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- For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070.

NOTES

ABOUT THIS PUBLICATION

The 2001 National Health Survey (NHS) was designed to obtain national benchmarks on a range of health issues, including the health status of the population, use of health services and other related actions, and health-related aspects of lifestyle and other health risk factors. This population-based information on the prevalence of risk factors is important for the effective planning and monitoring of provision of services and programs. The 2001 NHS meets these data needs by providing information on the:

- prevalence of risk factors in the population overall and in particular socio-demographic groups
- relationships between risk factor prevalence and relative states of health
- changes in the prevalence and distribution of risk factors over time.

EFFECTS OF ROUNDING

Where estimates have been rounded, discrepancies may occur between sums of the component items and total.

ACKNOWLEDGEMENTS

Australian Bureau of Statistics (ABS) publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated. Without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

Dennis Trewin
Australian Statistician

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ABBREVIATIONS

'000	thousand
ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ASGC	Australian Standard Geographical Classification
Aust.	Australia
BMI	body mass index
BP	blood pressure
CURF	Confidentialised Unit Record File
DALY	disability-adjusted life-years
DoHA	Department of Health and Ageing
ICD-10	International Classification of Diseases 10th Revision
mL	millilitre
mmHg	millimetres of mercury
mmol/L	millimoles per litre
n.e.c.	not elsewhere classified
NHMRC	National Health and Medical Research Council
NHS	National Health Survey
NSW	New South Wales
Qld	Queensland
RSE	relative standard error
SA	South Australia
SE	standard error
SEIFA	Socio-Economic Indexes for Areas
Tas.	Tasmania
Vic.	Victoria
WA	Western Australia
WHO	World Health Organization

INTRODUCTION

A range of factors influence the health outcomes of a given individual or population. These include the interaction of socioeconomic, biomedical and environmental factors which contribute to illness and injury. There are also specific lifestyle behaviours, such as smoking, exercise and dietary habits, which may further impact on one's health. In addition to these lifestyle behaviours there are other risk factors, such as high blood pressure and high cholesterol, that are associated with the increased risk of diseases like coronary heart disease and stroke. Since many behavioural risk factors, such as low exercise and smoking, can be influenced in a population, information concerning them is important to inform the development, implementation and evaluation of policies and programmes designed to reduce the burden of morbidity and mortality.

The 2001 National Health Survey (NHS) included topics on five behavioural risk factors:

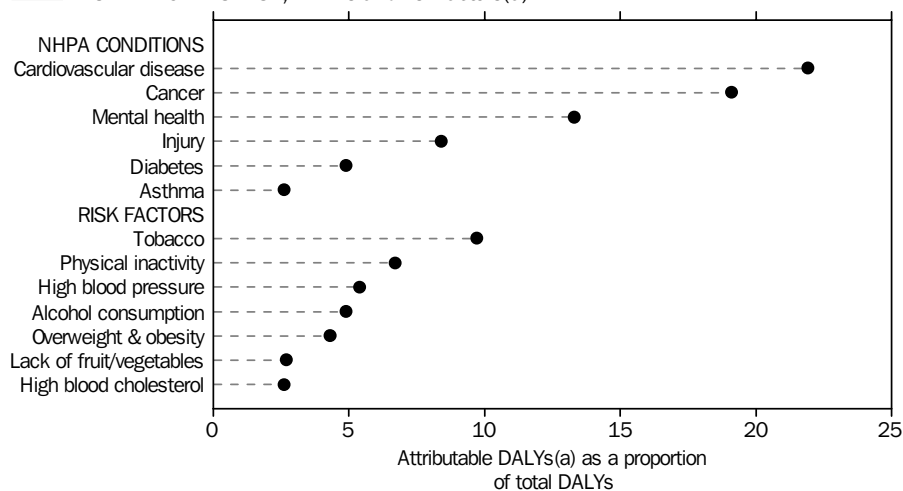
- physical activity
- body mass
- fruit and vegetable consumption
- smoking
- alcohol consumption.

The 2001 NHS also collected information on the prevalence of two additional risk factors:

- high blood pressure
- high cholesterol.

Research indicates that these additional risk factors are related to behavioural risk factors, such as poor diet, and/or hereditary risk factors.

In 1996, it was estimated that risk factors (such as smoking and physical inactivity) accounted for approximately one-third to one-half of the burden of disease and injury in Australia (Mathers et al. 1999). The burden of disease associated with some risk factors is greater than the burden associated with some National Health Priority Areas (NHPA)(see graph 1.1). For example, tobacco use is responsible for approximately 10% of the total burden of disease and injury in Australia, greater than the burden of National Health Priority Areas of injury (8%), diabetes (5%) and asthma (3%). Health interventions directed at promoting healthy behaviours are therefore likely to provide health benefits to the community.

INTRODUCTION *continued***1.1** BURDEN OF DISEASE, NHPAs and risk factors(a)

(a) Disability adjusted life years. One DALY is a 'healthy' year of life lost calculated by combining years lost due to early death and 'healthy' years lost from disability.

In this publication, analyses of seven risk factors are presented to highlight the population groups most affected by them, and the relationships between risk factors and health status. In addition, this publication presents the seven risk factors and their relationship between socio-demographics and illness status. While acknowledging that risk factors are not always present in isolation in individuals, this publication does not attempt to explore the relationship between them in great detail.

Data that suggest associations between a given risk factor and certain illnesses should not be interpreted as indicating causal relationships (that is, that the risk factor caused the disease). Several risk factors may interact to cause or promote disease in addition to environmental, socioeconomic, genetic and other influences.

Since many health characteristics are age-related, the age profile of the populations being compared needs to be considered when interpreting the data. To account for the differences in age structure, much of the comparative data contained within this publication are shown as age standardised percentages. For further detail, see paragraph 16 of the Explanatory Notes.

INTRODUCTION

Being physically active is associated with positive health outcomes including reduced risk of cardiovascular disease, some cancers and depression (World Health Organisation (WHO) 2002). Conversely, physical inactivity increases the risk of developing these conditions (Mathers et al. 1999). In 1996, physical inactivity was estimated to have caused 6% of the total disease burden among Australian males and 8% among females(Mathers et al. 1999).

Australians are advised to undertake at least 30 minutes of moderate activity on most days of the week (Department of Health and Ageing (DoHA) 1999). People have the opportunity to be physically active in various areas of their life such as during work, while performing domestic duties, for transport or during their leisure time (WHO 2002). Physically inactive persons may be defined as those who are not active in any of these areas.

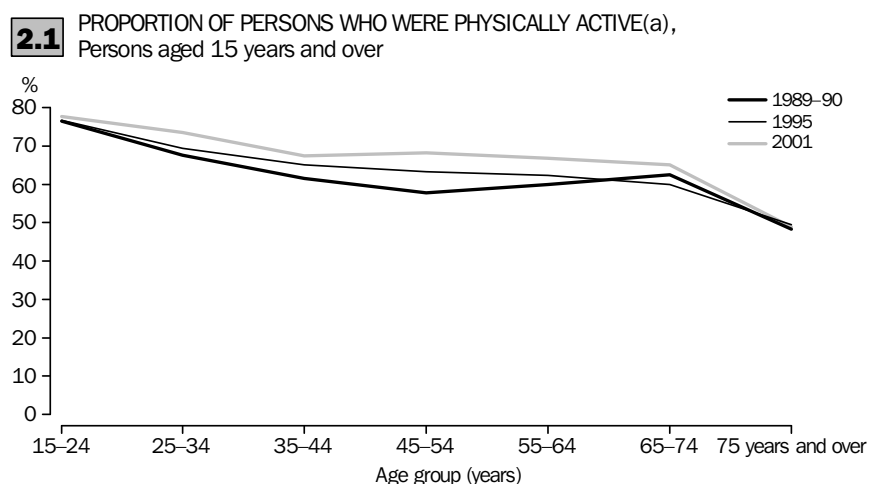
In the 2001 NHS, respondents aged 15 years and over were asked about exercise they had undertaken in the two weeks prior to interview through sport, recreation or fitness (including walking). Incidental exercise undertaken for other reasons, such as for work or while engaged in domestic duties was excluded. Based on the frequency, intensity and duration of exercise reported, an exercise score was derived for each respondent (see Glossary) which categorised them into one of the following exercise level groups:

- physically inactive
- low
- moderate
- high.

PREVALENCE

In 2001, 31% of those aged 15 years and over were physically inactive and 38% exercised at a low level (see table 2.2). Almost one-quarter (24%) exercised at a moderate level and 7% at a high level. While the proportion of males and females who were physically inactive was similar (30% and 32% respectively), males were more likely to exercise at a moderate level (26% compared with 23% of females), or at a higher level (10% compared with 4% of females).

With the exception of those persons aged 45–54 years, the proportion of persons who were physically inactive increased with age to include 51% of those aged 75 years and over. While the proportion of persons who exercised at a high level declined with increasing age, this was not demonstrated for those undertaking moderate exercise. Moderate exercise levels began to decrease with age to 23% among those aged 35–44 years before increasing to 29% among those aged 65–74 years.

PREVALENCE *continued*

(a) Exercising at a low, moderate or high level.

Comparing the 2001 NHS results with those from previous surveys demonstrates that more people aged 15 years and over are exercising than in 1989–90 and 1995 (see graph 2.1). In 1989–90, 64% were exercising at a low, moderate or high level compared with 66% in 1995 and 69% in 2001. However, this increase was mainly attributable to an increase in the number of persons undertaking light exercise (such as walking) — low levels of light exercise increased from 33% in 1989–90 to 38% in 2001. The proportion exercising at a moderate to high level showed little change (remaining around 30% over the same period). Adults aged 65–74 years showed the least improvements in physical activity (an increase of 2 percentage points over the period) while those aged 45–54 years had the greatest improvement. Among the 45–54 years age group, the proportion who were physically active increased by 10 percentage points over the period from 58% in 1989–90 to 68% in 2001.

LONG-TERM CONDITIONS
AND RISK FACTORS

Compared to physically inactive persons, those who exercised at a moderate to high level were less likely to have some long-term conditions (see table 2.3). For example, 11% of moderate to high exercisers reported having high blood pressure compared with 14% of physically inactive persons and 13% of low exercisers. In addition, 15% of moderate to high exercisers reported arthritis compared with 19% of physically inactive persons.

The prevalence of many selected long-term conditions was similar for physically inactive persons and those who exercised at a low level. For example, among both of these groups, 4% had diabetes mellitus, while 14% of those who were physically inactive, and 13% of those who exercised at a low level, had high blood pressure.

With regard to associated risk factors, adults aged 18 years and over who exercised at moderate to high levels were least likely to be obese (11%) while the prevalence of obesity was similar among physically inactive and low exercising adults (17% and 16% respectively). The proportion who were overweight was similar across the three groups (see table 2.3).

LONG-TERM CONDITIONS
AND RISK FACTORS*continued*

Among both men and women, those who exercised at moderate to high levels demonstrated the most positive dietary habits while those who were physically inactive had the poorest dietary habits. For example, 45% of men who exercised at moderate to high levels had an inadequate fruit intake (one serve or less per day) compared with 62% of physically inactive men. The difference was slightly greater among women with 33% who exercised at moderate to high levels having an inadequate fruit intake compared with 53% of those who were physically inactive.

Men who were moderate to high exercisers were less likely to smoke (22% compared with 36% of physically inactive men). The pattern was similar for women (20% of moderate to high female exercisers were current smokers compared with 27% of physically inactive women).

POPULATION
CHARACTERISTICS

Levels of physical inactivity varied across population groups (see table 2.4). For example, 40% of adults from the most disadvantaged socioeconomic areas (lowest Socio-Economic Indexes for Areas (SEIFA) quintile) were physically inactive compared with 25% of adults from the least disadvantaged socioeconomic areas (highest SEIFA quintile). With regard to self-assessed health, those adults who reported their health as being excellent or very good were most likely to be physically active (75%) (that is, exercising at low, moderate or high levels) compared with 56% of adults who rated their health as fair or poor.

For both men and women aged 18–64 years, physical inactivity was highest among those not in the labour force (34%) and lowest among the unemployed (24% for men and 23% for women). By comparison, 29% of the employed population aged 18–64 years were physically inactive.

2.2

EXERCISE LEVEL—2001

	AGE GROUP (YEARS)							Total
	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	
	%	%	%	%	%	%	%	
Males								
Physically inactive	19.4	26.9	33.5	31.9	34.9	30.9	44.0	30.0
Low	29.3	35.4	34.4	36.7	33.9	31.9	30.4	33.6
Moderate	27.8	24.2	24.8	24.6	27.2	35.2	25.1	26.4
High	23.5	13.5	7.3	6.7	4.0	*2.0	**0.5	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Females								
Physically inactive	25.5	26.0	31.8	31.4	31.2	38.8	55.9	32.0
Low	42.8	44.7	43.9	41.8	39.8	36.9	29.1	41.3
Moderate	22.9	22.7	20.9	24.1	26.5	23.1	14.6	22.5
High	8.7	6.6	3.5	2.7	2.6	*1.2	**0.4	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Persons								
Physically inactive	22.4	26.4	32.6	31.7	33.1	35.0	51.0	31.0
Low	35.9	40.1	39.2	39.3	36.8	34.5	29.6	37.5
Moderate	25.4	23.5	22.8	24.4	26.8	29.0	18.9	24.4
High	16.2	10.0	5.4	4.7	3.3	1.6	*0.4	7.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

2.3 EXERCISE LEVEL STATUS, Selected long-term conditions and risk factors(a)—2001

	EXERCISE LEVEL		
	Physically inactive	Low	Moderate or high
	%	%	%
MALES			
Selected long-term conditions (b) (c)			
Neoplasms	2.2	2.9	2.4
Diabetes mellitus	3.6	4.3	3.3
High sugar levels in blood/urine	*0.4	*0.6	*0.3
High cholesterol	7.7	9.6	7.0
Feeling depressed	*0.6	*0.4	*0.5
All mental and behavioural problems	9.3	9.0	8.4
Migraine	4.4	4.6	3.3
High blood pressure	12.0	13.5	10.7
Ischaemic heart disease	3.2	2.7	2.6
Tachycardia	2.3	2.5	1.2
Cerebrovascular diseases	0.8	0.9	0.6
Oedema	1.8	1.0	1.1
Bronchitis/emphysema	5.0	3.2	2.8
Asthma	9.1	9.1	9.3
Diseases of the oesophagus stomach & duodenum	4.0	4.3	3.9
Hernia	2.9	3.5	2.5
Gallstones	*0.2	*0.4	*0.3
Arthritis	15.5	14.1	13.8
Rheumatism	1.6	2.0	1.2
Gout	3.8	2.8	2.8
Back pain/problems/disc disorders/curvature of spine	27.9	26.0	25.1
Osteoporosis	*0.6	0.7	0.9
Diseases of genito-urinary system	2.9	3.2	2.3
Total with a selected long-term condition (d)	62.2	59.8	57.4
Total without a selected long-term condition	37.8	40.2	42.6
Total aged 15 years and over	100.0	100.0	100.0
Selected risk factors (e)			
Usually adds salt after cooking	37.3	30.6	27.9
Inadequate daily fruit intake	62.4	53.9	45.3
Inadequate daily vegetable intake	75.4	75.2	69.0
Ex-smoker	27.6	32.3	32.3
Current smoker	35.6	25.2	22.2
Overweight	37.0	40.1	40.9
Obese	16.2	16.2	11.7
Overweight/obese	53.2	56.4	52.6
Risky to high risk alcohol consumption	13.6	13.0	13.0
Total with a selected risk factor (f)	98.4	97.4	94.9
Total without a selected risk factor	1.6	2.6	5.1
Total aged 18 years and over	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Age standardised to the 2001 NHS benchmark population.
 (b) Persons aged 15 years and over.
 (c) Conditions which have lasted or are expected to last six months or more.
 (d) Persons may have reported more than one type of selected long-term condition and therefore components may not add to totals.
 (e) Persons aged 18 years and over.
 (f) Adults may have reported more than one type of selected risk factor and therefore components may not add to totals.

2.3 EXERCISE LEVEL STATUS, Selected long-term conditions and risk factors(a)—2001 *continued*

	EXERCISE LEVEL		
	Physically inactive	Low	Moderate or high
	%	%	%
FEMALES			
Selected long-term conditions (b) (c)			
Neoplasms	2.0	1.7	1.3
Diabetes mellitus	4.3	3.4	2.5
High sugar levels in blood/urine	*0.5	*0.4	*0.3
High cholesterol	7.6	7.0	6.6
Feeling depressed	0.9	1.0	*0.6
All mental and behavioural problems	13.2	12.0	10.7
Migraine	10.5	11.2	10.0
High blood pressure	15.3	12.5	11.6
Ischaemic heart disease	2.4	1.7	1.0
Tachycardia	2.3	2.5	2.3
Cerebrovascular diseases	0.6	*0.6	*0.5
Oedema	3.2	2.8	1.4
Bronchitis/emphysema	5.0	3.6	3.9
Asthma	13.9	12.3	12.7
Diseases of the oesophagus stomach & duodenum	4.2	4.3	3.7
Hernia	2.5	1.9	1.3
Gallstones	1.4	0.9	*0.8
Arthritis	21.6	19.8	16.6
Rheumatism	2.0	1.3	2.0
Gout	0.7	*0.4	*0.7
Back pain/problems/disc disorders/curvature of spine	27.6	24.8	24.9
Osteoporosis	3.1	3.1	3.1
Diseases of genito-urinary system	5.2	4.2	4.3
Total with a selected long-term condition (d)	65.2	63.9	61.6
Total without a selected long-term condition	34.8	36.1	38.4
Total aged 15 years and over	100.0	100.0	100.0
Selected risk factors (e)			
Usually adds salt after cooking	25.8	20.5	19.8
Inadequate daily fruit intake	53.4	38.5	33.4
Inadequate daily vegetable intake	72.5	65.4	60.6
Ex-smoker	19.5	23.5	23.7
Current smoker	26.5	18.8	19.6
Overweight	22.1	24.3	21.7
Obese	17.8	16.3	10.6
Overweight/obese	39.9	40.6	32.2
Risky to high risk alcohol consumption	7.6	8.3	10.2
Total with a selected risk factor (f)	96.6	92.8	89.6
Total without a selected risk factor	3.4	7.2	10.4
Total aged 18 years and over	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Age standardised to the 2001 NHS benchmark population.
 (b) Persons aged 15 years and over.
 (c) Conditions which have lasted or are expected to last six months or more.
 (d) Persons may have reported more than one type of selected long-term condition and therefore components may not add to totals.
 (e) Persons aged 18 years and over.
 (f) Adults may have reported more than one type of selected risk factor and therefore components may not add to totals.

2.3 EXERCISE LEVEL STATUS, Selected long-term conditions and risk factors(a)—2001 *continued*

	EXERCISE LEVEL		
	Physically inactive	Low	Moderate or high
	%	%	%
PERSONS			
Selected long-term conditions (b) (c)			
Neoplasms	2.1	2.2	1.9
Diabetes mellitus	4.0	3.8	2.9
High sugar levels in blood/urine	0.4	0.5	0.3
High cholesterol	7.6	8.2	6.8
Feeling depressed	0.8	0.7	0.5
All mental and behavioural problems	11.3	10.6	9.3
Migraine	7.5	8.3	6.3
High blood pressure	13.8	13.0	11.1
Ischaemic heart disease	2.8	2.2	1.9
Tachycardia	2.3	2.5	1.7
Cerebrovascular diseases	0.7	0.7	0.6
Oedema	2.5	2.0	1.2
Bronchitis/emphysema	4.9	3.4	3.3
Asthma	11.5	10.9	10.9
Diseases of the oesophagus stomach & duodenum	4.1	4.3	3.8
Hernia	2.7	2.6	2.0
Gallstones	0.8	0.7	0.5
Arthritis	18.7	17.3	15.1
Rheumatism	1.8	1.6	1.6
Gout	2.2	1.5	1.8
Back pain/problems/disc disorders/curvature of spine	27.8	25.4	25.0
Osteoporosis	2.0	2.1	1.9
Diseases of genito-urinary system	4.1	3.7	3.2
Total with a selected long-term condition (d)	63.7	62.2	59.3
Total without a selected long-term condition	36.3	37.8	40.7
Total aged 15 years and over	100.0	100.0	100.0
Selected risk factors (e)			
Usually adds salt after cooking	31.3	25.0	24.4
Inadequate daily fruit intake	57.8	45.3	40.0
Inadequate daily vegetable intake	73.9	69.8	65.3
Ex-smoker	23.0	27.4	28.4
Current smoker	31.0	21.6	21.1
Overweight	29.3	31.3	32.5
Obese	17.1	16.3	11.3
Overweight/obese	46.4	47.6	43.7
Risky to high risk alcohol consumption	10.6	10.3	11.8
Total with a selected risk factor (f)	97.4	94.8	92.6
Total without a selected risk factor	2.6	5.2	7.4
Total aged 18 years and over	100.0	100.0	100.0

- (a) Age standardised to the 2001 NHS benchmark population.
- (b) Persons aged 15 years and over.
- (c) Conditions which have lasted or are expected to last six months or more.
- (d) Persons may have reported more than one type of selected long-term condition and therefore components may not add to totals.
- (e) Persons aged 18 years and over.
- (f) Adults may have reported more than one type of selected risk factor and therefore components may not add to totals.

2.4**PROPORTION WHO ARE PHYSICALLY INACTIVE(a), Selected population characteristics(b)(c)—2001**

	<i>Males</i>	<i>Females</i>	<i>Persons</i>
	%	%	%
Location			
Capital city	29.8	31.3	30.6
Balance of State	33.1	33.2	33.2
Highest educational qualification			
Tertiary	19.0	20.6	19.6
Diploma	22.0	24.8	23.7
Vocational qualification	32.2	30.3	31.4
Other qualification	*18.4	*30.9	21.9
Level not stated/no post-school qualification	36.8	37.3	37.1
Index of relative socioeconomic disadvantage			
1st quintile	38.9	39.7	39.5
5th quintile	23.0	25.9	24.6
Income unit			
1st quintile	33.4	35.5	34.7
5th quintile	21.9	23.4	23.3
Country of birth			
Australia	30.1	29.9	30.1
Other countries	33.1	38.2	35.7
Household composition			
Person living alone	29.4	27.7	28.7
Couple only	28.8	30.3	29.5
Couple with children	32.9	34.5	32.8
One person with children	32.9	34.5	34.8
All other households	35.3	38.0	36.8
Government health card			
With card	33.6	37.3	35.8
Without card	29.7	29.4	30.0
Self-assessed health status			
Excellent/very good	25.0	25.0	24.9
Good	34.0	34.5	34.4
Fair/poor	42.4	45.6	44.1
Labour force			
Employed	30.1	27.5	29.1
Unemployed	24.0	22.6	24.3
Not in labour force	34.2	34.3	34.1
Total aged 18 years and over	30.9	32.0	31.5

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Persons aged 18 years and over.

(b) Age standardised to the 2001 NHS benchmark population.

(c) This table shows the percentage of adults in the population groups shown (e.g. tertiary educated adults) who are physically inactive.

INTRODUCTION

Overweight and obesity is an increasing health problem worldwide (WHO 2000). Being overweight or obese increases the risk of developing a range of conditions, including coronary heart disease, type 2 diabetes and certain types of cancers (WHO 2000). In 1996, it was estimated that being overweight or obese accounted for approximately 4% of the total disease burden in Australia (Mathers et al. 1999).

In the 2001 NHS, respondents aged 15 years and over provided self-reported height and weight estimates. Based on this information, respondents were classified according to their body mass index (BMI) (calculated as weight in kilograms divided by the square of height in metres). The data provided are considered to be underestimates of overweight and obesity since studies have shown that respondents tend to overestimate height and underestimate weight (ABS 1995).

To produce a measure of the prevalence of being overweight or obesity in adults, BMI values are grouped to enable categories to be reported against both WHO and National Health and Medical Research Council (NHMRC) guidelines.

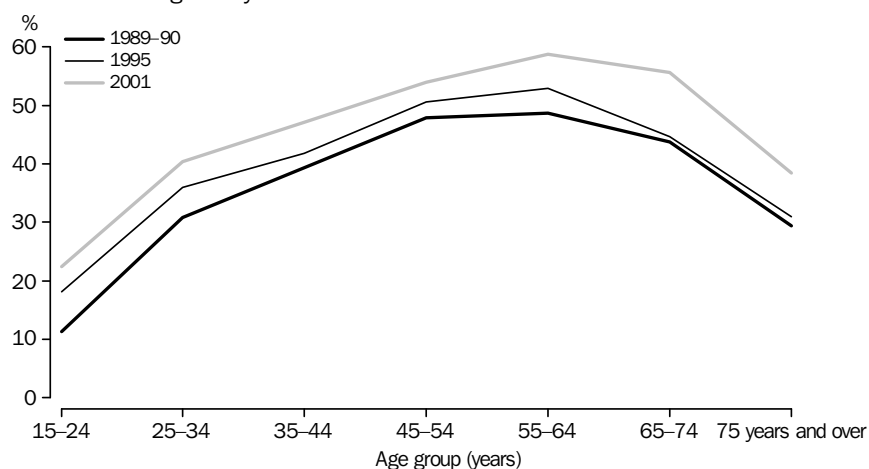
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2001	
Underweight	Less than 18.5
Normal range	18.5 to less than 20.0 and 20.0 to less than 25.0
Overweight	25.0 to less than 30.0
Obese	30.0 and greater

.....

PREVALENCE

Results from the 2001 NHS showed 30% of persons aged over 15 years were classified as being overweight and 14% classified as obese according to their body mass index (BMI). Males were more likely to be overweight (38% compared with 22% of females) but the proportion of obese persons was similar for both males and females (14% and 15% respectively). Overweight and obesity increased with age peaking among those aged 55–64 years (39% overweight and 20% obese) before declining among the older age groups (65 years and over). The highest proportion of overweight was among males aged 55–64 years (47%) while females in the same age group had the highest overall proportion of obesity (22%).

PREVALENCE *continued***3.1** PROPORTION OF PERSONS WHO WERE OVERWEIGHT OR OBESE, Persons aged 15 years and over

Australians are becoming increasingly more overweight and obese. In 1989-90, 36% of persons aged 15 years and over were overweight or obese. This increased to 39% in 1995 and 44% in 2001. The increase in overweight and obese persons was greater among males (up from 43% in 1989-90 to 52% in 2001) than females (up from 30% in 1989-90 to 37% in 2001). In addition, the increase was stronger among the older age groups (see table 3.3). The rate of increase was greatest among those aged 65-74 years, particularly occurring during the period between 1995 and 2001 (up from 45% in 1995 to 56% in 2001 among 65-74 year olds).

LONG-TERM CONDITIONS
AND RISK FACTORS

Compared with persons who were overweight or obese, those within the normal/underweight BMI categories were less likely to report certain long-term conditions (see table 3.4). For example, 9% of normal/underweight persons reported high blood pressure compared with 13% of overweight persons and 20% of those persons who were obese. Similarly, arthritis was reported among 15% of those within the normal/underweight BMI category compared with 19% of those persons who were overweight or obese. In addition, 2% of normal/underweight persons reported having diabetes mellitus compared with 3% for overweight persons and 7% for persons who were obese.

Females who were obese were most likely to report high blood pressure (23% compared to 9% of females within the normal/underweight BMI category). They were also more likely to report arthritis (27% compared to 17% of females within the normal/underweight BMI category). Among males, those who were obese were more likely to report gout (6% compared with 1% of males within the normal/underweight BMI category).

With regard to other lifestyle related health risk factors, overweight or obese adults aged 18 years and over were less likely to be current smokers (23% compared to the 25% of adults in the normal/underweight BMI category). There were no significant differences across the BMI groups in relation to inadequate daily fruit intake (one serve or less per day). For example, 48% of adults who were overweight or obese had an inadequate fruit intake compared with 46% of adults in the normal/underweight BMI category. However, obese adults were more likely to be physically inactive (36% compared with 30% of

LONG-TERM CONDITIONS
AND RISK FACTORS
continued

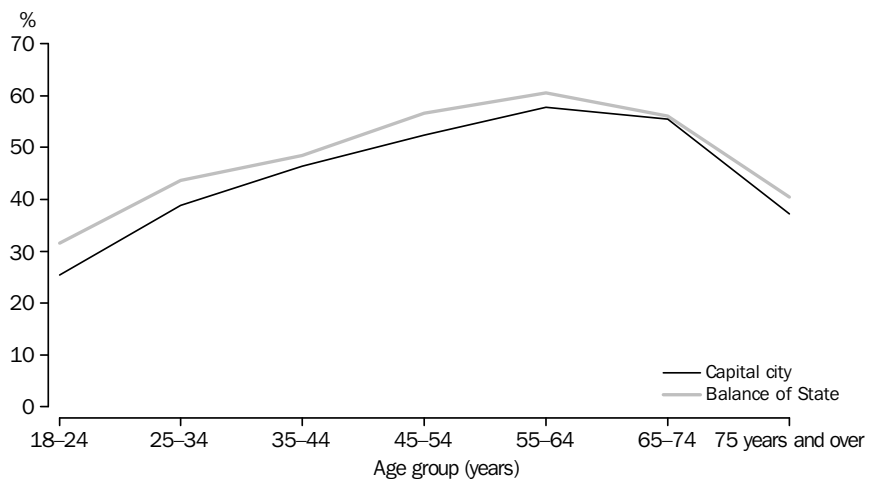
persons in the normal/underweight BMI category) and to usually add salt after cooking, especially obese males (37% of obese males compared with 29% of men in the normal/underweight BMI category and 26% of obese females).

Excluding dental consultations, persons who were overweight or obese were more likely to have taken all other health related actions (see Glossary) in the two weeks prior to interview. For example, those persons aged 15 years and over who were obese were most likely to have consulted a doctor (31% of obese persons compared with 25% of overweight persons and 26% of normal/underweight persons). Females who were obese were more likely to have undertaken many of the health related actions. For example, 35% of obese females consulted a doctor compared with 29% of females who were not obese and 25% of obese males.

POPULATION
CHARACTERISTICS

Adults living in capital cities were less likely to be overweight or obese (45%) compared with adults living outside capital cities (49%) (see table 3.5). This was evident across every age group (see graph 3.2) with the largest difference among those aged 18–24 years (25% of persons in this age group living in capital cities were overweight or obese compared with 32% of those living outside capital cities).

3.2 PROPORTION OF OVERWEIGHT/OBESITY AMONG ADULTS



Adults living alone and lone adults with children were least likely to be overweight or obese (42% in both groups). Tertiary educated adults were also less likely to be overweight or obese, with 48% of men and 35% of women who were tertiary educated being classified as overweight or obese. This compares to 57% of men with either a diploma or vocational qualification, 38% of women with a diploma, and 39% of women with a vocational qualification being overweight or obese.

3.3 BODY MASS INDEX GROUP (a)—2001

	AGE GROUP (YEARS)							Total
	15-24	25-34	35-44	45-54	55-64	65-74	75 and over	
	%	%	%	%	%	%	%	%
Males								
Underweight	6.6	*0.6	*0.9	*0.6	*0.8	*0.6	*1.6	1.8
Normal range (BMI 18.5 to less than 20.0)	8.7	2.1	2.1	*1.1	*0.9	*1.4	*2.6	2.9
Normal range (BMI 20.0 to less than 25.0)	47.5	42.5	33.1	30.2	28.6	33.1	42.0	36.8
Overweight	21.2	37.4	41.0	44.2	46.6	44.8	35.3	38.1
Obese	6.8	12.0	17.9	19.1	17.8	14.6	8.9	14.2
Not known	9.2	5.5	5.1	4.8	5.4	5.6	9.5	6.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Females								
Underweight	12.3	4.8	3.9	1.7	*1.7	*1.9	5.8	4.8
Normal range (BMI 18.5 to less than 20.0)	15.8	10.4	8.3	5.8	3.0	5.2	8.0	8.6
Normal range (BMI 20.0 to less than 25.0)	42.5	45.0	42.9	38.4	32.8	32.0	35.3	39.7
Overweight	11.3	18.1	21.2	25.6	31.5	32.2	23.9	22.1
Obese	5.4	13.5	14.4	19.0	21.8	20.1	10.5	14.6
Not known	12.7	8.2	9.3	9.6	9.4	8.7	16.4	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Persons								
Underweight	9.4	2.7	2.4	1.1	1.2	1.3	4.1	3.3
Normal range (BMI 18.5 to less than 20.0)	12.2	6.4	5.2	3.5	1.9	3.3	5.8	5.8
Normal range (BMI 20.0 to less than 25.0)	45.0	43.7	38.1	34.3	30.7	32.5	38.0	38.3
Overweight	16.3	27.6	30.9	34.8	39.1	38.3	28.6	29.9
Obese	6.1	12.8	16.1	19.1	19.7	17.4	9.9	14.4
Not known	10.9	6.8	7.2	7.2	7.4	7.2	13.6	8.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Based on self-reported height and weight. See Glossary.

3.4 BODY MASS INDEX GROUP, Selected long-term conditions and risk factors(a)(b)—2001

	<i>Underweight/normal range</i>	<i>Overweight</i>	<i>Obese</i>	<i>Overweight/obese</i>
	%	%	%	%
MALES				
Selected long-term conditions(c)				
Neoplasms	2.7	2.1	3.5	2.4
Diabetes mellitus	3.1	3.3	6.2	4.1
High sugar levels in blood/urine	*0.3	0.6	*0.3	0.6
High cholesterol	6.4	8.9	9.9	9.3
Feeling depressed	*0.4	0.6	*0.4	0.6
All mental and behavioural problems	8.2	8.5	9.0	8.7
Migraine	3.9	4.5	3.9	4.3
High blood pressure	9.3	12.6	17.8	14.0
Ischaemic heart disease	3.0	2.4	4.0	2.8
Tachycardia	1.7	2.2	2.8	2.4
Cerebrovascular diseases	0.9	0.7	*1.1	0.8
Oedema	1.0	1.5	1.6	1.6
Bronchitis/emphysema	4.4	3.4	3.3	3.5
Asthma	8.8	8.9	13.3	10.1
Diseases of the oesophagus stomach & duodenum	4.0	4.3	4.5	4.4
Hernia	2.6	3.4	3.7	3.5
Gallstones	*0.5	*0.3	**0.2	*0.2
Arthritis	12.9	14.6	18.7	15.6
Rheumatism	1.3	1.7	2.0	1.8
Gout	1.3	3.6	6.3	4.3
Back pain/problems/disc disorders/curvature of spine	23.5	27.8	29.3	28.2
Osteoporosis	0.7	0.6	*0.7	0.6
Diseases of genito-urinary system	2.5	2.9	3.1	3.0
Total with a selected long-term condition	56.2	61.1	68.8	63.2
Total without a selected long-term condition	43.8	38.9	31.2	36.8
Total aged 15 years and over	100.0	100.0	100.0	100.0
Selected risk factors(d)				
Physically inactive	29.7	29.0	33.6	30.3
Usually adds salt after cooking	28.8	31.9	37.0	33.4
Inadequate daily fruit intake	53.2	54.5	52.3	53.9
Inadequate daily vegetable intake	74.1	71.3	74.4	72.1
Ex-smoker	27.1	32.6	34.8	33.3
Current smoker	30.2	25.5	24.0	25.2
Risky to high risk alcohol consumption	11.6	14.3	13.7	14.1
Total with a selected risk factor	94.7	96.0	97.7	96.5
Total without a selected risk factor	5.3	4.0	2.3	4.5
Total aged 18 years and over	100.0	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Conditions which have lasted or are expected to last six months or more.

(b) Age standardised to the 2001 NHS benchmark population.

(c) Persons aged 15 years and over.

(d) Persons aged 18 years and over.

3.4 BODY MASS INDEX GROUP, Selected long-term conditions and risk factors(a)(b)—2001 *continued*

	<i>Underweight/normal range</i>	<i>Overweight</i>	<i>Obese</i>	<i>Overweight/obese</i>
	%	%	%	%
FEMALES				
Selected long-term conditions(c)				
Neoplasms	1.5	2.1	2.5	2.1
Diabetes mellitus	1.9	3.5	7.3	4.9
High sugar levels in blood/urine	*0.2	*0.4	*1.3	0.8
High cholesterol	5.9	7.3	9.0	8.0
Feeling depressed	0.8	*0.8	*1.2	0.9
All mental and behavioural problems	11.4	11.0	15.1	12.5
Migraine	9.8	10.7	13.1	11.5
High blood pressure	9.2	13.3	22.5	16.9
Ischaemic heart disease	1.6	1.9	2.5	2.1
Tachycardia	2.4	2.2	2.8	2.4
Cerebrovascular diseases	0.6	*0.5	*0.3	*0.4
Oedema	1.4	2.7	5.7	3.8
Bronchitis/emphysema	3.8	4.4	4.4	4.3
Asthma	10.9	13.5	16.7	14.8
Diseases of the oesophagus stomach & duodenum	3.2	4.0	6.0	4.8
Hernia	1.4	2.3	2.3	2.3
Gallstones	0.8	1.0	1.6	1.2
Arthritis	16.5	19.7	26.6	22.6
Rheumatism	1.5	1.7	2.4	2.0
Gout	*0.2	*0.8	1.3	1.0
Back pain/problems/disc disorders/curvature of spine	24.7	26.8	28.9	27.6
Osteoporosis	4.0	2.6	3.0	2.7
Diseases of genito-urinary system	3.9	5.1	5.6	5.3
Total with a selected long-term condition	60.8	64.8	72.5	67.8
Total without a selected long-term condition	39.2	35.2	27.5	32.2
Total aged 15 years and over	100.0	100.0	100.0	100.0
Selected risk factors(d)				
Physically inactive	29.7	30.6	36.4	32.8
Usually adds salt after cooking	21.9	19.9	25.8	22.2
Inadequate daily fruit intake	41.0	39.1	43.0	40.7
Inadequate daily vegetable intake	67.0	64.8	67.0	65.6
Ex-smoker	21.1	24.1	26.4	25.1
Current smoker	21.7	20.2	20.6	20.4
Risky to high risk alcohol consumption	8.8	9.9	7.7	9.0
Total with a selected risk factor	90.3	91.5	93.0	92.0
Total without a selected risk factor	9.7	8.5	7.0	8.0
Total aged 18 years and over	100.0	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Conditions which have lasted or are expected to last six months or more.

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(b) Age standardised to the 2001 NHS benchmark population.

(c) Persons aged 15 years and over.

(d) Persons aged 18 years and over.

3.4 BODY MASS INDEX GROUP, Selected long-term conditions and risk factors(a)(b)—2001 *continued*

	<i>Underweight/normal range</i>	<i>Overweight</i>	<i>Obese</i>	<i>Overweight/obese</i>
	%	%	%	%
PERSONS				
Selected long-term conditions(c)				
Neoplasms	2.0	2.0	2.6	2.2
Diabetes mellitus	2.4	3.3	6.9	4.5
High sugar levels in blood/urine	*0.2	0.5	0.8	0.6
High cholesterol	6.1	8.4	9.5	8.8
Feeling depressed	0.6	0.7	0.8	0.7
All mental and behavioural problems	10.0	9.4	12.2	10.3
Migraine	7.4	6.7	8.5	7.2
High blood pressure	9.3	13.0	20.4	15.4
Ischaemic heart disease	2.2	2.3	3.2	2.5
Tachycardia	2.1	2.1	2.8	2.3
Cerebrovascular diseases	0.8	0.6	*0.6	0.6
Oedema	1.2	2.0	4.0	2.6
Bronchitis/emphysema	4.1	3.8	4.2	3.8
Asthma	10.0	10.6	15.6	12.1
Diseases of the oesophagus stomach & duodenum	3.5	4.2	5.3	4.6
Hernia	1.9	2.9	3.0	2.9
Gallstones	0.7	0.5	0.9	0.7
Arthritis	15.0	16.8	22.9	18.8
Rheumatism	1.4	1.7	2.2	1.9
Gout	0.7	2.4	3.5	2.8
Back pain/problems/disc disorders/curvature of spine	24.2	27.3	29.3	27.9
Osteoporosis	2.6	1.5	2.0	1.6
Diseases of genito-urinary system	3.3	3.7	4.3	3.9
Total with a selected long-term condition	58.8	62.3	70.9	65.0
Total without a selected long-term condition	41.2	37.7	29.1	35.0
Total aged 15 years and over	100.0	100.0	100.0	100.0
Selected risk factors(d)				
Physically inactive	29.7	29.6	35.5	31.4
Usually adds salt after cooking	24.8	27.3	31.1	28.5
Inadequate daily fruit intake	46.2	48.8	47.6	48.4
Inadequate daily vegetable intake	70.0	68.9	70.4	69.3
Ex-smoker	23.7	28.8	29.8	29.2
Current smoker	25.3	23.7	22.2	23.2
Risky to high risk alcohol consumption	10.0	12.8	10.6	12.0
Total with a selected risk factor	92.1	94.2	95.2	94.5
Total without a selected risk factor	7.9	5.8	4.8	5.5
Total aged 18 years and over	100.0	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Conditions which have lasted or are expected to last six months or more.

(b) Age standardised to the 2001 NHS benchmark population.

(c) Persons aged 15 years and over.

(d) Persons aged 18 years and over.

3.5**PROPORTION OF OVERWEIGHT AND OBESITY(a)(b)(c), Selected population characteristics—2001**

	<i>Males</i>	<i>Females</i>	<i>Persons</i>
	%	%	%
Location			
Capital city	53.8	36.6	45.0
Balance of State	55.8	41.3	48.5
Highest educational qualification			
Tertiary	48.4	35.2	42.0
Diploma	56.6	38.4	46.7
Vocational qualification	57.2	38.8	49.7
Other qualification	50.9	*38.8	42.1
Level not stated/no post-school qualification	54.8	39.2	46.0
Index of relative socioeconomic disadvantage(d)			
1st quintile	51.9	39.6	45.4
5th quintile	51.3	34.3	42.7
Income unit			
1st quintile	51.9	37.8	44.4
5th quintile	59.3	33.5	49.1
Country of birth			
Australia	55.7	38.9	47.2
Other countries	49.9	35.9	42.7
Household composition			
Person living alone	47.1	34.4	41.7
Couple only	55.9	38.5	47.0
Couple with children	56.3	38.1	48.5
One person with children	53.3	37.2	41.8
All other households	52.5	40.0	46.3
Government health card			
With card	49.6	38.5	43.2
Without card	55.8	37.1	46.9
Self-assessed health status			
Excellent/very good	50.9	33.2	41.6
Good	57.6	43.1	50.6
Fair/poor	59.1	44.5	51.6
Labour force status(e)			
Employed	55.7	36.6	47.2
Unemployed	44.5	38.9	42.4
Not in labour force	49.3	35.9	39.4
Total aged 18 years and over	44.2	38.2	46.2

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Persons aged 18 years and over.

(b) Age standardised to the 2001 NHS population.

(c) This table shows the percentage of adults in the population groups shown (e.g. tertiary educated adults) who are overweight or obese.

(d) Where the first quintile represents the 20% of the population living in areas with the highest level of disadvantage, and the 5th quintile, those in areas with the lowest disadvantage.

(e) Data refers to persons aged 18–64 years.

INTRODUCTION

A varied and well balanced diet is essential for providing the range and level of nutrients required for good health and wellbeing. Regular consumption of fruit and vegetables play a key role in providing the nutrients required for a balanced diet. The National Health and Medical Research Council (NHRMC) reports substantial evidence of the protective effects of fruits and vegetables against non-communicable chronic diseases, due to the presence of nutrients and ‘phytochemicals’ in plant foods. People who regularly eat diets high in fruit and vegetables (and legumes) have substantially lower risks of coronary heart disease, stroke, several major cancers, and possibly hypertension and type 2 diabetes mellitus (NHMRC 2003). Levels of fruit and vegetable consumption therefore contribute to indicators of a persons’ health and the extent to which they are at risk of developing certain diseases.

RECOMMENDED INTAKE OF FRUIT AND VEGETABLES

The intake of fruit and vegetables required will vary slightly according to body size and activity level, but in general the NHRMC recommends consumption for adults of at least two servings of fruit and five of vegetables each day. The recommended servings are higher for both pregnant and breastfeeding women. For adolescents aged 12–18 years, the recommended average servings are for at least three servings of fruit and three servings of vegetables/legumes each day.

In the 2001 NHS, respondents aged 12 years and over were asked how many serves of vegetables (excluding legumes) they usually consumed per day, and then how many serves of fruit they usually consumed each day. The responses for both food types were categorised into ‘1 serve or less’, ‘2–3 serves’, ‘4–5 serves’, ‘6 serves or more’, and ‘Don’t eat vegetables’/‘Don’t eat fruit’. These NHS categories therefore provide information that is broadly indicative of fruit and vegetable consumption.

See Glossary for measurement issues.

PREVALENCE

In recognition of the importance of a good diet in reducing risk of disease, this section concentrates on the levels of fruit and vegetable intake as reported in the population which fall below the servings recommended by the NHRMC.

Overall, almost half (47%) of the Australian population aged 12 years and over reported a fruit intake of one serve or less daily, and the majority (70%) reported a vegetable intake of three serves or less daily (see table 4.2). Over one-third (37%) of those aged 12 years and over had a fruit intake of one serve or less per day and a vegetable intake of three serves or less per day. In general it was more common for respondents to report an inadequate vegetable intake (of three serves or less) than an inadequate fruit intake (of one serve or less).

PREVALENCE *continued*

Males were more likely to report an inadequate fruit and vegetable intake than females, with 42% having a fruit intake of one serve or less and a vegetable intake of three serves or less per day, compared to 32% of females reporting these intake levels.

For both males and females, those aged 18–24 years reported the lowest levels of fruit and vegetable intake. Among this age group, 80% reported a daily vegetable intake of three serves or less, 57% had a fruit intake of one serve or less, and almost half (48%) reported both fruit and vegetable intakes at these low levels. Fruit and vegetable intake increased with age for those aged 25 years and over. Only 24% of those aged 75 years and over reported both an inadequate fruit intake (one serve or less) and an inadequate vegetable intake (three serves or less).

LONG-TERM CONDITIONS AND RISK FACTORS

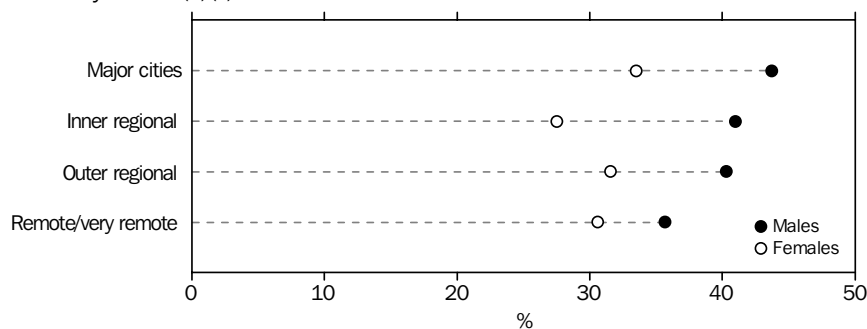
For most selected long-term conditions, there was little difference between persons who reported either an adequate or inadequate fruit and vegetable intake (see table 4.3). The observation of similar disease prevalences among both those groups may be partly accounted for by people making some dietary modifications after being diagnosed with a particular condition.

With regard to risk factors, adults aged 18 years and over who reported an inadequate fruit and vegetable intake were more likely to be physically inactive (39% compared with 22% of those with an adequate intake), to usually add salt after their cooking (33% compared with 22%) and were more likely to currently smoke (31% compared with 18%). However, the proportion of overweight and obesity was comparable across both groups (45%).

POPULATION CHARACTERISTICS

The proportion of persons aged 18 years and over with an inadequate fruit and vegetable intake was higher among groups with particular population characteristics (see table 4.4). For example, 39% of persons living within Major cities of Australia reported an inadequate intake compared with 32% of persons living within Remote or very Remote areas of Australia. Among men, the proportion who consumed fruit and vegetables at adequate levels increased with increasing remoteness (44% of men living in Major cities consumed inadequate fruit and vegetables compared with 36% of men in Remote or very Remote areas) (see graph 4.1).

4.1 PROPORTION OF PERSONS WITH AN INADEQUATE FRUIT AND VEGETABLE INTAKE(a), By location(b)(c)



(a) Inadequate fruit and vegetable intake is defined as usually one serve or less of fruit per day and three serves or less of vegetables per day.
 (b) According to the Australian Standard Geographical Classification (ASGC) Remoteness Structure.
 (c) Age standardised to the 2001 NHS benchmark population.
 Note: Persons aged 15 years and over.

POPULATION

CHARACTERISTICS *continued*

In addition, 41% of persons from the most disadvantaged socioeconomic areas (lowest SEIFA quintile) reported an inadequate fruit and vegetable intake compared with 35% of adults from the least disadvantaged socioeconomic areas (highest SEIFA quintile). Those persons who lived alone were most likely to have an inadequate intake (45%), especially men (52% compared with 36% of women living alone), while persons living as a couple with children were least likely (35%) to have an inadequate intake. For adults aged 18–64 years those who were unemployed were more likely to have an inadequate intake (46%) while those not in the labour force were least likely (38%).

4.2

INADEQUATE FRUIT AND/OR VEGETABLE CONSUMPTION—2001

	AGE GROUP (YEARS)							75 years and over	Total
	12-17	18-24	25-34	35-44	45-54	55-64	65-74		
<i>Usual daily intake of fruit/vegetables</i>	%	%	%	%	%	%	%	%	%
Males									
One serve or less of fruit	45.5	62.5	60.1	56.9	53.4	46.9	39.6	38.1	52.8
Three serves or less of vegetables	76.9	80.1	78.2	75.3	70.4	68.0	66.5	63.9	73.6
One serve or less of fruit and three serves or less of vegetables	37.6	53.3	50.6	46.2	40.7	34.9	29.8	26.8	42.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Females									
One serve or less of fruit	44.2	52.2	49.4	46.7	39.2	29.4	30.8	31.7	42.0
Three serves or less of vegetables	74.4	78.5	72.3	66.7	63.2	57.3	60.0	61.4	67.2
One serve or less of fruit and three serves or less of vegetables	36.3	42.5	39.9	34.4	29.4	19.9	21.6	22.2	32.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Persons									
One serve or less of fruit	44.8	57.4	54.7	51.7	46.2	38.2	35.1	34.3	47.3
Three serves or less of vegetables	75.7	79.3	75.2	71.0	66.8	62.7	63.2	62.4	70.3
One serve or less of fruit and three serves or less of vegetables	37.0	48.0	45.2	40.2	35.0	27.4	25.6	24.1	37.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

4.3 FRUIT AND VEGETABLE INTAKE LEVEL, Selected long-term conditions and risk factors(a)(b)—2001

	Inadequate(c)	Adequate(d)
	%	%
MALES		
Selected long-term conditions(e)(f)		
Neoplasms	2.1	2.7
Diabetes mellitus	3.0	4.2
High sugar levels in blood/urine	*0.3	*0.5
High cholesterol	7.2	7.7
Feeling depressed	0.5	*0.5
All mental and behavioural problems	9.8	7.5
Migraine	4.1	3.9
High blood pressure	11.3	13.1
Ischaemic heart disease	2.7	2.8
Tachycardia	1.8	2.1
Cerebrovascular diseases	0.8	*0.8
Oedema	0.9	1.2
Bronchitis/emphysema	4.3	3.2
Asthma	9.9	9.3
Diseases of the oesophagus, stomach & duodenum	4.1	3.5
Hernia	2.8	3.7
Gallstones	*0.2	*0.6
Arthritis	13.3	13.5
Rheumatism	1.3	1.8
Gout	2.6	3.4
Back pain/problems/disc disorders/curvature of spine	26.2	24.6
Osteoporosis	*0.5	*0.9
Diseases of genito-urinary system	2.4	2.6
Total with a selected long-term condition	59.7	56.3
Total without a selected long-term condition	40.3	43.7
Total aged 12 years and over	100.0	100.0
Selected risk factors(g)(h)		
Physically inactive	35.8	22.8
Usually adds salt after cooking	37.3	26.6
Ex-smoker	29.6	33.9
Current smoker	33.1	18.5
Overweight	38.8	39.8
Obese	13.9	13.7
Overweight/obese	52.7	53.6
Risky to high risk alcohol consumption	15.8	10.3
Total with a selected risk factor	91.0	83.0
Total without a selected risk factor	9.0	17.0
Total aged 18 years and over	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Conditions which have lasted or are expected to last six months or more.
 (b) Age standardised to the 2001 NHS Benchmark population.
 (c) Inadequate fruit and vegetable intake is defined as usually one serve or less of fruit daily and three serves or less of vegetables daily.
 (d) Adequate fruit and vegetable intake is defined as usually two serves or more of fruit daily and four serves or more of vegetables daily.
 (e) Persons aged 12 years and over.
 (f) Persons may have reported more than one type of selected long-term condition and therefore components may not add to totals.
 (g) Persons aged 18 years and over.
 (h) Persons may have reported more than one type of selected risk factor and therefore components may not add to totals.

4.3 FRUIT AND VEGETABLE INTAKE LEVEL, Selected long-term conditions and risk factors(a)(b)—2001 *continued*

	Inadequate(c)	Adequate(d)
	%	%
FEMALES		
Selected long-term conditions(e)(f)		
Neoplasms	1.7	1.5
Diabetes mellitus	3.0	4.1
High sugar levels in blood/urine	*0.4	*0.4
High cholesterol	6.7	5.7
Feeling depressed	1.0	*0.6
All mental and behavioural problems	13.0	10.1
Migraine	10.4	10.5
High blood pressure	13.3	12.7
Ischaemic heart disease	2.0	1.5
Tachycardia	2.2	2.8
Cerebrovascular diseases	*0.5	0.7
Oedema	2.7	2.8
Bronchitis/emphysema	4.9	3.3
Asthma	14.1	12.4
Diseases of the oesophagus, stomach & duodenum	4.0	4.0
Hernia	2.1	1.4
Gallstones	1.0	1.0
Arthritis	18.8	19.1
Rheumatism	1.8	1.6
Gout	*0.5	*0.5
Back pain/problems/disc disorders/curvature of spine	26.2	25.4
Osteoporosis	3.1	2.8
Diseases of genito-urinary system	4.4	5.0
Total with a selected long-term condition	63.9	61.4
Total without a selected long-term condition	36.1	38.6
Total aged 12 years and over	100.0	100.0
Selected risk factors(g)(h)		
Physically inactive	42.5	22.1
Usually adds salt after cooking	28.1	18.3
Ex-smoker	20.8	24.0
Current smoker	29.1	17.0
Overweight	19.7	24.0
Obese	16.3	14.7
Overweight/obese	36.0	38.7
Risky to high risk alcohol consumption	10.4	7.7
Total with a selected risk factor	85.8	75.1
Total without a selected risk factor	14.2	24.9
Total aged 18 years and over	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Conditions which have lasted or are expected to last six months or more.
- (b) Age standardised to the 2001 NHS Benchmark population.
- (c) Inadequate fruit and vegetable intake is defined as usually one serve or less of fruit daily and three serves or less of vegetables daily.
- (d) Adequate fruit and vegetable intake is defined as usually two serves or more of fruit daily and four serves or more of vegetables daily.
- (e) Persons aged 12 years and over.
- (f) Persons may have reported more than one type of selected long-term condition and therefore components may not add to totals.
- (g) Persons aged 18 years and over.
- (h) Persons may have reported more than one type of selected risk factor and therefore components may not add to totals.

4.3 FRUIT AND VEGETABLE INTAKE LEVEL, Selected long-term conditions and risk factors(a)(b)—2001 *continued*

	Inadequate(c)	Adequate(d)
	%	%
PERSONS		
Selected long-term conditions(e)(f)		
Neoplasms	1.9	1.9
Diabetes mellitus	3.0	4.1
High sugar levels in blood/urine	*0.3	*0.4
High cholesterol	7.0	6.5
Feeling depressed	0.7	0.5
All mental and behavioural problems	11.1	9.0
Migraine	6.9	7.9
High blood pressure	12.2	12.8
Ischaemic heart disease	2.4	2.1
Tachycardia	1.9	2.5
Cerebrovascular diseases	0.7	0.8
Oedema	1.7	2.2
Bronchitis/emphysema	4.5	3.3
Asthma	11.6	11.3
Diseases of the oesophagus, stomach & duodenum	4.1	3.8
Hernia	2.4	2.3
Gallstones	0.5	0.8
Arthritis	15.7	16.9
Rheumatism	1.5	1.7
Gout	1.7	1.6
Back pain/problems/disc disorders/curvature of spine	26.2	25.0
Osteoporosis	1.7	2.1
Diseases of genito-urinary system	3.2	4.1
Total with a selected long-term condition	61.5	59.3
Total without a selected long-term condition	38.5	40.7
Total aged 12 years and over	100.0	100.0
Selected risk factors(g)(h)		
Physically inactive	38.8	22.4
Usually adds salt after cooking	33.3	21.6
Ex-smoker	25.7	27.8
Current smoker	31.3	17.6
Overweight	30.6	30.3
Obese	14.8	14.3
Overweight/obese	45.4	44.6
Risky to high risk alcohol consumption	13.5	8.7
Total with a selected risk factor	88.7	78.2
Total without a selected risk factor	11.3	21.8
Total aged 18 years and over	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Conditions which have lasted or are expected to last six months or more.

(b) Age standardised to the 2001 NHS Benchmark population.

(c) Inadequate fruit and vegetable intake is defined as usually one serve or less of fruit daily and three serves or less of vegetables daily.

(d) Adequate fruit and vegetable intake is defined as usually two serves or more of fruit daily and four serves or more of vegetables daily.

(e) Persons aged 12 years and over.

(f) Persons may have reported more than one type of selected long-term condition and therefore components may not add to totals.

(g) Persons aged 18 years and over.

(h) Persons may have reported more than one type of selected risk factor and therefore components may not add to totals.

4.4

PROPORTION WITH AN INADEQUATE FRUIT AND VEGETABLE INTAKE (a)(b)(c),
Selected population characteristics(d)—2001

	Males	Females	Persons
	%	%	%
Location			
Capital city	44.4	33.6	38.9
Balance of State	39.7	28.3	33.9
Highest educational qualification			
Tertiary	41.0	25.8	33.9
Diploma	39.7	27.1	32.7
Vocational qualification	43.5	31.1	38.6
Other qualification	*53.4	*19.9	37.3
Level not stated/no post-school qualification	44.2	34.4	38.6
Index of relative socioeconomic disadvantage(e)			
1st quintile	45.8	36.6	40.9
5th quintile	40.8	29.5	35.2
Income unit			
1st quintile	45.1	33.7	39.4
5th quintile	41.8	26.8	36.3
Country of birth			
Australia	43.1	31.1	37.0
Other countries	40.9	33.1	37.1
Household composition			
Person living alone	52.3	35.5	44.5
Couple only	42.3	31.8	36.9
Couple with children	40.2	28.2	34.9
One person with children	46.7	36.3	39.6
All other households	41.6	40.4	40.9
Government health card			
With card	44.8	36.7	40.0
Without card	42.3	28.7	35.6
Self-assessed health status			
Excellent/very good	37.3	27.6	32.2
Good	47.7	33.9	41.0
Fair/poor	50.9	40.7	45.7
Labour force status(f)			
Employed	44.8	32.7	39.5
Unemployed	50.7	40.6	46.4
Not in labour force	48.2	34.8	38.4
Total aged 18 years and over	42.7	31.8	37.2

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Persons aged 18 years and over.

(b) Inadequate fruit and vegetable intake is defined as one serve or less of fruit per day and three serves or less of vegetables per day.

(c) Age standardised to the 2001 NHS benchmark population.

(d) This table shows the percentage of adults in the population groups shown (e.g. tertiary educated adults) who have an inadequate daily fruit and vegetable intake.

(e) Where the first quintile represents the 20% of the population living in areas with the highest level of disadvantage, and the 5th quintile, those in areas with the lowest disadvantage.

(f) Data refers to persons aged 18–64 years.

INTRODUCTION

In 1996, tobacco smoking was the risk factor responsible for the greatest disease burden in Australia (12%) (Mathers et al. 1999). Worldwide, smoking is estimated to cause almost five million premature deaths each year (WHO 2002) while in Australia it is estimated that around 19,000 people died as a result of smoking in 1998 (Riddolfo & Stevenson 2001). Among other conditions, smoking is associated with increased risk of coronary heart disease, stroke, and lung cancer (Australian Institute of Health and Welfare (AIHW) 2001a).

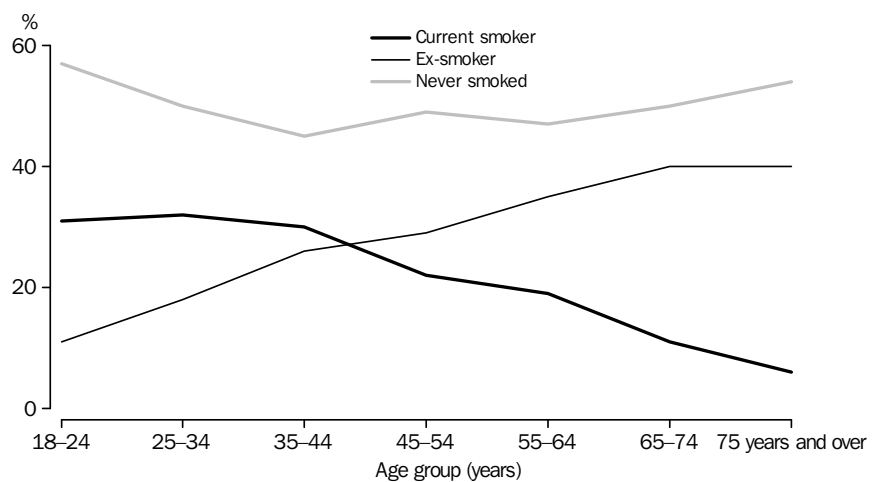
In the 2001 NHS, adults aged 18 years and over were asked whether they currently smoked (and if so, whether they smoke regularly), or have ever smoked regularly. Based on their responses, they were categorised into one of four smoker status categories:

- daily smoker (current regular smoker)
- not regular smoker (current but not regular)
- ex-regular smoker
- never smoked regularly.

PREVALENCE

Overall, 24% of the total adult population reported that they were current smokers (comprising 22% daily smokers and 2% not-regular smokers), 26% were ex-smokers and 49% had never smoked (see table 5.7). While the proportion of current smokers decreased with age (being highest in the 18–44 year age groups), the proportion of ex-smokers increased with age (particularly at 45 years and over) (see graph 5.1).

5.1 SMOKER STATUS — 2001



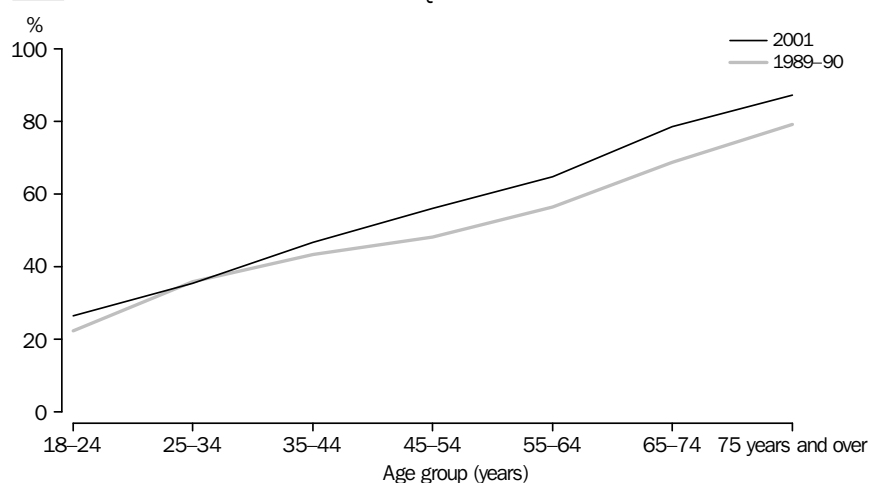
Males were more likely than females to report that they were daily smokers (25% and 20% respectively). The proportion of males and females who reported that they smoked on a non-regular basis was similar (2%) while a greater proportion of males reported that they were ex-smokers (30%) compared with females (22%).

PREVALENCE *continued*

Since 1989–90, the proportion of adults who were current smokers declined (down from 28% to 24% in 2001). Smoking was consistently higher among men over the period 1989–90 to 2001. Of all women, those aged 18–24 years experienced the greatest reduction in smoking (down from 36% in 1989–90 to 27% in 2001), while women aged 35–44 years experienced an increase (up from 25% to 27%), the only age group to do so. Men across all age groups experienced a reduction in smoking over the 1989–90 to 2001 period.

In 1989–90, just over half (52%) of all adults reported they had ever smoked (i.e. current smokers and ex-smokers), and of this group, 45% had quit smoking. Similarly in 2001, 51% of all adults reported they had ever smoked. However a greater proportion of this group (52%) had quit smoking at the time of the survey compared to 1989–90 (see table 5.8). The increase in those who had quit smoking was evident across every age group with the exception of those aged 25–34 years (see graph 5.2).

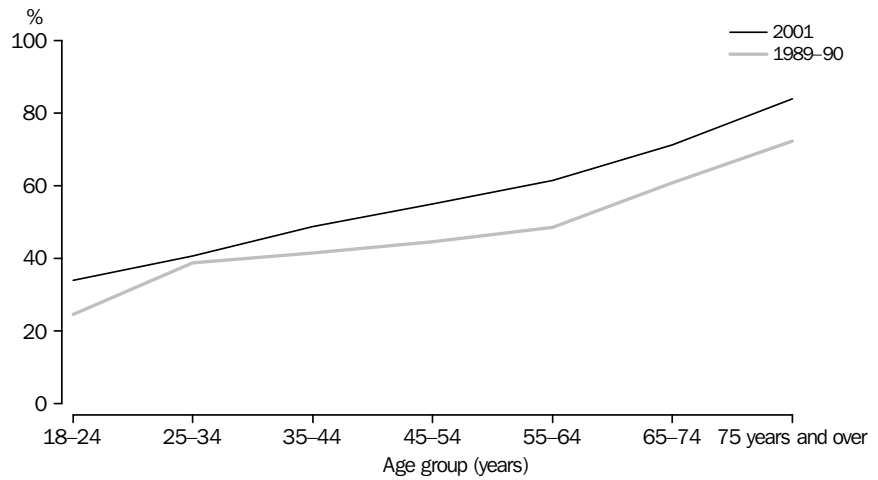
5.2 PROPORTION OF ADULTS WHO HAD QUIT SMOKING —1989–90 and 2001



The proportion of those who had quit smoking increased for both males and females over the period. In 1989–90, of the 43% of females who had ever smoked, 42% had quit smoking, while in 2001 of the 44% of females who had ever smoked, 52% had quit smoking (see graph 5.3).

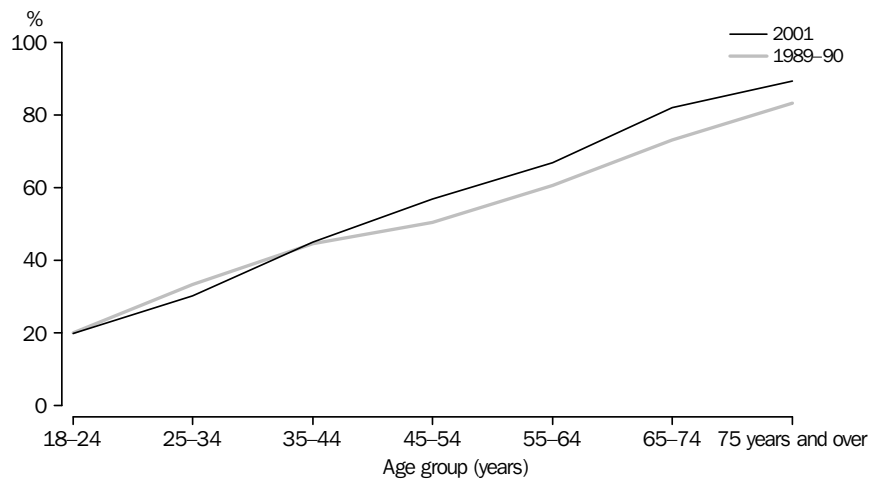
PREVALENCE *continued*

5.3 PROPORTION OF FEMALES WHO HAD QUIT SMOKING —1989–90 and 2001



Of the 61% of males who had ever smoked in 1989–90, 47% had quit smoking, while in 2001, 58% of males had ever smoked and 52% had quit smoking (see graph 5.4).

5.4 PROPORTION OF MALES WHO HAD QUIT SMOKING —1989–90 and 2001



The proportion of adults who quit smoking was generally similar for both years across the 18–44 year age groups. However the proportion of adults who quit smoking was higher for the 45 years and over age groups in 2001 relative to 1989–90. For both survey years, the proportion of adults who had quit smoking continued to increase with age to 80% of those aged 75 years and over in 1989–90 and 87% of those aged 75 years and over in 2001.

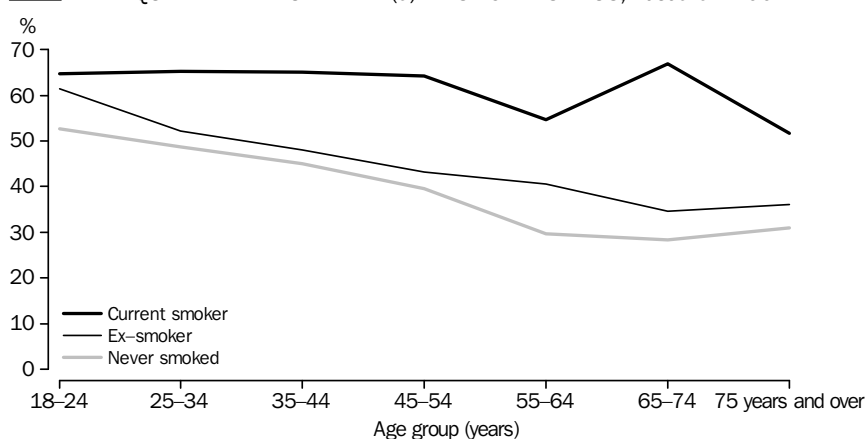
While the proportion of adult ex-smokers increased between 1989–90 and 2001, the proportional change was greater for females. The proportion of female ex-smokers increased from 18% in 1989–90 to 22% in 2001, while the proportion of male ex-smokers increased from 29% to 30% over this period.

LONG-TERM CONDITIONS
AND RISK FACTORS

A higher proportion of current smokers reported a mental or behavioural problem (14% compared with 10% of ex-smokers and 9% of adults who had never smoked) as well as bronchitis or emphysema (6% compared with 4% of ex-smokers and 3% of adults who had never smoked) (see table 5.9).

Adults who were current smokers were more likely to display other risk factors compared with adults who were not current smokers (see table 5.9). The exception to this observation was that current smokers were less likely to be overweight or obese than both ex-smokers and those who had never smoked. For example, 42% of current smokers were overweight or obese compared with 45% of adults who had never smoked and 51% of ex-smokers. Current smokers also demonstrated the poorest dietary habits. In particular, most current smokers consumed inadequate daily intakes of fruit (63% compared with 47% of ex-smokers and 41% of adults who had never smoked, see graph 5.5). Male current smokers were more likely to consume inadequate daily intakes of fruit (66% compared with 58% of female current smokers).

5.5 INADEQUATE DAILY FRUIT INTAKE(a) BY SMOKER STATUS, Australia—2001



(a) Inadequate daily fruit intake is defined as usually eating less than two serves of fruit each day.

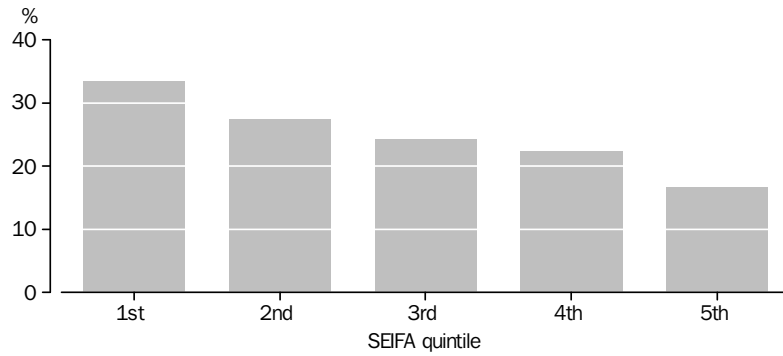
POPULATION
CHARACTERISTICS

Smoking was more prevalent among adults with particular population characteristics. For example, smoking was more prevalent among adults from the more disadvantaged socioeconomic areas. Of adults from the most disadvantaged socioeconomic areas (lowest SEIFA quintile), 34% smoked compared with 17% of adults from the least disadvantaged socioeconomic areas (highest SEIFA quintile, see graph 5.6). Smoking was more common among adults of lower levels of educational attainment (see table 5.10). Of those who were tertiary educated, 13% were current smokers compared with 20% of adults with a diploma and 26% of adults with a vocational qualification.

Adults living alone or in sole parent families with dependent children were more likely to smoke (33% and 34% respectively) while adults living as a couple with dependent children were least likely (21%). Smoking was also more likely among adults who were unemployed (40% among those aged 18–64 years compared with 26% of those employed). In particular, unemployed males had a high prevalence of smoking (46%) compared with unemployed females (32%).

POPULATION
CHARACTERISTICS *continued*

5.6 CURRENT SMOKERS(a) BY RELATIVE SOCIOECONOMIC ADVANTAGE(b),
Proportion of adult current smokers



(a) Age standardised to the 2001 population.
(b) According to SEIFA quintiles where the first quintile represents the most disadvantaged one-fifth of the population and the fifth quintile represents the most advantaged one-fifth of the population.

5.7**SMOKER STATUS—2001**

	<i>Daily current smoker</i>	<i>Other current smoker</i>	<i>Total current smoker</i>	<i>Ex- smoker</i>	<i>Never smoked</i>
	%	%	%	%	%
Males					
18–24	30.8	4.5	35.3	8.7	56.0
25–34	33.0	3.5	36.5	15.9	47.6
35–44	30.3	2.3	32.6	26.7	40.7
45–54	23.3	1.6	25.0	33.0	42.1
55–64	21.0	*0.7	21.7	44.2	34.1
65–74	12.0	**0.4	12.4	57.0	30.6
75 and over	6.8	**0.6	7.4	61.7	30.9
Total	25.4	2.2	27.6	30.3	42.0
Females					
18–24	24.8	2.4	27.2	14.1	58.7
25–34	25.8	2.6	28.4	19.5	52.2
35–44	24.2	2.3	26.5	25.2	48.3
45–54	18.9	*1.1	20.0	24.4	55.7
55–64	14.8	*1.0	15.8	25.3	58.9
65–74	9.4	np	9.4	23.4	67.2
75 and over	4.2	*0.6	4.8	25.3	69.9
Total	19.5	1.6	21.1	22.4	56.4
Persons					
18–24	27.8	3.5	31.3	11.3	57.3
25–34	29.4	3.0	32.4	17.7	49.9
35–44	27.2	2.3	29.5	25.9	44.6
45–54	21.1	1.4	22.4	28.6	48.9
55–64	17.9	0.9	18.8	34.7	46.5
65–74	10.7	**0.2	10.9	39.6	49.5
75 and over	5.3	*0.6	5.9	40.2	53.9
Total	22.4	1.9	24.3	26.3	49.4

* estimate has a relative standard error of between 25% and 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

np not available for publication but included in totals where applicable, unless otherwise indicated

5.8 QUIT RATIOS (a)—1989–90 and 2001

	AGE GROUP (YEARS)							Total
	18–24	25–34	35–44	45–54	55–64	65–74	75 years and over	
	%	%	%	%	%	%	%	%
2001								
Males	19.8	30.3	45.0	56.9	67.0	82.1	89.3	52.3
Females	34.1	40.7	48.8	55.0	61.5	71.3	84.1	51.5
Persons	26.6	35.4	46.8	56.1	64.9	78.5	87.3	52.0
1989–90								
Males	20.0	33.3	44.6	50.5	60.7	73.2	83.3	47.3
Females	24.6	38.8	41.6	44.6	48.5	60.8	72.4	41.9
Persons	22.4	35.8	43.4	48.2	56.5	68.7	79.3	45.0

(a) Ex-smokers as a proportion of persons who had ever smoked.

5.9**SMOKER STATUS(a)(b), Selected long-term conditions and risk factors—2001 ...**

	<i>Current smoker</i>	<i>Ex- smoker</i>	<i>Never smoked</i>
	%	%	%
Males			
Selected long-term conditions(c)			
Neoplasms	2.5	3.0	2.4
Diabetes mellitus	4.2	4.1	3.5
High sugar levels in blood/urine	*0.8	*0.5	*0.3
High cholesterol	7.3	10.1	8.0
Feeling depressed	*0.7	*0.5	*0.4
All mental and behavioural problems	11.4	9.1	6.7
Migraine	4.7	4.1	4.1
High blood pressure	8.3	14.2	13.5
Ischaemic heart disease	3.4	3.2	2.9
Tachycardia	1.4	2.6	1.8
Cerebrovascular diseases	*0.5	1.0	*0.7
Oedema	1.8	1.5	1.0
Bronchitis/emphysema	5.6	4.2	2.2
Asthma	8.0	10.2	8.5
Diseases of the oesophagus, stomach & duodenum	5.1	4.4	3.6
Hernia	1.9	3.8	2.9
Gallstones	*0.2	*0.2	*0.5
Arthritis	17.7	15.8	13.3
Rheumatism	1.9	2.0	1.3
Gout	2.5	3.1	3.8
Back pain/problems/disc disorders/curvature of spine	28.4	28.6	25.9
Osteoporosis	*0.5	0.8	0.6
Diseases of genito-urinary system	3.7	2.9	2.8
Total with a selected long-term condition(d)	60.7	64.2	58.7
Total without a selected long-term condition	39.3	35.8	41.3
Selected risk factors			
Usually adds salt after cooking	45.3	32.7	23.2
Physically inactive	41.3	27.9	27.7
Inadequate daily fruit intake(e)	65.9	52.6	47.4
Inadequate daily vegetable intake(f)	76.7	71.8	72.3
Overweight	36.3	42.4	39.9
Obese	11.8	17.2	14.3
Overweight/obese	48.1	59.6	54.2
Risky to high risk alcohol consumption	20.3	14.6	7.4
Total with a selected risk factor(g)	98.0	96.4	94.2
Total without a selected risk factor	2.0	3.6	5.8
Total 18 years and over	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Persons aged 18 years and over.
 (b) Age standardised to the 2001 NHS benchmark population.
 (c) Conditions which have lasted or are expected to last six months or more.
 (d) Persons may have reported more than one type of long-term condition and therefore components may not add to totals.
 (e) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.
 (f) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.
 (g) Adults may have reported more than one type of selected risk factor and therefore components may not add to totals.

5.9 SMOKER STATUS(a)(b), Selected long-term conditions and risk factors—2001

continued

	Current smoker	Ex- smoker	Never smoked
	%	%	%
Females			
Selected long-term conditions(c)			
Neoplasms	1.6	2.6	1.5
Diabetes mellitus	3.8	3.8	3.7
High sugar levels in blood/urine	*0.5	*0.6	0.4
High cholesterol	7.5	7.7	7.1
Feeling depressed	0.9	*0.8	0.8
All mental and behavioural problems	17.1	11.5	10.2
Migraine	11.7	10.4	10.7
High blood pressure	10.9	13.9	14.5
Ischaemic heart disease	*1.5	2.6	1.8
Tachycardia	1.9	2.3	2.8
Cerebrovascular diseases	*1.0	*0.6	0.5
Oedema	1.9	3.1	2.7
Bronchitis/emphysema	7.4	3.9	3.1
Asthma	14.0	13.2	11.8
Diseases of the oesophagus, stomach & duodenum	4.6	4.3	4.2
Hernia	2.5	2.4	1.9
Gallstones	1.0	*0.8	1.2
Arthritis	20.7	22.4	19.3
Rheumatism	2.2	1.4	1.8
Gout	*0.4	*0.7	0.6
Back pain/problems/disc disorders/curvature of spine	30.3	27.9	24.7
Osteoporosis	4.3	3.5	2.9
Diseases of genito-urinary system	5.0	4.9	4.2
Total with a selected long-term condition(d)	69.8	65.3	62.4
Total without a selected long-term condition	30.2	34.7	37.6
Selected risk factors			
Usually adds salt after cooking	32.6	23.9	17.2
Physically inactive	39.9	28.1	30.8
Inadequate daily fruit intake(e)	57.9	40.1	36.8
Inadequate daily vegetable intake(f)	69.1	63.9	67.0
Overweight	21.0	24.4	22.6
Obese	12.4	18.1	14.9
Overweight/obese	33.4	42.4	37.5
Risky to high risk alcohol consumption	13.6	10.8	5.2
Total with a selected risk factor(g)	94.6	92.1	90.3
Total without a selected risk factor	5.4	7.9	9.7
Total 18 years and over	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Persons aged 18 years and over.
 (b) Age standardised to the 2001 NHS benchmark population.
 (c) Conditions which have lasted or are expected to last six months or more.
 (d) Persons may have reported more than one type of long-term condition and therefore components may not add to totals.
 (e) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.
 (f) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.
 (g) Adults may have reported more than one type of selected risk factor and therefore components may not add to totals.

5.9**SMOKER STATUS(a)(b), Selected long-term conditions and risk factors—2001***continued*

	<i>Current smoker</i>	<i>Ex- smoker</i>	<i>Never smoked</i>
	%	%	%
Persons			
Selected long-term conditions(c)			
Neoplasms	2.1	2.8	1.8
Diabetes mellitus	4.0	4.0	3.6
High sugar levels in blood/urine	*0.7	0.6	0.3
High cholesterol	7.3	9.1	7.6
Feeling depressed	0.8	0.7	0.6
All mental and behavioural problems	13.9	10.3	8.7
Migraine	7.8	7.2	7.8
High blood pressure	9.5	13.9	14.2
Ischaemic heart disease	2.6	3.0	2.1
Tachycardia	1.6	2.5	2.4
Cerebrovascular diseases	0.7	0.8	0.6
Oedema	1.9	2.1	2.1
Bronchitis/emphysema	6.4	4.0	2.8
Asthma	10.7	11.3	10.4
Diseases of the oesophagus, stomach & duodenum	4.9	4.2	3.9
Hernia	2.1	3.2	2.2
Gallstones	0.6	0.5	0.9
Arthritis	19.3	18.3	17.3
Rheumatism	2.0	1.7	1.6
Gout	1.5	2.1	1.7
Back pain/problems/disc disorders/curvature of spine	29.2	28.2	25.2
Osteoporosis	2.1	1.8	2.2
Diseases of genito-urinary system	4.2	3.9	3.5
Total with a selected long-term condition(d)	64.6	64.8	60.8
Total without a selected long-term condition	35.4	35.2	39.2
Selected risk factors			
Usually adds salt after cooking	39.7	28.7	19.4
Physically inactive	41.0	27.6	29.6
Inadequate daily fruit intake(e)	62.6	46.6	41.3
Inadequate daily vegetable intake(f)	73.3	68.3	69.2
Overweight	29.5	33.8	30.0
Obese	12.1	17.5	14.8
Overweight/obese	41.5	51.3	44.7
Risky to high risk alcohol consumption	17.4	12.4	6.2
Total with a selected risk factor(g)	96.5	94.4	92.0
Total without a selected risk factor	3.5	5.6	8.0
Total 18 years and over	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Persons aged 18 years and over.
 (b) Age standardised to the 2001 NHS benchmark population.
 (c) Conditions which have lasted or are expected to last six months or more.
 (d) Persons may have reported more than one type of long-term condition and therefore components may not add to totals.
 (e) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.
 (f) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.
 (g) Adults may have reported more than one type of selected risk factor and therefore components may not add to totals.

5.10 PROPORTION OF CURRENT SMOKERS(a)(b)(c), Selected population characteristics—2001

<i>Population characteristics</i>	<i>Males</i>	<i>Females</i>	<i>Persons</i>
	%	%	%
<i>Location</i>			
Capital city	26.2	20.3	23.2
Balance of State	29.7	23.5	26.6
<i>Highest educational qualification</i>			
Tertiary	14.3	11.9	13.0
Diploma	20.9	18.2	19.6
Vocational qualification	29.9	20.6	26.0
Other qualification	*23.7	*23.7	*18.5
Level not stated/no post-school qualification	33.2	25.6	28.9
<i>Index of relative socioeconomic disadvantage(d)</i>			
1st quintile	36.6	30.8	33.5
5th quintile	18.0	15.4	16.7
<i>Income unit</i>			
1st quintile	35.9	30.8	33.3
5th quintile	16.9	13.9	15.6
<i>Country of birth</i>			
Australia	27.2	22.7	24.9
Other countries	26.4	17.7	22.0
<i>Household composition</i>			
Person living alone	35.6	28.9	32.7
Couple only	25.3	19.8	22.5
Couple with children	24.9	16.3	21.1
One person with children	34.1	34.2	33.9
All other households	34.4	28.5	31.6
<i>Government health card</i>			
With card	36.1	30.5	32.9
Without card	24.3	17.6	21.2
<i>Self-assessed health status</i>			
Excellent/very good	22.3	17.6	19.9
Good	31.1	23.6	27.5
Fair/poor	36.2	32.1	34.1
<i>Labour force status(e)</i>			
Employed	28.8	22.0	25.8
Unemployed	45.9	32.0	39.9
Not in labour force	37.0	27.2	29.5
Total aged 18 years and over	27.3	21.4	24.3

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Persons aged 18 years and over.

(b) Age standardised to the 2001 NHS benchmark population.

(c) This table shows the percentage of adults in the population groups shown (e.g. tertiary educated adults) who are current smokers.

(d) Where the first quintile represents the 20% of the population living in areas with the highest level of disadvantage, and the 5th quintile, those in areas with the lowest disadvantage.

(e) Data refers to persons aged 18–64 years.

INTRODUCTION

Alcohol is consumed widely in Australia, with the majority of adults (62%) in the 2001 NHS reporting they had consumed alcohol in the previous week. As a health issue, alcohol consumption is associated with both positive and negative health outcomes. While low to moderate alcohol consumption has been shown to provide a level of protection from certain cardiovascular conditions (WHO 2002), harmful levels of alcohol consumption are associated with increased risk of chronic disease, injury and premature mortality (AIHW 2001a).

In the 2001 NHS, respondents aged 18 years and over were categorised as consuming alcohol at low, risky or high risk levels based on the guidelines of the National Health and Medical Research Council (NHMRC 2001) which outline alcohol risk levels for harm in the long-term (see Glossary).

Those respondents who did not drink in the seven days prior to interview were categorised as either having last consumed alcohol more than one week to less than 12 months ago, last consumed alcohol 12 months or more ago, or having never consumed alcohol. In this publication, respondents in these categories were combined into 'did not consume' alcohol.

PREVALENCE

In 2001, the majority of adults consumed alcohol at a level which posed a low risk to health or they did not consume alcohol in the seven days prior to their interview (89%). The proportion of adults who consumed alcohol at levels which would be risky or a high risk to their health if continued was 11% (7% risky and 4% high risk, see table 6.3). Risky to high risk drinking increased with age to 45–54 years (12%) before declining to 5% among those aged 75 years and over (see table 6.3).

While the proportion of men and women consuming alcohol at risky levels was similar (both 7%), men were more likely to drink at high risk levels compared with women (6% and 2% respectively). Among men, those aged 25-34 years were most likely to drink at high risk levels (8%) while among women, high risk drinking was most common among the 35-44 and 45-54 year age groups (3%).

An estimated 62% of adults reported that they had consumed alcohol in the previous week. Of this group, the day of the week most respondents drank was Saturday (42%), while 23% of those who had consumed alcohol in the previous week consumed alcohol on all seven days of the week. Most of the adults who consumed alcohol drank wine or champagne (38%) followed by full strength beer (27%) and spirits and liquors (19%).

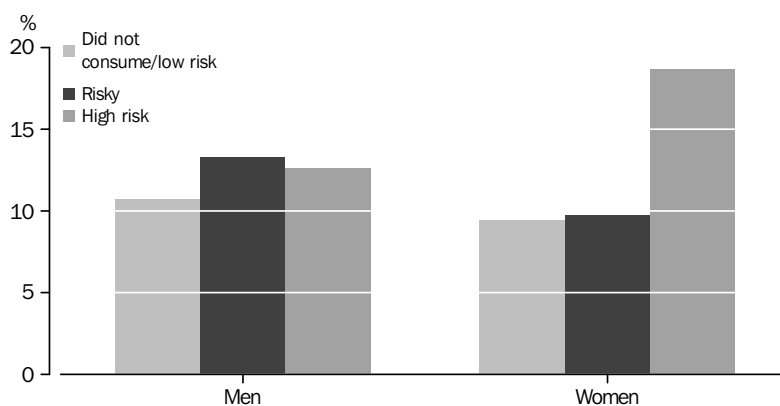
LONG-TERM CONDITIONS AND RISK FACTORS

For some selected long-term conditions, there was little difference between those adults who did not consume alcohol or did so at low risk levels, and adults who drank at risky to high risk levels. However, those respondents who consumed alcohol at risky to high risk levels were more likely to report a mental or behavioural problem (13% compared with 10%) as well as gout (5% compared with 2%, see table 6.4).

Some lifestyle related health risk factors were considerably more prevalent among risky to high risk drinkers compared with those who did not consume alcohol or did so at low risk levels. For example, 61% had an inadequate daily fruit intake (compared with 46% among those who did not consume or were low risk drinkers) and 40% were current smokers (compared with 22% who did not consume alcohol or were low risk drinkers).

Risky and high risk drinkers were also more likely to have received injuries than those who were in the low risk and non-drinker population. Of those who consumed alcohol at high risk levels, 15% reported an injury event in the four weeks prior to interview compared with 11% of risky drinkers and 10% of those who did not consume alcohol or did so at low risk levels. The difference was also greater among women (19% of high risk drinking women reported an injury event compared with 10% of risky drinkers and 9% of women who did not consume alcohol or did so at low risk levels) (see graph 6.1).

6.1 ALCOHOL RISK AND PROPORTION OF PEOPLE INJURED—2001



POPULATION CHARACTERISTICS

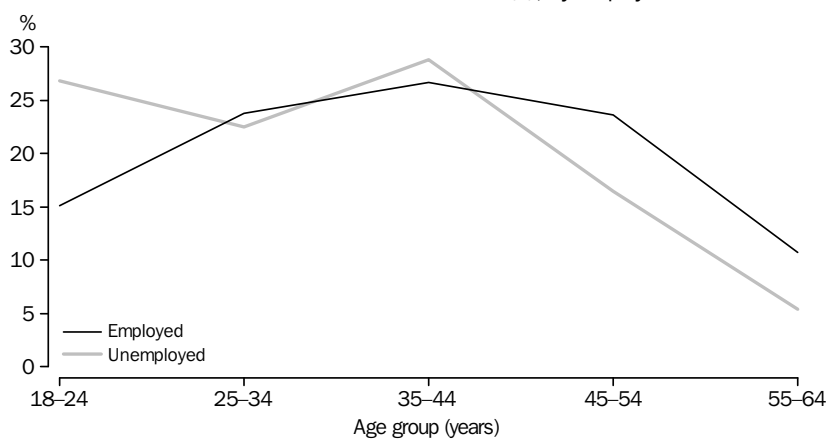
Levels of risky to high risk drinking varied across groups with different socio-demographic characteristics (see table 6.5). For example, 12% of adults living outside capital cities consumed alcohol at risky to high risk levels compared with 10% of adults within the capital city areas. This difference was more evident among adult males (16% compared with 12%). With regard to income, persons within the highest income quintile were more likely to drink at risky to high risk levels (15%) when compared to persons within the lowest income quintile (9%). Those adults living alone were also more likely to drink at risky to high risk levels (14%) while single persons living with children were least likely (8%).

Of those adults aged 18–64 years, the proportion who consumed alcohol at risky to high risk levels was similar among the employed and unemployed (13% and 12% respectively). However, differences between these groups were evident when males and females were analysed separately (see table 6.5). While 10% of employed females were in the risky to high risk drinking categories, 15% of employed males reported drinking at risky to high risk levels.

POPULATION
CHARACTERISTICS *continued*

Reported drinking behaviour also varied with age and employment status. Among those aged 18–24 years, risky to high risk drinking was almost twice as likely among the unemployed (27% compared with 15% of employed adults, see graph 6.2). In contrast, among adults aged 45 years and over, high risk drinking was more prevalent among the employed population.

6.2 PROPORTION OF RISKY/HIGH RISK DRINKERS(a), By employment status



(a) Based on Australian Alcohol Guidelines, October 2001.

6.3 ALCOHOL RISK LEVEL (a)—2001

	AGE GROUP (YEARS)							Total
	18-24	25-34	35-44	45-54	55-64	65-74	75 years and over	
	%	%	%	%	%	%	%	%
Males								
Did not consume/low risk	86.1	86.0	85.9	85.4	84.9	90.9	95.4	86.7
Risky	7.5	5.9	7.6	7.3	9.0	4.7	*3.2	6.9
High risk	6.4	8.1	6.5	7.4	6.0	4.4	*1.4	6.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Females								
Did not consume/low risk	91.4	92.5	90.0	89.9	91.5	93.0	95.3	91.5
Risky	7.1	6.1	7.4	7.4	6.3	6.0	3.9	6.6
High risk	*1.5	1.4	2.6	2.7	2.2	*1.0	*0.8	1.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Persons								
Did not consume/low risk	88.7	89.3	88.0	87.6	88.2	92.0	95.4	89.2
Risky	7.3	6.0	7.5	7.4	7.7	5.4	3.6	6.7
High risk	4.0	4.7	4.5	5.0	4.1	2.6	*1.0	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution
 (a) Based on Australian Alcohol Guidelines, October 2001.

6.4 ALCOHOL RISK LEVEL(a), Selected long-term conditions and risk factors(b)(c)—2001

	<i>Did not consume/low risk</i>	<i>Risky/high risk</i>
	%	%
MALES		
Selected long-term conditions(d)		
Neoplasms	2.7	*1.9
Diabetes mellitus	4.1	2.8
High sugar levels in blood/urine	np	np
High cholesterol	8.7	7.1
Feeling depressed	0.5	*0.4
All mental and behavioural problems	8.5	9.6
Migraine	4.3	3.0
High blood pressure	12.6	13.5
Ischaemic heart disease	3.1	2.8
Tachycardia	2.1	2.2
Cerebrovascular diseases	0.9	**0.3
Oedema	1.4	*1.2
Bronchitis/emphysema	3.6	5.1
Asthma	8.7	9.4
Diseases of the oesophagus, stomach & duodenum	4.0	5.2
Hernia	3.1	3.6
Gallstones	np	np
Arthritis	15.1	17.6
Rheumatism	1.8	*2.1
Gout	2.9	6.5
Back pain/problems/disc disorders/curvature of spine	26.9	31.5
Osteoporosis	0.8	*0.5
Diseases of genito-urinary system	3.2	*0.8
Total with a selected long-term condition(e)	60.7	66.3
Total without a selected long-term condition	39.3	33.7
Total aged 18 years and over	100.0	100.0
Selected risk factors		
Physically inactive	30.8	30.4
Usually adds salt after cooking	29.7	44.2
Inadequate daily fruit intake(f)	51.5	66.2
Inadequate daily vegetable intake(g)	73.3	73.2
Ex-smoker	30.5	34.5
Current smoker	24.8	42.8
Overweight	39.2	41.5
Obese	14.7	17.4
Overweight/obese	53.8	58.8
Total with a selected risk factor(h)	97.2	99.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

np not available for publication but included in totals where applicable, unless otherwise indicated

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Based on Australian Alcohol Guidelines, October 2001.

(b) Persons aged 18 years and over.

(c) Age standardised to the 2001 NHS benchmark population.

(d) Conditions which have lasted, or are expected to last six months or more.

(e) Adults may have reported more than one selected long-term condition and therefore components may not add to totals.

(f) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.

(g) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.

(h) Adults may have reported more than one selected risk factor and therefore components may not add to totals.

6.4 ALCOHOL RISK LEVEL(a), Selected long-term conditions and risk factors(b)(c)—2001 *continued*

	<i>Did not consume/low risk</i>	<i>Risky/high risk</i>
	%	%
MALES <i>cont.</i>		
Selected risk factors <i>cont.</i>		
<i>Total without a selected risk factor</i>	2.8	1.0
Total 18 years and over	100.0	100.0
FEMALES		
Selected long-term conditions(d)		
Neoplasms	1.8	*1.7
Diabetes mellitus	3.9	*2.1
High sugar levels in blood/urine	np	np
High cholesterol	7.3	7.5
Feeling depressed	0.9	*1.4
All mental and behavioural problems	11.8	16.6
Migraine	11.3	6.3
High blood pressure	13.9	13.8
Ischaemic heart disease	2.0	*0.9
Tachycardia	2.6	*2.3
Cerebrovascular diseases	0.6	**0.4
Oedema	2.8	*2.4
Bronchitis/emphysema	4.1	5.9
Asthma	12.8	12.7
Diseases of the oesophagus, stomach & duodenum	4.4	3.0
Hernia	2.1	*2.1
Gallstones	np	np
Arthritis	20.7	20.6
Rheumatism	1.8	*1.3
Gout	0.5	*1.9
Back pain/problems/disc disorders/curvature of spine	26.4	29.8
Osteoporosis	3.2	3.8
Diseases of genito-urinary system	4.7	4.6
Total with a selected long-term condition(e)	64.9	69.6
Total without a selected long-term condition	35.1	30.4

* estimate has a relative standard error of between 25% and 50% and should be used with caution

np not available for publication but included in totals where applicable, unless otherwise indicated

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Based on Australian Alcohol Guidelines, October 2001.

(b) Persons aged 18 years and over.

(c) Age standardised to the 2001 NHS benchmark population.

(d) Conditions which have lasted, or are expected to last six months or more.

(e) Adults may have reported more than one selected long-term condition and therefore components may not add to totals.

(f) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.

(g) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.

6.4 ALCOHOL RISK LEVEL(a), Selected long-term conditions and risk factors(b)(c)—2001 *continued*

	<i>Did not consume/low risk</i>	<i>Risky/high risk</i>
	%	%
FEMALES <i>cont.</i>		
Total aged 18 years and over	100.0	100.0
Selected risk factors		
Physically inactive	32.4	28.2
Usually adds salt after cooking	21.4	28.1
Inadequate daily fruit intake(d)	40.7	53.3
Inadequate daily vegetable intake(e)	66.8	63.3
Ex-smoker	21.7	29.5
Current smoker	20.0	34.8
Overweight	22.6	25.7
Obese	15.6	13.9
Overweight/obese	38.1	39.6
Total with a selected risk factor(f)	94.0	96.5
Total without a selected risk factor	6.0	3.5
Total 18 years and over	100.0	100.0
PERSONS		
Selected long-term conditions(g)		
Neoplasms	2.2	1.7
Diabetes mellitus	4.0	2.5
High sugar levels in blood/urine	0.4	*0.3
High cholesterol	8.0	7.1
Feeling depressed	0.7	*0.9
All mental and behavioural problems	10.2	12.5
Migraine	7.9	4.4
High blood pressure	13.3	13.7
Ischaemic heart disease	2.5	1.9
Tachycardia	2.4	2.2
Cerebrovascular diseases	0.8	*0.4
Oedema	2.1	1.7
Bronchitis/emphysema	3.8	5.5
Asthma	10.8	10.8
Diseases of the oesophagus, stomach & duodenum	4.2	4.4
Hernia	2.6	3.0
Gallstones	0.7	*0.6
Arthritis	18.1	18.8
Rheumatism	1.8	1.6
Gout	1.6	4.5
Back pain/problems/disc disorders/curvature of spine	26.7	31.0
Osteoporosis	2.1	2.1
Diseases of genito-urinary system	4.0	2.5
Total with a selected long-term condition(h)	62.8	67.5
Total without a selected long-term condition	37.2	32.5

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Based on Australian Alcohol Guidelines, October 2001.
 (b) Persons aged 18 years and over.
 (c) Age standardised to the 2001 NHS benchmark population.
 (d) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.
 (e) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.
 (f) Adults may have reported more than one selected risk factor and therefore components may not add to totals.
 (g) Conditions which have lasted, or are expected to last six months or more.
 (h) Adults may have reported more than one selected long-term condition and therefore components may not add to totals.

6.4 ALCOHOL RISK LEVEL(a), Selected long-term conditions and risk factors(b)(c)—2001 *continued*

	<i>Did not consume/low risk</i>	<i>Risky/high risk</i>
	%	%
PERSONS <i>cont.</i>		
Selected long-term conditions(d) <i>cont.</i>		
Total aged 18 years and over	100.0	100.0
Selected risk factors		
Physically inactive	31.6	30.0
Usually adds salt after cooking	25.3	37.8
Inadequate daily fruit intake(e)	45.9	60.9
Inadequate daily vegetable intake(f)	69.9	68.8
Ex-smoker	25.7	32.0
Current smoker	22.3	39.7
Overweight	30.5	35.4
Obese	15.2	15.4
Overweight/obese	45.7	50.8
Total with a selected risk factor(g)	95.6	97.9
Total without a selected risk factor	4.4	2.1
Total 18 years and over	100.0	100.0

- (a) Based on Australian Alcohol Guidelines, October 2001.
- (b) Persons aged 18 years and over.
- (c) Age standardised to the 2001 NHS benchmark population.
- (d) Conditions which have lasted, or are expected to last six months or more.
- (e) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.
- (f) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.
- (g) Adults may have reported more than one selected risk factor and therefore components may not add to totals.

6.5 PROPORTION OF RISKY OR HIGH RISK DRINKERS (a)(b)(c), Selected population characteristics—2001

	Males	Females	Persons
	%	%	%
Location			
Capital city	11.7	8.4	10.0
Balance of State	15.9	8.7	12.3
Highest level of education			
Tertiary	8.3	10.0	9.1
Diploma	14.2	8.5	11.1
Vocational qualification	15.6	8.9	12.8
Other qualification	*20.3	*12.6	*20.7
Level not stated/no post-school qualification	13.8	7.9	10.5
Index of relative socioeconomic disadvantage(d)			
1st quintile	13.9	7.7	10.6
5th quintile	11.9	11.2	11.5
Income unit			
1st quintile	11.1	7.4	9.1
5th quintile	15.6	12.9	14.7
Country of birth			
Australia	14.9	9.5	12.2
Other countries	8.2	6.0	7.1
Household composition			
Person living alone	16.4	11.6	14.1
Couple only	13.1	10.9	11.9
Couple with children	10.1	7.6	8.6
One person with children	8.2	7.4	7.5
All other households	17.5	8.4	12.8
Government health card			
With card	11.5	8.2	9.5
Without card	13.8	9.9	12.2
Self-assessed health status			
Excellent/very good	12.1	9.0	10.6
Good	14.5	8.7	11.7
Fair/poor	14.9	8.5	11.8
Labour force status(e)			
Employed	14.8	9.8	12.6
Unemployed	12.7	12.0	12.3
Not in labour force	12.3	6.6	8.0
Total aged 18 years and over	13.2	8.5	10.8

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Persons aged 18 years and over.

(b) Age standardised to the 2001 NHS benchmark population.

(c) This table shows the percentage of adults in the population groups shown (e.g. tertiary educated adults) who consume alcohol at risky or high risk levels.

(d) Where the first quintile represents the 20% of the population living in areas with the highest level of disadvantage, and the fifth quintile, those in areas with the lowest disadvantage.

(e) Data refers to persons aged 18–64 years.

HIGH BLOOD PRESSURE

According to guidelines of the World Health Organisation (1999), people are considered to have high blood pressure (hypertension) if:

- their systolic blood pressure (see Glossary) is greater than or equal to 140mmHg, and/or
- their diastolic blood pressure (see Glossary) is greater than or equal to 90mmHg.

It is estimated that high blood pressure is responsible for more than 5% of the total disease burden among Australians (Mathers et al. 1999). High blood pressure is recognised as being a major risk factor for coronary heart disease, stroke and heart failure among other conditions with the risk of disease increasing as high blood pressure increases (AIHW 2001b).

In the 2001 NHS, respondents were asked whether they had ever been told by a doctor or nurse that they had a heart or circulatory condition (including high blood pressure). If so, they were asked whether their condition was long-term (that is, had lasted or was expected to last six months or more). The proportion of persons with high blood pressure as a long-term condition includes those respondents who control their high blood pressure with medication.

A small proportion of respondents to the 2001 NHS with high blood pressure (1%) did not report that a doctor or nurse told them they had the condition. However, they did report high blood pressure as a long-term condition.

PREVALENCE

It is estimated that more than two and a half million people aged 15 years and over had been told by a doctor or nurse at some time during their lives that they had high blood pressure, with around 1.9 million people aged 15 years and over (13%) currently having high blood pressure as a long-term condition (see table 7.2).

For both males and females, high blood pressure was much more prevalent among the older age groups (those aged 55 years and over). For example, while 14% of persons aged 45–54 years reported high blood pressure, this increased to 26% among those within the 55–64 year age group. High blood pressure continued to increase with age to 42% among those aged 75 years and over.

The following analyses refers to adults aged 18 years and over with high blood pressure.

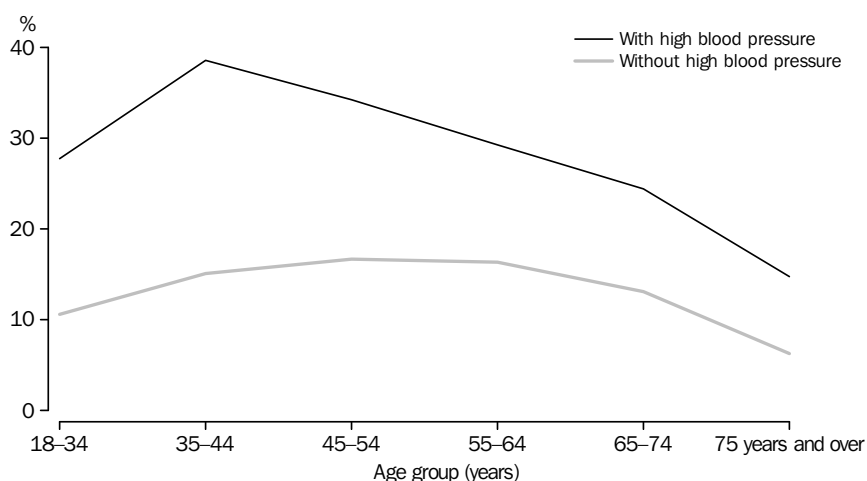
LONG-TERM CONDITIONS, RISK FACTORS AND OTHER ASSOCIATIONS

Compared to adults without high blood pressure, those with high blood pressure were more likely to have certain long-term conditions (see table 7.3). For example, adults with high blood pressure had a much higher prevalence of high cholesterol (20% compared with 6% among those without high blood pressure). In addition, they were more than twice as likely to have diabetes (7% compared with 3% of adults without high blood pressure) and over five times more likely to report oedema (7% compared with 1% of adults without high blood pressure).

LONG-TERM CONDITIONS,
RISK FACTORS AND
OTHER ASSOCIATIONS
continued

To reduce high blood pressure, people are advised to lower their weight if necessary, undertake sufficient exercise, limit alcohol intake and reduce the amount of salt in their diets (AIHW 2001b). Adults with high blood pressure were more than twice as likely to be obese compared with adults without high blood pressure (29% and 13% respectively, see graph 7.1). Obesity was especially higher among women with high blood pressure (33%) compared with men with high blood pressure (26%). Of those with high blood pressure, 37% were physically inactive, compared with 31% of those without high blood pressure. In addition, 16% of adults with high blood pressure reported risky to high risk alcohol consumption, compared to 11% of those without high blood pressure. There was little difference between those with or without high blood pressure and whether respondents added salt after cooking (28% with high blood pressure and 27% without high blood pressure).

7.1 BLOOD PRESSURE LEVELS AMONG ADULTS WHO ARE OBESE



Some 35% of adults with high blood pressure consulted a doctor in the two weeks prior to interview compared with 25% of those without high blood pressure. Respondents were also asked whether they took any medications to treat their high blood pressure and if so, which medications these were. The data showed that most persons aged 18 years and over with high blood pressure used a pharmaceutical medication to treat the condition in the two weeks prior to interview (86%, see table 7.4).

Population characteristics

High blood pressure levels varied among adults with different socio-demographic characteristics (see table 7.5). For example, 16% of adults from the most disadvantaged socioeconomic areas (lowest SEIFA quintile) had high blood pressure compared with 12% of adults from the least disadvantaged socioeconomic areas (highest SEIFA quintile). With regard to household composition, those adults living in one person households with children were most likely to report high blood pressure (17%) and those adults living in a couple household with or without children were least likely (13%). High blood pressure was also more common among adults with a health care card (15%) and in particular, among those who reported their overall health as being fair or poor (19%).

7.2 PROPORTION WITH HIGH BLOOD PRESSURE (a)—2001

Age group (years)	Males	Females	Persons
	%	%	%
15-24	*0.8	*0.3	*0.5
25-34	1.6	*0.9	1.2
35-44	4.9	4.0	4.4
45-54	13.9	13.6	13.8
55-64	24.6	27.0	25.8
65-74	35.1	41.6	38.5
75 years and over	35.8	46.4	42.0
Total	11.8	13.6	12.7

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) High blood pressure which has lasted or is expected to last six months or more.

7.3 HIGH BLOOD PRESSURE STATUS(a)(b), Selected long-term conditions and risk factors—2001

	Males with high BP(c)	Females with high BP(c)	Persons with high BP(c)	Males without high BP(c)	Females without high BP(c)	Persons without high BP(c)
	%	%	%	%	%	%
Selected long-term conditions						
Neoplasms	3.7	1.4	2.4	2.4	1.9	2.1
Diabetes mellitus	6.0	7.9	6.8	3.4	2.6	3.0
High sugar levels in blood/urine	*0.5	*1.1	0.7	0.5	0.3	0.4
High cholesterol	23.2	15.1	19.7	6.1	4.9	5.5
Feeling depressed	*1.5	*0.6	*1.1	0.5	0.8	0.7
All mental and behavioural problems	11.7	15.6	13.2	8.7	12.1	10.4
Migraine	5.9	17.4	10.4	4.0	10.7	7.4
Ischaemic heart disease	4.9	2.9	3.9	2.4	1.5	1.9
Tachycardia	4.1	6.3	4.9	1.8	2.1	1.9
Cerebrovascular diseases	1.6	0.9	1.2	0.7	0.5	0.6
Oedema	4.0	11.6	6.5	0.9	1.5	1.2
Bronchitis/emphysema	3.8	7.0	4.4	3.9	4.1	4.0
Asthma	8.0	18.4	12.0	8.6	12.1	10.4
Diseases of the oesophagus, stomach & duodenum	7.8	5.2	7.2	4.0	3.9	4.0
Hernia	3.6	2.0	2.7	3.0	2.0	2.5
Gallstones	*0.4	5.0	1.5	0.3	1.0	0.6
Arthritis	17.7	26.9	22.6	15.1	19.7	17.4
Rheumatism	1.7	1.5	1.6	1.8	1.9	1.8
Gout	7.6	1.2	4.5	2.5	0.3	1.4
Back pain/problems/disc disorders/curvature of spine	28.0	26.3	28.2	27.6	26.4	26.9
Osteoporosis	0.9	3.6	2.4	0.7	3.4	2.1
Diseases of genito-urinary system	5.0	10.3	6.6	2.7	4.3	3.5
Total with a selected long-term condition(d)	69.8	73.9	71.6	57.6	61.5	59.6
Total without a selected long-term condition	30.2	26.1	28.4	42.4	38.5	40.4
Selected health risk factors						
Physically inactive	33.3	40.5	37.0	31.0	30.9	31.0
Usually adds salt after cooking	32.0	23.7	28.1	32.2	21.9	27.0
Inadequate daily fruit intake(e)	59.8	48.1	54.8	53.6	41.5	47.5
Inadequate daily vegetable intake(f)	70.9	62.0	68.3	73.6	66.6	70.1
Ex-smoker	34.6	19.6	26.7	30.2	22.4	26.2
Current smoker	23.5	31.6	24.8	28.3	21.8	25.0
Overweight	44.0	24.5	35.1	39.4	22.7	31.0
Obese	26.0	33.1	29.3	13.7	13.0	13.3
Overweight/obese	70.0	57.6	64.4	53.1	35.7	44.3
Risky to high risk alcohol consumption	17.4	17.6	15.9	13.0	8.5	10.7
Total with a selected risk factor(g)	99.0	97.1	98.0	97.5	94.2	95.8
Total without a selected risk factor	1.0	2.9	2.0	2.5	5.8	4.2
Total total aged 18 years and over	100.0	100.0	100.0	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Persons aged 18 years and over.

(b) Age standardised to the 2001 NHS benchmark population.

(c) Blood Pressure.

(d) Adults may have reported more than one type of long-term condition and therefore components may not add to totals.

(e) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.

(f) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.

(g) Adults may have reported more than one type of selected risk factor and therefore components may not add to totals.

7.4 MEDICATION USE AMONG PERSONS WITH HIGH BLOOD PRESSURE (a)—2001

	Males	Females	Persons
	%	%	%
Pharmaceutical medications taken	84.2	88.1	86.3
Pharmaceutical medications not taken	12.1	8.3	10.0
Total with high blood pressure (b)	100.0	100.0	100.0
Vitamins taken	2.9	3.6	3.3
Vitamins not taken	95.9	95.1	95.5
Total with high blood pressure (c)	100.0	100.0	100.0
Natural/herbal treatments used	1.0	2.2	1.6
Natural/herbal treatments not used	97.9	96.6	97.2
Total with high blood pressure (d)	100.0	100.0	100.0

- (a) Persons aged 18 years and over.
- (b) Includes a small number of persons whose use of pharmaceutical medications is unknown.
- (c) Includes a small number of persons whose use of vitamins is unknown.
- (d) Includes a small number of persons whose use of natural/herbal treatments is unknown.

7.5
PROPORTION WITH HIGH BLOOD PRESSURE(a)(b), Selected population characteristics(c)—2001

	<i>Males</i>	<i>Females</i>	<i>Persons</i>
	%	%	%
Location			
Capital city	12.3	13.4	13.0
Balance of State	13.5	14.8	14.3
Highest educational qualification			
Tertiary	12.6	13.2	12.9
Diploma	13.9	11.8	12.7
Vocational qualification	12.0	15.1	13.1
Level not stated/no post-school qualification	13.3	14.0	13.8
Index of relative socioeconomic disadvantage(d)			
1st quintile	15.6	16.9	16.4
5th quintile	12.1	12.0	12.1
Income unit			
1st quintile	13.2	17.2	15.6
5th quintile	15.2	8.9	13.4
Country of birth			
Australia	14.0	14.6	14.4
Other countries	10.5	12.4	11.4
Household composition			
Person living alone	12.7	14.1	13.7
Couple only	12.8	13.9	13.2
Couple with children	13.5	14.7	13.1
One person with children	16.0	16.8	16.7
All other households	15.8	14.2	15.0
Government health card			
With card	14.5	16.1	15.3
Without card	12.6	11.0	11.5
Self-assessed health status			
Excellent/very good	8.9	9.7	9.4
Good	14.0	16.4	15.2
Fair/poor	19.1	19.1	19.0
Labour force status(e)			
Employed	8.3	7.4	7.9
Unemployed	8.6	7.4	9.3
Not in labour force	10.3	9.1	9.2
Total aged 18 years and over	12.8	13.9	13.4

- (a) Persons aged 18 years and over.
- (b) Age standardised to the 2001 NHS benchmark population.
- (c) This table shows the percentage of adults in the population groups shown (e.g. tertiary educated adults) who have high blood pressure.
- (d) Where the first quintile represents the 20% of the population living in areas with the highest level of disadvantage, and the fifth quintile, those in areas with the lowest disadvantage.
- (e) Data refers to persons aged 18-64 years.

INTRODUCTION

High cholesterol is associated with increased risk of coronary heart disease and stroke, with diets high in saturated fat the likely cause of high cholesterol in most people (AIHW 2001b). In 1996, high cholesterol was estimated to account for 3% of the total disease burden among Australian males and 2% among females (Mathers et al. 1999).

Total blood cholesterol levels above 5.5 mmol/L are considered to increase the risk of developing coronary heart disease and levels above 6.5 mmol/L are considered to place people within a high risk category (AIHW 2001b).

In the 2001 NHS, respondents were asked whether they had ever been told by a doctor or nurse that they had a heart or circulatory condition (including high cholesterol). If so, they were asked whether their condition was long-term (that is, had lasted or was expected to last six months or more). The proportion of persons with high cholesterol as a long-term condition included those respondents who controlled their high cholesterol with medication.

A small proportion of respondents with high cholesterol (less than 1%) did not report that a doctor or nurse told them they had the condition. However, they did report high cholesterol as a long-term condition.

PREVALENCE

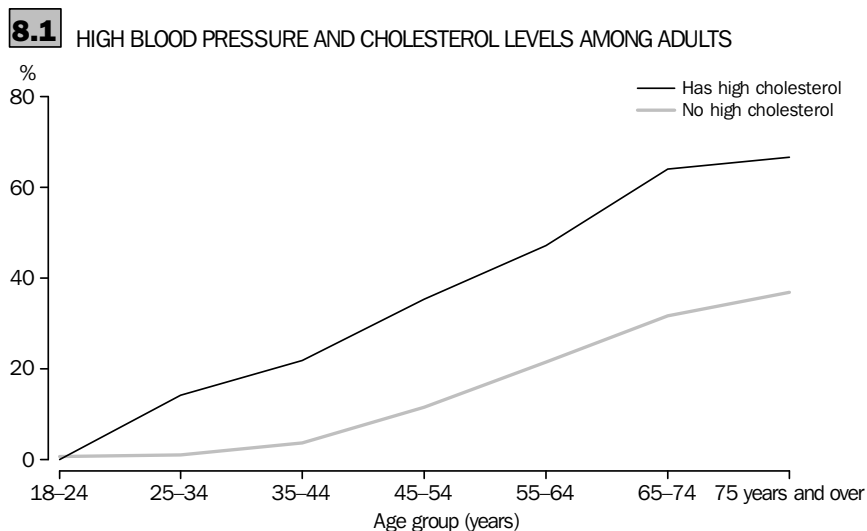
It is estimated that over 1.7 million people had been told by a doctor or nurse at some time during their lives that they had high cholesterol. The proportion of persons who reported that they currently had high cholesterol as a long-term condition was 8% among those persons aged 15 years and over (see table 8.2).

High cholesterol increased with age and in particular, was more prevalent among those aged 45 years and over (see table 8.2). For example, 3% of those aged 35–44 years had high cholesterol compared with 9% among the 45–54 year age group. High cholesterol was highest among those aged 65–74 years (21%) before declining among those aged 75 years and over (17%).

LONG-TERM CONDITIONS,
RISK FACTORS AND
OTHER ASSOCIATIONS

Adults with high cholesterol were more likely to have particular long-term conditions (see table 8.3). For example, 7% also reported having ischaemic heart disease compared with 2% of those without high cholesterol. In addition, 9% of those with high cholesterol also reported diabetes compared with 3% of adults without high cholesterol.

Almost 30% of adults with high cholesterol also had high blood pressure in comparison with 11% of adults without high cholesterol. High blood pressure was greater among those adults with high cholesterol across every age group (see graph 8.1).

LONG-TERM CONDITIONS,
RISK FACTORS AND
OTHER ASSOCIATIONS*continued*

Adults with high cholesterol were more likely to display other risk factors when compared with adults without high cholesterol. For example, 56% of adults with high cholesterol consumed low daily amounts of fruit compared with 48% of those without high cholesterol. The proportion of adults who were overweight was highest among men with high cholesterol (55% compared with 40% of men without high cholesterol). Women with high cholesterol were more likely to be obese (24% compared with 15% of women without high cholesterol).

Respondents were also asked whether they took any medications to treat their high cholesterol and if so, which medications these were. The data showed that 62% of adults aged 18 years and over with high cholesterol used a pharmaceutical medication to treat the condition in the two weeks prior to interview (see table 8.4).

POPULATION
CHARACTERISTICS

The proportion of adults with high cholesterol was similar between selected population characteristic groups (see table 8.5). For example, 5% of employed adults aged 18–64 years reported having high cholesterol compared with 6% of unemployed adults. Among females, those within the lowest income quintile were more likely to report having high cholesterol (9% compared with 5% among women in the highest income unit quintile). However, among males, the proportion with high cholesterol was similar across the lowest and highest income quintiles (9% and 11% respectively).

8.2 PROPORTION WITH HIGH CHOLESTEROL(a)—2001

Age group (years)	Males	Females	Persons
	%	%	%
15-24	*0.4	*0.3	*0.3
25-34	1.9	1.2	1.5
35-44	4.7	2.1	3.4
45-54	11.1	7.8	9.4
55-64	16.9	16.3	16.6
65-74	19.5	22.1	20.8
75 years and over	18.2	16.6	17.3
Total	8.0	7.1	7.6

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) High cholesterol which has lasted, or is expected to last for six months or more.

8.3 HIGH CHOLESTEROL STATUS(a)(b), Selected long-term conditions and risk factors—2001

	WITH HIGH CHOLESTEROL			WITHOUT HIGH CHOLESTEROL		
	Males	Females	Persons	Males	Females	Persons
	%	%	%	%	%	%
Selected long-term conditions						
Neoplasms	2.9	*1.0	2.0	2.5	1.8	2.1
Diabetes mellitus	5.0	13.3	9.0	3.7	3.2	3.4
High sugar levels in blood/urine	*1.1	*1.9	1.4	0.3	0.3	0.3
Feeling depressed	**0.2	*1.2	*0.6	0.5	0.8	0.7
All mental and behavioural problems	11.6	24.2	16.9	8.6	11.9	10.3
Migraine	3.7	15.2	8.4	4.1	10.8	7.5
High blood pressure	30.1	28.0	29.7	10.7	12.0	11.4
Ischaemic heart disease	8.1	5.5	6.8	2.1	1.6	1.8
Tachycardia	3.9	3.4	3.8	1.8	2.4	2.1
Cerebrovascular diseases	1.7	*1.1	1.4	0.7	0.5	0.6
Oedema	2.4	5.4	3.7	1.1	2.5	1.8
Bronchitis/emphysema	4.4	3.0	3.8	3.7	4.1	3.9
Asthma	17.4	21.2	18.3	8.6	12.6	10.6
Diseases of the oesophagus stomach & duodenum	9.2	7.1	8.6	4.0	4.1	4.0
Hernia	3.8	2.8	3.4	3.1	2.0	2.5
Gallstones	*0.7	*1.2	0.9	0.3	1.0	0.7
Arthritis	15.0	28.0	20.3	15.3	20.3	17.9
Rheumatism	2.0	1.7	1.9	1.7	1.8	1.7
Gout	5.8	*0.8	3.7	3.0	0.5	1.7
Back pain/problems/disc disorders/curvature of spine	32.0	37.9	35.2	27.2	26.2	26.7
Osteoporosis	*1.0	3.6	2.3	0.7	3.3	2.1
Diseases of genito-urinary system	4.0	8.3	5.5	2.8	4.6	3.7
Total with a selected long-term condition(c)	80.9	84.5	82.3	58.9	63.5	61.2
Total without a selected long-term condition	19.1	13.5	17.7	41.1	36.5	38.8
Total aged 18 years and over	100.0	100.0	100.0	100.0	100.0	100.0
Selected risk factors						
Physically inactive	31.0	33.6	33.2	31.2	31.8	31.6
Usually adds salt after cooking	26.4	23.9	25.3	31.9	22.0	26.8
Inadequate daily fruit intake(d)	58.1	53.6	55.5	53.7	41.9	47.6
Inadequate daily vegetable intake(e)	76.4	67.7	72.2	73.2	66.1	69.5
Ex-smoker	34.5	28.2	31.3	30.1	22.3	25.9
Current smoker	23.7	21.6	22.8	27.8	21.3	24.5
Overweight	54.5	24.4	42.0	39.3	22.7	30.8
Obese	19.1	24.1	21.0	14.3	14.9	14.6
Overweight/Obese	73.6	48.5	62.9	53.6	37.6	45.4
Risky to high risk alcohol consumption	15.1	13.1	14.3	13.4	8.5	10.9
Total with a selected risk factor(f)	97.9	97.1	97.6	97.5	94.4	95.9
Total without a selected risk factor	2.1	2.9	2.4	2.5	5.6	4.1
Total aged 18 years and over	100.0	100.0	100.0	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Persons aged 18 years and over.

(b) Age standardised to the 2001 NHS benchmark population.

(c) Persons may have reported more than one type of long-term condition and therefore components may not add to totals.

(d) Inadequate daily fruit intake is defined as usually eating one serve or less of fruit per day.

(e) Inadequate daily vegetable intake is defined as usually eating three serves or less of vegetables per day.

(f) Adults may have reported more than one type of selected risk factor and therefore components may not add to totals.

8.4 MEDICATION USE AMONG PERSONS WITH HIGH CHOLESTEROL(a)—2001

	Males	Females	Persons
	%	%	%
Pharmaceutical medications taken	58.6	64.9	61.6
Pharmaceutical medications not taken	33.6	28.0	30.9
Total with high cholesterol(b)	100.0	100.0	100.0
Vitamins taken	*0.7	3.5	2.0
Vitamins not taken	94.4	91.8	93.2
Total with high cholesterol(c)	100.0	100.0	100.0
Natural/herbal treatments used	*1.1	*2.1	1.6
Natural/herbal treatments not used	94.0	93.2	93.6
Total with high cholesterol(d)	100.0	100.0	100.0

* estimate has a relative standard error of between 25% and 50% and should be used with caution

- (a) Persons aged 18 years and over.
- (b) Includes a small number of respondents whose use of pharmaceutical medications was unknown.
- (c) Includes a small number of respondents whose use of vitamins was unknown.
- (d) Includes a small number of respondents whose use of natural/herbal treatments was unknown.

8.5 PROPORTION WITH HIGH CHOLESTEROL(a)(b), Selected population characteristics(c)—2001

	Males	Females	Persons
	%	%	%
Location			
Capital city	8.8	7.6	8.2
Balance of State	8.0	7.1	7.5
Highest educational qualification			
Tertiary	8.5	5.9	7.3
Diploma	6.8	5.8	6.2
Vocational qualification	8.5	8.1	8.2
Other qualification	np	np	*5.9
Level not stated/no post-school qualification	8.7	7.7	8.1
Index of relative socioeconomic disadvantage(d)			
1st quintile	8.5	8.1	8.2
5th quintile	8.8	6.4	7.6
Income unit			
1st quintile	8.9	9.4	9.2
5th quintile	10.9	5.0	8.3
Country of birth			
Australia	9.1	7.6	8.4
Other countries	7.6	6.8	7.1
Household composition			
Person living alone	7.2	7.9	7.8
Couple only	8.9	7.9	8.4
Couple with children	10.0	7.4	8.9
One person with children	*6.5	8.1	7.7
All other households	8.1	6.5	7.4
Government health card			
With card	9.2	8.8	8.9
Without card	6.8	6.6	6.7
Self-assessed health status			
Excellent/very good	6.4	5.4	5.9
Good	9.1	8.8	9.0
Fair/poor	12.2	9.8	10.9
Labour force status(e)			
Employed	6.1	4.1	5.2
Unemployed	*4.4	*6.9	5.5
Not in labour force	9.2	5.8	6.6
Total aged 18 years and over	8.5	7.4	7.9

np not available for publication but included in totals where applicable, unless otherwise indicated

* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) Persons aged 18 years and over.

(b) Age standardised to the 2001 NHS benchmark population.

(c) This table shows the percentage of adults in the population groups shown (e.g. tertiary educated adults) who have high cholesterol.

(d) Where the first quintile represents the 20% of the population living in areas with the highest level of disadvantage, and the fifth quintile, those in areas with the lowest disadvantage.

(e) Data refers to persons aged 18–64 years.

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents results from the National Health Survey (NHS) which was conducted throughout Australia from February to November 2001. This is the fifth in the series of health surveys conducted by the ABS; previous surveys were conducted in 1977–78, 1983, 1989–90 and 1995.

2 The statistics presented in this publication refer to data obtained on selected risk factors only. Additional health risk factor topics included in the 2001 NHS were:

- breastfeeding
- sun protection
- childhood and adult immunisation
- supplementary women's health topics, and
- contraception/protection.

3 Some data on the above risk factors is available in *National Health Survey: Summary of Results, 2001* (cat. no. 4364.0).

4 A supplementary health survey of Aboriginal and Torres Strait Islander people was conducted in association with the 2001 NHS. Information about that survey, together with summary results were separately published in *National Health Survey: Aboriginal and Torres Strait Islander Results, Australia, 2001* (cat. no. 4715.0).

SCOPE OF THE SURVEY

5 The NHS was conducted in a sample of 17,918 private dwellings across Australia. Both urban and rural areas in all states and territories were included, but sparsely settled areas of Australia were excluded. Non private dwellings such as hotels, motels, hostels, hospitals, nursing homes and short-stay caravan parks were not included in the survey.

6 Within each selected household, a random sub-sample of usual residents was selected for inclusion in the survey as follows:

- one adult (18 years of age and over)
- all children aged 0–6 years
- one child aged 7–17 years.

7 Subsampling of respondents enabled more information to be collected from each respondent than would have been possible had all usual residents of selected dwellings been included in the survey.

8 The following groups were excluded from the survey:

- certain diplomatic personnel of overseas governments, customarily excluded from the census and estimated resident population figures
- persons whose usual place of residence was outside Australia
- members of non-Australian defence forces (and their dependants) stationed in Australia
- visitors to private dwellings.

DATA COLLECTION

9 Trained ABS interviewers conducted personal interviews with selected residents of sampled dwellings. One person aged 18 years and over in each dwelling was selected and interviewed about their own health characteristics. An adult resident, nominated by the household, was interviewed about all children aged 0–6 years and one selected child aged 7–17 years in the dwelling. Adult female respondents were invited to complete a small additional questionnaire covering supplementary women's health topics.

SAMPLE DESIGN SAMPLE
DESIGN *continued*
sample size and selection

10 Dwellings were selected at random using a multi-stage area sample of private dwellings. The initial sample selected for the survey consisted of approximately 21,900 dwellings; this reduced to a sample of approximately 19,400 after sample loss (e.g. households selected in the survey which had no residents in scope for the survey, vacant or derelict buildings, buildings under construction). Of those remaining dwellings, around 92% were fully responding, yielding a total sample for the survey of 26,863 persons.

11 To take account of possible seasonal effects on health characteristics, the sample was spread throughout the 10 months enumeration period. Conduct of the survey was suspended during the six weeks from 28 July to 10 September during the 2001 Census of Population and Housing enumeration period.

WEIGHTING AND
BENCHMARKING
Weighting

12 Weighting is the process of adjusting results from a sample survey to infer results for the total population. To do this, a 'weight' is allocated to each sample unit. The weight is a value which indicates how many population units are represented by the sample unit.

13 The first step in calculating weights for each person was to assign an initial weight, which was equal to the inverse of the probability of being selected in the survey. For example, if the probability of a person being selected in the survey was 1 in 600, then the person would have an initial weight of 600 (that is, they represent 600 others).

Benchmarking

14 The initial weights were calibrated to align with independent estimates of the population of interest, referred to as 'benchmarks', in designated categories of sex by age by area of usual residence categories. Weights calibrated against population benchmarks compensate for over or under-enumeration of particular categories of persons and ensure that the survey estimates conform to the independently estimated distribution of the population by age, sex and area of usual residence, rather than to the distribution within the sample itself.

15 The survey was benchmarked to the estimated population living in private dwellings in non-sparsely settled areas at 30 June 2001 based on results from the 2001 Census of Population and Housing. Hence the benchmarks relate only to persons living in private dwellings, and therefore do not (and are not intended to) match estimates of the total Australian resident population (which include persons living in non-private dwellings, such as hotels) obtained from other sources.

Standardisation

16 Much of the comparative data contained in this publication are shown as age standardised estimates or percentages. Many health characteristics are age-related and to enable comparisons over time or across population groups (e.g. between states) the age profile of the populations being compared needs to be considered. The age standardised percentages are those which would have prevailed should the actual population have the standard age composition. In this publication the standard population is the benchmark population; i.e. the population at 30 June 2001 based on the 2001 Census of Population and Housing, adjusted for the scope of the survey. It should be noted that minor discrepancies in totals may occur between standardised and non-standardised estimates or percentages, as a result of the standardisation process.

RELIABILITY OF ESTIMATES

17 The estimates provided in this publication are subject to sampling and non-sampling error.

Sampling error

18 Sampling error is the difference between the published estimates, derived from a sample of persons, and the value that would have been produced if all persons in scope of the survey had been included. For more information refer to the Technical Notes. In this publication, estimates with a relative standard error of 25% to 50% are preceded by an asterisk (e.g. *3.4) to indicate that the estimate should be used with caution. Estimates with a relative standard error over 50% are indicated by a double asterisk (e.g. **0.6) and should be considered unreliable for most purposes.

Non sampling error

19 Non-sampling error may occur in any data collection, whether it is based on a sample or a full count such as a census. Sources of non-sampling error include non-response, errors in reporting by respondents or recording of answers by interviewers, and errors in coding and processing data.

20 Non-response occurs when people cannot or will not cooperate, or cannot be contacted. Non-response can affect the reliability of results and can introduce a bias. The magnitude of any bias depends upon the rate of non-response and the extent of the difference between the characteristics of those people who responded to the survey and those who did not.

21 The following methods were adopted to reduce the level and impact of non-response:

- face-to-face interviews with respondents
- the use of interviewers who could speak languages other than English where necessary
- follow-up of respondents if there was initially no response
- weighting to population benchmarks to reduce non-response bias.

22 By careful design and testing of questionnaires, training of interviewers, asking respondents to refer to records where appropriate, and extensive editing and quality control procedures at all stages of data processing, other non-sampling error has been minimised. However, the information recorded in the survey is essentially 'as reported' by respondents, and hence may differ from information available from other sources, or collected using different methodology. In particular it should be noted that:

- information about medical conditions was not medically verified and most was not necessarily based on diagnosis by a medical practitioner. Conditions which have a greater effect on people's wellbeing or lifestyle, or those which were specifically mentioned in survey questions are expected in general to have been better reported than others
- results of previous surveys have shown a tendency for respondents to under-report alcohol consumption levels and their weight, but over-estimate their height.

CLASSIFICATIONS

Long term medical conditions

23 All reported long term medical conditions were coded to a list of approximately 1,000 condition categories which was prepared for this survey. Information about medical conditions classified at this level of detail will not generally be available for output from the survey; however, they can be regrouped in various ways for output. Three standard output classifications developed by the ABS for this survey are available:

- a classification based on the International Classification of Diseases, 10th revision (ICD-10)
- a classification based on the 2 plus edition of the International Classification of Primary Care (ICPC)
- a classification based on the International Classification of Diseases, 9th revision (ICD-9), which is similar to the classification of conditions used in the 1995 NHS, and has been retained to assist data users in comparing 2001 and 1995 results.
- In this publication, medical conditions data from the 2001 NHS are shown classified to the ICD-10-based classification, or variants of that classification.

Geographic characteristics

24 In this publication, survey results are shown compiled for Australia, Capital cities and Balance of State and broad categories from the *Australian Standard Geographical Classification* (ASGC) Remoteness Area classification. Results compiled at other levels of the ASGC can be compiled on request.

RESULTS OF THE SURVEY

Comparability with previous National Health Surveys

25 This publication contains some results from the last two NHSs. Understanding the comparability of data from the 2001 NHS with data from these other surveys is crucial to the use of the data and interpretation of apparent changes in health characteristics over time. While the 2001 NHS is similar in many ways, particularly to the 1995 NHS, there are important differences in sample design and coverage, survey methodology and content, definitions and classifications between previous NHSs. These will effect the degree to which data are directly comparable between the surveys.

26 The main differences between the 1995 and 2001 NHSs which may effect comparability of data presented in this publication are shown below. In this publication, data from previous surveys are only shown where a reasonable level of comparability exists.

27 While the number of dwellings sampled was slightly smaller in 2001, sub-sampling of persons within households has meant the number of persons sampled in 2001 was about half that in 1995 (in which several states purchased additional sample). This has reduced the reliability of some estimates.

28 The sample for the 1995 survey included some non-private dwellings and covered sparsely settled areas. The 2001 NHS survey included private dwellings in urban and rural areas only. However, both the sparsely settled and special dwelling populations are quite small and hence their exclusion in 2001 is regarded as having minimal impact on comparability, particularly at the data levels shown in this publication.

29 All persons in sampled dwellings were included in the 1995 survey, and only records from fully responding households were retained on the data file. In contrast the 2001 survey sub-sampled persons within households (one adult, all children 0–6 years, one child 7–17 years). To the extent that some health characteristics may be clustered within households, the different sampling approaches may impact slightly on comparability between surveys.

30 The 2001 survey was effectively enumerated over about a ten-month period, compared with a 12-month period for the 1995 survey. The 2001 survey was not enumerated in December or January, nor during a six-week period mid-winter (coinciding with conduct of the 2001 Census of Population and Housing).

31 As a result of the points above, some care should be taken in interpreting apparent changes over time in the prevalence of certain long term conditions and other health characteristics. Some movements between 1995 and 2001 estimates can, at least in part, be attributed to conceptual, methodological and/or classification differences. However, there are some instances where the degree or nature of the change suggests other factors are contributing to the movements, including changes in community awareness or attitudes to certain conditions, changes in common terminology for conditions, improvements in the diagnosis of certain conditions, etc. The degree of change attributable to all these factors, relative to actual change in the prevalence of characteristics, cannot be determined from information collected in this survey.

32 Further information about comparability between surveys is contained in *National Health Survey: Users' Guide, Australia, 2001* (cat. no. 4363.0.55.001) and the *Occasional Paper: Long-term Health Conditions – A Guide To Time Series Comparability From The National Health Survey* (cat. no. 4816.0.55.001). Both the User's Guide and the Occasional Paper are available through the ABS web site <<http://www.abs.gov.au>>. In

*Comparability with previous
National Health Surveys
continued*

addition, the ABS can offer advice, if required, on the comparison of the 2001 survey results with those from the 1995 or earlier surveys.

HEALTH PRODUCTS AND SERVICES

Results for states and territories

33 Summary results from this survey compiled separately for each state and the Australian Capital Territory (ACT) are available in tabular form on the ABS web site <<http://www.abs.gov.au>> or on request to ABS.

Microdata

34 Users wishing to undertake more detailed analysis of the survey data may apply for access to either the BASIC or EXPANDED NHS Confidentialised Unit Record Files (CURFs). All clients wishing to access the NHS CURFs should refer to the 'Access to ABS CURFs' section located on the ABS web site, and read the Responsible Access to ABS Confidentialised Unit Record Files (CURFs) Training Manual, and other relevant information, before downloading the Application and Undertaking to apply for access. Any queries relating to Conditions of Sale should be referred to curf.management@abs.gov.au.

Special tabulations ions

35 Special tabulations are available on request. Subject to confidentiality and sampling variability constraints, tabulations can be produced from the survey incorporating data items, populations and geographic areas selected to meet individual requirements. These can be provided in printed or electronic form. A list of data items available from the survey is available free of charge on the ABS web site <<http://www.abs.gov.au>>. Further information about the survey and associated products is available from the National Information and Referral Service. Details are listed at the front of this publication.

RELATED PUBLICATIONS

36 Other ABS thematic publications and web-based papers which may be of interest are shown below. Most of these are available at <<http://www.abs.gov.au>>:

Thematic publications

National Health Survey: Summary of Results, 1989–90, 1995 and 2001,
cat. no. 4364.0

*National Health Survey: Summary Results, Australian States and Territories,
1995 and 2001,* cat. no. 4368.0

National Health Survey: Users' Guide, 1989–90, 1995 and 2001, cat. no. 4363.0

National Health Survey: Injuries, Australia, 2001, cat. no. 4384.0

National Health Survey: Private Health Insurance, Australia, 1995,
cat. no. 4334.0

National Health Survey: Diabetes, Australia, 1995, cat. no. 4371.0

*National Health Survey: Cardiovascular and Related Conditions, Australia,
1995,* cat. no. 4372.0

*National Health Survey: Asthma and Other Respiratory Conditions, Australia,
1995,* cat. no. 4373.0

National Health Survey: Injuries, Australia, 1995, cat. no. 4384.0

National Health Survey: SF36 Population Norms, Australia, 1995,
cat. no. 4399.0

Mental Health and Wellbeing: Profile of Adults, Australia, 1997, cat. no. 4326.0

National Survey of Mental Health and Wellbeing of Adults: Users' Guide, 1997,
cat. no. 4327.0

National Nutrition Survey: Selected Highlights, Australia, 1995, cat. no. 4802.0

National Nutrition Survey: Foods Eaten, Australia, 1995, cat. no. 4804.0

*National Nutrition Survey: Nutrient Intakes and Physical Measurements,
Australia, 1995,* cat. no. 4805.0

National Nutrition Survey: Users' Guide, 1995, cat. no. 4801.0

RELATED PUBLICATIONS

*continued**Children's Health Screening, 1995*, cat. no. 4337.0*Children's Immunisation Survey, Australia, 1995*, cat. no. 4352.0*Disability, Ageing and Carers, Australia: Summary of Findings, 1998*,
cat. no. 4430.0

Web-based papers

National Health Survey: Private Health Insurance, Australia,
cat. no. 4815.0.55.001*Breastfeeding in Australia*, cat. no. 4810.0.55 .001*Occasional Paper: Vaccination Coverage in Australian Children — ABS
Statistics and the Australian Childhood Immunisation Register (ACIR)*,
cat. no. 4813.0.55.001*Occasional Paper: Measuring Dietary Habits in the 2001 National Health
Survey, Australia*, cat.no. 4814.0.55.001*National Health Survey: Private Health Insurance, Australia*,
cat. no. 4815.0.55.001*Occasional Paper: Long-term Health Conditions — A Guide to Time Series
Comparability From The National Health Survey, Australia*,
cat. no. 4816.0.55.001*Information Paper: Use of the Kessler Psychological Distress Scale in ABS
Health Surveys, Australia*, cat. no. 4817.0.55.001

37 Current publications and other products released by the ABS are listed in the *Catalogue of Publications and Products* (cat. no. 1101.0). The Catalogue is available from any ABS office or the ABS web site <<http://www.abs.gov.au>>. The ABS also issues a daily Release Advice on the web site which details products to be released in the week ahead.

TECHNICAL NOTES

RELIABILITY OF ESTIMATES

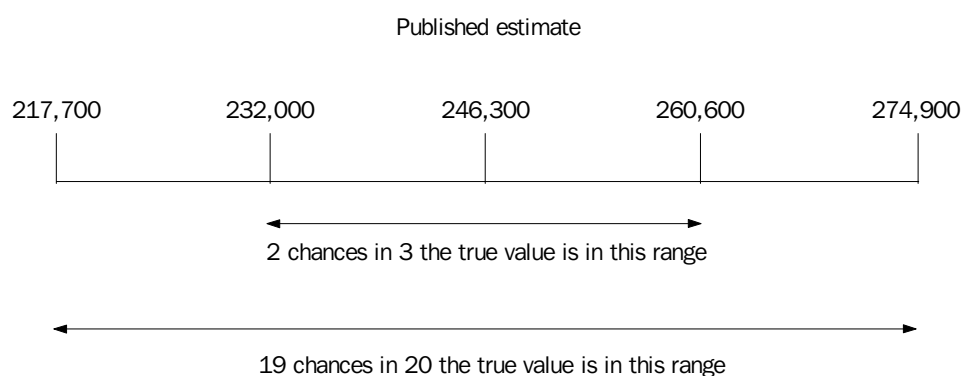
Measuring sample variability

1 Since the estimates in this publication are based on information obtained from a sub-sample of usual residents of a sample of dwellings, they are subject to sampling variability; that is, they may differ from those that would have been produced if usual residents of all dwellings had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings was included. There are about two chances in three that a sample estimate will differ by less than one SE from the number that would have been obtained if all dwellings had been included, and about 19 chances in 20 that the difference will be less than two SEs. Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate.

2 Space does not allow for the separate indication of the SEs of all estimates in this publication. A table of SEs and RSEs for estimates of numbers of persons appears at the end of these Technical Notes. These figures will not give a precise measure of the SE for a particular estimate but will provide an indication of its magnitude.

CALCULATION OF STANDARD ERRORS

3 An example of the calculation and the use of SEs in relation to estimates of persons is as follows. Consider the estimate for Australia of persons aged 45–54 years who reported high cholesterol as a long-term condition (246,300). Since this estimate is between 200,000 and 300,000 in the SE table, the SE will be between 13,200 and 15,600 and can be approximated by linear interpolation as 14,300 (rounded to the nearest 100). Therefore, there are about two chances in three that the value that would have been produced if all dwellings had been included in the survey will fall in the range 232,000 to 260,600 and about 19 chances in 20 that the value will fall within the range 217,700 to 274,900. This example is illustrated in the diagram below.



CALCULATION OF STANDARD ERRORS *continued*

4 As can be seen from the SE table at the end of this Chapter, the smaller the estimate the higher the RSE. Very small estimates are thus subject to such high SEs (relative to the size of the estimate) as to detract seriously from their value for most reasonable uses. In the tables in this publication, only estimates with RSEs of less than 25% and percentages based on such estimates are considered sufficiently reliable for most purposes. However, estimates with larger RSEs have been included and are preceded by an asterisk (e.g. *3.4) to indicate that they are subject to high SEs and should be used with caution. Estimates with RSEs greater than 50% are preceded by a double asterisk (e.g. **2.1) to indicate that they are considered too unreliable for general use.

PROPORTIONS AND PERCENTAGES

5 Proportions and percentages formed from the ratio of two estimates are also subject to sampling errors. The size of the error depends of the accuracy of both the numerator and denominator. A formula to approximate the RSE of a proportion is given below:

$$RSE\left(\frac{x}{y}\right) = \sqrt{[RSE(x)]^2 - [RSE(y)]^2}$$

6 Using this formula, the RSE of the estimated proportion or percentage will be lower than the RSE estimate of the numerator. Therefore an approximation for RSEs of proportions or percentages may be derived by neglecting the RSE of the denominator — i.e. obtaining the RSE of the number of persons corresponding to the numerator of the proportion or percentage and then applying this figure to the estimated proportion or percentage. This approach has been adopted in this publication for the purposes of assigning the * or ** to indicate a 25% or 50% RSE threshold.

7 Published estimates may also be used to calculate the difference between two survey estimates (numbers or percentages). Such an estimate is subject to sampling error. The sampling error of the difference between the two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates (x-y) may be calculated by the following formula:

$$SE(x - y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

8 While this formula will only be exact for differences between separate and uncorrelated characteristics of sub-populations, it is expected to provide a reasonable approximation for all differences likely to be of interest in this publication.

9 The imprecision due to sampling variability, which is measured by the SE, should not be confused with inaccuracies that may occur because of imperfections in reporting by respondents and recording by interviewers, and errors made in coding and processing data. Inaccuracies of this kind are referred to as non-sampling error, and they may occur in any enumeration, whether it be a full count or a sample. Every effort is made to reduce non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers, and efficient operating procedures.

PROPORTIONS AND PERCENTAGES *continued*

STANDARD ERRORS OR PERSON ESTIMATES

Size of estimate	STANDARD ERROR							AUST.	
	NSW	Vic.	Qld	SA	WA	Tas.	ACT	Australia standard error	Relative standard error
	no.	no.	no.	no.	no.	no.	no.	no.	%
500	520	488	499	404	438	342	268	468	93.7
1,000	848	782	777	647	686	526	397	750	75.0
1,500	1 113	1 019	997	839	880	666	492	978	65.2
2,000	1 342	1 222	1 184	1 002	1 046	780	570	1 174	58.7
2,500	1 548	1 403	1 350	1 145	1 190	880	635	1 350	54.0
3,000	1 734	1 566	1 500	1 272	1 320	969	693	1 512	50.4
3,500	1 904	1 718	1 638	1 390	1 439	1 047	742	1 659	47.4
4,000	2 064	1 860	1 764	1 496	1 548	1 120	788	1 800	45.0
4,500	2 219	1 989	1 881	1 598	1 652	1 184	832	1 930	42.9
5,000	2 360	2 115	1 995	1 690	1 745	1 245	870	2 055	41.1
6,000	2 622	2 346	2 202	1 866	1 920	1 362	942	2 286	38.1
8,000	3 088	2 752	2 568	2 160	2 232	1 552	1 056	2 696	33.7
10,000	3 500	3 100	2 880	2 420	2 490	1 710	1 160	3 060	30.6
20,000	5 040	4 440	2 060	3 340	3 460	2 260	1 480	4 440	22.2
30,000	6 180	5 400	4 920	3 960	4 140	2 610	1 680	5 490	18.3
40,000	7 080	6 160	5 600	4 440	4 680	2 880	1 840	6 320	15.8
50,000	7 850	6 800	6 200	4 850	5 100	3 100	1 950	7 050	14.1
100,000	10 600	9 100	8 300	6 200	6 600	3 800	2 300	9 700	9.7
200,000	13 800	12 000	10 800	7 600	8 400	4 400	2 600	13 200	6.6
300,000	16 200	13 800	12 600	8 400	9 600	4 800	3 000	15 600	5.2
400,000	17 600	15 200	14 000	8 800	10 400	5 200	2 800	17 600	4.4
500,000	19 000	16 500	15 000	9 500	11 000	..	..	19 000	3.8
1,000,000	23 000	20 000	19 000	11 000	13 000	..	..	24 000	2.4
2,000,000	28 000	24 000	22 000	..	..	..	..	30 000	1.5
5,000,000	35 000	..	..	..	..	..	..	40 000	0.8
10,000,000	..	..	..	..	..	..	..	50 000	0.5
20,000,000	..	..	..	..	..	..	..	60 000	0.3

.. not applicable

ESTIMATES WITH RELATIVE STANDARD ERRORS OF 25% AND 50%

Size of estimate	NSW	Vic.	Qld	SA	WA	Tas.	ACT	Aust.
	no.	no.	no.	no.	no.	no.	no.	no.
Estimate with 25% RSE	20 353	15 693	13 348	9 352	9 940	4 978	2 577	15 563
Estimate with 50% RSE	4 337	3 343	2 996	2 009	2 224	1 131	588	3 059

GLOSSARY

Additional information about the items and their definitions are contained in *National Health Survey: Users' Guide, 2001* which is available at <<http://www.abs.gov.au>>.

Furthermore, a copy of the 2001 NHS Questionnaire, data item list and associated publications are also available via the ABS web site.

Alcohol risk level

The adult was divided into risk levels determined by their estimated average daily alcohol consumption in the seven days prior to interview. Average daily consumption in the previous seven days was estimated using two components:

- the number of days on which the respondent reported consuming alcohol in the previous week
- the quantity consumed on the three most recent days on which they consumed alcohol. For people who drank on no more than three days in the last week, their daily average was simply the total consumed divided by seven.

Risk levels are based on the NHMRC risk levels for harm in the long term, and assumes the level of alcohol is typical. The average daily consumption of alcohol associated with risk levels is as follows:

.....

	<i>Males</i>	<i>Females</i>
Low risk	50ml or less	25ml or less
Risky	More than 50ml, up to 75ml	More than 25ml, up to 50ml
High risk	More than 75ml	More than 50ml

.....

Body Mass Index (BMI)

BMI is calculated from self-reported height and weight information, using the formula weight (kg) divided by the square of height(m). The data collected in the 2001 NHS are considered to be underestimates of overweight and obesity since studies have shown that respondents tend to overestimate height and underestimate weight (ABS 1995).

To produce a measure of the prevalence of overweight or obesity in adults, BMI values are grouped according to the table below which allows categories to be reported against both WHO and NHMRC guidelines.

.....

	<i>2001</i>
Underweight	Less than 18.5
Normal range	18.5 to less than 20.0 and 20.0 to less than 25.0
Overweight	25.0 to less than 30.0
Obese	30.0 and greater

.....

Days away

Refers to days on which the respondent was away from work, school or other educational institution (as appropriate) for at least half the day. Absences included days away due to respondent's own illness or injury, or to care for another person with an illness or injury. Employed persons away from both work and school/study have been included under days away from work only.

Dentist

Includes dentist, orthodontist, dental nurse, dental technician and dental mechanic.

Diastolic blood pressure Blood pressure between heartbeats, the lowest blood pressure during the cardiac cycle (*Blacks medical dictionary* 1992).

Exercise level Derived from frequency, intensity (i.e. walking, moderate exercise and vigorous exercise) and duration of exercise (for recreation, sport or fitness) in the two weeks prior to interview. From these components, an exercise score was derived using factors to represent the intensity of the exercise. Scores were grouped for output as follows:

		2001
Physically inactive		Less than 100 (includes no exercise)
Low		100 to less than 1,600
Moderate	1,600–3,200, or more than 3,200 but less than two hours of vigorous exercise	
High	More than 3,200 and two hours or more of vigorous exercise	

Fruit and vegetable consumption Fruit included fresh, dried, frozen and tinned. A serve of fruit was defined as approximately 150 grams of fresh fruit or 50 grams of dried fruit. To assist respondents in the interview, they were shown photos of individual fruit serves as medium piece of fruit, two small pieces of fruit or a cup of diced fruit. A single serve of dried fruit was described, if required, as one-quarter of a cup of sultanas or four dried apricot halves. Vegetables included all types such as potatoes, salad and stir-fried vegetables, whether fresh, frozen or tinned. A serve of vegetables was defined as approximately 75 grams of vegetables. To assist respondents in the interview, they were shown photos of single serves of vegetables as half a cup of cooked vegetables or one cup of salad vegetables.

Government health concession cards Includes Health Care Card, Pensioner Concession Card, Commonwealth Seniors Health Card and treatment entitlement cards issued by the Department of Veterans' Affairs.

Health related action Refers to one or more of the following actions taken in relation to the respondent's own health in the two weeks prior to interview:

- discharge from a stay in hospital as an admitted patient
- visit to casualty/emergency at hospital
- visit to outpatients at hospital
- visit to day clinic
- consultation with general practitioner (GP) or specialist
- dental consultation
- consultation with other health professional (OHP): see below
- day away from work or school (due to own illness or injury)
- other days of reduced activity (days other than days away from work or school/study) due to own illness or injury.

Highest educational qualification The level of the highest educational qualification obtained since leaving school.

Household composition Based on usual residents of households, as reported at the time of the survey.

Income of income unit An income unit may comprise one person or group of related persons (de facto or registered marriage or parent/dependent child relationship) within a household whose command over income is assumed to be shared. An income unit may therefore include the partner (for couples), all children aged less than 15 years, and children aged 15–24 years provided they are unmarried, full-time students and do not have dependants of their own. In this survey income unit income is the sum of the respondent's cash income and the cash income of their spouse/partner (where applicable). The income of any children within the units is not included.

Index of relative socio-economic disadvantage	One of five of the Socio-economic Indexes for Areas (SEIFAs) compiled by the ABS following each population census. Each of the indexes summarise different aspects of the socioeconomic condition of areas; the index of relative socioeconomic disadvantage includes attributes such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations. The index refers to the area (the Census Collector's District) in which a person lives, not to the socio-economic situation of the particular individual. The Index used in this publication were those compiled following the 1996 census. For further information about the SEIFAs see <i>Information Paper: Census of Population and Housing — Socio-economic Indexes for Areas, Australia, 1996</i> (cat. no. 2039.0).
Injury event	An injury event is an event meeting the following criteria: <ul style="list-style-type: none"> ■ the event was an accident, harmful incident, exposure to harmful factors or other incident ■ which occurred in the four weeks prior to interview ■ which resulted in an injury ■ which resulted in one or more of the following actions being taken: consulting a health professional, seeking medical advice, receiving medical treatment, reducing usual activities, other treatment of injury such as taking medications, or using a bandage or band aid or heat or ice pack.
Labour force status	Refers to the employment situation of respondents at the time of the survey. Categories are: <ul style="list-style-type: none"> ■ Employed (aged 15 years and over and had a job in the week prior to the survey), ■ Unemployed (aged 15 years and over, were not employed and actively looked for work in the four weeks prior to the survey) ■ Not in the labour force (all children less than 15 years, and persons 15 years and over or more who were neither employed or unemployed).
Location	From the ASGC Main structure classification. Further details are contained in the <i>Australian Standard Geographical Classification (ASGC), 2001</i> (cat. no. 1216.0).
Long-term condition	A condition which in the respondent's opinion has lasted for six months or more, or which he or she expects will last for six months or more. Some conditions reported were assumed to be long-term conditions. These included asthma, cancer, diabetes insipidus, diabetes mellitus types 1 and 2, rheumatic heart disease, heart attack and stroke.
National Health Priority Areas (NHPA)	Included cancer, diabetes/high sugar levels, heart and circulatory conditions, injuries, mental health and asthma in 2001. In 2002, arthritis and musculoskeletal diseases were added.
Occupation of main job	Occupation was classified to ASCO — <i>Australian Standard Classification of Occupations, Second Edition, 1997</i> (cat. no. 1220.0).
Oedema	Excessive accumulation of fluid in the tissue spaces, due to increased passing of the fluid from the capillaries.
Other days of reduced activity	Days other than days away from work or from school/study on which a person had cut down on their usual activities for at least half the day, as a result of personal injury or illness.
Other health professional (OHP)	Comprises: <ul style="list-style-type: none"> ■ Aboriginal health worker (nec) ■ Accredited counsellor ■ Acupuncturist ■ Alcohol and drug worker (nec) ■ Audiologist/audiometrist ■ Chemist (for advice) ■ Chiropodist/podiatrist ■ Chiropractor

- Other health professional (OHP) *continued***
- Dietitian/nutritionist
 - Herbalist
 - Hypnotherapist
 - Naturopath
 - Nurse
 - Occupational therapist
 - Optician/optometrist
 - Osteopath
 - Physiotherapist/hydrotherapist
 - Psychologist
 - Social worker/welfare officer
 - Speech therapist/pathologist.

Pharmaceutical medications Any medication used in the last two weeks prior to interview for a given condition (high blood pressure, high cholesterol) other than medications identified by respondents as vitamins or minerals, or natural or herbal medications.

Physical activity Refers to exercise undertaken in the two weeks prior to interview through sport, recreation or fitness (including walking). Incidental exercise undertaken for other reasons, such as for work or while engaged in domestic duties was excluded. See exercise level.

Self-assessed health status Refers to respondent's general assessment of their own health, against a five point scale from excellent through to poor.

Smoker status Refers to the smoking status of adults at the time of the interview, and incorporates the notion of (regular) smoking, as reported by respondents. Categories are:

- daily smoker (current regular smoker)
- not regular smoker (current but not regular)
- ex-regular smoker
- never smoked regularly.

Smoking refers to the regular smoking of tobacco, including manufactured (packet) cigarettes, roll your own cigarettes, cigars and pipes, but excludes chewing tobacco and smoking of non-tobacco products.

Systolic blood pressure The peak blood pressure at each heartbeat (*Black's medical dictionary* 1992).

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ISBN 0 642 47917 8

RRP \$27.00