notes to table 1.1

- Persons aged 18 years or over. Australian Bureau of Statistics 2001 census, Canberra.*
- Australian Bureau of Statistics 2001 census, Canberra. (The 'never married' category is not directly comparable between the census and the Victorian Population Health Survey 2003 because the survey collected an extra category—'living with a partner'.)*
- Australian Bureau of Statistics 2001 census, Canberra.*
- Persons aged 15 years or over. Australian Bureau of Statistics 2001, Labour force, Victoria, cat. no. 6202.2, Canberra.*
- Private Health Insurance Administration Council, www.phiac.gov.au.*

*na Not available.*

*\* Survey estimate was significantly lower than benchmark estimate ( $p < 0.05$ ).*

*\*\* Survey estimate was significantly higher than benchmark estimate ( $p < 0.05$ ).*

*Notes: 95 per cent confidence intervals are provided for benchmark data where available. The survey sample was allocated a 60 per cent/40 per cent rural/urban split respectively, and selected benchmark characteristics are for the whole of Victoria.*

Table 1.1: Profile of respondents in the Victorian Population Health Survey 2003

Selected characteristics	Benchmark data (%)	Survey outcome (%)	Survey estimate using probability of selection weights (%)	95% confidence interval (%)	
				Lower limit	Upper limit
<b>Sex<sup>i</sup></b>					
Male	48.4	39.3	48.4	46.8	49.2
Female	51.6	60.7	51.6	50.1	52.5
<b>Age group<sup>i</sup></b>					
18–24 years	12.7	8.5	12.7	11.5	13.3
25–34 years	19.8	16.5	19.8	18.5	20.5
35–44 years	20.4	21.7	20.4	19.2	21.1
45–54 years	18.0	18.5	18.0	16.9	18.7
55–64 years	12.2	15.6	12.2	11.2	12.7
65 years or over	16.9	19.2	16.9	15.8	17.4
<b>Marital status<sup>ii</sup></b>					
Married	52.0	53.9	57.7**	56.2	58.6
Widowed	6.4	8.3	4.8*	4.3	5.1
Divorced	6.8	8.1	5.0*	4.4	5.3
Separated	3.2	5.1	3.3	2.8	3.5
Never married	31.7	16.5	20.5	19.1	21.2
Living with a partner	na	7.9	8.6	7.7	9.0
<b>Country of birth<sup>iii</sup></b>					
Australia	75.3	80.0	73.5*	72.0	74.2
<b>Labour force status<sup>iv</sup></b>					
Employed	59.8	55.0	58.9*	57.4	59.7
Unemployed	3.4	3.8	3.8	3.2	4.1
Not in the labour force	36.8	40.8	36.9	35.4	37.7
<b>Private health insurance<sup>v</sup></b>					
Yes	42.8	47.2	51.9**	50.3	52.7

## 2. Health and lifestyle

### 2.1 Introduction

A range of lifestyle behaviours influence the health status and health risk profile of individuals. Lifestyle-related risk factors contribute significantly to the burden of disease in Australia via their effect on the onset, maintenance and prognosis of a variety of diseases and health conditions and their complications. The risk factors associated with health and lifestyle behaviours are largely avoidable or modifiable. As a result, there is considerable scope for health gain through early prevention or appropriate management.

This section presents information on four common lifestyle-related risk factors (poor nutrition, alcohol misuse, tobacco smoking and physical inactivity) and preventive health behaviours (screening and eye health checks). Measuring and reporting on indicators of health and lifestyle behaviours provide an important platform for planning and evaluating public health programs that seek to reduce the risk profile of the population as a whole and/or segments of the population who are at higher risk. Because certain health and lifestyle behaviours can contribute to the development of various chronic diseases and their complications, the surveillance of risk factors helps predict levels and trends, and gives impetus to opportunities for early intervention.

### 2.2 Fruit and vegetable intake

Plant foods have been found to be protective in a range of health problems, including coronary heart disease, hypertension, some forms of cancer (including colon, lung and gastrointestinal cancers), obesity and non-insulin dependent diabetes.<sup>1</sup> Inadequate consumption of fruit and vegetables has been identified as a risk factor in the development of a number of chronic diseases, including coronary heart disease, stroke and many types of cancer, including cancers of the mouth, pharynx, oesophagus, stomach and lungs. The Victorian Burden of Disease Study<sup>2</sup> estimated that 2.8 per cent of total disability-adjusted life years (DALYs) may be attributed to inadequate fruit and vegetable intake (fewer than seven serves per day). This contribution exceeds that made by alcohol (2.1 per cent), illicit drugs (1.9 per cent), unsafe sex (0.8 per cent) and occupational hazards and exposures (1.7 per cent).

Evidence regarding the protective effect of vegetables is stronger than that for fruit, although this may be due to the limited range of fruit available in some populations and/or the greater amount of vegetables in most diets.<sup>3</sup> Nutritional needs differ at different stages of life. In particular, the intake of fruit and vegetables required for good nutrition varies slightly according to body size and physical activity level. Current Australian guidelines recommend a daily vegetable intake of three serves for persons aged 12–18 years and five serves for persons aged 19 years or over. The recommended daily fruit intake is three serves for persons aged 12–18 years and two serves for persons aged 19 years or over. The recommended number of servings of fruit and vegetables is higher for pregnant and breastfeeding women.<sup>4</sup>

**Table 2.1: Recommended daily intake of fruit and vegetables**

Consumption	Age group*	Recommended daily intake
Fruit	• Persons aged 12–18 years	Three serves
	• Persons aged 19 years or over	Two serves
Vegetables	• Persons aged 12–18 years	Three serves
	• Persons aged 19 years or over	Five serves

\* Excludes pregnant and breastfeeding women.

## Survey results

### Fruit and vegetable intake at a glance

- In 2003, more than half of all Victorians consumed only one or two serves of vegetables per day.
- Almost nine in 10 persons in Victoria did not meet the healthy eating guidelines for vegetables.
- A greater proportion of females than males consumed the recommended minimum daily quantities of vegetables.
- Persons living in rural areas reported a higher intake of vegetables compared with those living in urban areas.
- Overall, almost six in 10 females consumed two or more serves of fruit each day.
- The proportion of females who consumed at least two serves of fruit per day was lower in younger age groups than in older age groups.
- Almost half of all males aged under 65 years of age consumed less than two serves of fruit per day.
- A higher proportion of females than males met the guidelines for recommended minimum daily quantities of fruit.
- The proportion of persons aged 18 years or over who met the dietary guidelines for fruit and vegetables was low.

- Fewer than six in 100 males and fewer than 11 in 100 females consumed the minimum recommended quantities of fruit and vegetables each day.
- Not consuming the minimum recommended quantities of fruit and vegetables each day was associated with lower socioeconomic status.

### Vegetable consumption

Of all persons aged 18 years or over in 2003, 11.4 per cent usually consumed five or more serves of vegetables each day (table 2.2). A greater proportion of females than males consumed the recommended number of daily serves of vegetables (13.5 per cent and 9.2 per cent respectively). Over half (54.6 per cent) of respondents consumed only one or two serves of vegetables daily, with a higher proportion of males (62.1 per cent) than females (47.6 per cent) doing so. A greater proportion of males than females (3.0 per cent and 1.9 per cent respectively) did not consume any vegetables.

Persons aged 55–64 years were found to be the largest consumers of vegetables, with 21.3 per cent of females and 12.6 per cent of males in this age group consuming five or more serves daily (tables 2.3 and 2.4). A majority of males aged 18–64 years consumed only one or two serves of vegetables daily. Among males aged 65 years or more, more than half consumed less than half the recommended number of daily serves of vegetables. Males aged 18–24 years were found to be the least likely to consume five or more serves of vegetables daily, with only 4.7 per cent doing so (figure 2.1). Among females, 5.9 per cent of those aged 18–24 years reported eating the recommended quantity of vegetables each day (figure 2.2). A majority of females aged 45 years or over reported consuming three or more serves of vegetables each day.

**Table 2.2: Daily vegetable consumption, by sex**

	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Serves of vegetables eaten each day*</b>						
No serves	3.0	0.4	1.9	0.3	2.4	0.2
One or two serves	62.1	1.2	47.6	1.0	54.6	0.8
Three or four serves	25.4	1.1	36.9	1.0	31.4	0.7
Five or more serves	9.2	0.7	13.5	0.7	11.4	0.5

\* A 'serve' is half a cup of cooked vegetables or a cup of salad vegetables.

SE = standard error.

Table 2.3: Daily vegetable consumption, by age—males

Age group (years)	Serves of vegetables eaten each day*							
	0		1-2		3-4		5+	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
18-24	3.7	1.3	66.9	1.3	24.4	3.1	4.7	1.3
25-34	3.7	1.1	64.3	2.9	21.6	2.6	10.2	1.9
35-44	2.6	0.8	68.5	2.5	21.3	2.2	7.5	1.4
45-54	2.9	1.0	62.0	2.7	26.1	2.4	8.8	1.4
55-64	3.0	0.9	58.1	3.0	25.7	2.6	12.6	1.9
65+	2.5	0.7	49.6	2.7	35.9	2.7	11.6	1.8

\* A 'serve' is half a cup of cooked vegetables or a cup of salad vegetables.

SE = standard error.

Table 2.4: Daily vegetable consumption, by age—females

Age group (years)	Serves of vegetables eaten each day*							
	0		1-2		3-4		5+	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
18-24	4.0	1.4	62.8	3.5	27.2	3.4	5.9	1.6
25-34	1.9	0.6	55.3	2.3	32.1	2.1	10.7	1.5
35-44	1.2	0.5	48.9	2.0	35.9	1.9	14.0	1.4
45-54	1.5	0.5	38.9	2.3	44.5	2.3	14.9	1.6
55-64	1.0	0.4	39.7	2.7	37.6	2.5	21.3	2.2
65+	2.2	0.7	41.3	2.3	41.7	2.3	14.6	1.5

\* A 'serve' is half a cup of cooked vegetables or a cup of salad vegetables.

SE = standard error.

Figure 2.1: Daily vegetable consumption, by age—males

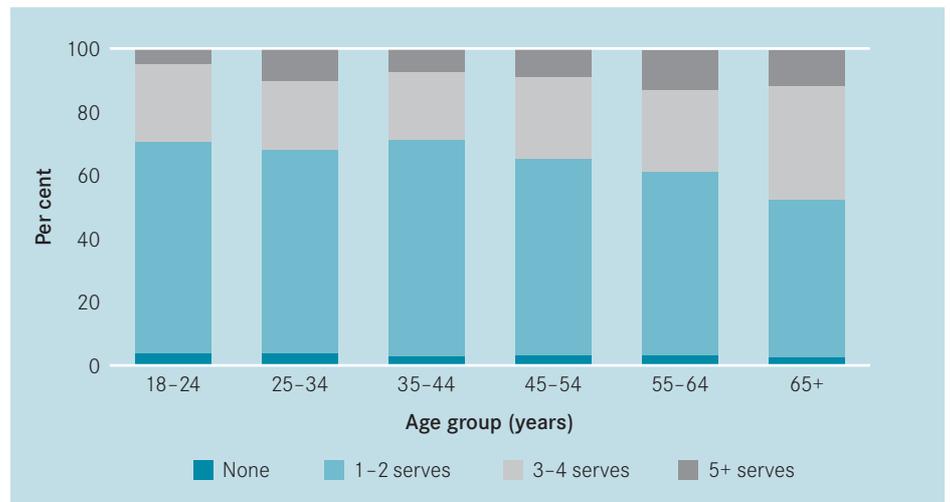
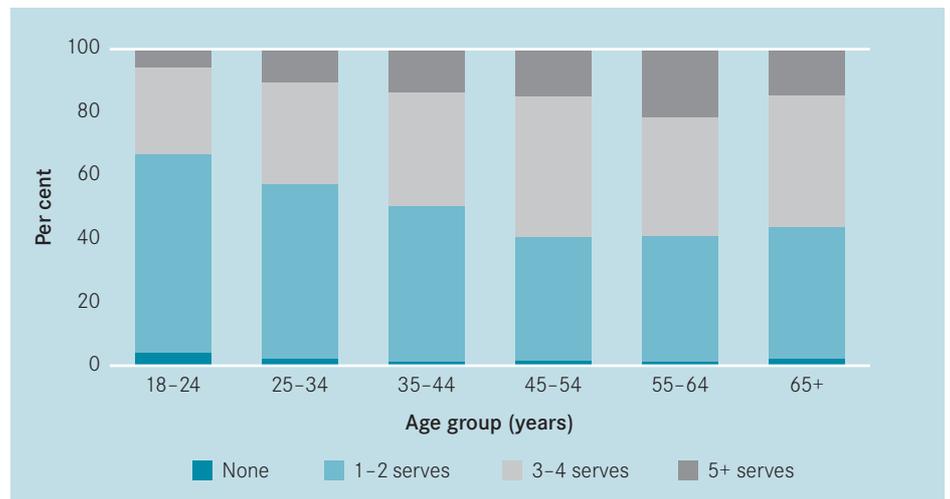


Figure 2.2: Daily vegetable consumption, by age—females



Persons living in rural areas reported a higher intake of vegetables, with 13.9 per cent consuming five or more serves daily, compared with 10.5 per cent of persons living in urban Victoria (table 2.5).

### Fruit consumption

Over half (50.9 per cent) of all persons aged 18 years or over consumed two or more serves of fruit on a usual day in 2003 (table 2.6). The proportion who met the recommended level of fruit consumption each day was greater among females overall (57.6 per cent) than among males (43.7 per cent), and this pattern was evident in every age group (tables 2.7 and 2.8). Among males, those aged 65 years or over were most likely to consume the recommended level, with 50.7 per cent having two or more serves each day (table 2.7). The consumption of fruit equal to the recommended two serves or more per day was highest (67.7 per cent) among females aged 55–64 years (table 2.8). The proportion of individuals who did not consume fruit was highest in the age group 25–34 years for both males (16.8 per cent) and females (11.4 per cent).

**Table 2.5: Daily vegetable consumption, by area of Victoria**

Serves of vegetables eaten each day*	Urban		Rural	
	%	SE (%)	%	SE (%)
No serves	2.7	0.3	1.9	0.2
One or two serves	55.8	1.0	51.2	0.9
Three or four serves	30.8	0.9	32.9	0.8
Five or more serves	10.5	0.6	13.9	0.6

\* A 'serve' is half a cup of cooked vegetables or a cup of salad vegetables.

SE = standard error.

**Table 2.6: Daily fruit consumption, by sex**

Serves of fruit eaten each day*	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
No serves	15.0	0.8	9.7	0.6	12.3	0.5
One serve	41.1	1.2	32.5	0.9	36.6	0.8
Two or more serves	43.7	1.2	57.6	1.0	50.9	0.8

\* A 'serve' is one medium piece or two small pieces of fruit, or one cup of diced pieces.

SE = standard error.

Table 2.7: Daily fruit consumption, by age—males

Age group (years)	Serves of fruit eaten each day*					
	0		1		2+	
	%	SE (%)	%	SE (%)	%	SE (%)
18–24	15.6	2.5	41.6	3.5	42.7	3.5
25–34	16.8	2.1	42.5	3.0	40.7	3.0
35–44	15.7	1.8	44.6	2.7	38.9	2.7
45–54	15.6	1.9	38.6	2.7	45.6	2.8
55–64	13.3	2.0	40.5	3.0	46.2	3.0
65+	11.7	1.8	37.4	2.6	50.7	2.7

\* A 'serve' is one medium piece or two small pieces of fruit, or one cup of diced pieces.

SE = standard error.

Table 2.8: Daily fruit consumption, by age—females

Age group (years)	Serves of fruit eaten each day*					
	0		1		2+	
	%	SE (%)	%	SE (%)	%	SE (%)
18–24	9.4	1.8	38.1	3.4	52.5	3.5
25–34	11.4	1.6	38.6	2.2	50.0	2.3
35–44	9.3	1.1	34.4	1.9	56.3	2.0
45–54	10.8	1.5	31.2	2.2	58.0	2.3
55–64	9.5	1.8	22.6	2.1	67.7	2.5
65+	7.8	1.5	27.7	2.1	63.9	2.3

\* A 'serve' is one medium piece or two small pieces of fruit, or one cup of diced pieces.

SE = standard error.

Figure 2.3: Daily fruit consumption, by age—males

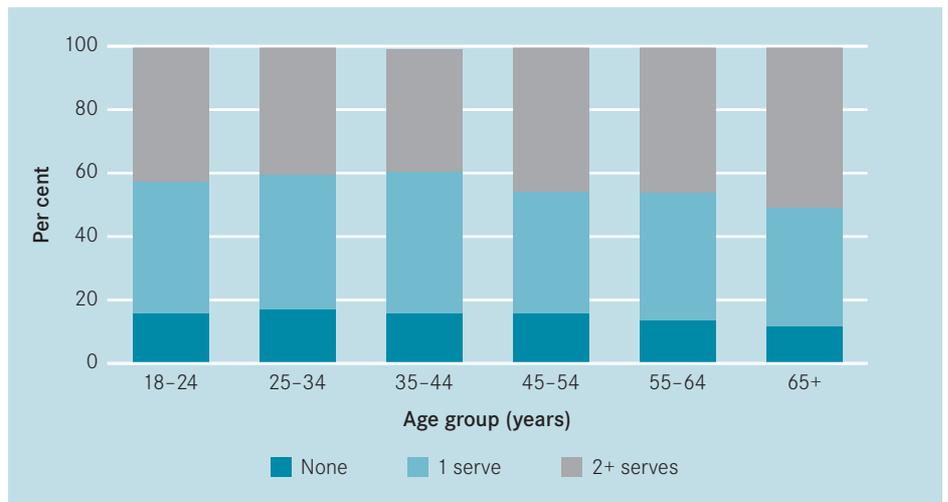
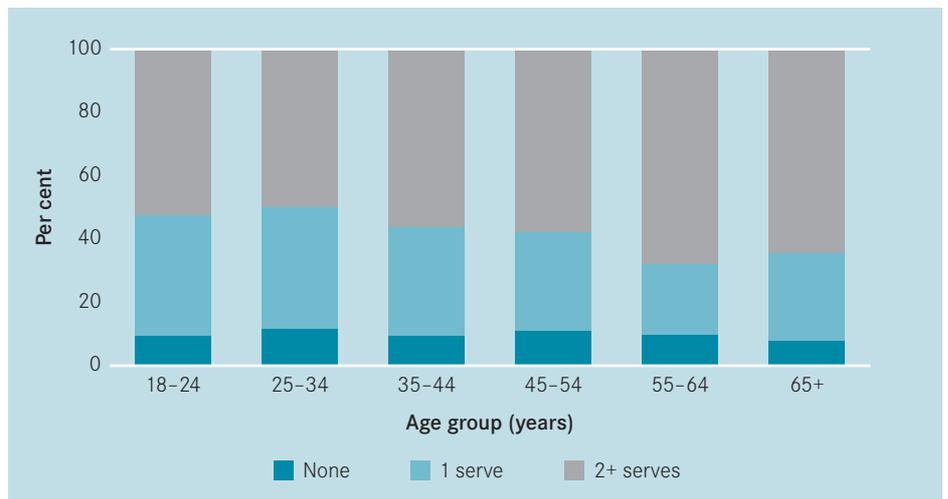


Figure 2.4: Daily fruit consumption, by age—females



Fruit consumption was not found to vary between rural and urban Victoria (table 2.9).

**Table 2.9: Daily fruit consumption, by area of Victoria**

Serves of fruit*	Urban		Rural	
	%	SE (%)	%	SE (%)
No serves	11.8	0.7	13.6	0.6
One or two serve	36.7	1.0	36.6	0.8
Two or more serves	51.3	1.0	49.7	0.9

\* A 'serve' is one medium piece or two small pieces of fruit, or one cup of diced pieces.

SE = standard error.

**Table 2.10: Proportion who met guidelines for consumption of fruit and/or vegetables, by age and sex**

Age group (years)	Fruit and vegetables		Vegetables only, not fruit		Fruit only, not vegetables		Neither fruit nor vegetables	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
<b>Males</b>								
18-24	2.2	0.9	8.1	1.8	33.8	3.4	55.6	3.6
25-34	6.4	1.5	3.9	1.3	34.1	2.9	55.5	3.0
35-44	3.0	0.9	4.5	1.2	35.9	2.7	55.8	2.7
45-54	6.1	1.1	2.6	0.9	39.4	2.8	51.4	2.8
55-64	7.8	1.5	4.8	1.3	38.4	3.0	48.4	3.1
65+	8.6	1.5	3.0	1.0	42.0	2.7	45.7	2.7
Total	5.6	0.5	4.3	0.5	37.2	1.2	52.5	1.2
<b>Females</b>								
18-24	6.2	1.6	3.0	1.2	43.1	2.3	46.3	2.3
25-34	7.0	1.1	3.7	1.0	43.1	2.3	46.3	2.3
35-44	11.4	1.4	2.6	0.6	44.9	2.0	41.1	2.0
45-54	11.2	1.4	3.6	0.8	46.6	2.3	38.4	2.3
55-64	16.9	1.9	4.4	1.2	50.6	2.7	27.7	2.4
65+	11.5	1.4	3.0	0.7	52.3	2.3	32.4	2.3
Total	10.5	0.6	3.3	0.4	46.7	1.0	39.2	1.0

SE = standard error.

### Combined fruit and vegetable consumption

The proportion of persons aged 18 years or over in Victoria in 2003 who met the dietary guidelines for fruit and vegetable intake was low—5.6 per cent of males and 10.4 per cent of females. Among females, the proportion whose daily consumption equalled or exceeded the recommended number of serves of both fruit and vegetables increased with age up to 64 years, from a minimum of 6.2 per cent among those aged 18–24 years to 16.9 per cent among those aged 55–64 years (table 2.10, page 17). For males, there was no consistent pattern by age group in the proportion who achieved the recommended daily intake of fruit and vegetables: the proportion ranged from a low of 2.2 per cent in the age group 18–24 years to 8.6 per cent of males aged 65 years or over. The extent to which respondents met recommended fruit and vegetables consumption was lower among males than among females in all age groups (figures 2.5 and 2.6).

More than half of all males aged 18–54 years did not consume the recommended number of servings of fruit or vegetables. The proportion of persons who did not consume the recommended intake ranged from a maximum of 55.8 per cent among males in the age groups 18–24 years and 25–34 years, to a minimum of 27.7 per cent among females aged 55–64 years.

Figure 2.5: Usual daily consumption of fruit and vegetables in relation to recommended serves, by age—males

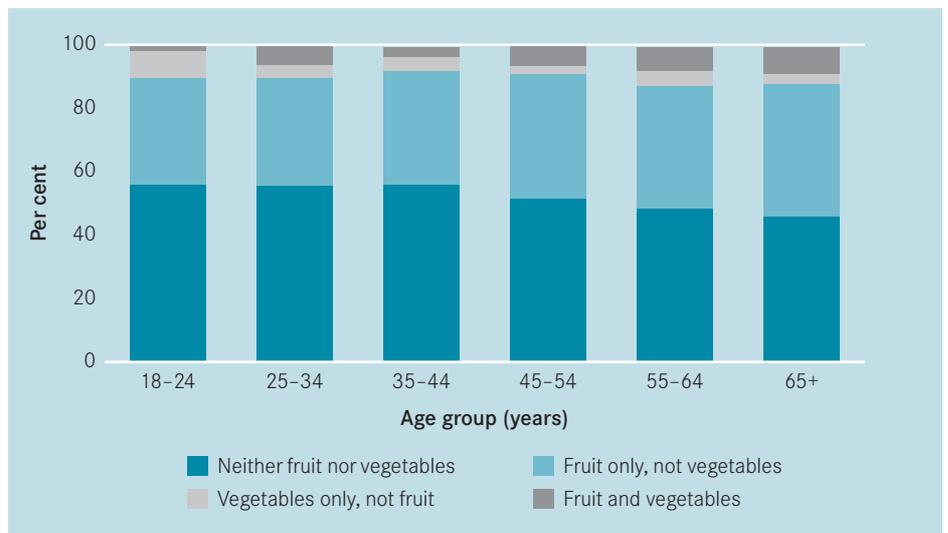
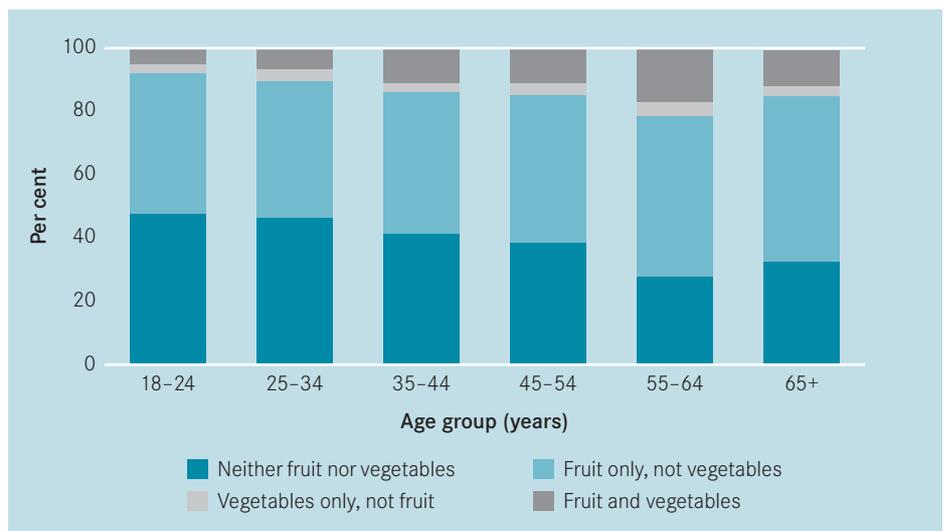


Figure 2.6: Usual daily consumption of fruit and vegetables in relation to recommended serves, by age—females



### Factors associated with not consuming fruit and vegetables

After adjusting for differences in age and sex (table 2.11), those persons more likely to be classified as not consuming the recommended number of daily serves of fruit and vegetables were those living in urban areas, those with lower levels of education, those who were unemployed, those with lower household incomes, those who lived in urban areas, those living in households with dependent children, and those having poorer self-rated health.

**Table 2.11: Non-consumption of recommended daily intake of fruit and vegetables, by selected variables**

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Area of Victoria</b>				
Rural/regional	1.00	–	–	–
Urban	1.36	1.13	1.62	0.001
<b>Country of birth</b>				
Australia	1.00	–	–	–
Overseas	1.31	0.99	1.73	0.051
<b>Household with dependant children</b>				
No	1.00	–	–	–
Yes	1.49	1.20	1.86	<0.001
<b>Education level</b>				
Tertiary	1.00	–	–	–
Secondary	1.49	1.20	1.86	<0.001
Primary	6.86	3.28	14.32	<0.001
<b>Employment status</b>				
Employed	1.00	–	–	–
Unemployed	1.95	1.00	3.84	0.052
Not in the labour force	1.05	0.81	1.37	0.704
<b>Body mass index</b>				
Not overweight	1.00	–	–	–
Overweight	1.23	0.98	1.54	0.068
<b>Household income per year</b>				
Greater than or equal to \$60,000	1.00	–	–	–
\$40,000 to less than \$60,000	1.08	0.78	1.49	0.653
\$20,000 to less than \$40,000	1.14	0.84	1.56	0.390
Less than \$20,000	1.64	1.26	2.25	0.002
<b>Self-rated health status</b>				
Excellent	1.00	–	–	–
Very good	1.42	1.05	1.94	0.023
Good	2.26	1.64	3.11	<0.001
Fair	2.34	1.56	3.51	<0.001
Poor	1.57	0.84	2.92	0.159

## 2.3 Milk consumption

Eating excessive amounts of some foods may be harmful. A high intake of saturated fat, for example, is associated with having an elevated blood cholesterol level, being overweight and having an increased risk of heart attack. Total fat (including saturated, mono-unsaturated and polyunsaturated fats) accounts for about 33 per cent of the energy intake of adult Australians,<sup>5</sup> which is above the National Health and Medical Research Council's recommended level of 30 per cent.<sup>1</sup> Within the total dietary fat intake, saturated fat accounts for about 13 per cent, compared with the maximum recommended level of 10 per cent.<sup>6</sup>

Choosing a low fat or reduced fat milk and yoghurt or calcium-fortified soy beverage is recommended for healthy eating.<sup>7</sup> These choices are also a proxy indicator of total and saturated fat consumption.<sup>8</sup>

### Survey results

#### Milk consumption at a glance

- Almost one half of males and less than one-third of females in 2003 usually drank whole milk.
- Over one-third of males and females drink low or reduced fat milk.

Table 2.12: Type of milk usually consumed

Type of milk	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
Whole	46.2	1.2	32.4	0.9	39.1	0.8
Low or reduced fat	34.2	1.2	38.7	1.0	36.5	0.8
Skim	9.3	0.7	17.2	0.7	13.4	0.5
Soya	3.5	0.5	5.2	0.5	4.4	0.3
Other*	0.7	0.2	0.9	0.2	0.8	0.1
Don't drink milk	5.9	0.6	5.7	0.5	5.8	0.4

\* Includes lactose-free milk.

SE = standard error.

Over half (54.3 per cent) of all persons consumed low fat, skim or soy milk in 2003, with 36.5 per cent consuming low or reduced fat milk (table 2.12).

A higher proportion of males (46.2 per cent) than females (32.4 per cent) usually consumed whole milk. A similar proportion of males and females reported they did not drink milk (5.9 per cent and 5.7 per cent respectively).

## 2.4 Alcohol consumption

At low or moderate levels, the consumption of alcohol yields health benefits for some people. In particular, it may help reduce the risk of heart disease from middle age. Regular excessive consumption of alcohol over time, however, places people at increased risk of chronic ill health and premature death, and episodes of heavy drinking may place the drinker (and others) at risk of injury or death. The consequences of heavy regular use of alcohol may include cirrhosis of the liver, cognitive impairment, heart and blood disorders, ulcers, cancers and damage to the pancreas. Intoxication and acute alcohol related problems include violence, risky behaviour, road trauma and injury. Significant psychosocial and economic consequences also arise from such patterns of drinking, not only for the individuals concerned but also for their families and the wider community.<sup>9</sup>

Excessive alcohol consumption is estimated to account for 4.9 per cent of the total burden of disease for Australia. Allowing for the beneficial effects of low to moderate levels of alcohol, the net harm associated with alcohol consumption accounts for around 2.2 per cent of the total burden of disease.<sup>10</sup> *The Australian alcohol guidelines: health risks and benefits*<sup>9</sup> emphasise patterns of drinking as

**Table 2.13: Australian alcohol guidelines for risk to health in the short term, by sex**

	Risk of harm in the short term*		
	Low risk	Risky	High risk
<b>Males</b>			
On any one day	Up to six on any one day; no more than three days per week	Seven to 10 on any one day	11 or more on any one day
<b>Females</b>			
On any one day	Up to four on any one day; no more than three days per week	Five to six on any one day	Seven or more on any one day

\* Based on a standard drink containing 10 grams or 12.5 millilitres of alcohol.

Source: National Health and Medical Research Council 2001, *Australian alcohol guidelines: health risks and benefits*, Canberra.

opposed to levels of consumption (the average amount consumed). The concept of drinking ‘patterns’ refers to aspects of drinking behaviour other than the level of drinking, including the context or circumstances of drinking (when, where and with whom the drinking behaviour occurs), the types of drink consumed, the number of heavy drinking occasions and their characteristics, and the norms associated with drinking behaviour. Two main patterns of drinking have been identified as creating a risk to an individual’s health: (i) excessive alcohol intake on a particular occasion and (ii) consistent high-level intake over months and years.

The guidelines specify the risks for various drinking levels for males and females of average or larger than average body size (60+ kilograms for males and 50+ kilograms for females) in the short term and the long term for the whole population (table 2.13). Risk is categorised according to three levels: (i) low risk—a level of drinking at which the risk of harm is minimal and there are possible benefits for some of the population; (ii) risky—a level of drinking at which the risk of harm outweighs any possible benefit; and (iii) high risk—a level of drinking at which there is substantial risk of serious harm and above which risk increases rapidly.

## Survey results

### Alcohol consumption at a glance

- The level of risk (low, risky or high risk) from **alcohol consumption** was modified by age and sex for 2003 (table 2.15).
- A lower proportion of males than females were categorised as recent or longer term **abstainers**.
- A higher proportion of males than females were categorised as consuming alcohol weekly at **risky or high risk levels**.
- The proportion of males who drank at **above short-term risk levels** at least yearly ranged from a high of 29.1 per cent in the age group 25–34 years to a low of 18.4 per cent in those aged 65 years or over.

### Abstainers from alcohol

Persons who had not had an alcoholic drink of any kind in the 12 months before the survey were classified as abstainers. Persons who had had an alcoholic drink during the previous year but who indicated they no longer drink were classified as recent abstainers. A lower proportion of males than females were categorised as recent or longer term abstainers (table 2.14). The proportion of females who abstained

Table 2.14: Total abstainers from alcohol\*

Age group (years)	Males		Females	
	%	SE (%)	%	SE (%)
18–24	9.0	1.9	13.9	2.5
25–34	10.3	2.0	15.5	1.6
35–44	12.0	2.0	17.4	1.5
45–54	9.4	1.6	22.7	2.0
55–64	14.7	2.1	26.7	2.3
65+	21.9	2.3	39.5	2.3
Total	12.6	0.8	22.8	0.8

\* Includes those who had had a drink in the previous 12 months but who no longer drink ('recent abstainers').

SE = standard error.

from alcohol increased with age, from a low of 13.9 per cent among those aged 18–24 years to a high of 39.5 per cent among those aged 65 years or over. The same pattern occurred among males: the proportion who reported abstaining from alcohol increased from 9.0 per cent in the age group 18–24 years to 21.9 per cent of those aged 55 years or over.

## Short-term risk from alcohol consumption

For the purpose of determining the risk of alcohol related harm, the short-term risk is defined in terms of the number of standard drinks consumed per drinking occasion (table 2.13). The guidelines for the whole population indicate that males who drink up to six standard drinks and females who drink up to four standard drinks are at 'low risk' of alcohol related harm in the short term. Males who drink 11 or more drinks when they consume alcohol and females who consume seven or more drinks are categorised as being at 'high risk'. Between these levels, alcohol consumption behaviour is classified as 'risky' in the short term. In specifying these short-term risks, it is assumed that heavier drinking days occur on a maximum of three occasions per week and remain within the levels of long-term harm.<sup>9</sup> The term 'binge drinking' has been identified with a pattern of behaviour that involves drinking 'too much' alcohol on infrequent occasions.

### Survey results

Table 2.15 shows the frequency at which persons consumed alcohol above the recommended short-term risk levels. A higher proportion of males than females (14.6 per cent and 6.2 per cent respectively) were categorised as consuming alcohol at least weekly at risky or high risk levels. The proportion of persons who consumed alcohol at least weekly at levels above the threshold for short-term alcohol harm was greatest in the age group 18–24 years for both sexes. The prevalence of drinking alcohol at least weekly at risky or high risk levels was

**Table 2.15: Frequency of drinking at above short-term risk levels, by age and sex**

Age group (years)	Risky and high risk							
	Low risk		At least yearly		At least monthly		At least weekly	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
<b>Males</b>								
18–24	18.0	2.9	22.4	3.0	26.7	3.1	23.9	2.9
25–34	22.0	2.5	29.1	2.8	22.8	2.5	15.8	2.1
35–44	29.9	2.5	25.4	2.3	19.4	2.1	13.3	1.7
45–54	32.6	2.6	27.9	2.6	15.5	2.0	14.6	1.8
55–64	36.2	2.9	18.9	2.2	16.3	2.5	13.9	2.0
65+	48.1	2.7	18.4	2.2	4.4	1.1	7.0	1.4
Total	30.8	1.1	24.4	1.1	17.7	0.9	14.6	0.8
<b>Females</b>								
18–24	21.5	3.1	28.7	3.2	22.5	2.9	13.4	2.1
25–34	26.4	2.0	31.7	2.1	18.2	1.8	8.2	1.5
35–44	41.3	2.0	22.5	1.6	12.4	1.3	6.3	0.9
45–54	45.0	2.3	18.0	1.7	8.8	1.3	5.4	1.0
55–64	53.4	2.7	12.0	1.7	3.8	1.0	4.1	1.4
65+	52.0	2.3	3.9	0.6	3.1	0.9	1.5	0.5
Total	40.0	1.0	19.6	0.8	11.4	0.7	6.2	0.5

*Risk levels are defined in terms of the number of standard drinks per drinking occasion (subject to qualifications for specific population groups) and differ for males and females. For males, the risk categories are: low risk—less than six standard drinks; risky—seven to 10; and high risk—11 or more. For females, the corresponding thresholds are: low risk—up to four standard drinks; risky—five to six; and high risk—seven or more.*

*SE = standard error.*

greatest among males and females aged 18–24 years (23.9 per cent and 13.4 per cent respectively). For the age group 65 years or over, 7.0 per cent of males and 1.5 per cent of females drank at least weekly at risky or high risk levels. The proportion of males who drank at least yearly at above short-term risk levels ranged from a high of 29.1 per

cent in the age group 25–34 years to a low of 18.4 per cent of those aged 65 years or over. Among females, 31.7 per cent of those aged 25–34 years drank at least yearly at above low risk levels. The proportion of females aged 65 years or over who drank at least yearly at short-term risky or high risk levels was 3.9 per cent.

## Long-term risk from alcohol consumption

Long-term risk of poor health outcomes due to alcohol consumption is associated with regular daily patterns of drinking, defined in terms of the amount of alcohol typically consumed each week. The *Australian alcohol guidelines* indicate that males are at high risk of long-term alcohol related health problems if they consume seven or more drinks on an average day or more than 43 standard drinks per week (table 2.16). For females, high risk of long-term problems is equated with the consumption of five or more standard drinks on an average day or more than 29 drinks per week. Alcohol consumption is classified as risky in the long term if males consume five to six drinks on an average day (29–42 per week) and if females consume more than three to four drinks daily (15–28 per week).

### Notes to table 2.16

\* Based on a standard drink containing 10 grams or 12.5 millilitres of alcohol

Source: National Health and Medical Research Council 2001, Australian alcohol guidelines: health risks and benefits, Canberra.

### Notes to table 2.17

Risk levels are defined in terms of the number of standard drinks per drinking occasion (subject to qualifications for specific population groups) and differ for males and females. For males, the risk categories are: low risk—up to 28 standard drinks per week; risky—29–42 drinks; and high risk—43 drinks or more. For females, the corresponding thresholds are: low risk—up to 14 standard drinks per week; risky—15–28 drinks; and high risk—29 or more drinks.

SE = standard error.

Table 2.16: Australian alcohol guidelines for long-term drinking and the level of risk to health

	Risk of harm in the long term*		
	Low risk	Risky	High risk
<b>Males</b>			
On an average day	Up to four per day	Five to six per day	Seven or more per day
Overall weekly level	Up to 28 per week	29–42 per week	43 or more per week
<b>Females</b>			
On an average day	Up to two per day	Three to four per day	Five or more per day
Overall weekly level	Up to 14 per week	15–28 per week	29 or more per week

Table 2.17: Long term risk of alcohol related harm, by sex

Age group (years)	Level of risk					
	Low		Risky		High risk	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Males</b>						
18–24	87.6	2.1	3.0	1.0	0.4	0.4
25–34	85.2	2.3	3.3	1.1	0.8	0.3
35–44	82.6	2.3	3.1	0.8	1.9	0.9
45–54	84.5	1.9	4.4	1.1	1.2	0.4
55–64	79.5	2.4	3.7	1.0	1.5	0.6
65+	72.8	2.4	2.7	0.8	2.0	0.6
Total	82.3	0.9	3.4	0.4	1.3	0.3
<b>Females</b>						
18–24	82.3	2.8	2.4	1.1	1.3	0.7
25–34	82.2	1.8	1.8	0.9	0.4	0.3
35–44	80.1	1.6	1.8	0.6	0.4	1.4
45–54	74.1	2.1	2.3	0.8	0.7	0.3
55–64	68.9	2.5	2.9	1.1	0.3	0.2
65+	57.1	2.3	1.6	0.6	0.2	0.1
Total	74.2	0.9	2.1	0.3	0.5	0.1

### Survey results

The quantity/frequency method was used to estimate the proportion of the population drinking at risky or high risk long-term levels. This method combines (i) the data on how often respondents usually had an alcoholic drink of any kind with (ii) data on the number of standard drinks that respondents usually had on a day when consuming an alcoholic drink.

Among males, the prevalence of long-term high risk levels of alcohol consumption was greatest (2.0 per cent) in the age group 65 years or over (table 2.17). The age group 45–54 years had the highest proportion (4.4 per cent) drinking at levels considered risky to health in the long term. More than 5 per cent of males aged 45–64 years engaged in drinking at levels considered to be risky or high risk in terms of long-term health consequences.

Among females, about 1.3 per cent of those aged 18–24 years reported drinking at levels associated with a high health risk in the long term (table 2.17). The proportion of females who drank at a risky level (15–28 drinks per week) in the long term was highest for the age group 55–64 years (2.9 per cent).

## 2.5 Smoking

Tobacco smoking accounts for 9.8 per cent of total DALYs for Victoria. Smoking tobacco is a major risk factor for coronary heart disease, stroke, peripheral vascular disease, numerous cancers and a range of other diseases and conditions. Smoking is also of concern during pregnancy, when a strong effect of smoking on foetal growth has been observed. Evidence links maternal smoking during pregnancy with an increased risk of sudden infant death syndrome, while household exposure to tobacco smoke has an independent additive effect.<sup>11</sup>

### Survey results

#### Smoking at a glance

- More males than females had **smoked tobacco products** at some point in their life.
- More males than females were categorised as **current smokers**.
- The proportion of current smokers was highest in younger age groups for both males and females, and decreased with increasing age.
- Among the current smoker population, the proportion who stated that their **home was smoke free** was greater in households with dependent children than in those with no dependent children (66.9 per cent and 50.2 per cent respectively).

Of all persons aged 18 years or over, 51.4 per cent of males and 40.5 per cent of females in 2003 were found to have smoked tobacco products at some point in their lives (table 2.18). Almost one-quarter of males (24.8 per cent) and 20.3 per cent of females identified themselves as current smokers. Across age groups, the proportion of males who were current smokers ranged from a high of 32.9 per cent (males aged 25–34 years) to a low of 10.3 per cent (males aged 65 years or over).

Almost six in 10 males aged 65 years or over (59.1 per cent) had smoked at some point in their lives. Among males aged 18–24 years, approximately one-third were current or ex-smokers. Among females, the proportion who had smoked during their lifetime was highest for the age group 35–44 years (46.5 per cent) and lowest for the age group 65 years or over (31.3 per cent). These proportions were similar for males and females up to the age group 45–54 years. Among persons aged 65 years or over, a significantly higher percentage of males than females (59.1 per cent versus 31.3 per cent) had ever smoked.

Table 2.18: Smoking status, by age\*

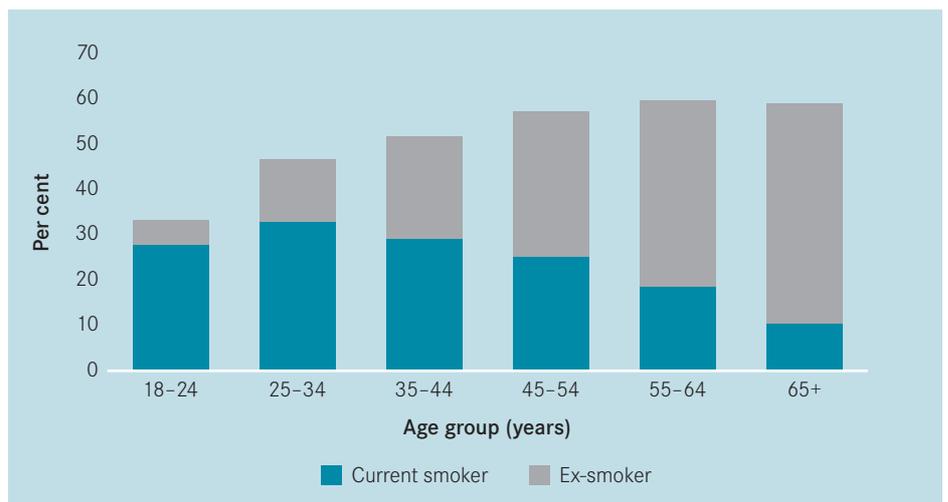
Age group (years)	Males						Females					
	Current smoker		Ex-smoker		Non-smoker		Current smoker		Ex-smoker		Non-smoker	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
18-24	27.7	3.1	5.6	1.6	66.7	3.3	27.5	3.0	9.3	1.9	63.1	3.3
25-34	32.9	2.8	13.7	2.2	53.3	3.0	28.3	2.1	18.2	1.8	53.5	2.3
35-44	29.2	2.4	22.5	2.3	48.1	2.7	23.3	1.6	23.2	1.7	53.4	2.0
45-54	25.1	2.4	32.3	2.7	42.3	2.7	19.9	1.8	22.1	1.9	57.9	2.3
55-64	18.6	2.4	41.1	3.0	40.2	3.0	15.3	2.0	21.1	2.1	63.5	2.6
65+	10.3	1.7	48.8	2.7	40.4	2.7	7.6	1.2	23.7	1.9	67.6	2.1
Total	24.8	1.1	26.6	1.1	48.4	1.2	20.3	0.8	20.2	0.8	59.2	1.0

\* Includes daily and occasional smokers.

SE = standard error.

Among males, the prevalence of current smoking was greatest in the age group 25-34 years, with 32.9 per cent indicating that they were current smokers (figure 2.7). The prevalence among females was also greatest (28.3 per cent) in this age group (figure 2.8).

Figure 2.7: Smoking status, by age—males



Current smokers are those who have smoked at least 100 cigarettes (or an equivalent amount of tobacco) and who smoke daily or occasionally. Overall, 4.6 per cent of males and 3.8 per cent of females in 2003 smoked occasionally (table 2.19). The proportion who smoked daily was greater for males than females across all age groups except for those aged 18–24 years, of whom 19.3 per cent of both males and females were daily smokers.

Figure 2.8: Smoking status, by age—females

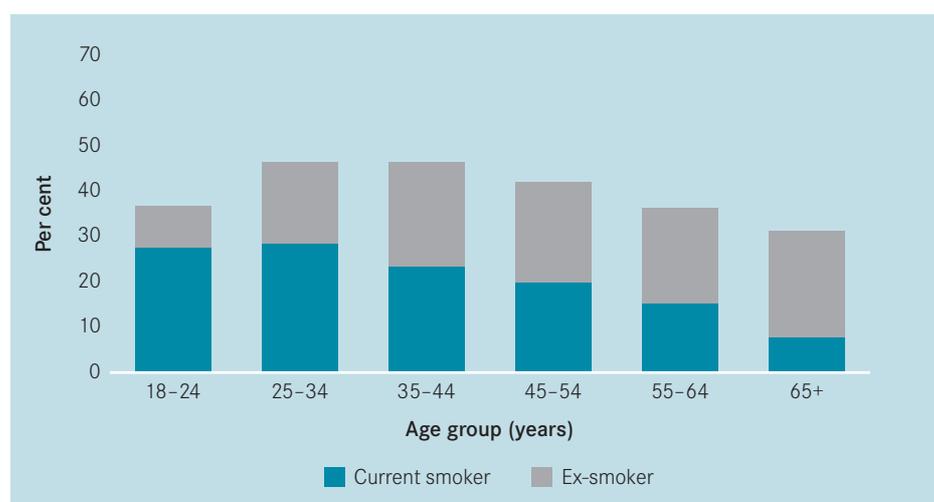


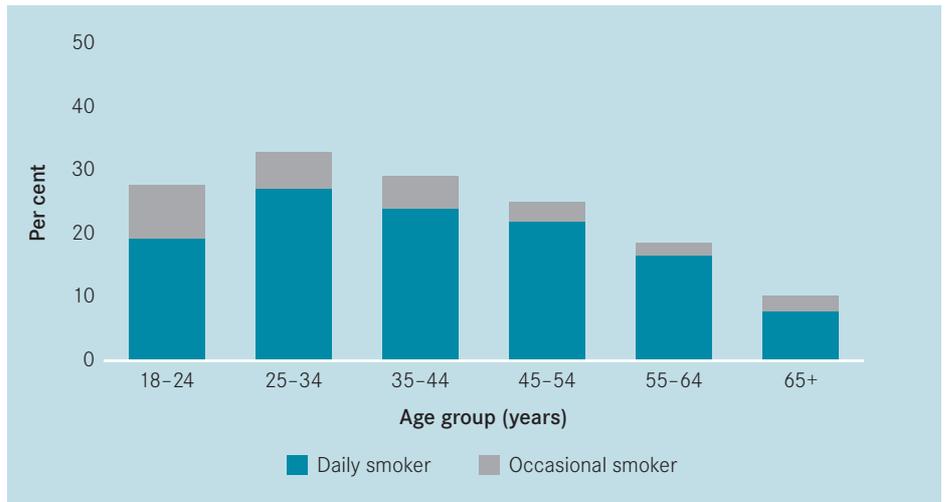
Table 2.19: Frequency of current smoking behaviour, by sex and age

Age group (years)	Males				Females			
	Daily		Occasional		Daily		Occasional	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
18-24	19.3	2.8	8.4	1.8	19.3	2.6	8.2	1.8
25-34	27.1	2.7	5.8	1.3	21.5	1.9	6.8	1.2
35-44	23.9	2.2	5.3	1.1	20.5	1.6	2.7	0.6
45-54	22.0	2.3	3.1	1.0	17.2	1.7	2.6	0.7
55-64	16.5	2.3	2.2	0.9	12.6	1.9	2.7	0.9
65+	7.8	1.4	2.5	1.0	6.9	1.2	0.7	0.3
Total	20.2	1.0	4.6	0.5	16.5	0.7	3.8	0.4

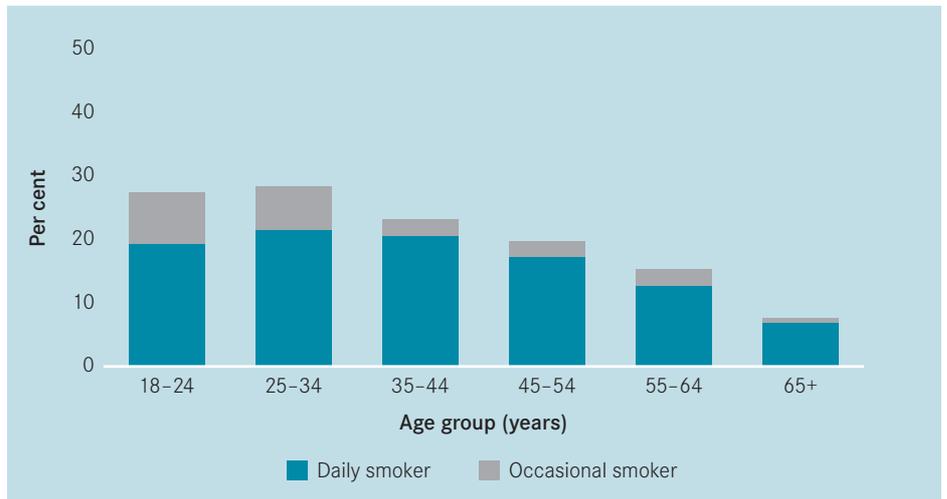
Among males, the majority of current and former smokers first started smoking at the age of 12–17 years (63.8 per cent and 56.6 per cent respectively). The age at which females first started smoking was similar, with 62.0 per cent of current smokers and 52.3 per cent of former smokers indicating that they had first started smoking in this age range.

Among ex-smokers, the mean number of years for which they had smoked was 20.4 years (standard error = 0.014) (table 2.20). On average, female ex-smokers had smoked for fewer years (mean = 18.9 years; standard error = 0.020) than males had (mean = 22.3 years; standard error = 0.020).

**Figure 2.9: Current smoking behaviour, by age—males**



**Figure 2.10: Current smoking behaviour, by age—females**



**Table 2.20: Number of years that ex-smokers had smoked, by sex**

	Males	Females	Total
Mean	22.3	18.9	20.4
75th percentile	31.0	27.0	29.0
95th percentile	46.0	45.0	45.0

## Environmental tobacco smoke in the home

Tobacco smoke is a significant environmental contaminant of indoor air. Exposure to environmental tobacco smoke is associated with increased health risks. Children who live in households with smokers have an increased risk of respiratory disease and are more likely to experience the symptoms of asthma.<sup>12,13</sup> Household exposure to tobacco smoke is also an independent risk factor for sudden infant death syndrome. Further, passive smoking increases a non-smoker's risk of developing lung cancer<sup>14</sup> and ischaemic heart disease. It is also associated with an increased risk of respiratory disease among adults.<sup>15</sup>

### Survey results

Overall, 83.9 per cent of persons reported their home was smoke free, with the proportion ranging from 92.6 per cent of non-smokers to 57.2 per cent of current smokers. Among ex-smokers, 7.8 per cent reported people occasionally smoked in their house, compared with 4.5 per cent of non-smokers. Among current smokers, the proportion whose homes were smoke free was greater when the household included dependent children (66.9 per cent) than when it did not (50.2 per cent) (figures 2.11 and 2.12).

Figure 2.11: Smoking in households with dependent children, by smoking status

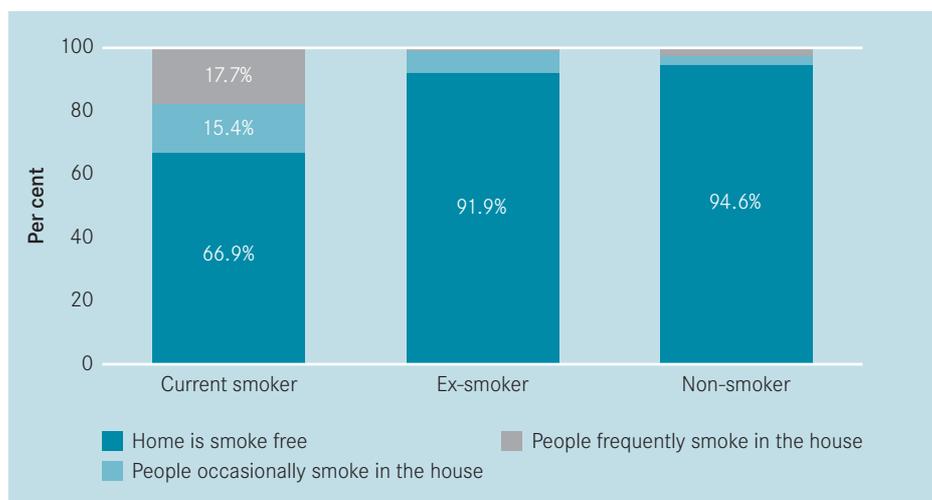
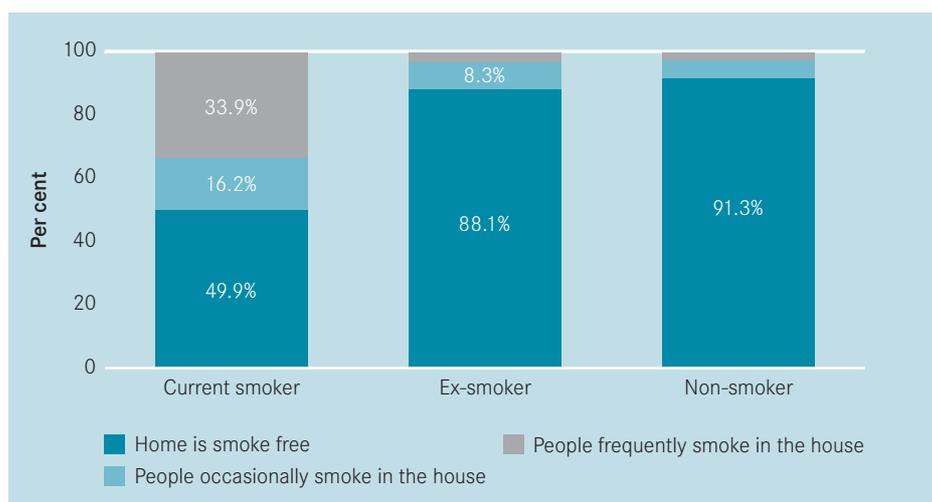


Figure 2.12: Smoking in households without dependent children, by smoking status



## 2.6 Physical activity/ inactivity

Physical inactivity is a major modifiable risk factor for a range of diseases and conditions, including cardiovascular disease, diabetes, some cancers, obesity and falls among the elderly.<sup>16-20</sup> About 7 per cent of the total burden of disease in Australia is attributable to physical inactivity.<sup>10</sup> As such, physical inactivity ranks second only to smoking in terms of its contribution to total DALYs. The Victorian Burden of Disease Study estimated that physical inactivity accounts for 6.6 per cent of total DALYs, with two-thirds of this burden arising from the increased risk of cardiovascular disease among persons who are not sufficiently physically active.<sup>2</sup>

Together with evidence that more health benefits accrue with more physical activity<sup>16,18</sup> and that the protective effect of physical activity occurs even if adopted in middle and later life,<sup>21,22</sup> such estimates suggest physical activity is an obvious target for health promotion. Monitoring physical activity at the population level is relevant for investigating the outcomes of such promotion efforts.

### Survey results

#### Physical activity at a glance

- More than one in 12 males in 2003 participated in no physical activity during the previous week.
- More than 50 per cent of Victorians participated in both moderate and vigorous intensity physical activity.
- More than one-quarter of males undertook some physical activity in the previous week but did not do enough regular activity to achieve health benefits.
- More than nine in 10 females aged up to 65 years participated in at least some physical activity.
- The proportion of males and females who were sufficiently active to achieve health benefits decreased with increasing age.
- Not participating in adequate regular physical activity was associated with being overweight or obese and having lower socioeconomic status.

Information was collected on three types of physical activity: (i) time spent walking (for more than 10 minutes at a time) for recreation or exercise, or to get to and from places; (ii) time spent doing vigorous household chores (excluding gardening); and (iii) time spent doing vigorous activities other than household chores and gardening (for example, tennis, jogging, cycling or keep-fit exercises). Data were collected on the number of sessions and the duration of each type of physical activity.

Eight per cent of persons aged 18 years or over did not undertake any physical activity during the week before the survey (table 2.21). Among both males and females who were physically active, walking was the most prevalent type of physical activity undertaken during the previous week, with 27.8 per cent of males and 25.2 per cent of females indicating that this was their only form of physical activity. A further 54.4 per cent of males and 58.2 per

**Table 2.21: Types of physical activity undertaken during the previous week, by sex**

Type of physical activity	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
No physical activity	8.4	0.7	7.6	0.5	8.0	0.4
Walking only*	27.8	1.1	25.2	0.9	26.4	0.7
Vigorous activity only**	9.0	0.7	7.8	0.5	8.4	0.4
Walking and vigorous activity**	54.4	1.2	58.2	1.0	56.4	0.8

\* Walking for a minimum of 10 minutes is categorised as a moderate intensity physical activity.

\*\* Includes vigorous household chores (excluding gardening) and vigorous 'other' activities (for example, tennis, jogging, cycling and keep-fit exercises).

SE = standard error.

cent of females participated in both walking and some form of vigorous activity in the week before the survey.

The level of health benefit achieved from physical activity partly depends on the intensity of the activity. In general, to obtain a health benefit from physical activity requires participation in moderate intensity activities (at least). Accruing 150 or more minutes of moderate intensity physical activity (such as walking) on a regular basis over one week is believed to be ‘sufficient’ for health benefits and is the recommended threshold of physical activity according to the *National physical activity guidelines for Australians*.<sup>23</sup> For those who achieve an adequate baseline level of fitness, extra health benefits may be gained by undertaking at least 30 minutes of regular vigorous exercise on three to four days per week.<sup>23,24</sup>

The sum of the proportions of adults who undertake only vigorous physical activity or walking and vigorous activity (table 2.21) sets the upper limit for the proportion of the population who may satisfy both the health benefit *and* health fitness related guidelines on physical activity. The actual proportion of adults who fulfil the criteria for both guidelines is reduced to the extent that individuals do not spend sufficient time on physical activity and/or do not participate in physical activity regularly.

The ‘sufficient time and sessions’ measure of physical activity is regarded as the preferred indicator of the adequacy of physical activity for health benefit because it addresses the regularity of the activity undertaken.<sup>25</sup>

**Table 2.22: Definition of sufficient time and sessions of physical activity**

• 0 minutes	Sedentary
• Less than 150 minutes OR 150 minutes or more but less than five sessions	Insufficient
• 150 minutes or more AND five or more sessions	Sufficient

Under this measure, the requirement to participate in physical activity *regularly* (that is, on five—preferably seven—days per week) is an accrued 150 or more minutes of at least moderate intensity physical activity.<sup>26,27</sup> The number of minutes spent on physical activity is calculated by adding the minutes of moderate intensity activity to two times the minutes of vigorous activity (that is, the minutes of vigorous intensity activity are weighted by a factor of two). A person who satisfies both criteria (time and number of sessions) is classified as doing ‘sufficient’ physical activity to achieve health benefits (table 2.22).

Individuals are classified as doing ‘insufficient’ physical activity if they reported undertaking physical activity during the week before the survey, but did not accrue 150 minutes and/or did fewer than five sessions. Individuals are considered to be ‘sedentary’ if they reported no physical activity for the relevant time period. Individuals classified as ‘sedentary’ or ‘insufficient’ are referred to as doing an ‘inadequate’ amount of physical activity to achieve health benefits.

The proportion of persons reporting no physical activity was greatest in the oldest age groups, with 13.8 per cent of those aged 65 years or over not undertaking any physical activity

(that is, ‘sedentary’) in the week before the survey (table 2.23). Within this age group, a higher proportion of females than males (15.4 per cent and 11.8 per cent respectively) had not participated in physical activity in the previous week. Persons aged 55–64 years ranked second in terms of those classified as sedentary, with 9.0 per cent having done no physical activity in the previous week.

Under the ‘sufficient’ time and sessions measure of physical activity, the proportion of persons whose physical activity in the previous week was ‘adequate’ decreased with increasing age. Between the age groups 18–24 years and 65 years or over, the proportion of those who undertook a sufficient amount of regular physical activity decreased from 66.9 per cent of younger adults to 46.6 per cent of the oldest age group. The proportions of males and females who were sufficiently active on most days of the week were similar for most age groups. Overall, 61.4 per cent of males and 57.6 per cent of females attained the threshold for physical activity to provide health benefits as per the national guidelines.

Table 2.23: Adequacy of physical activity undertaken during the previous week, by age and sex\*

Age group (years)	Sedentary		Insufficient time and/or sessions		Sufficient time and sessions	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Males</b>						
18-24	4.6	1.6	23.0	2.9	70.8	3.2
25-34	7.4	1.7	27.1	2.7	64.1	2.9
35-44	8.3	1.4	27.2	2.3	63.5	2.5
45-54	8.4	1.5	31.0	2.7	58.7	2.8
55-64	10.2	1.7	30.7	2.8	58.0	3.0
65+	11.8	1.8	33.6	2.6	52.7	2.7
Total	8.4	0.7	28.7	1.1	61.4	1.2
<b>Females</b>						
18-24	4.1	1.4	30.7	3.3	62.9	3.5
25-34	3.0	0.8	29.7	2.1	65.5	2.2
35-44	6.9	1.1	27.9	1.8	62.6	1.9
45-54	7.4	1.3	33.7	2.2	56.5	2.3
55-64	7.9	1.5	32.6	2.5	57.1	2.7
65+	15.4	1.7	36.8	2.2	42.0	2.3
Total	7.6	0.5	31.8	0.9	57.6	1.0
<b>Persons</b>						
18-24	4.4	1.1	26.8	2.2	66.9	2.4
25-34	5.1	0.9	28.4	1.7	64.8	1.8
35-44	7.6	0.9	27.5	1.5	63.0	1.6
45-54	7.9	1.0	32.4	1.7	57.6	1.8
55-64	9.0	1.1	31.6	1.9	57.6	2.0
65+	13.8	1.2	35.4	1.7	46.6	1.8
Total	8.0	0.4	30.3	0.7	59.5	0.8

\* 'Adequate' physical activity is defined as doing 150 or more minutes of at least moderate intensity physical activity over five or more sessions per week.

SE = standard error.

### Factors associated with inadequate physical activity behaviour

After adjusting for differences in age and sex (table 2.24), those persons more likely to be classified as sedentary or insufficiently active (using the sufficient time and sessions definition of physical activity) were those with lower levels of education, those who were overweight and those with lower household incomes.

Self-reported health status (section 3) had a strong association with being sufficiently active to achieve health benefits. Almost 72 per cent of those who rated their health as excellent undertook a sufficient level of physical activity on most days of the week, compared with only 46.2 per cent of those who rated their health as poor (table 2.25). Correspondingly, whereas only 4.0 per cent of those who rated their health as excellent were physically inactive or sedentary, 22.2 per cent of those who regarded themselves as being in poor health did not engage in any physical activity in the week before the survey.

#### Notes to table 2.24

\* 'Sufficient time and sessions' is defined as at least 150 minutes per week, using the sum of walking and vigorous activity (weighted by two) and five or more sessions of physical activity. 'Insufficient time and sessions' is defined as less than 150 minutes but more than 0 minutes (that is, the sedentary activity level) or more than 150 minutes over fewer than five sessions per week.

Table 2.24: Sedentary/insufficiently active behaviour, by selected variables\*

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Area of Victoria</b>				
Urban	1.00	–	–	–
Rural	1.08	0.97	1.21	0.157
<b>Country of birth</b>				
Australia	1.00	–	–	–
Overseas	1.14	0.98	1.33	0.095
<b>Education level</b>				
Tertiary	1.00	–	–	–
Secondary	1.24	1.08	1.42	0.002
Primary	1.80	1.25	2.60	0.002
<b>Occupation</b>				
Professional	1.00	–	–	–
Non-professional	1.17	0.97	1.42	0.093
<b>Employment status</b>				
Employed	1.00	–	–	–
Unemployed	0.88	0.63	1.25	0.487
Not in the labour force	0.93	0.80	1.10	0.447
<b>Smoking status</b>				
Non-smoker	1.00	–	–	–
Smoker	0.98	0.83	1.16	0.837
Ex-smoker	0.85	0.73	1.00	0.047
<b>Body mass index</b>				
Not overweight	1.00	–	–	–
Overweight	1.14	1.00	1.30	0.043
<b>Household income per year</b>				
Greater than or equal to \$60,000	1.00	–	–	–
\$40,000 to less than \$60,000	1.18	0.97	1.44	0.095
\$20,000 to less than \$40,000	1.22	1.01	1.49	0.043
Less than \$20,000	1.13	0.93	1.38	0.212

**Table 2.25: Persons achieving sufficient physical activity time and sessions in the previous week, by self-reported health status\***

Activity level	Self-rated health									
	Excellent		Very good		Good		Fair		Poor	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
Sufficient	71.9	2.0	64.4	1.3	56.3	1.3	46.5	2.1	46.2	4.6
Insufficient	22.1	1.9	26.9	1.2	33.9	1.2	36.4	2.1	30.3	4.0
Sedentary	4.0	0.8	6.2	0.6	7.9	0.7	13.7	1.6	22.2	3.7

\* 'Sufficient time and sessions' is defined as at least 150 minutes per week, using the sum of walking and vigorous activity (weighted by two) and five or more sessions of physical activity. 'Insufficient time and sessions' is defined as less than 150 minutes but more than 0 minutes (that is, the sedentary activity level) or more than 150 minutes over fewer than five sessions per week.

SE = standard error.

### Work related physical activity

Individuals who were employed were asked about the nature of any work related physical activity, partly because other physical activity questions focus more on leisure time physical activity. A higher proportion of persons who characterised their work as being mostly heavy labour or physically demanding work (10.1 per cent) were categorised as sedentary, compared with those whose work involved mostly sitting or standing (6.3 per cent) or mostly walking (6.1 per cent). About one-third of persons who mostly sat or stood at work (33.3 per cent) were classified as undertaking insufficient regular physical activity (table 2.26).

**Table 2.26: Persons achieving sufficient physical activity time and sessions\* in the previous week, by work related activity**

Work related physical activity	Sedentary		Insufficient time and/or sessions		Sufficient time and sessions	
	%	SE (%)	%	SE (%)	%	SE (%)
Mostly sitting or standing	6.3	0.7	33.3	1.3	58.8	1.3
Mostly walking	6.1	1.2	21.6	1.9	69.8	2.2
Mostly heavy labour or physically demanding work	10.1	1.5	24.3	2.2	63.3	2.5
Unemployed or not in labour force	9.5	0.7	31.1	1.1	56.6	1.2

SE = standard error.

## 2.7 Selected health screening and checks

The survey collected information on a number of routine checks or screening tests that may be performed to detect the presence of risk factors for the development of a disease condition or to detect a disease before its symptoms are manifest. Specifically, the survey collected information on: (i) a blood pressure check, (ii) a blood test for cholesterol, (iii) a test for diabetes or high blood sugar levels, (iv) a bowel examination (of any type), (v) a skin examination for lesions/cancers, (vi) a prostate check (males only) and (vii) a dental check-up (including visits to dental technicians).

### Screening at a glance

- Over three-quarters of all persons (76.6 per cent) in 2003 reported having had their **blood pressure checked** in the two years before the survey. Those aged 50 years or over were more likely than the younger age groups to have had the test done.
- Less than half of all persons aged 18 years or over (48.3 per cent) reported having had a **cholesterol check** in the previous two years, with those aged 50 years or over more likely to have done so than the younger age groups.
- Overall, 46.5 per cent of persons aged 18 years or over reported having had a **test for diabetes or high blood sugar levels** in the previous two years.

- Less than one-quarter of all persons aged 18 years or over (23.5 per cent) reported having had a **skin examination** in the previous two years.
- Just over half of all persons aged 18 years or over (51.6 per cent) reported having had a **dental check-up** in the previous two years.

### Blood pressure check

It is recommended that all adults have their blood pressure checked regularly, primarily to identify high blood pressure or hypertension.<sup>28</sup>

#### Survey results

In total, 76.6 per cent of persons in 2003 reported having had their blood pressure checked in the two years before the survey. Those aged 50 years or over were more likely than others to have had the test recently, with 91.6 per cent of males and 91.0 per cent of females in this age group having done so (figure 2.13). Among persons aged 18–49 years, 67.7 per cent had had their blood pressure checked in the previous two years, with

females being more likely than males (74.2 per cent and 60.9 per cent respectively) to have been tested.

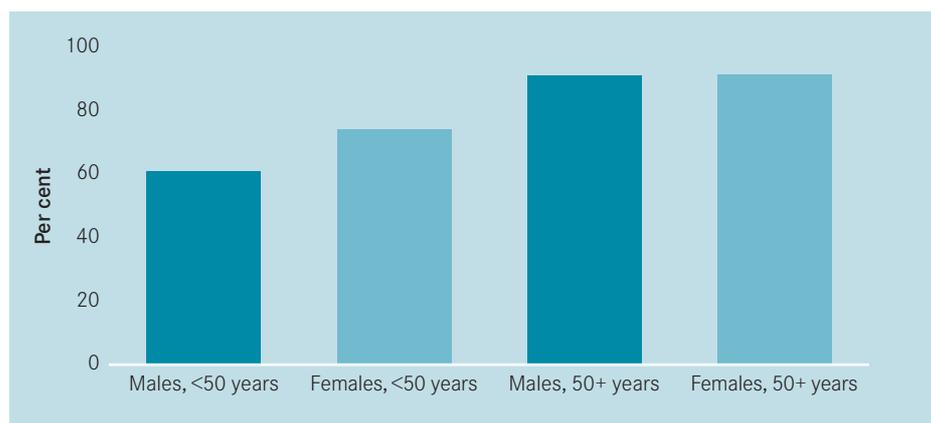
### Cholesterol check

Elevated blood cholesterol is an important risk factor for coronary heart disease. Cholesterol checks are recommended for persons potentially at high risk, such as smokers, those with a significant family history of coronary heart disease (a first-degree relative affected at an age under 60 years), those who are overweight or obese, those who have hypertension and those aged 45 years or over.<sup>7</sup>

#### Survey results

In total, 48.3 per cent of persons in 2003 indicated they had had a cholesterol check in the two years before the survey. Screening for elevated blood cholesterol levels was found to be higher among those aged 50 years or over, with 76.2 per cent of males and 73.2 per cent of females in this age group reporting that they had undergone a recent cholesterol check

Figure 2.13: Blood pressure check in previous two years, by age and sex



(figure 2.14). For those aged under 50 years, males were more likely than females (33.7 per cent and 31.5 per cent respectively) to have had their cholesterol checked.

### Blood sugar test

Blood glucose tests are used primarily to detect the development of, or a predisposition to, diabetes mellitus. While the screening of asymptomatic individuals is generally not considered to be justified, at-risk individuals are advised to have their blood glucose levels checked periodically. At-risk groups include persons aged 55 years or over, overweight persons, those with a first-degree relative with diabetes, and females with a history of gestational diabetes.

### Survey results

Overall, 46.5 per cent of persons in 2003 reported having had a test for diabetes or high blood sugar levels in the two years before the survey. This proportion was greatest for males aged 50 years or over (64.6 per cent), followed by females in the same age group (figure 2.15). Among persons aged under 50 years, this sex difference was reversed, with females being more likely to have had their blood glucose levels tested.

Figure 2.14: Cholesterol check in previous two years, by age and sex

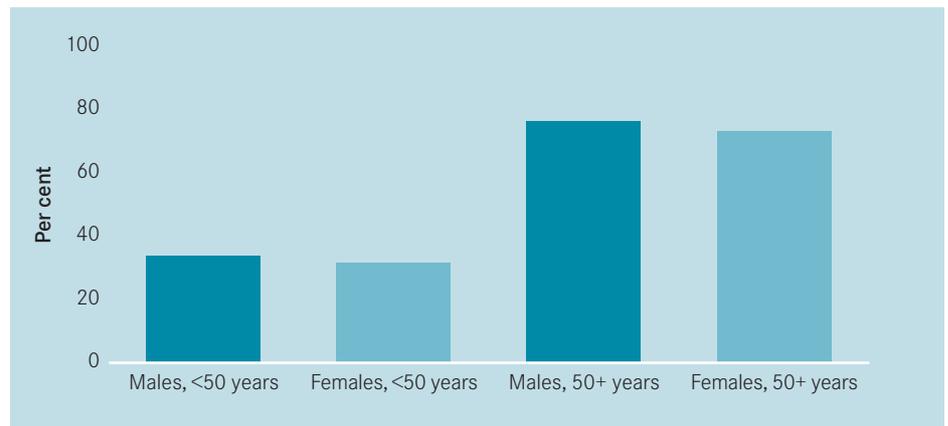
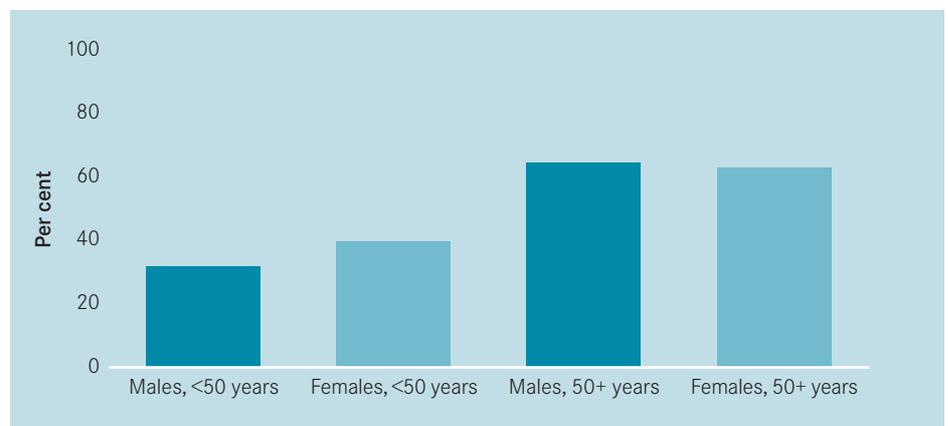


Figure 2.15: Glucose check in previous two years, by age and sex



## Bowel examination

Different types of bowel examination are used to detect cancer of the bowel or colon. They may take the form of an x-ray of the bowel (a barium enema), an examination of the lower bowel using a rigid or flexible tube (a sigmoidoscopy or colonoscopy) or an examination of faecal samples (a faecal occult blood test). Asymptomatic persons aged 50 years or over are advised to have a faecal occult blood test every two years and a flexible sigmoidoscopy or colonoscopy every five years.

### Survey results

In total, 14.2 per cent of persons reported having had a bowel examination in the two years before the survey. The proportion of males aged 50 years or older who had undergone a bowel examination was significantly greater than the proportion of females in that age group (31.2 per cent versus 19.7 per cent) (table 2.27).

## Skin examination

Australia has the highest incidence of skin cancer in the world, and health promotion programs emphasise avoiding exposure to solar ultra-violet radiation. Australians should check their skin regularly for suspicious looking or changing spots. Each person is advised to spend 15 minutes each season to check his or her skin with the help of a mirror or a family member. More frequent checks for skin changes are recommended for individuals who have had severe sunburn or skin cancer. Checks for melanoma are particularly important for those aged 50 years or over, because the

Table 2.27: Bowel examination in previous two years, by age and sex

	18–49 years		50 years or over		Total	
	%	SE (%)	%	SE (%)	%	SE (%)
Males	6.1	0.7	31.2	1.7	15.2	0.8
Females	8.6	0.7	19.7	1.2	12.9	0.7
Persons	7.9	0.5	24.4	1.1	14.2	0.5

SE = standard error.

Figure 2.16: Skin examination in previous two years, by age and sex

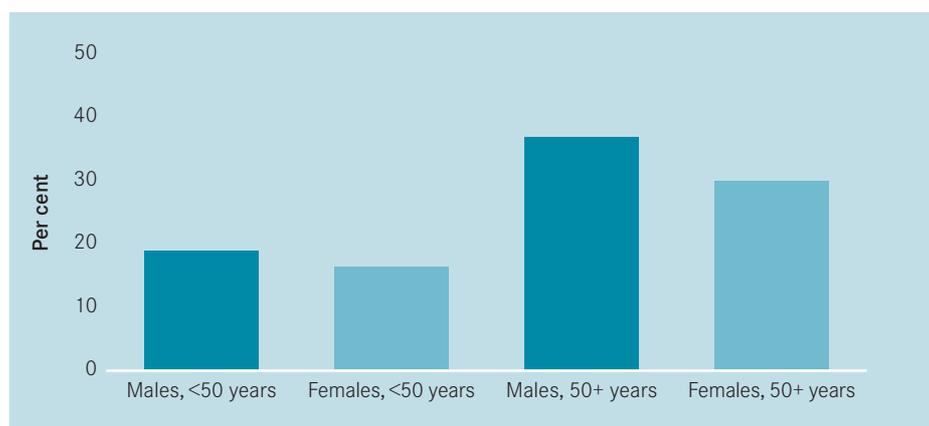


Table 2.28: Prostate check in previous two years, by age

	18–49 years		50 years or over		Total	
	%	SE (%)	%	SE (%)	%	SE (%)
Males	8.5	0.9	55.0	1.8	25.4	1.0

SE = standard error.

consequences of childhood exposure may become manifest in later life.

### Survey results

In total, 23.5 per cent of persons reported having had a skin examination in the two years before the survey. The proportion was greatest among males aged 50 years or over (36.9 per cent)

(figure 2.16). Among females, 29.9 per cent of the same age group reported having had a skin examination.

## Prostate check

Mass screening for prostate cancer is not currently recommended in Australia. Nonetheless, a procedure such as a digital rectal examination or a

prostate-specific antigen test may be advised for males aged 50 years or over to identify problems with the prostate gland.

**Survey results**

In total, 25.4 per cent of males reported having had a prostate check (including a blood test or a manual examination) in the two years before the survey, with 8.5 per cent of males aged under 50 years and 55.0 per cent of males aged 50 years or over having been tested (table 2.28).

**Dental check-up**

All age groups are recommended to have regular dental check-ups (at least every two years) to maintain healthy teeth and gums.

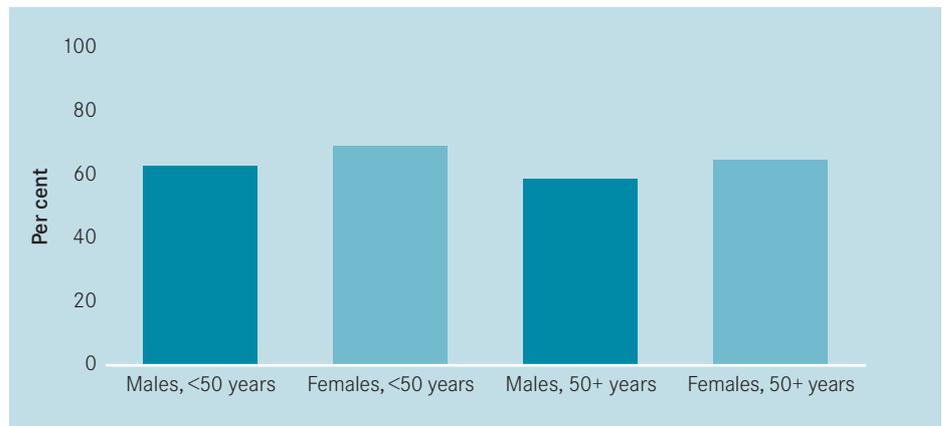
**Survey results**

Overall, 51.6 per cent of persons reported having had a dental check-up in the two years before the survey, with females being more likely than males

(67.4 per cent and 61.3 per cent respectively) to have used dental services in that period (figure 2.17). Fewer persons aged 50 years or over reported having had a dental check in the previous two years, compared with those who were younger.

The use of health check-ups and screening tests was found to not vary greatly between rural and urban Victoria (table 2.29).

**Figure 2.17: Dental check-up in previous two years, by age and sex**



**Table 2.29: Use of health checks and screening tests, by age and area of Victoria**

	Urban				Rural				Total	
	18–49 years		50+ years		18–49 years		50+ years		%	SE (%)
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)		
Blood pressure check	67.7	1.2	91.3	0.9	67.5	1.1	91.4	0.7	76.6	0.7
Cholesterol check	33.1	1.2	76.4	1.4	30.8	1.1	70.4	1.1	48.3	0.8
Blood sugar check	36.2	1.3	64.3	1.5	35.6	1.1	62.7	1.2	46.5	0.8
Bowel examination	7.0	0.6	26.2	1.4	8.5	0.6	22.6	1.0	14.2	0.5
Skin examination	16.7	1.0	32.0	1.5	20.6	0.9	35.8	1.2	23.5	0.7
Prostate check*	8.1	1.1	57.4	2.4	9.9	1.1	49.4	1.9	25.4	1.0
Dental check-up	67.0	1.2	66.3	1.5	62.9	1.1	51.7	1.2	51.6	0.8

\* Males only.

SE = standard error.

## 2.8 Eye health

Clear sight is important for daily living, employment, education and leisure activities. Vision loss is an important contributor to changes in physical and mental wellbeing, and is associated with poorer levels of social independence, an increased risk of falls among the elderly, and an increased need for community and health care services. It is estimated that at least half of the vision loss or impairment that many thousands of Victorians experience is correctable and that one quarter is preventable.<sup>29</sup> Given the correlation between ageing and vision loss, the number of Victorians who are needlessly blind or vision impaired is forecast to double in the next two decades.

With the ageing of the population, preventing avoidable blindness and reducing the impact of visual impairment have emerged as increasingly important public health issues. Identifying preventable causes of blindness and treating or mitigating the impact of vision loss depends on community awareness of the importance of eye health and eye care, and of the treatments and services available. Vision 2020: The Right to Sight Australia is the peak national eye health body, comprising organisations from the areas of eye health, research, education, low vision, rehabilitation, peer support and community services. It recommends that people aged 50 years or over should have their eyes checked every five years unless they are in a high risk group. Those at high

risk of vision impairment include those who smoke, have diabetes, have a family history of eye conditions, are elderly, identify themselves as Aboriginal or Torres Strait Islander, or experience a change in vision or a high degree of exposure to sunlight.<sup>29,30</sup>

For the first time, the Victorian Population Health Survey collected data in 2003 on whether respondents had ever seen an eye specialist, the recency of their last visit and whether they usually wear a hat and sunglasses when they go out in the sun.

### Survey results

#### Eye health at a glance

- More than 5 per cent of persons aged 55 years or over in 2003 had never visited an eye specialist or an eye clinic.
- Among males aged 55 years or over who had had their eyes checked, more than 5 per cent had not visited an eye specialist or an eye clinic in the five years before the survey.
- A higher proportion of females than males of all ages had consulted an eye care specialist or attended an eye clinic.
- A higher proportion of males than females reported they usually wear a hat when they go out in the sun.
- More than seven in 10 adults reported they usually wear sunglasses when they go out into the sun.
- One in six males reported not wearing a hat *and* sunglasses when going out into the sun.

- The proportion usually wearing a hat when going out into the sun increased with increasing age for both sexes.
- A majority of persons of both sexes reported usually wearing sunglasses when going out in the sun.
- The proportion of persons who usually wear sunglasses when going out in the sun was lowest among males aged 65 years or over. Only one in two males in this age group reported usually wearing sunglasses to protect their eyes from sun exposure.

#### Eye care visits

Almost three-quarters of males (74.5 per cent) recalled previously consulting an eye specialist or attending an eye clinic (table 2.30). The proportion of males aged over 18 years who had ever seen an eye care health professional increased with age, from 58.4 per cent of the youngest age group to 94.3 per cent of those aged 65 years or older.

The proportion who had received eye care was consistently higher for females than males, especially in the younger age groups. Overall, 82.1 per cent of females recalled having had eye care, ranging from 73.0 per cent of females aged 18–24 years to 95.4 per cent of those aged 65 years or over.

There were differences between males and females in terms of the recency of their last visits to an eye care specialist (that is, optician, optometrist or ophthalmologist) or an eye clinic (tables 2.31 and 2.32). Almost six in 10 females (59.0 per cent) had visited an eye clinic or an eye specialist within

the previous two years, compared with less than half of all males (46.8 per cent). Among females in the age groups 55–64 years and 65 years or over, 2.6 per cent and 2.5 per cent respectively had not had their eye health assessed within the previous five years. The proportion of males who reported five or more years had elapsed since their last eye health visit was 7.5 per cent of those aged 55–64 years and 5.9 per cent of those aged 65 years or more.

**Table 2.30: Consultation with an eye care specialist or attendance at an eye clinic, by age**

Age group (years)	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
18–24	58.4	3.5	73.0	3.2	65.6	2.4
25–34	61.1	3.0	71.3	2.1	66.3	1.8
35–44	63.3	2.6	70.2	1.9	66.8	1.6
45–54	85.6	2.0	90.3	1.4	88.0	1.2
55–64	91.5	1.8	96.8	0.9	94.2	1.0
65+	94.3	1.4	95.4	1.1	94.9	0.8
Total	74.5	1.1	82.1	0.8	78.4	0.7

SE = standard error.

**Table 2.31: Recency of last visit to an eye specialist or eye clinic, by age—males**

Age group (years)	Less than six months		Between six months and one year		More than one year and less than two years		More than two years but less than five years		Five years or more		Never	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
18–24	10.5	2.2	11.4	2.3	11.3	2.3	11.8	2.2	13.3	2.4	41.6	3.5
25–34	9.3	1.7	10.4	1.8	10.9	2.1	12.7	2.0	17.2	2.2	38.9	3.0
35–44	8.5	1.3	12.4	1.8	13.3	1.9	11.5	1.6	17.8	2.2	36.7	2.6
45–54	22.4	2.4	19.1	2.1	17.9	2.2	15.7	2.0	10.4	1.6	14.4	2.0
55–64	27.8	2.8	18.7	2.4	18.2	2.3	19.3	2.4	7.5	1.4	8.5	1.8
65+	28.4	2.4	25.1	2.4	16.4	2.0	18.2	2.2	5.9	1.2	5.7	1.4
Total	16.9	0.9	15.8	0.9	14.5	0.9	14.5	0.8	12.6	0.8	25.5	1.1

SE = standard error.

Table 2.32: Recency of last visit to an eye specialist or eye clinic, by age—females

Age group (years)	Less than six months		Between six months and one year		More than one year and less than two years		More than two years but less than five years		Five years or more		Never	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
18–24	17.6	2.6	15.2	2.7	14.4	2.5	14.1	2.2	11.7	2.2	27.0	3.2
25–34	13.5	1.6	12.3	1.4	14.4	1.6	15.4	1.7	15.6	1.6	28.7	2.1
35–44	13.8	1.4	13.4	1.4	16.2	1.5	14.1	1.3	12.6	1.3	29.8	1.9
45–54	23.4	2.1	27.9	2.1	20.3	1.8	14.5	1.6	4.2	0.8	9.7	1.4
55–64	25.2	2.3	29.7	2.5	23.3	2.3	16.0	1.9	2.6	0.7	3.1	0.9
65+	34.4	2.3	25.7	2.0	19.1	1.8	13.1	1.6	2.5	0.7	4.6	1.1
Total	21.1	0.8	20.2	0.8	17.7	0.8	14.4	0.7	8.6	0.6	17.9	0.8

SE = standard error.

### Eye health protection

Compared with females, a higher proportion of males in each age group reported they usually wear a hat when they go out in the sun. Overall, 62.3 per cent of males and 47.9 per cent of females indicated they usually wear a hat in the sun (table 2.33). A large majority of adults (72.8 per cent) reported they usually wear sunglasses when going out in the sun. The proportion of females who usually wear sunglasses was greater than that for males in all age groups. The proportion of adults who usually wear sunglasses was highest in the age group 35–44 years, at 86.1 per cent for females and 72.4 per cent for males. Among males aged 65 years or over, only a small majority (51.9 per cent) indicated they usually wear sunglasses when going out in the sun. The proportion of females who reported being usually protected from sun exposure by a hat and sunglasses was

Table 2.33: Eye health-related sun behaviour, by age and sex

Age groups (years)	Usually wear a hat		Usually wear sunglasses	
	%	SE (%)	%	SE (%)
<b>Males</b>				
18–24	44.7	3.5	61.1	3.5
25–34	52.7	3.1	68.6	2.9
35–44	64.1	2.6	72.4	2.4
45–54	68.3	2.6	67.7	2.6
55–64	70.0	2.8	64.7	2.8
65+	74.3	2.5	51.9	2.7
Total	62.3	1.2	65.2	1.2
<b>Females</b>				
18–24	27.4	3.0	76.6	2.9
25–34	41.0	2.3	78.9	1.9
35–44	47.7	2.0	86.1	1.5
45–54	52.9	2.3	84.7	1.7
55–64	56.3	2.7	80.4	2.2
65+	58.5	2.3	71.5	1.0
Total	47.9	1.0	79.9	2.1

SE = standard error.

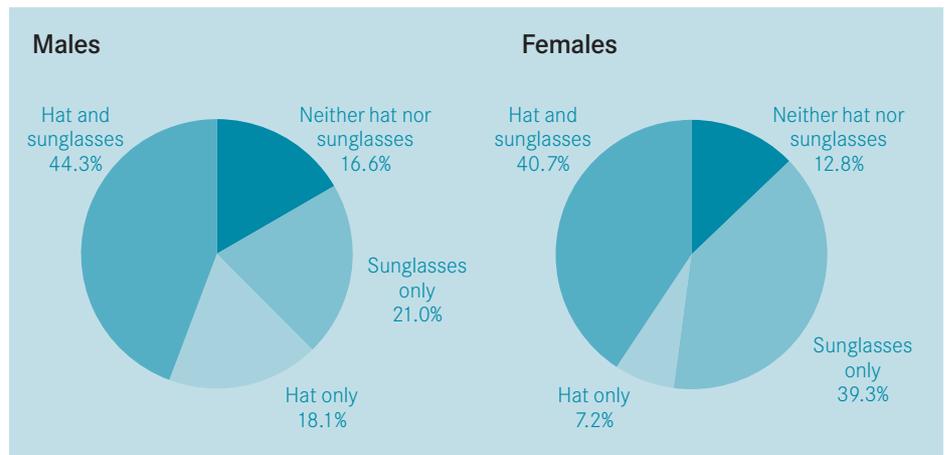
40.7 per cent, while 12.8 per cent reported they usually wear neither a hat nor sunglasses when going out in the sun (figure 2.18).

Among males, approximately one in six (16.6 per cent) reported not wearing a hat and sunglasses when out in the sun. The proportion of males who routinely wear both sunglasses and a hat when exposed to the sun (44.3 per cent) was slightly greater than that for females (40.7 per cent). Whereas the proportion of males who wear sunglasses only was similar to the proportion who wear a hat only (21.0 per cent and 18.1 per cent respectively), the proportion of females who wear sunglasses only was significantly greater than the proportion who wear a hat only (39.3 per cent and 7.2 per cent respectively).

## References

1. National Health and Medical Research Council 1992, *Dietary guidelines for Australians*, Canberra.
2. Department of Human Services 1999, *The Victorian Burden of Disease Study: morbidity, Government of Victoria*, Melbourne.
3. Mitchell JA & Armstrong B 2001, 'Cancer prevention by diet and exercise', *NSW Public Health Bulletin*, vol. 12, no. 1, pp. 7–9.
4. Australian Department of Health and Family Services 1998, *The Australian guide to healthy living*, Canberra.
5. Australian Bureau of Statistics & Australian Department of Health and Family Services 1997, *1995 National Nutrition Survey: selected highlights*, Canberra.
6. Australian Institute of Health and Welfare, National Heart Foundation & National Stroke Foundation of Australia 2001, *Heart, stroke and vascular diseases: Australia facts*, AIHW cat. no. CVD 13, Canberra.
7. National Heart Foundation of Australia and The Cardiac Society of Australia and New Zealand 2001, 'Lipid management guidelines 20001', *Medical Journal of Australia*, vol. 175 (supplement) pp. 557–88.
8. Rutishauser IHE, Webb K, Abraham B & Allsopp R 2001, *Evaluation of short dietary questions from the 1995 National Nutrition Survey*, Australian Department of Health and Aged Care, Canberra.
9. National Health and Medical Research Council 2001, *Australian alcohol guidelines: health risks and benefits*, Canberra.
10. Mathers C, Vos T & Stevenson C 1999, *The burden of injury and disease in Australia*, Australian Institute of Health and Welfare, Canberra.
11. Blair PS, Fleming PJ, Bensley D, Smith I, Bacon D, Taylor E, Berry J, Golding J & Tripp J 1996, 'Smoking and the sudden infant death syndrome: results from 1993–95 case-control study for confidential inquiry into stillbirths and deaths in infancy', *British Medical Journal*, vol. 313, pp. 195–8.
12. Australian Department of Health and Aged Care 1998, *National drug strategic framework 1998–99 to 2002–03*, Canberra.

Figure 2.18: Eye-related sun protection, by sex



13. Cook DG & Strachan DP 1999, 'Health effects of passive smoking—10: summary of parental smoking on the respiratory health of children and implications for research', *Thorax*, vol. 54, pp. 357–66.
14. Hackshaw AK, Law MR & Wald NJ 1997, 'The accumulated evidence on lung cancer and environmental tobacco smoke', *British Medical Journal*, vol. 315, pp. 980–8.
15. National Health and Medical Research Council 1997, *The health effects of passive smoking: a scientific information paper*, Canberra.
16. Berlin J & Colditz GA 1990, 'A meta analysis of physical activity in the prevention of coronary heart disease', *American Journal of Epidemiology*, vol. 132, pp. 612–28.
17. Bauman A & Owen N 1999, 'Physical activity of adult Australians: epidemiological evidence and potential strategies for health gain', *Journal of Science, Medicine and Sport*, vol. 2, pp. 30–41.
18. Powell KE, Thompson PD, Caspersen CJ & Kendrick JS 1987, 'Physical activity and the incidence of coronary heart disease', *Annual Review of Public Health*, vol. 8, pp. 253–87.
19. National Institute of Health, Consensus Development Panel on Physical Activity and Cardiovascular Disease 1996, 'Physical activity and cardiovascular health', *Journal of American Medical Association*, vol. 3, no. 276, pp. 241–6.
20. Pate RR, Pratt M, Blair SN, Haskell WL, Macera CA, Bouchard C et al. 1995, 'Physical activity and public health: a recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine', *Journal of American Medical Association*, vol. 273, pp. 402–7.
21. Kampert JB, Blair SN, Barlow CE & Kohl HW 1996, 'Physical activity, physical fitness and all cause cancer mortality', *Annals of Epidemiology*, vol. 6, pp. 452–7.
22. Lee IM & Paffenbarger RS 1997, 'Physical activity, fitness and longevity', *Aging*, vol. 9, pp. 2–11.
23. Australian Department of Health and Aged Care 1999, *National physical activity guidelines for Australians*, Canberra.
24. Egger G, Donovan R, Giles-Corti B, Bull F & Swinburn B 2001, 'Developing national physical activity guidelines for Australians', *Australian and New Zealand Journal of Public Health*, vol. 25, no. 6, pp. 561–3.
25. Australian Institute of Health and Welfare 2003, *Indicators of health risk factors*, AIHW cat. no. PHE 47, Canberra.
26. Australian Institute of Health and Welfare 2003, *The Active Australia Survey: a guide and manual for implementation, analysis and reporting*, Canberra.
27. Armstrong T, Bauman A & Davies J 2000, *Physical activity patterns of Australian adults. Results of the 1999 National Physical Activity Survey*, Australian Institute of Health and Welfare, Canberra.
28. Bindman AB 1995, 'Preventable hospitalizations and access to health care', *Journal of American Medical Association*, vol. 274, no. 4, pp. 305–11.
29. Vision 2020: the right to sight Australia 2002, *National eye health strategy*, [www.vision2020australia.org/Publications/documents/](http://www.vision2020australia.org/Publications/documents/), Accessed 5 February 2004.
30. Vision 2020: The Right to Sight Australia 2003, *Vision initiative: a public health program*, Melbourne, [www.vision2020australia.org/Publications/documents/](http://www.vision2020australia.org/Publications/documents/), Accessed 5 February 2004.

## 3. Self-reported health and selected health conditions

### 3.1 Introduction

A variety of Australian Bureau of Statistics surveys have used self-reported health ratings. These surveys have included the 1989–90, 1995 and 2002 National Health Surveys<sup>1</sup> and the 1997 National Survey of Mental Health and Wellbeing of Adults. Respondents to the Victorian Population Health Survey 2003 were asked to summarise perceptions of their health status by indicating whether, in general, they would say their health was *excellent*, *very good*, *good*, *fair* or *poor*.

This measure of health status is simple and global. It has been increasingly used in studies that seek to understand the factors that contribute to the level of health achieved and health inequalities, including differences that occur by gender, race or ethnicity, education or income, disability and geographic location.<sup>1–3</sup> Self-rated health assessments have been found to be a powerful predictor of future health care use and mortality, independent of other medical, behavioural or psychosocial risk factors.<sup>4,5</sup>

The survey also collected information on arthritis, heart disease, stroke, cancer, osteoporosis and anxiety/depression.

### 3.2 Survey results

#### Self-reported health findings at a glance

- Almost half of all respondents reported their overall health as being excellent or very good.
- After adjusting for age and sex, persons more likely to report fair/poor health were those with lower education levels (primary or secondary), those in non-professional/other occupations, those who were unemployed or not in the labour force, smokers, those with high blood pressure, those on lower incomes, those without private health insurance, those who were overweight/obese and those who were physically inactive
- Almost six out of 10 females (59.7 per cent) aged 65 years or over reported they had been told by a doctor that they had arthritis. More than four in 10 males (42.6 per cent) aged 65 years or over had been diagnosed with arthritis by a doctor.
- Of females aged 65 years or over, 19.5 per cent reported they had been told by a doctor that they had osteoporosis. Among males aged 65 years or over, 3.4 per cent reported they had been diagnosed with osteoporosis.
- Over one-quarter of males aged 65 years or over (26.5 per cent) reported they had been diagnosed with heart disease. Approximately 15 per cent (15.2 per cent) of females in this same age group had also been diagnosed with heart disease.

- Of males aged 65 years or over, 5.8 per cent reported they had experienced a stroke. The proportion was higher in females in the same age group, at 6.3 per cent.
- More than one in six males aged 65 years or over (17.2 per cent) and 14.7 per cent of females in the same age group reported they had been told by a doctor that they had some form of cancer.
- In all age groups, a greater proportion of females than males reported they had been diagnosed with depression or anxiety.

#### Self-reported health

Almost half (46.0 per cent) of all respondents reported their overall health as being excellent or very good, while 38.7 per cent reported they were in good health (figure 3.1). A further 12.7 per cent reported fair health and 2.6 per cent reported poor health.

Figure 3.2 shows that the proportion of persons who reported their health as being fair or poor increased from

**Figure 3.1: Self-reported health, 2003**



12.6 per cent of respondents aged 18–24 years to 21.3 per cent for those aged 65 years or over. The proportion of those who reported their health as being excellent or very good ranged from a high of 48.7 per cent among respondents aged 35–44 years to a low of 43.4 per cent among persons aged 18–24 years (figure 3.2). The proportion of Victorians who reported their health as good decreased by 10.6 per cent between the age groups 18–24 years and 65 years or over.

A lower proportion of males (43.1 per cent) than females (48.6 per cent) reported their health as being very good or excellent (table 3.2). Consistent with these data, a slightly lower proportion of females (14.6 per cent) than males (16.0 per cent) reported their health was fair or poor.

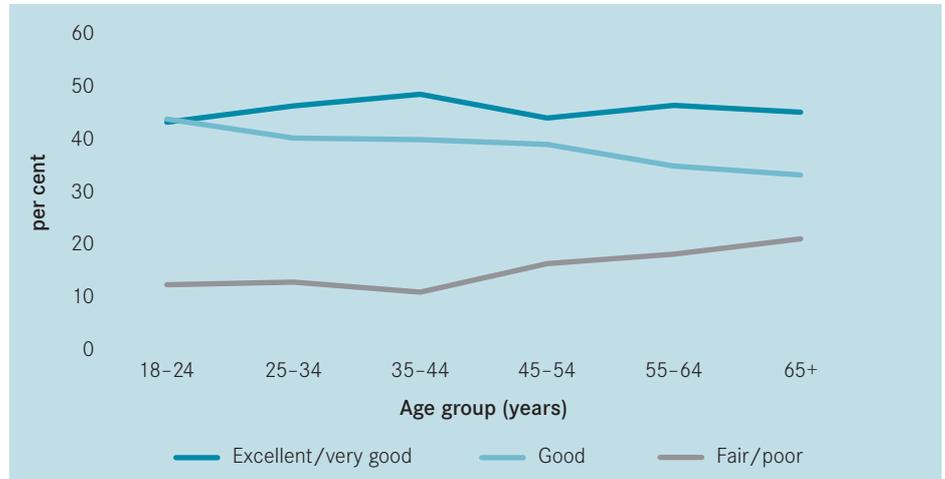
About 3.7 per cent of females aged 18–24 years, compared with 10.1 per cent of males in this age group, reported their health as being excellent (table 3.2). Among females, the highest proportion to report excellent health was in the age group 35–44 years (17.6 per cent), followed by the age group 45–54 years (15.2 per cent). The proportion of males who reported excellent health was highest among those aged 65 years or over (14.4 per cent).

**Table 3.1: Self-reported health**

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
Excellent	14.4	0.5	13.4	0.6	12.3	0.5
Very good	33.9	0.7	33.7	0.7	33.7	0.7
Good	33.8	0.8	35.5	0.8	38.7	0.8
Fair	14.6	0.5	14.3	0.5	12.7	0.5
Poor	3.3	0.3	3.1	0.3	2.6	0.2

SE = standard error.

**Figure 3.2: Self-reported health, by age**



**Figure 3.3: Self-reported health, by age—males**

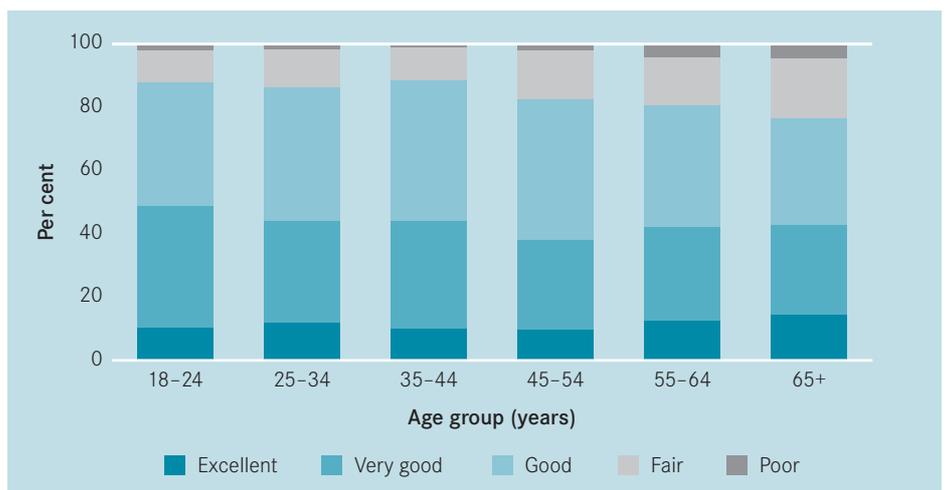


Figure 3.4: Self-reported health, by age—females

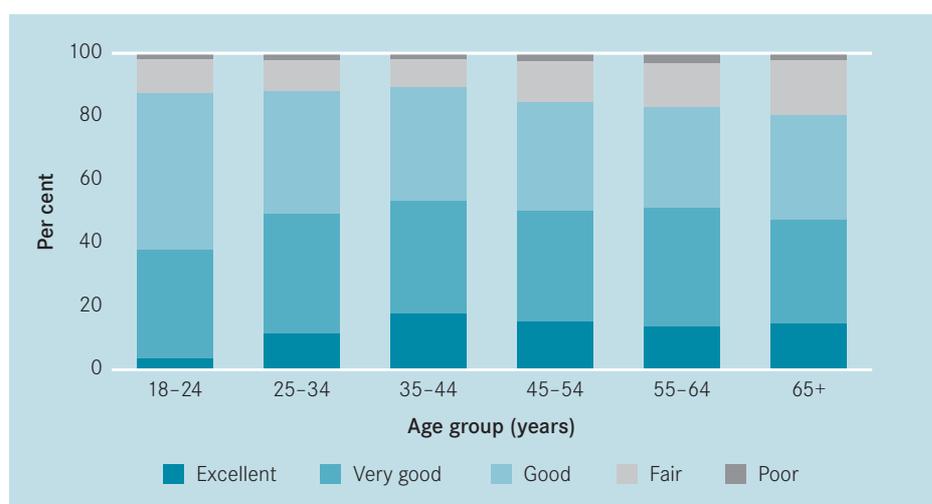


Table 3.2: Self-reported health, by age and sex

Age group (years)	Self-rated health									
	Excellent		Very good		Good		Fair		Poor	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
<b>Males</b>										
18-24	10.1	2.1	38.6	3.5	38.9	3.5	10.3	2.1	2.1	1.0
25-34	11.9	2.0	32.1	2.8	42.1	3.0	11.8	1.9	2.2	0.9
35-44	9.9	1.7	34.2	2.5	44.3	2.7	10.1	1.5	1.4	0.6
45-54	9.5	1.6	28.5	2.5	44.2	2.8	15.7	2.0	2.1	0.7
55-64	12.4	2.0	29.6	2.8	38.6	3.0	15.1	2.1	4.2	1.2
65+	14.4	1.9	28.3	2.5	33.7	2.6	18.7	2.2	4.8	1.0
Total	11.2	0.8	31.9	1.1	40.8	1.2	13.4	0.8	2.6	0.4
<b>Females</b>										
18-24	3.7	1.1	34.3	3.3	49.2	3.5	10.7	2.3	2.1	1.1
25-34	11.4	1.5	37.6	2.2	38.8	2.3	10.0	1.3	2.2	0.7
35-44	17.6	1.6	35.6	1.9	36.0	1.9	8.6	1.0	2.2	0.6
45-54	15.2	1.7	35.0	2.2	34.3	2.2	12.6	1.7	2.9	0.7
55-64	13.5	1.7	37.6	2.6	31.5	2.5	14.0	1.8	3.3	1.0
65+	14.6	1.7	32.6	2.2	33.2	2.2	17.2	1.8	2.4	0.6
Total	13.2	0.7	35.4	1.0	36.8	1.0	12.1	0.7	2.5	0.3

After adjusting for age and sex, those respondents more likely to report fair/poor health were those with lower education levels (primary or secondary), those in non-professional/other occupations, those who were unemployed or not in the labour force, smokers, those with high blood pressure, those on lower incomes, those without private health insurance, those who were overweight/obese and those who were physically inactive (table 3.3).

**Table 3.3: Fair/poor health and risk factors**

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Area of Victoria</b>				
Urban	1.00	–	–	–
Rural/regional	1.01	0.87	1.16	0.986
<b>Country of birth</b>				
Australia	1.00	–	–	–
Overseas	1.15	0.95	1.41	0.154
<b>Education level</b>				
Tertiary	1.00	–	–	–
Secondary	1.32	1.10	1.59	0.003
Primary	3.93	2.66	5.82	<0.001
<b>Occupation</b>				
Professional	1.00	–	–	–
Non-professional	1.57	1.17	2.10	0.003
<b>Employment status</b>				
Employed	1.00	–	–	–
Unemployed	2.34	1.59	3.45	<0.001
Not in the labour force	2.08	1.67	2.60	<0.001
<b>Household income per year</b>				
Greater than or equal to \$60,000	1.00	–	–	–
\$40,000 to less than \$60,000	1.36	1.02	1.81	0.038
\$20,000 to less than \$40,000	1.54	1.17	2.04	0.002
Less than \$20,000	2.47	1.90	3.22	<0.001
<b>Private health insurance</b>				
Yes	1.00	–	–	–
No	1.84	1.54	2.18	<0.001
<b>Dwelling ownership</b>				
Owned	1.00	–	–	–
Rented	1.29	1.04	1.60	0.019

Table 3.3: Fair/poor health and risk factors (continued)

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Smoking status</b>				
Non-smoker	1.00	–	–	–
Ex-smoker	1.31	1.08	1.61	0.008
Smoker	1.93	1.57	2.38	<0.001
<b>High blood pressure ever</b>				
No	1.00	–	–	–
Yes	2.15	1.77	2.61	<0.001
<b>Body mass index</b>				
Not overweight	1.00	–	–	–
Overweight	2.04	1.70	2.45	<0.001
<b>Physical activity</b>				
Sufficient*	1.00	–	–	–
Sedentary/insufficient	1.83	1.52	2.19	<0.001

\* 'Sufficient time and sessions' is defined as at least 150 minutes per week, using the sum of walking and vigorous activity (weighted by two) and five or more sessions of physical activity. 'Insufficient time and sessions' is defined as less than 150 minutes but more than 0 minutes (that is, the sedentary activity level) or more than 150 minutes over fewer than five sessions per week.

## Selected health conditions

The survey collected information on arthritis, heart disease, stroke, cancer, osteoporosis (females only) and anxiety/depression. Table 3.4 shows the prevalence of selected conditions by age and sex.

### Arthritis

Almost six out of 10 females (59.7 per cent) aged 65 years or over reported they had been told by a doctor that they had arthritis. More than four in 10 males (42.6 per cent) aged 65 years and over had been diagnosed with arthritis.

### Osteoporosis

Of females aged 65 years or over, 19.5 per cent reported they had been told by a doctor that they had osteoporosis. Among males aged 65 years or over, 3.4 per cent reported they had been diagnosed with osteoporosis.

### Heart disease

Over one-quarter of males aged 65 years or over (26.5 per cent) reported they had been diagnosed with heart disease. Of females in this age group, 15.2 per cent had also been diagnosed with heart disease.

### Stroke

Of males aged 65 years or over, 5.8 per cent reported they had experienced a stroke. The proportion was higher in females in the same age group, at 6.3 per cent.

Table 3.4: Selected health conditions, by age and sex

	18–24 years		25–34 years		35–44 years		45–54 years		55–64 years		65+ years	
	%	SE (%)	%	SE (%)								
<b>Males</b>												
Arthritis	0.2	0.2	4.3	1.1	7.5	1.3	15.5	1.9	31.6	2.9	42.6	2.7
Osteoporosis	0.0	0.0	0.2	0.1	0.4	0.2	0.2	0.1	4.4	1.3	3.4	1.1
Heart disease	0.5	0.3	1.5	0.7	2.0	0.5	5.1	1.3	11.8	1.8	26.5	2.4
Stroke	0.2	0.2	0.1	0.1	0.1	0.1	1.1	0.6	2.5	0.9	5.8	1.2
Cancer	1.1	0.8	0.6	0.3	2.6	0.8	5.2	1.2	9.9	2.0	17.2	1.9
Depression or anxiety	6.0	1.5	10.2	1.8	10.2	1.6	12.6	1.8	17.2	2.3	9.4	1.6
<b>Females</b>												
Arthritis	1.8	0.8	5.0	1.0	7.0	1.0	25.9	2.1	44.3	2.7	59.7	2.3
Osteoporosis	0.2	0.2	0.2	0.2	0.8	0.3	4.5	1.0	13.7	2.0	19.5	1.8
Heart disease	1.0	0.7	0.5	0.3	1.4	0.5	3.5	0.9	6.4	1.1	15.2	1.6
Stroke	0.0	0.0	1.0	0.5	0.2	0.1	1.0	0.5	1.4	0.4	6.3	1.1
Cancer	0.9	0.5	0.9	0.3	2.9	0.6	8.9	1.4	10.3	1.5	14.7	1.6
Depression or anxiety	16.4	2.4	21.2	1.9	17.3	1.4	19.1	1.7	26.1	2.3	14.1	1.6

SE = standard error.

### Cancer

More than one in six males aged 65 years or over (17.2 per cent) and 14.7 per cent of females in the same age group reported they had been told by a doctor that they had some form of cancer. Around one in 10 persons (10.3 per cent of females and 9.9 per cent of males) aged 45–54 years reported they had been told by a doctor that they had some form of cancer.

### Depression/anxiety

In all age groups, a greater proportion of females than males reported they had been diagnosed with depression or anxiety.

Figure 3.5: Reported health conditions, by age—males

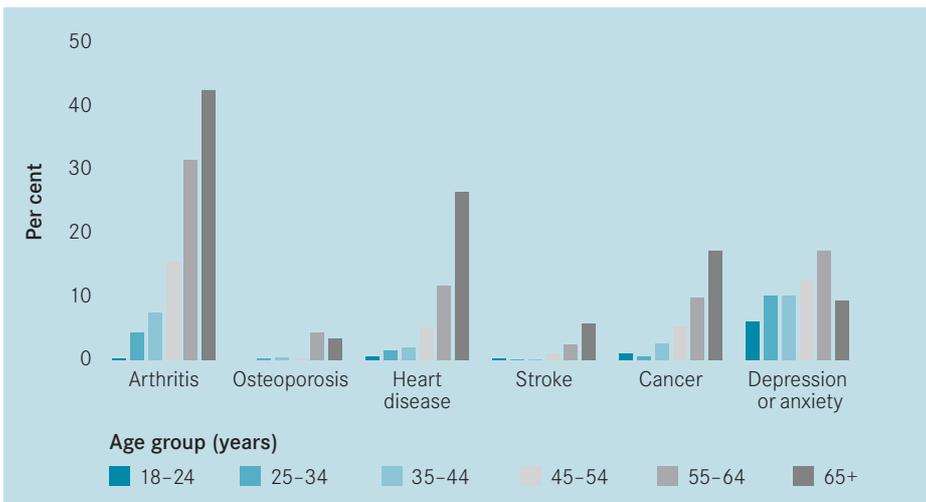
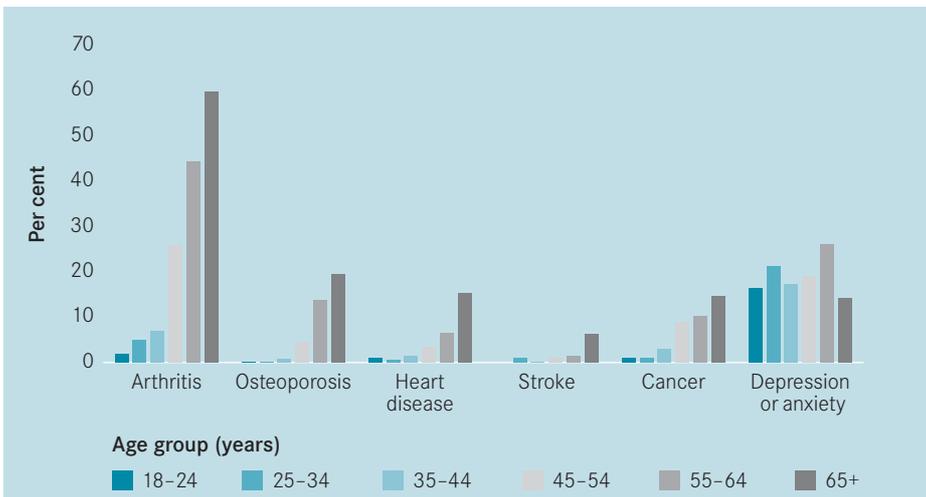


Figure 3.6: Reported health conditions, by age—females



## References

1. Hennessy C, Moriarty DG, Zack M, Scherr P & Brackbill R 1994, 'Measuring health-related quality of life for public health surveillance', *Public Health Reports*, vol. 109, pp. 665–72.
2. Kawachi I, Kennedy B, Glass R 1999, 'Social capital and self-rated health: a contextual analysis', *American Journal of Public Health*, vol. 89, no. 8, pp. 1187–93.
3. Andersen E, Catlin T & Wyrwlich K 2001, 'Retest reliability and validity of a surveillance measure of health-related quality of life', *Quality of Life Research*, vol. 10, no. 3, p. 199.
4. Idler E & Benyamini Y 1997, 'Self-rated health and mortality: a review of twenty-seven community studies', *Journal of Health and Social Behaviour*, vol. 38, pp. 21–37.
5. Miilunpalo S, Vuori I & Oja P 1997, 'Self rated health as a health measure: the predictive value of self-reported health status on the use of physician services and on mortality in the working age population', *Journal of Clinical Epidemiology*, vol. 50, no. 5, pp. 517–28.

## 4. Obesity among adults

### 4.1 Introduction

The body mass index (BMI) is a measurement that is widely used by researchers studying obesity. It uses a formula that accounts for both a person's height and their weight:

$$\text{BMI} = \frac{\text{weight (kilograms)}}{\text{height squared (m}^2\text{)}}.$$

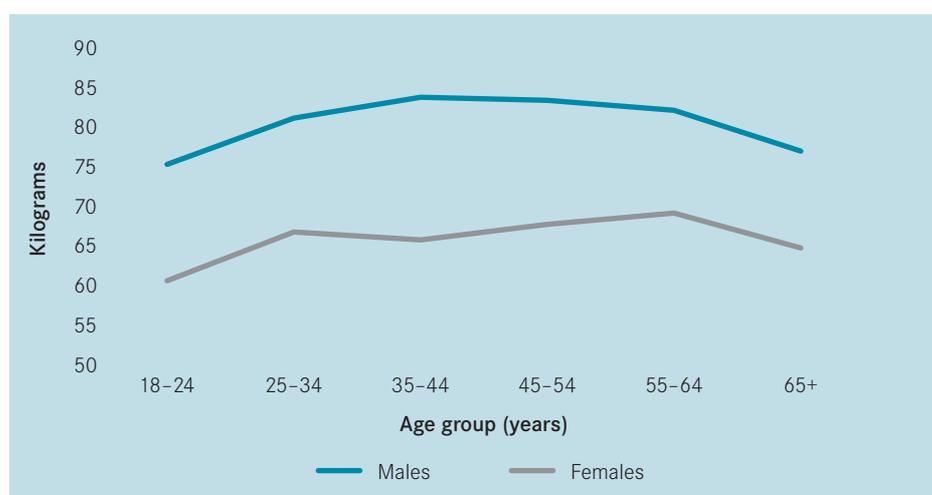
The Victorian Population Health Survey 2003 collected self-reported height and weight from respondents. The prevalence of obesity is known to be underestimated in data from self-reported telephone surveys, compared with data from measurement surveys. The true prevalence of obesity, therefore, is likely to be underestimated. Self-reported data still have a place in health monitoring, however, because such data are relatively inexpensive and easy to collect, and may be used for reporting trends over time.<sup>1</sup> A further note is that BMI calculations fail to consider lean body mass, such that the BMI formula may classify a healthy, muscular individual with very low body fat as being obese.

Table 4.1 shows the weight classifications according to the BMI.<sup>2,3</sup>

**Table 4.1: Measurement of excess weight**

Classification	BMI (kg/m <sup>2</sup> )
Underweight	Less than 18.5
Normal weight	18.5 to less than 25
Overweight	25 or above, but less than 30
Obese	30 and above

**Figure 4.1: Self-reported average weight**



The National Health Survey 2001<sup>4</sup> found that 30 per cent of Australian males (aged 18 years or over) assessed themselves as being overweight, yet 58 per cent were categorised as being overweight. Among females, the proportion (38 per cent) who self-reported as being overweight was similar to the proportion who were categorised as being overweight (42 per cent). In Victoria, the National Health Survey 2001 found that 54 per cent of males and 38 per cent of females aged 18 years or over were categorised as being overweight.

### 4.2 Survey results

#### Obesity at a glance

- 45.8 per cent of all persons were categorised as being overweight or obese.
- 54.3 per cent of males and 38.0 per cent of females were categorised as being overweight or obese.

- After adjusting for age and sex, those respondents more likely to be categorised as being overweight/obese were those born in Australia, those who rated their health as good, fair or poor (as opposed to excellent or very good), those living in rural areas, non-professionals, ex-smokers, those with high blood pressure, those who reported doing less than 30 minutes per week of vigorous physical activity, those spending less than 150 minutes walking in the previous week and those with a high level of psychological distress.
- The highest proportion of overweight/obese males was in the age group 55-64 years (65.3 per cent)
- The highest proportion of overweight/obese females was in the age group 55-64 years (50.8 per cent)

Table 4.2 shows the BMI scores from the Victorian Population Health Surveys 2002 and 2003. For the 2003 survey, the BMI scores were categorised as per table 4.1. The overall findings were as follows:

- 45.8 per cent of all persons were categorised as being overweight or obese
- 54.3 per cent of males were categorised as being overweight or obese
- 38.0 per cent of females were categorised as being overweight or obese.

**Table 4.2: Body Mass Index**

BMI category	2002		2003	
	%	SE (%)	%	SE (%)
Underweight	3.4	0.3	3.3	0.3
Normal weight	48.2	0.8	46.9	0.8
Overweight	30.9	0.7	31.7	0.7
Obese	14.6	0.6	14.1	0.5

SE = standard error.

**Overweight/obese adults**

The proportion of both males and females categorised as being either overweight or obese rose steadily with age until the age group 55–64 years (table 4.3). The highest proportion of

overweight/obese males was in the age group 55–64 years (65.3 per cent) (figure 4.2). The highest proportion of overweight/obese females was in the age group 55–64 years (50.8 per cent) (figure 4.2).

**Figure 4.2: Overweight/obese persons**

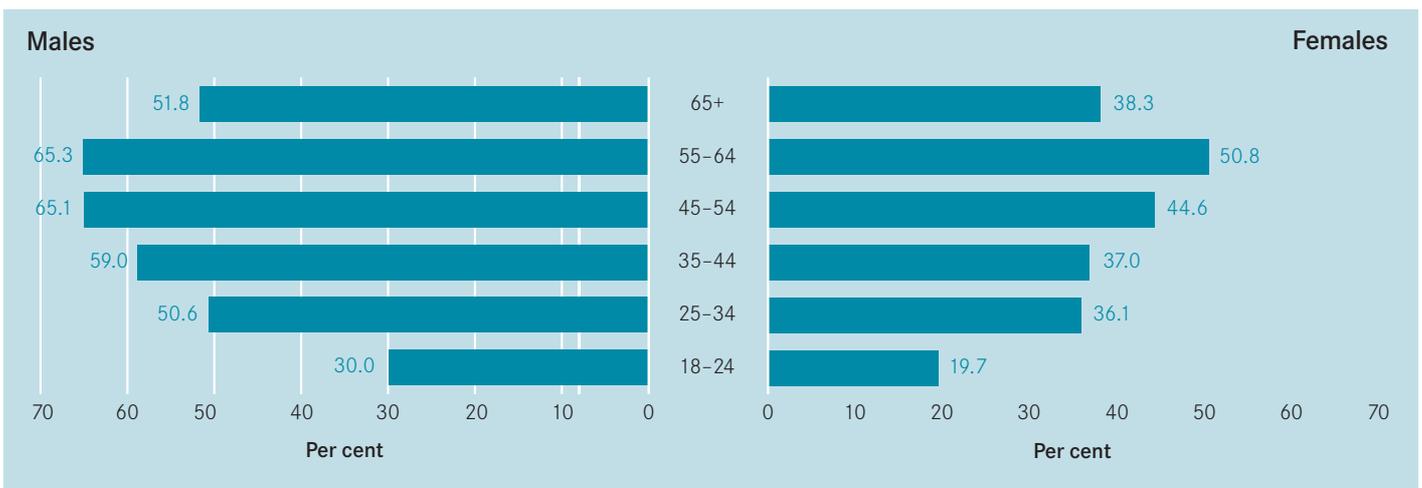


Table 4.3: Overweight/obese adults, by age and sex

	BMI							
	Underweight		Normal weight		Overweight		Obese	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
<b>Males</b>								
18-24	1.8	1.0	66.3	3.3	23.7	2.9	6.3	1.8
25-34	1.5	0.7	45.1	3.0	39.9	3.0	10.8	1.7
35-44	2.1	0.9	37.4	2.6	42.5	2.7	16.5	2.1
45-54	1.3	0.7	31.5	2.6	43.5	2.8	21.6	2.3
55-64	1.7	0.9	30.6	2.8	44.3	3.1	20.9	2.4
65+	1.9	0.8	41.7	2.7	41.9	2.7	9.9	1.6
All	1.7	0.3	41.5	1.2	39.8	1.2	14.5	0.8
<b>Females</b>								
18-24	13.8	2.5	61.7	3.4	14.2	2.4	5.5	1.4
25-34	4.6	0.9	54.0	2.3	23.3	1.9	12.8	1.6
35-44	2.6	0.6	55.8	2.0	25.3	1.8	11.7	1.3
45-54	2.4	0.6	47.3	2.3	25.9	2.1	18.7	1.8
55-64	2.7	0.8	40.9	2.7	31.3	2.4	19.5	2.1
65+	4.7	1.0	50.8	2.3	24.2	2.0	14.1	1.8
All	4.7	0.4	52.0	1.0	24.2	0.8	13.8	0.7
<b>Persons</b>								
18-24	7.7	1.4	64.0	2.4	19.0	1.9	5.9	1.2
25-34	3.1	0.5	49.6	1.9	31.4	1.8	11.8	1.2
35-44	2.4	0.5	46.8	1.7	33.7	1.6	14.0	1.2
45-54	1.9	0.5	39.5	1.8	34.6	1.7	20.1	1.5
55-64	2.2	0.6	35.8	1.9	37.8	2.0	20.2	1.6
65+	3.5	0.6	46.9	1.8	31.8	1.6	12.3	1.2
All	3.3	0.3	46.9	0.8	31.7	0.7	14.1	0.5

SE = standard error.

## Overweight/obesity and risk factors

After adjusting for age and sex, those respondents more likely to be categorised as being overweight/obese were those born in Australia, those who rated their health as good, fair or poor (as opposed to excellent or very good), those living in rural areas, having lower education levels, non-professionals, ex-smokers, those with high blood pressure, those who reported doing less than 30 minutes per week of vigorous physical activity, those spending less than 150 minutes walking in the previous week and those with a high level of psychological distress (as measured by the Kessler 10, or K10—see section 7) (table 4.4).

Table 4.4: Overweight/obesity and risk factors

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Self-rated health</b>				
Excellent/very good	1.00	–	–	–
Good	1.70	1.47	1.96	<0.001
Fair/poor	2.59	2.14	3.15	<0.001
<b>Area of Victoria</b>				
Urban	1.00	–	–	–
Rural	1.32	1.18	1.47	<0.001
<b>Country of birth</b>				
Overseas	1.00	–	–	–
Australia	1.23	1.06	1.44	0.008
<b>Education level</b>				
Tertiary	1.00	–	–	–
Secondary	1.20	1.05	1.37	0.009
Primary	1.76	1.18	2.63	0.005
<b>Occupation</b>				
Professional	1.00	–	–	–
Non-professional	1.32	1.10	1.59	0.003
<b>Employment status</b>				
Employed	1.00	–	–	–
Unemployed	0.85	0.59	1.22	0.383
Not in the labour force	0.99	0.84	1.17	0.914
<b>Smoking status</b>				
Smoker	1.00	–	–	–
Ex-smoker	1.24	1.02	1.50	0.030
Non-smoker	1.08	0.92	1.28	0.356
<b>High blood pressure ever</b>				
No	1.00	–	–	–
Yes	2.42	2.06	2.85	<0.001

Table 4.4: Overweight/obesity and risk factors (continued)

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Level of psychological distress (K10)</b>				
<16 (none)	1.00	-	-	-
16-21 (low)	1.10	0.94	1.31	0.234
22-29 (mild)	1.24	0.97	1.57	0.082
30 and over (high to severe)	1.50	1.02	2.20	0.037
<b>Time spent walking in the past week</b>				
≥150 minutes	1.00	-	-	-
<150 minutes	1.15	1.01	1.31	0.039
<b>Time spent doing vigorous physical activity in the past week</b>				
≥30 minutes	1.00	-	-	-
<30 minutes	1.25	1.09	1.44	0.002

## References

1. Flood V, Webb K, Lazarus R & Panf G 1999, 'Use of self-report to monitor overweight and obesity in populations: some issues for consideration', *Australian and New Zealand Journal of Public Health*, vol. 24, pp. 96-9.
2. Australian Institute of Health and Welfare & Australian Department of Health and Family Services 1997, *First report on national health priority areas 1996*, Canberra.
3. World Health Organisation 1997, *Obesity: preventing and managing the global epidemic*, Geneva.
4. Australian Bureau of Statistics 2001, *National Health Survey 2001*, cat. no. 4364.0, Canberra.

## 5. Asthma prevalence

### 5.1 Introduction

Asthma is a common, chronic disorder affecting the airways of the lungs. Narrowing of these air passages (caused by the inflammation and swelling of the airway lining, and the overproduction of mucus) results in airway obstruction and difficulty with breathing, which may be reversed either spontaneously or with medical treatment. The disease affects all age groups, but particularly young persons, and it ranges in severity from intermittent mild symptoms to a severe, incapacitating and life-threatening disorder.<sup>1</sup>

Asthma was designated as a national health priority area in 1999, in recognition that it is one of Australia's most serious chronic health problems. Across Australia, 397 deaths from asthma and status asthmaticus occurred in 2002.<sup>2</sup> In Victoria, the condition accounts for an estimated 2.3 per cent of the total disease burden for males and 2.9 per cent for females.<sup>3</sup>

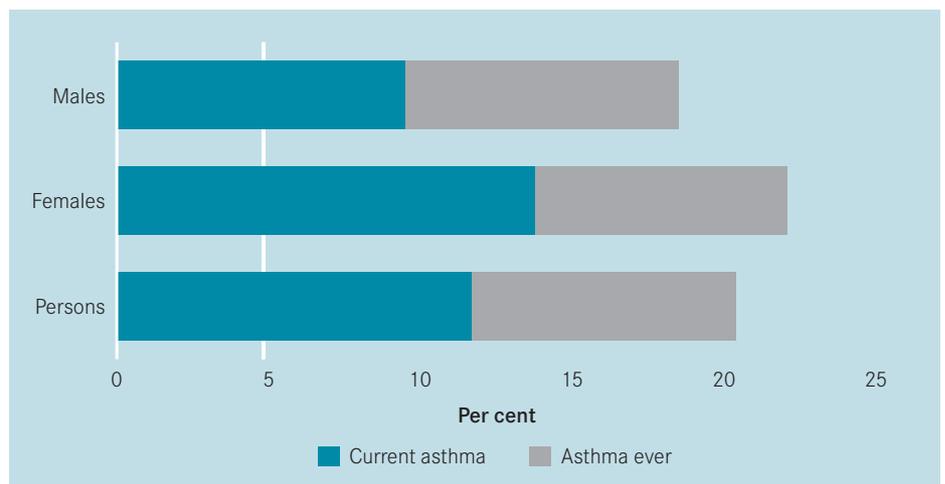
Asthma prevalence may be measured in terms of different definitions of the condition. Self-reported measures, such as those collected by the survey, typically report prevalence in Australia at around 27 per cent in children and 17–29 per cent in adults.<sup>4</sup> These proportions are quite different from those found via objective measures of lung function, which typically observe the prevalence of current or persistent asthma (wheezing episodes with abnormal airway function between episodes) at 9–11 per cent in children and 5–6 per cent in adults.<sup>4</sup>

Table 5.1: Asthma prevalence

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Asthma in the past</b>						
Males	20.2	1.0	20.1	1.0	18.5	0.9
Females	23.7	0.9	23.7	0.8	22.1	0.8
Persons	22.0	0.6	21.9	0.7	20.4	0.6
<b>Current asthma</b>						
Males	10.0	0.7	9.7	0.8	9.5	0.7
Females	14.5	0.7	15.3	0.7	13.8	0.7
Persons	12.3	0.5	12.6	0.5	11.7	0.5

SE = standard error.

Figure 5.1: Asthma prevalence, by sex



### 5.2 Survey results

#### Asthma prevalence at a glance

- An estimated 20.4 per cent of persons aged 18 years or over had had asthma ever and 11.7 per cent reported having current asthma.
- Overall, 9.5 per cent per cent of males and 13.8 per cent of females reported having current asthma.

- Asthma prevalence was higher among females in all age groups.
- After adjusting for age and sex, those persons more likely to report having been diagnosed with asthma ever were those persons born in Australia and those living in urban areas.

Respondents were asked whether a doctor had ever told them that they have asthma and, if so, whether they had had asthma symptoms (wheezing, coughing, shortness of breath, chest tightness) in the 12 months before the survey. Those persons who responded 'yes' to the first question are referred to as the population with asthma ever. Those persons who responded 'yes' to the question about still getting asthma at the time of the survey are referred to as the population with current asthma. An estimated 20.4 per cent of persons aged 18 years or over had had asthma ever and 11.7 per cent reported having current asthma (figure 5.1).

### Asthma ever

Younger age groups were more likely to have been diagnosed with asthma ever, with 31.7 per cent of persons aged 18–24 years reporting they had been told by a doctor that they had the condition (figure 5.2). Overall, 22.1 per cent of females and 18.5 per cent of males reported they had been diagnosed with asthma ever (table 5.2). Asthma prevalence was higher among females in all age groups.

Figure 5.2: Prevalence of asthma ever, by age and sex

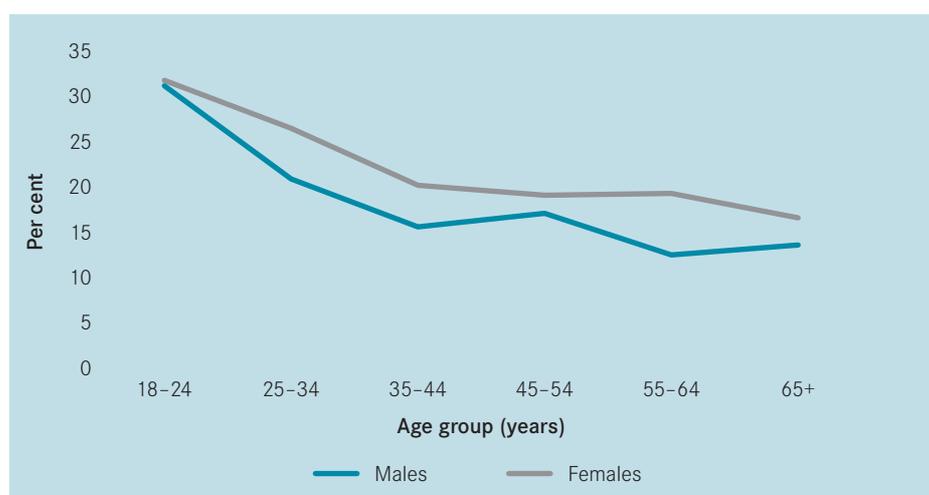


Table 5.2: Prevalence of asthma ever, by age and sex

Age group (years)	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
18-24	31.4	3.3	32.0	3.2	31.7	2.3
25-34	21.1	2.4	26.7	2.0	23.9	1.6
35-44	15.8	1.9	20.4	1.6	18.2	1.2
45-54	17.3	2.1	19.3	1.8	18.3	1.4
55-64	12.7	1.8	19.5	2.0	16.1	1.4
65+	13.8	1.8	16.8	1.7	15.5	1.2
All	18.5	0.9	22.1	0.8	20.4	0.6

SE = standard error.

### Risk factors and asthma ever

After adjusting for age and sex (table 5.3), those persons more likely to report having been diagnosed with asthma ever were born in Australia and/or lived in urban areas.

Table 5.3: Doctor-diagnosed asthma ever, by risk factors

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Area of state</b>				
Rural	1.00	-	-	-
Urban	1.31	1.15	1.49	<0.001
<b>Country of birth</b>				
Overseas	1.00	-	-	-
Australia	1.62	1.32	1.99	<0.001
<b>Education level</b>				
Tertiary	1.00	-	-	-
Secondary	1.07	0.91	1.25	0.424
Primary	0.80	0.51	1.25	0.318
<b>Occupation</b>				
Professional	1.00	-	-	-
Non-professional	0.99	0.79	1.23	0.934
<b>Employment status</b>				
Employed	1.00	-	-	-
Unemployed	0.99	0.67	1.46	0.975
Not in the labour force	1.16	0.96	1.40	0.113
<b>Smoking status</b>				
Non-smoker	1.00	-	-	-
Ex-smoker	1.20	0.96	1.50	0.112
Smoker	0.95	0.79	1.15	0.611

## Current asthma

Overall, 9.5 per cent of males and 13.8 per cent of females reported having current asthma (figure 5.3 and table 5.4).

Figure 5.3: Prevalence of current asthma, by age and sex

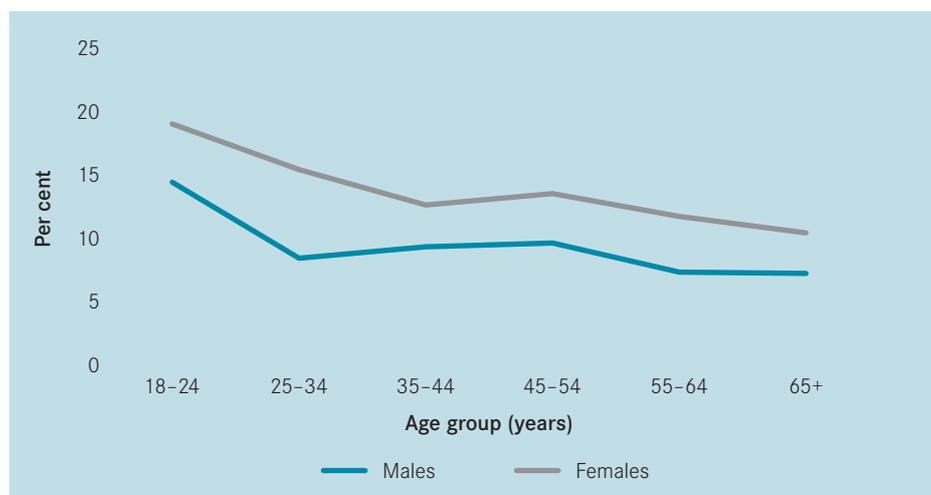


Table 5.4: Prevalence of current asthma, by age and sex

Age group (years)	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
18-24	14.6	2.5	19.2	2.6	16.9	1.8
25-34	8.6	1.6	15.6	1.7	12.2	1.2
35-44	9.5	1.6	12.8	1.4	11.2	1.0
45-54	9.8	1.7	13.7	1.7	11.8	1.2
55-64	7.5	1.4	11.9	1.6	9.7	1.1
65+	7.4	1.3	10.6	1.4	9.2	1.0
All	9.5	0.7	13.8	0.7	11.7	0.5

SE = standard error.

## Asthma action plans

Those persons aged 18 years or over who had had symptoms of asthma in the 12 months before the survey were asked 'Has your doctor given you written instructions or an asthma action plan, telling you what to do when you have asthma symptoms?'. Over half (51.2 per cent) had been given written instructions or an asthma action plan by their doctor. These respondents were then asked 'In the past 12 months, how often have you used the written instructions?'. Almost four out of five persons (78.3 per cent) reported they had referred to their asthma action plan (either sometimes or occasionally) (table 5.5).

Those respondents who had used the written instructions were asked 'Have they been helpful?'. Table 5.6 shows the breakdown of respondents according to how they used their asthma action plans.

**Table 5.5: Frequency of using asthma action plans**

	%	SE (%)
Never	21.6	2.8
Sometimes	26.1	2.8
Occasionally	52.2	3.2

SE = standard error.

**Table 5.6: Uses of asthma action plans**

	%	SE (%)
Helpful for managing an acute attack	57.1	3.4
Helpful for knowing when to seek medical advice	59.9	3.4
Helpful with day-to-day management	75.4	3.0

Note: Respondents could give all, some or none of the above three responses.

SE = standard error.

## References

1. Australian Institute of Health and Welfare 1999, *National health priority areas*, Canberra.
2. Australian Bureau of Statistics 2000, *Causes of death*, Canberra.
3. Department of Human Services 1999, *The Victorian Burden of Disease Study: morbidity*, Government of Victoria, Melbourne.
4. Woolcock B, Marks GB & Keena VA 2001, 'The burden of asthma in Australia', *Electronic Medical Journal of Australia*, [www.mja.com.au/public/issues/175\\_03\\_060801/woolcock/woolcock.html](http://www.mja.com.au/public/issues/175_03_060801/woolcock/woolcock.html)

## 6. Diabetes prevalence

### 6.1 Introduction

Diabetes mellitus is a common, chronic condition characterised by high blood glucose (sugar) levels. The two main types of diabetes are type 1 (insulin dependent) diabetes and type 2 (non-insulin dependent) diabetes. A third form is gestational diabetes, which is a condition that affects women during pregnancy.

Type 1 diabetes develops when the pancreas fails to effectively produce the hormone insulin, which stimulates the body's cells to use glucose as energy. Persons having type 1 diabetes mellitus require insulin injections to regulate their blood sugar levels. This type of the disease occurs most frequently in those aged less than 30 years and may be referred to as juvenile-onset diabetes.

Type 2 diabetes usually occurs in adults who are overweight or have a family history of the condition. Accounting for around 85 per cent of all cases of diabetes, it is caused by the body becoming resistant to high glucose levels in the blood. Appropriate diet and exercise can control type 2 diabetes in most cases.

Left untreated, diabetes can cause kidney, eye and nerve damage, heart disease, stroke and impotence.

### 6.2 Survey results

#### Diabetes at a glance

- Excluding females diagnosed with diabetes during pregnancy, 4.2 per cent of respondents reported they had been told by a doctor that they have diabetes.
- Overall, the prevalence of diabetes among respondents increased with age, and respondents aged 65 years or over reported the highest prevalence rate (9.5 per cent).
- Those respondents who had diabetes were asked about their condition-related visits to health professionals in the 12 months before the survey. Most (93.5 per cent) reported they had visited their general practitioner/doctor, and over half (53.8 per cent) had visited an optometrist or ophthalmologist. Only 31.8 per cent had visited a podiatrist or chiropodist.

- Overall, 46.5 per cent of respondents reported having had a test for diabetes in the previous two years, with a higher proportion of females (48.9 per cent) than males (43.9 per cent) having done so.
- After adjusting for differences in age and sex, those persons more likely to report having been diagnosed with diabetes or high sugar levels in their blood/urine were those born overseas, those not in the labour force, those in households with low incomes, those with high blood pressure and those not having private health insurance.

Excluding females diagnosed with diabetes during pregnancy, 4.2 per cent of respondents reported they had been told by a doctor that they have diabetes (table 6.1). Overall, the prevalence of diabetes among respondents increased with age, and respondents aged 65 years or over reported the highest prevalence rate (9.5 per cent) (table 6.2).

**Table 6.1: Prevalence of doctor-diagnosed diabetes, by sex**

	2002		2003	
	%	SE (%)	%	SE (%)
Males	4.7	0.5	4.5	0.5
Females	4.3	0.4	3.8	0.3
Persons	4.5	0.3	4.2	0.3

SE = standard error.

## Type of diabetes

The reported prevalence of diagnosed type 2 (non-insulin dependent) diabetes among respondents was 3.2 per cent (table 6.3).

Table 6.2: Prevalence of doctor-diagnosed diabetes, by age and sex

Age group (years)	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
18-24	1.1	0.9	0.5	0.3	0.8	0.5
25-34	0.3	0.3	1.8	0.7	1.0	0.4
35-44	2.2	0.9	1.8	0.5	2.0	0.5
45-54	5.0	1.3	4.5	1.0	4.7	0.8
55-64	9.5	1.8	6.7	1.2	8.1	1.1
65+	11.7	1.7	7.8	1.0	9.5	1.0

SE = standard error.

Figure 6.1: Prevalence of doctor-diagnosed diabetes, by age and sex

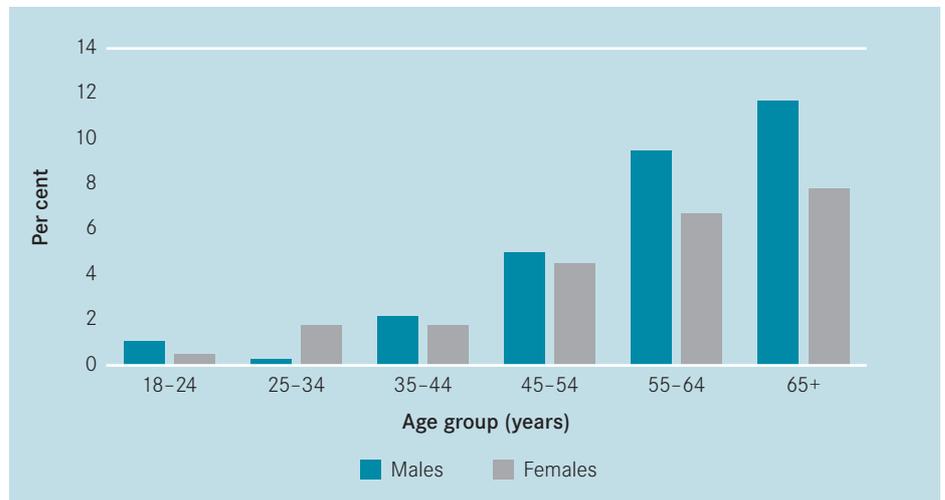


Table 6.3: Type of diabetes, by sex

	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
Type 1	0.6	0.2	0.6	0.2	0.6	0.1
Type 2	3.7	0.5	2.8	0.3	3.2	0.3

SE = standard error.

## Visits to health professionals

Those respondents who had diabetes were asked about their condition related visits to health professionals in the 12 months before the survey. Most (93.5 per cent) reported they had visited their general practitioner/doctor, and over half (53.8 per cent) had visited an optometrist or ophthalmologist (table 6.4). Only 31.8 per cent had visited a podiatrist or chiropodist.

## Diabetes screening

Survey respondents were asked whether they had had a check or test for diabetes or high blood sugar levels in the two years before the survey. Overall, 46.5 per cent of respondents reported having had a test in the previous two years, with a higher proportion of females (48.9 per cent) than males (43.9 per cent) having done so (table 6.5).

**Table 6.4: Visiting health professionals for diabetes in the previous 12 months, by type of professional and sex**

	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
General practitioner/doctor	91.7	2.6	95.5	1.6	93.5	1.6
Podiatrist or chiropodist	29.0	4.6	34.9	4.2	31.8	3.2
Diabetes educator or nurse	34.4	4.9	42.5	4.5	38.2	3.4
Optometrist or ophthalmologist	46.4	5.6	62.1	4.4	53.8	3.7
Nutritionist or dietician	33.6	5.1	38.8	4.5	36.1	3.5
Specialist	18.1	4.4	21.9	4.4	19.9	3.1
None of the above	3.9	1.6	2.3	1.0	3.2	1.0

*SE = standard error.*

**Table 6.5: Diabetes check in the previous two years, by age and sex**

Age group (years)	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
18–24	16.5	2.6	29.6	3.2	23.0	2.1
25–34	28.3	2.8	43.9	2.3	36.3	1.8
35–44	35.8	2.7	39.9	2.0	37.9	1.6
45–54	56.7	2.7	51.4	2.3	54.0	1.8
55–64	71.7	2.7	62.5	2.6	67.1	1.9
65+	60.9	2.7	65.4	2.2	63.4	1.7
All	43.9	1.2	48.9	1.0	46.5	0.8

*SE = standard error.*

### Gestational diabetes

Gestational diabetes occurs during pregnancy in about 3–8 per cent of females (in Australia) not previously diagnosed with diabetes.<sup>1</sup> It is an indicator of greater risk of developing type 2 diabetes later in life.<sup>2</sup> Among female respondents to the survey, 1.2 per cent (0.8–1.6) reported they had been diagnosed with diabetes during pregnancy.

### Factors influencing doctor diagnosed diabetes

After adjusting for differences in age and sex, those persons more likely to report having been diagnosed with diabetes or high sugar levels in their blood/urine were those born overseas, those not in the labour force, those having lower education levels, those in households with low incomes and those with high blood pressure (table 6.6).

Figure 6.2: Diabetes check in the previous two years, by age and sex

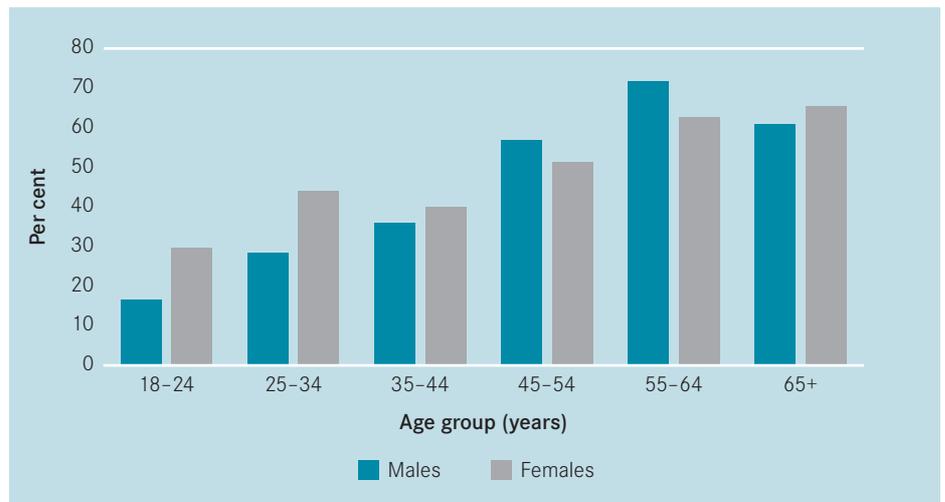


Table 6.6: Doctor-diagnosed diabetes, by risk factors

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Area of Victoria</b>				
Rural	1.00	–	–	–
Urban	1.17	0.91	1.50	0.229
<b>Country of birth</b>				
Australia	1.00	–	–	–
Overseas	1.39	1.00	1.93	0.047
<b>Education level</b>				
Tertiary	1.00	–	–	–
Secondary	1.23	0.88	1.72	0.224
Primary	2.31	1.27	4.19	0.006
<b>Occupation</b>				
Professional	1.00	–	–	–
Non-professional	1.03	0.56	1.89	0.92

Table 6.6: Doctor diagnosed diabetes, by risk factors (continued)

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Employment status</b>				
Employed	1.00	–	–	–
Unemployed	0.86	0.29	2.55	0.789
Not in the labour force	2.01	1.35	3.01	0.001
<b>Smoking status</b>				
Non-smoker	1.00	–	–	–
Ex-smoker	1.11	0.72	1.72	0.631
Smoker	1.01	0.66	1.54	0.973
<b>High blood pressure ever</b>				
No	1.00	–	–	–
Yes	2.14	1.53	2.99	<0.001
<b>Private health insurance</b>				
Yes	1.00	–	–	–
No	1.25	0.92	1.70	0.151
<b>Household income per year</b>				
Greater than or equal to \$60,000	1.00	–	–	–
\$40,000 to less than \$60,000	1.11	0.57	2.15	0.758
\$20,000 to less than \$40,000	1.53	0.88	2.67	0.131
Less than \$20,000	2.45	1.45	4.11	0.001
<b>Dwelling ownership</b>				
Owned	1.00	–	–	–
Rented	1.12	0.75	1.69	0.577

## References

1. Australian Institute of Health and Welfare 2002, *Australia's health 2002*, Canberra.
2. Department of Human Services, 'Diabetes explained', Better Health Channel website, [www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au), Government of Victoria, Melbourne.

## 7. Psychological distress

### 7.1 Introduction

Mental health problems and mental illness are a major cause of poor health in Australia. Almost one in five adults experiences a mental disorder at some time in their lives.<sup>1</sup> Depression is the number one cause of the burden of disease in Victoria and the fourth cause Australia-wide.<sup>2,3</sup> The World Health Organisation and the World Bank estimate that the burden of disease associated with depression is increasing globally and will become the major cause of the disease burden in the next 20 years. In recognition of the importance of these issues, mental health has been designated one of seven national health priority areas for Australia and is the subject of a National Strategy and Action Plan.<sup>4</sup>

Given the significance of mental health issues in Victoria, the Department of Human Services included a measure of psychological distress—the Kessler 10 (K10)—in the survey. The K10 is a set of 10 questions designed to categorise the level of psychological distress over a four-week period. It cannot be used to determine major mental illnesses (such as psychoses), but it has been validated as a simple measure of anxiety, depression and worry (psychological distress).<sup>5</sup> The K10 scale was developed for use in the United States National Health Interview Survey and formed part of the national Survey of Mental Health and Well Being conducted by the Australian Bureau of Statistics in 1997 and 2001.

### 7.2 Method

The K10 covers the dimensions of depression and anxiety, such as nervousness, hopelessness, restlessness, sadness and worthlessness. It consists of 10 questions that have the same response categories: all of the time, most of the time, some of the time, a little of the time and none of the time (which are scored from 1 to 5). To calculate a K10 score, the ordering of these values is reversed before being assigned to the responses given for each question, and the 10 items are summed to yield scores ranging from 10 to 50.

Subject to qualifications about the use of the K10 as a screening tool, the maximum score of 50 indicates severe distress and the minimum score of 10 indicates no distress. In general, the higher the K10 score, the greater is the likelihood that a person may be affected by psychological distress.

### 7.3 Survey results

#### Psychological distress at a glance

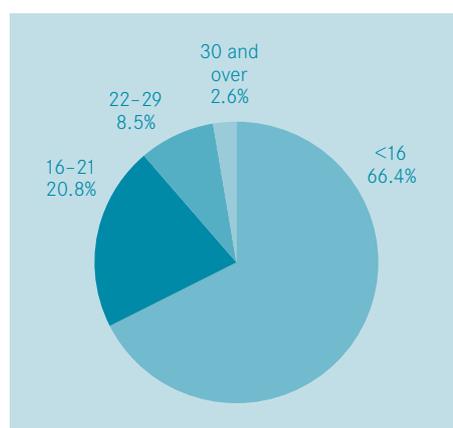
- Almost 3 per cent of persons aged 18 years or over had scores of 30 or greater on the K10 and were classified as likely to be at high risk of psychological distress. A further 29.3 per cent of persons were categorised in the middle risk category for psychological distress.
- For both males and females, the prevalence of higher K10 scores was generally lower among persons in older age groups. Persons aged 65 years or over were also more likely to have K10

scores in the low risk category (scores less than 22), with 91.6 per cent of males and 90.8 per cent of females in this age group achieving such scores.

- Overall, a lower proportion of males (2.0 per cent) than females (3.2 per cent) had high scores.
- After adjusting for age and sex, those persons more likely to be categorised as experiencing psychological distress (K10 scores greater than or equal to 22) were those persons with lower education levels, those unemployed or not in the labour force, those in non-professional or other occupations, those told by a doctor that they have had depression or anxiety, those born overseas, those self-reporting poor health status, those not having private health insurance, those having lower income levels and those living in rented dwellings.

Almost 3 per cent of persons aged 18 years or over had scores of 30 or greater on the K10 and were classified as likely to be at high risk of psychological distress (figure 7.1). For reporting purposes, the middle risk level was divided into a lower range (K10 scores of 16–21) and an upper range (scores of 22–29). Almost 9 per cent of respondents had scores in the upper range of the middle risk category and 20.8 per cent had scores in the lower range. Almost two-thirds of respondents (66.4 per cent) had low K10 scores and were regarded as being at low risk of psychological distress.

Figure 7.1: K10 scores



For both males and females, the prevalence of higher K10 scores was generally lower among persons in older age groups (table 7.1). Persons aged 65 years or over were also more likely to have K10 scores in the low risk category (scores less than 22), with 91.6 per cent of males and 90.8 per cent of females in this age group achieving such scores.

The proportion of females with scores in the high risk category was greatest in the age group 45–54 years (4.8 per cent). Males aged 55–64 years had the highest proportion categorised as high risk (3.5 per cent). Overall, a lower proportion of males (2.0 per cent) than females (3.2 per cent) had high scores.

Table 7.1: K10 score, by age and sex

Age group (years)	K10 score							
	<16		16–21		22–39		≥30	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
<b>Males</b>								
18–24	56.9	3.5	28.5	3.1	11.3	2.3	2.2	0.8
25–34	64.1	2.9	25.2	2.6	9.1	1.7	0.5	0.3
35–44	71.0	2.4	19.8	2.1	5.7	1.1	2.9	0.8
45–54	68.3	2.6	17.9	2.1	9.9	1.7	2.5	0.8
55–64	76.5	2.5	14.1	2.1	3.5	1.0	3.5	1.0
65+	79.9	2.1	11.7	1.7	4.5	1.2	1.0	0.5
All	69.3	1.1	19.8	1.0	7.4	0.6	2.0	0.3
<b>Females</b>								
18–24	46.7	3.5	34.6	3.4	14.7	2.5	3.4	1.2
25–34	60.3	2.3	24.0	1.9	11.0	1.4	2.9	0.9
35–44	67.0	1.9	18.7	1.5	9.2	1.1	3.5	0.8
45–54	62.7	2.3	21.8	2.0	9.7	1.4	4.8	1.0
55–64	66.8	2.6	18.3	2.3	8.7	1.5	3.7	1.0
65+	73.8	2.1	17.0	1.9	4.8	1.0	1.0	0.5
All	63.7	1.0	21.8	0.9	9.4	0.6	3.2	0.4
<b>Persons</b>								
18–24	51.9	2.5	31.5	2.3	13.0	1.7	2.8	0.7
25–34	62.2	1.8	24.6	1.6	10.0	1.1	1.7	0.5
35–44	69.0	1.5	19.2	1.3	7.5	0.8	3.2	0.6
45–54	65.5	1.7	19.9	1.5	9.8	1.1	3.7	0.6
55–64	71.6	1.8	16.2	1.6	6.1	0.9	3.6	0.7
65+	76.4	1.5	14.7	1.3	4.7	0.8	1.0	0.4
All	66.4	0.7	20.8	0.6	8.5	0.4	2.6	0.2

SE = standard error.

## Psychological distress and risk factors

After adjusting for age and sex (table 7.2), those persons more likely to be categorised as experiencing psychological distress (K10 scores greater than or equal to 22) were those persons with lower education levels, those unemployed or not in the labour force, those in non-professional occupations, those told by a doctor that they had depression or anxiety, those born overseas, those self-reporting poor health status, those not having private health insurance, those having lower income levels and those living in rented dwellings.

The survey also collected information on whether a person had ever been told by a doctor that they had depression or an anxiety disorder. Overall, 10.9 per cent of males and 18.7 per cent of females had been told by a doctor that they had depression or anxiety. Persons who had been so diagnosed were found to be more likely to have higher levels of psychological distress.

Table 7.2: Psychological distress, by risk factors

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Area of Victoria</b>				
Urban	1.00	-	-	-
Rural	0.85	0.72	1.01	0.067
<b>Country of birth</b>				
Australia	1.00	-	-	-
Overseas	1.25	1.01	1.56	0.044
<b>Education level</b>				
Tertiary	1.00	-	-	-
Secondary	1.31	1.05	1.61	0.015
Primary	2.48	1.52	4.04	<0.001
<b>Employment status</b>				
Employed	1.00	-	-	-
Unemployed	4.44	3.07	6.43	<0.001
Not in the labour force	2.02	1.58	2.60	<0.001
<b>Occupation</b>				
Professional	1.00	-	-	-
Non-professional	1.48	1.06	2.06	0.021
<b>Self-reported health status</b>				
Excellent/very good	1.00	-	-	-
Good	2.12	1.66	2.73	<0.001
Fair/poor	6.00	4.60	7.82	<0.001
<b>Told by a doctor that they had depression or anxiety</b>				
No	1.00	-	-	-
Yes	7.31	5.92	9.05	<0.001
<b>Private health insurance</b>				
Yes	1.00	-	-	-
No	2.08	1.69	2.56	<0.001

Table 7.2: Psychological distress, by risk factors (continued)

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Household income per year</b>				
Greater than or equal to \$60,000	1.00	–	–	–
\$40,000 to less than \$60,000	1.52	1.08	2.15	0.015
\$20,000 to less than \$40,000	2.62	1.88	3.65	<0.001
Less than \$20,000	5.25	3.80	7.25	<0.001
<b>Dwelling ownership</b>				
Owned	1.00	–	–	–
Rented	1.53	1.21	1.92	<0.001

## 7.4 Seeking professional help for mental health related problems

The survey also included a question on the use of mental health services, specifically: 'In the last year, have you sought professional help for a mental health related problem?'. An estimated 6.7 per cent of respondents had accessed professional help for a mental health related problem at some point during the year before the survey interview (table 7.3).

Of those who had sought professional help for a mental health related problem, almost half (47.3 per cent) sought help from a general practitioner (table 7.4). A further 25.0 per cent had had contact with a private counselling service or psychologist, and 19.9 per cent had made one or more visits to a private psychiatrist.

## References

1. Australian Bureau of Statistics 1999, *National Survey of Mental Health and Wellbeing of Adults*, Canberra.
2. Mathers C, Vos T & Stevenson C 1999, *The burden of injury and disease in Australia*, Australian Institute of Health and Welfare, Canberra.
3. Department of Human Service 1999, *The Victorian Burden of Disease Study: morbidity*, Government of Victoria, Melbourne.
4. Australian Institute of Health and Welfare 1996, *First report on national health priority areas*, Canberra.
5. Andrews G & Slade T 2001, 'Interpreting scores on the Kessler psychological distress scale (K10)', *Australian and New Zealand Journal of Public Health*, vol. 26, no. 6, pp. 494–7.

Table 7.3: Seeking professional help for a mental health related problem, by sex

	%	SE (%)
Males	5.7	0.5
Females	7.6	0.5
Persons	6.7	0.4

SE = standard error.

Table 7.4: Seeking help for a mental health related problem, by source of help

Sought help from	%	SE (%)
General practitioner	47.3	2.8
Private counselling service/ psychologist	25.0	2.5
Private psychiatrist	19.9	2.4
Other	10.9	1.8
Community health service	9.3	1.6
Public mental health service community service	6.2	1.1
Public hospital inpatient service	2.2	1.0
Public mental health service crisis service	1.3	0.9
Private hospital inpatient service	1.2	0.6

SE = standard error.

## 8. Social support and participation

### 8.1 Introduction

*In this section, Dr David Adams, Strategic Policy and Research Division, Department for Victorian Communities, outlines the contribution that the Victorian Population Health Survey continues to make in providing an ongoing set of social capital related indicators that are being used to report on many aspects of social capital in policy debates.*

#### Social networks and public policy

Since the idea of social capital was popularised in the 1980s, it has been appropriated by governments and academics all over the world. However, the currency of the idea has not translated into significant public policy action and, at best, all we have to show is an international plethora of pilots. The reasons for this literary success but policy inertia are many and varied (the language of 'capital' has not helped) but one important reason has been the failure of the social capital policy community to reach agreement on a core suite of indicators.

Indicators help translate complex ideas into simple and practical concepts with commonly understood meanings that can be monitored, assessed and debated by the public and policy makers.<sup>1</sup> They are, therefore, an important bridge between theory and practice. Currently, social capital and its many policy manifestations, such as community building, community strengthening and neighbourhood renewal, are opaque and distant to the

public. Yet, the consequences of the absence of social capital can be immediate and devastating, with the loss of community infrastructure and identity being linked to significant health and other social problems.<sup>2</sup>

The Victorian Population Health Survey has created a set of social capital related indicators, and these have become an important vehicle for introducing social capital concepts to policy makers and the public. In this section, the language of social networks is used in recognition of the complexity of attributing causation to the broader phenomenon of social capital. Networks are the sites of action in relation to social capital bonding, bridging and linking, and while their agency is still hotly contested,<sup>3</sup> they provide a public policy lens into the social capital world.

Network activity can generate, sustain and reproduce those important human relations that people can draw on for identity, interaction and support. One of the more significant research developments in recent years is the recognition of just how local social capital effects are. Important also is the recognition that often simple actions of communities, governments and business can support community strengthening. These actions include:

- using integrated land use planning as a basic building block for supportive community infrastructures (such as schools as a key local agora and site for multiple community facilities)
- encouraging participation in sporting, recreational, cultural and civic life

- looking at life through the lens of people and places rather than simply programs
- ensuring there is an economic side to community strengthening strategies (for example, skills and jobs)
- promoting local leadership and the participation of local institutions (such as schools, local councils and universities).

The Victorian Population Health Survey's social capital indicators meet the two criteria recognised internationally as being successful indicators (indicators that are well used in policy debates) beyond the need for technical accuracy.<sup>1</sup> The criteria are that the indicators (1) are linked to public policy objectives at all levels of government (and, therefore, can be acted on) and (2) use publicly understood concepts (and, therefore, can be readily adopted by the public and policy makers). Other important features include that the indicators are relatively few in number, provide information on bonding, bridging and linking social capital, and are longitudinal.

We are still in the early phases of understanding the public policy of social capital and its many manifestations, such as community building. It took many decades for those working on economic capital to agree on key international indicators (such as gross domestic product or employment rates). With natural capital, international indicators are emerging (such as air and water quality), as are core human capital

indicators (such as year 12 completion rates and class sizes). The Victorian Population Health Survey indicators are still in the early phases of development, but are now able to report on key aspects of social capital in policy debates and are already signalling the need for a paradigm shift in public policy to account for social capital related interventions.

An important example is a recent research project that used the survey's indicators to show how powerful community strengthening interventions are in driving a wedge in the cycle of disadvantage for communities by significantly reducing, for example, the likelihood of imprisonment and early school leaving (Vinson 2004). What is less well understood is the agency of networks in making such a difference to people's lives. The longitudinal nature of the Victorian Population Health Survey work is enabling us to develop a much better picture of how community strengthening improves health and wellbeing over time.

### Next steps

The Department of Human Services is implementing initiatives to increase both the uptake of the indicators and the utility of those indicators in informing a new social policy paradigm. Following a successful workshop late in 2003, the department, in conjunction with others (including the Australian Bureau of Statistics<sup>4</sup> and the Productivity Commission<sup>5</sup>), plans to refine and promote the widespread adoption of a simple set of indicators across Australia. This adoption could

include all levels of government, the community sector and business. Work has already begun with stakeholders to include these indicators in reporting systems being created by local governments across Victoria. A core suite of comparable indicators will enable us to understand and compare types of social capital intervention and compare performance across levels of government, sectors, jurisdictions and nations.

Research is now underway to also examine the combined three years of the Victorian Population Health Survey social capital data, to dissect in more detail questions of people and place. The Department for Victorian Communities is also planning to examine the survey's indicators alongside other information on government outcomes and expenditures, so as to develop a tool to assist in planning and resource allocation. It should shortly be able to understand the cost-effectiveness of social capital interventions (and, therefore, opportunity cost), enabling a more informed debate on the logics of resource allocation models.

The stakes are high for social capital indicators precisely because many perceive the idea and its practices as the leading edge of a paradigm shift in public policy.<sup>6</sup> While some might want to argue for another 20 years about the choice of indicators, and the need to avoid a 'one size fits all' approach, the opportunity may be lost to introduce these important concepts into public policy debates. The indicators in this

section provide a basis for linking measurements to the day-to-day policy activities of governments, communities and businesses.

Over 2004, the Department for Victorian Communities will extend the social networks indicators to the local government area level to enable better understanding and analysis of neighbourhood level effects. Importantly, such information will provide insights into the role of local institutions (such as councils) in shaping communities. The mandate of the Department for Victorian Communities is to strengthen communities and join up services across Victoria. The research emerging through the Victorian Population Health Survey provides an important evidence base for informing this new field of government policy.

## 8.2 Social support through social networks

The Victorian Population Health Survey incorporated a suite of questions relating to social support, connectedness and participation for the first time in 2001. Although there has been some evolution in the make-up of the questions, a core set has been retained in the past three annual surveys. The 2003 survey continued to collect information on informal social contacts (friends, family and neighbours) and membership or involvement with broader organisations such as sporting clubs, professional associations and community groups.

A number of questions related to the type of help that people can get through their social networks have been asked in the survey since 2001. The 2003 survey included questions on ability to get help from friends and family when needed, and on ability to raise \$2000 within two days in an emergency. The 'help from friends and family' questions were designed to explore the levels of social support that can be drawn through people's close networks, while the '\$2000 in an emergency' question more specifically described the availability of economic support. An inability to raise money in an emergency may indicate, for example, that some Victorians do not have the reserves in their social networks to deal with difficulties such as emergency dental care or the breakdown of a car needed to attend employment.

## Survey results

### Help when needed

Most persons felt they could get help from friends and family members when needed (table 8.1). Overall, 9.6 per cent of males and 7.8 per cent of females reported they might not be able to get help from family or friends when needed, with 12.3 per cent of males aged 35–54 years being unable to get help (table 8.2).

**Table 8.1: Ability to get help when needed**

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Can you get help from friends when you need it?</b>						
Yes, definitely	79.7	0.6	79.9	0.6	80.2	0.6
Sometimes	14.9	0.6	14.1	0.6	14.1	0.5
Not often	2.5	0.2	3.0	0.3	2.5	0.2
Not at all	2.9	0.3	2.9	0.3	3.1	0.3
<b>Can you get help from family members when you need it?</b>						
Yes, definitely	81.8	0.6	82.8	0.6	83.5	0.6
Sometimes	10.8	0.5	10.0	0.5	10.5	0.5
Not often	3.1	0.3	2.9	0.3	2.2	0.2
Not at all	4.3	0.3	4.2	0.3	3.8	0.3
<b>Can you get help from neighbours when you need it?</b>						
Yes, definitely	50.7	0.8	51.7	0.8	51.5	0.8
Sometimes	27.3	0.7	20.1	0.6	19.8	0.6
Not often	9.1	0.5	9.4	0.5	7.9	0.4
Not at all	12.9	0.5	18.8	0.7	20.7	0.7

SE = standard error.

**Table 8.2: Persons who could not get help from friends or family when needed, by age and sex**

Age group (years)	Males		Females	
	%	SE (%)	%	SE (%)
18–24	6.2	1.6	6.2	1.5
25–34	8.9	1.7	8.0	1.2
35–44	12.3	1.7	8.9	1.1
45–54	12.3	1.9	8.3	1.3
55–64	7.5	1.5	6.9	1.4
65+	8.2	1.7	7.7	1.4
All	9.6	0.7	7.8	0.5

SE = standard error.

### Raising \$2000 within two days in an emergency

This question more specifically described the availability of economic support. Most persons (80.0 per cent) could raise \$2000 within two days in an emergency (table 8.3). Overall, 15.9 per cent could not raise \$2000 within two days in an emergency, with the highest proportion being reported for both young males and females aged 18–24 years (31.3 per cent and 25.2 per cent respectively (table 8.4).

Table 8.3: Ability to raise \$2000 within two days in an emergency

	2002		2003	
	%	SE (%)	%	SE (%)
Yes	78.6	0.7	80.0	0.6
No	16.6	0.6	15.9	0.6
Don't know	3.9	0.3	3.5	0.3
Refused	–	–	0.6	0.1

SE = standard error.

Table 8.4: Persons who could not raise \$2000 within two days in an emergency, by age and sex

Age group (years)	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
18–24	31.3	3.3	25.2	3.1	28.3	2.3
25–34	11.3	1.9	15.6	1.7	13.5	1.3
35–44	8.3	1.3	18.0	1.5	13.3	1.0
45–54	10.1	1.6	17.8	1.8	14.0	1.2
55–64	12.6	2.1	17.7	2.0	15.2	1.5
65+	12.9	1.9	16.6	1.8	15.0	1.3
All	13.5	0.8	18.1	0.8	15.9	0.6

SE = standard error.

### Where friends and family are located

The survey examined whether the friends and family with whom respondents had regular (at least monthly) contact live in the respondent's local neighbourhoods. Around one-quarter of respondents had at least five close family members in their local areas, while 35.5 per cent had none (table 8.14). Around half had at least five close friends in their local area, while 14.4 per cent had none (table 8.14).

## 8.3 Community participation

Questions about community participation have been asked in the survey since 2001. In the 2003 survey, questions were asked about volunteering (table 8.5) and group membership (table 8.7).

### Survey results

#### Volunteering

Over one in three persons (34.4 per cent) aged 18 years or over helped out a local group as a volunteer (table 8.6).

Figure 8.1: Persons who could not raise \$2000 within two days in an emergency, by age and sex

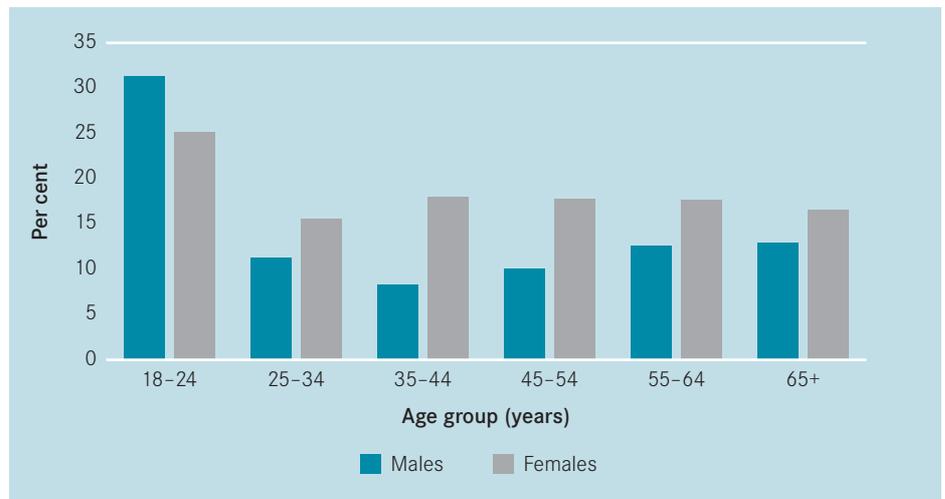


Table 8.5: Volunteering

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Do you help out a local group as a volunteer?</b>						
Yes, definitely	21.2	0.6	24.4	0.6	24.1	0.6
Sometimes	10.8	0.5	9.6	0.5	10.3	0.5
Not often	4.5	0.3	3.3	0.5	6.3	0.4
Not at all	63.5	0.7	62.7	0.7	59.3	0.8

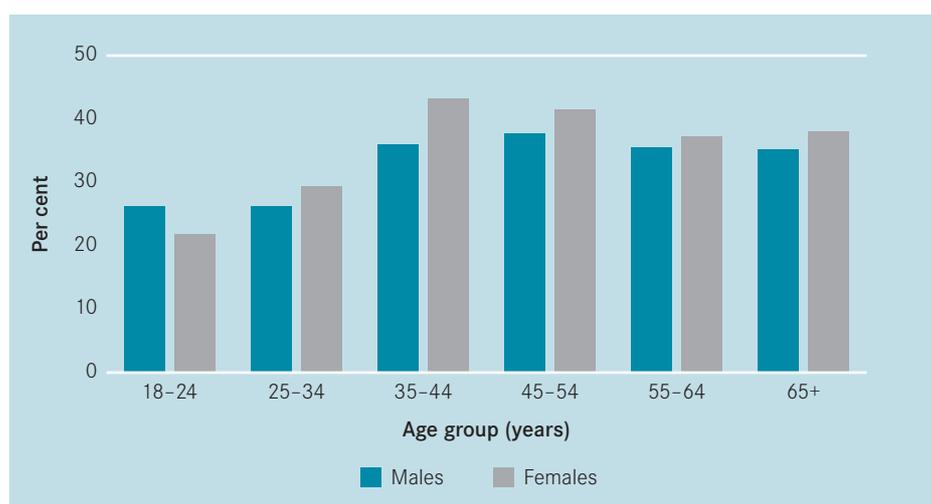
SE = standard error.

**Table 8.6: Persons who helped out a local group as a volunteer, by age and sex**

Age group (years)	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
18-24	26.2	3.2	21.8	2.8	24.0	2.1
25-34	26.2	2.6	29.4	2.0	27.8	1.6
35-44	36.0	2.5	43.2	2.0	39.7	1.6
45-54	37.7	2.6	41.4	2.3	39.6	1.7
55-64	35.5	2.9	37.2	2.6	36.4	1.9
65+	35.1	2.5	38.0	2.3	36.8	1.7
All	32.8	1.1	35.9	0.9	34.4	0.7

*SE = standard error.*

**Figure 8.2: Volunteering, by age and sex**



### Membership of groups

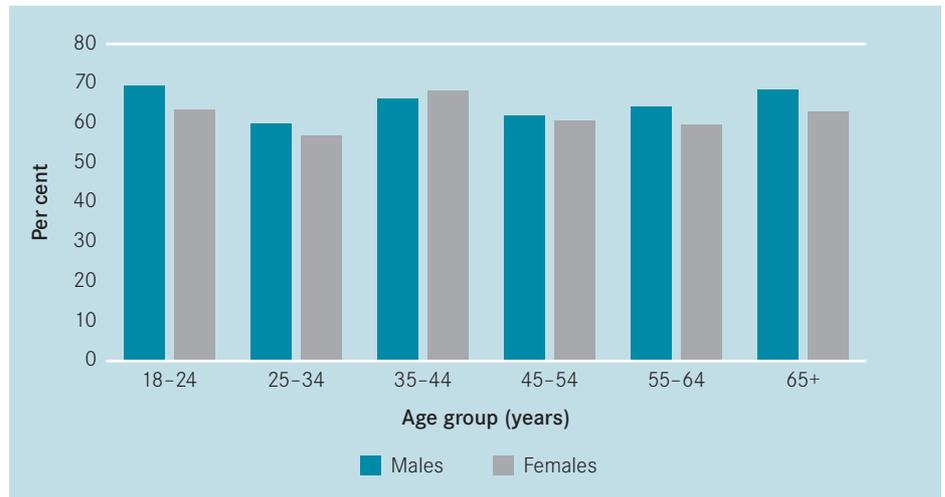
Most persons (63.3 per cent) aged 18 years or over were members of a group (either a sports, school, church, community or action, or professional group, or an academic society) (table 8.7).

Table 8.7: Membership of a group, by age and sex

Age group (years)	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
18-24	69.4	3.3	63.5	3.3	66.5	2.3
25-34	59.8	3.0	56.9	2.3	58.3	1.9
35-44	66.2	2.5	68.1	1.9	67.2	1.6
45-54	61.8	2.7	60.7	2.3	61.2	1.8
55-64	64.2	2.9	59.7	2.6	62.0	2.0
65+	68.4	2.5	63.0	2.3	65.3	1.7
All	64.6	1.2	62.1	1.0	63.3	0.8

SE = standard error.

Figure 8.3: Membership of a group, by age and sex



## 8.4 Attitudes

A number of questions related to community participation have been asked in the survey since 2001 (tables 8.8–8.12). These include questions on feelings of safety, trust, tolerance of diversity, feeling valued by society and feeling able to have a say on issues that are important to the respondent.

## Survey results

**Table 8.8: Feelings of safety**

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Do you feel safe walking alone down your street after dark?</b>						
Yes, definitely	55.2	0.8	56.0	0.8	59.0	0.8
Sometimes	17.5	0.6	16.1	0.6	15.6	0.6
Not often	5.9	0.4	5.0	0.3	5.1	0.3
Not at all	21.4	0.6	22.6	0.7	16.9	0.6

*SE = standard error.*

**Table 8.9: Feelings of trust**

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Do you agree that most people can be trusted?</b>						
Yes, definitely	28.0	0.7	31.7	0.7	35.7	0.5
Sometimes	43.5	0.8	43.3	0.8	43.6	0.8
Not often	12.0	0.5	8.5	0.4	9.1	0.5
Not at all	16.5	0.6	16.4	0.6	11.6	0.5

*SE = standard error.*

Table 8.10: Tolerance of diversity

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Do you enjoy living among people of different lifestyles?</b>						
Yes, definitely	69.5	0.7	71.2	0.7	73.3	0.7
Sometimes	22.0	0.7	20.9	0.6	18.5	0.6
Not often	2.9	0.2	3.1	0.3	2.2	0.2
Not at all	5.6	0.4	4.5	0.3	3.4	0.2
<b>Do you think that multiculturalism makes life in your area better?</b>						
Yes, definitely	57.0	0.8	59.4	0.8	64.2	0.7
Sometimes	28.7	0.7	27.6	0.7	22.0	0.6
Not often	5.6	0.4	4.5	0.3	2.6	0.2
Not at all	8.7	0.4	7.7	0.4	5.3	0.3

SE = standard error.

Table 8.11: Feeling valued by society

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Do you feel valued by society?</b>						
Yes, definitely	42.1	0.8	51.6	0.8	55.4	0.8
Sometimes	36.6	0.8	32.2	0.7	30.2	0.7
Not often	9.0	0.5	6.6	0.4	5.4	0.3
Not at all	12.4	0.5	8.6	0.4	9.0	0.4

SE = standard error.

Table 8.12: Opportunities to have a say

	2001		2002		2003	
	%	SE (%)	%	SE (%)	%	SE (%)
<b>Do you feel there are opportunities to have a real say on issues that are important to you?</b>						
Yes, definitely	36.1	0.7	39.3	0.8	42.2	0.7
Sometimes	34.2	0.7	34.1	0.8	33.0	0.7
Not often	14.9	0.6	12.7	0.5	10.6	0.5
Not at all	14.7	0.6	13.6	0.5	14.3	0.5

SE = standard error.

## 8.5 Self-rated health and selected elements of social support and participation

Adjusted for age and sex (table 8.13), persons who rated their health as fair or poor, as opposed to excellent, very good or good, were more likely to:

- not get help from friends or family when needed
- have relatively few conversations with people
- not agree that most people can be trusted
- not enjoy living among people of different lifestyles or think that multiculturalism makes life in their area better
- not feel valued by society
- not feel there are opportunities to have a say on issues that are important to them
- not be a member of any group.

Table 8.13: Fair/poor health, by selected social network questions

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Can you get help from friends when you need it?</b>				
Yes, definitely	1.00	–	–	–
Sometimes	1.99	1.58	2.49	<0.001
Not often	1.96	1.21	3.17	0.006
No, not at all	3.00	2.09	4.30	<0.001
<b>Can you get help from family when you need it?</b>				
Yes, definitely	1.00	–	–	–
Sometimes	1.77	1.38	2.28	<0.001
Not often	3.01	1.96	4.64	<0.001
No, not at all	1.82	1.29	2.57	0.001
<b>How many people did you speak to yesterday?</b>				
Many, at least 10	1.00	–	–	–
Five or more	1.31	1.07	1.61	0.009
Fewer than five	2.18	1.76	2.70	<0.001
None at all	4.73	2.54	8.80	<0.001
<b>Do you agree that most people can be trusted?</b>				
Yes, definitely	1.00	–	–	–
Sometimes	1.58	1.30	1.91	<0.001
Not often	2.07	1.53	2.79	<0.001
No, not at all	2.71	2.08	3.53	<0.001
<b>Do you enjoy living among people of different lifestyles?</b>				
Yes, definitely	1.00	–	–	–
Sometimes	1.20	0.96	1.50	0.106
Not often	1.52	0.93	2.48	0.092
No, not at all	1.92	1.33	2.76	<0.001

Table 8.13: Fair/poor health, by selected social network questions (continued)

	Odds ratio	95% confidence interval		p value
		Lower limit	Upper limit	
<b>Do you think multiculturalism makes life in your area better?</b>				
Yes, definitely	1.00	-	-	-
Sometimes	1.29	1.05	1.59	0.017
Not often	1.20	0.75	1.93	0.451
No, not at all	1.16	0.84	1.61	0.378
<b>Do you feel valued by society?</b>				
Yes, definitely	1.00	-	-	-
Sometimes	1.58	1.30	1.92	<0.001
Not often	2.49	1.77	3.50	<0.001
No, not at all	2.37	1.84	3.06	<0.001
<b>Do you feel there are opportunities to have a real say on issues that are important to you?</b>				
Yes, definitely	1.00	-	-	-
Sometimes	1.36	1.11	1.66	0.003
Not often	1.38	1.02	1.87	0.036
No, not at all	2.09	1.66	2.63	<0.001
<b>Membership of a group</b>				
Yes	1.00	-	-	-
No	1.77	1.50	2.10	<0.001

## 8.6 All questions in 2003 survey

Table 8.14: Social network questions from the Victorian Population Health Survey 2003

	None at all		Fewer than five		Five or more		Many, at least 10	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
How many relatives outside your home do you have contact with (face-to-face, telephone, email, mail) at least once a month?	3.1	0.3	32.1	0.7	37.5	0.8	27.4	0.7
How many of these relatives live in your local area/local government or council area?	35.5	0.8	36.1	0.8	17.6	0.6	7.8	0.4
How many friends do you have contact with (face-to-face, telephone, email, mail) at least once a month?	2.0	0.2	19.1	0.6	30.9	0.7	48.0	0.8
How many of these friends live in your local area/local government or council area?	14.4	0.6	34.6	0.8	27.0	0.7	22.0	0.6
How many people did you talk to yesterday?	1.1	0.2	17.0	0.6	27.2	0.7	54.6	0.8
	No, not at all		Not often		Sometimes		Yes, definitely	
	%	SE (%)	%	SE (%)	%	SE (%)	%	SE (%)
Can you get help from friends when you need it?	3.1	0.3	2.5	0.2	14.1	0.6	80.3	0.6
Can you get help from family members when you need it?	3.8	0.3	2.2	0.2	10.5	0.5	83.5	0.6
Can you get help from neighbours when you need it?	20.7	0.7	7.9	0.4	19.8	0.6	51.5	0.8
Can you get access to community service or resources when you need them?	5.5	0.4	2.9	0.3	14.5	0.6	72.0	0.7
Do you help out a local group as a volunteer?	59.3	0.8	6.3	0.4	10.3	0.5	24.1	0.6
Do you feel safe walking alone down your street after dark?	16.9	0.6	5.1	0.3	15.6	0.6	59.0	0.8
Do you agree that most people can be trusted?	11.6	0.5	9.1	0.5	43.6	0.8	35.7	0.7
Do you enjoy living among people of different lifestyles?	3.4	0.3	2.2	0.2	18.5	0.6	73.3	0.7
Do you think that multiculturalism makes life in your area better?	5.3	0.3	2.6	0.2	22.0	0.6	64.2	0.7
Do you feel valued by society?	9.0	0.4	5.4	0.4	30.2	0.7	55.4	0.8
Do you feel there are opportunities to have a real say on issues that are important to you?	14.3	0.5	10.6	0.5	33.0	0.7	42.2	0.8

Table 8.14: Social network questions from the Victorian Population Health Survey 2003 (continued)

	Yes		No		Don't know	
	%	SE (%)	%	SE (%)	%	SE (%)
Could you raise \$2000 within two days in an emergency?	80.0	0.6	15.9	0.6	3.5	0.3
Are you a member of a sports group?	28.3	0.7	71.7	0.7	-	-
Are you a member of a church group?	17.5	0.6	82.4	0.6	-	-
Are you a member of a school group?	14.8	0.5	85.1	0.5	-	-
Are you a member of any other community group?	21.7	0.6	78.3	0.6	-	-
Are you a member of a professional group or academic society?	21.7	0.7	78.1	0.7	-	-
If you needed to find a job, could you get one through a contact in one of these groups? (Of persons who belonged to any of the groups)	59.9	1.1	29.8	1.0	10.3	0.7
Have any of these groups you are involved with taken any LOCAL action on behalf of your community in the past 12 months? (Of persons who belong to any of the groups)	38.5	1.0	52.9	1.1	8.7	0.6
Do you get any help from any volunteer based organisations?	7.4	0.4	92.3	0.4	-	-
Have you been to any support group meetings over the past two years?	10.1	0.4	89.8	0.4	-	-
Could one of your relatives or friends care for you or your children in an emergency?	92.6	0.4	4.8	0.3	2.5	0.2
Have you attended a local community event in the past six months (for example, church fête, school concert, craft exhibition)?	52.7	0.8	46.9	0.8	0.4	0.1
If you needed to find a job, could you get one through a relative or friend?	43.3	0.8	30.7	0.7	9.0	0.5

SE = standard error.

## References

1. Innes JE 1994, *Knowledge and public policy: the search for meaningful indicators*, 2nd edn, Transaction Publishers, New Brunswick, New Jersey.
2. Kawachi I & Berkman L 2000, 'Social cohesion, social capital and health', In: LF Berkman & I Kawachi (eds.), *Social epidemiology*, Oxford University Press, New York.
3. Sampson RJ 2004, 'Networks and neighbourhoods: the implications of connectivity for thinking about crime in the modern city', In: H McCarthy, P Miller & P Skidmore (eds), *Network logic: who governs in an interconnected world?*, [www.demos.co.uk/networklogic12sampson\\_pdf\\_media\\_public.aspx](http://www.demos.co.uk/networklogic12sampson_pdf_media_public.aspx), Accessed May 2004.
4. Australian Bureau of Statistics 2004, *Measuring social capital: an Australian framework and indicators*, Canberra.
5. Productivity Commission 2003, *Social capital: reviewing the concept and its policy implications*, Canberra.
6. Adams D 2004, 'Usable knowledge in public policy', *Australian Journal of Public Administration*, vol. 63, no. 1, pp. 29–42.

## Appendix: Data items for the Victorian Population Health Survey 2003

### Demographics

Age

Sex

Marital status

Country of birth

Main language spoken at home

Country of birth of mother

Country of birth of father

Highest level of education

Employment status

Main field of occupation

Household income

Housing tenure

Whether has private health insurance

Indigenous status

Area of state (Department of Human Services region)

Silent telephone number status

Number of adults aged 18 years or over in household

### Health care use

Whether had blood pressure check in previous two years

Whether had cholesterol check in previous two years

Whether had a test for diabetes or high blood sugar levels in previous two years

Whether had a bowel examination in previous two years

Whether had a skin examination in previous two years

Whether had a prostate check in previous two years

Whether had a dental check-up in previous two years

Use of and level of satisfaction with:

- public hospital
- community health centre
- Meals on Wheels home nursing
- kindergarten
- maternal and child health centre
- mental health service

### Self-reported height and weight

#### Nutrition

Number of serves of vegetables eaten each day

Number of serves of fruit eaten each day

Breakfast cereal consumption

Type of milk consumed

#### Alcohol

Whether had an alcoholic drink of any kind in previous 12 months

Frequency of having an alcoholic drink of any kind

Amount of standard drinks consumed when drinking

Level of frequency of high risk drinking

#### Smoking

Smoking status

Frequency of smoking

### Asthma

Asthma status

### Blood pressure

High blood pressure status

Management of high blood pressure

### Diabetes

Diabetes status

Type of diabetes

### Social capital measures

Social networks and support structures

Social and community participation

Civic involvement and empowerment

Trust in people and social institutions

Tolerance of diversity

### Physical activity

Whether walked continuously for at least 10 minutes in previous week

Amount of time spent walking continuously in previous week

Whether did any vigorous physical activity in previous week

Amount of time spent doing vigorous activity

### Self-reported health status

#### Kessler 10 measure of psychological distress

## **Health conditions**

Arthritis

Heart disease

Stroke

Cancer

Osteoporosis

Depression or anxiety

Gastroenteritis

## **Eye care**

Visits to eye specialists

Eye problems

## **Falls in older persons**

## Attachment 1: Falls among older persons

The Victorian Population Health Survey 2003 included a question on falls for persons aged 60 years or over only, specifically: 'Have you had any falls in or around your home in the past 12 months?'

### Survey results

The survey estimates were weighted to population benchmarks for age, sex and area of Victoria.

- Of all persons aged 60 years or over, 15.9 per cent reported having had a fall in or around their home in the 12 months before the survey.
- In this age group, a higher proportion of females (18.5 per cent) than males (12.7 per cent) reported a fall in or around the house in the previous 12 months.

The table at right shows the breakdown of the results of the falls question by sex and Department of Human Services region.

### Falls, by sex and Department of Human Services region

Region	Persons aged 60 years or over					
	Males		Females		Persons	
	%	SE (%)	%	SE (%)	%	SE (%)
Barwon South West	14.5	4.0	16.8	3.0	15.8	2.5
Grampians	13.9	4.0	16.0	3.3	15.1	2.5
Loddon-Mallee	15.9	4.0	25.5	3.7	21.1	2.7
Hume	11.4	3.2	26.6	3.9	19.4	2.6
Gippsland	8.9	2.7	20.0	3.3	14.9	2.2
Western Metropolitan	10.4	4.0	15.5	4.6	13.2	3.1
Northern Metropolitan	18.2	5.7	22.2	5.1	20.4	3.8
Eastern Metropolitan	9.3	3.5	14.8	3.4	12.4	2.5
Southern Metropolitan	12.5	3.5	17.8	3.7	15.3	2.6
Total	12.7	1.5	18.5	1.5	15.9	1.1

*SE = standard error.*

