

# Australian heart disease statistics 2014



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HeartStats – The National Heart Foundation of Australia/  
Deakin University Heart Disease Statistics Project

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# Foreword

Cardiovascular disease: a global epidemic and a local epidemic



Cardiovascular disease is the major cause of death and disability across the globe and as this compendium, *Australian heart disease statistics 2014*, shows, it is the biggest killer in Australia.

In 2012, all nations, including Australia, agreed to a set of voluntary goals and targets to reduce the mortality associated with the global epidemics of non-communicable diseases (NCDs) – cardiovascular disease, cancer, diabetes and lung disease.

The overarching goal, known as *25 by 25*, aims to reduce premature mortality from NCDs by 25% by the year 2025 using 2010 as the baseline. There are eight other voluntary targets Australia has signed onto, including a 25% reduction in high blood pressure, 30% reduction in salt intake, 30% reduction in tobacco use, 10% reduction in the harmful use of alcohol, and no increase in obesity and diabetes.

Australia is both leader and laggard. We have seen world-leading reductions in daily tobacco use along with reductions in hypertension and death due to CVD – especially in women. As a nation we expect to do well. We expect a world-class prevention system and a world-class healthcare system. But both are now at risk.

These systems are at risk because of our rapidly rising levels of obesity, poor diet, sedentary behaviour and insufficient physical activity in children and adults. They are at risk because funding has been withdrawn from many essential prevention services across the nation. Lack of

effective prevention in turn leads to increased risks of ischaemic heart disease, stroke and type 2 diabetes – all putting huge strain on not only our healthcare system, but our national and personal finances as well.

There is no overarching national plan to show how Australia will reach *25 by 25*. We must ensure we continue progress in tobacco control, but we have yet to really take CVD prevention seriously by reducing salt, sugar and fat content in our processed foods, restricting junk food advertising, setting the example of healthy foods in public institutions (e.g. schools, hospitals) and widespread, repeated, well-researched social marketing as has started with the ‘LiveLighter’ campaign, which is being implemented in Western Australia, Victoria and the ACT.

The National Heart Foundation plays a major role as a leader in Australia, urging our federal, state and local governments, as well as many public, philanthropic, faith-based and private entities, to adopt effective evidence-informed approaches to decreasing CVD. And this can be only done if we closely measure and monitor our health behaviours and outcomes. This compendium is a great contribution to a healthier Australia. It is what we expect!

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# Preface

The cardiovascular health challenge in the 21st century:  
good news and bad



The statistics set out in this inaugural compendium, *Australian heart disease statistics 2014*, are more – much more – than a large set of numbers.

Together, they give us a compelling story about the changing nature of Australia's leading killer – cardiovascular disease.

The statistics give us both good and bad news.

Without doubt, turning the tide on the cardiovascular epidemic of the 20th century is one of the great achievements of Australian healthcare.

By the late 1960s, cardiovascular disease (CVD) accounted for a disturbing 56% of all deaths. Since then, CVD mortality rates have been in steady decline to a point where they now account for 30% of all deaths.

Cardiovascular disease is still the leading cause of death in Australia, but the decline has been extraordinary and is an enormous credit to organisations like the Heart Foundation and our many donors, the cardiovascular research community (many of whom the Heart Foundation has funded), the broader public health community and all those who have contributed to a string of landmark breakthroughs in research, treatment and management of the millions of patients who have experienced heart attack, stroke and other forms of CVD.

The data show a compelling message. We should recognise the success of the past six decades. But we must also guard against complacency.

This complacency is all too obvious. While CVD remains the single largest killer of Australians and

is the most expensive disease treated nationally, accounting for 11% of direct healthcare expenditure, it remains a national health priority in name only.

Unlike other health priorities, there is no nationally funded action plan to drive improvements in prevention, early detection and management of CVD.

The National Heart Foundation fears that declining mortality rates could be put at risk in the years ahead by Australia's failure to address the surge in overweight and obesity rates, or make substantial progress to reduce other modifiable risk factors, including poor nutrition, physical inactivity and excessive alcohol consumption.

In the case of overweight and obesity, conservative estimates indicate that life expectancy at age 20 years is about one year less among overweight Australian adults than those within the healthy weight range. And life expectancy is reduced by about 4 years for obese adults.<sup>1</sup>

If current trends continue, it has been estimated that the life expectancy for children alive now will fall by two years by the time they are 20 years old.<sup>1</sup>

These disturbing estimates cannot be ignored, particularly in the context of our failure to make inroads with other leading risk factors.

The statistics also reveal glaring gaps in how we prevent and manage CVD.

We must do more to prevent disease happening in the first place. We must do more to detect people at risk of disease before it strikes. We must do more to improve the quality of care

and reduce variation in management. We must improve secondary prevention. We must improve our data, particularly data that help us improve care and outcomes for patients. We must continue to invest in research. And we must do more to improve outcomes for those who bear the greatest burden of CVD – Aboriginal and Torres Strait Islanders, rural and remote Australians and people surviving on low incomes.

By doing so, we can help people not only live longer, healthier lives, we can also ease the pressure on our hospitals and our hard-pressed health budgets. This compendium should therefore be on the desks of all those who decide how our scarce healthcare dollars are spent.



**Mary Barry**  
CEO National  
National Heart Foundation of Australia

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# Summary

- Cardiovascular disease was responsible for nearly 44,000 deaths in Australia in 2012, including more than 20,000 deaths from ischaemic heart disease.
- Ischaemic heart disease results in more Australian deaths than any other single cause for both men and women.
- Death rates from heart disease are substantially higher among Aboriginal and Torres Strait Islander Australians, ranging from 1.5 to 3 times higher than in non-Indigenous Australians.
- Of all Australians aged 2 years and over, 5% report living with heart, stroke or vascular disease. Among people aged 85 years and over, this proportion rises to two in every five people (40%).
- In 2012–2013 the Pharmaceutical Benefits Scheme paid approximately \$1.8 billion for cardiovascular system medicines, representing 21% of total benefits paid in that year.
- In Australia, 18% of men and 14% of women are daily smokers.
- Smoking rates among Aboriginal and Torres Strait Islander Australians were more than double those among non-Indigenous Australians (41% daily smokers).
- Fewer than 10% of Australians met the National Health and Medical Research Council (NHMRC) guidelines for vegetable consumption.
- In a national secondary school survey, 24% met recommendations for consumption of vegetables and 42% met recommendations for fruit consumption.
- Most Australians (58%) were either sedentary or had low levels of activity.
- Australians spent an average of 38.8 hours per week in sedentary behaviour.
- Only 30% of children met physical activity recommendations, and only 10% met both physical activity and screen-time recommendations.
- Thirteen per cent of men and 10% of women reported drinking alcohol at levels likely to present a risk to health.
- Total per capita alcohol consumption fell between the early 1970s and the early 1990s, but has been relatively steady since then.
- One-third of Australians had high blood cholesterol (above 5.5 mmol/L).
- Almost four in every five Australians with abnormal cholesterol or triglyceride levels were not receiving treatment for it.
- One in five Australians had high blood pressure and the prevalence was higher in men than women.
- One in four Aboriginal and Torres Strait Islander Australians had high blood pressure.
- The prevalence of high blood pressure rose substantially with age, from less than 10% in the 25 to 34-year age group to almost 50% in people aged 75 years and over.
- More than two-thirds of men were classified as overweight or obese, as were 55% of women.
- One-quarter of children aged 2 to 17 years were classified as overweight or obese.
- The overall prevalence of diabetes in the Australian public was more than 5%, with a further 5% at increased risk of developing diabetes.
- The prevalence of mental disorders in 2007 was 17.6% in men and 22.3% in women; anxiety disorders were the most prevalent mental disorders in both sexes.

# Introduction

*Australian heart disease statistics 2014* is the first edition in a planned series of annual updates produced for the National Heart Foundation of Australia by the Heart Foundation/Deakin University Heart Disease Statistics Project. The reports will provide regularly updated relevant statistics about heart disease and associated risk factors for Australians.

The aim of *Australian heart disease statistics 2014* is to document the current and recent burden of heart disease in Australia, including risk factors and comorbidities, and present the statistics in a manner that is both informative and accessible to a range of audiences. This compendium is designed to be useful to health professionals, policy makers, health and medical researchers and others with an interest in the heart health and wellbeing of the Australian population.

The report is divided into three main sections and 12 chapters. Part A is made up of three chapters that provide an overview of the key issues directly related to heart disease in Australia: mortality, morbidity and treatment. Part B contains four chapters that focus on the key behavioural factors associated with heart disease: smoking, diet, physical activity and alcohol. Finally, Part C contains five chapters that cover medical risk factors associated with heart disease. These include three clinical risk factors: cholesterol, blood pressure and obesity, and two major comorbid risk factors: diabetes and mental health.

Each chapter provides a brief introduction to the topic and its relevance to heart disease, and a summary of the 'key facts' contained in the chapter. Then follows a series of tables and figures that illustrate in more detail the patterns and trends in the topic.

The scope of this report covers the topics described above in relation to heart disease (and specifically, to coronary or ischaemic heart disease) in Australia. In some cases, statistics relating to cardiovascular diseases as a whole, or to other conditions (e.g. stroke, common cancers) have been presented for comparison; however, these are not the primary focus of the publication. The data sources included have been selected in order to strike a balance between high-quality, informative, up-to-date and comparable data sources, both over time and between geographic regions. To present a current picture of heart disease in Australia, primarily only data sets that were updated in the past 10 years have generally been included; however, some data older than these have been added to more recent statistics in order to provide historical comparisons and trends over time.

The data in this report have been drawn from a wide range of Australian and international sources, including major data collections by Commonwealth and state government departments and agencies and non-government organisations, as well as some national, international and state-based surveys. Every effort has been made to ensure that the data are presented accurately and that major limitations or caveats to interpretation are highlighted; however, the original sources should be consulted for further information.

In preparation for this report, a wide-ranging audit of available data sources was conducted. The results of that process highlighted some limitations in the data available in Australia to monitor heart disease and its risk factors. The best data availability was found for mortality, with frequently updated and very high coverage of age-, sex- and cause-specific death rates along with sociodemographic variables. Treatment data, including hospital statistics and prescription medicines, were found to have similarly high coverage. Australian hospital statistics provide

a complete picture of all episodes of care in both public and private hospitals. Conversely, a major limitation to the data available for most risk factors is the lack of ongoing monitoring or surveillance, leading to a reliance on one-off or ad hoc surveys, and a lack of clarity around time trends in behaviours and biomedical risk factors. Further, there is variability in the data collection methods, indicators used and geographic coverage among many of these surveys. Surveys of physical activity and mental health in particular use a wide range of questions and scales to describe population characteristics, and comparability of estimates may be limited.

The most important recent development in the availability of data related to heart disease and related risk factors in Australia was the release of results from the 2011–2013 Australian Health Survey. The Australian Health Survey comprises the National Health Survey ( $n = 20,500$ , broadly comparable with previous National Health Surveys in 1989–1990, 1995, 2001, 2004–2005 and 2007–2008), the National Nutrition and Physical Activity Survey ( $n = 13,000$ ) and the National Health Measures Survey. The nutrition and physical activity survey is the first comprehensive data collection on the diets of Australian adults since the 1995 National Nutrition Survey, and of children aged 2 to 16 years since the 2007 Australian National Children's Nutrition and Physical Activity Survey. The health measures survey is the first time that biomedical collection has been included, with blood and urine samples taken from more than 11,000 volunteers. Concurrently, an additional representative sample of around 13,000 Aboriginal and Torres Strait Islander peoples have participated in the Australian Aboriginal and

Torres Strait Islander Health Survey, which has a similar structure. Data from these surveys are included throughout this report, and collectively they provide the most comprehensive picture of Australia's health ever assembled.

The purpose of this publication is to present the best and most up-to-date data in a clear and factual manner. Where possible and appropriate, data have been presented according to sex, age group, state or territory, and other sociodemographic groupings. This format allows some comparisons among groups; however, no statistical tests have been applied to these data. Thus, differences, especially small differences, may be an artefact of the study sampling or design, and should be interpreted with caution.

Print copies of this report can be obtained by contacting the Heart Foundation Research Program on (03) 9321 1581 or emailing [research@heartfoundation.org.au](mailto:research@heartfoundation.org.au).

Electronic copies are available for download from the Heart Foundation website at [www.heartfoundation.org.au](http://www.heartfoundation.org.au).



# Part A | Chapter 1

## Mortality

### Key facts

- Cardiovascular disease was responsible for nearly 44,000 deaths in Australia in 2012, including more than 20,000 deaths from ischaemic heart disease.
- Death rates from heart disease are substantially higher for Aboriginal and Torres Strait Islander Australians, ranging from 1.5 to 3 times higher than for non-Indigenous Australians.



### Introduction

Ischaemic heart disease\* (IHD) is a major cause of mortality globally and is the leading cause of death for Australian men and women. Globally, the World Health Organization estimates that in 2008, 30% of all deaths (17.3 million) were due to cardiovascular diseases (CVD), of which 7.3 million were due to heart disease.<sup>2</sup>

Mortality from heart disease has decreased significantly in recent decades in Australia, as it has in many high-income countries,<sup>3,4</sup> decreasing by more than 70% since the 1970s.<sup>5,6</sup> Despite this decrease, IHD is still the cause of a significant burden of mortality, including premature mortality in Australia, and it accounts for more deaths than either lung cancer or breast cancer. The decreases observed in Australia have been of a similar or greater magnitude to those in comparable high-income countries.

Within Australia, there are significant inequalities in the mortality burden of IHD, according to geographic location (remoteness) and socioeconomic status, and between Aboriginal and Torres Strait Islanders and other Australians. A recent report by the Australian Institute of Health and Welfare, which examined how the ongoing trends of decreasing IHD mortality have impacted on different population groups, found somewhat greater recent improvements in mortality among Aboriginal and Torres Strait Islander peoples, resulting in reduced inequality, although the burden remains higher in these groups.<sup>6</sup> Conversely, the study found a social gradient in the mortality reductions, such that socioeconomic inequalities in death rates increased between 1997 and 2007. All population groups examined had experienced decreases in IHD mortality, but there were important differences in the magnitude of improvements, and younger age groups in particular were found to have less favourable trends.<sup>6</sup>

Mortality data offer one of the most important indications of progress in improved prevention and treatment of heart disease. Changes in mortality rates may reflect either reduced incidence (or event rates) of heart disease, or improved survival (reduced case-fatality rates) among people with heart disease. There is evidence internationally that observed decreases in mortality in recent decades appear to have been due, in approximately equal measure, to each of these improvements.<sup>7,8</sup> It is likely that risk factor reduction (particularly reduced smoking rates and improved treatment of clinical risk factors) has played an important part in achieving greatly reduced heart disease mortality.

Vital registration is a fundamental indicator of population health and illness. The Registrars of Births, Deaths and Marriages in each state and territory collect Australian death data then report them to the Australian Bureau of Statistics, who in turn compile and report on the data.

Mortality rates are also among the best indicators available for international comparisons in heart disease, and enable relatively robust comparisons over a long period in age- and sex-specific death rates by cause. Internationally, the World Health Organization (WHO) collates data. There are some limitations to interpreting differences in mortality rates by country due to differences in both the coverage of vital registration systems and in coding practices between countries.

\* Unless otherwise specified, references to 'heart disease' in this document refer to ischaemic heart disease (coronary heart disease), defined according to the International Classification of Diseases, 10th revision (ICD-10) codes I20-I25, and codes 4100-4149 in ICD-9 and ICD-8.



Key facts

- Cardiovascular disease was responsible for nearly 44,000 deaths in Australia in 2012, including more than 20,000 deaths from ischaemic heart disease.
- Ischaemic heart disease results in more Australian deaths than any other single cause for both men and women.
- Age-standardised heart disease death rates have decreased by more than 30% since 2002 in Australia for both men and women. The largest decreases were seen in the 65–74-years age group.
- Premature heart disease death rates (before age 75) are three to four times higher among men than women; however, after age 75 the differences are much smaller.
- Premature deaths (before age 75) have continued to decline sharply, particularly among women, for whom the age-standardised death rate from ischaemic heart disease is now close to one-half of what it was in 2002.
- Death rates from heart disease are substantially higher for Aboriginal and Torres Strait Islander Australians, ranging from 1.5 to 3 times higher than non-Indigenous Australians.
- International trends have shown strong reductions in heart disease mortality over recent decades (in high-income countries), and these trends have continued in the most recent data available.
- Heart disease death rates in Australia are lower than many comparable high-income countries such as the UK, Germany and the USA, but are higher than in Japan.

Tables and figures  
Mortality numbers

Table 1.1 Deaths from major causes, by sex and state or territory, all ages, 2012

	All causes	All CVD	IHD	Stroke	Other CVD	All cancer	Colorectal cancer	Lung cancer	Breast cancer	Other cancers	Respiratory disease	Injuries and poisoning	All other causes
Men and boys													
Australian Capital Territory	852	232	122	53	57	270	19	37	0	214	79	59	212
New South Wales	25,106	7,234	3,641	1,592	2,001	8,031	717	1,641	5	5,668	2,397	1,698	5,746
Northern Territory	651	150	98	13	39	173	10	38	0	125	42	120	166
Queensland	14,845	4,176	2,243	896	1,037	4,888	449	1,016	6	3,417	1,318	1,376	3,087
South Australia	6,526	1,879	989	350	540	1,942	198	404	4	1,336	597	478	1,630
Tasmania	2,231	644	351	98	195	686	69	140	0	477	214	154	533
Victoria	17,643	4,847	2,449	941	1,457	5,723	550	1,111	10	4,052	1,584	1,260	4,229
Western Australia	6,937	1,791	1,014	302	475	2,279	194	487	2	1,596	592	752	1,523
All men and boys	74,791	20,953	10,907	4,245	5,801	23,992	2,206	4,874	27	16,885	6,823	5,897	17,126
Women and girls													
Australian Capital Territory	854	253	99	72	82	217	35	30	29	123	66	57	261
New South Wales	24,208	7,888	3,001	2,341	2,546	6,119	561	1,098	897	3,563	2,301	1,013	6,887
Northern Territory	387	84	37	14	33	94	16	18	14	46	33	44	132
Queensland	13,455	4,494	1,914	1,283	1,297	3,573	333	649	538	2,053	1,141	668	3,579
South Australia	6,652	2,098	875	583	640	1,594	162	263	227	942	580	267	2,113
Tasmania	2,228	716	263	206	247	528	47	88	69	324	210	103	671
Victoria	18,117	5,636	2,207	1,530	1,899	4,633	499	751	739	2,644	1,568	832	5,448
Western Australia	6,402	1,823	742	505	576	1,705	124	357	282	942	536	394	1,944
All women and girls	72,303	22,992	9,138	6,534	7,320	18,463	1,777	3,254	2,795	10,637	6,435	3,378	21,035

Source: Australian Bureau of Statistics, 3303.0 – Causes of Death, Australia, 2012

Notes: Total deaths. State or territory of usual residence, regardless of where death occurred. All CVD includes all of ICD-10 chapter I (100-199); IHD includes 120-125; 'Stroke' includes I60-I69; Other CVD includes the remainder of chapter I (excluding IHD and Stroke). All cancer includes all of ICD-10 chapter C (malignant neoplasms); Colorectal cancer includes sections C18-C20; Lung cancer corresponds to C34; Breast cancer corresponds to C50; Other cancers include the remainder of chapter C. Respiratory disease includes all of chapter J; Injuries and poisoning include all of chapters V, X, W and Y.



Figure 1.1a Proportion of deaths from major causes, all ages, men and boys, 2012

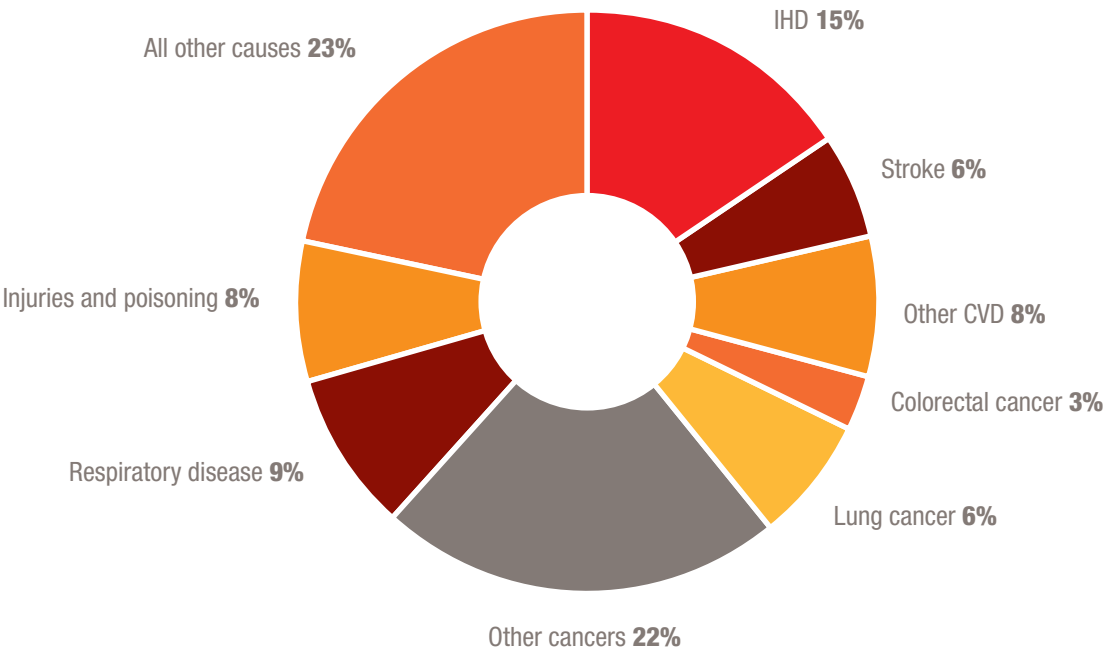


Figure 1.1b Proportion of deaths from major causes, all ages, women and girls, 2012

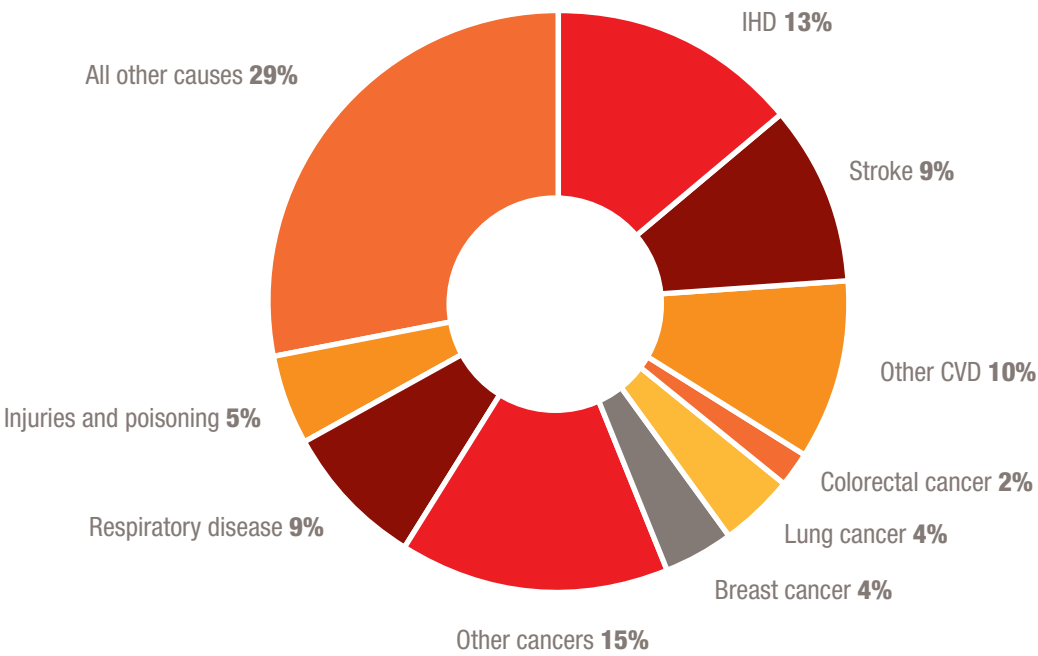


Table 1.2 Deaths from major causes, Australia, by sex and age, 2011

	All causes	All CVD	IHD	Stroke	Other CVD	All cancer	Colorectal cancer	Lung cancer	Breast cancer	Other cancers	Respiratory disease	Injuries and poisoning	All other causes
Men and boys													
0–34	3,066	160	49	22	89	240	22	9	0	209	46	1631	989
35–44	2,050	361	198	43	120	384	40	41	0	303	55	867	383
45–54	4,202	962	630	114	218	1,381	114	291	0	976	135	829	895
55–64	8,457	2,087	1,338	275	474	3,857	349	880	6	2,622	403	617	1493
65–74	13,533	3,314	1,929	567	818	6,253	636	1,497	3	4,117	1,079	471	2,416
75+	44,019	14,982	7,589	3,406	3,987	12,082	1,058	2,237	14	8,773	4,840	1,437	10,678
All men and boys	75,330	21,867	11,733	4,427	5,707	24,198	2,219	4,955	23	17,001	6,558	5,852	16,855
Women and girls													
0–34	1,671	108	15	23	70	198	13	4	23	158	40	544	781
35–44	1,241	131	35	31	65	514	38	43	150	283	33	294	269
45–54	2,733	405	146	124	135	1,381	115	226	397	643	112	301	534
55–64	4,955	675	311	165	199	2,854	233	592	602	1,427	319	233	874
65–74	8,493	1,666	696	422	548	4,082	308	903	615	2,256	791	230	1,724
75+	52,508	20,770	8,577	6,059	6,134	9,446	1,073	1,385	1,127	5,861	4,676	1,668	15,948
All women and girls	71,602	23,755	9,780	6,824	7,151	18,475	1,780	3,153	2,914	10,628	5,971	3,271	20,130

Source: World Health Organization, WHO Mortality Database at [www.who.int/healthinfo/mortality\\_data/en/](http://www.who.int/healthinfo/mortality_data/en/)

Notes: Total deaths. Deaths for which no age was recorded (n = 4) have been included in totals but do not appear in age-specific categories. All CVD includes all of ICD-10 chapter I (I00-I99); IHD includes I20-I25; Stroke includes I60-I69; Other CVD includes the remainder of chapter I (excluding IHD and Stroke). All cancer includes all of ICD-10 chapter C (malignant neoplasms); Colorectal cancer includes sections C18-C20; Lung cancer corresponds to C34; Breast cancer corresponds to C50; Other cancers include the remainder of chapter C; Respiratory disease includes all of chapter J; Injuries and poisoning include all of chapters V, X, W and Y.

Premature mortality

Table 1.3 Premature deaths (<75 years) from cardiovascular causes, by sex and state or territory, 2012

	All causes	IHD	Stroke	Other forms of heart disease <sup>a</sup>
Men and boys				
Australian Capital Territory	353	43	18	9
New South Wales	10,012	1,217	351	309
Northern Territory <sup>b</sup>				
Queensland	6,626	843	224	199
South Australia	2,487	316	69	75
Tasmania	919	127	32	21
Victoria	6,708	758	245	267
Western Australia	3,121	391	75	102
All men and boys	30,226	3,695	1,014	982
Women and girls				
Australian Capital Territory	225	7	6	7
New South Wales	6,196	380	270	165
Northern Territory <sup>b</sup>				
Queensland	3,951	237	173	95
South Australia	1,531	59	55	35
Tasmania	605	38	29	20
Victoria	4,306	218	161	110
Western Australia	1,864	90	68	48
All women and girls	18,678	1,029	762	480

a Definition varies from other tables in Chapter 1; this category refers to ICD-10 codes I30-I52.

b Blank cells indicate disaggregated data by age were not available for Northern Territory due to low numbers.

Source: Australian Bureau of Statistics, 3303.0 - Causes of Death, Australia, 2012

Notes: Total premature deaths

Figure 1.3a Proportion of premature deaths (<75 years) from cardiovascular causes, men and boys, 2012

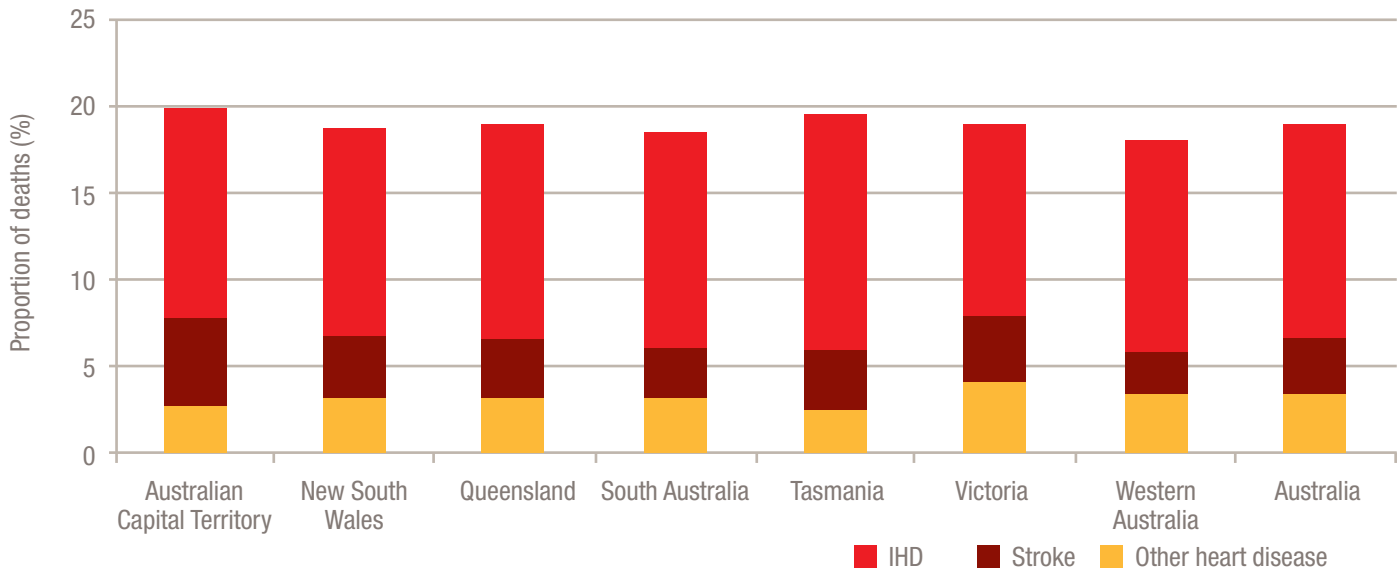
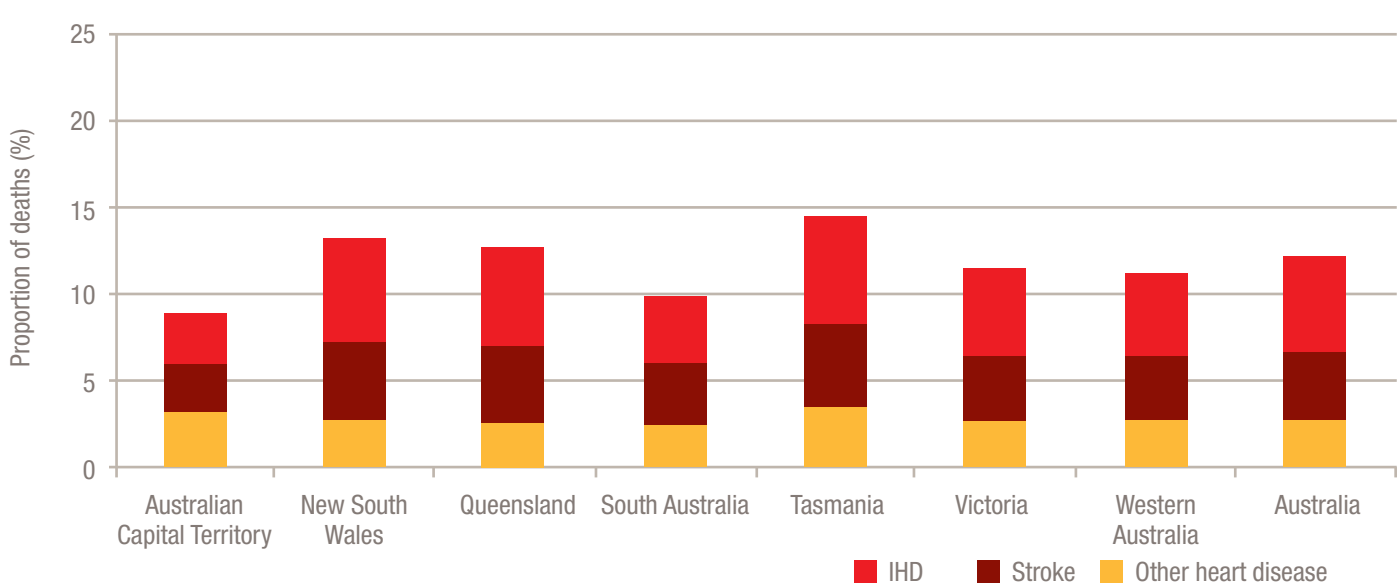


Figure 1.3b Proportion of premature deaths (<75 years) from cardiovascular causes, women and girls, 2012



Trends in mortality

Table 1.4a Deaths from cardiovascular diseases, Australia, by sex and age, 2002 to 2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
0–34	174	199	174		154	173	192	194	181	160
35–44	402	394	399		376	377	388	370	363	361
45–54	1,103	1,042	1,025		927	1,048	1,021	1,022	989	962
55–64	2,185	2,106	2,103		1,822	2,052	2,049	1,991	1,965	2,087
65–74	4,655	4,280	4,101		3,275	3,476	3,557	3,412	3,386	3,314
75+	15,342	15,261	15,050		14,045	15,151	15,689	14,998	14,749	14,982
All men and boys	23,875	23,283	22,853		20,600	22,280	22,899	21,993	21,633	21,867
Women and girls										
0–34	81	106	99		111	116	104	97	97	108
35–44	158	161	154		128	160	158	161	157	131
45–54	349	365	368		346	360	351	346	371	405
55–64	796	738	707		618	710	775	728	766	675
65–74	2,418	2,266	2,061		1,718	1,844	1,911	1,713	1,732	1,666
75+	22,294	21,684	21,302		20,148	21,488	22,474	21,144	20,763	20,770
All women and girls	26,102	25,320	24,692		23,069	24,678	25,774	24,190	23,887	23,755

Source: World Health Organization, WHO Mortality Database at [www.who.int/healthinfo/mortality\\_data/en/](http://www.who.int/healthinfo/mortality_data/en/)

Notes: Total deaths. Deaths for which no age was recorded have been included in totals but do not appear in age-specific categories. Blank cells indicate data were not available.

Table 1.4b Deaths from ischaemic heart disease, Australia, by sex and age, 2002 to 2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
0–34	54	63	50		54	47	54	62	45	49
35–44	238	234	240		216	220	227	228	192	198
45–54	751	715	713		624	681	652	658	648	630
55–64	1,503	1,454	1,461		1,209	1,337	1,357	1,289	1,260	1,338
65–74	2,923	2,695	2,608		1,981	2,137	2,133	2,048	1,939	1,929
75+	8,288	8,278	8,058		7,535	7,851	8,122	7,806	7,636	7,589
All men and boys	13,768	13,440	13,130		11,620	12,275	12,546	12,096	11,720	11,733
Women and girls										
0–34	14	16	17		12	11	13	12	11	15
35–44	54	45	63		35	43	49	54	42	35
45–54	148	159	146		118	128	161	135	146	146
55–64	408	370	331		284	323	342	331	333	311
65–74	1,260	1,103	1,014		807	829	900	795	716	696
75+	10,229	10,162	9,847		9,064	9,347	9,802	9,164	8,749	8,577
All women and girls	12,116	11,855	11,419		10,325	10,681	11,267	10,491	9,998	9,780

Source: World Health Organization, WHO Mortality Database,[www.who.int/healthinfo/mortality\\_data/en/](http://www.who.int/healthinfo/mortality_data/en/)

Notes: Total deaths. Deaths for which no age was recorded have been included in totals but do not appear in age-specific categories. Blank cells indicate data were not available.

Table 1.4c Deaths from stroke, Australia, by sex and age, 2002 to 2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
0–34	33	31	30		26	20	41	32	30	22
35–44	54	43	51		47	43	58	42	51	43
45–54	140	123	123		126	140	128	150	100	114
55–64	282	274	236		244	260	255	262	243	275
65–74	793	726	703		575	582	623	592	606	567
75+	3,654	3,651	3,659		3,256	3,478	3,627	3,433	3,309	3,406
All men and boys	4,957	4,848	4,802		4,274	4,523	4,733	4,512	4,339	4,427
Women and girls										
0–34	20	24	22		29	32	26	23	22	23
35–44	57	48	41		35	41	53	25	54	31
45–54	92	106	110		118	106	86	97	112	124
55–64	157	166	164		156	176	195	191	178	165
65–74	561	586	522		450	470	453	412	468	422
75+	6,613	6,431	6,358		5,913	6,157	6,432	5,955	6,043	6,059
All women and girls	7,502	7,361	7,217		6,701	6,982	7,246	6,704	6,877	6,824

Source: World Health Organization, WHO Mortality Database, [www.who.int/healthinfo/mortality\\_data/en/](http://www.who.int/healthinfo/mortality_data/en/)

Notes: Total deaths. Deaths for which no age was recorded have been included in totals but do not appear in age-specific categories. Blank cells indicate data were not available.

Table 1.5 Deaths from ischaemic heart disease, by sex and state or territory, 2003 to 2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Men and boys										
Australian Capital Territory	134	131	123	110	129	137	132	139	116	122
New South Wales	4,739	4,643	4,217	4,256	4,218	4,377	4,031	3,863	3,964	3,641
Northern Territory	76	94	86	76	85	84	80	82	98	98
Queensland	2,624	2,633	2,401	2,522	2,269	2,526	2,346	2,329	2,401	2,243
South Australia	1,316	1,147	1,228	1,039	1,187	1,076	1,078	1,110	1,031	989
Tasmania	377	376	329	375	345	365	365	354	316	351
Victoria	3,204	3,050	2,980	2,820	2,918	2,923	2,966	2,773	2,808	2,449
Western Australia	1,064	1,077	1,067	1,086	1,122	1,058	1,097	1,071	1,007	1,014
All men and boys	13,534	13,151	12,431	12,284	12,273	12,546	12,095	11,721	11,741	10,907
Women and girls										
Australian Capital Territory	96	79	83	92	94	100	110	95	97	99
New South Wales	4,162	4,086	3,830	3,753	3,688	3,893	3,485	3,381	3,347	3,001
Northern Territory	37	49	31	40	27	19	32	29	32	37
Queensland	2,226	2,271	2,139	2,176	1,991	2,272	1,997	1,996	1,935	1,914
South Australia	1,155	1,036	1,013	964	968	1,009	1,007	965	925	875
Tasmania	371	291	333	319	335	330	269	311	236	263
Victoria	2,963	2,740	2,799	2,695	2,711	2,745	2,727	2,432	2,390	2,207
Western Australia	895	872	909	808	867	899	864	789	819	742
All women and girls	11,905	11,424	11,137	10,847	10,681	11,267	10,491	9,998	9,781	9,138

Source: Australian Bureau of Statistics, 3303.0 – Causes of Death, Australia, 2012

Notes: Total deaths. State or territory of usual residence, regardless of where death occurred

Mortality rates per 100,000 population

Table 1.6a Age-specific death rates from cardiovascular diseases, Australia, by sex and age, 2002 to 2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
0–34	3.6	4.1	3.5		3.1	3.4	3.7	3.6	3.4	2.9
35–44	27.1	26.4	26.7		25.0	24.6	25.0	23.7	23.1	22.8
45–54	82.6	77.2	74.6		66.6	72.6	69.6	68.6	65.7	63.4
55–64	223.5	205.7	198.8		166.3	176.0	170.3	161.7	156.2	162.3
65–74	717.3	650.1	617.8		484.1	488.7	485.9	448.5	427.1	401.1
75+	3,357.5	3,203.5	3,077.6		2,770.6	2,810.0	2,837.4	2,646.2	2,534.2	2,497.7
Men and boys <75 years	93.0	86.0	82.5		67.9	70.2	69.1	65.1	62.3	60.4
All men and boys	297.3	280.4	270.5		235.8	234.1	232.6	215.1	203.3	197.2
Women and girls										
0–34	1.7	2.2	2.1		2.3	2.4	2.1	1.9	1.9	2.1
35–44	10.5	10.7	10.2		8.4	10.3	10.1	10.2	9.8	8.2
45–54	26.0	26.8	26.5		24.5	24.5	23.5	22.8	24.1	26.1
55–64	83.3	73.7	67.9		56.8	60.8	64.0	58.5	59.9	51.5
65–74	351.3	325.8	294.6		241.7	248.1	250.1	215.8	209.8	194.3
75+	3,199.5	3,027.5	2,932.0		2,711.5	2,788.1	2,874.9	2,669.0	2,578.0	2,534.0
Women and girls <75 years	40.1	37.9	35.0		29.7	30.9	31.0	27.8	27.6	25.8
All women and girls	208.2	196.3	188.2		168.9	169.2	171.4	155.9	149.1	143.4

Source: World Health Organization, WHO Mortality Database, [www.who.int/healthinfo/mortality\\_data/en/](http://www.who.int/healthinfo/mortality_data/en/)  
Notes: Death rate per 100,000 population. Rates within age groups are age-specific (not age-standardised). Premature and total death rates are age standardised to the 2001 Estimated Resident Population of Australia. Blank cells indicate data were not available.

Table 1.6b Age-specific death rates from ischaemic heart disease, Australia, by sex and age, 2002 to 2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
0–34	1.1	1.3	1.0		1.1	0.9	1.0	1.2	0.8	0.9
35–44	16.0	15.7	16.1		14.4	14.3	14.7	14.6	12.2	12.5
45–54	56.2	53.0	51.9		44.8	47.2	44.4	44.2	43.0	41.5
55–64	153.7	142.0	138.1		110.3	114.7	112.8	104.7	100.1	104.0
65–74	450.4	409.4	392.9		292.8	300.4	291.3	269.2	244.6	233.5
75+	1,813.8	1,737.7	1,647.8		1,486.4	1,456.1	1,468.9	1,377.2	1,312.0	1,265.2
Men and boys <75 years	59.6	55.2	53.5		42.1	43.4	42.2	39.8	36.7	36.1
All men and boys	168.8	159.6	153.1		131.7	127.7	126.3	117.5	109.6	105.1
Women and girls										
0–34	0.3	0.3	0.4		0.3	0.2	0.3	0.2	0.2	0.3
35–44	3.6	3.0	4.2		2.3	2.8	3.1	3.4	2.6	2.2
45–54	11.0	11.7	10.5		8.4	8.7	10.8	8.9	9.5	9.4
55–64	42.7	36.9	31.8		26.1	27.6	28.2	26.6	26.1	23.7
65–74	183.1	158.6	144.9		113.5	111.6	117.8	100.2	86.7	81.2
75+	1,468.0	1,418.8	1,355.3		1,219.8	1,212.8	1,253.9	1,156.8	1,086.3	1,046.4
Women and girls <75 years	19.9	17.6	16.2		12.7	12.8	13.7	12.0	10.9	10.3
All women and girls	97.1	92.1	87.1		75.4	73.0	74.8	67.5	62.2	58.7

Source: World Health Organization, WHO Mortality Database, [www.who.int/healthinfo/mortality\\_data/en/](http://www.who.int/healthinfo/mortality_data/en/)  
Notes: Death rate per 100,000 population. Rates within age groups are age-specific (not age-standardised). Premature and total death rates are age standardised to the 2001 Estimated Resident Population of Australia. Blank cells indicate data were not available.

Table 1.6c Age-specific death rates from stroke, Australia, by sex and age, 2002 to 2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
0–34	0.7	0.6	0.6		0.5	0.4	0.8	0.6	0.6	0.4
35–44	3.6	2.9	3.4		3.1	2.8	3.7	2.7	3.2	2.7
45–54	10.5	9.1	9.0		9.1	9.7	8.7	10.1	6.6	7.5
55–64	28.8	26.8	22.3		22.3	22.3	21.2	21.3	19.3	21.4
65–74	122.2	110.3	105.9		85.0	81.8	85.1	77.8	76.4	68.6
75+	799.7	766.4	748.2		642.3	645.0	656.0	605.7	568.5	567.8
All men and boys <75 years	14.3	12.9	12.3		10.7	10.4	10.7	10.2	9.4	9.1
All men and boys	63.7	60.1	58.7		49.8	48.5	48.9	44.8	41.3	40.4
Women and girls										
0–34	0.4	0.5	0.5		0.6	0.7	0.5	0.5	0.4	0.4
35–44	3.8	3.2	2.7		2.3	2.6	3.4	1.6	3.4	1.9
45–54	6.8	7.8	7.9		8.4	7.2	5.8	6.4	7.3	8.0
55–64	16.4	16.6	15.7		14.3	15.1	16.1	15.3	13.9	12.6
65–74	81.5	84.3	74.6		63.3	63.2	59.3	51.9	56.7	49.2
75+	949.1	897.9	875.1		795.8	798.9	822.8	751.7	750.3	739.2
All women and girls <75 years	9.4	9.7	8.9		8.0	8.0	7.7	6.8	7.4	6.6
All women and girls	59.3	56.6	54.6		49.0	47.7	48.0	43.0	42.8	41.1

Source: World Health Organization, WHO Mortality Database, [http://www.who.int/healthinfo/mortality\\_data/en/](http://www.who.int/healthinfo/mortality_data/en/)  
Notes: Death rate per 100,000 population. Rates within age groups are age-specific (not age-standardised). Premature and total death rates are age standardised to the 2001 Estimated Resident Population of Australia. Blank cells indicate data were not available.

Figure 1.6a Trends in age-standardised death rates from cardiovascular diseases, all ages, men and boys, 2002 to 2011

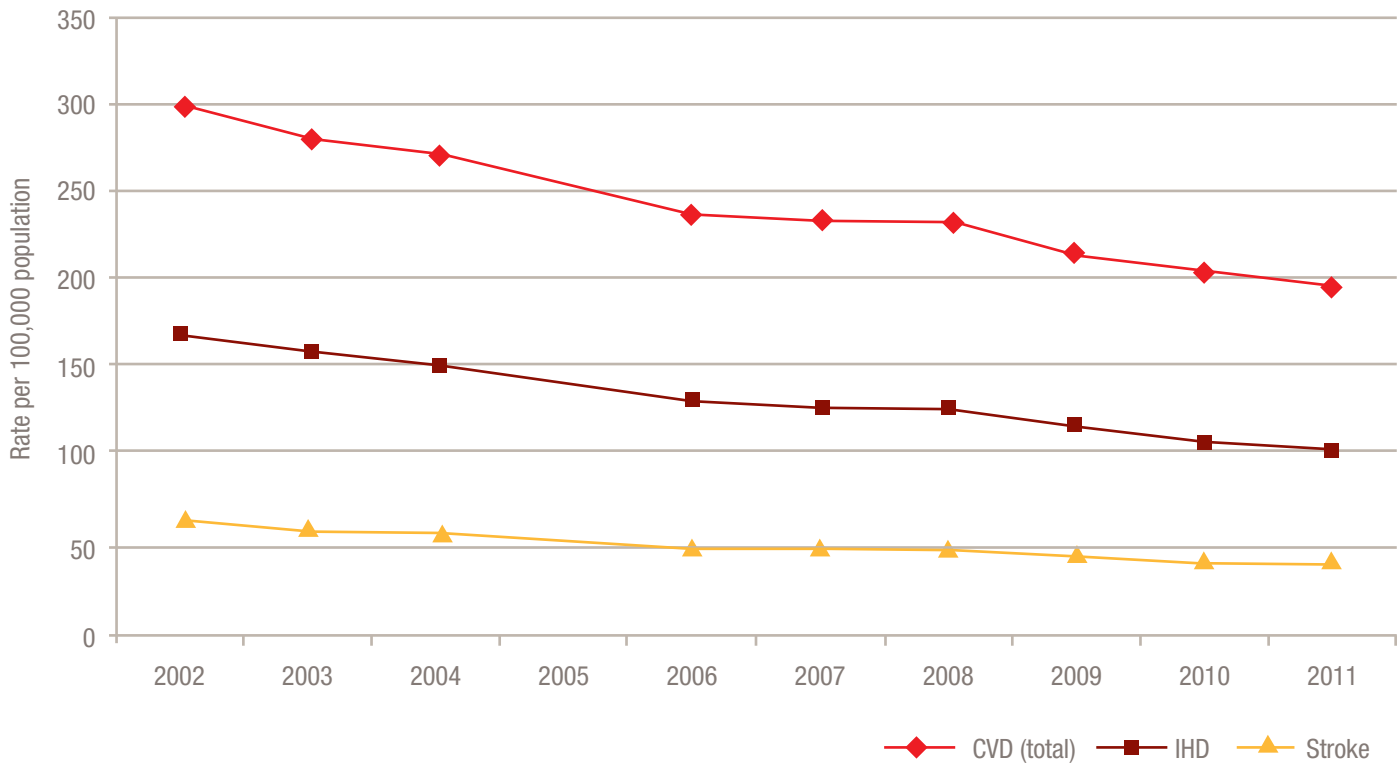


Figure 1.6b Trends in age-standardised death rates from cardiovascular diseases, all ages, women and girls, 2002 to 2011

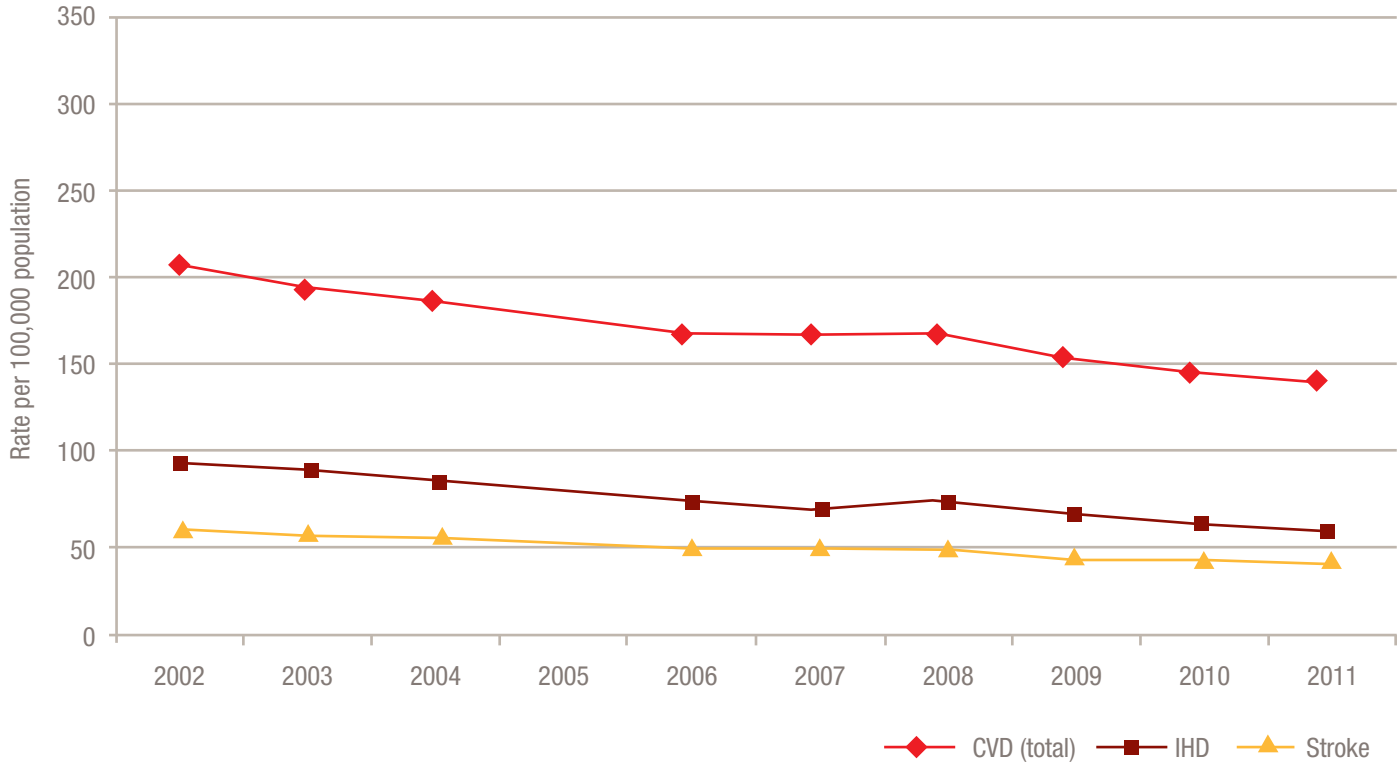




Figure 1.6c Trends in age-standardised premature death rates from cardiovascular diseases, men and boys, 2002 to 2011

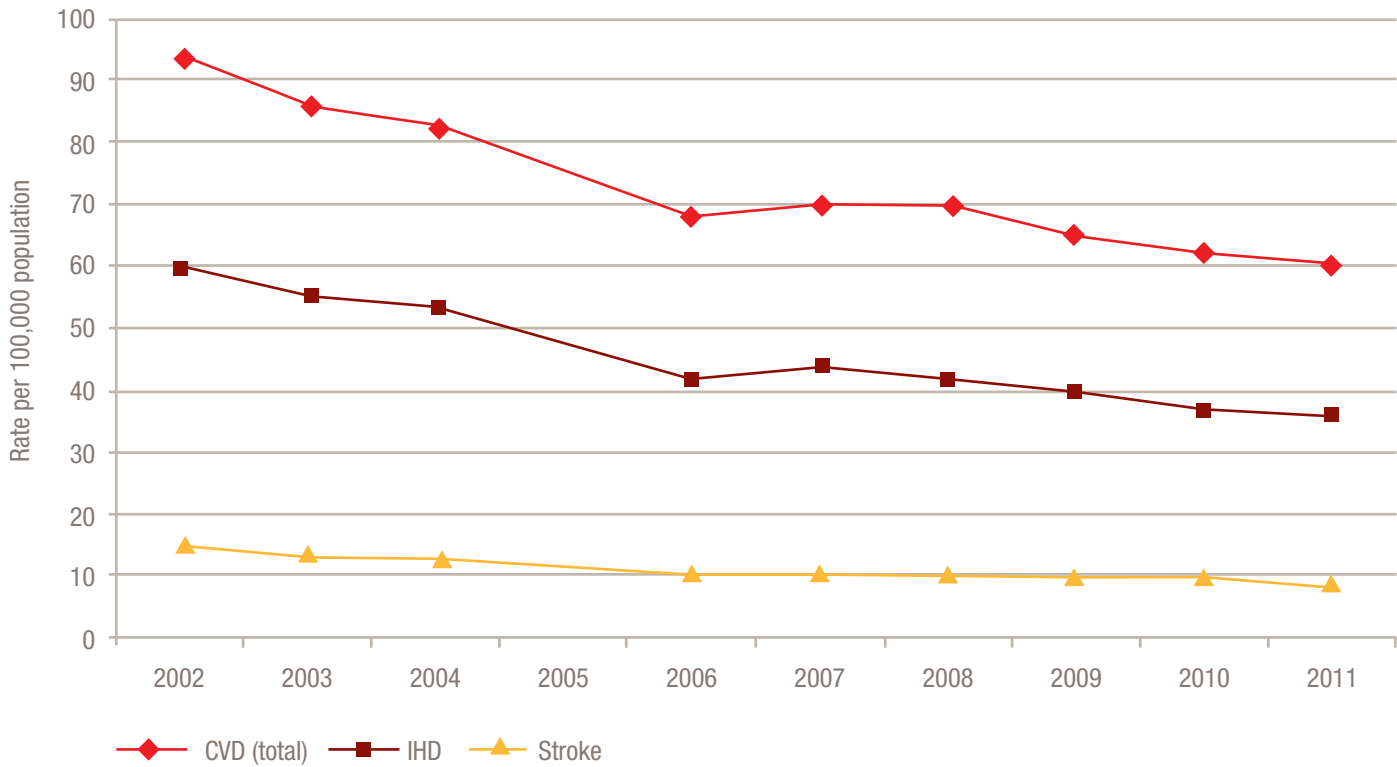


Figure 1.6d Trends in age-standardised premature death rates from cardiovascular diseases, women and girls, 2002 to 2011

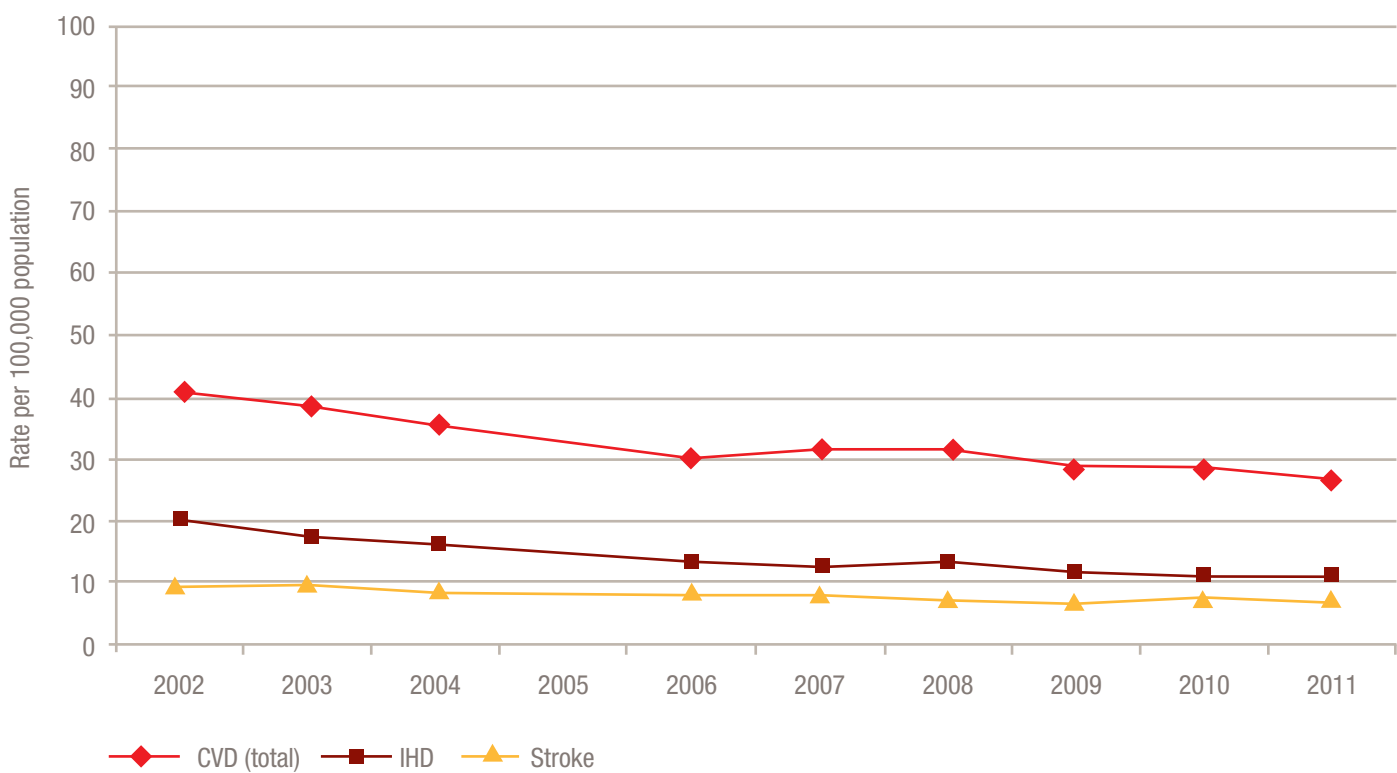


Table 1.7 Death rates from ischaemic heart disease, by sex and state or territory, all ages, 2012

	Men and boys	Women and girls	Total
State or territory			
Australian Capital Territory	86.9	47.4	65.1
New South Wales	94.3	51.5	70.8
Northern Territory	134.6	65.7	102.1
Queensland	106.0	63.8	83.7
South Australia	101.8	54.8	76.3
Tasmania	118.5	62.3	88.1
Victoria	85.4	49.5	65.9
Western Australia	95.5	48.5	70.1

Source: Australian Bureau of Statistics, 3303.0 – Causes of Death, Australia, 2012  
Notes: Standardised Death Rates (SDR) are directly age-standardised rates per 100,000 of estimated mid-year population.

Figure 1.7 Age-standardised death rates from ischaemic heart disease, by sex and state or territory, 2012

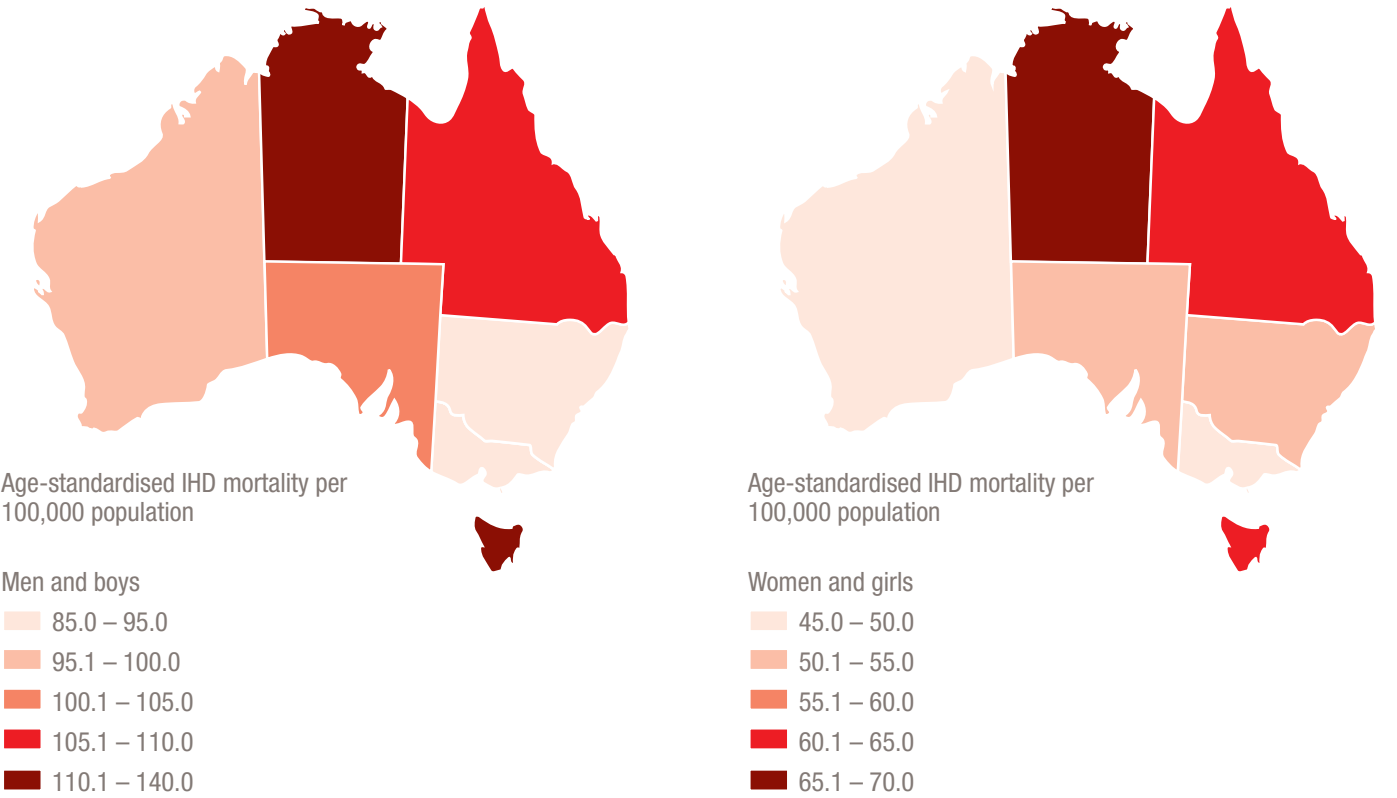


Table 1.8 Deaths and standardised death rates from ischaemic heart disease, by Indigenous status, sex and state or territory (NSW, NT, QLD, SA, WA), 2008 to 2012 (pooled)

Deaths			SDR	
	Aboriginal and Torres Strait Islander	Non-Indigenous	Aboriginal and Torres Strait Islander	Non-Indigenous
Men and boys				
New South Wales	276	19,443	194.0	109.2
Northern Territory	209	229	291.0	96.1
Queensland	296	11,232	240.0	112.4
South Australia	60	5,196	183.3	115.0
Western Australia	201	4,969	266.7	100.2
Women and girls				
New South Wales	191	16,800	126.8	71.3
Northern Territory	82	67	95.9	42.8
Queensland	159	9,748	137.5	80.0
South Australia	40	4,719	115.3	75.9
Western Australia	115	3,980	145.8	66.1

Source: Australian Bureau of Statistics, 3303.0 – Causes of Death, Australia, 2012

Notes: Total deaths and Standardised Death Rate (SDR) per 100,000 of estimated mid-year population are presented. Data are available only for states or territories with large enough populations who identify as Aboriginal or Torres Strait Islander. Data are presented in a 5-year grouping to minimise volatility due to small numbers.

International comparisons

Table 1.9a International comparison of total ischaemic heart disease deaths, by sex, 2002 to 2011, selected countries

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
Australia	13,768	13,440	13,130		11,620	12,275	12,546	12,096	11,720	11,733
France	24,256	23,930	23,122	22,985	22,012	21,719	21,525	20,896	20,452	
Germany	77,395	77,123	73,296	72,003	70,378	69,147	66,556	67,938	67,403	64,811
Japan	39,138	40,080	39,014	41,970	41,296	41,023	42,156	41,795	42,750	43,612
New Zealand	3,333	3,243	3,368	3,057	3,134	3,015	2,960	3,039		
UK	64,678	62,565	58,785	56,337	52,804	51,568	49,652	47,306	46,592	
USA	252,760	246,342	233,538	232,115	224,516	216,080	216,248	210,175	207,700	
Women and girls										
Australia	12,116	11,855	11,419		10,320	10,681	11,267	10,491	9,998	9,780
France	19,321	19,469	17,535	17,612	16,794	16,428	16,219	15,804	15,079	
Germany	87,406	86,322	79,363	76,638	73,811	71,241	68,266	67,475	65,723	62,290
Japan	32,399	33,273	32,271	34,533	34,133	34,117	34,426	33,686	34,467	34,229
New Zealand	2,954	2,953	2,949	2,750	2,777	2,619	2,594	2,515		
UK	53,104	51,563	47,357	44,876	41,872	40,163	38,575	35,425	33,976	
USA	241,622	233,686	217,788	213,572	200,918	190,309	189,061	176,290	172,009	

Source: World Health Organization, WHO Mortality Database, www.who.int/healthinfo/mortality\_data/en/

Notes: Total deaths. Blank cells indicate data were not available.

Table 1.9b International comparison of age-standardised ischaemic heart disease death rates, by sex, 2002 to 2011, selected countries

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
Australia	168.8	159.6	153.1		131.7	127.7	126.3	117.5	109.6	105.1
France	84.5	82.1	77.6	74.8	69.2	66.1	63.7	60.0	57.1	
Germany	203.4	199.0	183.5	174.0	163.5	154.9	144.4	142.8	136.5	126.9
Japan	56.3	55.9	52.6	54.5	52.0	49.9	49.7	47.8	47.5	47.2
New Zealand	218.9	208.1	212.0	185.8	184.7	168.9	160.0	159.5		
UK	217.7	208.1	192.5	180.4	165.3	157.7	148.6	138.5	133.0	
USA	214.4	204.3	188.9	182.3	171.9	163.5				
Women and girls										
Australia	97.1	92.1	87.1		75.4	73.0	74.8	67.5	62.2	58.7
France	37.1	37.2	33.1	32.1	29.2	27.4	26.2	24.6	22.8	
Germany	117.0	116.2	106.1	99.7	93.1	87.3	81.5	78.6	75.0	69.3
Japan	28.7	28.3	26.4	26.8	25.6	24.5	23.8	22.4	22.1	21.3
New Zealand	126.6	123.1	120.8	109.7	106.8	98.4	93.6	88.9		
UK	110.0	106.1	96.9	90.4	83.0	78.0	74.0	66.9	63.2	
USA	126.1	120.0	110.1	105.4	97.4	91.0				

Source: World Health Organization, WHO Mortality Database, http://www.who.int/healthinfo/mortality\_data/en/

Notes: Total deaths per 100,000 people. Standardised to Australian Estimated Resident Population 2001. Blank cells indicate data were not available.

Table 1.9c International comparison of ischaemic heart disease as a proportion of all deaths, by sex, 2002 to 2011, selected countries

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men and boys										
Australia	20.0	19.8	19.2		17.8	17.4	17.1	16.7	15.9	15.6
France	8.9	8.6	8.8	8.5	8.3	8.1	7.9	7.6	7.4	
Germany	19.9	19.5	19.1	18.5	18.2	17.7	16.7	16.8	16.5	15.9
Japan	7.3	7.3	7.0	7.2	7.1	6.9	6.9	6.9	6.7	6.6
New Zealand	23.5	23.1	23.7	22.7	22.4	21.0	20.3	20.8		
UK	22.4	21.6	21.1	20.3	19.3	18.8	17.9	17.5	17.2	
USA	21.1	20.5	19.8	19.2	18.7	17.9	17.6	17.3	16.8	
Women and girls										
Australia	18.8	18.6	17.8		16.6	15.9	16.0	15.3	14.3	13.7
France	7.4	7.1	7.1	6.9	6.7	6.5	6.2	6.0	5.7	
Germany	19.3	18.9	18.2	17.4	16.9	16.3	15.3	15.0	14.6	14.0
Japan	7.2	7.2	6.8	6.9	6.8	6.6	6.5	6.3	6.1	5.7
New Zealand	20.9	21.1	20.4	20.2	19.3	18.4	17.6	17.2		
UK	16.6	16.0	15.5	14.7	14.0	13.4	12.7	12.3	11.7	
USA	19.4	18.8	17.9	17.2	16.4	15.6	15.2	14.5	13.9	

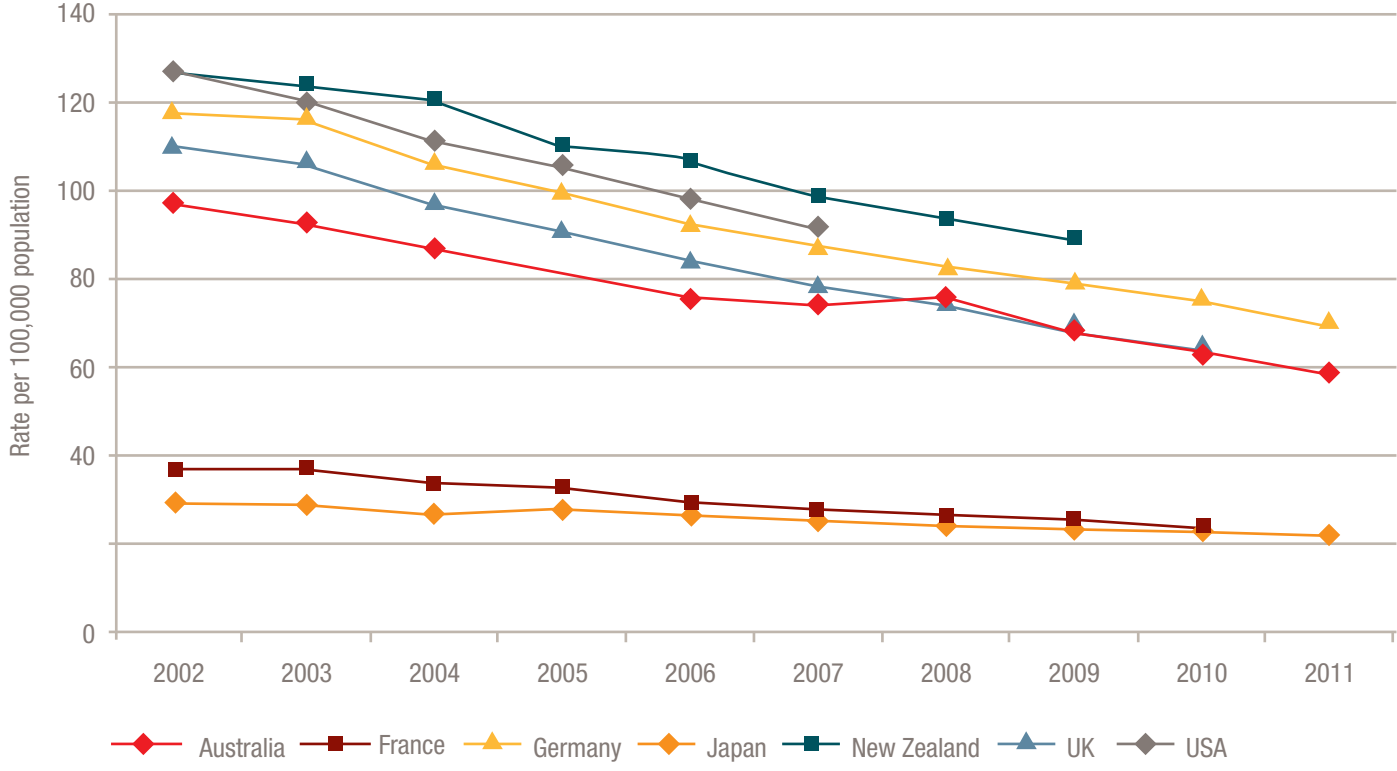
Source: World Health Organization, WHO Mortality Database, www.who.int/healthinfo/mortality\_data/en/

Notes: Proportion of deaths. Blank cells indicate data were not available.

Figure 1.9a Trends in age-standardised death rates from ischaemic heart disease, men and boys, selected countries, 2002 to 2011



Figure 1.9b Trends in age-standardised death rates from ischaemic heart disease, women and girls, selected countries, 2002 to 2011



# Part A | Chapter 2

## Morbidity

### Key facts

- Of all Australians aged 2 years and over, 5% report living with heart, stroke or vascular disease. Among those aged 85 years and over, this increases to two in every five people (40%).
- Total hospital separations due to all cardiovascular diseases increased by approximately 23% between 1998–1999 and 2011–2012, while hospitalisation for ischaemic heart disease was relatively stable.

### Introduction

Heart disease creates a significant burden on both the health system and society in Australia and worldwide. Mortality statistics alone are inadequate to understand the impact of heart disease. This is because many people may live with heart disease for extended periods, which has a significant impact on quality of life for them and those around them, and creates significant demands on the health system.

The 2010 Global Burden of Disease study showed that ischaemic heart disease (IHD) contributed 7.8% of the total burden of disability-adjusted life years lost (DALYs) in Australia, the largest of any single specific condition.<sup>9</sup> DALYs provide an indication of the impact of a condition on both premature mortality and years lived with disability. One DALY can be thought of as one lost year of ‘healthy’ life. DALYs for a specific disease are calculated by adding the total number of years of life lost due to premature mortality in the population and the years lost due to disability for people affected by the disease.<sup>10</sup> There is cause for optimism, however, as the proportion of the total burden of DALYs in Australia that is contributed by IHD has decreased substantially since 1990 and 2000, when it was 12.2% and 9.0%, respectively.<sup>9</sup>

Morbidity from heart disease may be described in a number of ways, including prevalence and incidence of heart diseases and case-fatality rates. Data sources available in Australia that provide insight into heart disease morbidity include hospital separation statistics,<sup>†</sup> and self-reported histories of heart attack and angina<sup>‡</sup> from surveys. In Australia, as in many countries, limited data are available on the community-based incidence and prevalence of heart disease, and there is no registry.

### Key facts

- Of all Australians aged 2 years and over, 5% report living with heart, stroke or vascular disease. Among those aged 85 years and over, this increases to two in every five people (40%).
- Three to four times more 30–64-year-old men than women reported experiencing a heart attack in the last five years. Twice as many men as women reported a history of angina within the last five years.
- Variation in the prevalence of heart, stroke and vascular disease by state is relatively small, with rates ranging from just under 4% in Victoria and Western Australia to over 5% in Queensland and the ACT in 2011–2012.
- Total hospital separations due to all cardiovascular diseases increased by approximately 23% between 1998–1999 and 2011–2012, while hospitalisation for ischaemic heart disease was relatively stable.
- Case-fatality rates after acute myocardial infarction in Australia have steadily declined since 2000, and are now among the lowest in the OECD countries.

<sup>†</sup> A ‘hospital separation’ is defined by the Australian Institute of Health and Welfare as the completion of an episode of care in hospital for an admitted patient because the patient was discharged, died or was transferred to another hospital, or if their type of care is changed.

<sup>‡</sup> A heart attack happens when there is a sudden blockage to an artery that supplies blood to a part of the heart. Angina is chest pain or discomfort caused by insufficient blood flow and oxygen to the heart muscle.



Tables and figures

Prevalence of heart disease

Table 2.1 Prevalence of self-reported heart, stroke and vascular disease, by age and sex, 2011–2012

	Men	Women	Persons
Age group			
35–44	1.7	1.6	1.6
45–54	4.6	3.2	3.9
55–64	10.2	7.5	8.8
65–74	20.1	14.0	17.0
75–84	29.6	23.3	26.1
85+	47.1	34.3	39.6
All persons (age 2+)	5.5	4.5	5.0

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. Estimates for people under 35 years were either too small for publication or had relative standard error >50%, but are included in totals. ‘All persons’ includes all people over 2 years.

Table 2.2 Prevalence of specific self-reported cardiovascular conditions, by age, 2011–2012

	Angina	Heart attack and other ischaemic heart diseases	Total ischaemic heart diseases	Stroke and other cerebrovascular diseases	Oedema and heart failure	Diseases of arteries, arterioles and capillaries
Age group						
35–44	0.2 <sup>a</sup>	0.5	0.6	*0.4	*0.5	*0.3
45–54	0.8	1.3	1.8	1.1	1.0	0.5
55–64	2.0	3.5	4.8	1.8	2.5	1.4
65–74	4.6	6.9	9.7	4.3	3.9	3.1
75–84	7.8	8.9	14.3	6.4	8.0	4.4
85+	14.5	15.1	26.1	7.6	12.2	9.5
All persons (age 2+)	1.3	1.8	2.7	1.2	1.4	0.9

\* Estimate has a relative standard error of 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. Estimates for people under 35 years were either too small for publication or had relative standard error >50%, but are included in totals. ‘All persons’ includes all people over 2 years. As people can report having more than one type of heart, stroke or vascular condition, summing the types of heart, stroke and vascular disease will result in a higher total than the number of people with any heart, stroke or vascular condition reported in Table 2.1.

Trends in heart disease morbidity and hospitalisation

Table 2.3 Age-standardised prevalence of self-reported heart, stroke and vascular disease, by state or territory, 2001 to 2011–2012

	2001	2004–2005	2007–2008	2011–2012
State or territory				
Australian Capital Territory	3.8	4.3	4.9	5.7
New South Wales	4.0	3.8	4.5	4.6
Northern Territory				4.2
Queensland	4.8	4.2	5.8	5.2
South Australia	4.5	3.8	5.2	4.4
Tasmania	5.4	5.1	6.9	5.3
Victoria	4.2	3.4	5.3	3.8
Western Australia	3.8	3.6	4.4	3.9
Australia	4.4	3.9	5.2	4.7

Source: Australian Bureau of Statistics, 4364.0.55.001 – Australian Health Survey: First Results, 2011–2012

Notes: Proportion of people. Proportions age-standardised to 2001 Australian Estimated Resident Population. Data from National Health Surveys 2001, 2004–2005 and 2007–2008, and Australian Health Survey 2011–2012, as presented in the 2011–2012 data package. Blank cells indicate data were not available.

Figure 2.3 Trends in age-standardised prevalence of heart, stroke and vascular disease, by state or territory, 2001 to 2011–2012

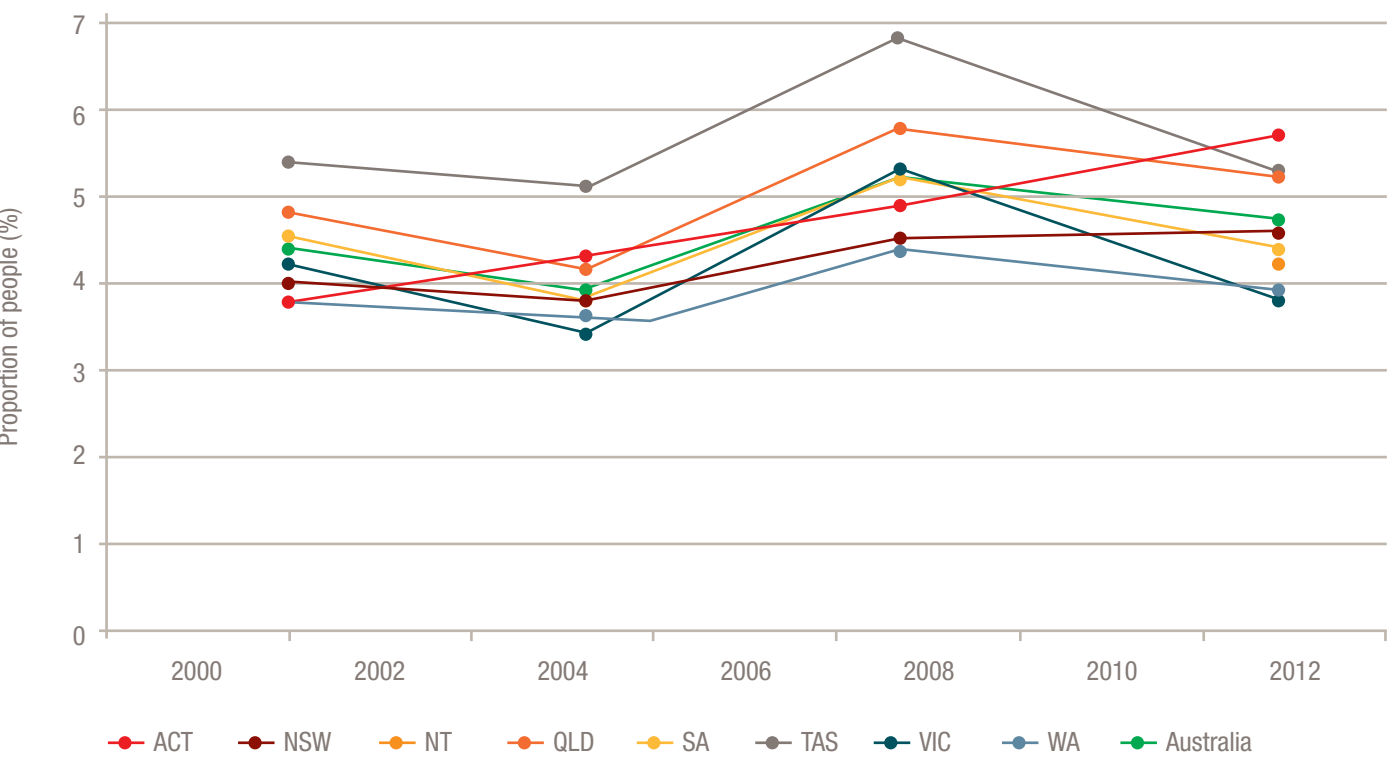




Table 2.4 Incidence of heart attacks (acute myocardial infarction), by sex and age, 2007 to 2011

	2007	2008	2009	2010	2011
Men					
25–34	22.3	18.8	18.4	17.3	15.8
35–44	149.3	142.0	140.4	131.5	125.7
45–54	492.7	457.1	438.5	437.3	416.8
55–64	979.0	907.6	882.3	823.6	784.4
65–74	1,650.8	1,556.2	1,399.8	1,325.5	1,264.7
75–84	2,710.5	2,519.7	2,334.5	2,225.0	2,127.3
85+	4,586.1	4,408.5	4,104.6	3,980.0	3,834.8
All men	729.0	682.7	639.9	611.4	584.0
Women					
25–34	6.4	5.3	5.1	5.2	6.4
35–44	44.1	40.9	46.3	43.3	40.6
45–54	148.1	144.0	139.6	139.9	134.3
55–64	350.7	314.1	296.9	283.6	274.0
65–74	785.8	721.0	641.1	620.5	578.3
75–84	1,683.5	1,599.7	1,442.7	1,395.3	1,287.7
85+	3,475.5	3,402.9	3,102.1	2,943.8	2,900.5
All women	358.2	337.4	310.2	299.2	283.8
Persons					
25–34	14.4	12.1	11.8	11.3	11.1
35–44	96.3	91.1	93.0	87.0	82.8
45–54	319.0	299.2	287.8	287.3	274.2
55–64	664.7	610.4	588.7	552.4	527.7
65–74	1,209.3	1,130.7	1,014.1	968.0	917.7
75–84	2,135.1	2,006.3	1,838.7	1,765.3	1,663.8
85+	3,840.9	3,737.6	3,439.7	3,296.5	3,222.4
All persons	534.2	501.7	467.2	447.8	427.0

Source: Australian Institute of Health and Welfare (AIHW) 2014. Acute coronary syndrome: validation of the method used to monitor incidence in Australia. A working paper using linked hospitalisation and deaths data from Western Australia and New South Wales. CVD 68. Canberra: AIHW.

Notes: Rate per 100,000 population. People aged 25 years and over. Totals for each sex are age-standardised to the 2001 Australian standard population. This table is based on the AIHW (2014) report, which used the following sources: AIHW National Hospital Morbidity Database; AIHW National Mortality Database; ABS (2012) Australian Demographic Statistics, September 2011, ABS cat. No. 3101.0; ABS (2013) Australian Demographic Statistics, December 2012, ABS cat. no. 3101.0.

Figure 2.4 Age-standardised incidence of heart attack (acute myocardial infarction), by sex, 2007 to 2011

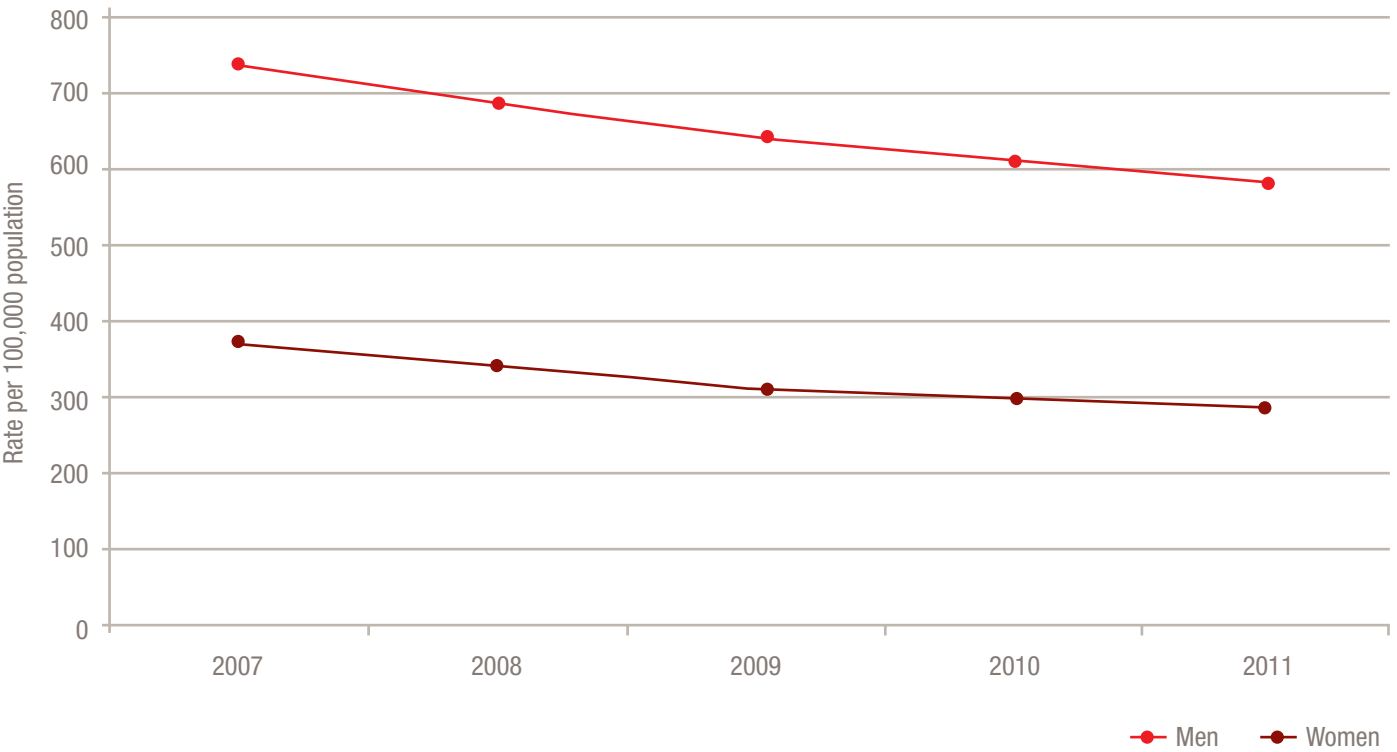


Table 2.5 History of angina in the last 5 years, by sex and age, 2009 to 2013

	2009	2010	2011	2012	2013
Men					
30–39	2.24	1.94	2.64	2.20	3.19
40–49	4.56	3.58	2.95	3.08	3.07
50–59	5.91	4.92	5.22	4.94	6.22
60–65	8.76	9.59	6.14	7.72	6.88
All men	4.87	4.43	4.02	4.10	4.75
Women					
30–39	0.34	1.03	1.02	1.52	1.60
40–49	1.17	2.06	1.29	1.88	1.53
50–59	3.80	2.57	2.57	2.87	1.88
60–65	7.66	4.29	3.15	4.28	4.16
All women	2.40	2.16	1.79	2.35	2.04
Persons					
30–39	1.21	1.45	1.76	1.83	2.28
40–49	2.98	2.79	2.02	2.46	2.30
50–59	4.82	3.78	3.85	3.86	4.07
60–65	8.26	7.13	4.75	6.15	5.61
All persons	3.64	3.28	2.84	3.19	3.36

Source: National Heart Foundation of Australia, HeartWatch survey, 2009–2013

Notes: Proportion of persons. Survey included adults aged 30–65 years. Data presented are for self-reported recall of an angina attack during the last 5 years.

Figure 2.5 History of angina in the last 5 years, by sex, 2009 to 2013

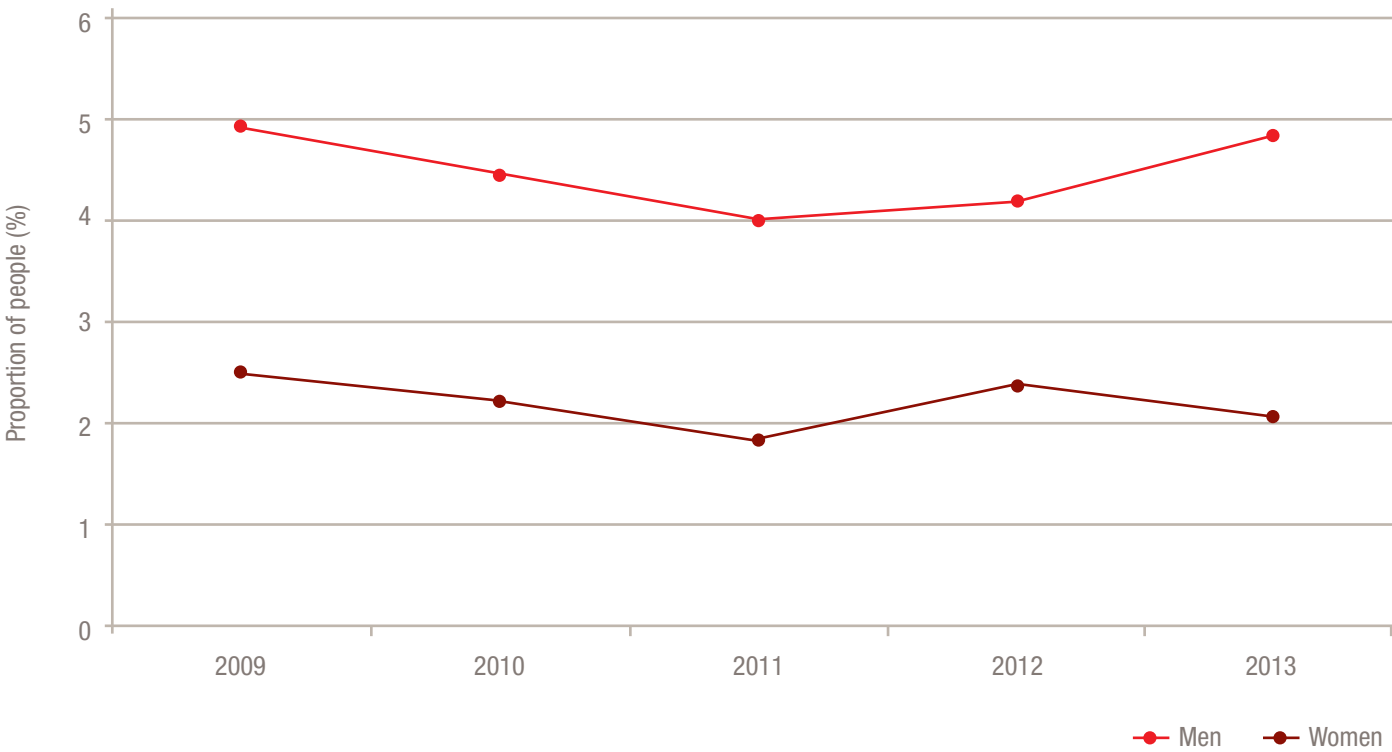


Table 2.6 History of heart attack in the last 5 years, by age and sex, 2009 to 2013

	2009	2010	2011	2012	2013
Men					
30–39	1.23	1.29	1.84	1.76	2.30
40–49	1.87	1.77	2.25	1.98	1.89
50–59	3.27	3.39	3.20	3.93	3.93
60–65	6.77	7.15	5.63	6.72	5.17
All men	2.75	2.91	2.95	3.22	3.20
Women					
30–39	0.34	0.36	0.52	0.51	0.68
40–49	0.19	0.82	0.41	1.04	0.83
50–59	0.95	1.12	1.04	0.94	1.66
60–65	1.91	2.92	1.45	1.68	1.31
All women	0.66	1.02	0.74	0.93	1.10
Persons					
30–39	0.75	0.79	1.12	1.08	1.37
40–49	1.09	1.28	1.22	1.49	1.36
50–59	2.07	2.28	2.08	2.36	2.80
60–65	4.57	5.18	3.68	4.41	3.37
All persons	1.70	1.95	1.78	2.03	2.13

Source: National Heart Foundation of Australia, HeartWatch survey, 2009 to 2013

Notes: Proportion of people. Survey included adults aged 30 to 65 years. Data presented are for self-reported recall of heart attack during the last 5 years.

Figure 2.6 History of heart attack in the last 5 years, by sex, 2009 to 2013

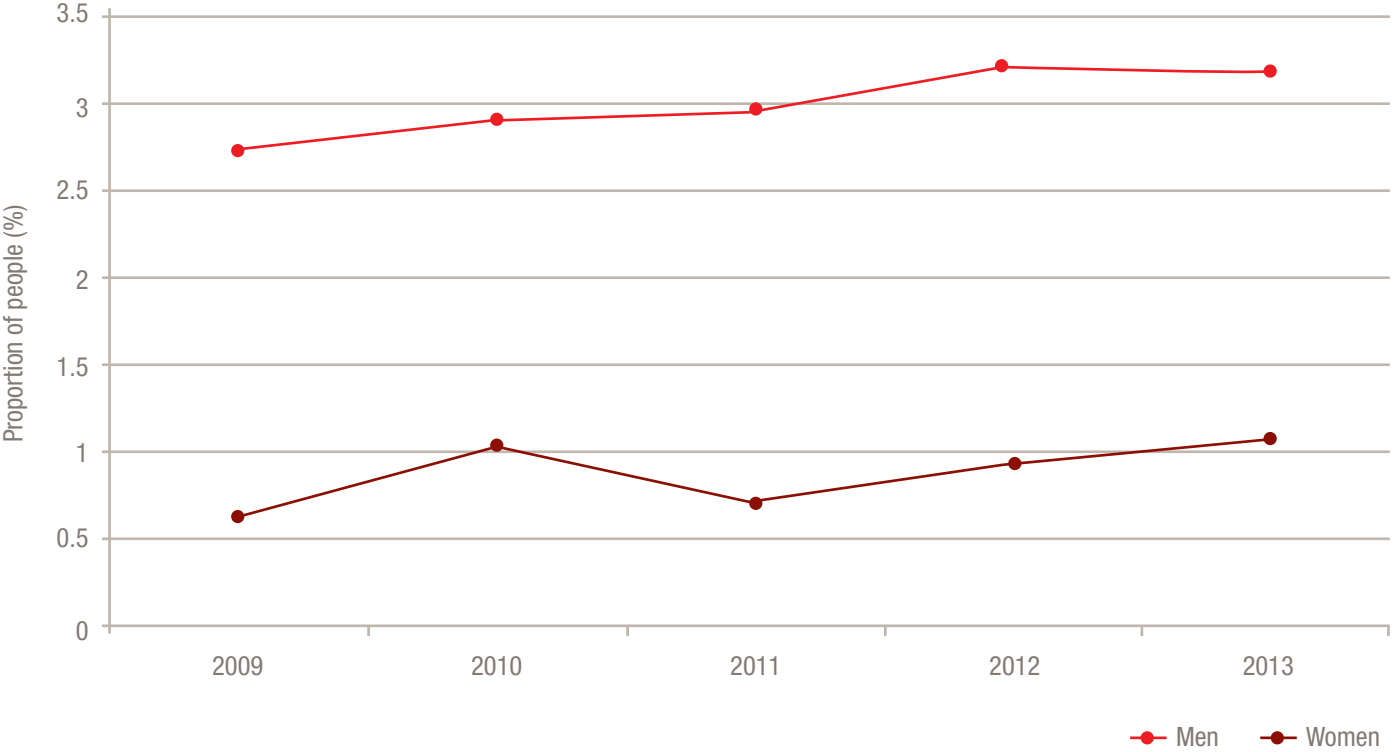


Table 2.7 Number of hospital separations for cardiovascular diseases, by sex and age, 2011–2012

	Acute rheumatic fever	Chronic rheumatic disease	Hypertensive disease	Ischaemic heart disease	Diseases of pulmonary circulation	Other forms of heart disease	Cerebrovascular disease	Diseases of arteries, arterioles and capillaries	Other diseases of cardiovascular system
Men and boys									
0–10	40	7	32	3	13	421	77	44	971
10–14	85	19	29	0	7	263	46	22	571
15–24	45	31	50	59	94	1,482	132	103	1,636
25–34	15	29	133	533	239	2,163	263	180	3,837
35–44	10	45	301	4,037	452	4,302	813	453	7,258
45–54	2	69	517	13,626	781	8,387	2,043	1,344	9,748
55–64	2	176	772	26,115	1,185	16,337	3,701	3,765	9,993
65–74	1	274	726	29,623	1,445	22,652	5,747	6,780	7,929
75–84	1	270	631	21,799	1,174	24,571	6,404	6,836	5,317
85+	0	72	307	7,326	388	12,833	3,575	2,740	2,406
All men and boys	201	992	3,498	103,121	5,778	93,411	22,801	22,267	49,666
Women and girls									
0–10	32	9	38	1	24	289	73	44	671
10–14	47	17	13	0	4	163	35	12	471
15–24	34	41	56	10	203	916	131	91	1,567
25–34	19	91	111	165	480	1,422	306	228	3,804
35–44	7	100	258	1,385	729	2,359	813	466	7,580
45–54	3	138	495	4,835	776	4,276	1,693	820	9,281
55–64	8	243	675	8,782	1,127	8,666	2,340	1,402	9,405
65–74	3	337	1,182	12,689	1,472	14,781	3,573	2,701	7,677
75–84	5	359	1,753	14,418	1,639	22,443	5,991	3,988	5,699
85+	1	102	1,247	8,296	738	18,491	5,810	2,738	3,656
All women and girls	159	1,437	5,828	50,581	7,192	73,806	20,765	12,490	49,811

Source: Australian Institute of Health and Welfare, National Hospital Morbidity Database, Principal diagnosis data cubes

Notes: Number of separations. AIHW defines a hospital separation as the completion of an episode of care for an admitted patient due to the patient being discharged, dying, transferring to another hospital or changing the type of care. These data have not been standardised to population size or age distribution. The following ICD-10 codes were used: acute rheumatic fever (100-102); chronic rheumatic heart disease (105-109); hypertensive diseases (110-115); ischaemic heart diseases (20-25); diseases of pulmonary circulation, including pulmonary heart disease (26-28); other forms of heart disease (30-52); cerebrovascular diseases (60-69); diseases of arteries, arterioles and capillaries (70-79); other diseases of the cardiovascular system, including diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (80-89 and I95-I99).

Table 2.8 Number of hospital separations for cardiovascular diseases, by sex, 1998–1999 to 2011–2012

	1998–1999	1999–2000	2000–2001	2001–2002	2002–2003	2003–2004	2004–2005	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012
Men and boys														
Acute rheumatic fever	92	94	110	111	103	84	108	137	131	122	110	119	197	201
Chronic rheumatic heart disease	674	733	709	782	813	831	897	840	923	1,065	963	961	1,008	992
Hypertensive disease	2,938	2,917	2,680	2,636	2,720	2,840	2,670	2,689	2,838	2,829	2,587	2,699	3,186	3,498
Ischaemic heart disease	102,929	103,300	103,048	103,390	105,417	107,349	106,249	106,173	107,246	106,705	102,327	101,732	103,371	103,121
Angina pectoris	59,048	57,070	55,269	54,053	51,754	51,006	50,419	48,882	47,600	45,444	42,260	41,405	39,100	37,787
Acute myocardial infarction	22,023	23,223	24,600	26,211	28,610	30,795	31,188	32,363	33,898	36,666	36,178	36,023	37,033	37,096
Diseases of pulmonary circulation	3,296	3,600	3,501	3,547	3,645	3,712	3,670	3,910	4,384	4,823	5,055	5,266	5,480	5,778
Other forms of heart disease	55,673	58,242	58,943	62,361	63,673	64,489	66,926	70,432	73,069	75,977	78,275	81,142	88,582	93,411
Heart failure	21,056	20,733	20,218	20,643	20,754	21,085	21,243	21,853	22,402	23,353	23,277	23,398	26,221	26,898
Cerebrovascular disease	21,002	21,386	21,205	20,872	20,908	21,098	21,293	21,994	21,723	21,879	21,969	22,050	22,559	22,801
Diseases of the arteries, arterioles and capillaries	18,996	19,372	17,227	16,333	16,902	17,209	17,102	17,145	17,159	17,266	17,447	17,885	21,292	22,267
Other diseases of the cardiovascular system	34,272	34,590	36,593	37,834	38,398	38,253	39,208	39,949	42,387	42,433	42,890	44,587	47,813	49,666
Total annual cardiovascular disease separations	239,872	244,234	244,016	247,866	252,579	255,865	258,123	263,269	269,860	273,099	271,623	276,441	293,488	301,735
Total annual hospital separations	2,640,367	2,730,272	2,852,163	2,974,601	3,094,520	3,194,692	3,292,736	3,438,248	3,581,515	3,724,423	3,854,100	4,042,026	4,215,938	4,402,238
Proportion of all separations due to CVD (%) for men and boys	9.1	8.9	8.6	8.3	8.2	8.0	7.8	7.7	7.5	7.3	7.0	6.8	7.0	6.9

Table 2.8 Number of hospital separations for cardiovascular diseases, by sex, 1998–1999 to 2011–2012 (continued)

	Women and girls															
	1998–1999	1999–2000	2000–2001	2001–2002	2002–2003	2003–2004	2004–2005	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012		
Acute rheumatic fever	136	118	129	116	134	123	118	147	134	140	143	152	134	159		
Chronic rheumatic heart disease	1,220	1,246	1,119	1,247	1,246	1,254	1,325	1,386	1,373	1,374	1,398	1,434	1,363	1,437		
Hypertensive disease	5,031	4,890	4,827	4,785	4,762	4,758	4,548	4,532	4,686	4,604	4,443	4,615	5,373	5,828		
Ischaemic heart disease	55,226	54,612	55,362	56,169	56,376	56,876	56,028	55,194	55,079	54,710	52,481	52,101	52,363	50,581		
Angina pectoris	35,387	33,878	33,471	32,970	31,458	30,903	29,806	28,360	27,507	26,357	24,052	23,753	22,359	21,214		
Acute myocardial infarction	11,527	12,195	13,072	14,120	15,156	16,089	16,443	17,171	17,768	19,010	19,055	18,980	19,512	19,076		
Diseases of pulmonary circulation	4,473	4,926	4,942	4,930	4,850	4,860	4,989	5,030	5,396	5,742	6,021	6,116	6,711	7,192		
Other forms of heart disease	47,358	49,718	51,165	53,866	53,637	53,996	55,135	57,360	59,393	61,773	63,939	65,726	71,423	73,806		
Heart failure	20,838	20,970	20,890	21,241	20,295	20,338	20,078	20,218	21,279	21,859	21,920	21,606	23,868	24,085		
Cerebrovascular disease	19,284	19,287	19,436	19,371	19,341	19,693	19,425	19,460	19,756	19,837	19,804	19,927	20,084	20,765		
Diseases of the arteries, arterioles and capillaries	11,330	11,446	10,337	10,360	10,662	10,625	10,437	10,144	10,598	10,441	10,219	10,333	11,589	12,490		
Other diseases of the cardiovascular system	41,603	40,425	41,485	42,289	41,713	40,804	41,556	42,091	43,534	43,399	44,098	45,406	48,217	49,811		
Total annual cardiovascular disease separations	185,661	186,668	188,802	193,133	192,721	192,989	193,561	195,344	199,949	202,020	202,546	205,810	217,257	222,069		
Total annual hospital separations	3,094,619	3,168,469	3,301,537	3,423,390	3,550,220	3,646,456	3,726,032	3,873,645	4,020,928	4,149,380	4,294,291	4,488,869	4,636,439	4,853,858		
Proportion of all separations due to CVD (%) for women and girls	6.0	5.9	5.7	5.6	5.4	5.3	5.2	5.0	5.0	4.9	4.7	4.6	4.7	4.6		

Source: Australian Institute of Health and Welfare, National Hospital Morbidity Database, Principal diagnosis data cubes

Notes: Number of separations. Separations were coded using ICD-10-AM, chapter 9. AIHW defines a hospital separation as the completion of an episode of care for an admitted patient due to the patient being discharged, dying, transferring to another hospital or changing the type of care. Figures are raw reports of total separations from Australian public and private hospitals and have not been standardised to population size or age distribution; therefore comparisons over time should be interpreted with caution. Separations for which the sex of the individual was not recorded have been excluded. The following ICD-10 codes were used: acute rheumatic fever (I00-I02); chronic rheumatic heart disease (I05-I09); hypertensive disease (I10-I15); ischaemic heart disease (I20-I25); angina pectoris (I20); acute myocardial infarction (I21); diseases of pulmonary circulation, including pulmonary heart disease (I26-I28); other forms of heart disease (I30-I52); heart failure (I50); cerebrovascular disease (I60-I69); diseases of arteries, arterioles and capillaries (I70-I79); other diseases of the cardiovascular system, including diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89 and I95-I99).

Figure 2.8a Trends in hospital separations for specific cardiovascular causes, men and boys, 1998–1999 to 2011–2012

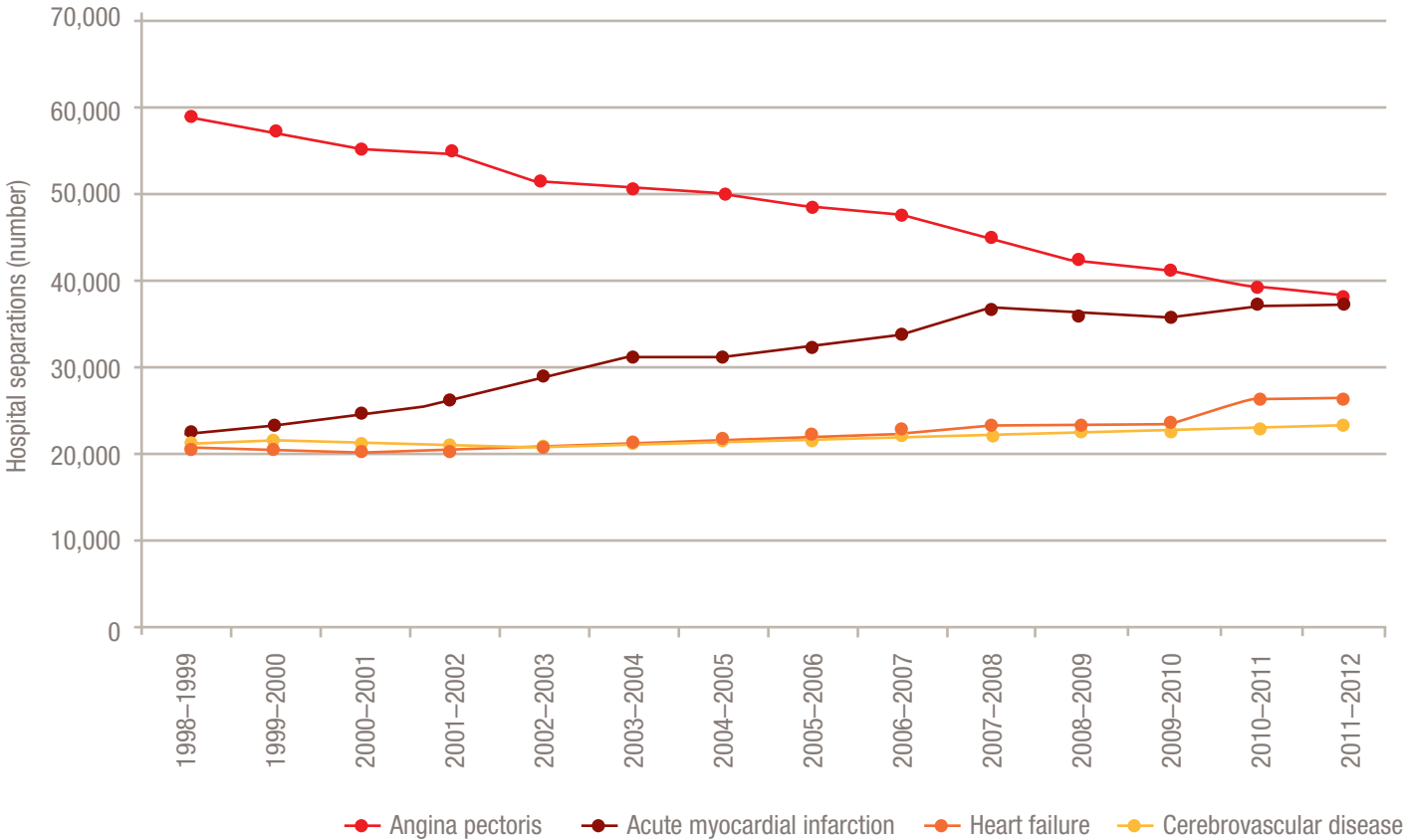


Figure 2.8b Trends in hospital separations for specific cardiovascular causes, women and girls, 1998–1999 to 2011–2012

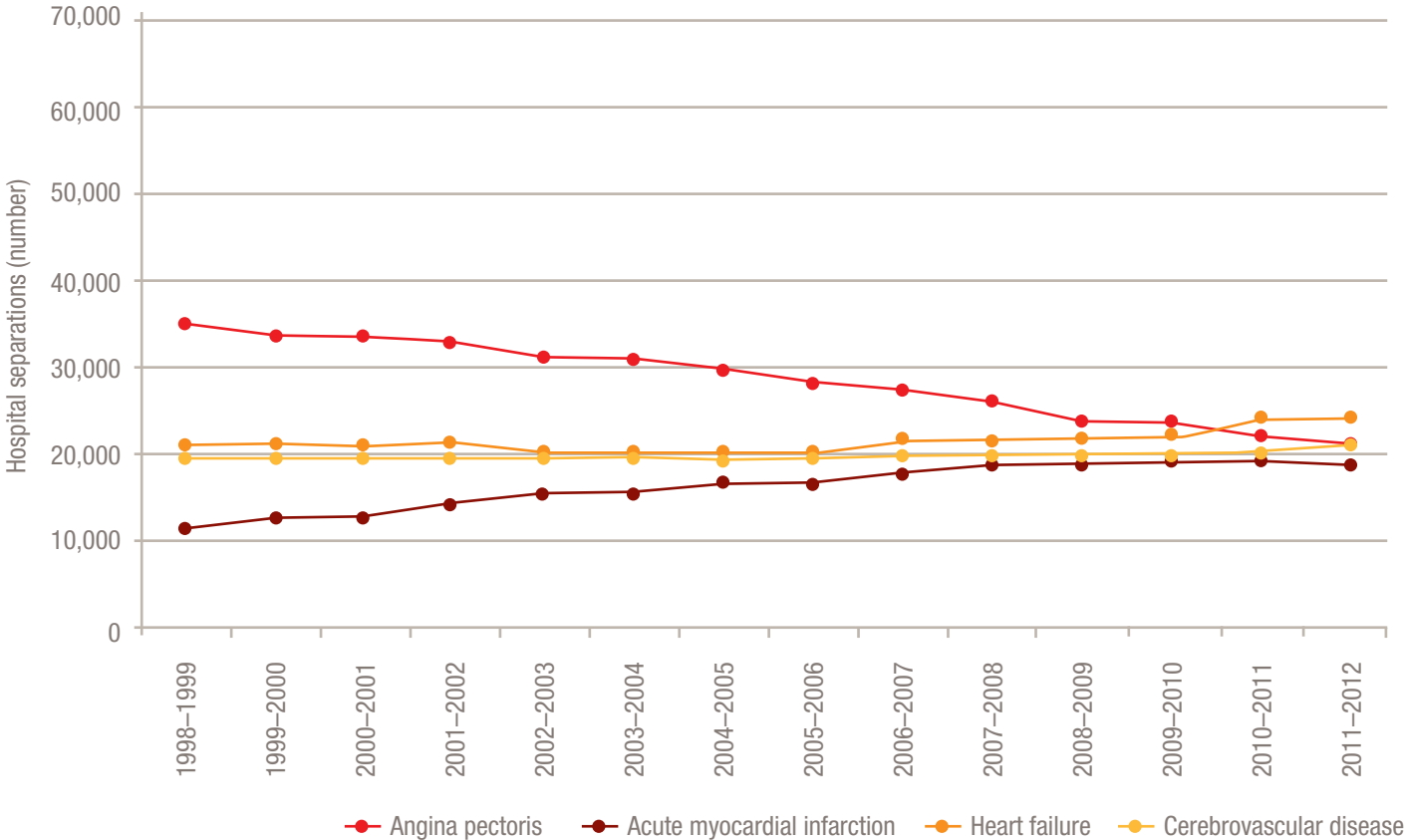




Figure 2.8c Proportion of total hospitalisations due to cardiovascular diseases, by sex, 1998–1999 to 2011–2012

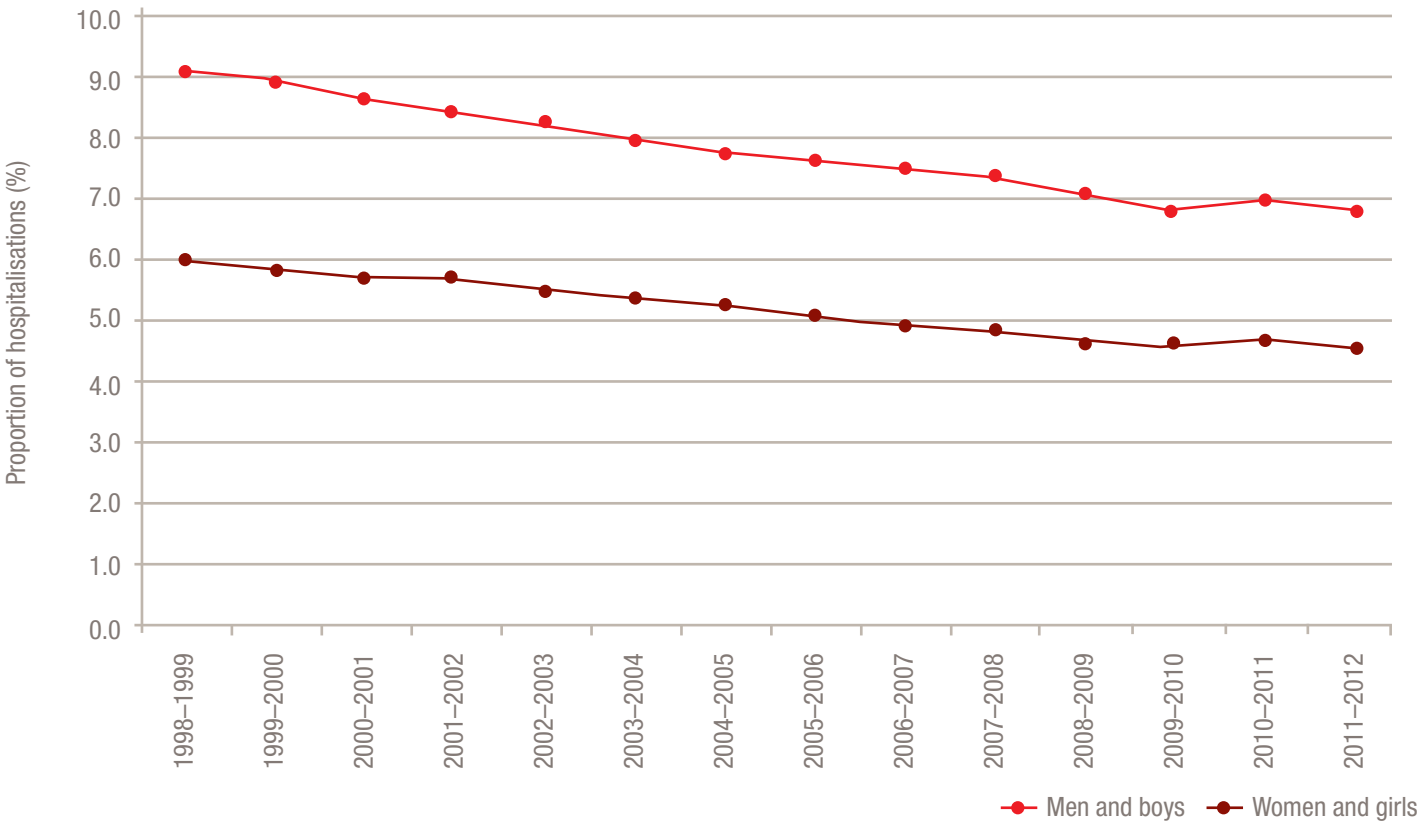


Table 2.9 Average length of stay in hospital for cardiovascular diseases, by condition and sex, 2000–2001 to 2011–2012

	2000–2001	2001–2002	2002–2003	2003–2004	2004–2005	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012
Men and boys												
Acute rheumatic fever	5.9	7.4	6.8	5.6	5.5	5.8	7.4	5.4	5.4	6.2	5.1	4.6
Chronic rheumatic heart disease	8.2	7.6	7.9	9.1	8.9	8.8	9.3	9.8	9.1	9.5	9.3	9.4
Hypertensive disease	3.6	4.7	3.8	3.8	3.5	3.6	3.4	3.3	3.5	3.3	3.4	3.2
Ischaemic heart disease	4.2	4.1	4.0	3.9	3.9	3.8	3.8	3.7	3.7	3.6	3.6	3.5
Pulmonary heart disease and diseases of pulmonary circulation	7.3	7.2	7.3	7.2	6.9	7.2	6.7	6.6	6.6	6.5	6.3	6.3
Other forms of heart disease	5.2	5.1	5.0	5.2	5.0	5.0	4.9	4.9	4.8	4.7	4.6	4.6
Cerebrovascular disease	10.6	10.5	9.8	10.0	9.3	9.5	9.0	8.9	8.8	8.2	8.2	7.7
Diseases of arteries, arterioles and capillaries	7.0	6.8	6.8	6.7	6.3	6.3	6.3	6.1	6.0	5.8	5.7	5.5
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified	2.4	2.3	2.2	2.3	2.1	2.1	2.0	2.1	2.1	2.0	2.1	1.9
Other and unspecified disorders of the circulatory system	5.7	5.5	5.5	5.3	5.2	5.2	5.0	5.0	4.9	4.7	4.6	4.5
All cardiovascular disease	5.0	4.9	4.8	4.8	4.6	4.6	4.5	4.5	4.5	4.3	4.3	4.2
Women and girls												
Acute rheumatic fever	7.0	6.0	6.6	6.8	5.6	5.6	6.2	6.0	6.4	5.1	5.1	5.9
Chronic rheumatic heart disease	7.6	8.2	7.7	9.0	8.5	8.9	8.6	9.0	9.1	9.2	8.8	8.4
Hypertensive disease	4.6	4.4	4.4	4.2	3.9	4.0	3.8	3.8	3.5	3.5	3.6	3.3
Ischaemic heart disease	4.6	4.5	4.5	4.3	4.2	4.1	4.1	4.0	4.0	3.8	3.7	3.6
Pulmonary heart disease and diseases of pulmonary circulation	7.8	7.4	7.4	7.3	7.4	7.2	7.0	6.6	6.9	6.6	6.5	6.3
Other forms of heart disease	6.2	5.8	5.8	5.7	5.6	5.6	5.5	5.4	5.2	5.1	5.1	5.0
Cerebrovascular disease	12.0	12.2	11.4	11.0	10.6	10.1	10.1	9.9	9.5	9.2	8.7	8.4
Diseases of arteries, arterioles and capillaries	7.3	7.1	6.9	6.7	6.7	6.7	6.5	6.4	6.2	6.0	5.7	5.7
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified	2.6	2.4	2.4	2.3	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1
Other and unspecified disorders of the circulatory system	5.8	5.9	5.9	5.6	5.6	5.4	5.5	5.4	5.2	5.1	4.9	4.6
All cardiovascular disease	5.7	5.5	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	4.5

Source: Australian Institute of Health and Welfare, National Hospital Morbidity Database, Principal diagnosis data cubes

Notes: Average length of stay in days. Not standardised to population size or age distribution. The following ICD-10 codes were used: acute rheumatic fever (100-102); chronic rheumatic heart disease (105-109); hypertensive disease (110-115); ischaemic heart disease (I20-I25); diseases of pulmonary circulation, including pulmonary heart disease (I26-I28); other forms of heart disease (I30-I52); cerebrovascular disease (I60-I69); diseases of arteries, arterioles and capillaries (I70-I79); other diseases of the cardiovascular system, including diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89 and I95-I99).

Table 2.10 Total number of hospital bed days for cardiovascular diseases, by condition and sex, 2000–2001 to 2011–2012

	2000–2001	2001–2002	2002–2003	2003–2004	2004–2005	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012
Men and boys												
Acute rheumatic fever	651	822	698	472	595	800	963	658	591	732	1,012	928
Chronic rheumatic heart disease	5,811	5,968	6,391	7,601	7,983	7,390	8,577	10,390	8,779	9,103	9,423	9,313
Hypertensive disease	9,522	12,508	10,283	10,713	9,268	9,777	9,689	9,433	9,093	9,001	10,860	11,080
Ischaemic heart disease	436,768	424,379	425,366	422,828	410,544	405,067	404,854	399,944	379,907	363,834	367,454	358,441
Pulmonary heart disease and diseases of pulmonary circulation	25,644	25,558	26,516	26,577	25,203	28,150	29,250	31,612	33,566	34,054	34,574	36,223
Other forms of heart disease	303,838	315,080	320,547	332,665	337,329	350,067	359,339	372,999	379,349	383,196	409,905	430,081
Cerebrovascular disease	224,184	218,929	205,759	211,014	199,046	209,640	195,861	194,998	193,832	181,555	185,090	176,282
Diseases of arteries, arterioles and capillaries	120,518	110,973	115,426	115,715	108,388	108,837	107,294	104,761	104,395	103,049	122,078	121,567
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified	79,799	77,339	76,974	78,104	74,042	75,258	75,868	79,458	77,800	78,349	85,142	83,637
Other and unspecified disorders of the circulatory system	20,164	21,117	21,211	21,488	24,361	24,841	25,030	25,958	24,659	26,002	29,771	30,204
All cardiovascular disease	1,226,899	1,212,673	1,209,171	1,227,177	1,196,759	1,219,827	1,216,725	1,230,211	1,211,971	1,188,875	1,255,309	1,257,756
Women and girls												
Acute rheumatic fever	907	699	887	841	660	825	827	839	921	779	677	931
Chronic rheumatic heart disease	8,546	10,224	9,576	11,246	11,249	12,367	11,821	12,401	12,703	13,178	12,061	12,121
Hypertensive disease	22,126	21,083	21,102	19,995	17,878	17,991	17,813	17,593	15,674	16,369	19,299	19,239
Ischaemic heart disease	254,656	251,495	251,048	242,449	235,269	225,152	223,760	220,497	209,668	196,995	195,808	182,920
Pulmonary heart disease and diseases of pulmonary circulation	38,377	36,245	35,999	35,254	37,088	36,159	37,984	37,745	41,377	40,158	43,887	45,149
Other forms of heart disease	317,214	314,249	311,711	308,645	310,619	323,232	328,663	331,506	332,887	335,900	361,154	365,429
Cerebrovascular disease	233,295	236,939	221,127	215,780	206,082	196,483	198,839	196,312	188,038	184,222	175,488	174,620
Diseases of arteries, arterioles and capillaries	75,494	73,567	73,736	70,938	70,087	67,567	68,395	67,077	63,143	61,528	66,516	71,777
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified	97,600	92,479	88,658	86,086	82,057	83,992	83,724	84,182	83,486	83,799	88,711	90,120
Other and unspecified disorders of the circulatory system	22,576	23,019	24,403	23,355	26,503	26,265	28,388	26,519	26,522	27,787	30,171	30,335
All cardiovascular disease	1,070,791	1,059,999	1,038,247	1,014,589	997,492	990,033	1,000,214	994,671	974,419	960,715	993,772	992,641

Source: Australian Institute of Health and Welfare, National Hospital Morbidity Database, Principal diagnosis data cubes

Notes: Number of hospital bed days. Not standardised to population size or age distribution. The following ICD-10 codes were used: acute rheumatic fever (I00-I02); chronic rheumatic heart disease (I05-I09); hypertensive disease (I10-I15); ischaemic heart disease (I20-I25); diseases of pulmonary circulation, including pulmonary heart disease (I26-I28); other forms of heart disease (I30-I52); cerebrovascular disease (I60-I69); diseases of arteries, arterioles and capillaries (I70-I79); other diseases of the cardiovascular system, including diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89 and I95-I99).

Case-fatality rates

Table 2.11 Admission-based, age-standardised case-fatality rate after acute myocardial infarction, by sex, Australia and selected countries, 2000 to 2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Men													
Australia	9.8	8.8	8.9	8.0	7.2	6.6	6.4	6.1	5.3	5.2	5.1	4.8	4.4
Belgium	13.0	11.9	12.1	11.6	10.8	9.8	9.1	8.1	8.1	7.2			
Canada			9.4	9.3	8.8	8.5	8.2	7.2	6.8	6.5	6.0	5.6	
Denmark	9.6	8.4	6.8	6.0	5.6	5.2	4.7	4.5	3.7	4.0	3.4	2.9	2.5
New Zealand	9.5	8.3	8.4	7.0	6.2	5.7	6.2	5.4	5.1	5.1	4.6	4.4	
UK									9.1	8.5	8.2	7.8	
USA	8.6	8.0	7.8	7.4	7.1	6.9	6.4	6.4	6.1		5.6		
Women													
Australia	11.8	10.3	9.0	8.1	7.7	7.0	7.1	6.2	5.7	5.2	5.3	4.8	4.5
Belgium	15.4	13.0	12.3	12.3	11.2	11.0	9.1	8.7	8.7	8.1			
Canada			9.6	9.6	9.2	9.0	8.4	7.4	7.0	6.6	6.2	6.0	
Denmark	10.1	8.5	7.5	6.6	5.3	5.7	5.3	5.3	4.0	4.0	3.1	3.1	3.1
New Zealand	10.4	10.0	8.7	8.0	6.8	6.7	5.8	5.5	6.1	5.3	4.7	4.9	
UK									9.9	9.3	8.6	7.9	
USA	8.8	8.5	8.3	8.0	7.6	7.0	6.7	6.3	6.2		5.6		
Persons													
Australia	10.6	9.4	8.9	7.9	7.4	6.7	6.7	6.2	5.4	5.2	5.1	4.8	4.4
Belgium	13.9	12.4	12.1	11.8	10.8	10.3	9.1	8.4	8.4	7.6			
Canada			9.3	9.3	8.8	8.5	8.2	7.2	6.8	6.5	6.0	5.7	
Denmark	9.8	8.4	7.1	6.3	5.5	5.3	5.1	4.9	3.9	3.9	3.3	3.0	2.9
New Zealand	9.6	8.8	8.4	7.3	6.4	6.1	6.0	5.4	5.6	5.2	4.5	4.5	
UK									9.4	8.7	8.4	7.8	
USA	8.6	8.1	7.9	7.5	7.2	6.8	6.4	6.3	6.1		5.5		

Source: Organisation for Economic Cooperation and Development (OECD), OECD.StatExtracts Health database, stats.oecd.org/

Notes: Age- (and sex-) standardised rate per 100 hospital discharges. Includes only patients over 45 years of age. Patients were tracked exclusively within the same hospital. Blank cells indicate data were not available.

Figure 2.11a Trends in admission-based, age-standardised case-fatality rate after acute myocardial infarction, men, Australia and selected countries, 2000 to 2012

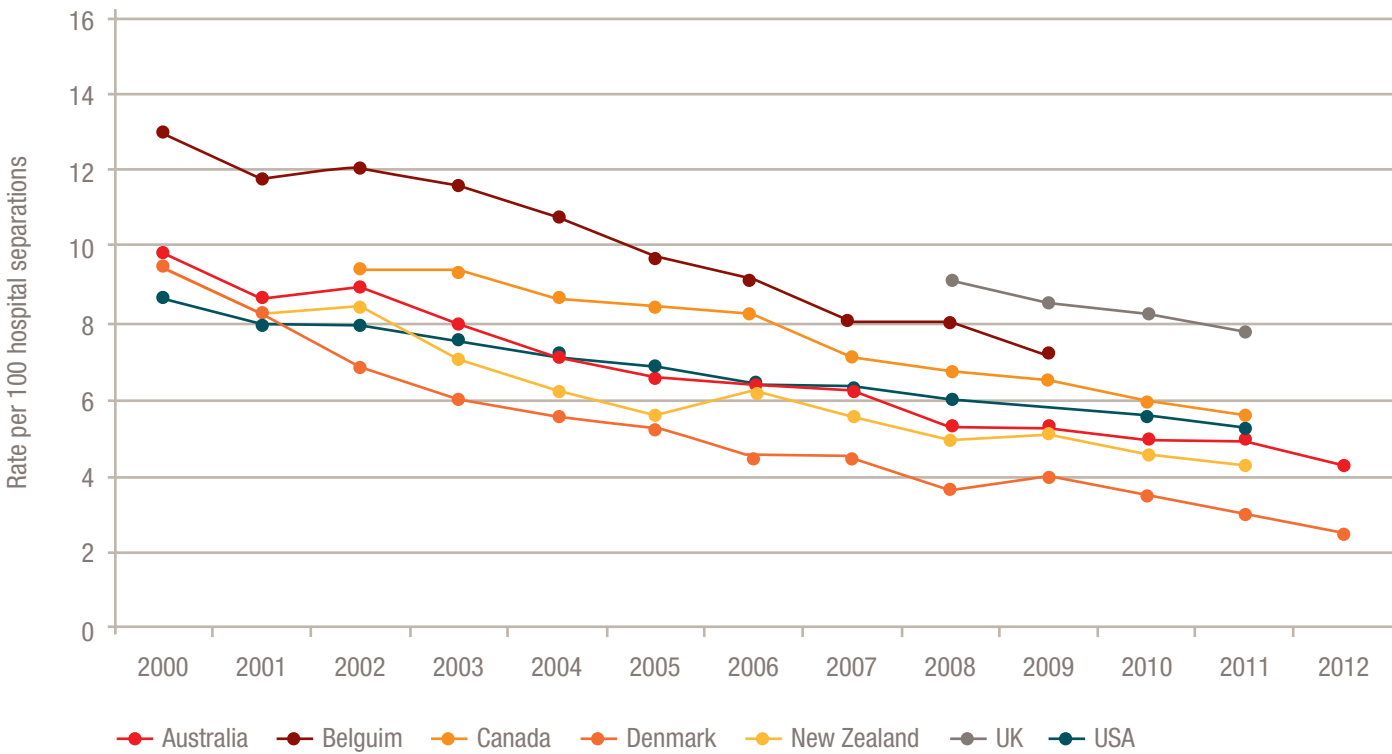
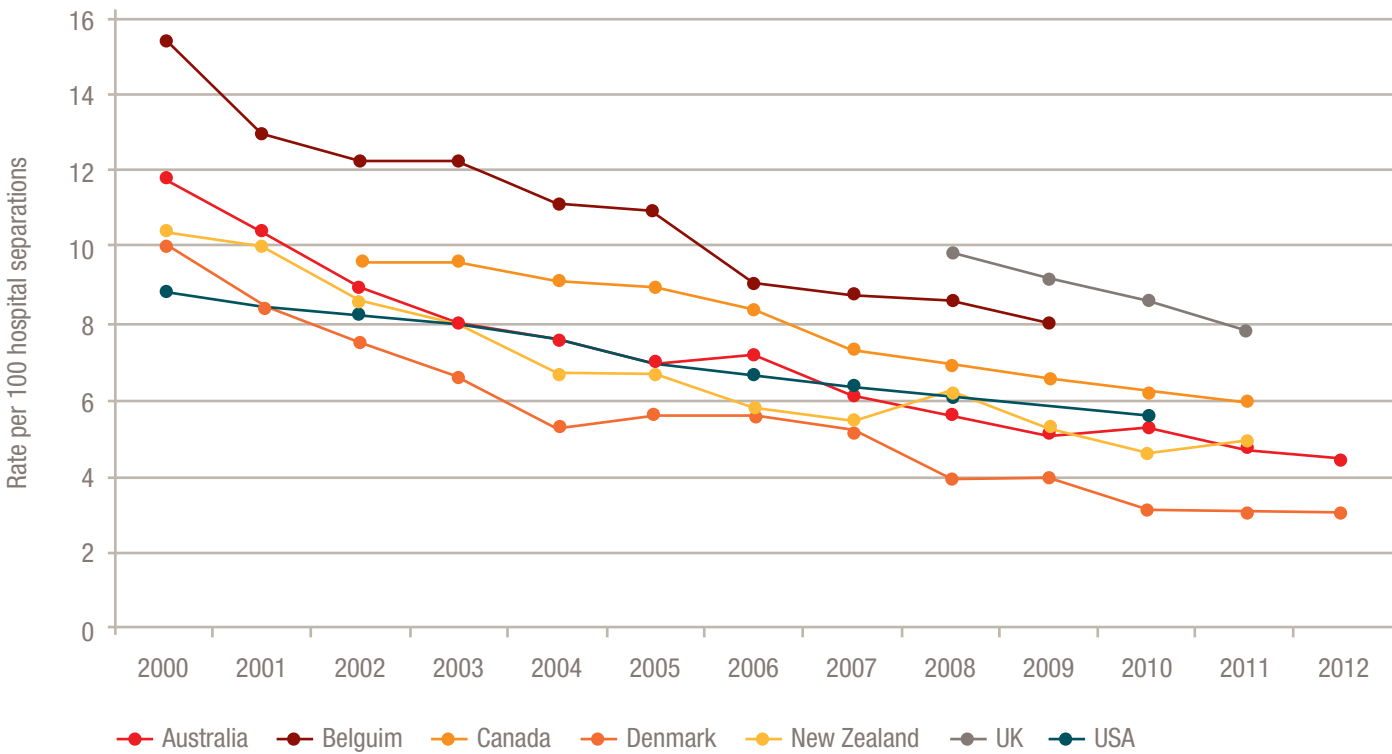


Figure 2.11b Trends in admission-based, age-standardised case-fatality rate after acute myocardial infarction, women, Australia and selected countries, 2000 to 2012



Heart disease in Aboriginal and Torres Strait Islander peoples

Table 2.12 Prevalence of self-reported diagnosed diseases of the circulatory system, by Indigenous status and age, then sex, 2012–2013

	Heart disease, stroke and vascular diseases		Hypertensive disease		All heart and circulatory problems and/or diseases	
	Aboriginal and Torres Strait Islander	Non-Indigenous	Aboriginal and Torres Strait Islander	Non-Indigenous	Aboriginal and Torres Strait Islander	Non-Indigenous
Age group						
2–14	**0.1	**0.1	*0.1	np	2.1	1.1
15–24	*0.6	**0.1	*1.5	np	5.3	2.8
25–34	*2.3	*0.5	4.1	1.1	10.9	4.9
35–44	4.2	1.5	8.8	4.6	18.0	10.2
45–54	10.1	3.9	13.9	11.2	28.3	19.0
55+	20.1	15.9	25.0	31.6	44.9	46.1
Sex						
Men and boys	4.0	5.5	5.6	10.4	11.1	16.4
Women and girls	3.8	4.5	6.0	10.9	14.2	18.4
All persons	3.9	5.0	5.8	10.6	12.7	17.4
All persons (age-standardised)	7.1	4.5	9.8	9.7	19.7	16.0

\* Proportion has a relative standard error 25%–50% and should be used with caution.

\*\* Proportion has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of persons. Includes all persons aged 2 years and over. ‘Heart, stroke and vascular diseases’ includes ischaemic heart disease, stroke and other cerebrovascular disease, oedema, heart failure and diseases of the arteries, arterioles and capillaries. ‘All heart and circulatory problems and/or diseases’ includes hypertensive disease; ischaemic heart diseases; other heart diseases; tachycardia; cerebrovascular diseases; oedema; diseases of the arteries, arterioles and capillaries; diseases of the veins, lymphatic vessels, etc.; other diseases of the circulatory system; and symptoms and signs involving the circulatory system. Totals by sex are not age-standardised. Age-standardised proportions have been standardised to the 2001 Australian Estimated Resident Population to account for differences in the age structure of the two populations. Data for non-Indigenous people are from the Australian Health Survey 2011–2013 (2011–2012 Core component). np, not available for publication but included in totals where applicable, unless otherwise indicated.

Table 2.13 Age-standardised rate of heart attacks (acute myocardial infarction), by Indigenous status, 2007 to 2011

Year	Per 100,00 population	
	Aboriginal and Torres Strait Islander	Non-Indigenous
2007	1,208	521
2008	1,198	486
2009	1,184	451
2010	1,104	435
2011	1,077	421

Source: Australian Institute of Health and Welfare 2014. Acute coronary syndrome: validation of the method used to monitor incidence in Australia. A working paper using linked hospitalisation and deaths data from Western Australia and New South Wales. CVD 68. Canberra: AIHW.

Notes: Rate per 100,000 population. People aged 25 years and over. Totals for each sex are age-standardised to the 2001 Australian standard population. This table is taken from the AIHW (2014) report, which used the following sources: AIHW National Hospital Morbidity Database; AIHW National Mortality Database; ABS (2012) Australian Demographic Statistics, September 2011, ABS cat. No. 3101.0; ABS (2009) Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 1991 to 2021, Series B, ABS cat. no. 3238.0.



# Part A | Chapter 3

## Treatment

### Key facts

- Overall, the number of major cardiovascular procedures performed in Australian hospitals has increased steadily since 2000–2001. Most of the increase has been in procedures of the coronary arteries (50,000 more procedures in 2011–2012 than in 2000–2001), particularly among men.
- The Pharmaceutical Benefits Scheme (PBS) paid approximately \$477 million for cardiovascular system medicines in 1992–1993, which represented 32% of all PBS benefits paid in that year. In 2012–2013, \$1.8 billion was paid for cardiovascular system medicines, representing 21% of total PBS benefits paid in that year.



### Introduction

The reductions in case-fatality rates seen in Australia over the past several decades have likely been due to advances and improvements in the treatment and care of patients with heart disease.<sup>5,8</sup>

After accounting for the burden caused by mortality, a significant proportion of the burden caused to individuals and society by heart disease arises from the costs of providing treatment and care to patients. Treatment data therefore provide a good indication of the financial costs incurred by the healthcare system, which provides primary, secondary and tertiary prevention and care<sup>s</sup> to the population. It is important to note that a large proportion of prescriptions issued for ischaemic heart disease are written with primary prevention in mind – for patients with identified risk factors for heart disease but without clinical disease.

Treatment data also give a more comprehensive understanding of heart disease morbidity in Australia, where data on community-based incidence and prevalence are lacking. This chapter presents data on prescriptions of cardiovascular system medicines as documented in the Pharmaceutical Benefits Scheme (PBS), as well as cardiovascular system surgical procedures performed in Australian hospitals.

### Key facts

- Overall, the number of major cardiovascular procedures performed in Australian hospitals has increased steadily since 2000–2001. Most of the increase has been in procedures of the coronary arteries (50,000 more procedures in 2011–2012 than in 2000–2001), particularly among men.
- Some less common procedures have shown proportionally very large increases, in particular procedures on the atrium (more than 10 times more procedures performed in 2011–2012 compared to a decade earlier).
- Men underwent significantly more cardiovascular procedures than women in the past decade, particularly coronary artery procedures.
- The number of prescriptions for cardiovascular system medicines increased steadily from 1992–1993 to the early 2000s, but has levelled off somewhat since then.
- The PBS paid approximately \$477 million for cardiovascular system medicines in 1992–1993, which represented 32% of all PBS benefits paid in that year. In 2012–2013, \$1.8 billion was paid for cardiovascular system medicines, representing 21% of total PBS benefits paid in that year.

<sup>s</sup> Primary prevention reduces the likelihood of developing a disease or disorder; secondary prevention interrupts, prevents or minimises the progress of a disease or disorder at an early stage; and tertiary prevention halts the progression of damage already done.

Primary care is typically a person's first point of contact with the healthcare system and is most often provided outside the hospital system; secondary care is medical care provided by a specialist or facility on referral by a primary care physician; and tertiary care is more specialised consultative care.

Source: Australian Institute of Health and Welfare 2014. Australia's health 2014. Australia's health series no. 14. Cat. no. AUS 178.

Tables and figures  
Procedures performed for cardiovascular diseases

Table 3.1 Number of major procedures for cardiovascular diseases performed in hospitals, by sex and age, 2011–2012

		Heart						Vascular sites					
		Atrium	Ventricle	Septum	Valve procedures	Myocardium	Pericardium	Other sites	Coronary arteries	Aorta	Arteries	Veins	Other
Men and boys													
0–10	129	254	567	207	612	97	146	222	365	626	2,433	1,042	
10–14	88	40	27	61	83	23	107	35	11	60	359	302	
15–24	224	98	47	106	154	64	338	165	35	576	757	628	
25–34	182	368	46	135	237	87	405	787	55	586	1,294	681	
35–44	409	2,356	68	226	595	123	795	5,301	153	655	2,954	1,240	
45–54	792	7,624	108	524	1,634	239	1,931	18,563	371	1,250	4,890	2,859	
55–64	1,597	15,015	147	1,199	3,604	430	4,619	36,471	613	2,987	6,911	5,765	
65–74	1,512	16,226	182	1,972	4,390	582	9,157	40,690	749	4,861	5,604	8,253	
75–84	784	9,778	67	1,962	2,789	413	11,595	25,530	430	4,157	2,881	6,919	
85+	107	1,708	6	507	321	70	4,954	4,914	62	1,104	513	2,000	
Women and girls													
0–10	90	186	505	185	510	73	146	200	333	481	2,043	1,026	
10–14	55	28	27	22	66	21	62	38	12	28	293	272	
15–24	245	70	47	84	159	48	312	80	18	208	584	589	
25–34	259	144	61	130	193	50	378	274	22	367	1,633	943	
35–44	404	956	95	191	300	100	581	1,752	45	499	4,112	2,171	
45–54	525	3,360	85	302	513	151	1,000	6,001	102	731	5,194	3,855	
55–64	801	6,938	106	598	938	242	1,975	12,180	164	1,266	5,638	4,741	
65–74	904	9,362	100	1,129	1,540	305	4,085	17,519	261	2,142	4,703	5,222	
75–84	582	7,551	85	1,357	1,514	189	6,802	15,803	257	2,419	2,257	4,260	
85+	144	1,684	4	431	214	37	4,507	4,101	44	1,126	573	1,875	

Source: Australian Institute of Health and Welfare, National Hospital Morbidity Database, Procedures data cubes  
Notes: Number of procedures across Australia

Table 3.2 Number of major procedures for cardiovascular diseases performed in hospitals, by sex, 2000–2001 to 2011–2012

	Heart						Vascular sites						
	Atrium	Ventricle	Septum	Valve procedures	Myocardium	Pericardium	Other Sites	Coronary arteries	Aorta	Arteries	Veins	Other	Total
Men and boys													
2000–2001	266	44,721	778	4,147	15,288	1,139	21,304	98,600	1,672	22,091	40,841	19,234	270,081
2001–2002	519	44,898	746	4,088	14,352	1,187	22,263	100,513	1,938	23,497	45,447	20,580	280,028
2002–2003	652	46,999	911	4,358	14,259	1,384	24,874	105,368	2,161	24,852	48,656	19,948	294,422
2003–2004	758	49,235	883	4,731	14,450	1,442	26,590	111,055	2,260	26,147	53,946	20,941	312,438
2004–2005	791	49,813	930	5,060	14,434	1,638	29,448	113,358	2,406	28,107	56,415	32,342	334,742
2005–2006	905	49,021	963	5,107	14,298	1,685	32,465	115,376	2,399	30,091	60,221	36,651	349,182
2006–2007	1,025	50,832	1,130	5,277	14,512	1,804	35,045	119,789	2,562	32,028	63,223	40,285	367,512
2007–2008	1,117	51,886	1,116	5,693	14,316	1,701	37,549	122,395	2,574	32,378	64,674	42,002	377,401
2008–2009	4,378	49,954	1,143	6,066	14,396	1,889	35,781	124,647	2,666	28,443	58,312	26,826	354,501
2009–2010	4,703	51,511	1,161	6,179	13,876	1,980	36,256	126,339	2,756	27,346	59,764	27,961	359,832
2010–2011	5,215	53,555	1,223	6,512	14,084	1,988	33,079	131,100	2,598	17,154	28,627	28,313	323,448
2011–2012	5,824	53,467	1,265	6,899	14,419	2,128	34,047	132,678	2,844	16,862	28,596	29,689	328,718
Women and girls													
2000–2001	254	22,721	775	2,734	5,949	664	14,027	41,346	1,026	12,844	41,500	15,388	159,228
2001–2002	452	23,735	746	2,893	5,662	709	14,943	43,136	942	13,969	45,896	16,737	169,820
2002–2003	541	24,979	828	2,885	5,615	784	16,054	45,275	1,044	14,822	46,972	16,744	176,543
2003–2004	607	26,686	835	2,977	5,480	756	16,873	48,134	1,093	15,823	49,963	17,895	187,122
2004–2005	576	27,182	857	3,150	5,519	903	17,873	49,831	1,156	16,888	52,135	29,222	205,292
2005–2006	672	27,195	966	3,309	5,797	955	18,750	50,816	1,239	18,055	54,307	33,027	215,088
2006–2007	663	28,127	1,064	3,441	5,810	1,038	20,791	52,842	1,240	19,413	55,849	37,962	228,240
2007–2008	747	28,394	949	3,510	5,571	962	22,108	52,955	1,202	19,604	56,432	40,870	233,304
2008–2009	3,279	28,693	1,010	3,886	5,883	1,141	21,058	55,162	1,241	16,905	52,040	23,214	213,512
2009–2010	3,333	29,372	1,078	4,171	5,882	1,187	21,729	56,315	1,254	17,165	52,777	24,019	218,282
2010–2011	3,667	31,041	1,176	4,149	5,867	1,273	20,081	59,064	1,215	9,417	27,542	23,558	188,050
2011–2012	4,009	30,279	1,115	4,429	5,947	1,216	19,848	57,948	1,258	9,267	27,030	24,954	187,300

Source: Australian Institute of Health and Welfare, National Hospital Morbidity Database, Procedures data cubes  
Notes: Number of procedures across Australia. AIHW advise that the use of different editions of the Australian Classification of Health Interventions coding system over time means that data across years may not be exactly comparable.

Figure 3.2a Number of major procedures for cardiovascular diseases performed in hospitals, men and boys, 2000–2001 to 2011–2012

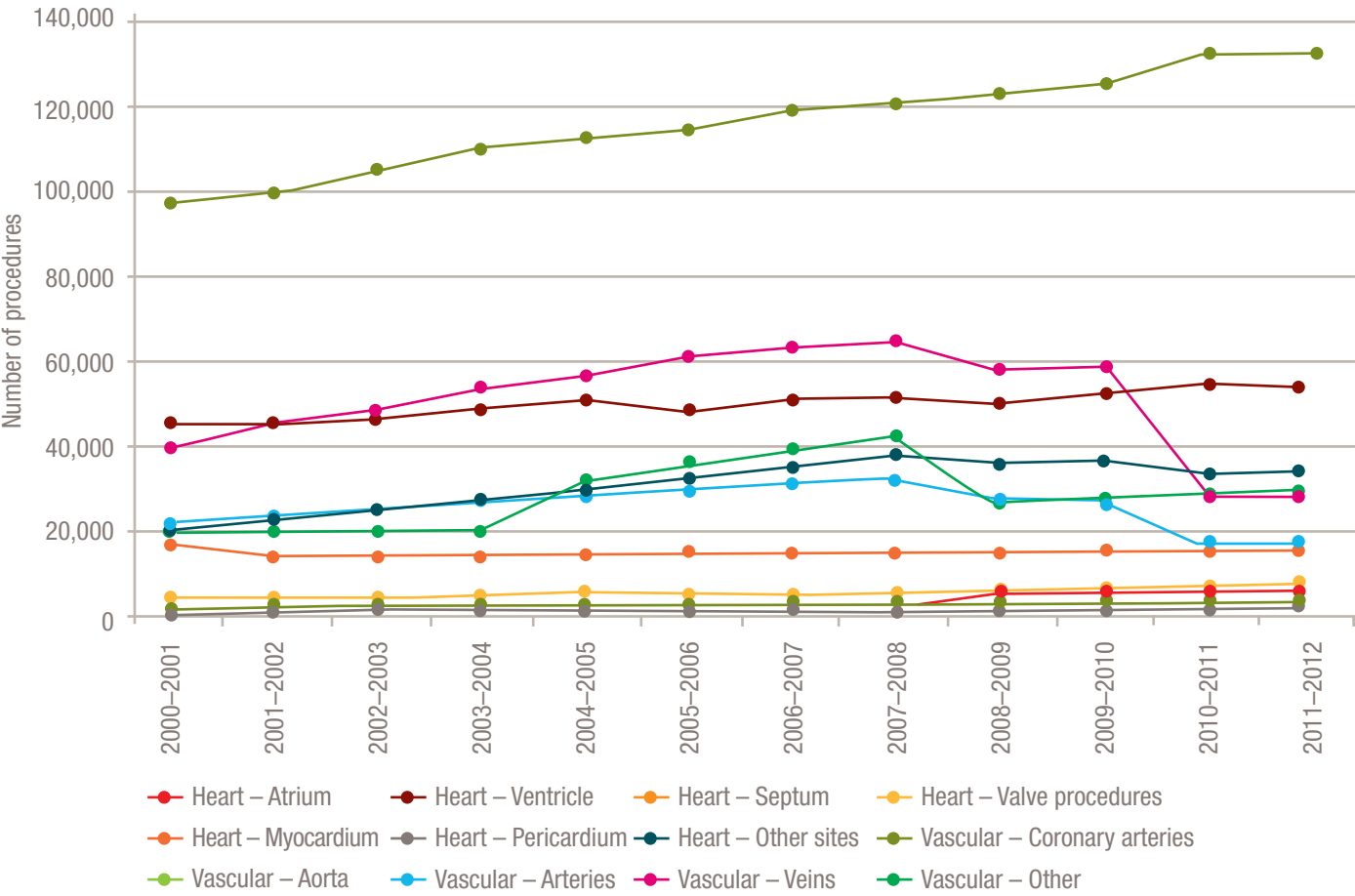
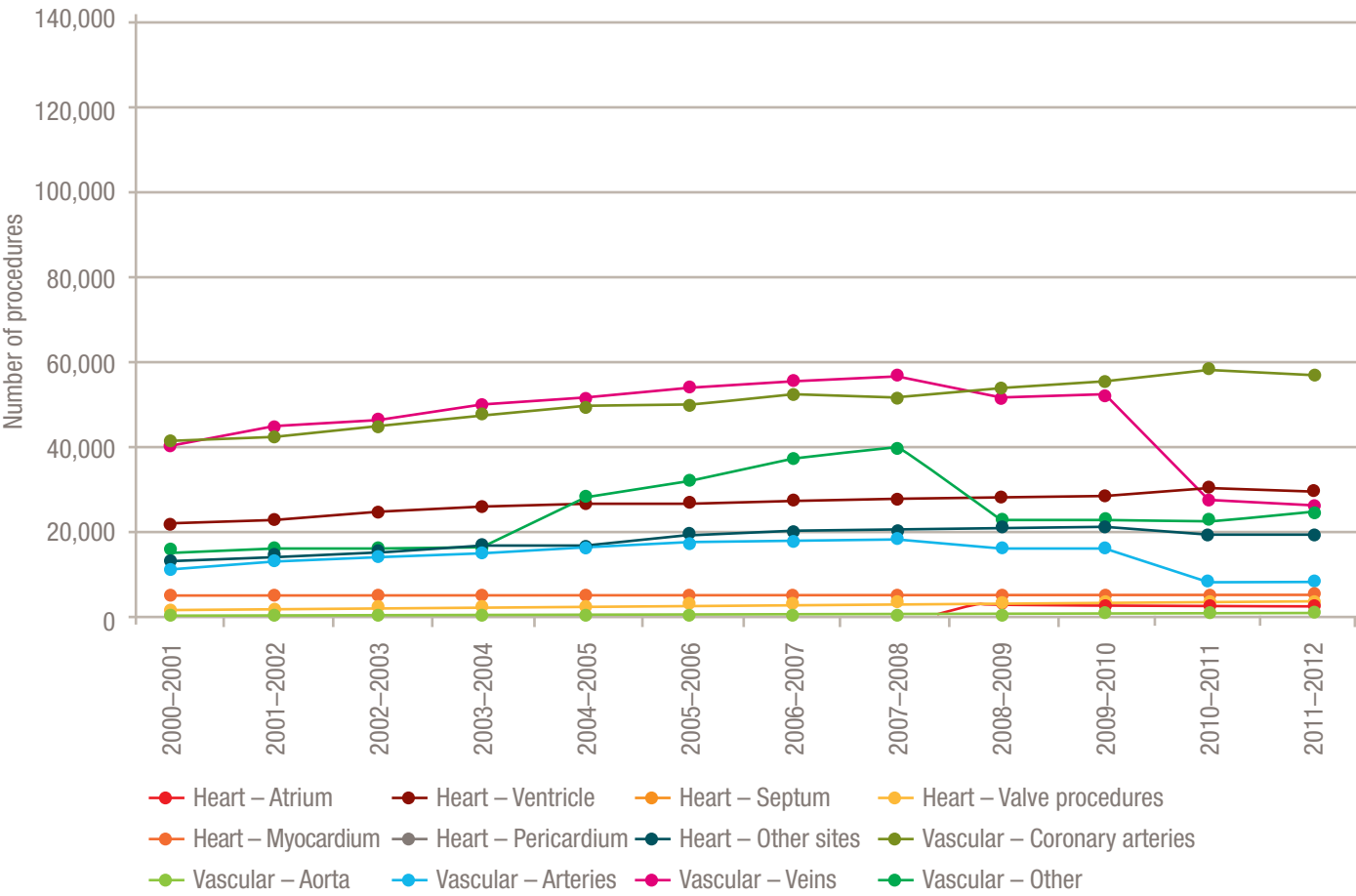


Figure 3.2b Number of major procedures for cardiovascular diseases performed in hospitals, women and girls, 2000–2001 to 2011–2012





Prescription medicines for cardiovascular diseases

Table 3.3 Total and per capita number of prescriptions for cardiovascular system, by state or territory, 1992–1993 to 2012–2013

	1992–1993	1993–1994	1994–1995	1995–1996	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001		2001–2002	2002–2003	2003–2004	2004–2005	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013
Total prescriptions by state or territory																						
Australian Capital Territory	245,926	278,279	305,047	344,317	369,292	402,612	445,579	508,924	569,968		615,343	664,152	703,739	721,705	719,886	695,988	700,467	747,367	758,142	789,113	789,604	781,406
New South Wales	9,732,473	10,631,895	11,162,436	12,170,336	12,893,253	13,622,768	14,494,249	16,080,947	17,369,947		18,289,714	19,340,472	20,391,587	21,093,404	21,183,064	21,316,336	21,514,352	22,956,103	23,193,376	23,572,199	24,027,415	23,798,441
Northern Territory	53,014	61,572	72,078	85,327	95,055	107,272	119,761	131,552	148,174		157,944	175,086	186,718	200,782	210,540	204,441	212,264	224,667	232,575	240,876	248,120	249,646
Queensland	3,949,894	4,387,706	4,714,846	5,214,960	5,625,298	6,074,417	6,609,450	7,372,898	8,155,695		8,687,647	9,318,033	10,024,051	10,716,346	10,893,019	11,245,263	11,557,907	12,345,238	12,514,479	12,797,503	13,367,828	13,451,211
South Australia	2,095,545	2,265,212	2,422,240	2,662,379	2,857,276	3,028,154	3,268,067	3,669,169	4,010,825		4,242,173	4,501,509	4,724,735	4,907,962	5,032,164	5,029,667	5,237,069	5,569,425	5,734,878	5,752,467	5,947,775	5,999,921
Tasmania	721,430	783,857	831,515	914,353	979,398	1,044,591	1,120,842	1,243,566	1,345,731		1,416,966	1,489,627	1,597,842	1,621,455	1,686,412	1,648,366	1,714,766	1,804,190	1,822,324	1,882,559	1,959,902	1,907,457
Victoria	6,121,142	6,763,902	7,187,717	7,912,769	8,427,796	8,955,707	9,685,856	10,913,387	12,000,665		12,673,279	13,519,747	14,378,594	14,983,693	15,226,483	15,272,390	15,783,212	16,781,138	17,057,616	17,328,742	17,780,600	17,703,103
Western Australia	1,825,436	2,003,718	2,138,357	2,411,067	2,625,536	2,850,998	3,140,356	3,545,770	3,985,600		4,221,694	4,514,215	4,821,697	5,032,569	5,118,998	5,200,509	5,273,549	5,700,588	5,674,933	5,816,625	6,217,700	5,953,506
Australia	24,744,860	27,176,141	28,834,236	31,715,508	33,872,904	36,086,519	38,884,160	43,466,213	47,586,605		50,304,760	53,522,841	56,828,963	59,277,916	60,070,566	60,612,960	61,993,586	66,128,716	66,988,323	68,180,084	70,338,944	69,844,691
Per capita prescriptions by state or territory																						
Australian Capital Territory	1.43	1.59	1.70	1.87	1.95	2.09	2.27	2.56	2.83		3.04	3.29	3.47	3.51	3.44	3.26	3.19	3.31	3.30	3.41	3.35	3.25
New South Wales	1.62	1.76	1.83	1.97	2.06	2.16	2.27	2.49	2.66		2.78	2.92	3.07	3.15	3.14	3.12	3.10	3.25	3.25	3.27	3.29	3.21
Northern Territory	0.18	0.20	0.24	0.28	0.31	0.34	0.38	0.41	0.46		0.49	0.53	0.57	0.61	0.63	0.60	0.61	0.63	0.64	0.65	0.66	0.65
Queensland	1.28	1.39	1.46	1.58	1.68	1.78	1.91	2.10	2.28		2.38	2.49	2.62	2.73	2.72	2.74	2.74	2.85	2.84	2.86	2.93	2.89
South Australia	1.44	1.55	1.65	1.81	1.94	2.04	2.19	2.45	2.67		2.81	2.96	3.09	3.19	3.24	3.20	3.30	3.46	3.52	3.51	3.59	3.59
Tasmania	1.53	1.66	1.75	1.92	2.06	2.21	2.37	2.63	2.84		2.99	3.11	3.31	3.33	3.45	3.34	3.44	3.58	3.58	3.68	3.83	3.72
Victoria	1.37	1.51	1.60	1.74	1.84	1.94	2.08	2.32	2.52		2.63	2.77	2.92	3.00	3.01	2.96	3.00	3.12	3.12	3.13	3.16	3.08
Western Australia	1.09	1.18	1.23	1.36	1.46	1.56	1.69	1.89	2.09		2.19	2.31	2.44	2.50	2.50	2.47	2.43	2.54	2.48	2.47	2.55	2.36
Australia	1.40	1.53	1.60	1.74	1.84	1.94	2.07	2.28	2.47		2.58	2.71	2.85	2.94	2.94	2.91	2.92	3.05	3.04	3.05	3.09	3.02

Source: Australian Government Department of Human Services, Pharmaceutical Benefits Schedule group reports; Australian Bureau of Statistics, 3101.0 – Australian Demographic Statistics, Sep 2013, Estimated Resident Population

Notes: Data from the Pharmaceutical Benefits Scheme and the Repatriation Pharmaceutical Benefits Scheme are presented together. Per capita prescriptions were calculated by dividing the total number of prescriptions from each state or territory by the estimated mid-year population in that state or territory. The figures presented here refer only to paid services processed from claims presented by approved pharmacies. They do not include any adjustments made against pharmacists’ claims, any manually paid claims or any benefits paid as a result of retrospective entitlement or refund of patient contributions. Where ATC Classification is used, items are mapped to the current ATC Classification. If an item’s ATC Classification changes, all historical data are updated. The figures contain some ‘Special Arrangements’ items. It is a documented phenomenon that residents of the Northern Territory receive fewer MBS and PBS services and benefits than the national average. Suggested potential reasons include fewer full-time workload equivalent GPs per capita, fewer pharmacies per capita (although ACT has even fewer), fewer MBS-eligible health providers and a greater proportion of alternative health providers, and a lower population-share of Australian Government funding for medical and pharmaceutical services. Refer Malyon R, Zhao Y, Guthridge S, Medicare Benefits Schedule and Pharmaceutical Benefits Scheme utilisation in the Northern Territory, 1993–94 to 2008–09, Department of Health and Families, Darwin, 2010.

Table 3.4 Pharmaceutical Benefits Scheme benefits paid for cardiovascular system prescriptions, by state or territory, 1992–1993 to 2012–2013

	1992–1993	1993–1994	1994–1995	1995–1996	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001		2001–2002	2002–2003	2003–2004	2004–2005	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013
State or territory																						
Australian Capital Territory	4,781	5,719	6,230	7,376	8,296	9,509	10,877	13,152	15,010		16,642	18,500	20,402	21,625	21,623	21,312	21,853	22,866	23,843	24,730	24,118	19,445
New South Wales	193,185	224,393	238,660	271,827	298,759	328,526	361,934	421,365	466,545		507,625	554,658	608,926	645,863	649,131	657,431	668,671	709,342	746,296	758,744	758,431	621,499
Northern Territory	921	1,125	1,344	1,674	1,939	2,290	2,609	2,996	3,500		3,950	4,602	5,210	5,967	6,483	6,503	6,928	7,278	7,954	8,254	8,153	6,475
Queensland	74,884	88,626	97,296	112,571	125,709	140,712	157,693	183,580	209,723		232,838	260,754	294,646	325,524	334,840	349,513	363,343	387,555	410,818	420,683	431,448	357,361
South Australia	39,462	45,487	50,184	58,139	64,904	71,081	78,725	93,600	106,238		117,055	129,184	140,711	149,971	154,295	155,417	163,758	172,651	185,089	186,879	189,711	158,987
Tasmania	13,554	15,755	17,120	19,786	22,049	24,520	27,426	32,448	36,188		39,161	42,509	47,336	48,647	50,227	49,422	51,663	53,740	56,898	59,049	59,962	50,186
Victoria	115,353	135,616	146,476	168,420	185,617	204,934	228,560	274,483	312,628		343,999	381,950	423,864	451,947	457,287	461,468	480,901	507,969	536,842	545,866	549,658	451,566
Western Australia	35,288	40,972	44,710	52,987	60,399	68,347	77,300	92,743	107,570		118,419	130,414	143,962	153,399	154,958	160,237	166,521	179,770	186,870	191,938	200,825	157,484
Australia – total benefits paid for cardiovascular system prescriptions	477,428	557,692	602,019	692,781	767,672	849,919	945,124	1,114,367	1,257,402		1,379,688	1,522,572	1,685,057	1,802,943	1,828,843	1,861,301	1,923,638	2,041,170	2,154,611	2,196,143	2,222,306	1,823,003
Total benefits paid – all systems	1,499,893	1,790,105	1,992,334	2,330,339	2,528,572	2,746,187	3,025,515	3,459,576	4,159,909		4,602,142	5,063,126	5,564,388	5,933,176	6,052,780	6,193,720	6,695,453	7,391,911	7,923,468	8,295,136	8,790,902	8,824,077
Proportion of total benefits paid for cardiovascular system prescriptions	31.8	31.2	30.2	29.7	30.4	30.9	31.2	32.2	30.2		30.0	30.1	30.3	30.4	30.2	30.1	28.7	27.6	27.2	26.5	25.3	20.7

Source: Australian Government Department of Human Services, Pharmaceutical Benefits Schedule group reports

Notes: Thousands of Australian Dollars (A\$) per year. Data from the Pharmaceutical Benefits Scheme and the Repatriation Pharmaceutical Benefits Scheme are presented together. The figures reported refer only to paid services processed from claims presented by approved pharmacies. They do not include any adjustments made against pharmacists’ claims, any manually paid claims or any benefits paid as a result of retrospective entitlement or refund of patient contributions. Where ATC Classification is used, items are mapped to the current ATC Classification. If an item’s ATC Classification changes, all historical data are updated. The figures contain some ‘Special Arrangements’ items (e.g. Section 100 highly specialised medicines prescribed in Private Hospitals for outpatients). It is a documented phenomenon that residents of the Northern Territory receive fewer MBS and PBS services and benefits than the national average. Potential reasons include fewer full-time workload equivalent GPs per capita, fewer pharmacies per capita (though ACT has even fewer), fewer MBS-eligible health providers and a greater proportion of alternative health providers, and a lower population-share of Australian Government funding for medical and pharmaceutical services. Refer Malyon R, Zhao Y, Guthridge S, Medicare Benefits Schedule and Pharmaceutical Benefits Scheme utilisation in the Northern Territory, 1993–94 to 2008–09, Department of Health and Families, Darwin, 2010.

Figure 3.3 Trends in per capita prescription rates for cardiovascular system, by state or territory, 1992–1993 to 2012–2013

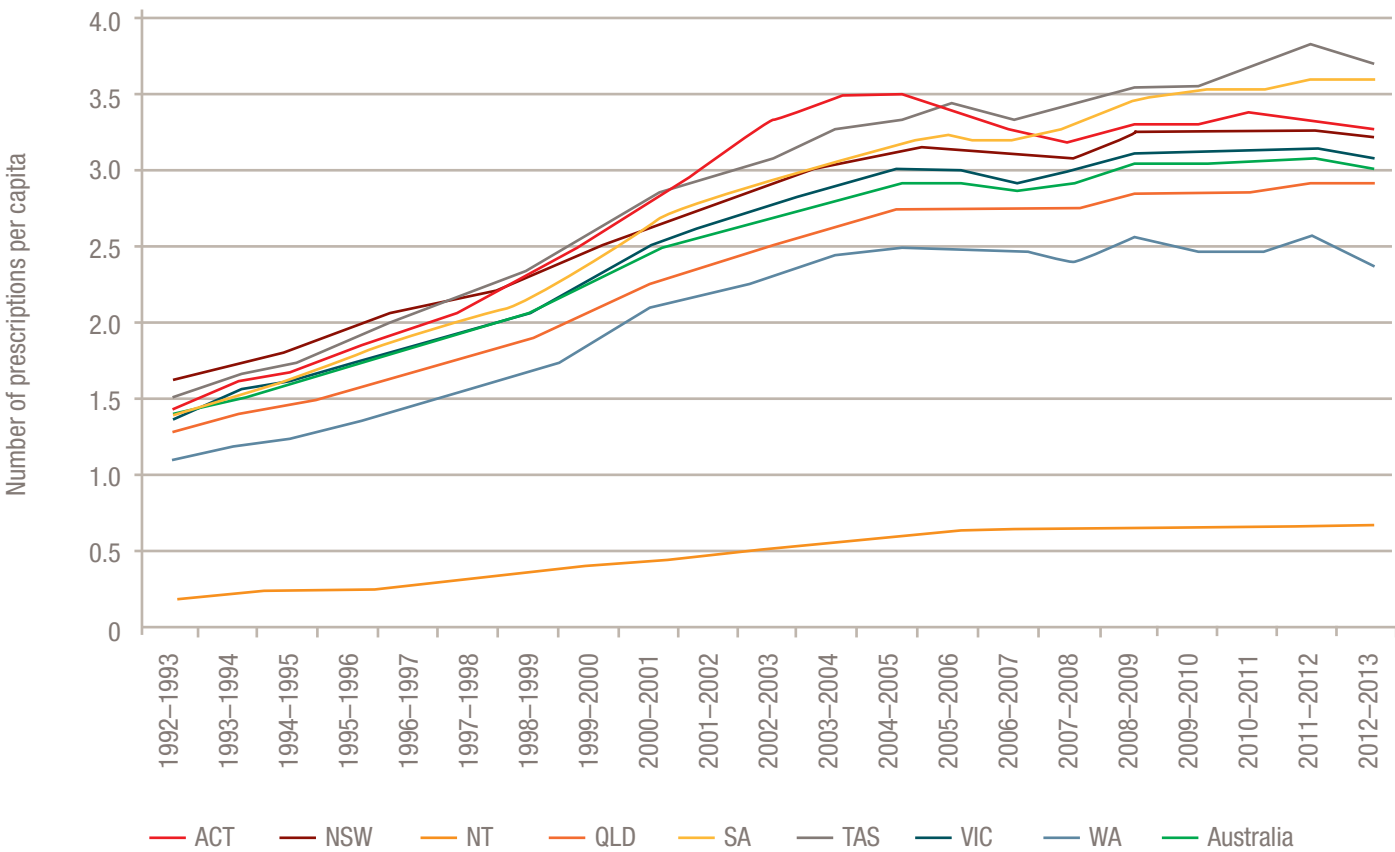


Figure 3.4 Proportion of total Pharmaceutical Benefits Scheme benefits that were paid for cardiovascular system prescriptions, Australia, 1992–1993 to 2012–2013

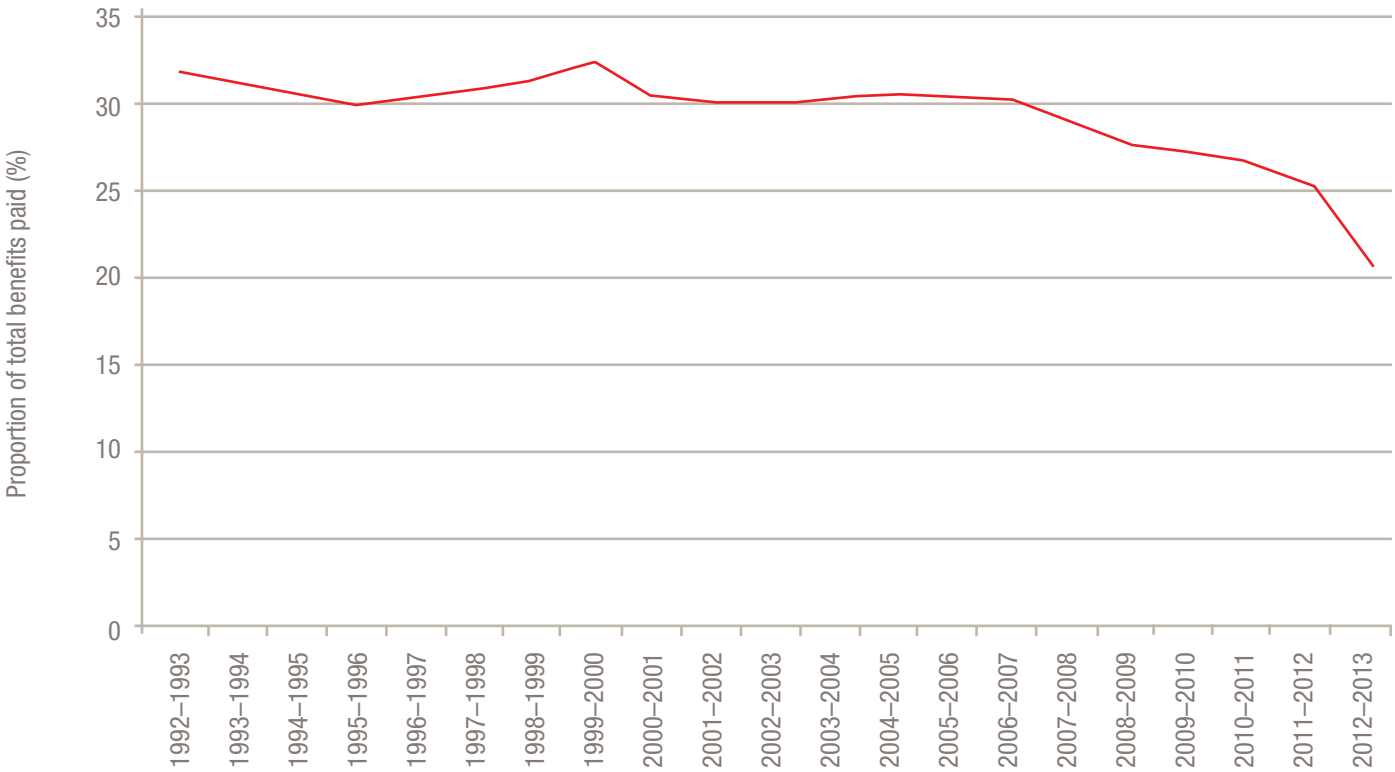


Table 3.5 Number of prescriptions for cardiovascular diseases per 1,000 people per year, by Medicare Local area and major medicine class, 2012–2013

	Cardiac therapy	Antihyper-tensives	Diuretics	Peripheral vaso-dilators	Vaso-protectives	Beta blocking agents	Calcium channel blockers	Agents acting on renin–angiotensin system	Lipid modifying agents
Australian Capital Territory									
Australian Capital Territory	80.9	44.8	67.5	–	–	163.4	220.2	691.3	846.9
New South Wales									
Central Coast NSW	173.3	73.0	113.5	–	0.3	287.8	340.6	1,184.6	1,219.8
Eastern Sydney	129.6	56.2	90.7	–	0.1	239.0	297.6	929.8	1,248.8
Far West NSW	215.4	82.0	199.4	–	–	481.1	526.5	1,780.0	1,808.8
Hunter	176.8	96.0	143.8	0.1	0.2	389.7	392.5	1,331.2	1,261.0
Illawarra–Shoalhaven	171.3	72.7	119.4	–	0.2	297.9	369.5	1,267.9	1,316.3
Inner West Sydney	132.5	65.1	85.3	0.1	0.1	244.9	286.4	991.5	1,112.1
Murrumbidgee	178.5	62.5	148.5	–	–	324.1	411.4	1,305.3	1,355.4
Nepean–Blue Mountains	122.1	49.2	77.0	–	–	204.3	250.7	793.5	932.9
New England	153.5	82.3	127.3	–	–	312.9	398.3	1,198.3	1,124.9
Northern Coast NSW	176.6	80.8	119.5	0.1	0.3	371.4	402.8	1,232.2	1,195.5
Northern Sydney	184.5	61.9	102.6	0.1	0.3	258.1	360.3	1,133.2	1,407.6
South Eastern Sydney	134.0	56.6	93.5	–	0.2	270.2	332.5	978.4	1,181.2
South Western Sydney	105.6	45.8	74.6	0.0	0.1	216.2	243.5	922.8	1,033.6
Southern NSW	134.1	64.6	114.7	–	–	264.8	325.3	1,050.4	1,036.8
Sydney North Shore and Beaches	136.6	31.4	75.3	0.1	0.2	181.6	251.2	761.6	1,006.5
Western NSW	164.8	75.0	126.1	–	–	345.9	390.5	1,291.4	1,267.6
Western Sydney	118.9	49.6	67.0	0.1	0.1	181.6	248.4	820.2	965.1
Northern Territory									
Northern Territory	62.0	22.6	45.5	–	–	136.5	134.2	478.9	554.0
Queensland									
Central and Northwest QLD	108.3	35.8	81.9	–	–	313.5	249.2	883.4	1,224.7
Central QLD	125.5	45.7	88.1	–	–	323.1	268.8	945.0	1,144.0
Darling Downs–Southwest QLD	201.6	73.6	128.8	0.2	0.2	393.5	359.9	1,168.5	1,213.1
Far North QLD	120.7	49.9	79.1	–	0.1	271.6	247.0	899.3	1,060.3
Gold Coast	150.3	54.5	88.2	0.1	0.3	256.3	273.4	864.2	997.0
Greater Metro South Brisbane	156.9	52.9	80.9	0.2	0.2	249.3	252.4	794.1	939.2
Metro North Brisbane	188.2	66.8	112.0	0.2	0.3	348.3	345.4	1,106.8	1,323.3



Table 3.5 Number of prescriptions for cardiovascular diseases per 1,000 people per year, by Medicare Local area and major medicine class, 2012–2013 (continued)

	Cardiac therapy	Antihyper-tensives	Diuretics	Peripheral vaso-dilators	Vaso-protectives	Beta blocking agents	Calcium channel blockers	Agents acting on renin–angiotensin system	Lipid modifying agents
Sunshine Coast	167.9	55.4	96.3	–	0.4	322.5	312.4	1,076.2	1,111.4
Townsville–Mackay	136.9	44.4	85.4	0.1	0.1	298.8	277.8	926.5	1,130.6
West Moreton–Oxley	144.0	53.9	82.1	0.0	0.1	228.8	248.4	787.8	882.0
Wide Bay	214.3	90.6	146.8	–	–	466.2	449.7	1,498.7	1,490.7
South Australia									
Central Adelaide and Hills	221.6	69.3	169.1	0.1	0.3	418.0	484.0	1,431.5	1,630.3
Country North SA	173.4	69.3	170.6	–	0.1	432.3	445.9	1,492.8	1,660.7
Country South SA	185.2	63.9	171.7	–	–	399.8	466.7	1,548.8	1,720.1
Northern Adelaide	109.5	41.1	90.8	–	–	217.9	256.0	825.7	899.2
South Adelaide–Flourieu–Kangaroo Island	152.6	50.9	122.6	0.1	0.2	331.7	371.1	1,133.7	1,313.4
Tasmania									
Tasmania	173.8	84.1	150.8	–	0.2	340.1	427.0	1,391.4	1,377.4
Victoria									
Barwon	176.5	66.4	132.8	–	0.2	322.4	327.3	1,132.8	1,115.5
Bayside	188.2	79.1	131.8	0.1	0.2	287.0	374.8	1,141.1	1,307.5
Eastern Melbourne	94.1	44.6	76.8	–	–	162.4	198.2	709.7	731.8
Frankston–Mornington Peninsula	115.4	52.6	97.5	–	0.2	229.7	296.1	916.6	924.0
Gippsland	215.9	100.4	169.9	–	0.2	376.9	483.9	1,486.5	1,472.7
Goulburn Valley	196.6	93.5	177.5	–	–	358.0	463.0	1,466.4	1,533.9
Grampians	198.8	72.7	174.9	–	0.1	351.8	432.1	1,292.4	1,257.6
Great South Coast	164.4	76.6	168.0	–	–	396.8	391.8	1,293.8	1,380.6
Hume	153.0	55.7	136.9	–	–	339.6	387.6	1,222.1	1,212.2
Inner East Melbourne	208.6	101.4	161.6	–	0.3	388.5	489.7	1,614.0	1,720.8
Inner North West Melbourne	155.1	76.4	129.4	0.1	0.1	306.2	332.2	1,101.5	1,175.6
Loddon–Mallee–Murray	193.9	71.0	146.8	–	–	355.8	441.9	1,409.1	1,350.2
Lower Murray	201.7	90.7	202.8	–	–	429.0	481.1	1,647.5	1,553.9

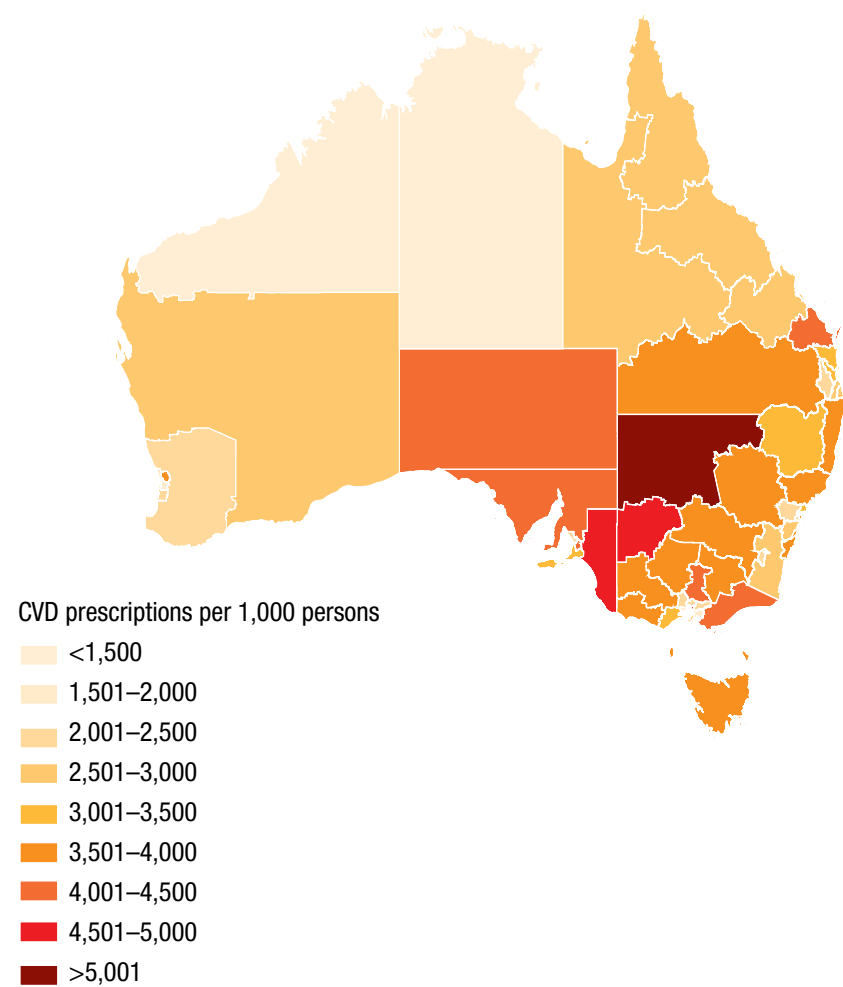
Table 3.5 Number of prescriptions for cardiovascular diseases per 1,000 people per year, by Medicare Local area and major medicine class, 2012–2013 (continued)

	Cardiac therapy	Antihyper-tensives	Diuretics	Peripheral vaso-dilators	Vaso-protectives	Beta blocking agents	Calcium channel blockers	Agents acting on renin–angiotensin system	Lipid modifying agents
Macedon Ranges and North Western Melbourne	76.9	46.1	72.6	–	–	175.3	217.2	755.1	792.1
Northern Melbourne	90.0	44.4	83.7	–	0.1	216.2	228.8	834.7	853.2
South Eastern Melbourne	72.4	38.6	62.1	–	0.0	149.6	189.3	646.4	702.9
South Western Melbourne	70.9	42.5	64.5	–	–	149.9	179.8	608.3	650.7
Western Australia									
Bentley–Armadale	73.9	32.7	58.9	–	0.1	175.5	167.4	626.7	748.8
Fremantle	146.4	59.3	108.9	–	–	314.2	308.8	1,105.6	1,341.2
Goldfields–Midwest	82.6	39.8	69.5	0.0	–	235.5	220.1	816.7	1,134.1
Kimberly–Pilbara	34.7	13.2	28.5	–	–	120.8	94.0	372.1	733.2
Perth Central and East Metro	161.2	65.1	123.9	0.1	0.3	320.2	333.0	1,159.7	1,404.3
Perth North Metro	69.9	29.1	56.2	–	0.1	157.9	159.3	596.1	701.3
Perth South Coastal	77.7	37.9	66.9	–	–	201.7	199.3	759.1	859.1
South West WA	92.8	40.7	86.9	–	0.1	225.1	215.6	828.5	969.3

Source: Australian Government Department of Human Services, Medicare Local Statistics Reports; Australian Bureau of Statistics, 3101.0 – Australian Demographic Statistics, September 2013, Estimated Resident Population, Total Population by Medicare Local area, as obtained from Medicare Local website available from <http://www.medicarelocals.gov.au/internet/medicarelocals/publishing.nsf/Content/digital-boundaries#.U6oporHy98H>. Accessed 24 June 2014.

Notes: Prescriptions per 1,000 people per year. Statistics are supplied for both the Pharmaceutical Benefit Scheme (PBS) and Repatriation Pharmaceutical Benefit Scheme. Totals for each class of therapeutics were summed manually prior to accounting for population of each Medicare Local area. Prescriptions per 1,000 persons have been calculated by dividing the total number of prescriptions in 2012–2013 for each Medicare Local by the Australian Bureau of Statistics 2012 Estimated Resident Population, as reported on the Medicare Local website available from <http://www.medicarelocals.gov.au/internet/medicarelocals/publishing.nsf/Content/digital-boundaries#.Uk43adVwW4I>, Accessed 24 June 2014. – indicates a figure suppressed for confidentiality reasons, and not included in totals.

Figure 3.5 Number of prescriptions for cardiovascular diseases per 1,000 people, by Medicare Local area, 2012 to 2013



## Part B – Behavioural risk factors

This section of *Australian heart disease statistics 2014* addresses major behaviours linked to heart disease. A significant proportion of heart disease risk is attributable to modifiable behavioural risk factors. The four most important of these are tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. Effective prevention of heart disease, including both primary and secondary prevention, depends on addressing these modifiable behavioural risk factors, along with management of clinical risk factors. Behavioural risk factors for heart disease often occur together, and may cluster particularly in disadvantaged groups.

Together, the four leading risk factors contribute significantly to the global burden of non-communicable diseases (NCDs). Addressing these risk factors in the population has benefits beyond minimising heart disease, extending to all cardiovascular diseases, diabetes, cancer and chronic respiratory diseases. These four NCDs, and the major common risk factors, are the focus of the World Health Organization’s *Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013–2020*,<sup>11</sup> which aims, by addressing these common risk factors and strengthening health systems, to reduce the global burden of premature mortality from NCDs by 25% by 2025.

The 2010 Global Burden of Disease study examined a wide range of risk factors and outcomes, and found that for Australia, dietary risk factors accounted for 58.7% of the total disability-adjusted life years (DALYs) lost to cardiovascular diseases, and 10.4% of total DALYs lost (all causes). Physical inactivity

contributed to a further 20.4% of all DALYs, and smoking to 16.6%.<sup>9</sup> While these risks interact and overlap, and cannot be added, it is clear that behavioural risk factors are among the biggest contributors to heart disease morbidity and mortality. Further, they are particularly important as they provide options and opportunities for primary prevention of heart disease.

In recent decades, Australia’s risk factor profile has shifted considerably. In particular, Australia has led the world in reducing smoking prevalence. Meanwhile, little progress has been made in the areas of decreasing harmful alcohol use and improving physical activity; sedentary behaviours appear to be increasing, along with many aspects of unhealthy dietary patterns.

The following four chapters provide detailed updates on each of these key behaviours, including patterns according to age and sex, socioeconomic differences, and changes over time.

## Part B | Chapter 4

# Smoking

### Key facts

- Smoking rates are relatively low in Australia by world standards: only 18% of men and boys, and 14% of women and girls, were daily smokers in the 2011–2012 Australian Health Survey (a further 2% reported smoking less frequently than daily).
- Smoking rates among Aboriginal and Torres Strait Islander Australians (more than 41% are daily smokers) were more than double those among non-Indigenous Australians. However, smoking rates among Aboriginal and Torres Strait Islander peoples have substantially decreased in the past decade (down from 49% in 2002).



### Introduction

Tobacco smoking is the single most preventable cause of death and disease globally. It is a major risk factor for death from ischaemic heart disease (IHD) and stroke.<sup>12</sup> All levels of cigarette smoking are associated with increased risk of IHD, even for people who smoke fewer than five cigarettes per day, and the risk of IHD increases with any increase in the number of cigarettes smoked per day.<sup>13</sup> Smoking has additionally been causally linked to diseases of nearly all organs of the body,<sup>14</sup> and is directly responsible for 9% of the global burden of cardiovascular disease.<sup>15</sup> In Australia, tobacco smoking was responsible for 19% of the burden of IHD in 2010.<sup>9</sup> As there is no safe level of exposure to tobacco smoke, national policies and guidelines for smoking focus on reducing the use of and exposure to tobacco at the individual and population levels.<sup>16,17</sup>

Tobacco is a major modifiable risk factor for IHD. Thus, targeting this risk behaviour through various national and state- or territory-level policies is necessary to reduce the burden of heart disease in Australia. Smoke-free laws elsewhere have led to reductions in coronary events.<sup>14</sup> It is therefore important to understand the prevalence and nature of tobacco smoking in Australia in order to better inform and evaluate such policies. Several Australian datasets and surveys collect information on the smoking status of Australians and tobacco consumption patterns.

### Key facts

- Smoking rates are relatively low in Australia by world standards: only 18% of men and boys, and 14% of women and girls, were daily smokers in the 2011–2012 Australian Health Survey (a further 2% reported smoking less frequently than daily).
- The prevalence of daily smoking has steadily dropped from 1991 to 2010.
- Average weekly household expenditure on tobacco products has risen steadily since 1984, but this does not account for inflation or increases in tax on tobacco products.
- The average number of cigarettes smoked per smoker per day decreased steadily between 1997 and 2005.
- Smoking rates were lowest in the ACT and NSW and highest in the NT and Tasmania.
- Smoking rates among Aboriginal and Torres Strait Islander Australians (more than 41% are daily smokers) were more than double those among non-Indigenous Australians. However, smoking rates among Aboriginal and Torres Strait Islander peoples have substantially decreased in the past decade (down from 49% in 2002).



Tables and figures

Prevalence of smoking

Table 4.1 Proportion of current adult daily smokers, other smokers, ex-smokers and never smokers, by sex, age and state or territory, 2011–2012

	Australia				Australian Capital Territory					New South Wales				Northern Territory				Queensland			
	Daily smokers	Other smokers	Ex-smokers	Never smokers	Daily smokers	Other smokers	Ex-smokers	Never smokers		Daily smokers	Other smokers	Ex-smokers	Never smokers	Daily smokers	Other smokers	Ex-smokers	Never smokers	Daily smokers	Other smokers	Ex-smokers	Never smokers
Men and boys																					
15–17	4.6	*1.0	6.1	88.3	**1.0	**2.9	**2.0	94.1		**4.8	**0.0	*5.6	89.6	*16.3	*0.0	**2.6	81.0	*7.4	*0.6	*4.9	87.0
18–24	18.3	3.2	14.6	63.9	*10.3	*4.7	20.6	64.4		20.5	3.2	*9.9	66.4	25.0	0.0	*14.0	61.0	20.0	2.9	17.5	59.5
25–34	21.9	3.9	25.5	48.8	19.4	3.9	26.1	50.6		20.2	3.9	25.8	50.0	34.7	2.2	24.5	38.6	22.5	3.6	27.4	46.4
35–44	21.2	2.2	29.5	47.0	17.1	1.6	28.8	52.5		14.9	3.0	31.5	50.5	23.7	1.5	28.6	46.2	24.7	1.5	28.4	45.4
45–54	22.9	1.1	37.4	38.6	14.4	0.3	37.3	48.0		19.4	1.1	37.3	42.2	30.5	1.2	37.8	30.5	23.4	1.0	38.9	36.7
55–64	15.5	*1.1	45.6	37.9	11.4	0.7	51.5	36.4		14.8	2.0	43.5	39.7	24.8	0.5	47.2	27.5	12.6	1.1	48.6	37.7
65–74	10.8	*0.5	53.6	35.1	np	np	61.6	28.9		11.4	0.0	52.4	36.2	np	np	63.6	*22.7	11.7	1.2	54.6	32.5
75+	4.3	0.0	64.7	31.0	np	np	59.5	35.3		*4.4	*0.0	60.5	35.0	np	np	64.5	*23.9	*3.5	*0.0	72.6	23.8
All men and boys	17.6	1.9	33.8	46.7	13.5	2.1	34.2	50.2		15.8	2.1	33.1	49.0	26.2	1.1	32.0	40.7	18.4	1.8	35.3	44.5
Women and girls																					
15–17	*3.7	*2.4	*2.3	91.6	**6.7	**0.0	**1.0	92.2		*3.5	*1.5	**1.2	93.9	*11.1	*2.6	**1.3	84.9	**3.9	*5.2	**2.3	88.6
18–24	14.8	2.8	12.2	70.2	*13.1	*1.6	*9.0	76.3		12.3	2.5	11.9	73.3	*19.2	*0.0	*9.6	71.2	17.2	3.8	13.1	65.9
25–34	17.1	3.2	21.4	58.4	8.4	2.1	26.0	63.4		15.2	2.6	19.6	62.6	17.8	3.6	24.7	53.9	19.8	2.9	24.0	53.3
35–44	16.5	1.4	28.7	53.4	12.7	2.0	25.2	60.1		14.2	1.5	27.9	56.3	19.8	3.2	30.0	47.0	19.9	0.5	30.4	49.2
45–54	17.4	*1.4	32.6	48.5	14.1	0.3	32.9	52.7		16.3	1.1	30.9	51.6	26.8	0.3	29.8	43.0	19.1	0.3	34.3	46.4
55–64	12.9	*1.0	31.3	54.8	*10.2	*0.6	35.0	54.2		11.9	0.4	33.8	54.0	23.5	0.4	31.8	44.2	15.0	1.6	29.9	53.5
65–74	7.2	**0.2	33.8	58.8	np	np	43.2	48.4		*4.3	*0.0	39.0	56.7	np	np	48.5	35.6	10.4	0.0	28.7	60.9
75+	3.6	**0.3	27.8	68.2	np	np	25.7	66.4		*3.9	*0.2	23.7	72.2	np	np	51.1	*45.4	*2.8	*0.0	24.1	73.1
All women and girls	13.6	1.7	25.7	59.0	10.9	1.1	26.4	61.6		11.9	1.3	25.4	61.3	20.0	1.7	26.6	51.6	15.9	1.6	25.8	56.7
Persons																					
15–17	4.2	1.7	4.2	89.9	*3.8	*1.5	**1.5	93.2		*4.2	*0.7	*3.5	91.7	*13.8	*1.3	**2.0	82.9	*5.7	*2.9	*3.7	87.8
18–24	16.6	3.0	13.4	67.0	11.6	3.3	14.9	70.2		16.5	2.8	10.9	69.8	22.3	0.0	*11.9	65.8	18.6	3.4	15.4	62.7
25–34	19.5	3.5	23.4	53.6	14.0	3.0	26.1	56.9		17.7	3.2	22.7	56.3	26.1	2.9	24.6	46.4	21.2	3.2	25.7	49.9
35–44	18.9	1.8	29.1	50.3	14.9	1.8	27.0	56.3		14.5	2.3	29.7	53.5	21.8	2.3	29.3	46.6	22.3	1.0	29.4	47.3
45–54	20.2	1.3	35.0	43.6	14.3	0.2	35.1	50.4		17.9	1.1	34.0	47.0	28.7	0.8	33.9	36.6	21.2	0.6	36.5	41.6
55–64	14.2	1.0	38.4	46.4	10.8	0.6	43.0	45.6		13.3	1.2	38.6	47.0	24.2	0.5	40.0	35.4	13.8	1.3	39.2	45.6
65–74	8.9	*0.4	43.5	47.2	8.5	0.4	52.0	39.0		7.8	0.0	45.5	46.7	*14.2	*0.4	57.0	28.4	11.1	0.6	41.6	46.7
75+	3.9	**0.2	44.2	51.7	*6.7	*0.0	40.6	52.7		4.1	0.2	39.9	55.8	*7.5	*0.0	57.8	34.7	*3.1	*0.0	46.1	50.7
All persons	15.6	1.8	29.7	52.9	12.2	1.6	30.2	55.9		13.8	1.7	29.2	55.3	23.2	1.4	29.4	46.0	17.2	1.6	30.5	50.7

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. People aged 15 years and over. Other smokers are defined as those who currently smoke but less often than daily.

Ex-smokers are those who have smoked at least 100 cigarettes or used pipes, cigars or other tobacco products 20 times, but are not current smokers.

A never smoker was anyone who had not smoked 100 cigarettes, nor had used pipes, cigars or other tobacco products 20 times over their lifetime. np, not available for publication but included in totals where applicable, unless otherwise indicated.

Table 4.1 Proportion of current adult daily smokers, other smokers, ex-smokers and never smokers, by sex, age and state or territory, 2011–2012 (continued)

	South Australia				Tasmania					Victoria				Western Australia			
	Daily smokers	Other smokers	Ex-smokers	Never smokers	Daily smokers	Other smokers	Ex-smokers	Never smokers		Daily smokers	Other smokers	Ex-smokers	Never smokers	Daily smokers	Other smokers	Ex-smokers	Never smokers
Men and boys																	
15–17	**1.6	**2.2	*7.9	88.3	*5.7	*0.0	**9.5	84.8		*2.2	*1.7	*6.4	89.7	*5.7	*2.7	**7.7	83.8
18–24	15.4	4.7	*16.9	63.0	22.1	1.5	*14.9	61.5		17.7	3.7	13.9	64.7	12.1	2.0	21.7	64.2
25–34	22.2	3.7	21.6	52.4	37.2	2.8	22.9	37.1		20.7	4.3	23.3	51.7	25.1	3.9	28.6	42.4
35–44	24.5	3.0	28.1	44.4	36.7	1.9	25.3	36.1		23.9	1.7	28.4	46.0	22.8	2.2	30.1	45.0
45–54	20.1	1.8	39.4	38.7	27.3	0.8	37.6	34.3		26.8	0.5	36.3	36.4	25.6	2.1	36.4	36.0
55–64	14.6	1.0	48.9	35.5	21.3	0.0	41.1	37.6		17.1	0.4	43.8	38.7	18.9	0.2	47.8	33.1
65–74	13.0	0.0	55.3	31.7	*5.9	*0.7	59.7	33.6		*9.6	*1.1	50.5	38.8	9.0	0.0	59.0	32.0
75+	*5.4	*0.0	60.0	34.7	*7.3	*0.0	68.5	24.2		*3.0	*0.0	65.7	31.3	*6.8	*0.0	66.0	27.2
All men and boys	17.1	2.2	34.8	45.8	23.6	1.1	34.7	40.6		18.4	1.9	32.3	47.4	18.9	1.8	35.6	43.6
Women and girls																	
15–17	**1.3	**3.2	*5.2	90.3	**4.2	**5.9	**4.0	85.9		**2.6	**2.0	**3.4	91.9	**7.1	**0.0	**0.6	92.2
18–24	*9.1	*2.5	*13.2	75.2	20.6	1.9	*10.5	67.0		15.1	2.7	*15.0	67.2	19.7	2.8	*5.1	72.4
25–34	16.4	4.2	24.3	55.0	24.3	2.1	24.4	49.2		17.7	4.3	21.2	56.8	16.6	2.6	18.4	62.4
35–44	20.8	1.9	29.4	47.9	18.2	1.1	29.2	51.5		14.9	1.5	26.6	57.0	18.4	1.6	32.8	47.2
45–54	21.6	2.0	35.2	41.2	20.0	0.5	39.3	40.2		15.7	3.0	32.1	49.2	18.1	1.3	32.1	48.5
55–64	10.7	0.3	29.6	59.4	15.8	0.6	35.9	47.7		12.0	1.2	28.8	58.1	15.2	1.6	32.3	51.0
65–74	10.2	0.8	31.6	57.4	*6.5	1.3	36.2	56.0		7.1	0.4	31.2	61.3	*8.3	*0.0	31.9	59.7
75+	*4.0	*0.0	27.9	68.1	*5.4	*0.0	34.4	60.1		*3.4	*0.5	33.6	62.5	*3.5	*1.1	32.6	62.8
All women and girls	13.9	1.8	26.8	57.5	16.2	1.3	29.5	53.0		13.0	2.2	25.4	59.4	15.3	1.6	25.0	58.1
Persons																	
15–17	**1.4	*2.8	*6.6	89.3	*5.0	*2.8	*6.8	85.3		*2.4	*1.9	*4.9	90.8	*6.4	*1.4	**4.3	87.9
18–24	12.3	3.6	15.1	69.0	21.4	1.7	12.8	64.2		16.4	3.3	14.4	65.9	15.8	2.3	13.7	68.1
25–34	19.3	4.0	23.0	53.7	30.6	2.4	23.7	43.3		19.2	4.3	22.3	54.2	21.0	3.2	23.7	52.1
35–44	22.6	2.5	28.7	46.2	27.1	1.6	27.3	44.0		19.4	1.5	27.5	51.6	20.6	1.9	31.4	46.1
45–54	20.9	1.9	37.3	39.9	23.6	0.6	38.4	37.4		21.2	1.7	34.2	42.9	21.8	1.7	34.3	42.2
55–64	12.6	0.7	39.0	47.7	18.5	0.3	38.5	42.7		14.5	0.8	36.1	48.6	17.1	0.8	40.1	42.0
65–74	11.5	0.5	42.9	45.1	6.2	1.1	47.8	45.0		8.3	0.8	40.6	50.4	8.7	0.0	45.4	45.9
75+	4.6	0.0	42.0	53.4	6.3	0.0	49.6	44.2		*3.2	*0.3	47.8	48.7	*5.0	*0.6	47.7	46.7
All persons	15.4	2.1	30.8	51.7	19.8	1.2	32.0	47.0		15.6	2.1	28.8	53.5	17.1	1.7	30.4	50.8

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. People aged 15 years and over. Other smokers are defined as those who currently smoke but less often than daily.

Ex-smokers are those who have smoked at least 100 cigarettes or used pipes, cigars or other tobacco products 20 times, but are not current smokers.

A never smoker was anyone who had not smoked 100 cigarettes, nor had used pipes, cigars or other tobacco products 20 times over their lifetime. np,

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

Figure 4.1a Proportion of current adult daily smokers, other smokers, ex-smokers and never smokers, men and boys, 2011–2012

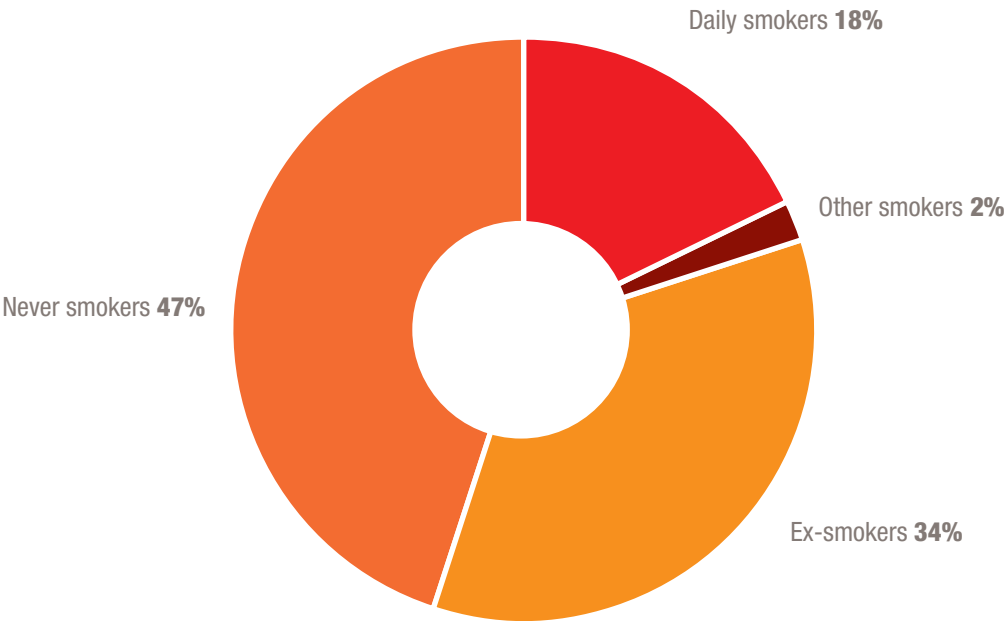


Figure 4.1b Proportion of current adult daily smokers, other smokers, ex-smokers and never smokers, women and girls, 2011–2012

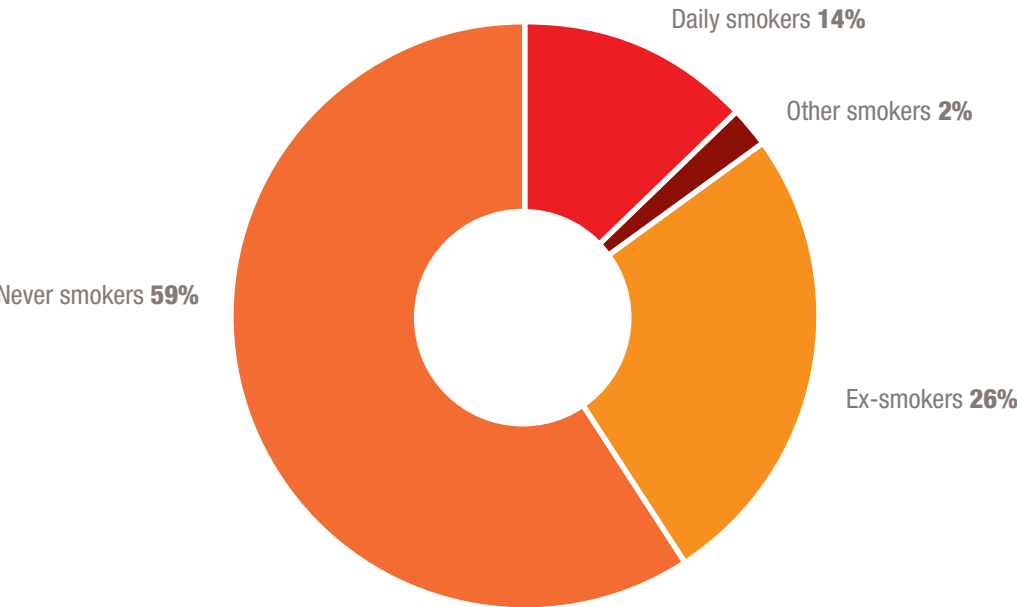


Table 4.2 Proportion of adolescents who have never smoked tobacco, by age and sex, 2011

	Boys	Girls	Children
Age			
12	90.8	94.1	92.5
13	86.8	88.0	87.4
14	78.6	82.4	80.5
15	72.0	73.1	72.5
16	63.5	61.8	62.6
17	56.5	59.2	57.9
All ages	75.9	77.4	76.7

Source: Cancer Council Victoria Centre for Behavioural Research in Cancer, Australian Secondary Students' Alcohol and Drug Survey report, Australian secondary school students' use of tobacco, alcohol and over-the-counter and illicit substances in 2011

Notes: Proportion of school students. Adolescents aged 12–17 who had never had even a puff of a cigarette

Figure 4.2 Proportion of adolescents who have never smoked tobacco, by age and sex, 2011

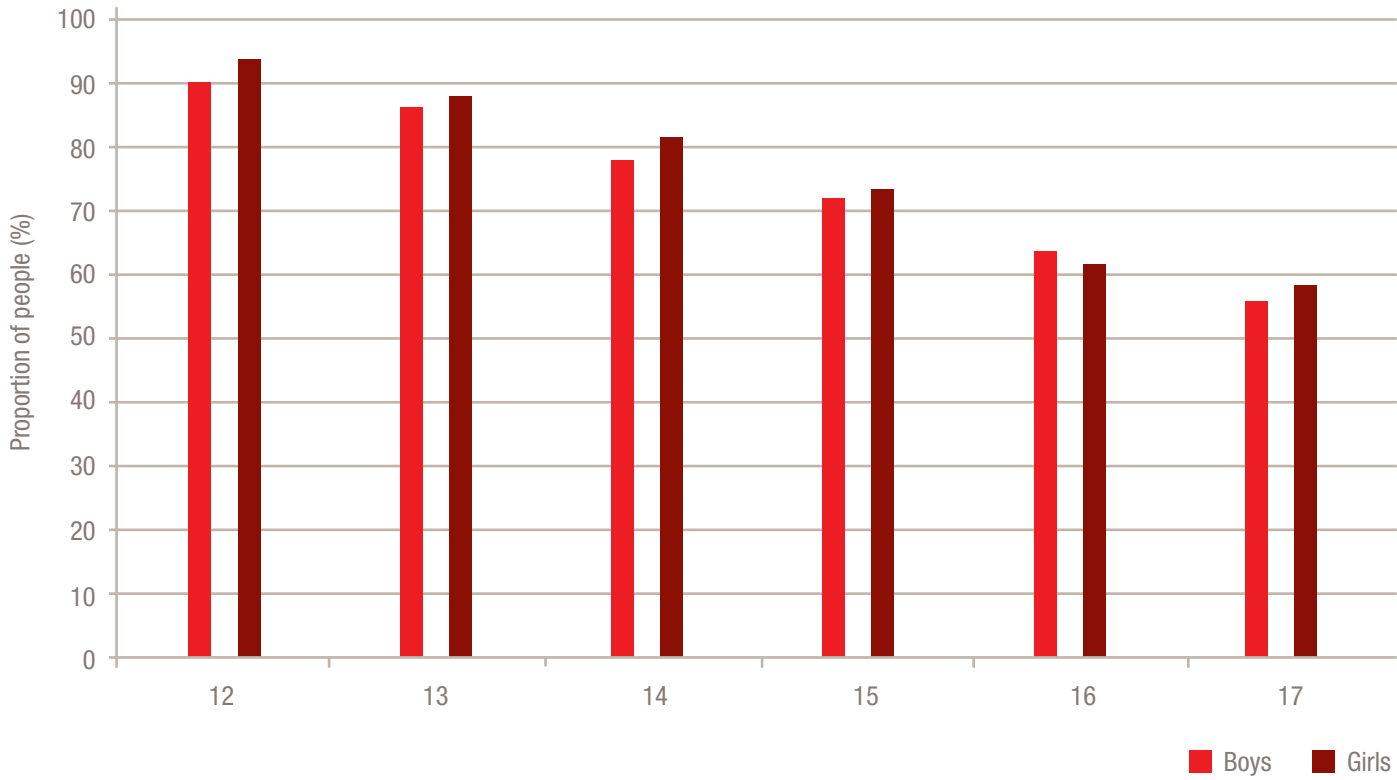




Table 4.3 Proportion of adolescent heavy, light, occasional, former or non-smokers, by sex and age, 2011

	Heavy smokers	Light smokers	Occasional smokers	Ex-smokers	Non-smokers
Boys					
12	0.3	0.2	1.1	2.0	96.4
13	0.5	0.9	1.2	1.9	95.5
14	1.7	1.6	2.5	3.1	91.2
15	1.9	2.2	5.9	2.6	87.4
16	2.2	3.6	7.6	3.8	82.8
17	3.7	4.3	9.2	3.8	79.0
All boys	1.6	2.0	4.3	2.8	89.4
Girls					
12	0.3	0.1	1.3	0.4	97.9
13	0.5	0.9	2.2	1.8	94.6
14	1.0	1.9	3.2	2.7	91.2
15	1.5	1.8	6.2	3.3	87.2
16	1.9	3.9	8.7	2.9	82.6
17	2.1	4.9	9.4	2.3	81.3
All girls	1.2	2.1	4.9	2.2	89.5
Children					
12	0.3	0.1	1.2	1.2	97.1
13	0.5	0.9	1.7	1.8	95.1
14	1.3	1.7	2.8	2.9	91.2
15	1.7	2.0	6.0	3.0	87.3
16	2.1	3.7	8.2	3.3	82.7
17	2.9	4.6	9.3	3.0	80.2
All children	1.4	2.0	4.6	2.5	89.5

Source: Cancer Council Victoria Centre for Behavioural Research in Cancer, Australian Secondary Students' Alcohol and Drug Survey report, Australian secondary school students' use of tobacco, alcohol and over-the-counter and illicit substances in 2011

Notes: Proportion of school students. Adolescents aged 12–17 years. For this question in the survey, respondents were asked to subjectively characterise their own perceived levels of smoking; thus, the above categories are not objectively defined.

Trends in smoking prevalence

Table 4.4 Trends in proportion of current adult daily smokers, other smokers, ex-smokers and never smokers, by sex and age, 2001 to 2011–2012

	2001					2004–2005					2007–2008					2011–2012				
	Daily smokers	Other smokers	Ex-smokers	Never smokers		Daily smokers	Other smokers	Ex-smokers	Never smokers		Daily smokers	Other smokers	Ex-smokers	Never smokers		Daily smokers	Other smokers	Ex-smokers	Never smokers	
Men and boys																				
15–17											8.0	**1.3	*2.9	87.8	4.6	*1.0	6.1	88.3		
18–24											19.8	*4.4	11.9	64.0	18.3	3.2	14.6	63.9		
25–34	30.8	4.5	8.7	56.0		30.3	29.8	23.9	43.1		29.5	3.3	25.5	41.7	21.9	3.9	25.5	48.8		
35–44	33.0	3.5	15.9	47.6		29.5	29.5	28.0	40.4		26.2	2.0	26.5	45.3	21.2	2.2	29.5	47.0		
45–54	30.3	2.3	26.7	40.7		24.7	24.7	37.3	36.0		22.5	*1.7	37.3	38.4	22.9	1.1	37.4	38.6		
55–64	23.3	1.6	33.0	42.1		19.7	19.7	*0.4	32.6		15.3	*0.9	47.6	36.2	15.5	*1.1	45.6	37.9		
65–74	21.1	*0.7	44.2	34.1		np	np	59.0	28.3		np	np	54.9	34.6	10.8	*0.5	53.6	35.1		
75+	12.0	**0.4	56.9	30.6		np	np	68.2	26.3		np	np	61.0	33.8	4.3	0.0	64.7	31.0		
All men and boys	6.8	**0.6	30.3	42.0		24.2	24.2	2.1	38.6		20.2	2.0	32.8	45.0	18.3	2.0	35.2	44.5		
Women and girls																				
15–17											4.3	**0.2	*4.1	91.3	*3.7	*2.4	*2.3	91.6		
18–24											18.2	3.7	13.2	64.9	14.8	2.8	12.2	70.2		
25–34	24.8	2.4	14.1	58.7		23.4	23.3	24.0	49.5		19.3	3.1	23.8	53.8	17.1	3.2	21.4	58.4		
35–44	25.8	2.6	19.5	52.2		23.3	23.3	25.3	49.1		20.3	1.9	26.6	51.2	16.5	1.4	28.7	53.4		
45–54	24.2	2.3	25.2	48.3		22.0	22.0	29.0	49.7		20.7	*1.1	25.8	52.5	17.4	*1.4	32.6	48.5		
55–64	18.9	*1.1	24.4	55.7		20.2	20.2	*0.7	55.8		16.4	**0.9	30.8	51.8	12.9	*1.0	31.3	54.8		
65–74	14.8	*1.0	25.3	58.9		13.6	13.6	29.3	62.3		np	np	29.7	61.2	7.2	**0.2	33.8	58.8		
75+	9.4		23.4	67.2		np	np	26.6	69.5		np	np	28.4	66.9	3.6	**0.3	27.8	68.2		
All women and girls	4.2	*0.6	22.0	69.9		18.4	18.4	1.7	54.5		16.4	1.6	24.3	57.7	14.3	1.7	26.6	57.4		
Persons																				
15–17											6.1	*0.7	3.6	89.6	4.2	1.7	4.2	89.9		
18–24											19.0	4.1	12.5	64.4	16.6	3.0	13.4	67.0		
25–34	27.8	3.5	11.3	57.3		26.9	26.5	23.9	46.3		24.4	3.2	24.7	47.7	19.5	3.5	23.4	53.6		
35–44	29.4	3.0	17.7	49.9		26.5	26.4	26.7	44.8		23.2	1.9	26.6	48.3	18.9	1.8	29.1	50.3		
45–54	27.2	2.3	25.9	44.6		22.5	22.5	33.1	43.0		21.6	1.4	31.5	45.5	20.2	1.3	35.0	43.6		

Table 4.4 Trends in proportion of current adult daily smokers, other smokers, ex-smokers and never smokers, by sex and age, 2001 to 2011–2012 (continued)

	2001					2004–2005					2007–2008					2011–2012				
	Daily smokers	Other smokers	Ex-smokers	Never smokers		Daily smokers	Other smokers	Ex-smokers	Never smokers		Daily smokers	Other smokers	Ex-smokers	Never smokers		Daily smokers	Other smokers	Ex-smokers	Never smokers	
55–64	17.9	0.9	34.7	46.5		16.7	*0.5	38.7	44.1		15.9	*0.9	39.2	44.0		14.2	1.0	38.4	46.4	
65–74	10.7	**0.2	39.6	49.5		np	np	43.8	45.7		9.6	**0.1	42.0	48.2		8.9	*0.4	43.5	47.2	
75+	5.3	*0.6	40.2	53.9		np	np	44.2	51.2		4.9	**0.0	42.6	52.4		3.9	**0.2	44.2	51.7	
All persons	22.4	1.9	26.3	49.4		21.3	1.9	30.2	46.7		18.3	1.8	28.5	51.5		16.3	1.8	30.7	51.2	

\* Estimate has a relative standard error of 25–50% and should be used with caution.  
\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.  
Source: Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2001, 2004–2005, 2007–2008, and 4364.0.55.001 – Australian Health Survey: First Results, 2011–2012  
Notes: Proportion of people. People aged 15 years and over. Other smokers are defined as those who currently smoke but less often than daily. Ex-smokers are those who have in the past smoked at least 100 cigarettes or used pipes, cigars or other tobacco products 20 times, but are not current tobacco consumers. A never smoker was anyone who had not smoked 100 cigarettes, and had not used pipes, cigars or other tobacco products 20 times over their lifetime. Blank cells indicate data were not available for this age group. np, not available for publication but included in totals where applicable, unless otherwise indicated.

Figure 4.4 Trends in proportion of current adult daily smokers, other smokers, ex-smokers and never smokers, by sex, 2001 to 2011–2012

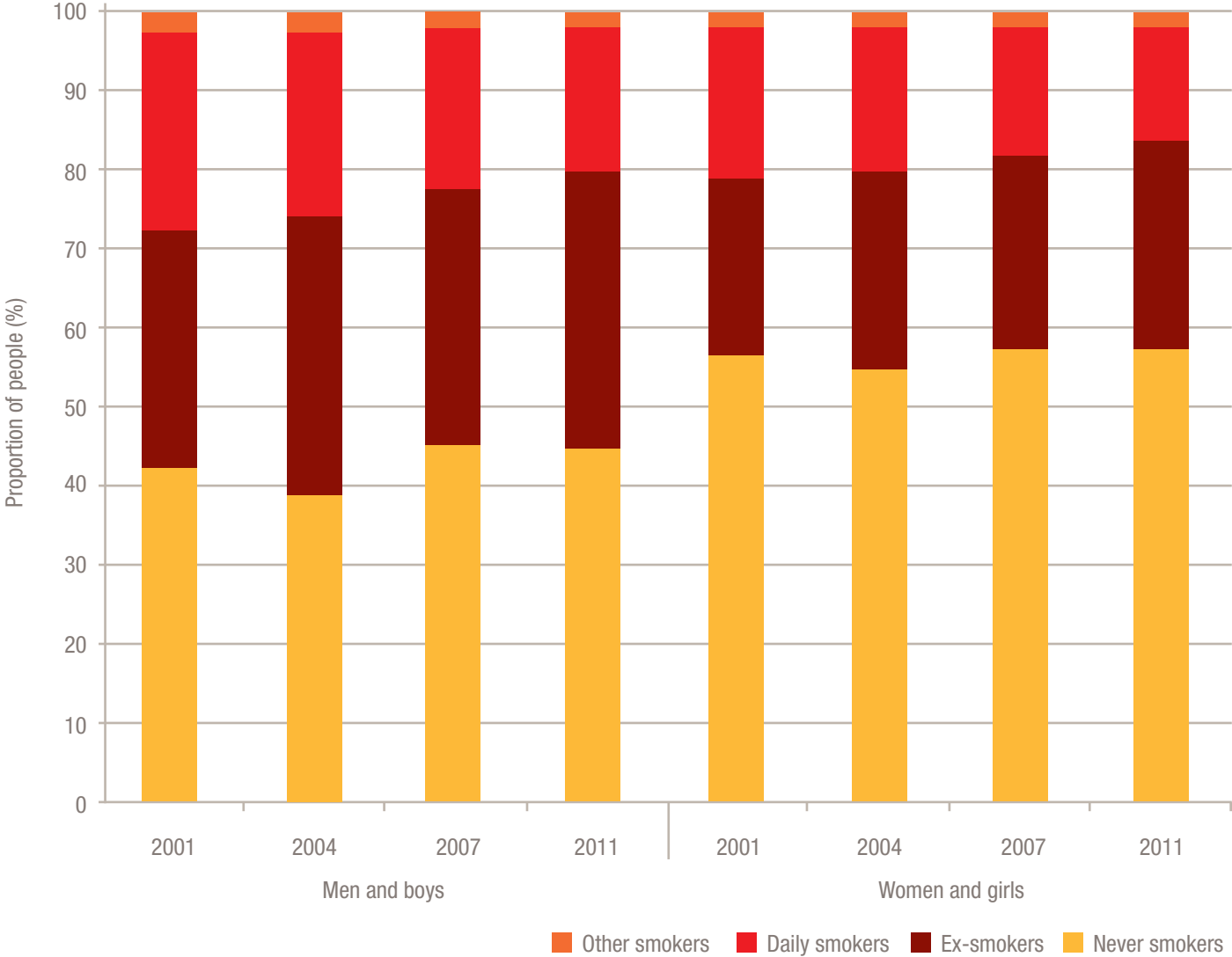


Table 4.5 Trends in prevalence of daily smoking, by state or territory, 1998 to 2010

	1998	2001	2004	2007	2010
State or territory					
Australian Capital Territory	22.5	18.4	16.2	14.7	11.0
New South Wales	21.2	18.0	16.5	16.3	14.2
Northern Territory	30.9	27.9	27.4	25.3	22.3
Queensland	24.4	21.0	19.8	17.2	16.7
South Australia	19.3	20.1	16.5	16.5	15.0
Tasmania	24.4	20.6	21.5	22.6	15.9
Victoria	23.4	19.2	17.5	16.5	14.9
Western Australia	22.6	20.0	15.6	14.8	15.6
Australia	22.5	19.4	17.5	16.6	15.1

Source: Australian Institute of Health and Welfare, 2010 National Drug Strategy Household Survey Report, Drug statistics series no. 25, Cat. no. PHE 145

Notes: Proportion of people. People aged 14 years and over

Table 4.6 Trends in proportion of current smokers, ex-smokers and never smokers, by sociodemographic subgroup, 2007 and 2010

	2007			2010		
	Never smokers	Ex-smokers	Current smokers	Never smokers	Ex-smokers	Current smokers
All persons	55.4	25.1	19.4	57.8	24.1	18.1
Education						
Tertiary qualifications	53.4	27.9	18.8	56.2	26.8	17.0
No tertiary qualifications	57.5	21.5	21.0	59.8	20.7	19.5
Employment status						
Currently employed	52.5	25.8	21.7	54.9	25.5	19.6
Student	86.6	4.3	9.2	85.0	4.8	10.3
Unemployed	45.5	16.3	38.2	55.7	16.7	27.6
Home duties	55.5	25.3	19.2	54.2	25.7	20.1
Retired or pensioner	49.9	37.0	13.1	53.7	35.0	11.3
Volunteer or charity work				60.1	20.4	19.5
Unable to work	43.9	22.4	33.7	42.4	22.2	35.4
Other	51.4	21.9	26.7	53.4	22.8	23.8
Main language spoken at home						
English	53.7	26.5	19.8	55.5	26.1	18.4
Other	75.0	12.5	12.5	80.4	8.0	11.6
Level of disadvantage						
1st quintile (highest disadvantage)	49.6	24.5	25.9	52.6	22.8	24.6
2nd quintile	53.4	25.1	21.5	55.8	23.5	20.7
3rd quintile	55.8	23.7	20.5	56.7	25.7	17.7
4th quintile	56.9	25.2	17.8	59.6	24.1	16.3
5th quintile (lowest disadvantage)	59.6	26.6	13.9	63.2	24.3	12.5
Geography						
Major cities	57.6	24.4	18.0	60.2	23.0	16.8
Inner regional	51.7	26.4	21.9	53.3	26.8	19.9
Outer regional	50.2	26.9	23.0	53.5	25.9	20.7
Remote or very remote	47.8	27.1	25.0	45.4	25.7	28.9
Indigenous status						
Aboriginal and/or Torres Strait Islander*	47.6	18.3	34.1	47.8	14.6	37.6
Non-Indigenous	55.6	25.5	19.0	58.0	24.6	17.4
Household composition						
Single with dependent children	38.4	24.2	37.4	39.5	23.6	36.9
Couple with dependent children	51.9	28.9	19.2	53.9	28.2	17.9
Parent(s) with non-dependent children	50.0	31.6	18.4	53.2	28.6	18.2
Single without children	50.9	23.7	25.4	52.9	23.2	23.8
Couple without children	51.4	34.2	14.4	52.7	33.8	13.5
Other	70.8	10.6	18.6	74.6	9.8	15.6

\* Due to small sample sizes for Aboriginal and/or Torres Strait Islander peoples, estimates should be interpreted with caution.

Source: Australian Institute of Health and Welfare, 2010 National Drug Strategy Household Survey Report, Drug statistics series no. 25, Cat. no. PHE 145

Notes: Proportion of people. People aged 14 years and over. Ex-smokers were defined as having smoked at least 100 cigarettes or the equivalent amount of tobacco in their life, but reported no longer smoking. Never smokers were defined as not having smoked at least 100 cigarettes or the equivalent amount of tobacco in their life. Socioeconomic status based on the 2006 Index of Relative Socio-Economic Disadvantage. A lower Index of Disadvantage quintile (e.g. the first quintile) indicates an area with relatively greater disadvantage and a lack of advantage in general. A higher Index of Disadvantage quintile (e.g. the fifth quintile) indicates an area with a relative lack of disadvantage and greater advantage in general. Blank cells indicate data were not available.



Table 4.7 Trends in prevalence of smoking, adults, by sociodemographic subgroup, 1997 to 2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Sex									
Men	24.5	23.3	22.5	23.0	22.8	22.8	22.6	22.7	20.9
Women	19.0	19.7	18.3	18.1	18.3	17.9	17.6	16.3	16.0
Age group									
18–29	29.4	28.7	26.7	28.6	28.3	26.2	25.3	25.0	23.3
30–40	26.9	27.5	25.6	25.3	26.2	25.8	26.7	24.1	21.5
41–60	19.7	18.8	19.5	18.6	18.9	19.5	19.2	19.4	18.9
61+	11.4	11.7	9.9	10.1	9.2	9.7	8.9	9.0	9.6
Socioeconomic status									
Blue collar	27.9	28.0	26.3	26.4	27.4	28.0	27.5	27.2	25.2
Lower blue	32.0	30.3	28.3	27.9	30.3	29.8	29.6	27.9	27.8
Upper blue	25.4	26.4	25.1	25.4	25.5	26.6	25.2	26.5	23.1
White collar	19.5	19.2	18.9	19.2	18.1	17.9	18.1	17.7	16.9
Lower white	21.8	20.6	20.6	21.2	19.7	21.4	20.5	21.3	20.5
Upper white	17.7	18.0	17.3	17.5	16.2	16.1	16.4	15.5	14.9
Primary language spoken at home									
English	21.8	21.5	20.6	20.5	20.5	20.4	20.3	19.7	18.6
Other	19.0	18.4	16.2	19.5	19.2	17.5	15.1	14.8	15.7
Region									
Capital city	21.6	21.2	19.7	20.0	19.8	19.0	19.1	18.3	17.5
Other	21.9	21.9	21.7	21.3	21.7	22.4	21.6	21.7	19.8

Source: Australian Government Department of Health, National Tobacco Survey 2006 report, National Tobacco Survey: Smoking Prevalence and Consumption, 1997–2005

Notes: Proportion of people from weighted enumerated samples. People aged 18 years and over. Totals for each sex have been age-standardised to the 2001 Estimated Resident Population of Australia. A person was considered to be a smoker if they smoked on at least a weekly basis at the time of the survey or if they had quit smoking on at least a weekly basis within the past 12 months. Socioeconomic subgroups were based on the main income earner’s occupation, and those reporting no occupation were excluded from the coding of this variable.

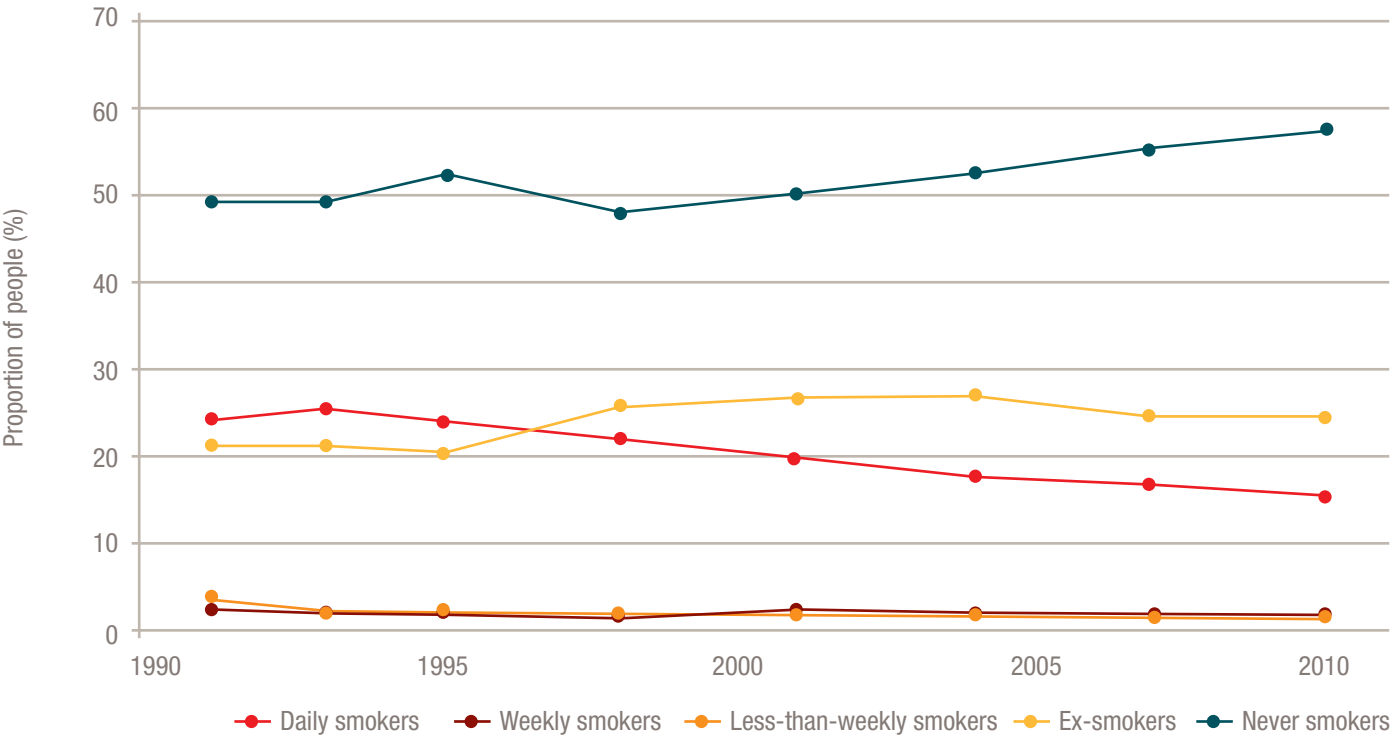
Table 4.8 Trends in proportion of recent daily smokers, weekly smokers, less-than-weekly smokers, ex-smokers and never smokers, ages 14 years and over, 1991 to 2010

	Daily smokers	Weekly smokers	Less-than-weekly smokers	Ex-smokers	Never smokers
Year					
1991	24.3	2.8	2.4	21.4	49.0
1993	25.0	2.3	1.8	21.7	49.1
1995	23.8	1.6	1.8	20.2	52.6
1998	21.8	1.8	1.3	25.9	49.2
2001	19.4	1.8	2.0	26.2	50.6
2004	17.5	1.6	1.6	26.4	52.9
2007	16.6	1.3	1.5	25.1	55.4
2010	15.1	1.5	1.4	24.1	57.8

Source: Australian Institute of Health and Welfare, 2010 National Drug Strategy Household Survey Report, Drug statistics series no. 25, Cat. no. PHE 145

Notes: Proportion of people. People aged 14 years and over. Ex-smokers were defined as having smoked at least 100 cigarettes or the equivalent amount of tobacco in their life, but reported no longer smoking. Never smokers were defined as not having smoked at least 100 cigarettes or the equivalent amount of tobacco in their life.

Figure 4.8 Trends in proportion of recent daily smokers, weekly smokers, less-than-weekly smokers, ex-smokers and never smokers, ages 14 years and over, 1991 to 2010



Trends in level of tobacco consumption

Table 4.9 Average weekly household expenditure on tobacco products, by state or territory, 1984 to 2009–2010

	Average weekly expenditure (A\$)					
	1984	1988–1989	1993–1994	1998–1999	2003–2004	2009–2010
State or territory						
Australian Capital Territory	4.42	6.61	8.53	11.44 <sup>a</sup>	9.47	*11.03
New South Wales	5.65	6.96	9.38	10.51	11.65	11.48
Northern Territory	9.60	9.26	14.63	17.16 <sup>a</sup>	14.92	15.32
Queensland	4.63	6.31	8.91	10.52	11.48	12.90
South Australia	5.50	6.66	9.42	10.92	11.31	14.40
Tasmania	5.56	7.28	10.10	10.33	14.74	14.64
Victoria	6.41	7.09	8.67	10.53	11.34	12.63
Western Australia	6.27	7.18	9.82	11.83	11.41	13.31
Australia	5.73	6.89	9.22	10.74	11.55	12.57

a Data from the capital city only (Canberra or Darwin, respectively)

\* Estimate has a relative standard error of 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 6530.0 – Household Expenditure Survey, Australia: Summary of Results, 1984, 1988–1989, 1993–1994, 6535.0 – Household Expenditure Survey, Australia: Detailed Expenditure Items, 1998–1999, 6535.0.55.001 - Household Expenditure Survey, Australia: Detailed Expenditure Items, 2003–2004, and 6530.0 – Household Expenditure Survey, Australia: Detailed Expenditure Items, 2009–2010

Notes: Australian dollars per week

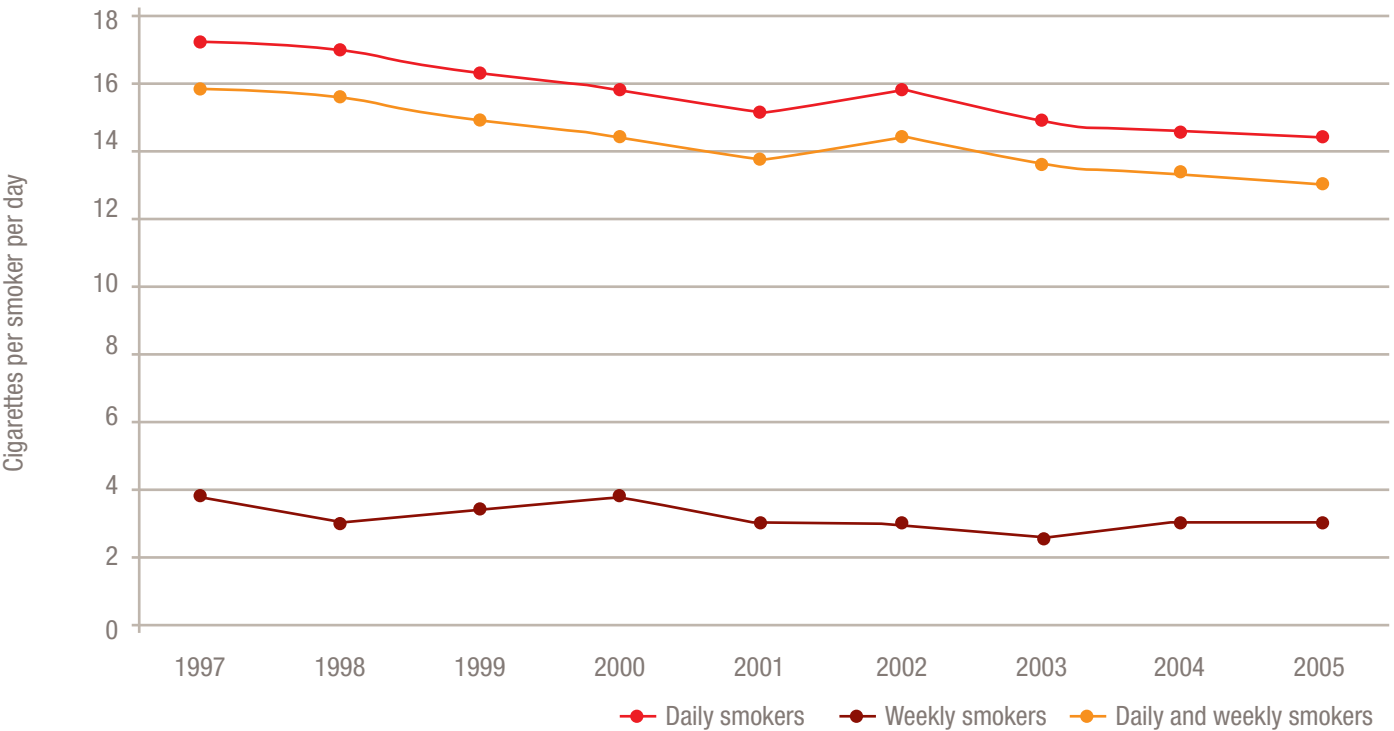
Table 4.10 Average number of cigarettes smoked per smoker per day, 1997 to 2005

	Daily smokers	Weekly smokers	Daily and weekly
Year			
1997	17.0	4.0	15.7
1998	16.8	3.1	15.3
1999	16.2	3.5	14.8
2000	15.5	3.8	14.1
2001	15.0	3.3	13.7
2002	15.7	3.1	14.4
2003	14.9	2.7	13.5
2004	14.4	3.2	13.3
2005	14.3	3.2	13.0

Source: Australian Government Department of Health, National Tobacco Survey 2006 report, National Tobacco Survey: Smoking Prevalence and Consumption, 1997–2005

Notes: Average number of cigarettes per smoker per day among daily and weekly smokers. Smokers aged 18–40 years

Figure 4.10 Average number of cigarettes smoked per smoker per day, ages 18 to 40 years, 1997 to 2005



International comparisons

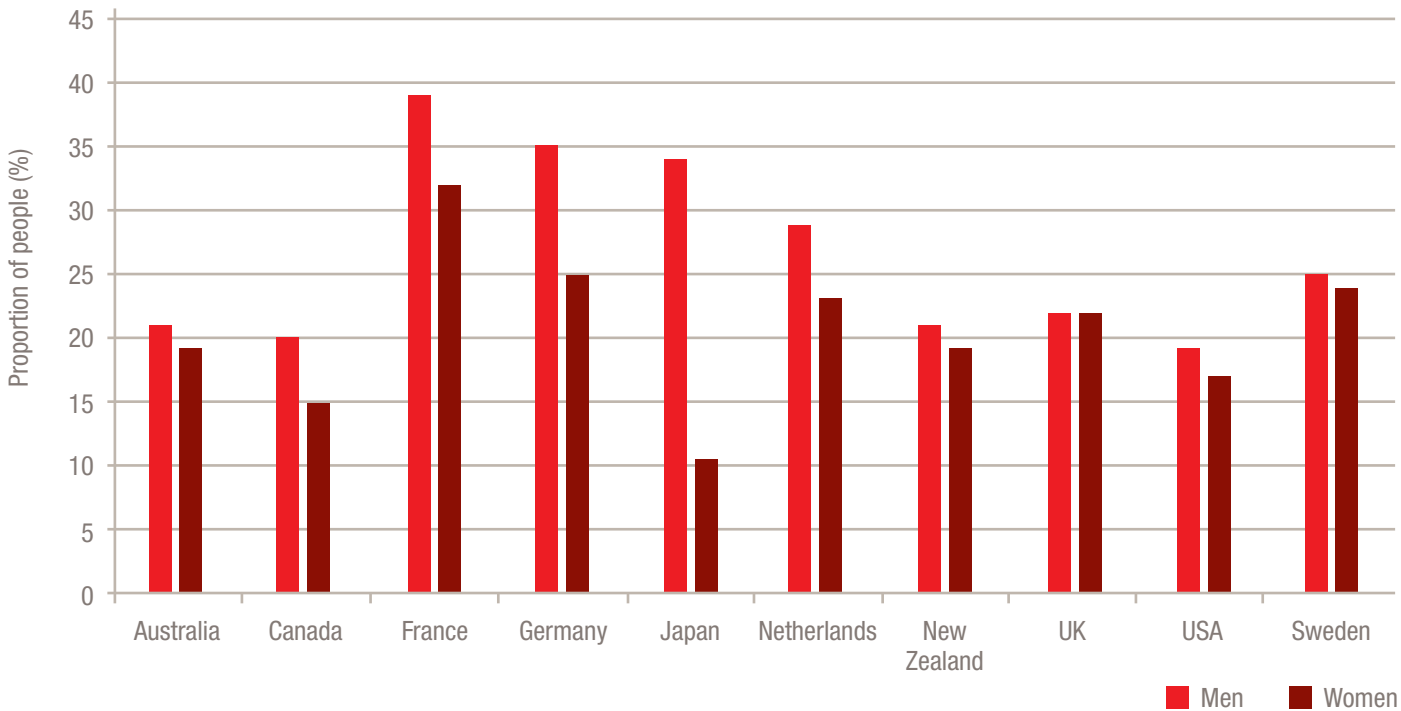
Table 4.11 Age-standardised prevalence of current tobacco smoking in adults, Australia and selected countries, 2011

	Men	Women	Persons
Australia	21	19	20
Canada	20	15	18
France	39	32	36
Germany	35	25	30
Japan	34	11	22
Netherlands	29	23	26
New Zealand	21	19	20
UK	22	22	22
USA	19	17	21
Sweden	25	24	24

Source: World Health Organization, Global Health Observatory Data Repository at [www.who.int/gho/database/en/](http://www.who.int/gho/database/en/)

Notes: Proportion of people. Adults aged 15 years and over. Prevalence of smoking any tobacco product, except for US data, which only included smoking of cigarettes. See the Global Health Observatory data repository for further details on methods, comparability and a description of the age-standardisation method.

Figure 4.11 Age-standardised prevalence of current tobacco smoking in adults, Australia and selected countries, 2011



Smoking in Aboriginal and Torres Strait Islanders peoples  
Table 4.12 Proportion of current adult daily smokers, other smokers, ex-smokers and never smokers, by sex, age and Indigenous status, 2012–2013

	Current daily smokers			Current non-daily smokers		Ex-smokers		Never smokers	
	Aboriginal and Torres Strait Islander	Non-Indigenous		Aboriginal and Torres Strait Islander	Non-Indigenous	Aboriginal and Torres Strait Islander	Non-Indigenous	Aboriginal and Torres Strait Islander	Non-Indigenous
<b>Men and boys</b>									
15–17	21.3	*4.1	*1.3	*1.0	6.0	*4.4	73.0	88.9	
18–24	43.8	17.3	4.1	3.3	14.8	11.7	40.3	64.6	
25–34	54.2	21.5	*2.0	3.9	25.6	17.2	26.6	49.0	
35–44	49.5	20.7	*1.6	2.2	29.6	22.5	26.3	47.5	
45–54	47.6	22.2	**2.4	1.1	37.8	23.1	26.9	38.9	
55+	31.8	11.6	*1.3	0.7	52.1	45.4	21.5	35.6	
All men and boys	43.6	17.1	2.3	2.0	34.0	20.1	34.0	46.9	
<b>Women and girls</b>									
15–17	14.0	*3.6	**0.9	*2.2	*1.8	*4.2	81.0	92.4	
18–24	41.4	14.1	*2.5	2.8	12.2	13.3	42.9	70.8	
25–34	48.8	16.3	3.8	3.2	21.4	18.2	29.2	59.1	
35–44	47.2	16.1	*1.9	1.3	28.8	23.2	27.8	53.8	
45–54	45.1	17.0	*1.0	*1.4	32.7	29.0	24.9	48.9	
55+	26.0	8.8	*0.6	*0.6	31.3	33.6	39.7	59.4	
All women and girls	39.6	13.2	2.0	1.6	25.8	20.6	37.7	59.4	
<b>Persons</b>									
15–17	17.8	3.9	*1.1	*1.6	4.0	*4.3	76.8	90.6	
18–24	42.6	15.8	3.3	3.1	13.5	12.5	41.6	67.6	
25–34	51.5	18.9	2.9	3.6	23.5	17.7	27.9	54.0	
35–44	48.3	18.3	1.7	1.8	29.2	22.9	27.1	50.7	
45–54	46.3	19.6	*1.7	1.2	35.2	26.2	25.9	44.0	
55+	28.7	10.1	*1.0	0.6	41.3	39.1	31.3	47.9	
All persons	41.6	15.1	2.1	1.8	29.8	20.4	35.9	53.2	

\* Proportion has a relative standard error 25–50% and should be used with caution.

\*\* Proportion has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. People aged 15 years and over. Totals by sex are non-age standardised. Data for non-Indigenous people are from the Australian Health Survey 2011–2013 (2011–2012 Core component). Ex-smokers are those who have smoked at least 100 cigarettes or used pipes, cigars or other tobacco products 20 times, but are not current smokers. A never smoker was anyone who had not smoked 100 cigarettes, and had not used pipes, cigars or other tobacco products 20 times over their lifetime and did not currently smoke.



Table 4.13 Trends in proportion of current daily smokers, other smokers, ex-smokers and never smokers, Aboriginal and Torres Strait Islander adults, by sex and age, 2002 to 2012–2013

		2002				2008				2012–2013			
		Current daily smokers	Current other smokers	Ex-smokers	Never smokers	Current daily smokers	Current other smokers	Ex-smokers	Never smokers	Current daily smokers	Current other smokers	Ex-smokers	Never smokers
Men and boys													
15–17		30.7	*2.4	*5.4	60.4	17.7	*2.8	*5.5	74.0	21.3	*1.3	*4.4	73.0
18–24		53.8	*4.2	7.0	34.5	50.1	*4.0	9.9	36.0	43.8	4.1	11.7	40.3
25–34		55.4	*2.3	12.1	29.6	56.0	*2.5	16.8	24.7	54.2	*2.0	17.2	26.6
35–44		58.0	*1.9	17.7	21.5	55.5	3.4	18.3	22.8	49.5	*1.6	22.5	26.3
45–54		50.9	*1.3	19.4	28.4	47.9	*1.5	32.8	17.8	47.6	**2.4	23.1	26.9
55+		40.7	*0.7	38.5	19.8	32.8	**1.0	43.6	22.6	31.8	*1.3	45.4	21.5
All men and boys		50.5	2.3	15.4	31.3	46.1	2.7	19.8	31.4	43.6	2.3	20.1	34.0
Women and girls													
15–17		29.8	*2.1	*5.1	62.4	21.5	*2.3	*7.1	69.1	14.0	**0.9	*4.2	81.0
18–24		52.0	*4.5	9.9	32.8	49.2	*2.5	14.1	34.2	41.4	*2.5	13.3	42.9
25–34		55.1	1.8	12.2	30.2	50.1	*3.4	19.1	27.4	48.8	3.8	18.2	29.2
35–44		53.1	*1.5	15.4	29.3	47.3	*0.8	22.5	29.4	47.2	*1.9	23.2	27.8
45–54		45.2	*1.0	22.4	30.9	46.1	**0.6	25.4	27.9	45.1	*1.0	29.0	24.9
55+		27.1	*2.6	29.6	39.2	30.6	**0.4	27.6	41.5	26.0	*0.6	33.6	39.7
All women and girls		46.9	2.2	15.2	34.9	43.1	1.8	19.6	35.5	39.6	2.0	20.6	37.7
Persons													
15–17		30.2	*2.3	5.3	61.4	19.5	*2.6	6.3	71.6	17.8	*1.1	*4.3	76.8
18–24		52.9	*4.3	8.5	33.6	49.7	3.3	12.0	35.1	42.6	3.3	12.5	41.6
25–34		55.2	2.0	12.2	29.9	52.9	2.9	18.0	26.1	51.5	2.9	17.7	27.9
35–44		55.4	1.7	16.5	25.6	51.1	2.0	20.6	26.3	48.3	1.7	22.9	27.1
45–54		47.9	*1.1	21.0	29.7	46.9	*1.0	28.9	23.2	46.3	*1.7	26.2	25.9
55+		33.3	*1.8	33.7	30.3	31.6	*0.7	34.8	32.9	28.7	*1.0	39.1	31.3
All persons		48.6	2.3	15.3	33.2	44.6	2.2	19.7	33.5	41.6	2.1	20.4	35.9

\* Proportion has a relative standard error of 25–50% and should be used with caution.

\*\*Proportion has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4714.0 – National Aboriginal and Torres Strait Islander Social Survey, 2002 and 2008, and 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. People aged 15 years and over. Ex-smokers are those who have smoked at least 100 cigarettes or used pipes, cigars or other tobacco products 20 times, but are not current smokers. A never smoker was anyone who had not smoked 100 cigarettes, and had not used pipes, cigars or other tobacco products 20 times over their lifetime and did not currently smoke.

Table 4.14 Trends in proportion of current daily smokers, other smokers, ex-smokers and never smokers, Aboriginal and Torres Strait Islander adults, by remoteness and age, 2002 to 2012–2013

		2002				2008				2012–2013			
		Current daily smokers	Current other smokers	Ex-smokers	Never smokers	Current daily smokers	Current other smokers	Ex-smokers	Never smokers	Current daily smokers	Current other smokers	Ex-smokers	Never smokers
Non-remote													
15–17		29.7	*2.1	5.6	62.6	19.0	**0.9	*7.1	73.0	15.7	*1.1	*4.6	78.5
18–24		51.8	*4.6	9.0	34.5	47.0	*2.7	13.2	37.0	38.2	*2.9	13.9	45.1
25–34		54.7	*1.4	13.5	30.4	50.0	*2.5	21.0	26.5	49.0	2.9	19.2	28.9
35–44		55.9	*1.2	18.2	24.8	49.4	*1.6	22.9	26.0	46.3	*1.2	25.3	27.1
45–54		46.0	*0.9	22.3	30.7	48.7	*1.0	29.3	21.0	45.5	*1.3	28.5	24.6
55+		32.4	*1.9	38.1	27.6	31.9	**0.5	35.5	32.0	27.7	*0.8	42.3	29.2
All non-remote		48.0	2.0	16.7	33.3	43.0	1.7	21.1	34.1	39.1	1.9	22.2	36.9
Remote													
15–17		31.8	*2.7	*4.2	57.8	22.1	*10.4	*2.3	65.2	26.9	**1.0	*2.9	69.2
18–24		55.7	3.6	7.2	31.3	57.9	*4.9	8.3	29.0	59.4	*5.0	7.1	28.4
25–34		56.6	3.7	8.8	28.5	60.0	4.0	10.8	25.2	59.5	2.8	12.9	24.8
35–44		54.2	*3.2	12.0	27.8	56.4	*3.1	13.2	27.3	55.0	*3.4	14.5	27.1
45–54		53.2	*8.0	17.2	27.0	41.2	**1.1	27.6	30.1	49.0	**2.9	17.9	30.2
55+		35.5	*1.4	23.0	36.8	30.6	**1.1	33.0	35.4	32.2	*1.4	27.9	38.5
All remote		50.4	2.9	11.5	32.7	49.2	3.7	15.5	31.6	50.4	3.0	14.1	32.5
Persons													
15–17		30.2	*2.3	5.3	61.4	19.5	*2.6	6.3	71.6	17.8	*1.1	*4.3	76.8
18–24		52.9	*4.3	8.5	33.6	49.7	3.3	12.0	35.1	42.6	3.3	12.5	41.6
25–34		55.2	2.0	12.2	29.9	52.9	2.9	18.0	26.1	51.5	2.9	17.7	27.9
35–44		55.4	1.7	16.5	25.6	51.1	2.0	20.6	26.3	48.3	1.7	22.9	27.1
45–54		47.9	*1.1	21.0	29.7	46.9	*1.0	28.9	23.2	46.3	*1.7	26.2	25.9
55+		33.3	*1.8	33.7	30.3	31.6	*0.7	34.8	32.9	28.7	*1.0	39.1	31.3
All persons		48.6	2.3	15.3	33.2	44.6	2.2	19.7	33.5	41.6	2.1	20.4	35.9

\*\* Proportion has a relative standard error of 25–50% and should be used with caution.

\*\* Proportion has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4714.0 – National Aboriginal and Torres Strait Islander Social Survey, 2002 and 2008, as presented in 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. People aged 15 years and over. Ex-smokers are those who have smoked at least 100 cigarettes or used pipes, cigars or other tobacco products 20 times, but are not current smokers. A never smoker was anyone who had not smoked 100 cigarettes, and had not used pipes, cigars or other tobacco products 20 times over their lifetime and did not currently smoke. The 2002 and 2008 data are from the 2002 and 2008 National Aboriginal and Torres Strait Islander Social Surveys, respectively. A never smoker was anyone who had not smoked 100 cigarettes, and had not used pipes, cigars or other tobacco products 20 times over their lifetime and did not currently smoke.



## Part B | Chapter 5

# Diet

### Key facts

- Fewer than 10% of Australians met the National Health and Medical Research Council (NHMRC) guidelines for vegetable consumption (five or more serves per day). Vegetable consumption tended to increase with age.
- In a national secondary school survey, 24% of children met recommendations for consumption of vegetables and 42% met recommendations for fruit consumption. Slightly more boys than girls met recommendations, and the prevalence of meeting recommendations decreased with age for both sexes.



### Introduction

Nutrition is well recognised as a major modifiable determinant for many chronic diseases, and this is particularly the case for cardiovascular diseases.<sup>18</sup> The effect of dietary factors on heart disease is both direct, through specific nutrients and food components, and indirect, through excess weight gain and obesity. Diets high in saturated fat, added sugars or sodium are associated with higher risk for cardiovascular events. Conversely, consumption of fibre, fruit and vegetables is associated with protective effects against heart disease.<sup>19–24</sup>

It is important to have a good understanding of the healthiness of Australian diets in order to identify major risks and targets for preventive actions. However, it can be difficult and time-consuming to ascertain whole diets among survey participants. Surveys commonly use simple indicators of diet quality such as self-reported daily fruit and vegetable consumption, amount of salt added to food, and daily saturated fat intake or fatty and junk food consumption. The Australian Health Survey of 2011–2012 also collected comprehensive data on the whole diets of Australians aged 2 years and older, as well as their estimated daily energy, sodium and nutrient intakes. This is the first time since 1995 that such a comprehensive dietary survey has been undertaken, providing a much-needed update.

In Australia, recommendations for fruit and vegetable consumption are for at least two serves of fruit and five to six serves of vegetables and legumes per day for adults.<sup>25</sup> For children, recommended daily serves are lower than for adults but vary by age group, with recommended serves of each increasing with age.<sup>26</sup> The National Heart Foundation of Australia recommends a balanced and varied diet rich in vegetables, wholegrains, fruit, nuts and seeds, and low in sugary, fatty and salty meals and snacks ([www.heartfoundation.org.au/healthy-eating/Pages/default.aspx](http://www.heartfoundation.org.au/healthy-eating/Pages/default.aspx)).

### Key facts

- Fewer than 10% of Australians met the National Health and Medical Research Council (NHMRC) guidelines for vegetable consumption (five or more serves per day). Vegetable consumption tended to increase with age.
- A higher proportion of Australians reported meeting NHMRC guidelines for fruit consumption (two or more serves per day) than for vegetable consumption: between 40% and 67% met guidelines for fruit consumption, depending on age group.
- Adults aged 16–54 years were less likely to meet fruit consumption recommendations than children and adults older than 54 years. Fruit consumption was higher among women and girls than men and boys.
- Fewer Aboriginal and Torres Strait Islander peoples met recommendations for fruit consumption than non-Indigenous Australians.
- In a national secondary school survey, 24% of children met recommendations for consumption of vegetables and 42% met recommendations for fruit consumption. Slightly more boys than girls met recommendations, and the prevalence of meeting recommendations decreased with age for both sexes.
- International data show that total energy consumption in Australia has trended upwards since around 2000, yet it remains substantially lower than the USA, by around 400 kcal (approximately 1,674 kJ) per person per day.
- Total per capita vegetable and fruit consumption has been relatively stable in Australia since the late 1990s, similar to many comparable high-income countries.



Tables and figures

Fruit and vegetable consumption

Table 5.1 Usual daily vegetable consumption, by sex and age, 2011–2012

	Does not eat vegetables	<1 serve	1 serve	2 serves	3 serves	4 serves	5+ serves
Men and boys							
2–4		4.1	8.4	39.2	30.0	10.0	5.2
5–7		**0.3	6.1	35.8	31.0	16.7	7.1
8–11		*2.8	4.0	30.5	33.6	20.6	5.1
12–15		**0.4	5.2	35.0	25.7	22.0	7.2
16–17		**1.3	7.5	30.6	25.8	23.1	7.2
18–24		*2.0	7.2	35.0	24.3	17.6	9.1
25–34		*1.5	5.6	29.8	29.6	19.0	8.9
35–44		*0.9	4.5	28.2	30.4	20.7	9.5
45–54		*0.8	3.3	28.3	27.8	22.5	10.4
55–64		*0.6	3.0	21.8	27.8	26.3	11.4
65–74		*0.4	2.3	21.9	25.2	25.9	14.7
75–84		np	3.2	16.9	25.9	27.3	15.4
85+		np	*4.9	20.9	22.6	25.8	13.8
All men and boys		1.2	4.7	28.7	28.1	21.3	9.7
Women and girls							
2–4		*2.0	9.0	38.0	31.4	14.4	*3.2
5–7		**1.6	5.8	37.5	31.9	15.5	5.3
8–11		*0.7	5.0	31.3	31.5	20.0	5.7
12–15		**0.7	3.8	27.8	30.0	22.2	9.8
16–17		**0.7	*3.8	28.1	29.1	22.2	9.9
18–24		*1.0	5.8	31.4	31.7	16.2	7.9
25–34		*0.3	2.6	25.2	31.4	24.3	10.3
35–44		*1.0	2.3	19.3	31.9	25.5	10.8
45–54		*0.2	3.9	16.8	31.8	24.0	12.3
55–64		*0.2	2.6	13.4	27.1	27.6	16.8
65–74		**0.2	2.4	12.6	26.4	27.1	18.0
75–84		np	*2.1	17.0	25.9	31.1	14.6
85+		np	*5.4	14.8	26.1	28.2	14.5
All women and girls		0.6	3.6	22.3	30.2	23.6	11.4
Persons							
2–4		3.1	8.7	38.6	30.7	12.2	4.2
5–7		**0.9	5.9	36.6	31.4	16.1	6.2
8–11		1.8	4.5	30.9	32.6	20.3	5.4
12–15		*0.5	4.5	31.4	27.9	22.1	8.5
16–17		*1.0	5.8	29.4	27.3	22.7	8.4
18–24		1.5	6.5	33.3	27.9	16.9	8.5
25–34		0.9	4.1	27.5	30.5	21.7	9.6
35–44		0.9	3.4	23.7	31.2	23.1	10.2
45–54		*0.5	3.6	22.5	29.8	23.3	11.4
55–64		*0.4	2.8	17.6	27.4	27.0	14.1
65–74		*0.3	2.3	17.2	25.8	26.5	16.4
75–84		*0.6	2.6	17.0	25.9	29.4	15.0
85+		**0.3	*5.2	17.3	24.7	27.2	14.2
All persons		0.9	4.2	25.5	29.2	22.4	10.5

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. People aged 2 years and over. Potatoes were included as vegetables in this analysis, but vegetable juices were excluded. np, not available for publication but included in totals where applicable, unless otherwise indicated.

Figure 5.1a Usual daily vegetable consumption, men and boys, by age, 2011–2012

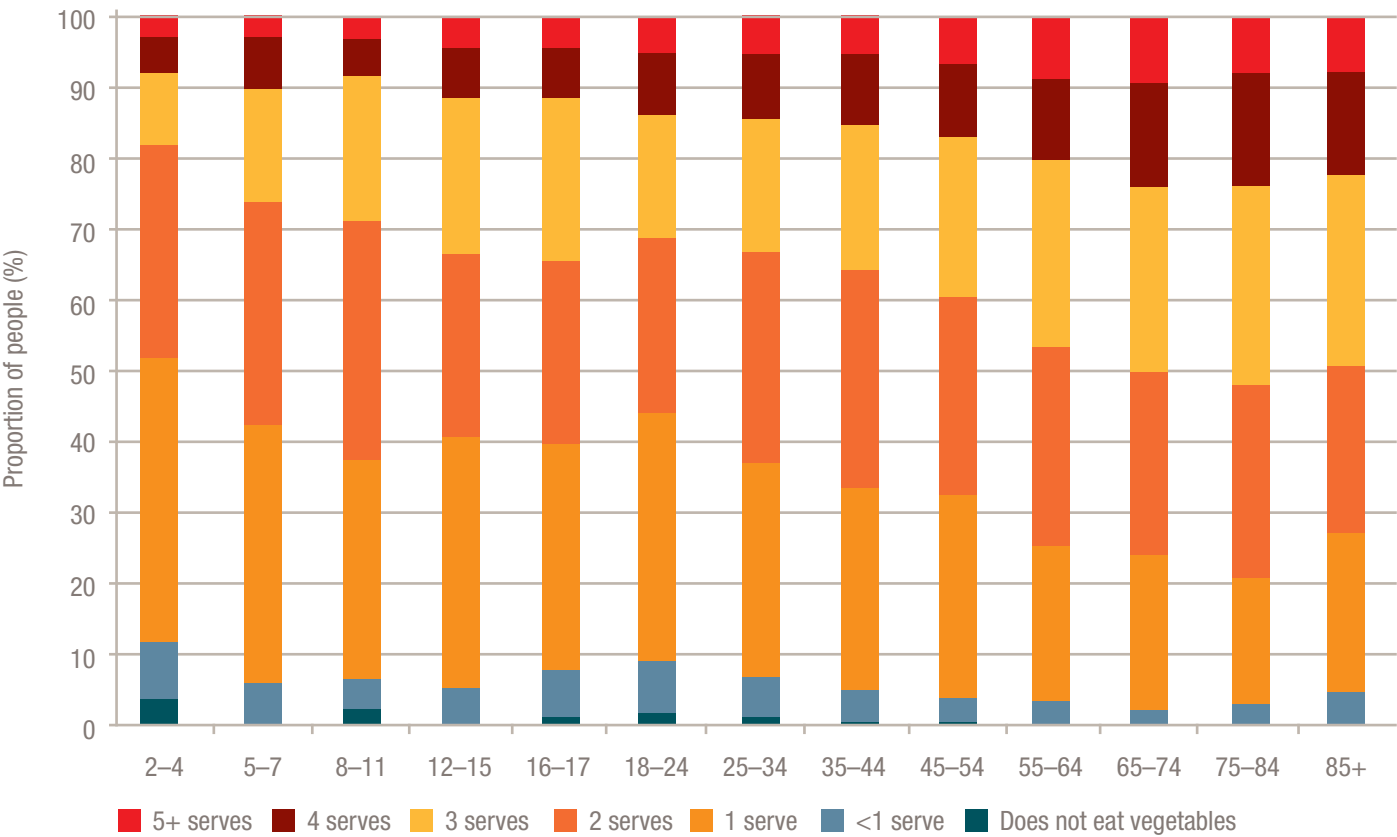


Figure 5.1b Usual daily vegetable consumption, women and girls, by age, 2011–2012

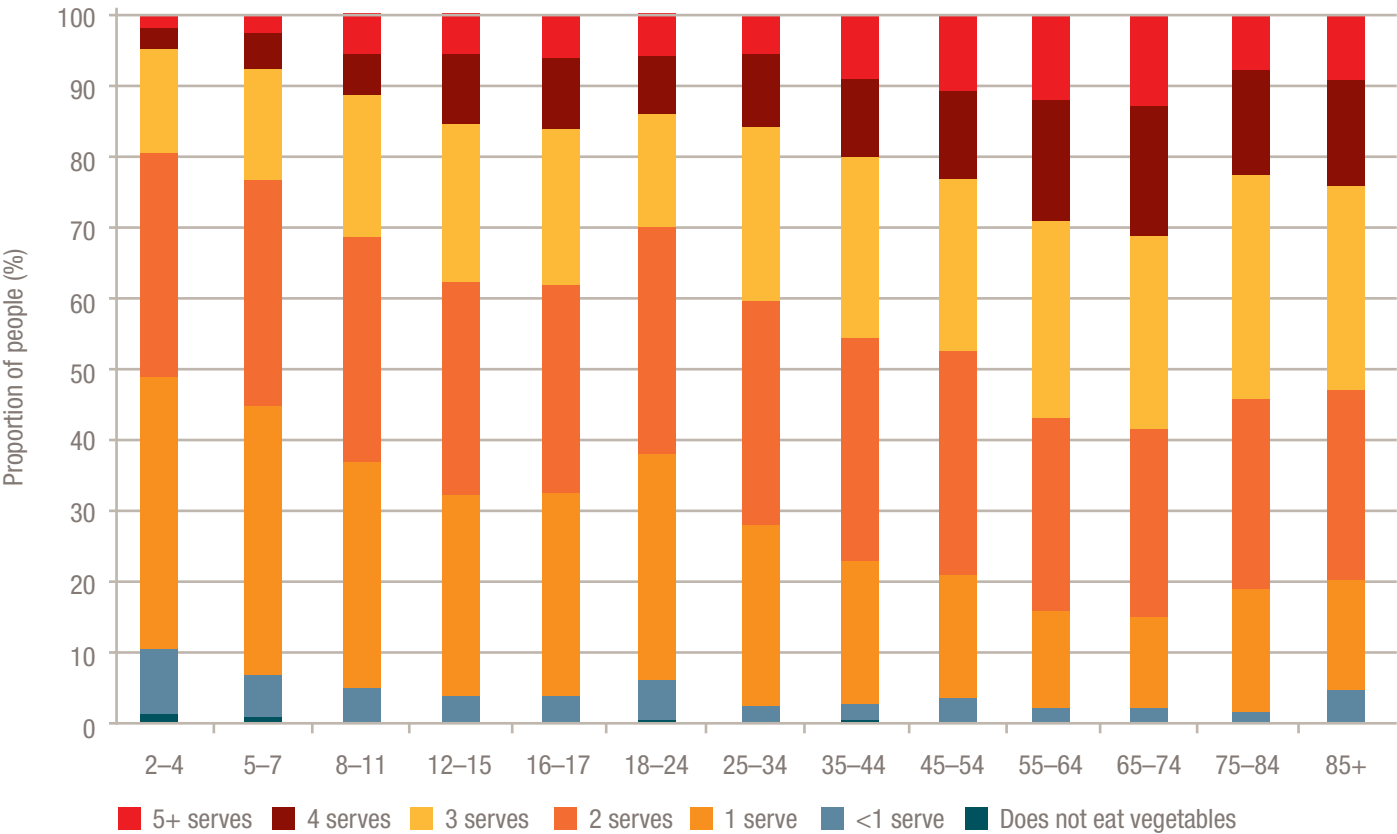


Table 5.2 Usual daily fruit consumption, by sex and age, 2011–2012

	Does not eat fruit	<1 serve	1 serve	2 serves	3 serves	4+ serves
Men and boys						
2–4	*2.3	4.3	23.9	34.4	22.1	13.0
5–7	*2.6	*3.2	28.0	31.1	22.6	12.6
8–11	*1.8	4.8	28.5	40.2	16.0	8.7
12–15	4.7	6.4	35.9	32.9	12.4	7.6
16–17	6.4	13.5	31.1	29.9	13.1	6.0
18–24	9.2	16.0	36.1	22.5	9.4	6.8
25–34	8.2	19.2	35.8	23.8	9.0	4.0
35–44	10.1	17.4	34.3	23.5	9.4	5.3
45–54	7.4	17.6	30.7	26.6	11.8	5.9
55–64	6.6	14.7	30.1	28.6	13.4	6.7
65–74	4.3	11.2	31.6	30.5	14.6	7.8
75–84	*1.2	10.7	27.0	34.9	17.1	9.2
85+	*6.2	*8.9	25.5	32.5	16.8	10.1
All men and boys	6.6	13.9	32.1	27.9	12.6	6.8
Women and girls						
2–4	*1.2	*1.6	24.1	39.4	23.1	10.5
5–7	**1.1	*1.8	23.3	41.0	21.2	11.6
8–11	*1.3	*2.7	25.5	41.0	21.3	8.2
12–15	*2.3	7.5	31.0	36.0	14.0	9.2
16–17	6.1	8.6	31.3	33.4	15.4	5.1
18–24	7.0	12.3	36.4	30.7	9.6	4.1
25–34	5.7	10.3	36.3	32.3	10.6	4.8
35–44	6.1	11.0	37.1	29.9	12.4	3.6
45–54	5.6	11.6	30.1	31.5	14.2	7.0
55–64	4.1	9.2	24.4	35.9	19.2	7.1
65–74	1.9	8.3	23.8	37.3	21.1	7.6
75–84	*1.9	7.7	22.5	37.8	21.5	8.5
85+	*1.8	*5.2	32.7	30.3	22.1	7.9
All women and girls	4.4	9.1	30.5	34.0	15.6	6.5
Persons						
2–4	1.7	3.0	24.0	36.8	22.6	11.8
5–7	*1.8	2.5	25.7	35.9	21.9	12.1
8–11	1.6	3.8	27.0	40.6	18.6	8.5
12–15	3.5	7.0	33.4	34.5	13.2	8.5
16–17	6.3	11.2	31.2	31.5	14.2	5.7
18–24	8.1	14.2	36.2	26.5	9.5	5.4
25–34	7.0	14.8	36.1	28.0	9.8	4.4
35–44	8.1	14.2	35.7	26.7	10.9	4.4
45–54	6.5	14.5	30.4	29.1	13.0	6.4
55–64	5.3	11.9	27.2	32.3	16.4	6.9
65–74	3.1	9.7	27.6	33.9	17.9	7.8
75–84	1.6	9.1	24.5	36.5	19.5	8.8
85+	*3.6	6.8	29.7	31.2	19.9	8.8
All persons	5.5	11.5	31.3	30.9	14.1	6.6

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. People aged 2 years and over. Fruit juices were excluded from this analysis.

Figure 5.2a Usual daily fruit consumption, men and boys, by age, 2011–2012

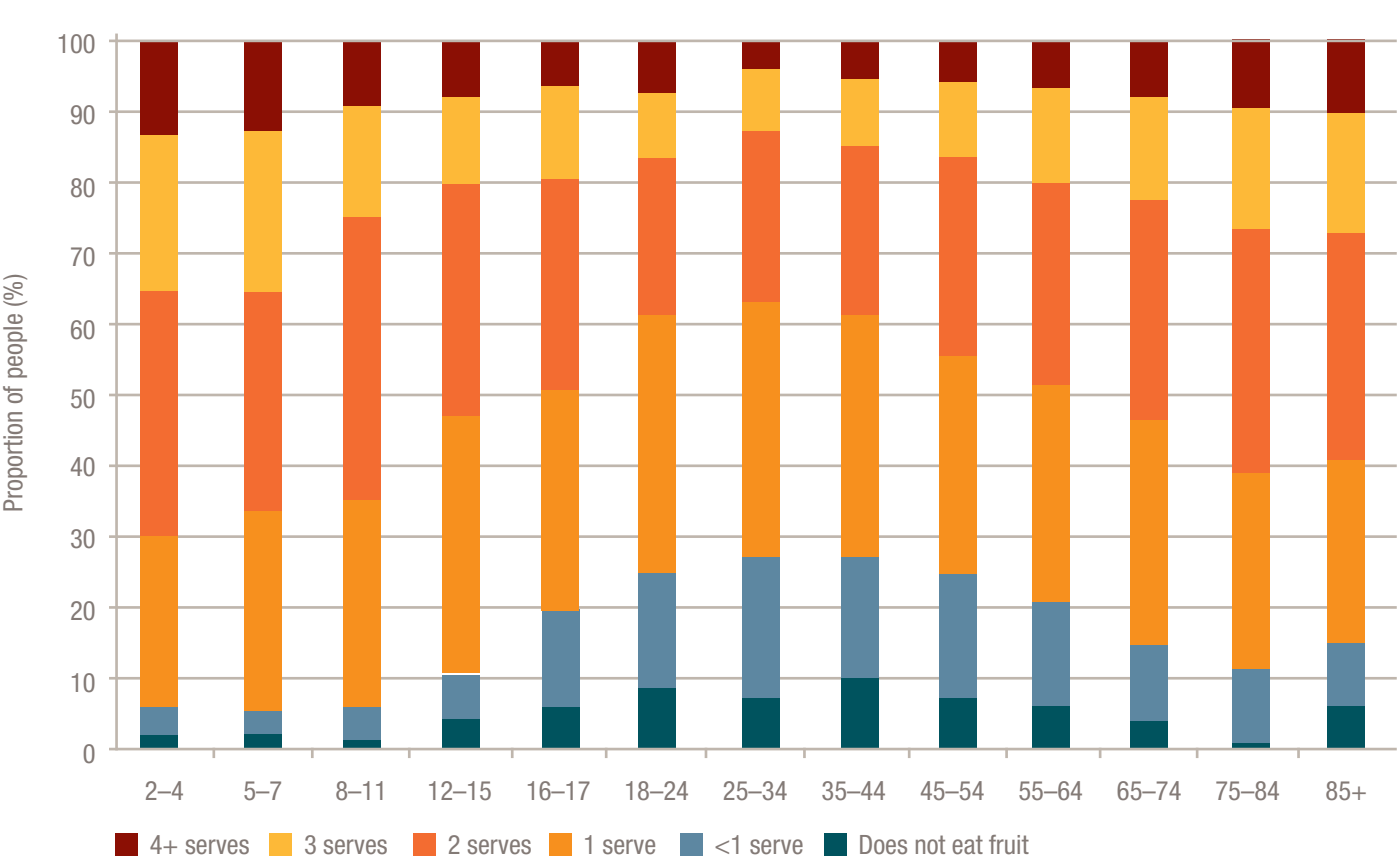


Figure 5.2b Usual daily fruit consumption, women and girls, by age, 2011–2012

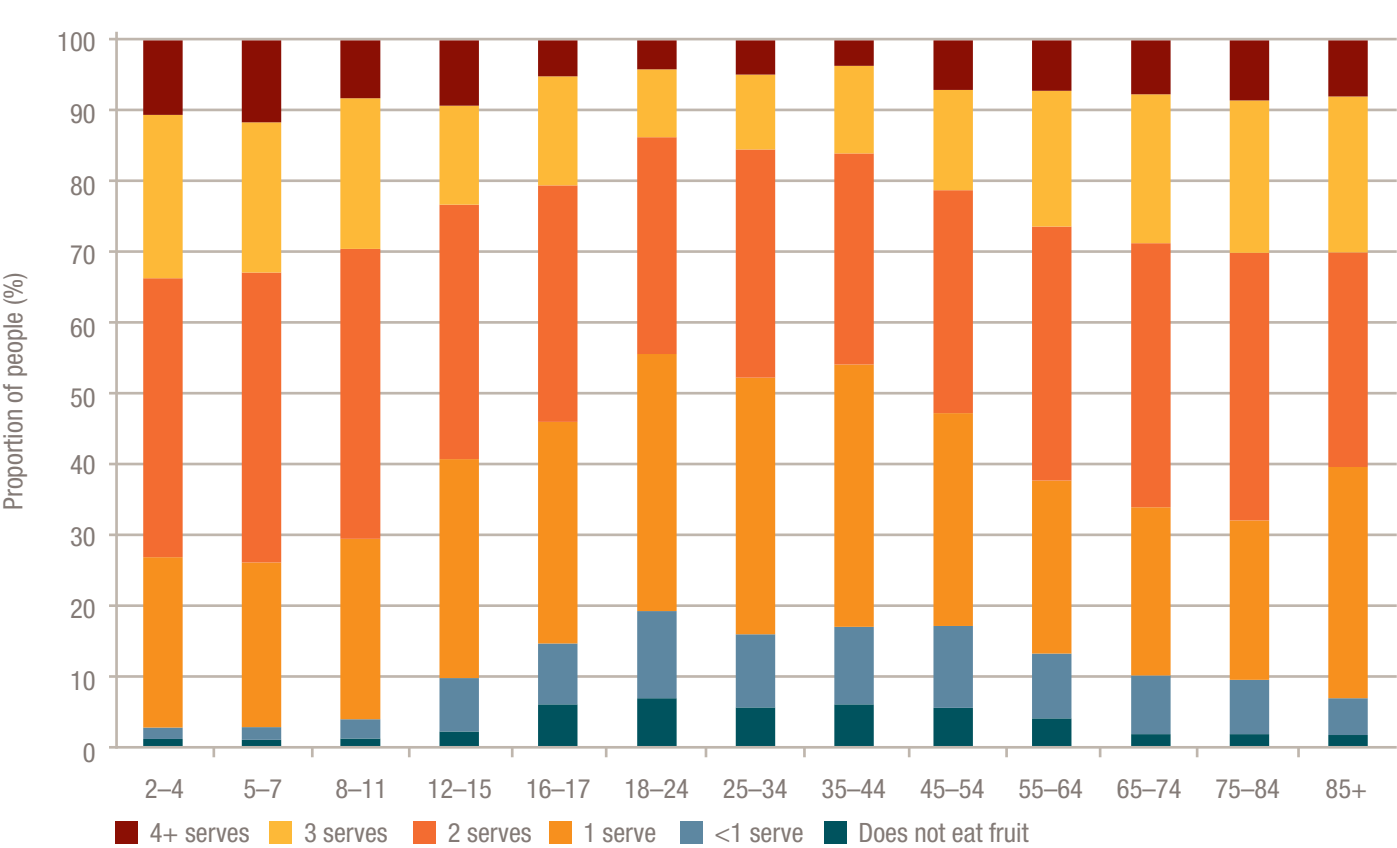




Table 5.3a Self-reported daily intake of vegetables, adults, by sex and state or territory, 2013

	Does not eat vegetables	1 serve or less	2–3 serves	4+ serves
Men				
Australian Capital Territory	0.7	26.3	53.7	19.3
New South Wales	1.9	29.1	55.6	13.4
Northern Territory	2.3	29.7	46.8	21.3
Queensland	1.3	31.1	50.0	17.6
South Australia	1.6	31.9	50.5	16.1
Tasmania	1.8	30.4	49.3	18.5
Victoria	1.0	32.0	51.6	15.4
Western Australia	1.1	26.2	55.5	17.1
All men	1.5	29.9	51.8	16.8
Women				
Australian Capital Territory	0.6	17.3	52.6	29.5
New South Wales	0.7	19.1	55.9	24.3
Northern Territory	0.3	20.5	47.5	31.7
Queensland	1.0	21.3	53.1	24.7
South Australia	0.9	21.4	53.8	23.9
Tasmania	0.0	21.0	52.8	26.2
Victoria	0.9	20.1	56.0	22.9
Western Australia	0.5	15.4	56.0	28.2
All women	0.7	19.5	53.8	26.1
Persons				
Australian Capital Territory	0.7	21.6	53.1	24.6
New South Wales	1.4	24.8	55.7	18.1
Northern Territory	1.2	24.7	47.2	26.9
Queensland	1.1	26.6	51.4	20.9
South Australia	1.2	25.8	52.4	20.6
Tasmania	0.8	25.3	51.2	22.7
Victoria	1.0	26.5	53.7	18.9
Western Australia	0.7	19.5	55.8	24.0
All persons	1.0	24.5	52.8	21.6

Source: National Heart Foundation of Australia, HeartWatch survey, 2009–2013

Notes: Proportion of people. Survey included only people aged 30–65 years. ‘Don’t know’ responses have been excluded from this analysis.

Table 5.3b Self-reported daily intake of fruit, adults, by sex and state or territory, 2013

	Does not eat fruit	1 serve or less	2–3 serves	4+ serves
Men				
Australian Capital Territory	2.1	46.2	43.0	8.7
New South Wales	4.6	44.0	42.1	9.3
Northern Territory	4.6	47.7	40.5	7.3
Queensland	4.5	48.1	42.6	4.9
South Australia	4.6	51.9	37.7	5.9
Tasmania	2.2	55.3	34.9	7.6
Victoria	4.8	46.2	42.1	6.9
Western Australia	8.1	46.0	41.4	4.6
All men	4.5	47.7	40.9	7.0
Women				
Australian Capital Territory	1.9	41.0	47.4	9.6
New South Wales	3.2	44.9	46.2	5.7
Northern Territory	4.9	44.9	40.7	9.5
Queensland	3.2	45.3	47.2	4.4
South Australia	3.4	46.1	44.3	6.3
Tasmania	0.3	48.0	43.0	8.7
Victoria	2.8	46.1	44.0	7.2
Western Australia	3.2	38.9	51.0	6.9
All women	2.9	44.4	45.7	7.1
Persons				
Australian Capital Territory	2.0	43.5	45.3	9.2
New South Wales	4.0	44.4	43.9	7.7
Northern Territory	4.8	46.2	40.6	8.5
Queensland	3.9	46.8	44.7	4.7
South Australia	3.9	48.5	41.5	6.1
Tasmania	1.2	51.3	39.3	8.2
Victoria	3.9	46.1	43.0	7.0
Western Australia	5.0	41.5	47.4	6.0
All persons	3.7	46.0	43.3	7.0

Source: National Heart Foundation of Australia, HeartWatch survey, 2009–2013

Notes: Proportion of people. Survey included only people aged 30–65 years. ‘Don’t know’ responses have been excluded from this analysis.

Table 5.4 Daily intake of vegetables and fruit, children, by sex and age, 2007

Vegetables	1 serve or less	2 serves	3 serves	4 serves	5+ serves
Boys					
2–3	52.9	32.4	10.8	3.1	0.8
4–8	35.7	33.5	19.7	8.5	2.7
9–13	23.4	31.5	24.4	14.7	6.1
14–16	16.7	27.0	25.3	18.2	12.7
All boys	32.5	31.2	19.9	11.0	5.4
Girls					
2–3	51.2	33.8	11.3	2.3	1.4
4–8	34.5	36.4	18.0	8.1	3.1
9–13	21.1	33.4	24.4	12.5	8.6
14–16	18.8	28.9	24.6	15.8	12.0
All girls	31.2	33.2	19.7	9.7	6.3
Children					
2–3	52.1	33.0	11.1	2.7	1.1
4–8	35.1	34.9	18.9	8.3	2.9
9–13	22.2	32.5	24.4	13.6	7.4
14–16	17.7	27.9	25.0	17.0	12.4
All children	31.8	32.2	19.8	10.3	5.9
Fruit	1 serve or less	2 serves	3 serves	4 serves	5+ serves
Boys					
2–3	21.4	38.0	21.4	14.0	5.2
4–8	24.0	35.0	22.9	12.1	6.0
9–13	31.0	33.0	16.7	11.3	8.0
14–16	40.7	24.9	14.5	11.6	8.4
All boys	29.1	32.8	19.0	12.3	6.8
Girls					
2–3	23.5	39.0	21.3	12.0	4.2
4–8	20.1	38.9	23.3	12.4	5.3
9–13	26.6	34.4	19.1	12.5	7.4
14–16	31.3	33.6	16.9	10.3	7.8
All girls	25.3	36.5	20.2	11.8	6.2
Children					
2–3	22.4	38.5	21.4	13.0	4.7
4–8	22.1	36.9	23.1	12.2	5.6
9–13	28.7	33.8	18.0	11.9	7.7
14–16	36.1	29.2	15.7	11.0	8.1
All children	27.2	34.7	19.6	12.1	6.5

Source: Australian Government Department of Health, National Children’s Nutrition and Physical Activity Survey, 2007, accessed via the Australian Data Archive

Notes: Proportion of people. Children aged 2–16 years. ‘Don’t know’ responses have been excluded from this analysis. Neither the Department of Health nor the ADA is responsible for the analysis provided here.

Figure 5.4a Daily intake of vegetables, children, by sex and age, 2007

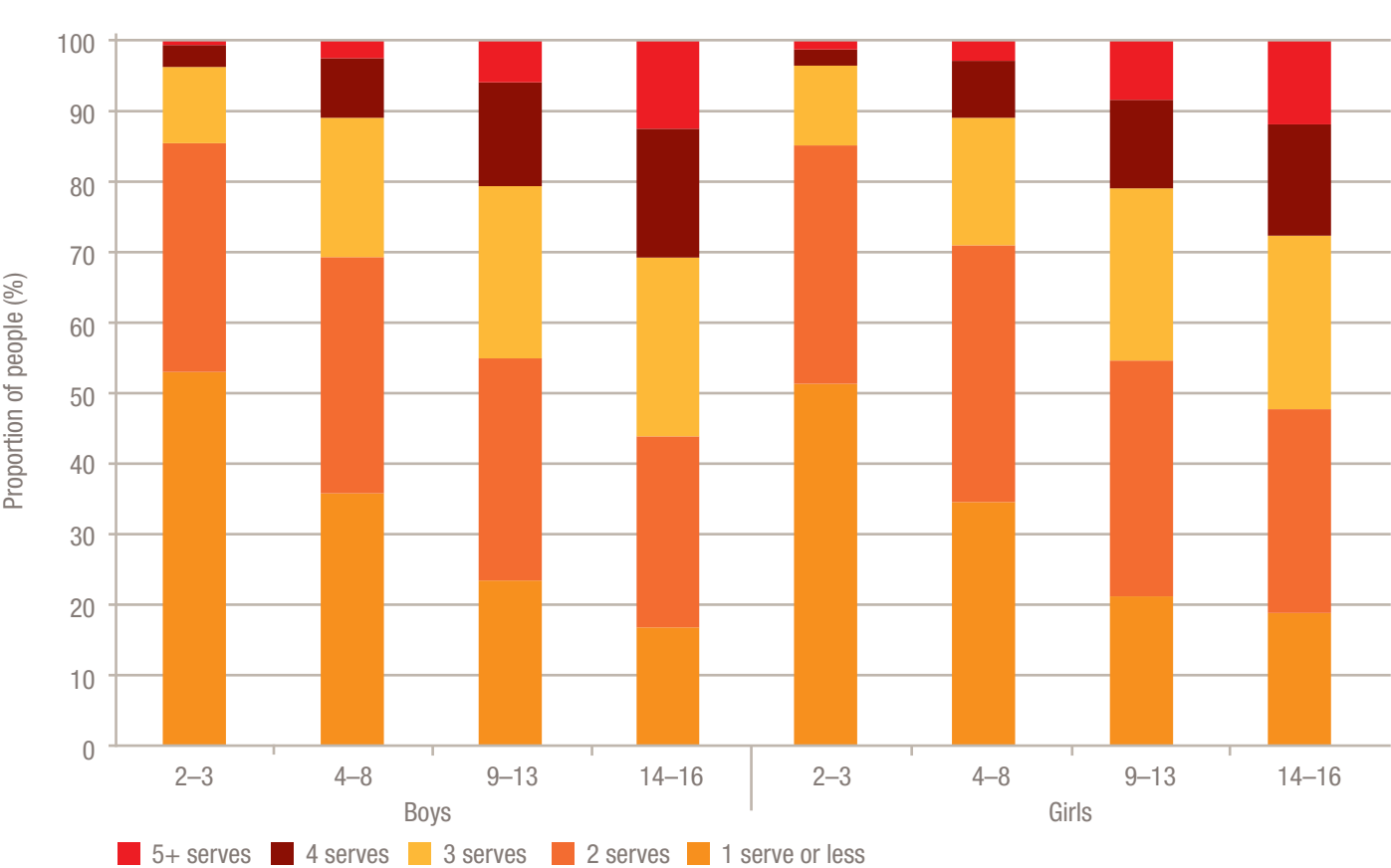


Figure 5.4b Daily intake of fruit, children, by sex and age, 2007

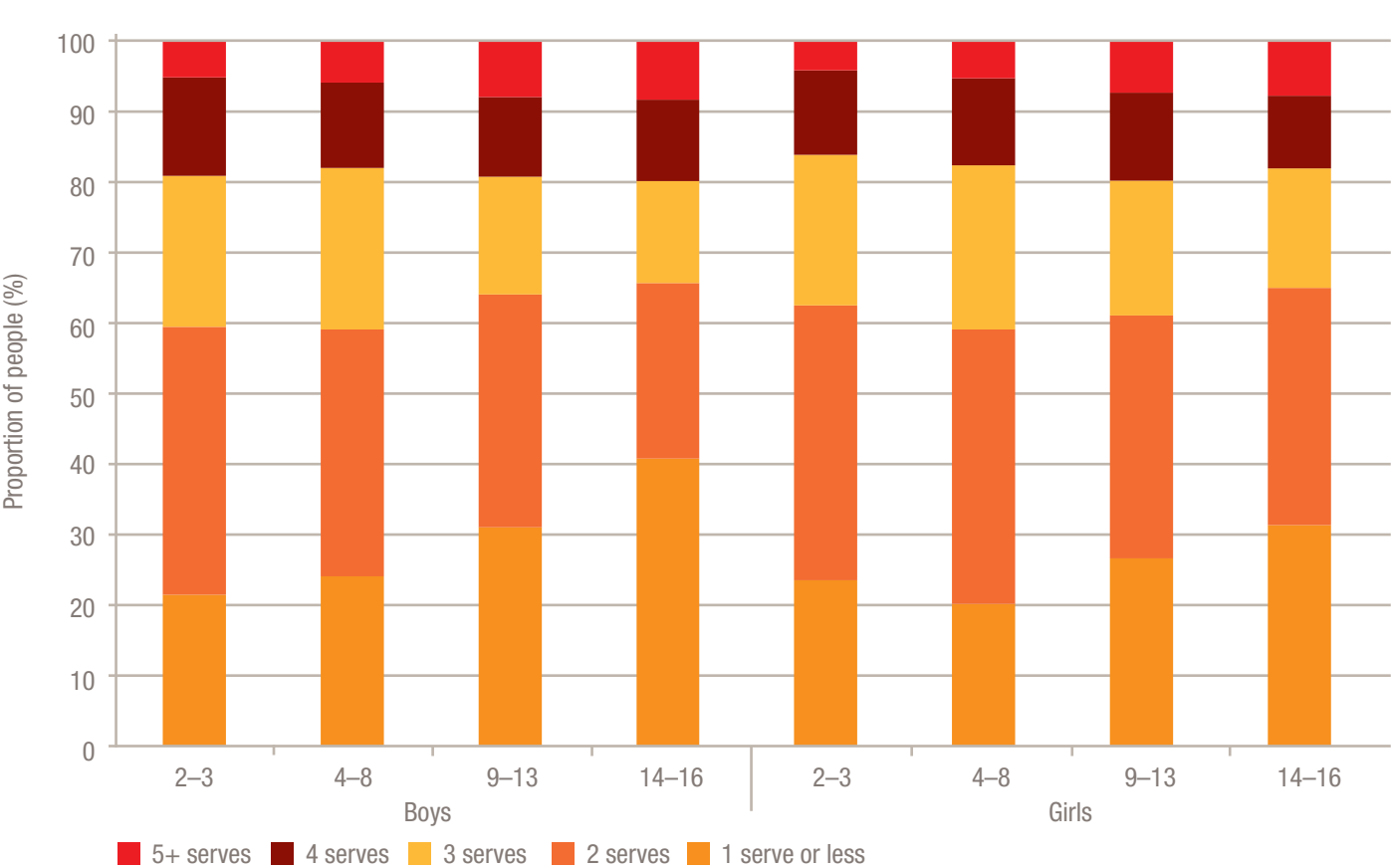


Table 5.5 Proportion of people eating adequate amounts of fruit and vegetables, by sex and age, 2011–2012

	Adequate consumption		
	Men and boys	Women and girls	All persons
Age group			
5–7	56.0	54.3	55.2
8–11	28.4	31.3	29.8
12–15	4.2	5.7	5.0
16–17	*4.1	*5.2	4.6
18–24	3.0	3.9	3.5
25–34	3.3	3.5	3.4
35–44	3.9	5.1	4.5
45–54	4.5	7.8	6.1
55–64	5.3	9.5	7.5
65–74	6.6	10.1	8.3
75–84	8.3	8.1	8.2
85+	*8.4	9.1	8.8
All ages (2+)	7.9	9.6	8.7

\* Estimate has a relative standard error of 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. Totals for each sex include people aged 2 years and over. Based on 2003 NHMRC Australian Dietary Guidelines. Adequate daily vegetable intake has been defined as two serves of vegetables daily for children aged 5–7 years, three serves for children 8–11 years, four serves for children aged 12–17 years and five serves or more for adults. Adequate daily fruit intake was defined as one serve of fruit daily for children aged 5–11 years, three serves for children aged 12–17 years and two serves for adults.

Table 5.6 Proportion of children meeting dietary recommendations for vegetables and fruit, by sex and school year level, 2009–2010

	Met recommendations for vegetables	Met recommendations for fruit
Boys		
Year 8	28.6	49.3
Year 9	24.5	43.0
Year 10	22.8	41.6
Year 11	20.3	39.4
All boys	24.1	43.4
Girls		
Year 8	26.2	45.5
Year 9	24.1	38.3
Year 10	20.5	37.3
Year 11	22.7	36.0
All girls	23.4	39.3
Children		
Year 8	27.5	47.5
Year 9	24.3	40.8
Year 10	21.7	39.6
Year 11	21.5	37.8
All children	23.8	41.5

Source: National Heart Foundation of Australia and Cancer Council Australia, National Secondary Students’ Diet and Activity survey research memo, Prevalence of Meeting Healthy Eating Guidelines in Australian Secondary Students.

Notes: Proportion of people. School students in years 8–11. NHMRC Dietary Guidelines for Children and Adolescents in Australia recommend that adolescents eat at least four serves of vegetables and at least three serves of fruit each day.

Nutrition in children

Table 5.7a Children’s consumption of fruit and vegetables in past 24 hours, by sex, 2004 to 2010

	Not at all	1 time	≥2 times	≥3 times	≥4 times
Boys					
2004 (age 4–5)	5.2	12.0	20.8	27.7	34.4
2006 (age 6–7)	5.1	10.3	20.5	26.8	37.3
2008 (age 8–9)	3.9	10.6	20.0	29.9	35.7
2010 (age 10–11)	5.9	13.0	18.5	22.9	38.8
Girls					
2004 (age 4–5)	3.5	9.7	21.4	28.8	36.7
2006 (age 6–7)	3.4	9.1	19.5	26.8	41.3
2008 (age 8–9)	2.9	8.8	18.7	29.3	40.3
2010 (age 10–11)	4.0	9.3	19.9	22.8	43.0

Source: Australian Government Department of Social Services, Australian Institute of Family Studies, and Australian Bureau of Statistics, Longitudinal Study of Australian Children, Waves 1–4, K-cohort

Notes: Proportion of people. Children aged 6–11 years. For children aged 4–9 years, a parent answered questions about the study child’s diet. However, at age 10 years and over, the study child answered dietary questions for him or herself. A derived variable was created, which added responses for fruit, raw vegetables and cooked vegetables. Each of these separately had response choices of ‘not at all’, ‘one time’ or ‘more than once’. Data are from Growing Up in Australia, the Longitudinal Study of Australian Children, conducted by a partnership of the Department of Social Services (DSS), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS).

Table 5.7b Children’s consumption of high-fat foods in the past 24 hours, by sex, 2004 to 2010

	Not at all	1 time	≥2 times	≥3 times
Boys				
2004 (age 4–5)	9.8	28.5	33.9	27.9
2006 (age 6–7)	8.6	30.7	32.2	28.3
2008 (age 8–9)	9.4	30.0	33.1	27.4
2010 (age 10–11)	9.8	22.1	26.3	41.0
Girls				
2004 (age 4–5)	9.0	31.7	33.1	26.3
2006 (age 6–7)	8.6	31.6	33.7	25.9
2008 (age 8–9)	9.6	32.8	33.5	24.3
2010 (age 10–11)	8.5	28.3	25.2	37.0

Source: Australian Government Department of Social Services, Australian Institute of Family Studies, and Australian Bureau of Statistics, Longitudinal Study of Australian Children, Waves 1–4, K-cohort

Notes: Proportion of people. Children aged 6–11 years. For children aged 4–9 years, a parent answered questions about the study child’s diet. However, at age 10 years and over, the study child answered dietary questions for him or herself. A derived variable was created, which added responses for meat pie, hamburger, hot dog, sausage or sausage roll; chips (including hot chips or french fries); potato chips or savoury snacks; and sweets (including biscuits, doughnuts, cake, pie or chocolate). Each of these four categories had response choices of ‘not at all’, ‘one time’ or ‘more than once’. Data are from Growing Up in Australia, the Longitudinal Study of Australian Children, conducted by a partnership of the Department of Social Services (DSS), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS).

Table 5.7c Children’s consumption of sweet drinks in the past 24 hours, by sex, 2004 to 2010

	Not at all	1 time	≥2 times	≥3 times
Boys				
2004 (age 4–5)	19.9	21.9	35.0	23.2
2006 (age 6–7)	25.7	27.2	29.4	17.8
2008 (age 8–9)	31.9	27.8	25.9	14.4
2010 (age 10–11)	23.3	27.2	27.0	21.6
Girls				
2004 (age 4–5)	21.0	23.1	34.6	21.3
2006 (age 6–7)	27.3	28.1	28.6	16.0
2008 (age 8–9)	31.5	29.1	26.5	12.9
2010 (age 10–11)	25.4	28.9	24.8	19.9

Source: Australian Government Department of Social Services, Australian Institute of Family Studies, and Australian Bureau of Statistics, Longitudinal Study of Australian Children, Waves 1–4, K-cohort

Notes: Proportion of people. Children aged 6–11 years. For children aged 4–9 years, a parent answered questions about the study child’s diet. However, at age 10 years and over, the study child answered dietary questions for him or herself. A derived variable was created, which added responses for fruit juice and soft drink or cordial. Each of these separately had response choices of ‘not at all’, ‘one time’ or ‘more than once’. Data are from Growing Up in Australia, the Longitudinal Study of Australian Children, conducted by a partnership of the Department of Social Services (DSS), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS).

Specific nutrient intakes  
Table 5.8a Mean daily intake of energy, macronutrients, sodium and fibre, by sex and age, 2011–2012

	Energy (kJ)	Protein (g)	Total carbo- hydrates (g)	Total sugars (g)	Total starch (g)	Total fat (g)	Saturated fat (g)	Monoun- saturated fat (g)	Polyun- saturated fat (g)	Choles- terol (mg)	Sodium (mg)	Dietary fibre (g)	Alcohol (g)
Men and boys													
2–3	6,044	58	184	94	88	49.8	21.8	17.5	6.3	158	1,517	17.0	0.0
4–8	7,638	69	233	111	120	64.8	27.7	23.3	8.4	211	2,236	20.1	0.0
9–13	9,209	86	274	125	146	80.4	34.0	29.4	10.5	258	2,657	22.8	0.1
14–18	10,186	101	297	134	161	88.1	36.4	32.8	11.6	326	3,117	22.4	2.0
19–30	11,004	117	297	131	159	92.5	34.7	36.0	14.1	383	3,120	24.4	14.4
31–50	10,220	108	264	119	137	86.3	32.5	33.5	13.2	354	2,915	24.9	19.7
51–70	9,345	98	234	101	125	78.6	29.4	30.5	11.8	333	2,510	24.8	22.6
71+	8,174	83	219	102	112	66.9	26.6	24.5	9.6	284	2,217	25.1	14.2
All men (19+)	9,955	105	259	115	137	83.7	31.5	32.3	12.7	348	2,779	24.8	18.7
All men and boys (2+)	9,655	99	259	116	136	81.5	31.5	31.2	12.0	326	2,721	24.0	14.6
Women and girls													
2–3	5,850	56	177	89	87	48.8	22.2	16.8	5.7	163	1,448	15.3	0.0
4–8	6,428	57	199	95	103	53.3	22.7	19.2	7.0	178	1,868	17.3	0.1
9–13	7,985	74	238	115	121	70.2	29.2	26.0	9.4	244	2,263	19.2	0.0
14–18	8,114	77	235	109	124	73.1	29.5	27.5	10.4	248	2,399	19.3	0.4
19–30	7,863	78	214	99	112	69.9	26.7	26.4	11.0	252	2,303	20.3	7.0
31–50	7,540	80	197	91	103	65.3	24.4	25.0	10.3	263	2,154	20.7	10.3
51–70	7,268	78	184	87	94	62.0	22.5	24.0	9.9	250	1,972	22.2	13.3
71+	6,570	72	172	84	86	55.6	21.3	20.2	8.8	243	1,773	21.0	8.0
All women (19+)	7,420	78	194	91	101	64.2	24.0	24.5	10.2	254	2,090	21.1	10.2
All women and girls (2+)	7,402	76	199	94	103	64.1	24.6	24.2	9.8	246	2,091	20.5	8.0
Persons													
2–3	5,951	57	181	92	88	49.3	22.0	17.2	6.0	160	1,484	16.1	0.0
4–8	7,053	64	217	103	112	59.3	25.3	21.3	7.7	195	2,058	18.7	0.0
9–13	8,604	80	256	120	134	75.4	31.6	27.7	9.9	251	2,462	21.0	0.1
14–18	9,159	89	267	122	143	80.7	33.0	30.2	11.0	287	2,761	20.8	1.2
19–30	9,466	98	256	115	136	81.4	30.8	31.3	12.6	319	2,720	22.4	10.8
31–50	8,872	94	230	105	120	75.8	28.4	29.2	11.7	308	2,533	22.8	15.0
51–70	8,290	88	208	94	110	70.2	25.9	27.2	10.8	291	2,237	23.5	17.8
71+	7,295	77	194	92	98	60.7	23.7	22.2	9.2	262	1,973	22.9	10.8
All persons (19+)	8,672	91	226	103	118	73.8	27.7	28.4	11.4	301	2,431	22.9	14.4
All persons (2+)	8,522	88	229	105	120	72.8	28.0	27.7	10.9	286	2,404	22.2	11.3

Source: Australian Bureau of Statistics, 4364.0.55.007 – Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011–2012

Notes: Kilojoules, grams or milligrams (as indicated) per capita per day. People aged 2 years and over. Energy includes energy from dietary fibre. Alcohol figures represent pure alcohol (ethanol). Sodium figures include sodium naturally present in foods as well as sodium added during processing, but excludes the ‘discretionary salt’ added by consumers in home-prepared foods or ‘at the table’.



Table 5.8b Proportional contribution to energy intake – protein, fat, carbohydrate, dietary fibre and alcohol, by sex and age, 2011–2012

	Protein	Total fat	Saturated fat + trans fatty acids	Saturated fat	Trans fatty acids	Monoun- saturated fat	Polyun- saturated fat	Linolenic acid	Alpha- linolenic acid	Carbo- hydrate	Total sugars	Starch	Dietary fibre	Alcohol
Men and boys														
2–3	16.5	30.0	13.7	13.0	0.6	10.6	3.9	3.2	0.5	50.4	24.9	25.0	2.3	0.0
4–8	15.6	30.8	13.8	13.2	0.6	11.1	4.0	3.4	0.5	50.8	23.3	27.0	2.1	0.0
9–13	16.2	31.3	13.7	13.0	0.6	11.5	4.2	3.5	0.5	49.9	21.7	27.8	2.0	0.0
14–18	17.4	31.2	13.4	12.8	0.7	11.7	4.2	3.5	0.5	48.6	21.4	26.8	1.8	0.5
19–30	18.5	30.5	12.0	11.4	0.6	11.9	4.7	3.9	0.5	45.0	19.1	24.9	1.8	3.5
31–50	18.2	30.6	12.1	11.5	0.6	11.8	4.7	3.9	0.6	43.4	18.9	23.3	2.1	5.0
51–70	18.4	30.5	11.9	11.3	0.6	11.8	4.6	3.8	0.6	41.7	17.3	23.1	2.2	6.6
71+	17.7	29.5	12.3	11.7	0.6	10.8	4.3	3.4	0.6	44.6	19.8	23.6	2.5	5.0
All men (19+)	18.3	30.4	12.0	11.4	0.6	11.7	4.6	3.8	0.6	43.4	18.6	23.7	2.1	5.1
All men and boys (2+)	17.9	30.5	12.4	11.8	0.6	11.6	4.5	3.7	0.6	44.9	19.5	24.4	2.1	4.0
Women and girls														
2–3	16.7	30.4	14.4	13.8	0.7	10.5	3.6	2.9	0.5	49.9	24.1	25.2	2.2	0.0
4–8	15.3	30.1	13.4	12.8	0.6	10.8	4.0	3.3	0.5	51.6	23.8	27.3	2.2	0.0
9–13	16.1	31.5	13.7	13.1	0.6	11.6	4.2	3.6	0.5	49.8	23.5	25.9	2.0	0.0
14–18	16.5	32.4	13.5	12.9	0.6	12.2	4.7	4.0	0.5	48.3	21.4	26.4	2.0	0.1
19–30	17.7	31.9	12.6	12.0	0.6	12.0	5.1	4.3	0.6	45.5	20.5	24.5	2.1	2.1
31–50	18.5	31.4	12.2	11.6	0.6	12.0	5.0	4.1	0.6	43.5	19.7	23.3	2.3	3.6
51–70	18.9	30.9	11.7	11.2	0.6	11.9	5.0	4.0	0.6	42.2	19.2	22.4	2.5	4.7
71+	19.0	30.8	12.3	11.7	0.6	11.3	4.9	3.9	0.7	43.5	20.3	22.6	2.7	3.2
All women (19+)	18.5	31.3	12.2	11.6	0.6	11.9	5.0	4.1	0.6	43.5	19.8	23.2	2.4	3.5
All women and girls (2+)	18.0	31.3	12.5	11.9	0.6	11.8	4.8	4.0	0.6	44.9	20.5	23.9	2.3	2.8
Persons														
2–3	16.6	30.2	14.0	13.4	0.6	10.5	3.7	3.1	0.5	50.2	24.5	25.1	2.2	0.0
4–8	15.5	30.5	13.6	13.0	0.6	10.9	4.0	3.3	0.5	51.2	23.5	27.2	2.2	0.0
9–13	16.1	31.4	13.7	13.1	0.6	11.6	4.2	3.5	0.5	49.8	22.6	26.9	2.0	0.0
14–18	17.0	31.8	13.4	12.8	0.6	11.9	4.4	3.7	0.5	48.5	21.4	26.6	1.9	0.3
19–30	18.1	31.2	12.3	11.7	0.6	12.0	4.9	4.1	0.6	45.3	19.8	24.7	2.0	2.8
31–50	18.4	31.0	12.1	11.5	0.6	11.9	4.8	4.0	0.6	43.4	19.3	23.3	2.2	4.3
51–70	18.6	30.7	11.8	11.2	0.6	11.8	4.8	3.9	0.6	41.9	18.2	22.8	2.4	5.6
71+	18.4	30.2	12.3	11.7	0.6	11.1	4.6	3.7	0.7	44.0	20.1	23.1	2.6	4.0
All persons (19+)	18.4	30.9	12.1	11.5	0.6	11.8	4.8	4.0	0.6	43.5	19.2	23.4	2.2	4.3
All persons (2+)	17.9	30.9	12.4	11.8	0.6	11.7	4.7	3.9	0.6	44.9	20.0	24.2	2.2	3.4

Source: Australian Bureau of Statistics, 4364.0.55.007 – Australian Health Survey: Nutrition First Results – Foods and Nutrients, 2011–2012  
Notes: Proportion of energy intake (%). People aged 2 years and over. Alcohol figures represent pure alcohol (ethanol). Components may not sum to total.

Table 5.8c Proportion of daily energy obtained from major food groups, by sex and age, 2011–2012

	Cereals and cereal products	Cereal-based products and dishes	Fats and oils	Fish and seafood	Fruits and fruit dishes	Egg products and dishes	Meat, poultry and game products and dishes	Milk products and dishes	Dairy and meat substitutes	Vegetable, legume and pulse products and dishes	Snack foods <sup>a</sup>	Non-alcoholic beverages	Total
Men and boys													
2–3	18.2	18.1	1.6	1.7	8.4	0.6	9.9	20.0	0.8	5.1	7.1	5.7	97.2
4–8	20.3	21.6	1.8	1.0	6.0	0.7	10.3	15.8	0.2	4.6	9.7	5.2	97.2
9–13	19.2	24.3	1.4	1.1	4.2	0.5	11.5	13.5	0.1	5.9	9.1	6.8	97.6
14–18	17.4	27.5	1.2	1.0	2.5	0.9	12.6	10.9	0.1	6.7	6.6	8.9	96.3
19–30	17.0	20.4	1.0	2.4	2.7	1.1	15.5	9.9	0.2	6.8	5.1	8.0	90.1
31–50	16.8	19.1	1.4	2.2	3.7	1.2	14.9	8.9	0.3	6.7	5.9	6.8	87.9
51–70	19.5	15.3	2.4	2.8	4.2	1.3	15.3	9.3	0.2	6.5	4.8	4.7	86.3
71+	20.8	15.7	3.1	2.8	5.9	1.3	12.9	11.5	0.3	6.4	5.1	3.7	89.5
All men (19+)	17.9	18.1	1.7	2.5	3.7	1.2	15.0	9.5	0.3	6.6	5.4	6.3	88.2
All men and boys (2+)	18.1	19.3	1.7	2.2	3.9	1.1	14.3	10.4	0.2	6.4	5.9	6.5	90.0
Women and girls													
2–3	19.1	21.2	1.5	0.8	7.3	0.6	8.8	21.4	0.2	4.8	6.5	4.3	96.5
4–8	20.7	21.6	2.1	1.4	7.0	0.7	9.0	15.4	0.4	5.3	8.8	5.5	97.9
9–13	17.6	24.3	1.8	1.2	5.0	0.7	11.7	14.5	0.2	5.7	8.3	6.2	97.2
14–18	16.1	24.9	1.2	1.2	3.2	0.8	12.6	12.5	0.2	8.0	8.8	7.0	96.5
19–30	15.7	23.2	1.5	1.7	3.6	1.2	12.3	9.5	0.6	8.7	6.5	7.4	91.9
31–50	17.1	19.1	1.5	2.8	4.6	1.2	12.9	9.8	0.4	8.0	6.1	6.2	89.7
51–70	18.2	16.1	1.9	3.5	5.9	1.2	13.0	9.7	0.6	7.3	5.2	4.7	87.3
71+	19.8	14.8	2.8	3.2	6.7	1.7	13.2	11.8	0.3	7.6	4.4	4.6	90.9
All women (19+)	17.4	18.8	1.8	2.8	5.0	1.2	12.8	9.9	0.5	7.9	5.9	5.9	89.9
All women and girls (2+)	17.5	19.8	1.8	2.5	5.0	1.1	12.4	10.9	0.4	7.5	6.3	5.9	91.1
Persons													
2–3	18.6	19.6	1.5	1.3	7.9	0.6	9.4	20.7	0.6	4.9	6.8	5.0	96.9
4–8	20.5	21.6	2.0	1.2	6.4	0.7	9.8	15.6	0.3	4.9	9.3	5.3	97.6
9–13	18.5	24.3	1.6	1.2	4.6	0.6	11.6	14.0	0.1	5.8	8.8	6.5	97.6
14–18	16.8	26.4	1.2	1.1	2.8	0.9	12.6	11.6	0.1	7.2	7.5	8.1	96.3
19–30	16.5	21.5	1.2	2.1	3.1	1.1	14.2	9.7	0.3	7.5	5.7	7.8	90.7
31–50	16.9	19.1	1.5	2.5	4.1	1.2	14.0	9.3	0.4	7.2	6.0	6.6	88.8
51–70	18.9	15.6	2.2	3.1	5.0	1.3	14.3	9.5	0.4	6.8	5.0	4.7	86.8
71+	20.3	15.2	3.0	3.0	6.3	1.5	13.1	11.6	0.3	7.1	4.7	4.1	90.2
All persons (19+)	17.7	18.4	1.7	2.6	4.3	1.2	14.1	9.7	0.4	7.1	5.5	6.1	88.8
All persons (2+)	17.8	19.5	1.7	2.3	4.4	1.1	13.5	10.6	0.3	6.9	6.1	6.2	90.4

a Sugar products and dishes; confectionary and cereal/fruit/nut/seed bars  
Source: Australian Bureau of Statistics, 4364.0.55.007 – Australian Health Survey: Nutrition First Results – Foods and Nutrients, 2011–2012  
Notes: Proportion of energy intake. People aged 2 years and over. Items that contribute a small relative proportion of dietary energy have been omitted. The items included represent >85% of the source of dietary energy among Australians.

Table 5.9a Mean daily intake of energy, macronutrients, sodium and fibre, children and adolescents, by sex and age, 2007

	Energy (kJ)	Protein (g)	Total carbohydrate (g)	Total sugars (g)	Total starch (g)	Total fat (g)	Saturated fat (g)	Monoun-saturated fat (g)	Polyn saturated fat (g)	Chol-esterol (mg)	Sodium (mg)	Dietary fibre (g)	Alcohol (g)
Boys													
2–3	6,157	61	193	102	90	51.6	24.4	17.1	6.2	163	1,691	16.7	0.0
4–8	7,587	74	237	117	118	64.4	29.3	22.2	8.1	215	2,229	19.2	0.0
9–13	9,646	95	303	146	154	81.0	36.4	28.3	10.3	265	2,890	23.9	0.0
14–16	11,598	121	351	163	185	99.7	44.2	35.4	12.8	334	3,672	27.5	0.1
Girls													
2–3	5,918	59	183	96	86	50.5	23.5	17.1	6.1	172	1,658	15.5	0.0
4–8	6,886	66	216	106	108	59.1	26.5	20.6	7.7	187	2,090	18.0	0.0
9–13	8,167	80	253	124	126	70.4	31.3	24.7	9.3	224	2,490	20.7	0.0
14–16	8,436	82	261	126	131	73.1	31.7	26.2	10.0	225	2,624	21.5	0.4
Children													
2–3	6,038	60	188	99	88	51.0	23.9	17.1	6.2	167	1,675	16.1	0.0
4–8	7,245	70	227	112	113	61.8	28.0	21.4	7.9	202	2,161	18.6	0.0
9–13	8,922	88	279	135	140	75.8	33.9	26.6	9.8	245	2,694	22.3	0.0
14–16	10,057	102	307	145	159	86.7	38.1	30.9	11.4	281	3,161	24.6	0.2

Source: Australian Government Department of Health, 2007 Australian National Children's Nutrition and Physical Activity Survey – Main Findings  
Notes: Kilojoules, grams or milligrams (as indicated). Survey included children and adolescents aged 2–16 years.

Table 5.9b Proportion of total dietary energy intake obtained from major food groups, children, by sex and age, 2007

	Cereals and cereal-based products	Fats and oils	Fish and seafood	Fruits and fruit dishes	Egg products and dishes	Meat, poultry and game	Milk products and dishes, dairy substitutes	Vegetable, legume, seed and nut products and dishes	Snack foods <sup>a</sup>	Total
Boys										
2–3	34.8	2.9	1.3	7.7	0.6	8.4	25.2	6.0	7.0	93.9
4–8	37.9	2.6	1.3	5.6	0.9	10.4	17.9	6.4	10.4	93.4
9–13	39.0	1.8	1.4	3.7	0.6	11.1	15.7	7.4	11.4	92.1
14–16	40.2	1.8	0.9	2.8	0.6	13.0	14.3	8.0	10.2	91.8
Girls										
2–3	33.6	3.0	1.6	7.8	0.8	8.7	24.6	6.7	7.2	94.0
4–8	38.1	2.9	1.4	6.0	0.8	9.4	17.6	6.9	10.2	93.3
9–13	38.6	2.1	1.2	4.5	0.6	11.0	15.0	7.7	11.4	92.1
14–16	37.3	2.2	1.4	3.9	0.8	9.9	14.0	9.7	11.5	90.7

<sup>a</sup> Confectionary and other sugar products, sauces and condiments  
Source: Australian Government Department of Health, 2007 Australian National Children's Nutrition and Physical Activity Survey – Main Findings  
Notes: Proportion of diet. Survey included children and adolescents aged 2–16 years. Items that contribute a small relative proportion of dietary energy have been left out of the table. However, the items included represent more than 90% of the source of dietary energy among Australian children.

Table 5.10a Frequency of adding salt to food during and after cooking, by sex and age, 2011–2012

	During cooking				After cooking					
	Very often	Occasionally	Rarely	Not used	Not known	Very often	Occasionally	Rarely	Not used	Not known
Men and boys										
2–3	28.2	16.6	5.3	49.0	0.9	1.0	1.9	2.4	93.7	0.9
4–8	22.0	18.0	8.9	50.6	0.4	1.1	7.3	5.9	85.2	0.5
9–13	26.4	17.5	10.9	43.5	1.7	9.4	16.3	12.5	61.8	0.0
14–18	23.9	18.3	9.7	45.3	2.7	13.1	19.5	13.5	53.7	0.2
19–30	34.8	20.6	6.0	34.2	4.4	11.6	21.3	12.2	54.9	0.0
31–50	32.3	18.8	10.0	37.8	1.1	17.1	21.2	13.6	47.8	0.3
51–70	27.8	14.8	10.7	45.7	0.9	22.7	19.1	13.4	44.7	0.1
71+	32.8	17.8	7.8	40.2	1.5	23.5	21.6	12.0	42.6	0.3
All men (19+)	31.6	18.0	9.0	39.5	1.9	18.0	20.7	13.1	48.1	0.2
All men and boys (2+)	30.1	18.0	9.1	41.1	1.8	15.5	18.9	12.3	53.1	0.2
Women and girls										
2–3	22.1	11.9	11.1	54.7	0.1	0.0	1.6	4.7	93.6	0.1
4–8	20.5	19.4	9.8	49.5	0.8	3.6	9.6	7.3	78.8	0.7
9–13	24.6	24.4	10.4	37.4	3.2	3.7	17.5	12.3	64.5	2.0
14–18	28.9	19.9	7.4	41.9	1.9	14.8	15.5	11.1	58.1	0.5
19–30	35.7	23.3	8.3	31.6	1.0	10.4	17.6	12.0	60.0	0.0
31–50	32.1	18.0	8.1	41.6	0.3	14.7	19.9	11.4	53.9	0.1
51–70	28.6	18.6	10.0	42.4	0.3	14.5	21.0	14.2	50.0	0.3
71+	34.8	18.0	11.0	34.7	1.4	14.1	18.8	13.9	53.2	0.0
All women (19+)	32.2	19.3	9.1	38.8	0.6	13.6	19.6	12.6	54.1	0.1
All women and girls (2+)	30.5	19.6	9.1	39.9	0.9	12.0	18.1	12.0	57.5	0.3
Persons										
2–3	25.3	14.4	8.1	51.7	0.5	0.5	1.8	3.5	93.7	0.5
4–8	21.3	18.7	9.3	50.1	0.6	2.3	8.4	6.6	82.1	0.6
9–13	25.5	20.9	10.6	40.5	2.4	6.6	16.9	12.4	63.1	1.0
14–18	26.4	19.1	8.6	43.7	2.3	13.9	17.5	12.3	55.9	0.3
19–30	35.2	21.9	7.1	33.0	2.8	11.0	19.5	12.1	57.4	0.0
31–50	32.2	18.4	9.1	39.7	0.7	15.9	20.5	12.5	50.8	0.2
51–70	28.2	16.8	10.4	44.1	0.6	18.5	20.1	13.8	47.4	0.2
71+	33.9	17.9	9.6	37.2	1.5	18.4	20.0	13.0	48.4	0.1
All persons (19+)	31.9	18.7	9.0	39.1	1.2	15.8	20.1	12.9	51.1	0.2
All persons (2+)	30.3	18.8	9.1	40.5	1.3	13.8	18.5	12.1	55.3	0.3

Source: Australian Bureau of Statistics, 4364.0.55.007 – Australian Health Survey: Nutrition First Results – Foods and Nutrients, 2011–2012

Notes: Proportion of people. People aged 2 years and over

Table 5.10b Trends in usually adding salt to food after cooking, adults, by sex and age, 1983 to 2011–2012

	1983	1989	2001	2011–2012
Men				
25–34	32.2	17.1	25.8	15.7
35–44	36.5	20.1	31.4	19.3
45–54	40.6	25.6	31.9	20.8
55–64	40.7	26.8	38.6	23.0
Women				
25–34	24.5	13.6	20.3	12.2
35–44	24.8	13.2	21.4	14.7
45–54	23.3	16.9	22.4	17.9
55–64	24.9	15.6	23.9	17.3
Persons				
25–34	28.3	15.3	23.0	14.1
35–44	30.6	16.6	26.3	17.0
45–54	31.8	21.2	27.1	19.3
55–64	32.6	21.2	31.3	20.1

Source: National Heart Foundation of Australia, Risk Factor Prevalence study 1983 and 1989, accessed via the Australian Data Archive; Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2001, and 4324.0.55.003 – Microdata: Australian Health Survey, Core Content - Risk Factors and Selected Health Conditions, 2011–2012

Notes: Proportion of people. Adults aged 25–64 years. Totals were not available for all persons aged 25–64 years for the 2001 NHS; thus no totals were included. This table presents data on individuals who responded ‘almost always or always’ in the Risk Factor Prevalence surveys, ‘usually’ in the 2001 NHS and ‘very often’ in 2011–2012 AHS to the question of how frequently they add salt to food after it has been cooked. AHS 2011–2012 figures were generated using ABS TableBuilder application.

Figure 5.10 Trends in usually adding salt to food after cooking, adults, by age, 1983 to 2011–2012

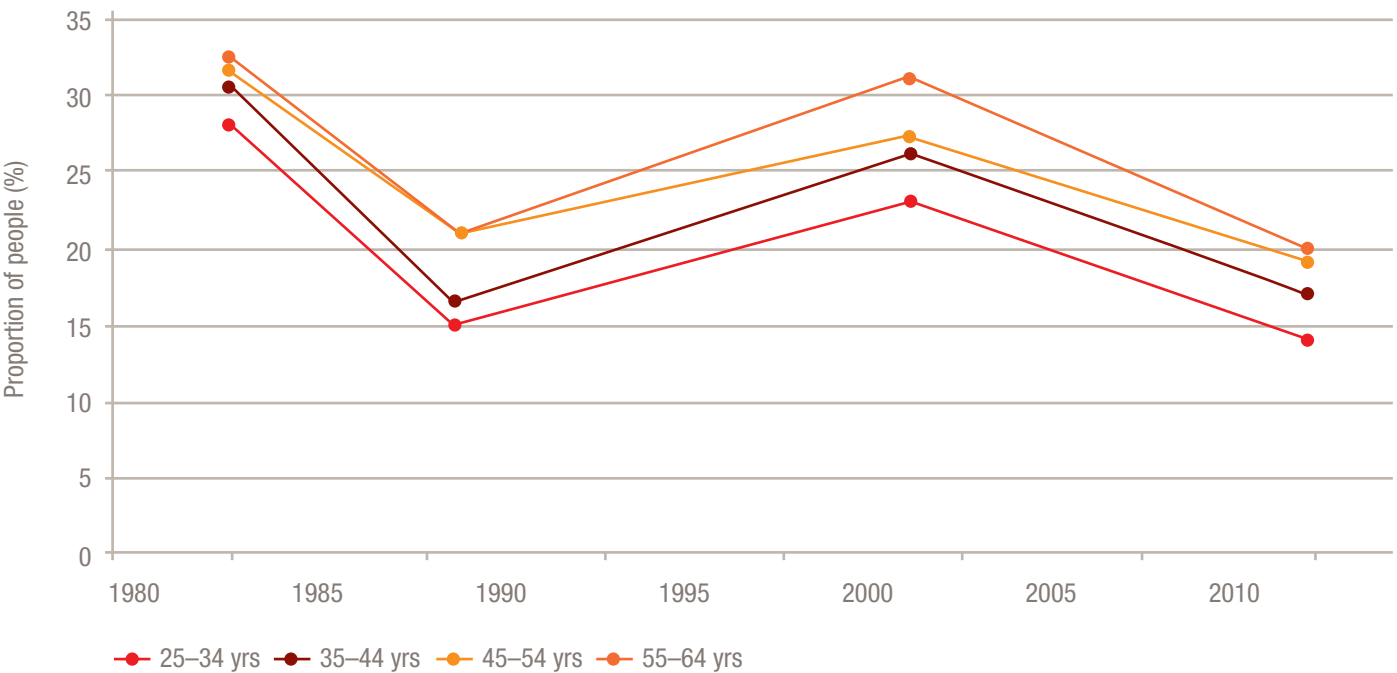


Table 5.11 Total per capita energy consumption, Australia and selected countries, 1990 to 2009

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Australia	3,177	3,111	3,119	3,048	3,048	3,090	3,065	3,099	3,020	3,022	3,014	3,094	3,094	3,159	3,090	3,133	3,206	3,232	3,245	3,261
Canada	3,019	3,039	3,090	3,120	3,207	3,208	3,252	3,390	3,455	3,496	3,515	3,517	3,534	3,530	3,539	3,503	3,499	3,498	3,465	3,399
France	3,515	3,549	3,558	3,552	3,521	3,527	3,529	3,559	3,605	3,604	3,608	3,649	3,669	3,603	3,570	3,586	3,537	3,520	3,598	3,531
Germany	3,321	3,413	3,452	3,290	3,297	3,341	3,387	3,267	3,376	3,371	3,423	3,467	3,516	3,479	3,518	3,557	3,537	3,552	3,537	3,549
Japan	2,945	2,930	2,940	2,923	2,929	2,917	2,960	2,935	2,891	2,894	2,902	2,892	2,859	2,851	2,855	2,842	2,793	2,821	2,768	2,723
New Zealand	3,254	3,177	3,183	3,212	3,167	3,190	3,177	3,175	3,163	3,217	3,153	3,112	3,121	3,126	3,132	3,158	3,104	3,167	3,169	3,172
Sweden	2,974	2,943	3,051	3,138	3,088	3,088	3,040	3,089	3,066	3,120	3,101	3,127	3,130	3,138	3,141	3,127	3,097	3,096	3,123	3,125
UK	3,244	3,210	3,271	3,219	3,236	3,187	3,270	3,331	3,357	3,410	3,372	3,418	3,437	3,421	3,455	3,437	3,433	3,453	3,453	3,432
USA	3,507	3,538	3,576	3,624	3,687	3,602	3,612	3,675	3,685	3,719	3,804	3,756	3,829	3,821	3,853	3,799	3,804	3,794	3,733	3,688

Source: Food and Agriculture Organization of the United Nations (FAO), Food Balance Sheets. FAOstat, faostat.fao.org/

Notes: Kilocalories per person per day. Energy consumption per person refers to the total amount in food, in kilocalories, available for each individual in the population each year. Per person figures represent only the average supply available for the population as a whole and do not necessarily indicate what is consumed by individuals. Actual consumption may be lower than the quantity shown due to wastage and losses of food in the household.

Figure 5.11 Total per capita energy consumption, Australia and selected countries, 1990 to 2009

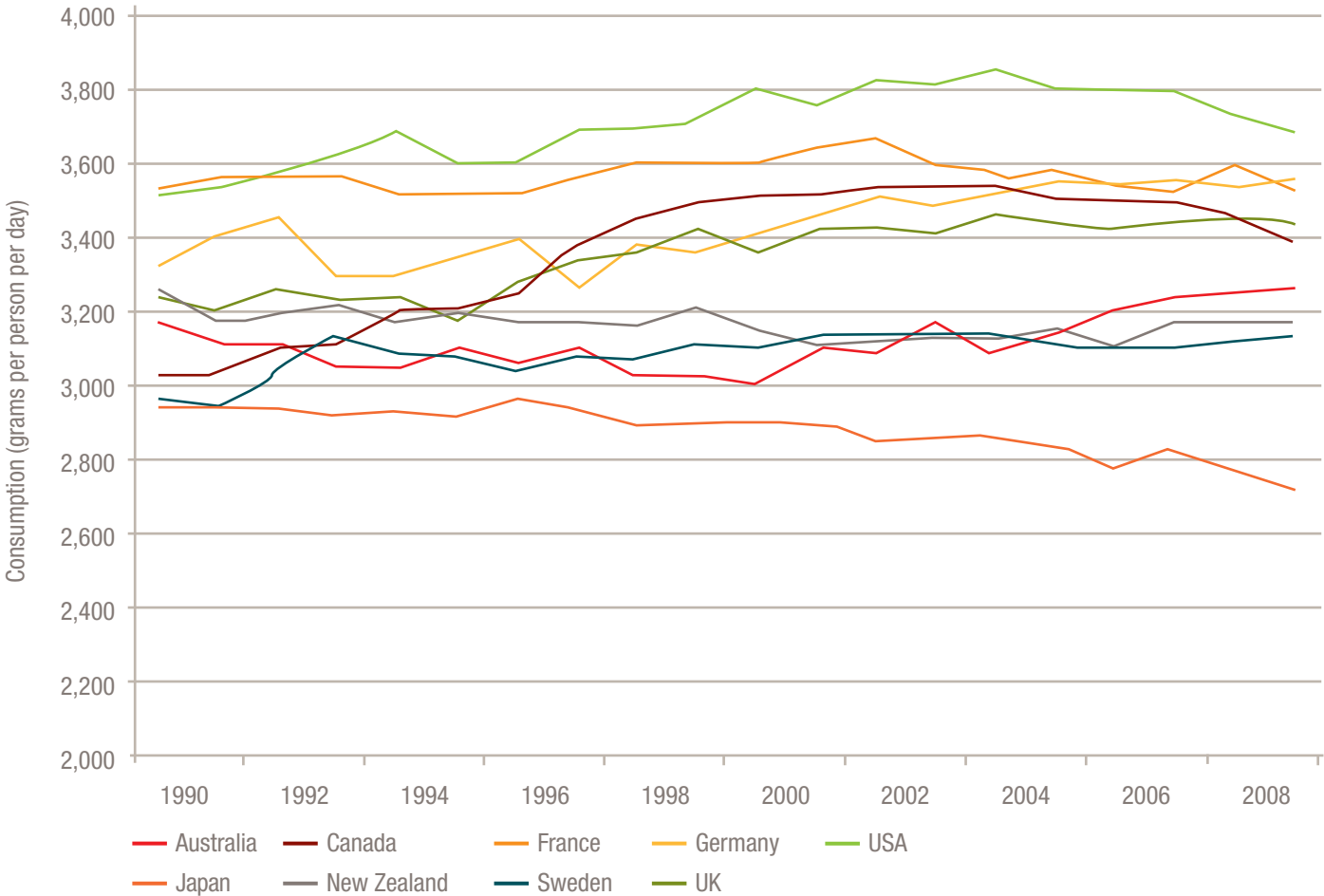




Table 5.12 Average per capita vegetable and fruit consumption, Australia and selected countries, 1990 to 2009

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Vegetables																				
Australia	237	236	227	216	241	235	252	246	248	267	270	289	261	250	277	269	269	275	282	267
Canada	320	294	311	327	326	326	335	333	335	309	329	331	344	335	335	326	332	336	317	309
France	347	355	329	339	275	296	294	287	299	255	301	296	301	296	311	286	268	270	273	255
Germany	205	214	221	197	213	216	237	231	234	254	248	254	252	248	254	234	233	241	244	254
Japan	321	316	322	312	314	321	318	310	303	278	310	307	296	297	291	298	293	290	284	278
New Zealand	284	328	280	335	545	548	525	416	372	381	361	390	336	323	379	330	415	355	361	381
Sweden	180	169	181	181	190	177	191	192	199	248	204	211	214	218	235	234	248	237	244	248
UK	242	243	248	245	223	211	222	233	244	245	241	262	244	253	249	264	257	252	257	245
USA	321	316	310	312	353	338	343	338	327	336	365	343	360	349	363	338	346	354	321	336
Fruit																				
Australia	248	228	240	259	248	232	225	248	238	241	250	266	262	284	278	297	278	289	284	285
Canada	306	294	306	307	328	329	326	339	341	353	345	340	340	326	330	354	361	391	363	366
France	220	214	249	231	249	258	242	228	233	244	267	265	277	263	291	313	305	320	300	314
Germany	323	305	363	280	282	256	302	272	286	280	316	280	285	258	242	247	241	235	228	228
Japan	137	129	142	137	143	146	137	146	130	146	141	147	155	152	158	166	152	159	151	144
New Zealand	277	265	275	306	318	317	324	311	274	292	335	318	320	297	311	327	266	318	339	308
Sweden	265	242	243	238	251	225	227	253	253	270	270	278	298	315	312	300	306	321	367	322
UK	209	205	213	217	222	216	224	218	246	237	232	252	269	317	319	348	381	348	368	343
USA	326	291	300	325	331	306	310	331	329	309	346	310	304	315	320	302	299	303	318	303

Source: Food and Agriculture Organization of the United Nations (FAO), FAOSTAT, faostat.fao.org/

Notes: Grams per person per day (converted from kilograms per person per year). Total food supply of fruit and vegetables available per person each year. Per person figures represent only the average supply available for the population as a whole and do not necessarily indicate what is consumed by individuals. Actual consumption may be lower than the quantity shown due to wastage and losses of food in the household.

Figure 5.12a Average per capita vegetable consumption, Australia and selected countries, 1990 to 2009

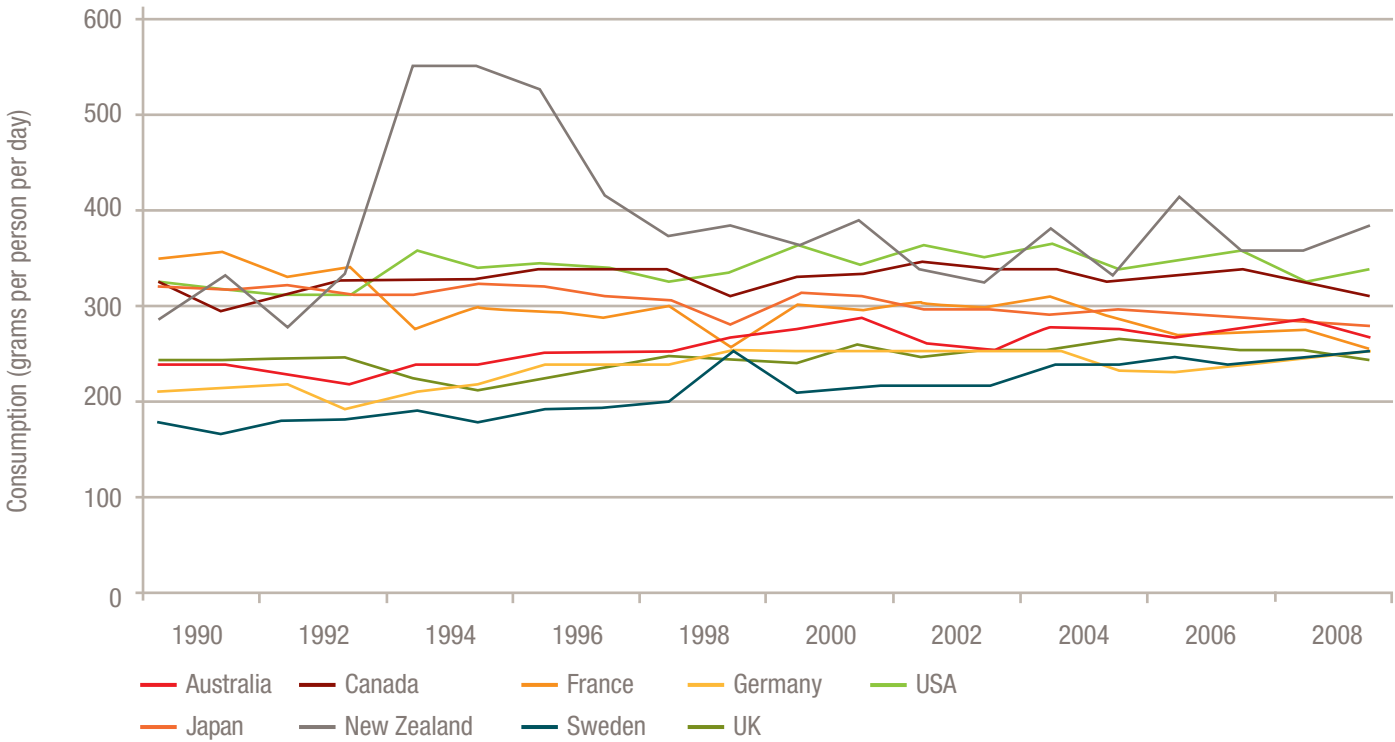


Figure 5.12b Average per capita fruit consumption, Australia and selected countries, 1990 to 2009

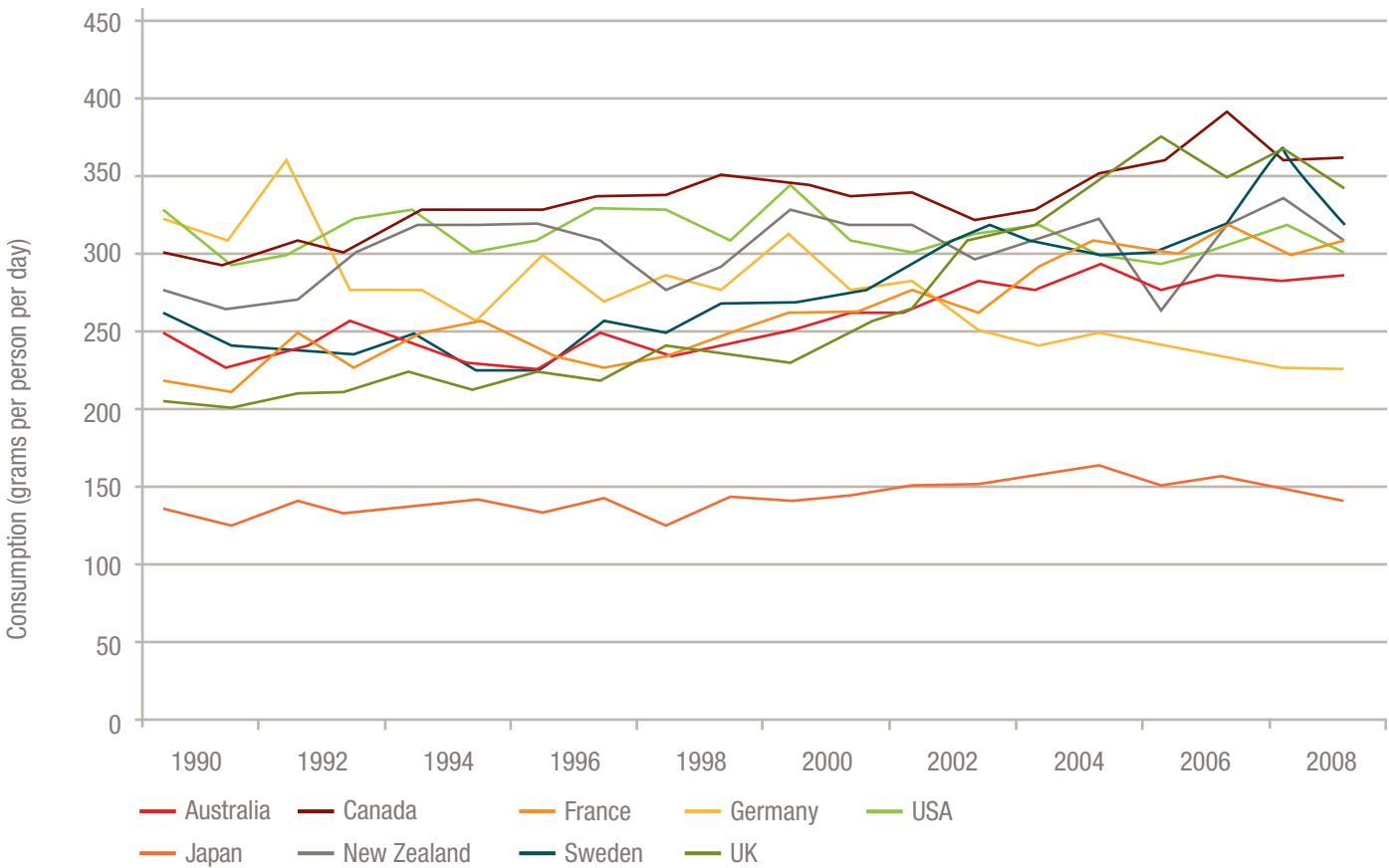


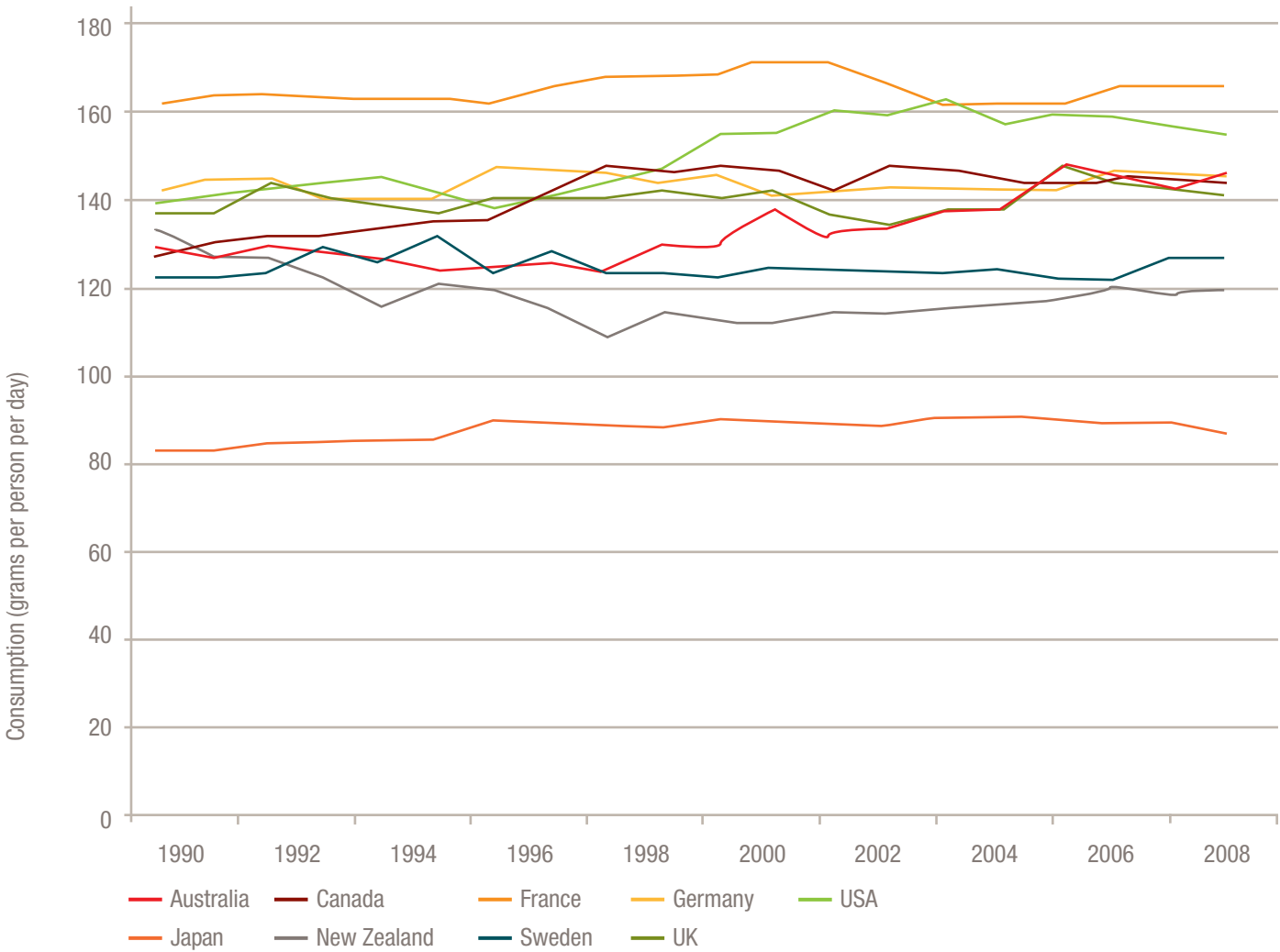
Table 5.13 Total per capita fat consumption, Australia and selected countries, 1990 to 2009

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Australia	128.4	127.2	130.5	129.2	126.8	125.0	124.1	126.6	124.4	130.2	131.7	138.4	131.9	133.1	136.8	139.5	149.1	146.6	143.0	146.5
Canada	127.1	130.3	132.2	131.2	132.9	135.4	136.4	142.4	148.4	147.0	147.9	146.8	142.3	147.9	147.2	144.5	143.5	145.6	145.8	145.1
France	161.4	163.9	165.1	164.3	164.0	163.9	162.9	166.5	168.4	167.8	169.5	171.4	171.3	168.5	161.9	163.9	163.0	164.7	165.5	166.1
Germany	142.0	145.8	147.0	141.3	141.2	141.2	147.6	146.3	146.7	144.0	145.9	140.8	141.6	143.2	143.0	142.8	143.3	147.1	146.1	146.1
Japan	83.1	83.6	84.4	84.5	85.8	85.4	89.8	89.6	88.5	88.7	90.4	90.1	88.9	88.6	90.6	91.0	89.9	89.5	89.4	86.8
New Zealand	133.4	127.9	127.0	123.5	116.1	121.5	119.6	116.5	109.5	114.4	112.6	112.3	115.1	114.1	115.6	116.7	118.1	120.6	119.5	119.7
Sweden	122.4	122.4	123.7	128.9	125.6	132.9	123.9	129.1	123.9	124.8	123.1	124.7	124.8	124.9	124.4	124.7	122.4	122.3	126.0	127.7
UK	136.8	136.5	145.0	141.4	138.7	137.3	140.5	141.0	141.6	143.0	141.3	142.0	136.8	134.1	138.1	139.2	149.0	144.3	143.0	142.2
USA	139.8	141.5	143.0	144.3	146.2	141.2	138.3	140.8	143.9	147.7	155.6	156.1	161.2	159.8	162.8	158.1	160.0	159.4	157.3	155.9

Source: Food and Agriculture Organization of the United Nations (FAO), FAOstat, faostat.fao.org/

Notes: Grams per person per day. Total food supply of fat available per person each year. Per person figures represent only the average supply available for the population as a whole and do not necessarily indicate what is consumed by individuals. Actual consumption may be lower than the quantity shown due to wastage and losses of food in the household.

Figure 5.13 Total per capita fat consumption, Australia and selected countries, 1990 to 2009



Nutrition in Aboriginal and Torres Strait Islander peoples

Table 5.14 Usual daily vegetable consumption, Aboriginal and Torres Strait Islander peoples, by sex and age, 2012–2013

	<1 serve	1 serve	2 serves	3 serves	4 serves	5+ serves
Men and boys						
2–4	9.0	39.4	28.4	16.6	*4.9	*1.8
5–9	12.5	31.0	26.0	17.2	7.0	*6.4
10–14	11.9	23.7	26.5	22.9	9.6	5.4
15–17	8.4	33.0	23.2	19.8	10.7	*5.0
18–24	9.4	23.8	23.4	28.3	11.1	3.9
25–34	7.7	27.2	26.6	23.3	9.1	6.1
35–44	9.0	25.5	24.8	23.2	12.6	4.8
45–54	10.2	26.1	26.1	18.3	12.9	6.4
55+	8.9	24.2	22.2	23.1	13.5	8.1
All men and boys	9.7	27.6	25.3	21.9	10.1	5.4
Women and girls						
2–4	10.6	29.1	32.3	18.2	7.7	*2.0
5–9	7.3	28.7	33.3	17.2	10.8	*2.7
10–14	7.1	30.5	28.5	21.1	6.9	*5.9
15–17	6.4	26.8	28.3	21.4	9.1	8.0
18–24	9.2	30.9	30.1	18.5	6.0	5.3
25–34	7.7	26.7	30.3	20.1	8.6	6.6
35–44	8.8	23.6	30.0	21.5	9.9	6.1
45–54	9.5	23.4	26.9	23.6	8.9	7.7
55+	7.7	22.0	24.5	24.0	11.8	9.9
All women and girls	8.3	27.0	29.5	20.5	8.8	6.0
Persons						
2–4	9.8	34.4	30.3	17.4	6.2	*1.9
5–9	10.0	29.9	29.5	17.2	8.9	4.6
10–14	9.5	27.0	27.5	22.0	8.2	5.6
15–17	7.4	30.0	25.7	20.6	9.9	6.4
18–24	9.3	27.3	26.7	23.5	8.6	4.6
25–34	7.7	26.9	28.5	21.7	8.8	6.4
35–44	8.9	24.5	27.5	22.3	11.2	5.5
45–54	9.9	24.7	26.5	21.1	10.8	7.1
55+	8.2	23.1	23.4	23.6	12.6	9.1
All persons	9.0	27.3	27.4	21.2	9.5	5.7

\* Proportion has a relative standard error 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. Aboriginal and Torres Strait Islander peoples aged 2 years and over. The ‘<1 serve’ category includes people who reported not eating any vegetables. Vegetable juices were excluded.

Figure 5.14a Usual daily vegetable consumption, Aboriginal and Torres Strait Islander adults, by sex and age, 2012–2013

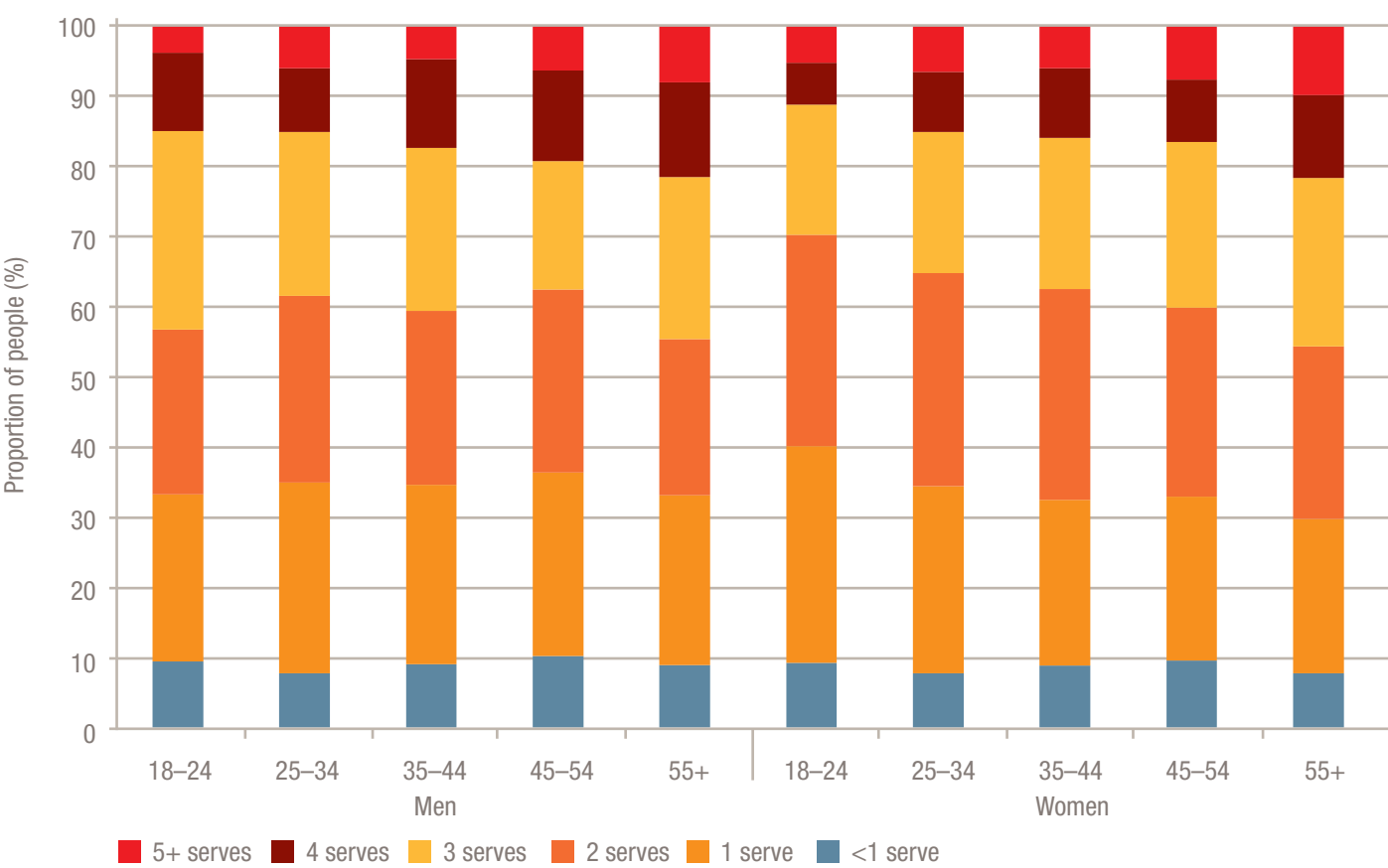


Figure 5.14b Usual daily vegetable consumption, Aboriginal and Torres Strait Islander children, by sex and age, 2012–2013

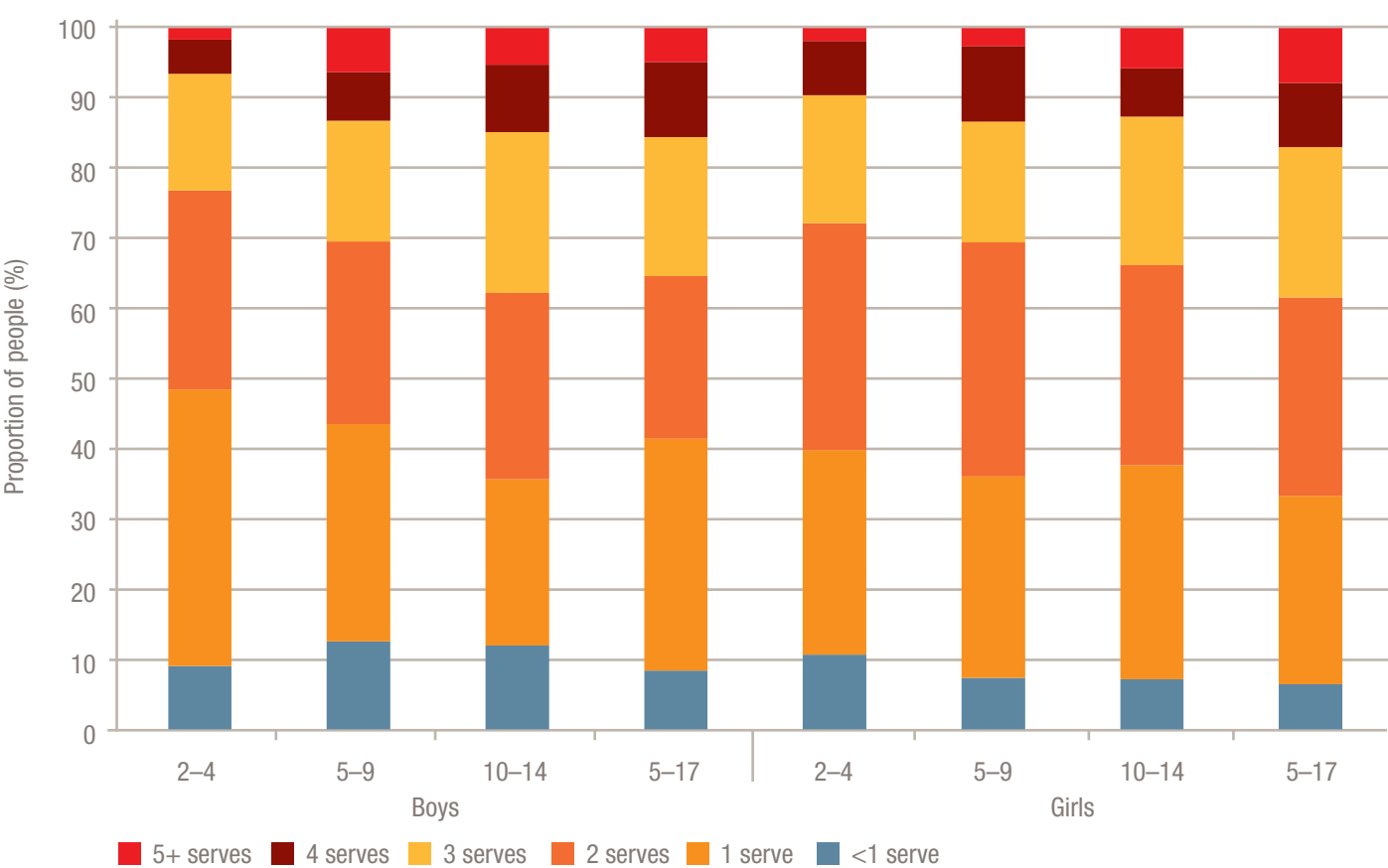


Table 5.15 Usual daily fruit consumption, Aboriginal and Torres Strait Islander peoples, by sex and age, 2012–2013

	<1 serve	1 serve	2 serves	3 serves	4 serves	5+ serves
Men and boys						
2–4	8.5	24.6	33.3	20.5	7.3	*5.8
5–9	6.3	26.8	35.0	19.9	7.2	4.8
10–14	18.5	27.5	29.3	16.2	6.6	*1.9
15–17	25.6	25.9	29.7	11.4	*2.7	*4.7
18–24	31.2	30.3	23.4	10.2	*2.4	*2.4
25–34	34.1	30.8	21.2	8.3	*3.1	*2.6
35–44	34.7	23.2	25.5	11.8	*2.8	*2.0
45–54	38.0	27.3	20.1	8.4	*3.3	*2.9
55+	25.0	32.7	26.2	9.9	*3.8	*2.5
All men and boys	25.1	27.8	26.8	12.8	4.3	3.1
Women and girls						
2–4	5.1	21.9	33.5	25.6	10.0	*3.9
5–9	4.9	26.1	37.8	22.2	6.9	*2.0
10–14	9.9	27.6	41.2	13.6	5.4	*2.3
15–17	15.1	35.7	26.4	14.0	*6.2	*2.6
18–24	26.1	33.7	25.7	10.0	*2.1	*2.4
25–34	27.4	31.5	24.8	11.1	3.1	*2.1
35–44	27.9	29.8	26.1	11.2	2.9	*2.1
45–54	25.8	30.7	26.5	10.5	*5.0	*1.6
55+	18.8	25.7	34.9	13.8	4.1	*2.7
All women and girls	18.9	29.3	30.6	14.1	4.7	2.3
Persons						
2–4	6.8	23.3	33.4	23.0	8.6	4.9
5–9	5.6	26.4	36.4	21.0	7.1	3.4
10–14	14.2	27.5	35.2	14.9	6.0	2.1
15–17	20.5	30.6	28.1	12.7	4.4	3.7
18–24	28.7	32.0	24.5	10.1	2.3	2.4
25–34	30.7	31.1	23.0	9.7	3.1	2.3
35–44	31.2	26.6	25.8	11.5	2.9	2.0
45–54	31.6	29.1	23.4	9.5	4.1	*2.2
55+	21.7	29.0	30.8	12.0	4.0	2.6
All persons	22.0	28.6	28.7	13.5	4.5	2.7

\* Proportion has a relative standard error 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. Aboriginal and Torres Strait Islander peoples aged 2 years and over. The ‘<1 serve’ category includes people who reported not eating any fruit. Fruit juices were excluded.

Figure 5.15a Usual daily fruit consumption, Aboriginal and Torres Strait Islander adults, by sex and age, 2012–2013

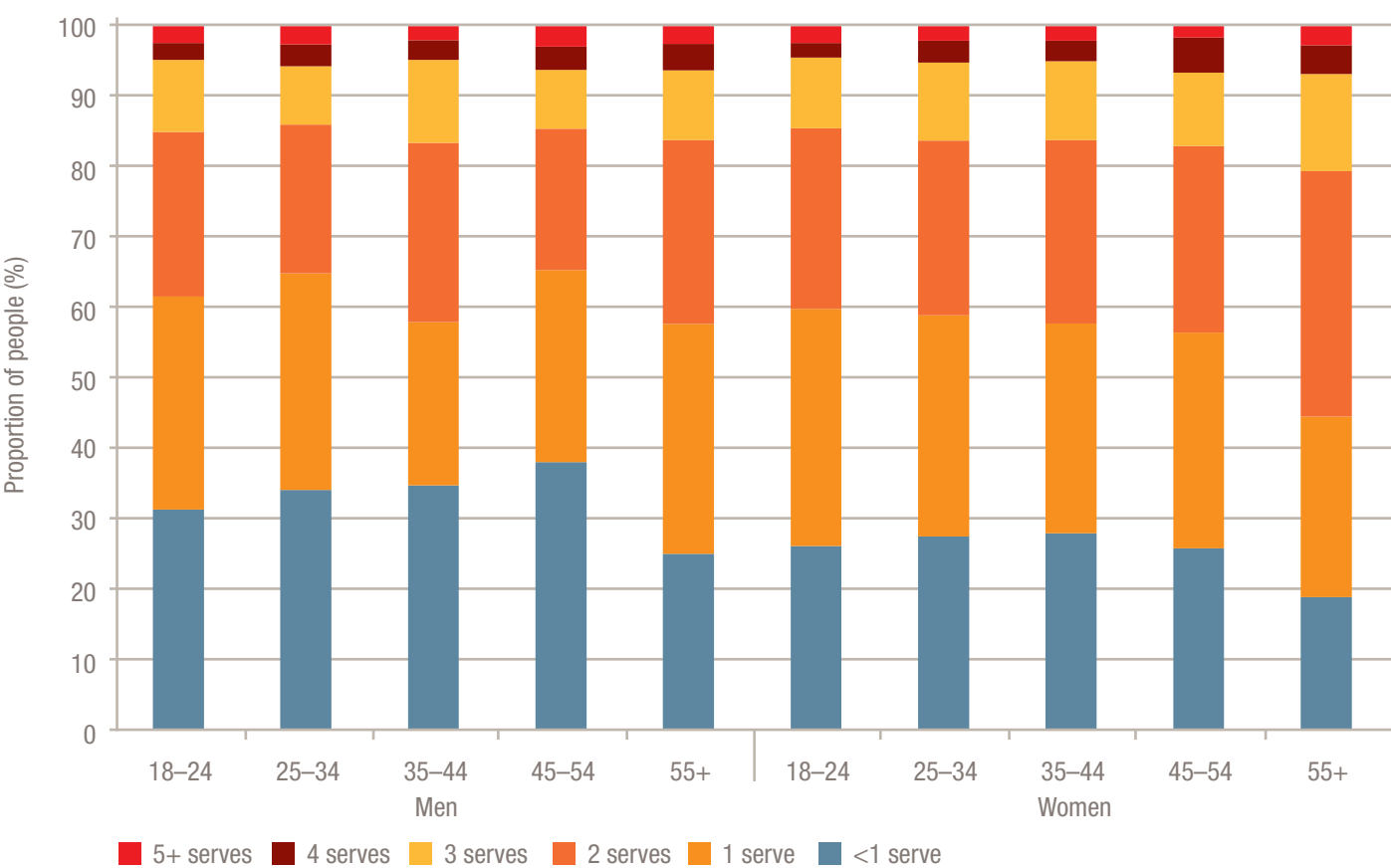


Figure 5.15b Usual daily fruit consumption, Aboriginal and Torres Strait Islander children, by sex and age, 2012–2013

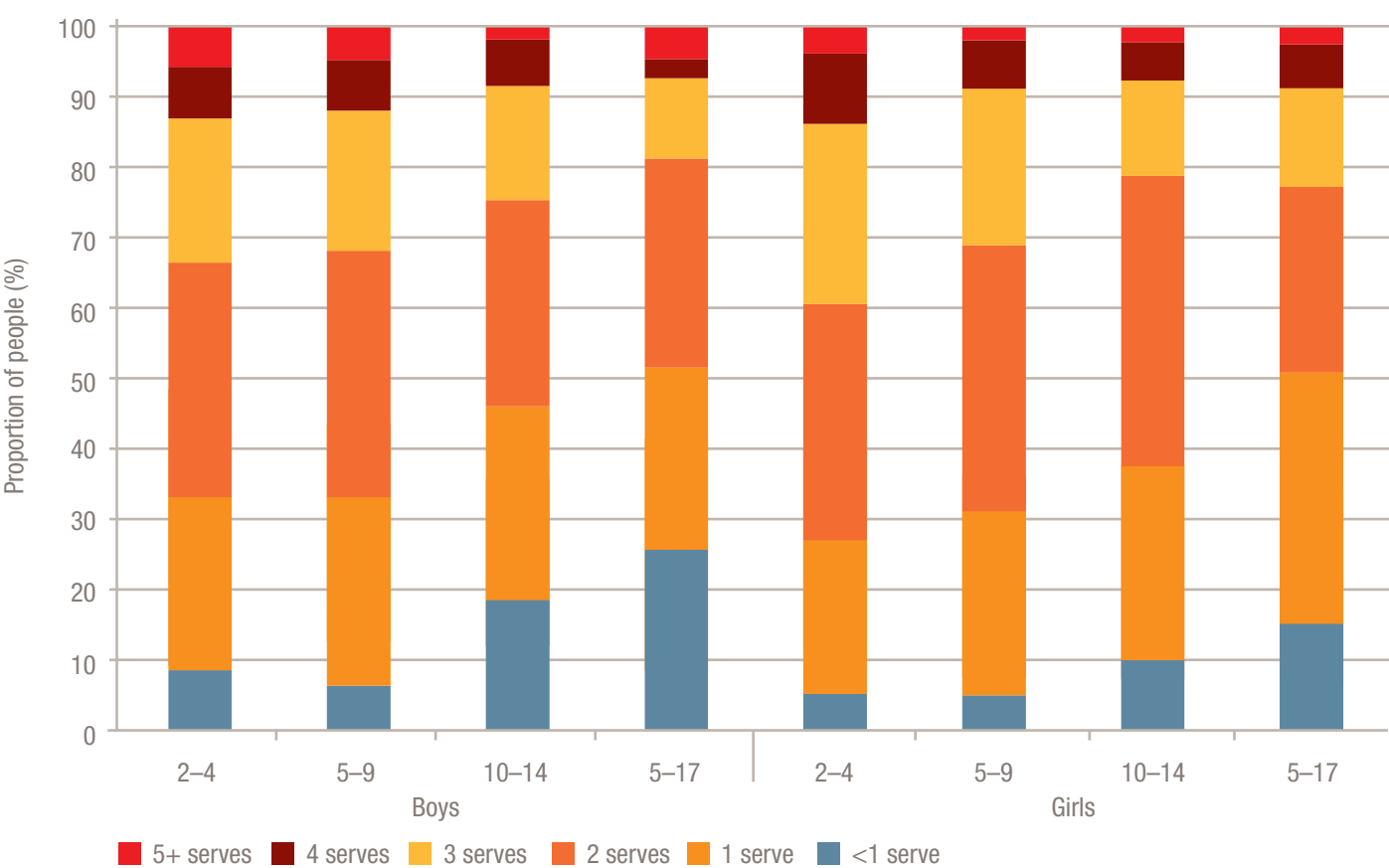




Table 5.16 Proportion of Aboriginal and Torres Strait Islander children meeting dietary recommendations for vegetables and fruit, by age, then remoteness and sex, 2012–2013

	Met recommendations for vegetables	Met recommendations for fruit	Met recommendations for both	Inadequate daily vegetable and/or fruit intake
Age group				
2–4	93.8	40.7	39.8	60.2
5–7	94.4	11.8	11.1	88.9
8–11	70.2	8.1	*7.0	93.0
12–15	55.4	6.0	*4.1	95.9
16–17	44.0	*6.8	*3.8	96.2
Ages 5–17	67.6	8.1	6.6	93.4
Remoteness				
Non-remote	72.1	15.0	13.5	86.5
Remote	75.6	12.7	11.9	88.1
Sex				
Boys	71.1	12.7	10.9	89.1
Girls	74.5	16.4	15.5	84.5
All children	72.8	14.6	13.2	86.8

\* Proportion has a relative standard error 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 4727.0.55.001 – Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012–2013

Notes: Proportion of people. Aboriginal and Torres Strait Islander children aged 2–17 years. Based on 2013 NHMRC Australian Dietary Guidelines. Adequate daily vegetable intake has been defined as two serves for children aged 2–3 years; four serves for children aged 4–8 years; and five serves for older children. Adequate daily fruit intake was defined as one serve for children aged 2–8 years and two serves for older children.



## Part B | Chapter 6

# Physical activity

### Key facts

- Most Australians (58%) were either sedentary or undertook low levels of physical activity.
- Only 30% of children met physical activity recommendations, and only 10% met both physical activity and screen-time recommendations.



### Introduction

Physical inactivity is an independent risk factor for ischaemic heart disease (IHD) and a range of other diseases. Evidence suggests that the risk of heart disease for physically inactive individuals is double that of active individuals.<sup>27</sup> There is strong, clear evidence of an inverse relationship between physical activity and risk for IHD and other cardiovascular outcomes, as well as all-cause mortality, type 2 diabetes, metabolic syndrome, colon and breast cancers and depression. There is also strong evidence of a dose-response pattern for most of these relationships.<sup>28</sup>

The Australian Government Department of Health recommends that Australian adults between the ages of 18 and 64 years engage in a minimum of 150 minutes of moderate physical activity or 75 minutes of vigorous activity every week and activity should be spread over most, preferably all, days of the week.<sup>29</sup> It is important to recognise, however, that an individual can meet physical activity guidelines while still engaging in high amounts of sedentary behaviour. Sedentary behaviour is increasingly being recognised as an independent risk factor for IHD, and research suggests that the risks associated with excessive sedentary behaviour may not be mediated even by high levels of moderate-to-vigorous physical activity.<sup>30</sup> Australian guidelines recommend that adults spend less total time sitting, and break up long periods of sitting as much as possible.<sup>29</sup>

In the 2010 Global Burden of Disease study, 4.6% of total disease burden and just over 20% of the cardiovascular disease burden in Australia were attributable to physical inactivity.<sup>9</sup>

### Key facts

- Most Australians (58%) were either sedentary or undertook low levels of physical activity.
- There was some variation among states and territories in activity levels. A higher proportion of adults in the ACT were highly physically active, while Queensland and the Northern Territory showed the highest proportions of sedentary adults.
- More men than women were classified as moderately or highly active.
- Australians participated in an average of 4 hours per week of moderate-to-vigorous physical activity. Men reported slightly more weekly physical activity than women (4.2 hours versus 3.4 hours, respectively).
- Australians spent an average of 38.8 hours per week in sedentary behaviour (including work-related sedentary behaviour).
- Only 30% of children met physical activity recommendations, and only 10% met both physical activity and screen-time recommendations.
- Based on pedometer data, only 19% of adults met the target threshold of 10,000 steps per day.
- Fewer than one in five boys under 18 years met the target threshold of 13,000 steps per day (19%), while 17% of girls younger than 18 years met the target of 11,000 steps per day. A particularly low proportion of children between the ages of 12 and 17 years met thresholds (9%).



Tables and figures

Physical activity and sedentary behaviour levels

Table 6.1 Physical activity levels in adults, by sex and state or territory, 2011–2012

	Sedentary	Low	Moderate	High
Men				
Australian Capital Territory	14.1	33.5	28.5	23.9
New South Wales	18.8	33.2	29.6	18.4
Northern Territory	22.5	33.3	28.1	15.8
Queensland	21.1	32.8	28.9	17.3
South Australia	22.7	35.6	28.5	13.7
Tasmania	21.5	35.2	30.0	13.9
Victoria	19.1	34.7	27.8	18.6
Western Australia	18.6	33.1	30.8	17.6
All men	19.5	33.7	29.0	17.8
Women				
Australian Capital Territory	16.2	40.4	28.3	15.1
New South Wales	19.5	42.7	28.1	9.6
Northern Territory	23.0	39.8	25.3	13.3
Queensland	23.8	40.6	27.5	8.1
South Australia	21.2	42.1	28.4	8.9
Tasmania	19.3	43.2	28.1	9.6
Victoria	19.5	41.3	28.5	11.0
Western Australia	16.7	41.9	28.4	12.5
All women	20.2	41.7	28.1	10.0
Persons				
Australian Capital Territory	14.9	36.9	28.4	19.5
New South Wales	19.1	38.0	28.9	14.0
Northern Territory	22.4	36.5	26.4	14.2
Queensland	22.5	36.8	28.0	12.7
South Australia	21.8	38.7	28.3	11.2
Tasmania	20.2	39.2	29.2	11.6
Victoria	19.2	38.1	28.1	14.7
Western Australia	17.6	37.3	29.6	15.2
All persons	19.9	37.8	28.5	13.8

Source: Australian Bureau of Statistics, 4324.0.55.003 – Microdata: Australian Health Survey, Core Content – Risk Factors and Selected Health Conditions, 2011–2012

Notes: Proportion of people. Adults aged 18 years and over. Level of exercise undertaken in the past week for fitness, recreation or sport, or walking for transport, taking into account intensity, duration and frequency of physical activity. Respondents were assigned a score using the formula: (number of times activity was undertaken in past week) x (average duration of physical activity in minutes) x (intensity factor). A score <50 corresponded to sedentary levels of activity, 50 to less than 800 corresponded to low levels, 800 to less than 1600 or more than 1600 but with less than 1 hour of vigorous activity corresponded to moderate levels, and scores >1600 and with at least 1 hour of vigorous physical activity corresponded to high levels of activity.

Figure 6.1a Physical activity levels in men, by state or territory, 2011–2012

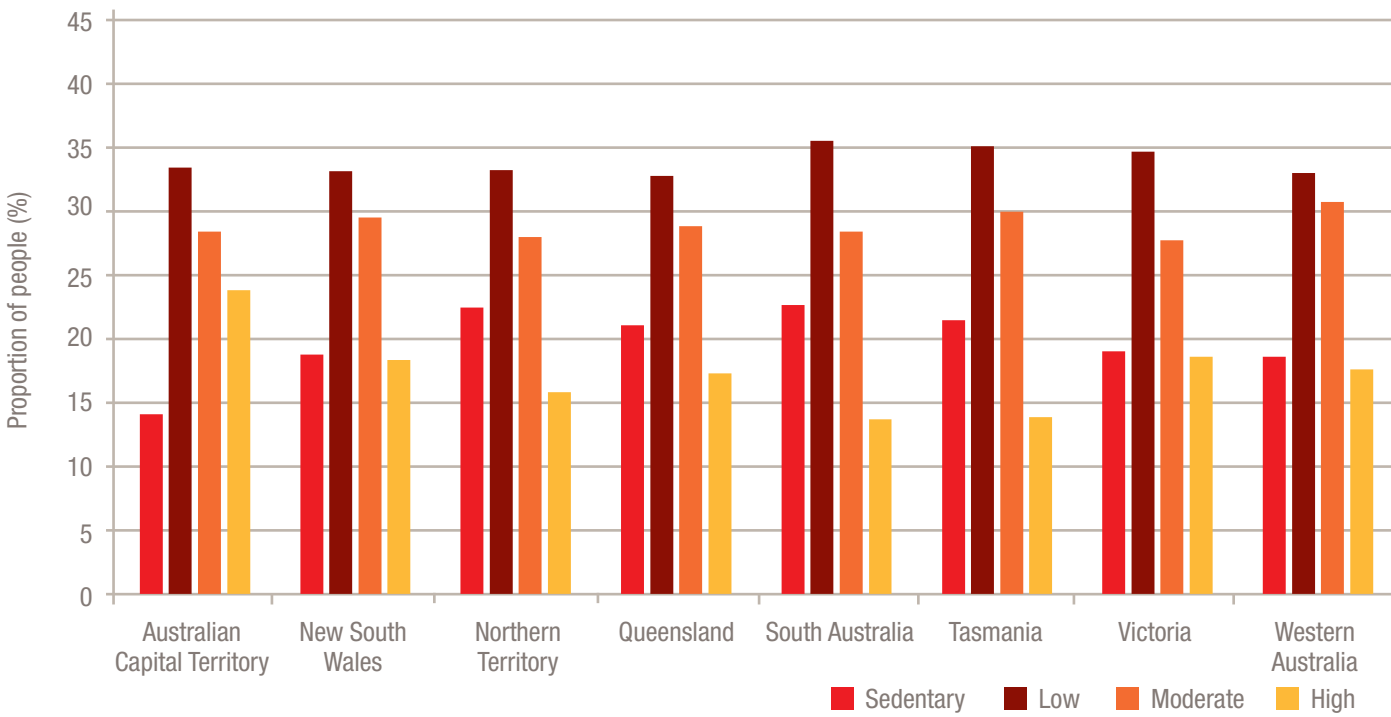


Figure 6.1b Physical activity levels in women, by state or territory, 2011–2012

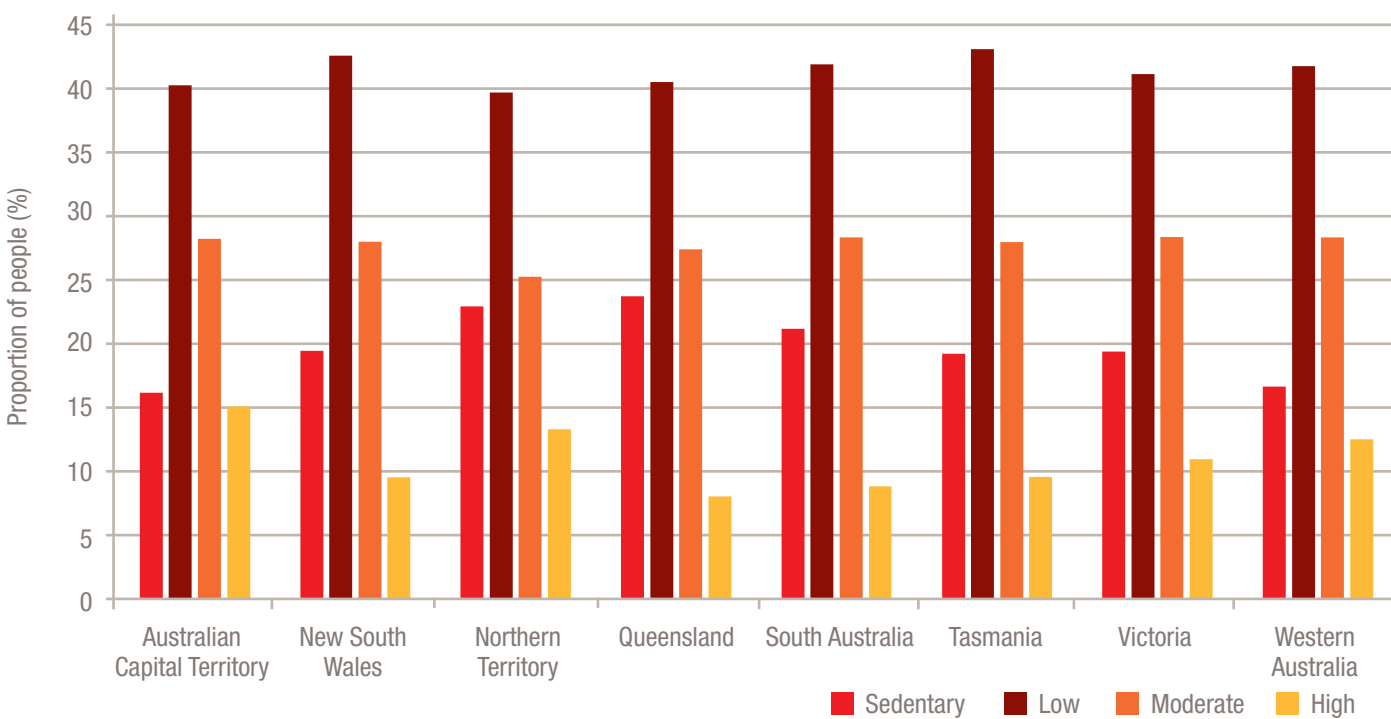


Table 6.2 Average time spent in physical activity and sedentary behaviour, adults, by sex and age, 2011–2012

	Hours per week		
	Physical activity	Sedentary behaviour (excluding work)	Sedentary behaviour (including work)
Men			
18–24	5.4	31.6	37.8
25–34	4.3	29.9	45.0
35–44	3.8	28.4	45.1
45–54	4.1	28.1	44.1
55–64	4.2	30.5	42.7
65–74	3.8	31.5	33.9
75+	3.2	30.3	31.0
All men	4.2	29.8	41.5
Women			
18–24	3.8	31.1	39.3
25–34	3.6	28.2	39.6
35–44	3.5	24.7	35.3
45–54	3.8	25.6	36.4
55–64	3.4	28.6	35.5
65–74	3.3	31.0	32.8
75+	1.7	31.0	31.2
All women	3.4	28.0	36.2
Persons			
18–24	4.6	31.3	38.5
25–34	3.9	29.1	42.3
35–44	3.6	26.5	40.2
45–54	4.0	26.9	40.2
55–64	3.8	29.5	39.0
65–74	3.6	31.2	33.3
75+	2.4	30.7	31.1
All persons	3.8	28.9	38.8

Source: Australian Bureau of Statistics, 4364.0.55.004 – Australian Health Survey: Physical Activity, 2011–2012

Notes: Adults aged 18 years and over. To measure physical activity, the Australian Health Survey collected data on walking for transport, walking for fitness and moderate and vigorous physical activity for fitness, recreation or sport undertaken in the week prior to interview. For sedentary behaviour, data were collected on sitting at work, sitting for transport and sitting or lying down for other social or leisure activities.

Table 6.3 Pedometer-measured physical activity levels, by sex, age and state or territory, 2011–2012

	Number of steps					Met target
	<6,000	6,000–7,999	8,000–9,999	10,000–11,999	≥12,000	
Men and boys						
<18	15.4	19.2	23.2	17.7	24.5	18.6
18+	38.1	25.2	17.0	10.7	9.0	19.7
Women and girls						
<18	14.9	28.8	26.7	21.1	8.4	17.2
18+	34.7	27.1	20.4	9.5	8.2	17.7
Persons						
5–8	*8.4	14.7	27.3	27.9	21.7	28.5
9–11	*7.6	22.8	21.0	24.3	24.4	25.4
12–14	15.7	22.9	30.3	18.5	12.6	13.2
15–17	29.5	35.0	21.3	*7.1	*7.1	*4.8
18–24	34.8	23.3	21.8	9.2	*10.9	20.1
25–34	33.4	29.0	17.0	10.7	9.9	20.6
35–44	23.4	29.9	21.6	15.1	10.0	25.1
45–54	28.2	29.3	21.4	10.0	11.1	21.2
55–64	36.8	25.1	21.9	9.4	6.9	16.3
65–74	53.3	22.4	12.0	7.6	4.6	12.3
75+	78.2	12.2	*6.4	**1.3	*1.9	*3.2
Adults						
Australian Capital Territory	35.2	29.2	19.4	9.0	7.2	16.2
New South Wales	40.6	24.0	18.4	10.2	6.8	17.0
Northern Territory	30.7	25.4	20.9	10.7	12.4	23.1
Queensland	36.1	26.1	17.7	10.6	9.5	20.1
South Australia	39.1	23.5	20.2	8.6	8.5	17.2
Tasmania	36.8	22.9	22.2	9.9	8.3	18.1
Victoria	30.6	29.5	19.1	10.5	10.3	20.8
Western Australia	33.4	28.8	19.1	9.1	9.7	18.8
Children						
Australian Capital Territory	*10.6	20.6	34.7	18.2	*16.0	*17.4
New South Wales	20.0	24.4	21.6	19.4	14.7	17.5
Northern Territory	*20.5	**7.2	*28.2	*24.8	*19.3	*18.2
Queensland	*8.9	30.5	23.1	21.4	*16.0	20.7
South Australia	19.3	16.5	31.0	19.4	13.9	*11.0
Tasmania	*14.5	24.8	32.4	*13.9	*14.4	*9.7
Victoria	*7.8	23.8	27.6	18.6	22.1	*19.6
Western Australia	23.0	18.8	24.8	*18.8	*14.5	18.6

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4364.0.55.004 – Australian Health Survey: Physical Activity, 2011–2012

Notes: Proportion of people. People aged 5 years and over. The threshold (target) for adults is 10,000 steps per day. For boys, the threshold is 13,000 steps; and for girls, 11,000 steps.



Table 6.4 Average number of steps taken on survey day, by sex, age and state or territory, 2011–2012

	Australian Capital Territory	New South Wales	Northern Territory	Queensland	South Australia	Tasmania	Victoria	Western Australia	Australia
Men and boys									
5–14	10,109	10,074	10,508	9,497	10,692	9,896	10,832	10,449	10,285
15–24	8,060	6,775	8,463	9,150	7,278	7,707	8,206	8,134	7,667
25–34	7,920	7,037	8,929	8,342	6,733	9,501	8,529	9,691	7,935
35–44	7,645	8,070	8,271	8,340	7,881	8,906	8,189	7,784	8,115
45–54	8,775	7,801	*9568.4	8,186	7,931	7,738	7,612	7,634	7,832
55–64	7,628	6,995	7,496	7,130	7,675	6,676	7,816	6,650	7,288
65–74	7,389	6,642	7,391	6,005	5,842	7,104	5,713	6,361	6,232
75+	5,891	4,968	*4098.9	4,438	4,000	3,482	4,390	4,674	4,616
All men and boys	8,152	7,442	8,597	7,910	7,556	7,969	7,998	7,965	7,751
Women and girls									
5–14	8,773	9,269	8,656	9,523	8,827	7,988	9,212	8,353	9,106
15–24	7,881	7,001	8,614	6,690	6,872	7,640	8,038	8,253	7,317
25–34	7,150	7,069	7,184	8,421	7,695	8,149	7,533	7,622	7,543
35–44	8,259	8,565	8,232	7,376	8,490	7,964	8,699	7,821	8,257
45–54	7,114	7,596	7,518	8,780	7,874	8,512	8,252	8,462	8,088
55–64	6,688	7,227	8,279	7,927	7,368	6,326	7,719	7,663	7,524
65–74	6,471	6,085	7,889	5,985	5,962	5,757	6,314	6,015	6,088
75+	3,835	4,350	*6964.8	4,223	4,430	4,285	5,625	4,387	4,591
All women and girls	7,416	7,349	7,976	7,740	7,461	7,371	7,849	7,659	7,584
Persons									
5–14	9,481	9,629	9,588	9,499	9,707	9,108	10,108	9,493	9,701
15–24	8,071	6,892	8,483	7,772	7,102	7,701	8,089	8,208	7,508
25–34	7,620	7,041	7,946	8,362	7,311	8,748	7,977	8,516	7,730
35–44	7,956	8,310	8,270	7,827	8,189	8,371	8,433	7,810	8,188
45–54	7,892	7,676	8,621	8,497	7,900	8,179	7,971	8,062	7,966
55–64	7,177	7,128	7,910	7,566	7,491	6,485	7,777	7,203	7,404
65–74	6,923	6,348	7,714	6,000	5,925	6,483	6,021	6,185	6,159
75+	4,938	4,620	5,037	4,305	4,204	3,912	5,030	4,486	4,599
All persons	7,792	7,397	8,316	7,816	7,508	7,662	7,924	7,805	7,664

\* Estimate has a relative standard error of 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 4324.0.55.002 – Microdata: Australian Health Survey: Nutrition and Physical Activity, 2011–2012

Notes: Number of steps. People aged 5 years and over. These figures were generated using the ABS TableBuilder application.

Table 6.5 Average time spent participating in moderate-to-vigorous physical activity, children, 2007

	Age group		
	9–13	14–16	All ages
Boys	159	116	142
Girls	129	83	112
All children	144	100	127

Source: Australian Government Department of Health, 2007 Australian National Children’s Nutrition and Physical Activity Survey - Main Findings

Notes: Minutes per day. Children aged 9–16 years

Trends in physical activity and sedentary behaviours  
Table 6.6 Trends in physical activity levels in adults, excluding walking for transport, by sex and age, 1995 to 2011–2012

	1995				2001				2004–2005				2007–2008				2011–2012			
	Sedentary	Low	Moderate	High	Sedentary	Low	Moderate	High	Sedentary	Low	Moderate	High	Sedentary	Low	Moderate	High	Sedentary	Low	Moderate	High
Men																				
18–24	24.4	29.4	26.2	20.0	19.9	31.7	27.1	21.3	24.9	32.3	24.2	18.5	27.2	31.6	27.4	13.9	27.4	20.6	24.9	27.1
25–34	30.8	31.1	25.0	13.1	26.9	35.4	24.2	13.5	26.3	35.4	25.7	12.5	30.2	36.8	21.2	11.6	27.4	27.8	23.5	21.3
35–44	35.8	33.2	22.7	8.3	33.5	34.4	24.8	7.3	34.4	35.7	22.1	7.8	33.8	36.4	21.5	8.3	34.0	30.1	19.7	16.1
45–54	38.7	31.5	24.0	5.8	31.9	36.7	24.6	6.7	36.5	34.3	24.2	5.0	38.6	32.5	20.7	7.9	34.8	31.8	19.8	13.6
55–64	38.6	28.8	27.9	4.6	34.9	33.9	27.2	4.0	38.5	31.7	26.2	3.6	35.2	33.4	26.6	4.5	37.7	29.6	25.1	7.6
65–74	35.6	28.6	34.1	1.7	30.9	31.9	35.2	2.0	31.9	32.9	30.3	4.9	37.5	30.9	28.3	np	38.9	29.8	np	np
75+	44.9	28.6	24.4	2.0	44.0	30.4	25.1	0.5	51.5	24.4	23.1	1.1	53.9	24.8	20.5	np	46.1	30.0	np	np
All men	35.0	30.7	25.6	8.7	30.9	34.1	26.2	8.8	33.6	33.3	24.8	8.3					33.8	28.6	22.7	14.9
Women																				
18–24	28.1	40.6	21.8	9.5	25.5	44.7	22.1	7.6	32.3	39.0	21.5	7.2	31.1	42.7	18.8	7.4	31.5	39.9	18.1	10.5
25–34	30.1	41.7	22.2	6.0	26.0	44.7	22.7	6.6	29.4	41.7	22.6	6.4	30.6	43.7	20.2	5.5	34.9	34.5	18.4	12.0
35–44	34.1	40.8	19.8	5.3	31.8	43.9	20.9	3.5	32.1	42.3	21.7	3.9	35.5	42.2	18.2	4.0	34.6	35.4	20.1	9.8
45–54	34.7	39.8	21.8	3.7	31.4	41.8	24.1	2.7	32.9	41.7	21.8	3.6	34.3	40.5	21.7	3.5	37.2	33.7	20.1	9.0
55–64	36.8	35.7	25.7	1.9	31.2	39.8	26.5	2.6	31.5	37.9	27.0	3.6	37.8	36.8	22.3	2.9	36.6	37.4	20.9	4.9
65–74	43.7	31.9	22.9	1.4	38.8	36.9	23.1	1.2	40.5	33.1	24.8	1.6	41.4	33.4	23.8	np	41.7	32.2	np	np
75+	54.0	28.3	17.0	0.6	55.9	29.1	14.6	0.4	58.6	29.0	11.6	0.9	59.7	27.1	12.9	np	65.6	22.5	np	np
All women	35.4	38.4	21.7	4.5	32.2	41.5	22.4	3.9	34.4	39.2	22.0	4.3					38.2	34.4	19.3	8.0
Persons																				
18–24	26.2	34.9	24.0	14.8	22.6	38.1	24.7	14.6	28.6	35.6	22.9	12.9	29.1	37.1	23.2	10.7	29.4	30.0	21.6	19.0
25–34	30.5	36.4	23.6	9.6	26.4	40.1	23.5	10.0	27.9	38.5	24.2	9.4	30.4	40.3	20.7	8.6	31.2	31.1	21.0	16.7
35–44	35.0	37.0	21.3	6.8	32.6	39.2	22.8	5.4	33.3	39.0	21.9	5.8	34.7	39.3	19.8	6.1	34.3	32.8	19.9	12.9
45–54	36.7	35.6	22.9	4.8	31.7	39.3	24.4	4.7	34.7	38.1	23.0	4.2	36.4	36.6	21.2	5.7	36.0	32.7	19.9	11.2
55–64	37.7	32.2	26.8	3.2	33.1	36.8	26.8	3.3	35.0	34.7	26.6	3.6	36.5	35.1	24.5	3.7	37.1	33.5	23.0	6.2
65–74	40.0	30.4	28.1	1.6	35.0	34.5	29.0	1.6	36.3	33.0	27.5	3.2	39.5	32.2	26.0	2.3	40.3	31.1	24.6	4.1
75+	50.5	28.4	19.9	1.2	51.0	29.6	18.9	0.4	55.6	27.0	16.4	0.9	57.2	26.1	16.2	0.4	56.9	25.8	15.6	1.5
All persons	35.3	34.5	23.6	6.6	31.6	37.8	24.2	6.3	34.1	36.3	23.3	6.3					36.0	31.5	21.0	11.4

Source: Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2004–2005, 2007–2008 and 4364.0.55.001 – Australian Health Survey: First Results, 2011–2012

Notes: Proportion of people. Adults aged 18 years and over. Level of exercise undertaken in the past week for fitness, recreation or sport, excluding walking for transport, taking into account intensity, duration and frequency of physical activity. Respondents were assigned a score using the formula: (number of times activity was undertaken in past week) x (average duration of physical activity in minutes) x (intensity factor). A score <50 corresponded to sedentary levels of activity, 50 to less than 800 corresponded to low levels, 800 to less than 1600 but with less than 1 hour of vigorous activity corresponded to moderate levels, and scores >1600 and with at least 1 hour of vigorous physical activity corresponded to high levels of activity. In 2007, the All men, All women and All persons data included all respondents over 15 years of age, and so are not comparable with the other surveys, which included ages 18 and over. Blank cells indicate data were not available. np, not available for publication, but figures have been included in totals where applicable.

Figure 6.6a Trends in physical activity levels in men, 1995 to 2011–2012

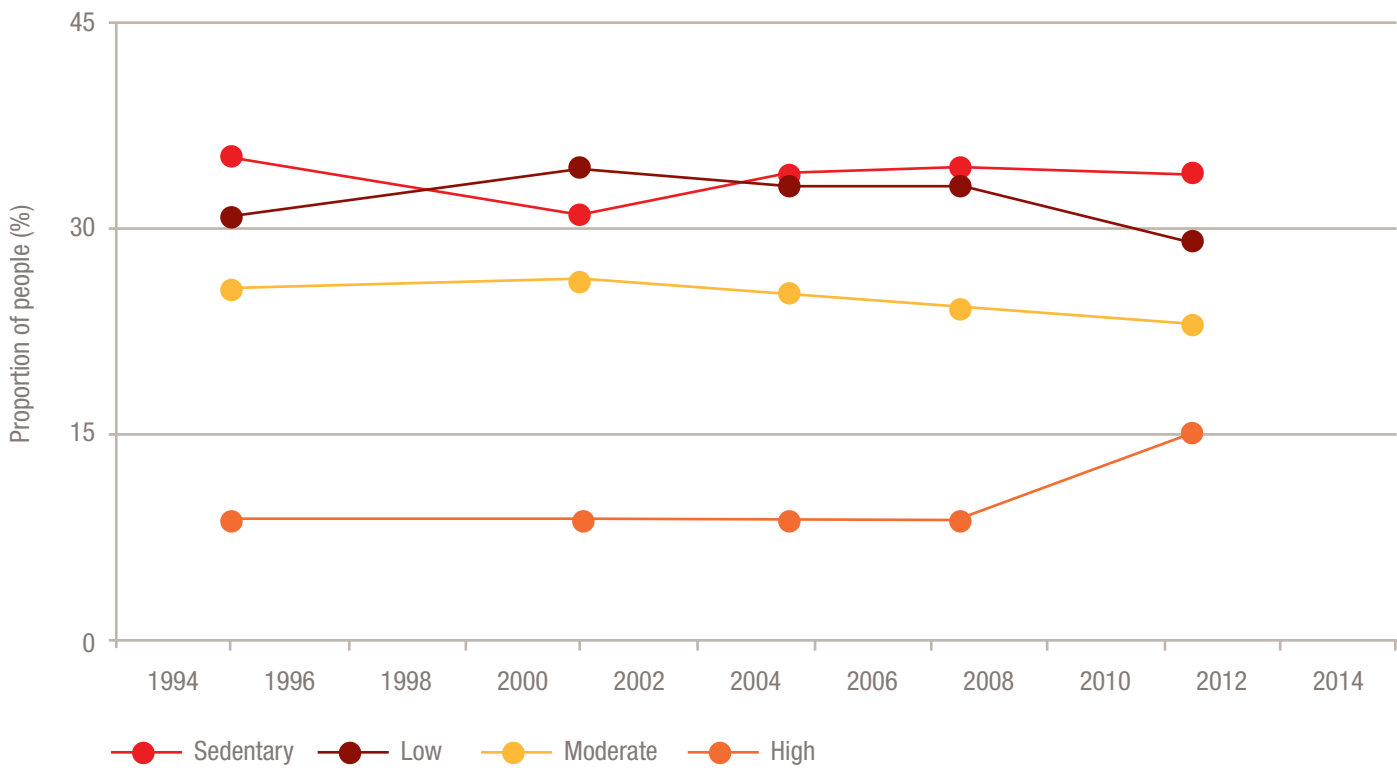


Figure 6.6b Trends in physical activity levels in women, 1995 to 2011–2012

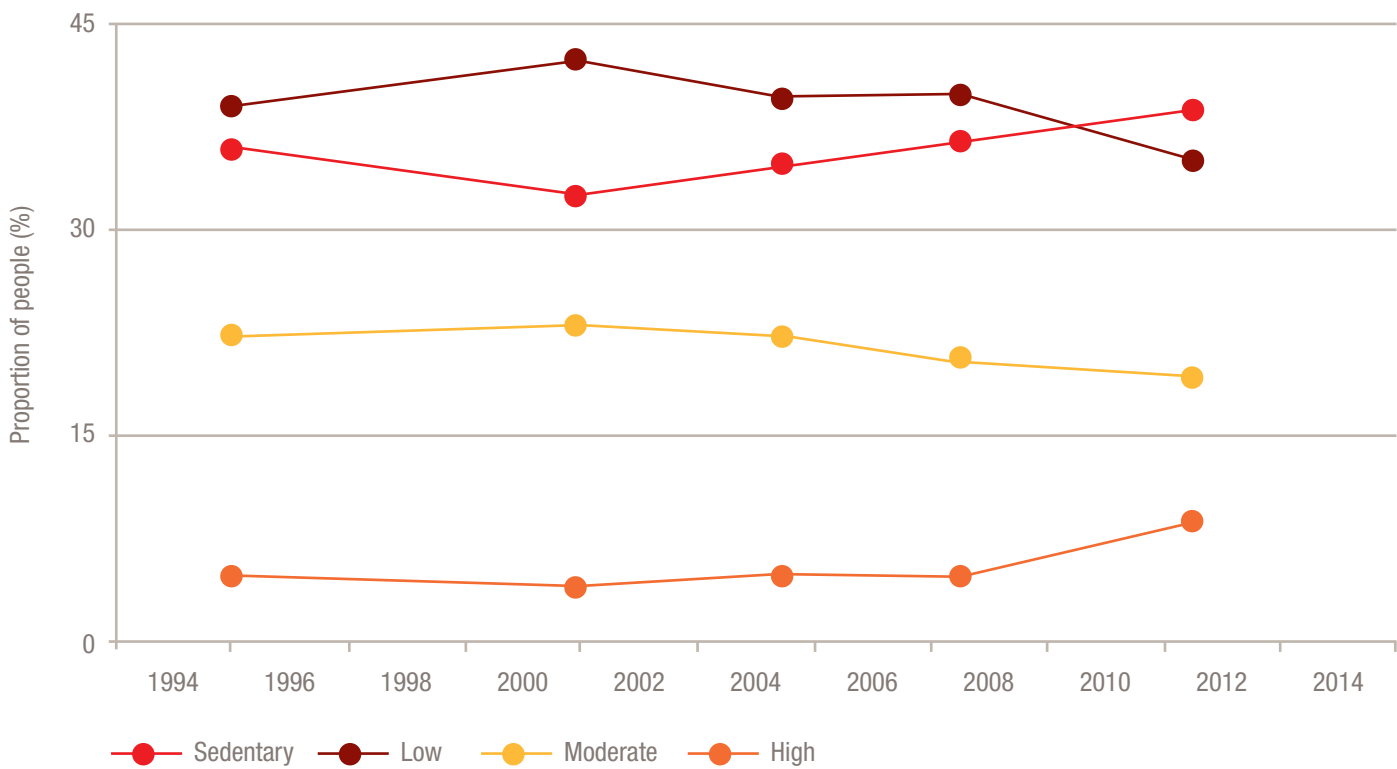


Table 6.7 Trends in the median frequency per week of participation in any physical activity, by sex, 2001 to 2010

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Men and boys										
Participants in physical activity	2.3	2.8	3.0	3.0	3.0	2.9	3.0	3.1	3.0	3.0
All male respondents	1.7	1.8	2.1	2.2	2.0	2.0	2.0	2.5	2.2	2.2
Women and girls										
Participants in physical activity	3.0	3.0	3.2	3.5	3.0	3.2	3.1	3.5	3.5	3.5
All female respondents	2.0	2.0	2.9	3.0	2.6	2.5	2.4	3.0	3.0	3.0
Persons										
Participants in physical activity	2.9	3.0	3.0	3.2	3.0	3.0	3.0	3.3	3.2	3.1
All respondents	1.9	2.0	2.4	2.6	2.3	2.1	2.0	2.9	2.5	2.5

Source: Australian Government, Australian Sports Commission, and state and territory governments, Exercise, Recreation and Sport Survey (ERASS), Annual Report 2010, Participation in Exercise, Recreation and Sport

Notes: Median number of times participating per week. People aged 15 years and over. Participants in physical activity were defined as anyone who participated in any physical activity for fitness, recreation or sport at least once in the preceding 12 months. Non-playing participation, such as coaching or umpiring, was excluded, as was participation in physical activity for work, household chores or gardening. The All respondents category for each sex includes participants and non-participants (people with a participation frequency of zero over the last 12 months).

Population recommendations

Table 6.8 Proportion of children meeting physical activity and screen-time recommendations on all 7 days prior to interview, by sex and age, 2011–2012

	Met physical activity recommendations	Met screen-based activity recommendations	Met both recommendations
Boys			
2–4	74.8	25.4	20.2
5–8	36.0	38.0	20.5
9–11	22.3	24.9	*6.6
12–14	12.5	16.3	*3.6
15–17	*5.4	15.4	**0.4
All boys	31.0	24.7	10.9
Girls			
2–4	68.8	26.6	19.4
5–8	35.4	44.5	16.4
9–11	19.8	35.9	*8.0
12–14	8.6	31.9	*3.1
15–17	*6.2	21.8	**1.0
All girls	28.3	32.8	9.9
Children			
2–4	71.9	26.0	19.8
5–8	35.7	41.1	18.5
9–11	21.1	30.4	7.3
12–14	10.6	24.0	*3.3
15–17	5.8	18.5	*0.7
All children	29.7	28.7	10.4

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4364.0.55.004 – Australian Health Survey: Physical Activity, 2011–2012

Notes: Proportion of people. Children aged 2–17 years. Recommendations for 2–4-year olds call for at least 3 hours of physical activity every day and no more than 1 hour of screen time per day. Recommendations for 5–17-year olds are for at least one hour of moderate-to-vigorous physical activity every day and no more than 2 hours of screen-based activity for non-educational purposes per day.

Active transport

Table 6.9 Active transport – method of travel to work on census day, employed people, by sex, 2001 to 2011

	2001		2006		2011	
	Men	Women	Men	Women	Men	Women
One method only						
Train	136,218	128,884	148,493	142,013	201,620	186,391
Bus	95,888	112,406	111,419	127,787	146,512	154,676
Ferry	4,949	3,479	5,431	3,807	6,635	4,256
Tram	14,816	17,713	15,533	19,137	21,109	25,390
Taxi	13,066	8,081	12,096	8,330	13,483	8,593
Car as driver	2,789,313	2,027,286	2,925,937	2,262,699	3,378,572	2,681,401
Car as passenger	235,319	277,914	231,518	269,352	246,032	291,606
Truck	129,986	4,147	109,890	3,203	101,932	2,812
Motorbike or motor scooter	44,364	3,758	51,872	6,573	56,747	7,595
Bicycle	63,248	14,962	69,032	17,563	79,990	23,922
Other	36,004	11,100	37,128	12,355	49,242	17,374
Walked only	170,326	146,310	180,709	172,313	192,279	184,766
Total one method	3,733,497	2,756,040	3,899,058	3,045,132	4,494,153	3,588,782
Two methods						
Train and bus	30,359	29,504	28,624	27,568	42,732	40,981
Train and other (excluding bus)	52,023	52,859	48,310	47,894	64,179	59,490
Bus and other (excluding train)	14,149	19,318	12,563	17,272	18,363	23,667
Other two methods	42,136	20,754	29,438	15,078	40,416	21,070
Total two methods	138,667	122,435	118,935	107,812	165,690	145,208
Three methods						
Train and other two methods	11,371	10,822	11,152	11,367	18,451	18,502
Bus and other two methods (excluding train)	1,597	1,439	1,330	1,245	2,429	2,022
Other three methods	3,012	855	2,391	783	3,185	1,152
Total three methods	15,980	13,116	14,873	13,395	24,065	21,676
Other						
Worked at home	203,838	234,677	191,329	226,344	198,528	245,411
Did not go to work	377,727	550,500	369,011	580,068	403,091	621,791
Not stated	77,074	75,055	50,550	46,077	81,135	68,796
Total all methods	4,546,783	3,751,823	4,643,756	4,018,828	5,366,662	4,691,664

Source: Australian Bureau of Statistics, 2006.0 - 2001 Census of Population and Housing, Community Profile Series, Working Population Profile, 2006.0- 2006 Census of Population and Housing, Community Profile Series, and 2011 Census of Population and Housing, TableBuilder Pro

Notes: Number of people. Employed people

Figure 6.9a Method of travel to work on census day, employed men, 2001 to 2011

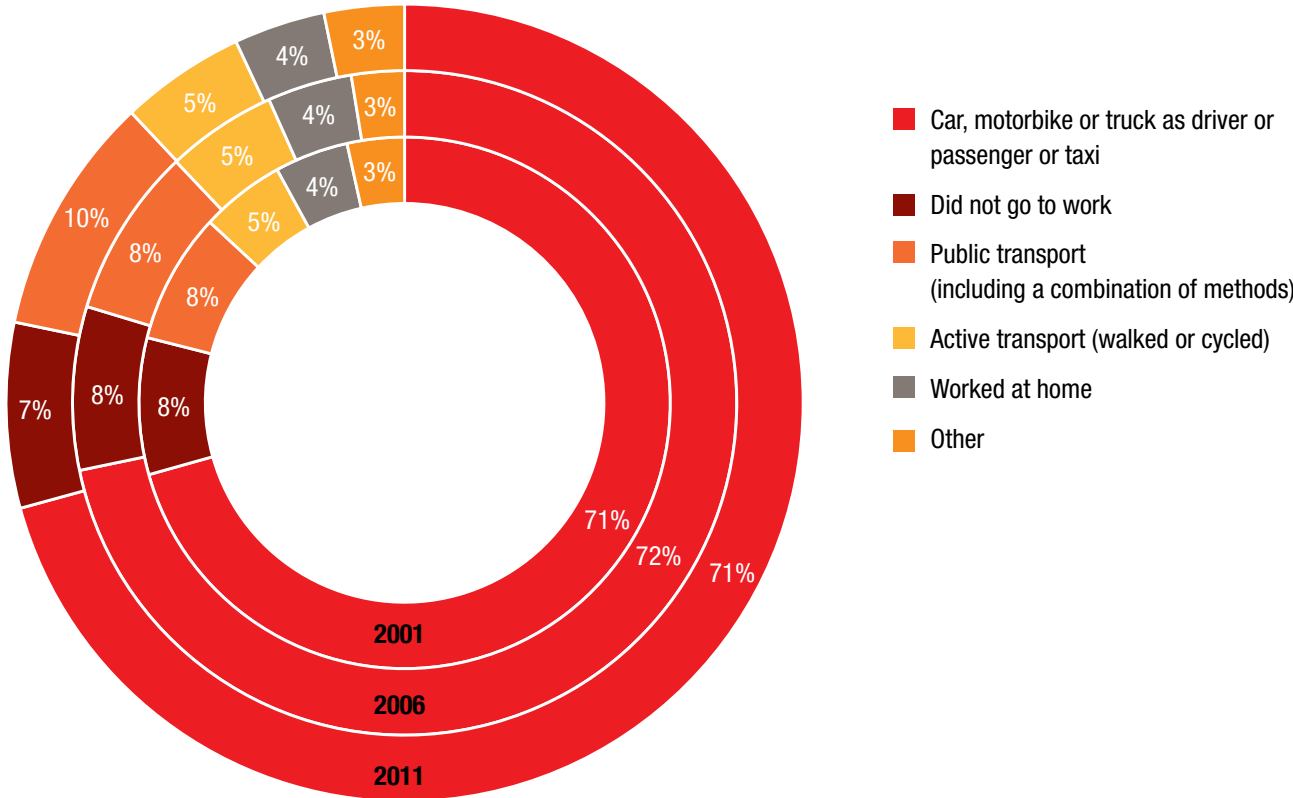


Figure 6.9b Method of travel to work on census day, employed women, 2001 to 2011

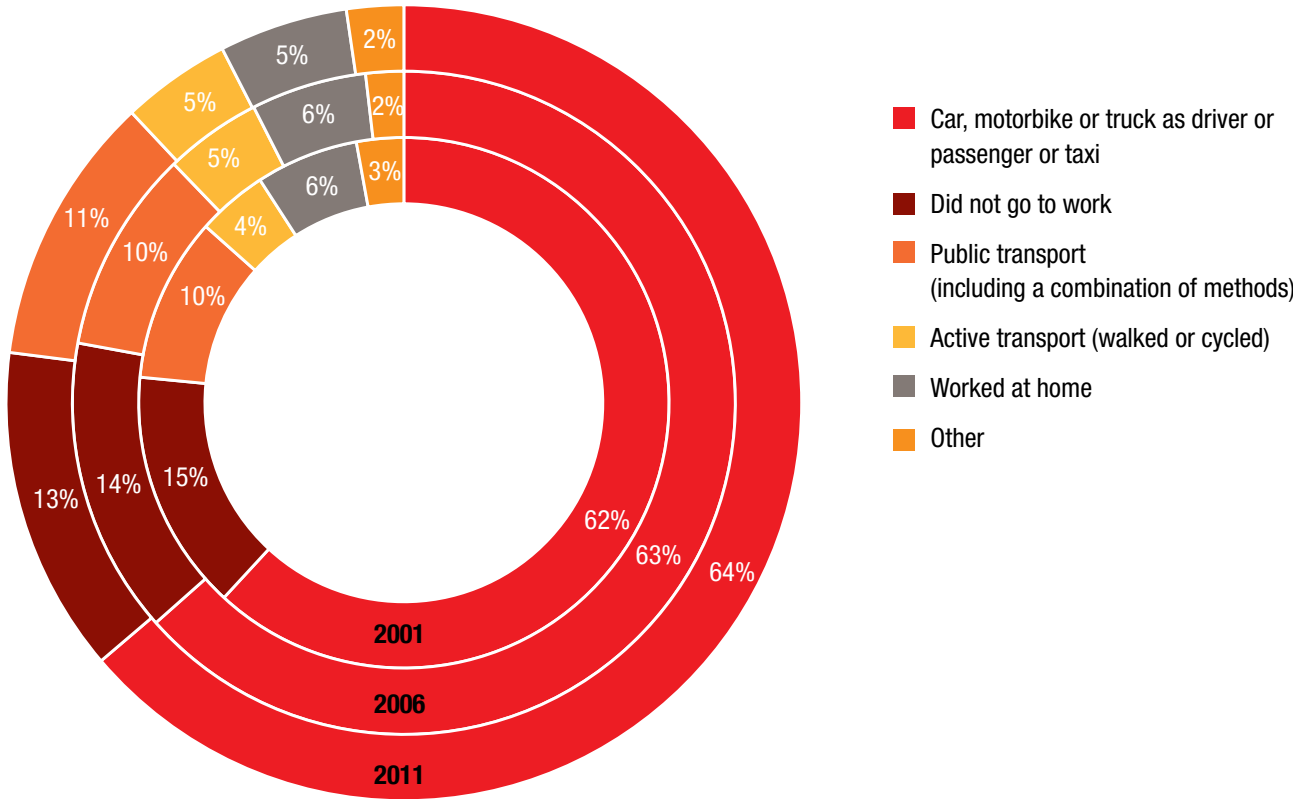




Table 6.10 Average minutes spent per day in active transport, children, by age and sex, 2011–2012

	Boys	Girls	Children
Age group			
5–8	13	13	13
9–11	20	17	18.5
12–14	21	19	20
15–17	25	22	23.5

Source: Australian Bureau of Statistics, 4364.0.55.004 – Australian Health Survey: Physical Activity, 2011–2012

Notes: Minutes per day. Children aged 5–17 years

Physical activity levels in Aboriginal and Torres Strait Islander peoples

Table 6.11 Physical activity levels in Aboriginal and Torres Strait Islander adults, by sex and age, 2012–2013

	Sedentary	Low	Moderate	High
Men				
18–24	12.9	34.8	30.5	21.8
25–34	21.0	27.4	34.8	16.8
35–44	24.7	35.6	28.8	*10.9
45–54	22.9	34.5	35.0	*7.5
55+	24.0	44.2	24.6	*7.2
All men	20.5	34.6	31.0	13.9
Women				
18–24	10.5	49.7	29.6	10.2
25–34	16.3	47.1	26.6	10.1
35–44	21.1	48.1	25.1	5.7
45–54	25.8	49.8	19.5	*4.9
55+	36.8	41.9	20.0	**1.3
All women	20.9	47.5	24.7	6.9
Persons				
18–24	11.8	42.1	30.0	16.1
25–34	18.6	37.3	30.7	13.4
35–44	22.8	42.1	26.8	8.2
45–54	24.4	42.5	27.0	6.2
55+	30.9	43.0	22.1	*4.1
All persons	20.7	41.2	27.8	10.3

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4727.0.55.001 – Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012–2013

Notes: Proportion of people. Aboriginal and Torres Strait Islander adults aged 18 years and over. Only non-remote people were included. Level of exercise undertaken in the past week for fitness, recreation or sport, walking for transport, taking into account intensity, duration and frequency of physical activity. Respondents were assigned a score using the formula: (number of times activity was undertaken in past week) x (average duration of physical activity in minutes) x (intensity factor). A score <50 corresponded to sedentary levels of activity, 50 to less than 800 corresponded to low levels, 800 to less than 1600 or >1600 but with less than 1 hour of vigorous activity corresponded to moderate levels, and scores >1600 and with at least 1 hour of vigorous physical activity corresponded to high levels of activity.

# Part B | Chapter 7 Alcohol

## Key facts

- In 2011–2012, rates of risky drinking were highest in the 55 to 64-year age group for both sexes. Overall, 13% of men and 10% of women reported drinking alcohol at levels likely to present a risk to health.
- Total per capita alcohol consumption fell between the early 1970s and the early 1990s, but has been relatively stable since then. Most of the earlier declines were due to a decrease in beer consumption. Wine consumption has steadily increased since 1970.



## Introduction

The relationship between alcohol and ischaemic heart disease (IHD) is complex. The evidence is clear, however, that high levels of alcohol consumption, whether over the long term or in a single heavy drinking session ('binge' drinking), cause stress to the heart, leading to increased risk of heart disease.<sup>31</sup> Alcohol can raise blood pressure and increase the risk of arrhythmias, certain types of cardiac failure and haemorrhagic stroke. Low to moderate consumption of alcohol, on the other hand, has been consistently shown to be associated with some protection from cardiovascular diseases including heart disease.<sup>32</sup>

National guidelines from the National Health and Medical Research Council (NHMRC) discourage consumption of more than two standard drinks per day in order to minimise long-term health risks from alcohol.<sup>33</sup> It is important to understand not only the average levels of alcohol consumption in Australia, but also the patterns of consumption and social trends mediating risky drinking patterns.

## Key facts

- In 2010, 7% of Australians reported drinking alcohol daily, while a further 38% reported drinking alcohol at least weekly.
- In 2011–2012, 11% of Australians over the age of 15 years reported never consuming alcohol.
- Men reported higher drinking levels than women overall (9% vs 5% daily drinkers, 44% vs 33% weekly drinkers).
- In 2011–2012, rates of risky drinking were highest in the 55 to 64-year age group for both sexes. Overall, 13% of men and 10% of women reported drinking alcohol at levels likely to present a risk to health.
- Total per capita alcohol consumption fell between the early 1970s and the early 1990s, but has been relatively stable since then. Most of the earlier declines were due to a decrease in beer consumption. Wine consumption has steadily increased since 1970.
- Although average weekly household expenditure on alcoholic beverages increased between 1984 and 2009–2010 (in raw dollar values), the proportion of household expenditure spent on alcoholic beverages has declined slightly during that period.

Tables and figures

Levels of alcohol consumption

Table 7.1 Self-reported alcohol drinking status, by sex and age, 2010

	Daily drinker	Weekly drinker	Less-than-weekly drinker	Ex-drinker	Never drinker
Men and boys					
12–17	**0.1	5.3	32.2	*2.7	59.6
18–19	*1.8	46.2	39.4	*2.0	10.5
20–29	3.4	49.7	33.0	3.1	10.8
30–39	6.6	50.2	29.7	6.1	7.4
40–49	10.2	49.3	28.0	6.5	6.0
50–59	14.0	50.6	22.7	7.8	5.0
60–69	17.8	45.9	22.7	8.3	5.2
70+	18.4	37.3	22.6	12.4	9.3
All men and boys	9.3	43.8	28.1	6.3	12.5
Women and girls					
12–17		4.9	34.2	*1.9	59.0
18–19	**0.6	30.4	54.1	*5.0	9.9
20–29	*0.9	37.9	45.6	4.3	11.4
30–39	2.5	37.3	42.3	7.7	10.2
40–49	4.8	40.9	38.4	7.2	8.8
50–59	6.4	38.9	34.6	10.7	9.4
60–69	8.8	33.0	32.2	12.5	13.4
70+	12.0	23.5	27.3	13.4	23.8
All women and girls	4.7	32.9	37.8	8.1	16.4
Persons					
12–17	**0.1	5.1	33.2	2.3	59.3
18–19	*1.2	38.6	46.5	*3.5	10.2
20–29	2.1	43.9	39.2	3.7	11.1
30–39	4.6	43.7	36.0	6.9	8.8
40–49	7.5	45.0	33.3	6.9	7.4
50–59	10.1	44.7	28.7	9.3	7.2
60–69	13.3	39.5	27.5	10.4	9.3
70+	14.8	29.5	25.2	13.0	17.4
All persons	7.0	38.3	33.0	7.2	14.5

\* Estimate has a relative standard error of 25% to 50% and should be used with caution.

\*\* Estimate has a standard error >50% and is considered too unreliable for general use.

Source: Australian Institute of Health and Welfare, 2010 National Drug Strategy Household Survey Report, Drug statistics series no. 25, Cat. no. PHE 145

Notes: Proportion of people. People aged 12 years and over. An ex-drinker is defined as someone who has consumed at least one whole serve of alcohol, but not in the previous 12 months. A never drinker is defined as someone who has never consumed a full serve of alcohol. Blank cells indicate no data were reported for this age group.

Table 7.2 Prevalence of alcohol consumption patterns, by sociodemographic characteristics, 2010

	Abstainers and ex-drinkers	Low lifetime risk	High lifetime risk
All persons	19.5	60.4	20.1
Education			
No tertiary qualifications	26.2	56.1	17.7
Tertiary qualification	14.2	63.8	22.0
Employment status			
Currently employed	11.1	64.1	24.8
Student	36.7	49.3	14.0
Unemployed	25.9	52.3	21.7
Home duties	22.7	67.2	10.1
Retired or pensioner	25.6	60.1	14.3
Volunteer or charity work	32.2	55.7	12.1
Unable to work	31.6	50.4	18.0
Other	28.3	57.0	14.7
Main language spoken at home			
English	16.1	62.4	21.6
Other	49.5	45.1	5.4
Level of disadvantage			
1st quintile (highest disadvantage)	25.6	55.7	18.7
2nd quintile	22.0	58.0	20.0
3rd quintile	18.6	60.7	20.7
4th quintile	18.1	61.8	20.1
5th quintile (lowest disadvantage)	14.4	64.8	20.8
Geography			
Major cities	20.4	61.0	18.6
Inner regional	17.7	60.3	22.0
Outer regional	17.5	57.9	24.6
Remote or very remote	15.3	54.2	30.5
Indigenous status			
Aboriginal and/or Torres Strait Islander**	24.5	44.5	31.0
Non-Indigenous	19.0	61.1	19.9

\*\* Due to small sample sizes for Aboriginal and/or Torres Strait Islander people, estimates should be interpreted with caution.

Source: Australian Institute of Health and Welfare, 2010 National Drug Strategy Household Survey Report, Drug statistics series no. 25, Cat. no. PHE 145

Notes: Proportion of people. People aged 14 years and over. Lifetime risk as based on the 2009 NHMRC Australian Guidelines to Reduce Health Risks from Drinking Alcohol. Low lifetime risk includes individuals who consume alcohol, but not an average of more than two standard drinks per day. High lifetime risk includes individuals who consume on average more than two standard drinks per day. An abstainer or ex-drinker was defined as someone who has not consumed alcohol in the previous 12 months. Socioeconomic status based on the 2006 Index of Relative Socio-Economic Disadvantage. A lower Index of Disadvantage quintile (e.g. the first quintile) indicates an area with relatively greater disadvantage and a lack of advantage in general. A higher Index of Disadvantage quintile (e.g. the fifth quintile) indicates an area with a relative lack of disadvantage and greater advantage in general.



Table 7.3 Adult per capita consumption of alcohol, by type, Australia and selected countries, 2010

Country	Pure alcohol (L)			
	Beer	Wine	Spirits	Other alcohol
Australia <sup>a</sup>	4.51	3.87	1.30	0.84
Canada	4.20	1.80	2.20	
France	2.20	6.60	2.70	0.20
Germany	6.01	3.12	2.08	
Japan	1.32	0.28	3.58	1.70
New Zealand	3.67	3.26	1.46	1.22
Sweden	2.70	3.40	1.10	0.10
UK	3.79	3.47	2.24	0.77
USA	4.28	1.48	2.80	

a Revised in ABS Apparent Consumption of Alcohol 2011–2012.

Source: World Health Organization, Global Health Observatory, Global Information System on Alcohol and Health, [www.who.int/gho/alcohol/en/](http://www.who.int/gho/alcohol/en/); Australian Bureau of Statistics, 4307.0.55.001 – Apparent Consumption of Alcohol, Australia, 2012–2013

Notes: Includes only people aged 15 years and over. Blank cells indicate data were not available.

Trends in alcohol consumption

Table 7.4 Trends in alcohol consumption, by sex and age, 2001 to 2011–2012

	2001						2004–2005				2007–2008				2011–2012				
	Low risk	Risky	High risk	Did not consume in past week	Never consumed		Low risk	Risky	High risk	Did not consume in past week	Never consumed	Low risk	Risky	High risk	Did not consume in past week	Never consumed			
Men and boys																			
15–17	54.4	7.5	6.4	25.2	6.5	49.6	6.9	8.6	26.9	7.3	23.0	np	6.1	10.2	30.0	44.2	18.6	np	46.4
18–24	59.0	5.9	8.1	20.9	6.1	56.5	7.6	8.1	22.8	4.6	52.0	np	8.3	9.1	23.4	7.7	51.5	np	7.6
25–34	61.9	7.6	6.5	18.5	4.5	58.6	6.7	9.2	20.9	4.0	53.5	np	7.1	8.2	21.8	7.0	56.9	6.2	6.4
35–44	61.2	7.3	7.4	18.4	5.8	55.1	9.4	8.8	21.4	4.6	59.0	np	7.2	8.5	19.5	5.5	56.2	7.1	4.3
45–54	54.0	9.0	6.1	22.4	8.6	55.3	8.4	9.2	20.6	5.3	53.7	np	9.3	7.6	20.1	3.9	58.4	6.1	5.2
55–64	55.3	4.7	4.4	26.7	8.9	55.9	6.3	5.2	26.4	5.8	53.9	np	6.2	5.3	23.5	5.9	57.6	10.1	4.9
65–74	54.2	*3.2	*1.4	30.0	11.2	54.3	*3.2	*1.8	32.2	6.5	51.6	np	np	np	27.7	12.1	51.7	6.2	7.2
75+	58.1	6.9	6.4	21.7	6.8	55.4	7.4	8.0	23.3	5.2	53.8	np	6.9	7.5	22.2	8.4	53.7	6.7	6.4
All men and boys																			7.8
Women and girls																			
15–17	49.5	7.1	*1.5	34.9	7.0	44.0	8.7	3.7	34.8	7.6	15.3	np	9.5	4.3	37.1	45.3	12.9	np	52.0
18–24	46.2	6.1	1.4	37.5	8.8	45.3	7.4	3.3	34.3	8.9	37.7	np	6.8	2.9	37.6	10.2	40.9	np	7.1
25–34	45.5	7.4	2.6	32.9	11.7	44.3	10.0	3.2	31.9	9.4	42.8	np	9.7	3.0	35.4	10.1	41.7	6.2	9.2
35–44	45.6	7.4	2.7	31.7	12.5	44.4	9.6	3.4	28.2	12.3	41.2	np	8.8	4.0	33.5	12.6	43.5	8.4	11.5
45–54	41.3	6.3	2.2	28.4	21.8	43.5	9.6	3.8	27.6	13.9	46.4	np	9.3	3.3	26.1	12.0	42.7	7.1	10.2
55–64	38.5	6.0	*1.0	29.6	24.9	38.4	7.0	*2.3	29.3	20.5	35.7	np	9.4	*2.7	26.2	13.2	43.0	9.5	12.0
65–74	31.6	3.9	*0.8	34.1	30.0	30.5	4.0	*1.6	36.2	24.5	31.0	np	np	np	31.1	20.3	36.7	6.5	17.7
75+	43.9	6.6	1.9	33.1	14.6	42.7	8.5	3.2	31.5	12.5	39.8	8.1	8.1	3.0	31.4	15.1	27.1	6.0	25.0
All women and girls																			13.9



Table 7.4 Trends in alcohol consumption, by sex and age, 2001 to 2011–2012 (continued)

	2001					2004–2005				2007–2008				2011–2012				
	Low risk	Risky	High risk	Did not consume in past week	Never consumed	Low risk	Risky	High risk	Did not consume in past week	Never consumed	Low risk	Risky	High risk	Did not consume in past week	Never consumed	Low risk	Risky	High risk
Persons																		
15–17											19.1	np	np	33.6	44.7	15.8	*1.0	**0.8
18–24	52.0	7.3	4.0	30.0	6.7	46.8	7.8	6.2	30.8	7.5	44.9	7.8	7.3	30.4	9.0	46.3	4.9	5.2
25–34	52.5	6.0	4.7	29.4	7.5	50.9	7.5	5.7	28.6	6.8	48.2	7.6	6.0	28.5	8.6	49.3	6.7	4.6
35–44	53.6	7.5	4.5	25.8	8.6	51.4	8.4	6.2	26.4	6.7	50.0	8.0	5.6	26.6	9.1	49.7	7.7	5.1
45–54	53.3	7.4	5.0	25.1	9.2	49.7	9.5	6.1	24.8	8.5	52.9	8.5	6.2	23.2	8.0	50.4	6.6	5.7
55–64	47.6	7.7	4.1	25.4	15.2	49.4	9.0	6.5	24.1	9.6	48.9	9.3	5.5	23.8	9.6	50.2	9.8	4.6
65–74	46.6	5.4	2.6	28.2	17.2	46.9	6.6	3.7	27.9	13.4	44.6	7.9	4.0	25.3	14.4	44.0	6.9	3.9
75+	40.9	3.6	*1.0	32.5	22.0	40.6	3.6	1.7	34.5	16.9	39.9	np	np	29.7	18.5	38.1	6.1	*1.3
All persons	50.9	6.7	4.1	27.5	10.8	48.9	7.9	5.6	27.5	8.9	46.7	7.5	5.2	26.8	11.8	46.5	6.8	4.5

\* Estimate has a relative standard error of 25–50% and should be used with caution. \*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2001, 2004–2005, 2007–2008, and 4364.0.55.001 – Australian Health Survey: First Results, 2011–2012

Notes: Proportion of people. People aged 15 years and over (2001 and 2004–2005 data only included adults aged 18 years and over). Proportions for 2001 and 2004–2005 were calculated based on ABS raw numbers. Risk categories were applied to people who had consumed alcohol in the past week and were based on the 2001 NHMRC Australian Alcohol Guidelines. Low risk drinking is defined as four or fewer drinks per day for men and two or fewer drinks per day for women. Risky drinking is defined as 5–6 drinks per day for men and 3–4 drinks per day for women. High risk drinking is defined as seven or more drinks per day for men and five or more drinks per day for women. The NHMRC advises that, for children up to 15 years of age, the safest option is to not drink alcohol at all. For 15–17 year olds, the safest option is to delay the initiation of drinking for as long as possible; if drinking does occur in this age group, it should be at low risk levels and in a safe environment, supervised by adults. Summing the categories does not necessarily add to 100%, because some respondents did not state when they last consumed alcohol. Blank cells indicate data were not available for this age group. np, not available for publication but included in totals where applicable, unless otherwise indicated.

Figure 7.4a Trends in high-risk drinking, by age, men, 2001 to 2011–2012

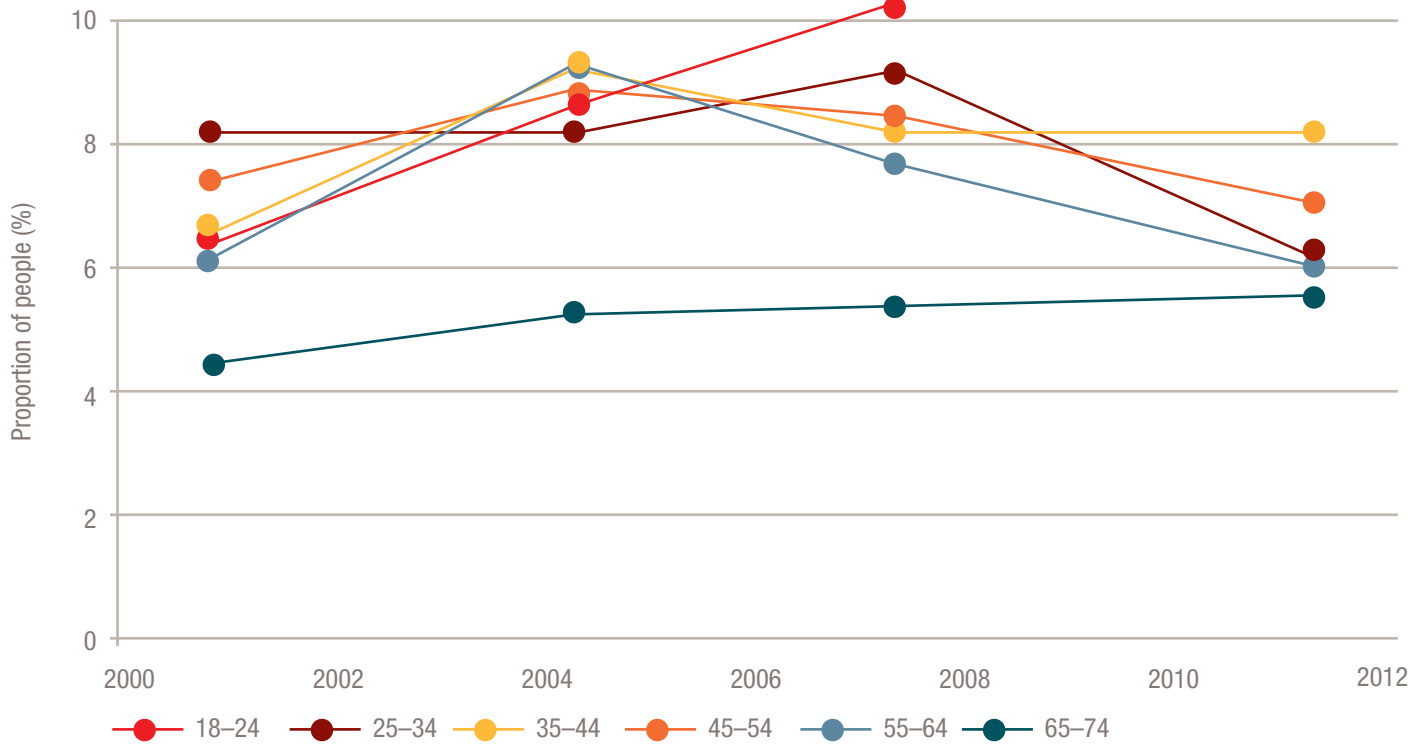


Figure 7.4b Trends in high-risk drinking, by age, women, 2001 to 2011–2012

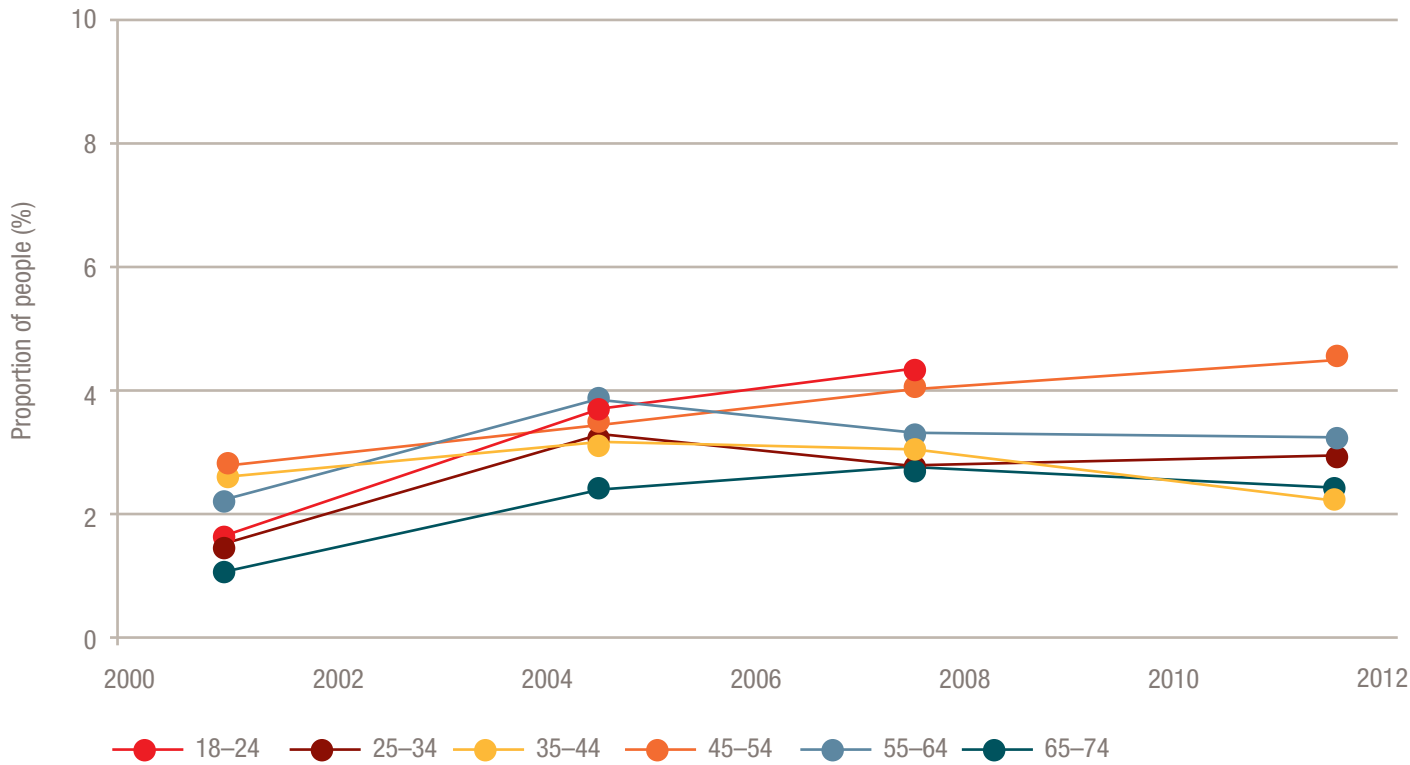


Table 7.5 Trends in adult per capita annual consumption of alcohol, Australia, by type, 1969–1970 to 2012–2013

Year(s)	Pure alcohol (L)			
	Beer	Wine	Spirits and RTDs	Total
1970–1975	8.76	1.91	1.60	12.27
1975–1980	8.74	2.55	1.57	12.86
1980–1985	7.69	3.15	1.52	12.37
1985–1990	6.63	3.13	1.62	11.37
1990–1995	5.72	2.86	1.56	10.14
1995–2000	5.21	3.07	1.72	10.00
2000–2001	5.13	3.27	1.82	10.22
2001–2002	4.87	3.26	1.88	10.01
2002–2003	5.04	3.38	2.02	10.44
2003–2004	4.77	3.48	2.08	10.32
2004–2005	4.67	3.56	2.18	10.49
2005–2006	4.68	3.57	2.18	10.50
2006–2007	4.69	3.75	2.26	10.76
2007–2008	4.69	3.71	2.29	10.75
2008–2009	4.68	3.78	2.07	10.63
2009–2010	4.51	3.87	2.03	10.53
2010–2011	4.31	3.79	2.05	10.30
2011–2012	4.14	3.78	1.95	10.04
2012–2013	4.04	3.70	1.95	9.88

Source: Australian Bureau of Statistics, 4307.0.55.001 – Apparent Consumption of Alcohol, Australia, 2012–2013

Notes: Litres pure alcohol per capita per year. Data are presented for financial years (1 July through 30 June). From 1970 to 2000, data for each year have been averaged over 5-year periods. From 2004–2005 onwards, total consumption figures also include cider. RTD are ready-to-drink (pre-mixed) beverages.

Figure 7.5 Trends in adult per capita annual consumption of alcohol, by type, 1969–1970 to 2012–2013

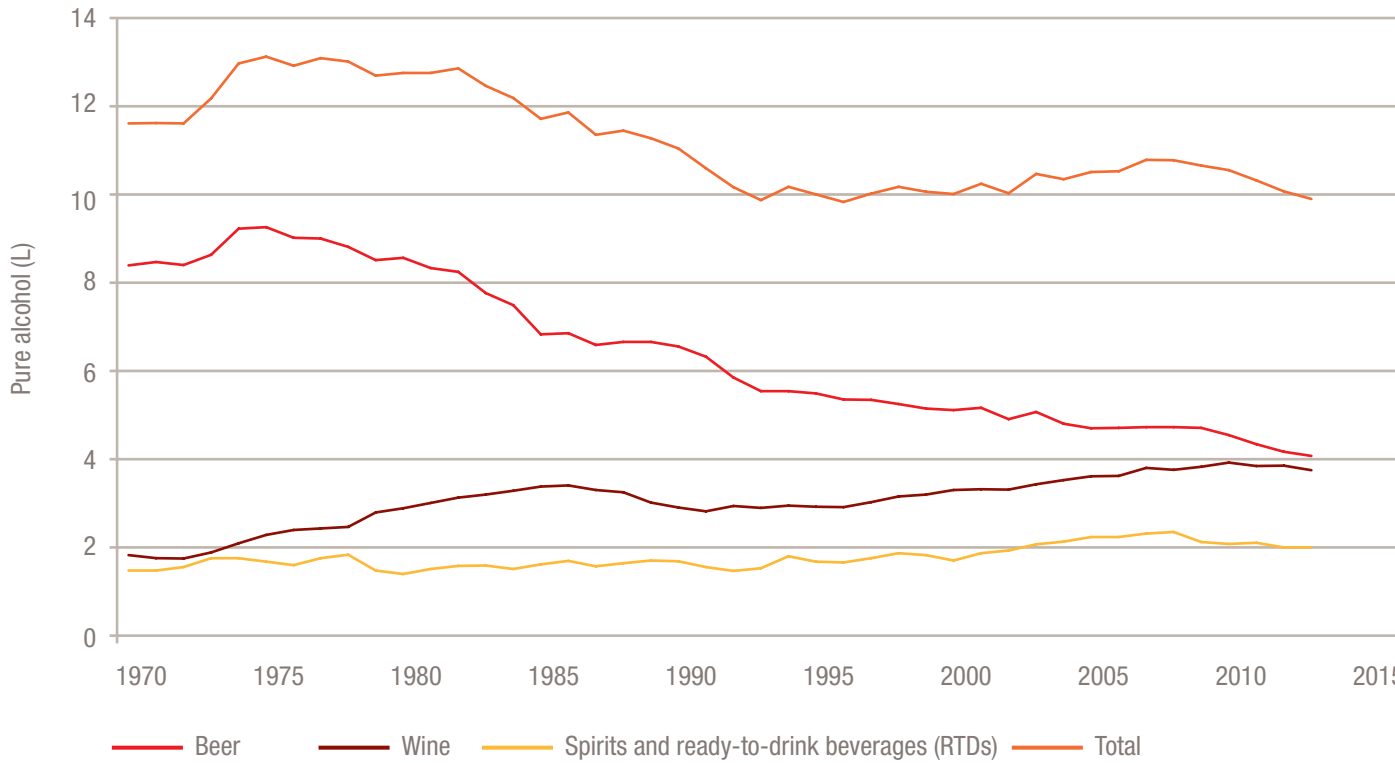


Table 7.6 Average weekly household expenditure on alcoholic beverages, Australia, by state or territory, 1984 to 2009–2010

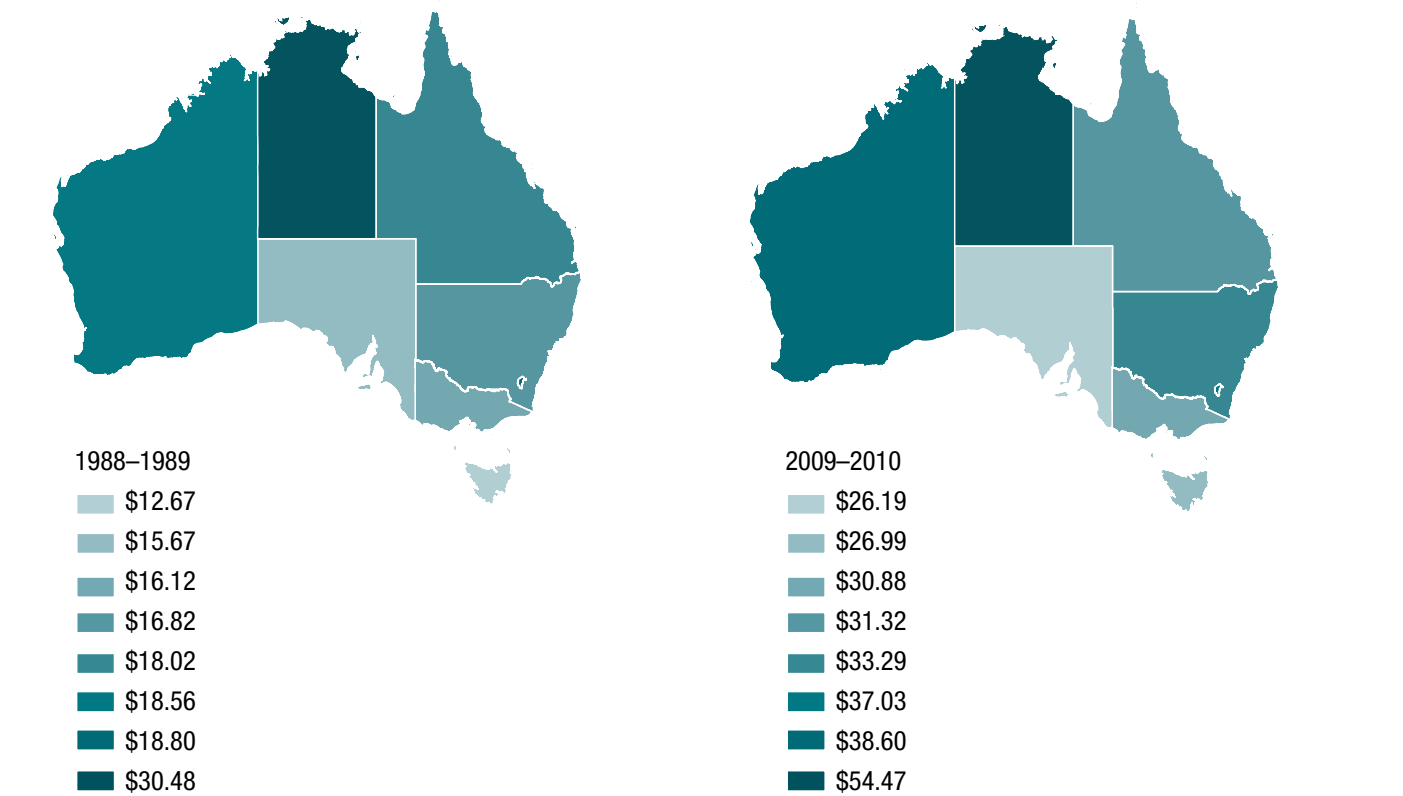
	1984	1988–1989	1993–1994	1998–1999	2003–2004	2009–2010
State or territory						
Australian Capital Territory	15.05	18.80	18.65	27.66 <sup>a</sup>	24.51	37.03
New South Wales	13.13	16.82	17.85	21.56	23.41	33.29
Northern Territory	25.04	30.48	25.80	35.52 <sup>a</sup>	37.63	54.47
Queensland	12.21	18.02	17.92	18.96	20.06	31.32
South Australia	11.49	15.67	16.45	16.49	22.49	26.19
Tasmania	9.45	12.67	15.42	15.60	26.79	26.69
Victoria	11.11	16.12	16.52	20.32	23.69	30.88
Western Australia	13.24	18.56	18.19	21.83	27.08	38.60
Australia	12.30	16.90	17.46	20.43	23.32	32.35
Alcohol proportion of total goods and services (%)	3.4%	3.4%	2.9%	2.9%	2.6%	2.6%

<sup>a</sup> Data from the capital city only (Canberra or Darwin, respectively)

Source: Australian Bureau of Statistics, 6530.0 – Household Expenditure Survey, Australia: Summary of Results, 1984, 1988–1989, 1993–1994, 6535.0 – Household Expenditure Survey, Australia: Detailed Expenditure Items, 1998–1999, 6535.0.55.001 – Household Expenditure Survey, Australia: Detailed Expenditure Items, 2003–2004, and 6530.0 – Household Expenditure Survey, Australia: Detailed Expenditure Items, 2009–2010

Notes: Australian dollars per household per week, and proportion of total household expenditure

Figure 7.6 Average weekly household expenditure on alcoholic beverages, Australia, by state or territory, 1988–1989 and 2009–2010



Alcohol consumption in Aboriginal and Torres Strait Islander peoples

Table 7.7 Trends in prevalence of alcohol consumption, Aboriginal and Torres Strait Islander peoples, by sex and age, 2004–2005 to 2012–2013

	2004–2005				2012–2013			
	Low risk	Risky	High risk	Did not consume in past week	Low risk	Risky	High risk	Did not consume in past week
Men								
18–24	38	12	8	41	49.4	6.3	*5.4	37.2
25–34	45	8	10	36	48.1	*6.2	9.2	36
35–44	38	8	17	37	40.6	7.5	11.7	39.2
45–54	35	**7	16	40	43.2	*5.0	*8.2	42.4
55+	28	*5	*5	60	32.9	np	np	52.4
All men					41.4	6.1	8.5	42.8
Women								
18–24	29	*7	*7	56	23.8	8.2	*4.0	63.0
25–34	28	*8	7	55	28.6	6.9	4.1	59.6
35–44	30	10	5	53	32.9	6.7	4.8	54.2
45–54	27	7	*4	60	28.2	7.1	5.0	58.6
55+	14	*7	*4	72	21.0	np	np	68.2
All women					26.6	6.0	4.2	61.4
Persons								
18–24	33	9	7	49	36.8	7.2	4.7	49.9
25–34	36	8	9	47	38.2	6.6	6.6	47.9
35–44	34	9	10	46	36.6	7.1	8.1	47.0
45–54	31	*7	10	51	35.5	6.1	6.5	50.9
55+	21	*6	4	66	26.5	4.5	5.3	61.0
All persons					33.8	6.1	6.3	52.3

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4715.0 – National Aboriginal and Torres Strait Islander Health Survey, 2004–2005, 4727.0.55.001 – Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012–2013

Notes: Proportion of people. Aboriginal and Torres Strait Islander people aged 18 years and over. Totals for 2012–2013 are age-standardised; category totals were not available for 2004–2005. Risk categories were applied to people who had consumed alcohol in the past week and were based on the 2001 NHMRC Australian Alcohol Guidelines. Low-risk drinking is defined as four or fewer drinks per day for men and two or fewer drinks per day for women. Risky drinking is defined as 5–6 drinks per day for men and 3–4 drinks per day for women. High-risk drinking is defined as seven or more drinks per day for men and five or more drinks per day for women. Summing the categories does not necessarily add to 100% because there were respondents for whom alcohol intake could not be determined. Data from 2004–2005 were only provided as integers. Blank cells indicate data were not available. np, not available for publication but included in totals where applicable, unless otherwise indicated.

Part C – Medical risk factors

This section of *Australian heart disease statistics 2014* reports on the medical risk factors and comorbidities associated with heart disease. The risk factors included are high blood pressure, cholesterol levels, overweight and obesity, diabetes and mental health.

There is strong, well-established evidence of the effect of clinical risk factors, including elevated blood pressure, blood cholesterol levels and overweight and obesity on the risk of heart disease. These risk factors are each explored in chapters 8–10, including the prevalence of high risk according to both measured and self-reported indicators.

It is especially important for clinical risk factors to interpret any self-reported data with caution, and crucial that we have accurate, up-to-date national data to have a clear understanding of the true burden of these risks. Self-reported measures of weight and height are notorious for underestimating the prevalence of overweight and obesity, as weight is generally under-reported and height may be overreported.<sup>34</sup> In the 2007–2008 National Health Survey, both self-reported and measured height and weight data were collected, enabling comparison of the estimates. The results showed that if the self-reported height and weight were used, 63% of men and 48% of women were classified as overweight or obese, compared to 68% of men and 54% of women using the measured data.<sup>35</sup> For blood pressure and cholesterol, elevated levels may not have been diagnosed or detected simply because they were not measured, especially among populations that have less regular contact with health services, and because most people are likely to live with no noticeable symptoms or side effects of these risks. The results of blood tests taken in the recent National

Health Measures Survey showed almost one-third of Australian adults had high cholesterol according to blood tests; however, only one in 10 of those people self-reported that they had high cholesterol.<sup>36</sup> Similarly, of those in the National Health Survey who had measured high blood pressure, fewer than one in three had self-reported that they had high blood pressure.<sup>37</sup>

In addition, other medical conditions, including diabetes and poor mental health, increase the risk of developing heart disease, and may also be associated with poorer outcomes for those living with heart disease. Diabetes in particular has common risk factors with heart disease; the behavioural and clinical risks for developing diabetes and heart disease may be addressed together to improve outcomes. There is also a growing evidence base linking behavioural risk factors, including diet and physical activity as well as smoking and risky alcohol consumption, to poorer mental health. The risk factors covered in part C often tend to occur together, and the risks for individuals with these clusters of risk factors are very high.

The following chapters provide detailed information about each of the five medical risk factors described above, including patterns and differences among population groups and changes over time.



## Part C | Chapter 8

# Cholesterol

### Key facts

- One-third of Australians had measured total blood cholesterol greater than 5.5 mmol/L. Prevalence was slightly higher in women than in men.
- Almost four in every five Australians with abnormal blood lipids (dyslipidaemia) were not receiving treatment for it.

### Introduction

High blood cholesterol is a major risk factor for ischaemic heart disease (IHD), ischaemic stroke and peripheral vascular disease. Total blood cholesterol levels exceeding 5.5 mmol/L greatly increase the risk of IHD, while levels above 6.5 mmol/L represent extremely high risk.<sup>38</sup> At high levels in the bloodstream, cholesterol can cause plaques to form in blood vessels, leading to clogged vessels.<sup>39</sup> For most people, a diet high in saturated fats is the main factor contributing to raised blood cholesterol.<sup>39</sup>

Globally, high cholesterol is responsible for 1.6% of the total burden of disease, and 29% of the burden from IHD.<sup>40</sup> High blood cholesterol was responsible for 3% of the total burden of disease in Australia in 2010, and 21% of the burden of cardiovascular diseases.<sup>9</sup>

Due to the expense and participant burden associated with taking blood samples for cholesterol measurement, many surveys rely on self-reporting measures of having been diagnosed with high cholesterol. A limitation of the approach, however, is that the true burden of disease may be underestimated if patients have never had their cholesterol levels measured by a general practitioner. The recent National Health Measures Survey component of the 2011–2012 Australian Health Survey, however, did measure blood cholesterol levels in participants, thus allowing for high-quality population-level estimates of the prevalence of high cholesterol in Australia.

### Key facts

- One-third of Australians had measured total blood cholesterol greater than 5.5 mmol/L. Prevalence was slightly higher in women than in men.
- Almost two-thirds of Australians had at least one abnormal blood lipid reading (total cholesterol, LDL-cholesterol, HDL-cholesterol or triglycerides) or were on lipid-lowering medicine.
- Almost four in every five Australians with abnormal blood lipids (dyslipidaemia) were not receiving treatment for it.
- Internationally, more than one-half of adults aged 25 years and over had raised blood cholesterol (greater than 5.0 mmol/L) in most high-income countries.





Tables and figures

Population blood cholesterol levels

Table 8.1 Measured blood cholesterol and triglyceride levels, by sex, 2011–2012

	Men	Women	Persons
Total cholesterol (mmol/L)			
<4.0	14.2	11.5	12.8
≥4.0 to <4.5	14.2	14.9	14.6
≥4.5 to <5.0	18.9	19.9	19.4
≥5.0 to <5.5	19.1	19.1	19.1
≥5.5 to <6.0	14.1	14.8	14.5
≥6.0 to <6.5	9.3	9.0	9.1
≥6.5 to <7.0	5.3	4.8	5.1
≥7.0	3.7	4.5	4.1
Total abnormal results (≥5.5 mmol/L)	32.4	33.2	32.8
HDL cholesterol (mmol/L)			
<1.0	18.9	4.8	11.8
≥1.0 to <1.3	41.3	22.4	31.7
≥1.3 to <1.5	21.1	22.8	22.0
≥1.5 to <2.0	15.8	38.3	27.2
≥2.0 to <2.5	1.5	9.4	5.5
≥2.5	*0.3	0.8	0.6
Total abnormal results <sup>a</sup>	18.9	27.2	23.1
LDL cholesterol (mmol/L) <sup>b</sup>			
<1.5	1.3	1.3	1.3
≥1.5 to <2.0	6.4	6.5	6.4
≥2.0 to <2.5	12.8	16.0	14.4
≥2.5 to <3.0	20.9	24.3	22.6
≥3.0 to <3.5	21.7	20.1	20.9
≥3.5 to <4.0	16.9	16.3	16.6
≥4.0 to <4.5	8.7	8.0	8.3
≥4.5 to <5.0	6.4	4.4	5.4
≥5.0	2.9	2.9	2.9
Total abnormal results (≥3.5 mmol/L)	35.0	31.6	33.2
Triglycerides (mmol/L) <sup>b</sup>			
<0.5	1.0	2.2	1.6
≥0.5 to <1.0	32.1	44.4	38.3
≥1.0 to <1.5	31.9	30.5	31.2
≥1.5 to <2.0	16.1	13.9	15.0
≥2.0 to <2.5	7.7	5.3	6.5
≥2.5 to <3.0	5.0	2.0	3.5
≥3.0	6.3	1.7	4.0
Total abnormal results (≥2.0 mmol/L)	19.0	9.0	13.9

\* Estimate has a relative standard error of 25–50% and should be used with caution.

a Cutoff values for HDL cholesterol vary by sex: abnormal values ≤1.0 mmol/L for men and ≤1.3 mmol/L for women.

b LDL and triglyceride measurements were taken from fasting participants only (≥8 hours).

Source: Australian Bureau of Statistics, 4364.0.55.005 – Australian Health Survey: Biomedical Results for Chronic Diseases, 2011–2012

Notes: Measured lipid levels (mmol/L). Adults aged 18 years and over, including pregnant women. Higher levels of HDL (high-density lipoprotein) cholesterol are associated with lower risk for heart disease. Higher levels of LDL (low-density lipoprotein) cholesterol are associated with higher risk for heart disease.

Prevalence of high cholesterol

Table 8.2 Prevalence of medicated and unmedicated dyslipidaemia, by age or sex, 2011–2012

	Total with dyslipidaemia	Unmedicated and has abnormal lipid levels	Medicated and has abnormal lipid levels	Medicated and has normal lipid levels
Age group				
18–34	44.3	43.3	1.0	0.0
35–44	59.2	54.5	3.0	1.7
45–54	70.9	61.1	6.2	3.7
55–64	78.9	55.1	13.4	10.4
65–74	81.0	42.9	19.0	19.0
75+	77.7	30.3	17.7	29.8
Sex				
Men	63.7	49.1	7.7	6.9
Women	62.8	49.7	6.7	6.3
All persons	63.2	49.4	7.2	6.6

Source: Australian Bureau of Statistics, 4364.0.55.005 – Australian Health Survey: Biomedical Results for Chronic Diseases, 2011–2012

Notes: Proportion of people. Adults aged 18 years and over, including pregnant women. Dyslipidaemia is defined as when a person presents with one or more of the following: taking lipid-lowering medication, abnormal total cholesterol results, abnormal LDL cholesterol results, abnormal HDL cholesterol results, abnormal triglyceride results.

Table 8.3 Prevalence of abnormal lipid levels, by lipid type and sociodemographic characteristics, 2011–2012

	Total cholesterol	HDL cholesterol	LDL cholesterol	Triglycerides
Sex				
Men	32.4	18.9	35.0	19.0
Women	33.2	27.2	31.6	9.0
State or territory				
Australian Capital Territory	31.6	21.5	31.4	15.1
New South Wales	32.3	24.7	33.5	14.4
Northern Territory	29.8	25.1	28.1	18.0
Queensland	30.8	26.5	34.0	15.8
South Australia	35.0	22.6	32.5	14.2
Tasmania	39.4	23.0	39.4	14.8
Victoria	33.2	22.0	31.6	10.2
Western Australia	34.7	14.9	33.7	14.8
Country of birth				
Australia	32.6	22.7	32.2	13.9
Other Oceania	25.8	25.0	31.5	17.2
United Kingdom	37.1	19.1	36.9	13.8
Northwest Europe	47.4	14.9	46.5	15.3
Southern and Eastern Europe	36.8	24.1	37.1	11.7
North Africa and Middle East	21.9	39.6	29.1	22.0
South-East Asia	37.0	17.3	38.8	14.9
North-East Asia	28.5	22.4	25.1	*14.5
Southern and Central Asia	27.3	39.6	35.9	*14.1
Americas	30.6	20.7	29.3	*3.7
Sub-Saharan Africa	36.9	*22.8	38.5	*9.0
Index of Relative Socioeconomic Disadvantage				
First quintile (highest disadvantage)	29.4	29.5	31.3	18.0
Second quintile	33.7	27.8	33.9	15.6
Third quintile	33.6	22.0	32.0	13.7
Fourth quintile	31.7	20.9	32.0	11.7
Fifth quintile (lowest disadvantage)	35.0	17.1	36.4	11.5
Remoteness				
Major cities	31.0	23.4	32.0	13.0
Inner regional	38.1	21.5	37.4	16.4
Outer regional and remote	36.7	24.3	34.9	16.1
All persons	32.8	23.1	33.2	13.9

\* Estimate has a relative standard error of 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 4364.0.55.005 – Australian Health Survey: Biomedical Results for Chronic Diseases, 2011–2012

Notes: Proportion of people. Adults aged 18 years and over who had fasted for at least 8 hours prior to sampling. Abnormal total cholesterol  $\geq 5.5$  mmol/L. Abnormal HDL (high-density lipoprotein) cholesterol is  $\leq 1.0$  mmol/L for men and  $\leq 1.3$  mmol/L for women. Abnormal LDL (low-density lipoprotein) cholesterol is  $\geq 3.5$  mmol/L. Abnormal triglyceride levels are  $\geq 2.0$  mmol/L. Socioeconomic status based on the 2006 Index of Relative Socio-Economic Disadvantage. A lower Index of Disadvantage quintile (e.g. the first quintile) indicates an area with relatively greater disadvantage and a lack of advantage in general. A higher Index of Disadvantage quintile (e.g. the fifth quintile) indicates an area with a relative lack of disadvantage and greater advantage in general.

Figure 8.3a Prevalence of dyslipidaemia, by lipid type and Index of Relative Socioeconomic Disadvantage, 2011–2012

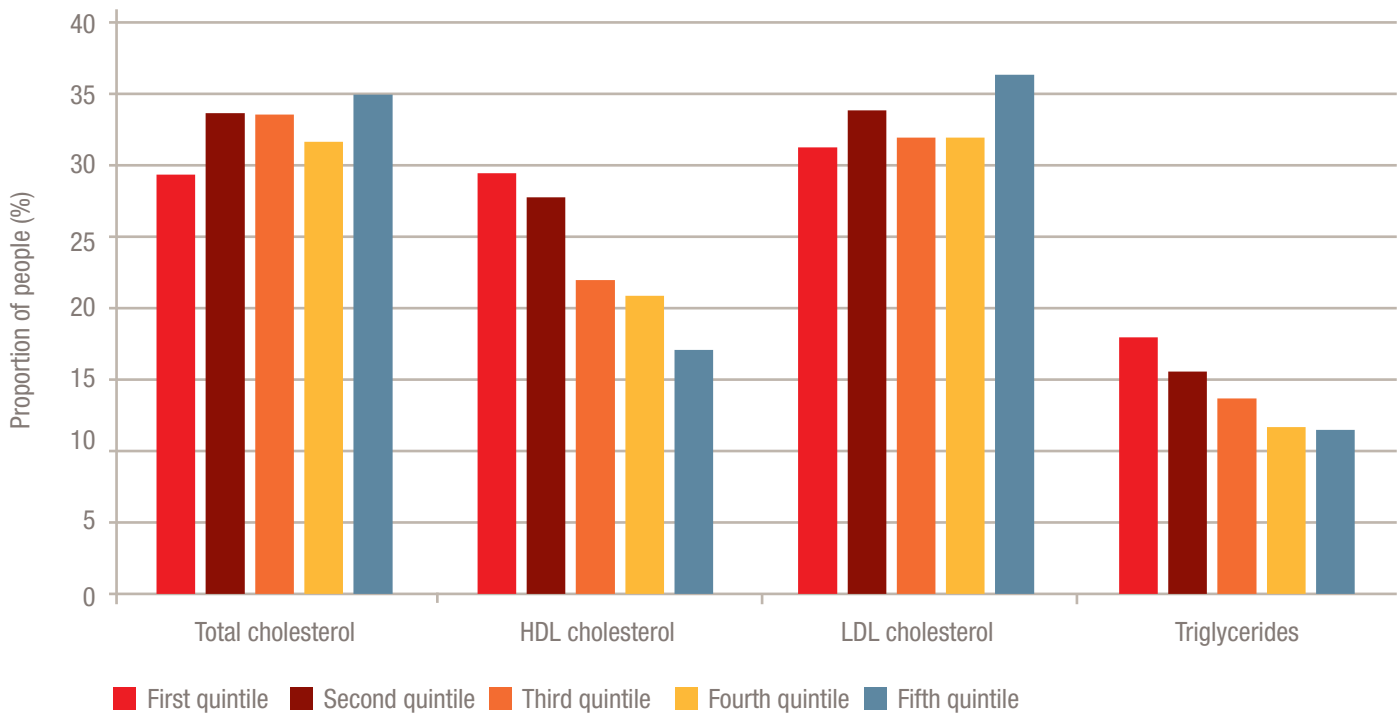


Figure 8.3b Prevalence of dyslipidaemia, by lipid type and remoteness, 2011–2012

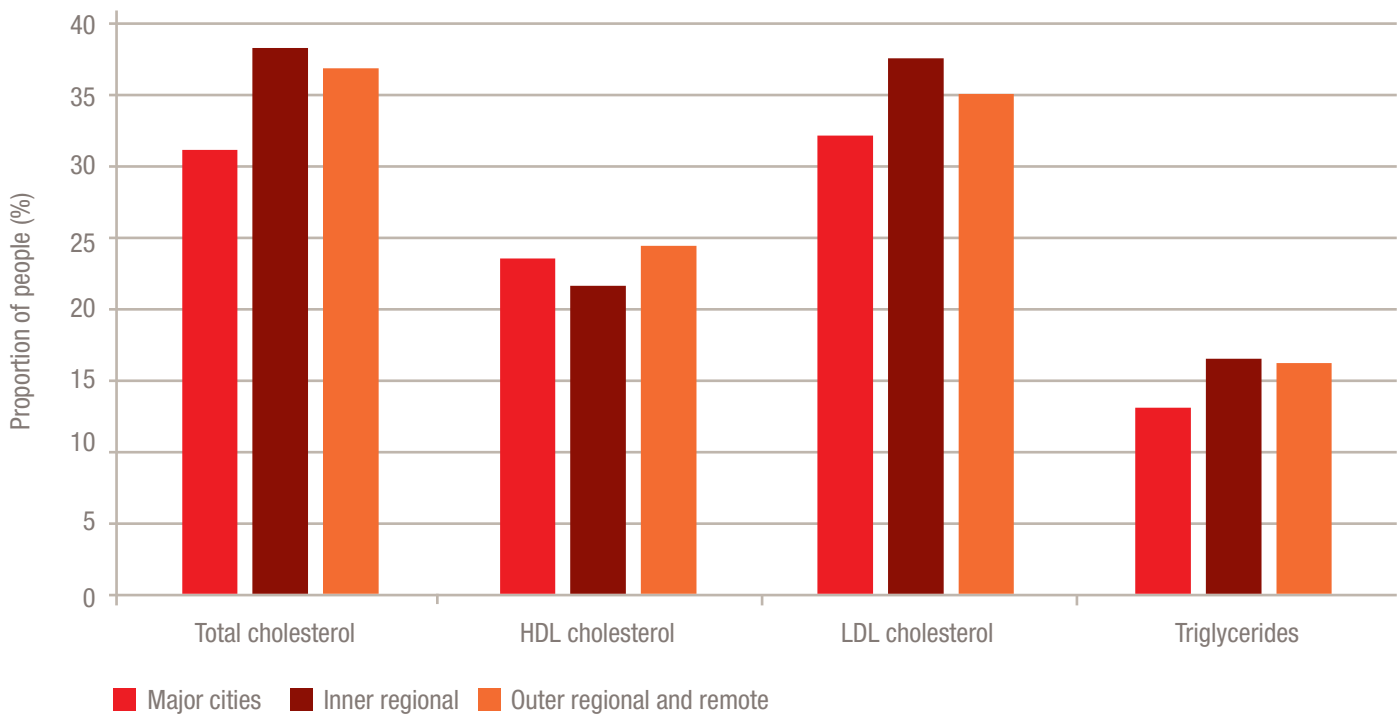


Table 8.4 Age-standardised prevalence of raised total cholesterol, adults, Australia and selected countries, by sex, 2008

	Age-standardised prevalence of raised total cholesterol >5.0 mmol/L			Age-standardised prevalence of raised total cholesterol >6.2 mmol/L		
	Men	Women	Persons	Men	Women	Persons
Country						
Australia	54.8	55.3	55.2	14.8	17.3	16.1
Canada	53.4	52.9	53.4	14.8	17.3	16.2
France	63.5	60.2	62.0	20.2	20.7	20.6
Germany	69.6	61.4	65.6	27.1	21.9	24.6
Ireland	65.5	59.5	62.6	22.9	20.4	21.7
Japan	58.2	55.7	57.1	15.7	15.8	15.8
Mexico	47.4	53.6	50.7	11.3	16.2	13.9
New Zealand	56.8	55.4	56.2	16.6	17.3	17.0
Republic of Korea	41.7	42.7	42.5	8.6	10.2	9.5
Spain	58.9	52.9	56.1	17.1	15.4	16.4
UK	65.2	61.3	63.4	21.6	21.3	21.7
USA	52.9	54.2	53.8	13.1	14.9	14.2

Source: World Health Organization, Global Health Observatory Data Repository, [www.who.int/gho/database/en/](http://www.who.int/gho/database/en/)  
Notes: Proportion of people. Adults aged 25 years and over. Estimates based on a combination of published and unpublished survey data with adjustments for risk factor definition, age groups for reporting, reporting year and representativeness of population. Age-standardised using the WHO standard population.

Figure 8.4 Age-standardised prevalence of raised total cholesterol, adults, Australia and selected countries, by sex, 2008

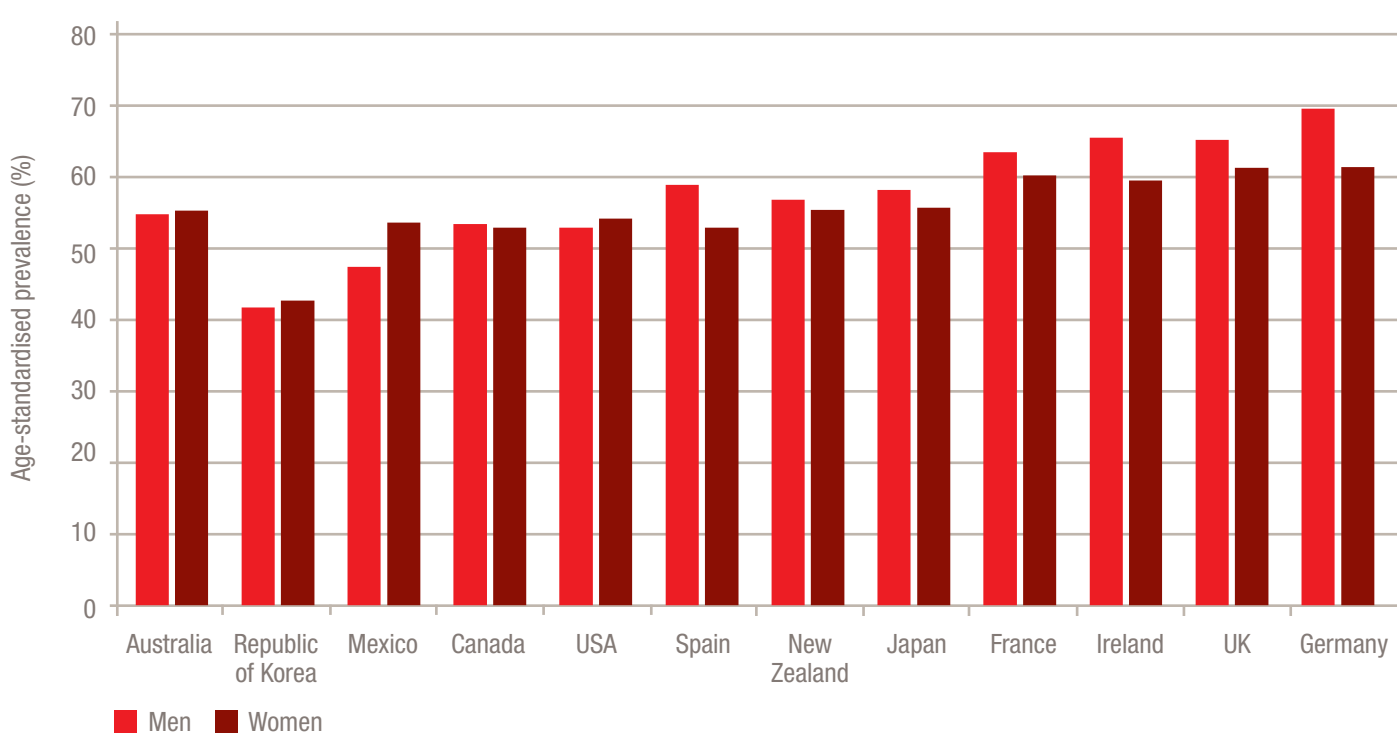


Table 8.5 Prevalence of self-reported diagnosed or treated high blood cholesterol, by sex, age and state or territory, 2009 to 2013 (pooled)

	Australian Capital Territory	New South Wales	Northern Territory	Queensland	South Australia	Tasmania	Victoria	Western Australia	Australia
Men									
30–39	21.3	25.0	12.6	19.6	19.1	15.0	23.0	18.8	20.4
40–49	36.9	36.5	23.5	35.2	37.8	30.1	35.8	33.9	34.4
50–59	52.4	47.5	45.3	50.1	50.6	44.8	49.7	47.9	48.7
60–65	50.4	57.0	47.4	55.3	56.1	49.9	59.8	57.3	55.1
All men	37.9	39.8	31.6	39.3	40.3	33.6	39.3	37.9	38.1
Women									
30–39	15.5	13.9	12.5	15.0	18.9	11.6	14.3	12.5	14.3
40–49	24.2	25.9	23.6	25.5	28.4	20.7	26.4	24.0	24.9
50–59	40.5	43.4	36.0	39.8	45.6	35.4	44.6	42.8	41.1
60–65	51.7	53.8	45.2	52.8	60.3	52.4	53.2	49.6	52.7
All women	28.2	31.5	25.9	30.1	34.5	27.3	30.3	29.1	29.7
Persons									
30–39	18.2	19.6	12.5	17.1	19.0	13.0	18.5	15.1	17.1
40–49	30.2	31.5	23.6	30.4	32.7	24.9	31.2	28.4	29.4
50–59	46.7	45.5	40.0	45.4	48.1	39.2	47.2	45.1	44.8
60–65	51.0	55.6	46.4	54.2	57.9	51.2	56.9	53.4	54.0
All persons	32.9	35.9	28.3	34.9	37.3	30.0	34.9	33.0	33.8

Source: National Heart Foundation of Australia, HeartWatch survey, 2009–2013  
Notes: Proportion of people. Survey included only adults aged 30–65 years. Data from 2009 to 2013 have been pooled. Includes respondents who answered ‘yes’ when asked if they had ever been told by a doctor they had high cholesterol or when asked if they were currently taking any medicines for high cholesterol. Responses ‘Prefer not to say’ have been excluded.



Figure 8.5a Prevalence of self-reported diagnosed or treated high blood cholesterol, men aged 30–65 years, by age, 2009 to 2013 (pooled)

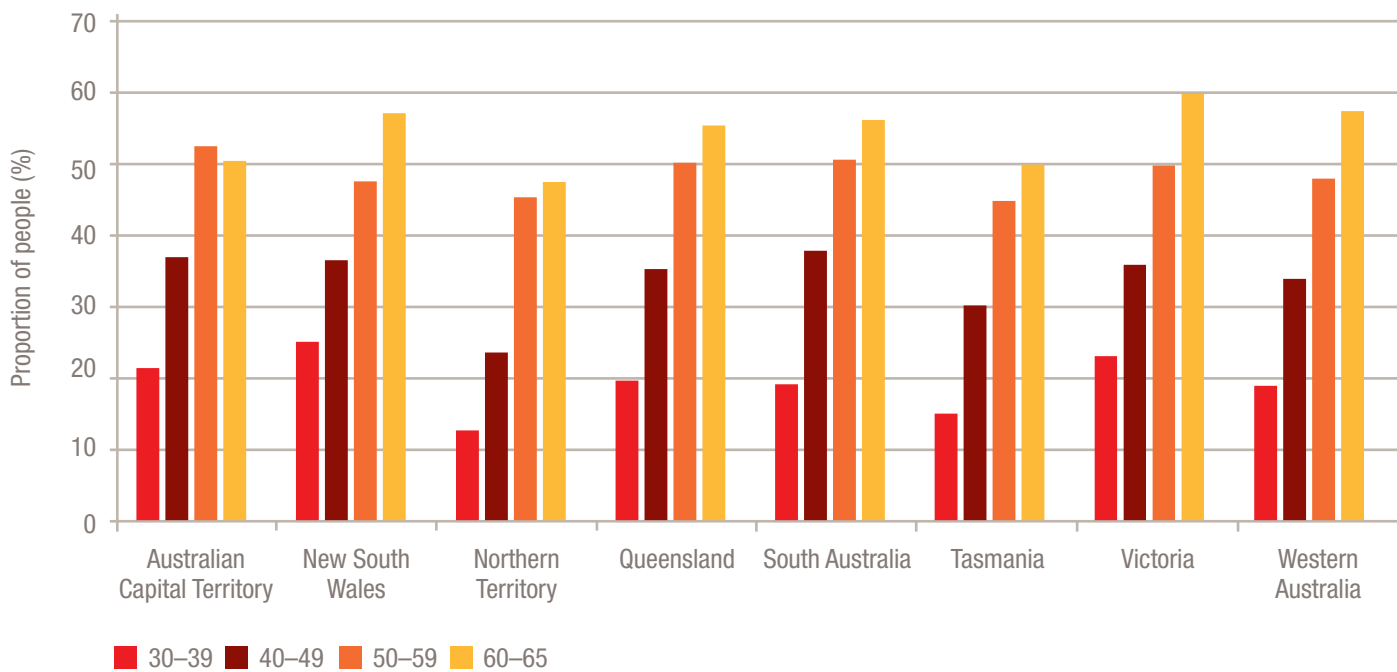
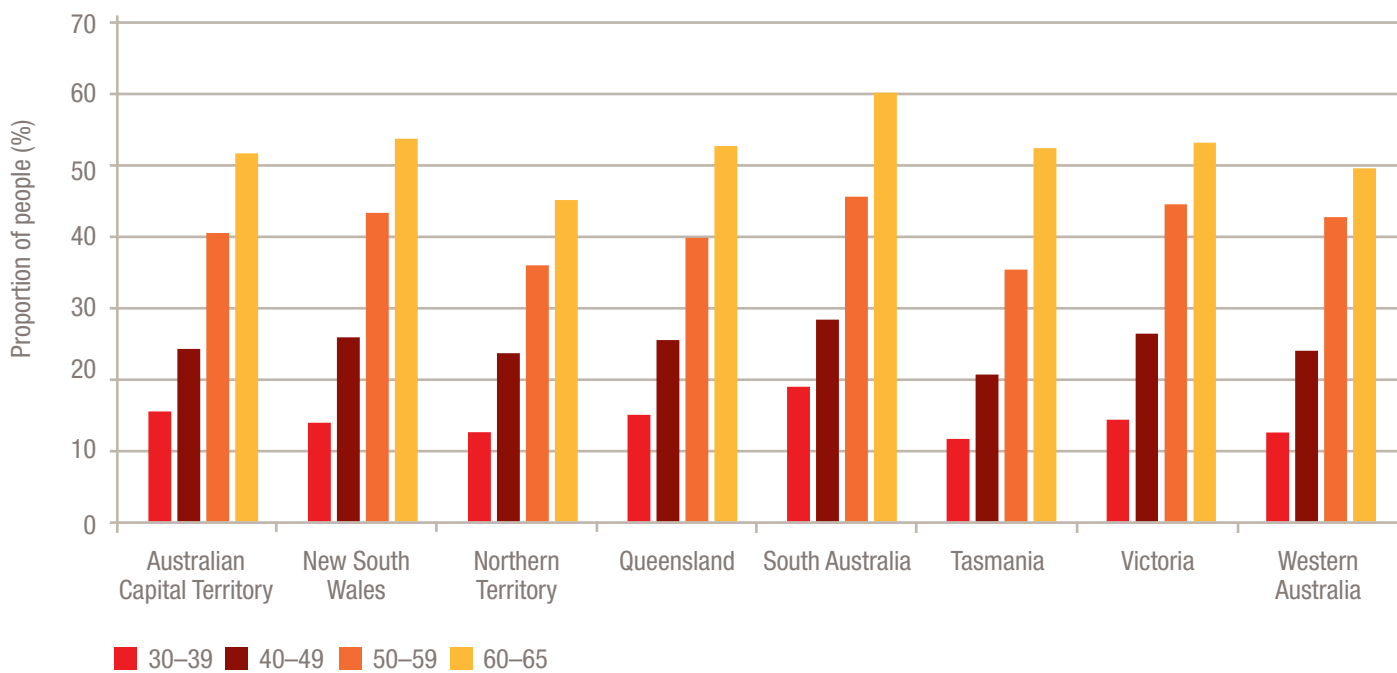


Figure 8.5b Prevalence of self-reported diagnosed or treated high blood cholesterol, women aged 30–65 years, by age, 2009 to 2013 (pooled)



Actions taken for high cholesterol

Table 8.6 Proportion of adults with high or normal cholesterol who have taken action related to cholesterol levels in the last 2 years, by sex and age, 2009 to 2013 (pooled)

	Proportion who have taken action	
	High cholesterol	Normal cholesterol
Men		
30–39	90.3	46.4
40–49	93.0	62.3
50–59	96.4	77.9
60–65	97.9	85.1
All men	95.0	63.2
Women		
30–39	88.2	44.0
40–49	93.4	62.1
50–59	96.3	78.7
60–65	97.9	84.5
All women	94.8	61.3
Persons		
30–39	89.3	45.0
40–49	93.2	62.2
50–59	96.3	78.3
60–65	97.9	84.8
All persons	94.9	62.2

Source: National Heart Foundation of Australia, HeartWatch survey, 2009–2013

Notes: Proportion of people. Survey included only adults aged 30–65 years. Data from 2009 to 2013 have been pooled. Actions related to cholesterol included participants having spoken to a general practitioner or other health professional about his or her own cholesterol levels, or having had a blood test for cholesterol. Responses ‘Prefer not to say’ have been excluded.

Figure 8.6a Proportion of men who have taken action related to cholesterol levels in the last 2 years, aged 30–65 years, by age and diagnosis, 2009 to 2013 (pooled)

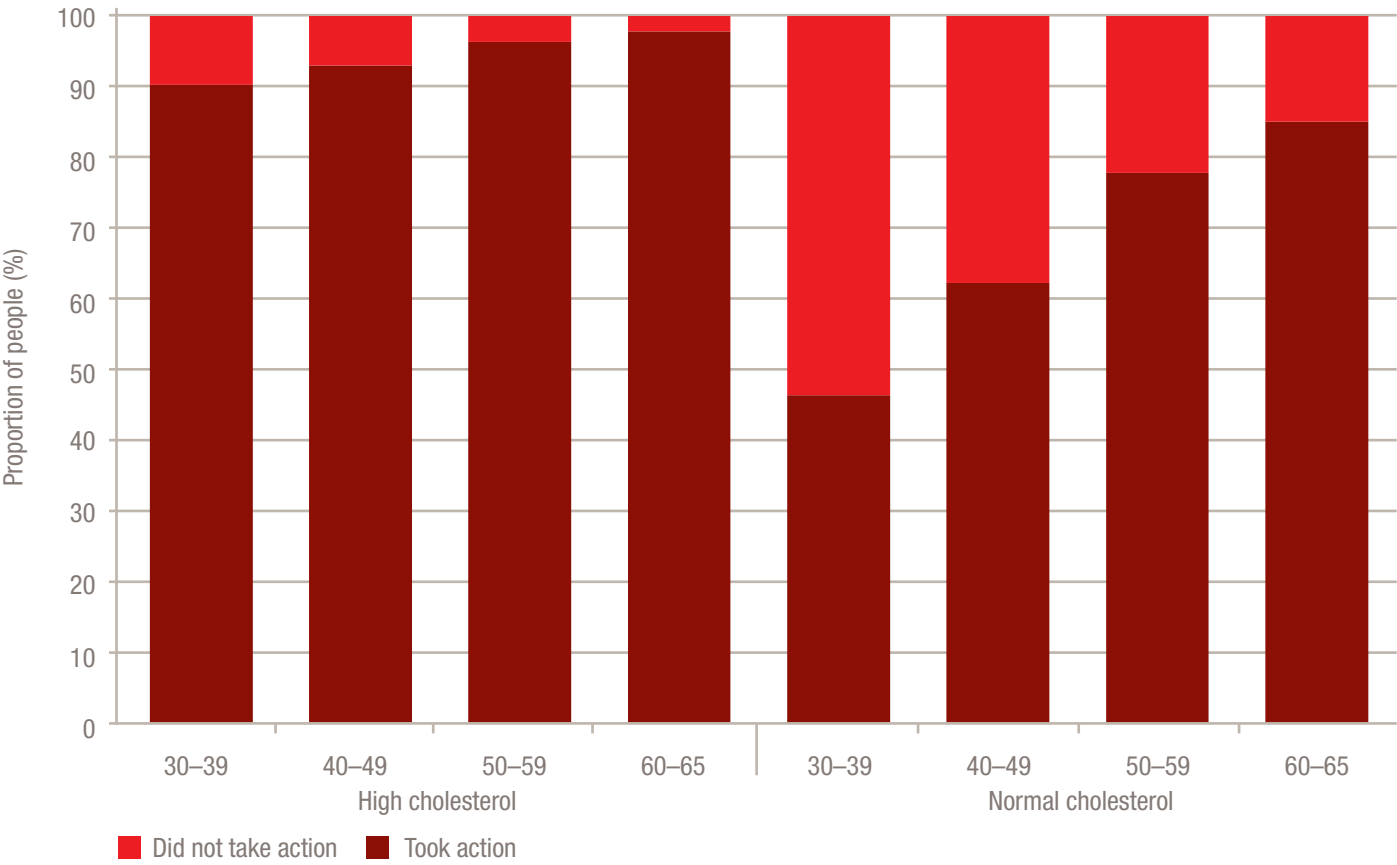
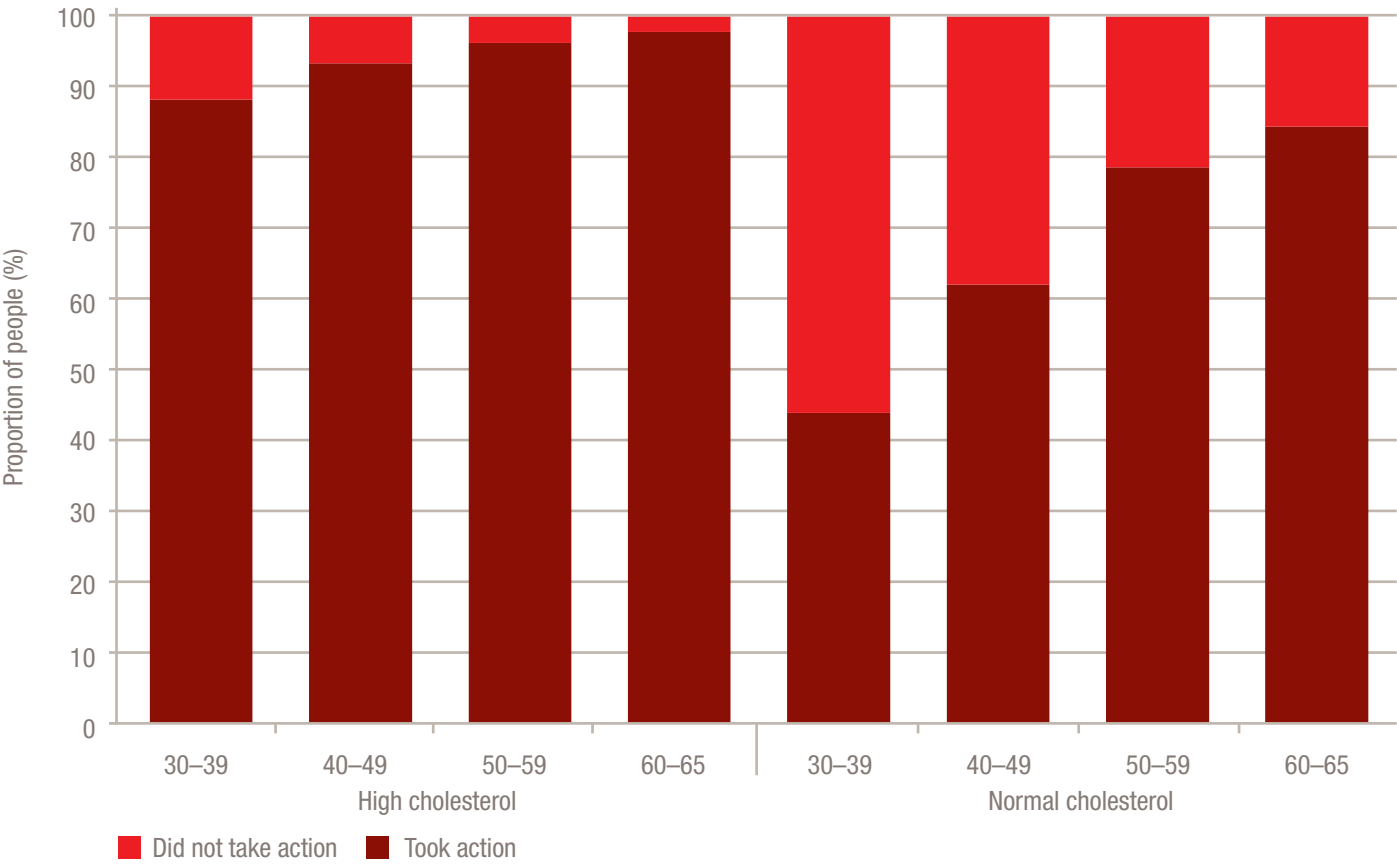


Figure 8.6b Proportion of women who have taken action related to cholesterol levels in the last 2 years, aged 30–65 years, by age and diagnosis, 2009 to 2013 (pooled)



Cholesterol in Aboriginal and Torres Strait Islander peoples

Table 8.7 Prevalence of self-reported diagnosed high cholesterol, by age or sex and Indigenous status, 2012–2013

	Aboriginal and Torres Strait Islander	Non-Indigenous
Age group		
25–34	np	1.2
35–44	3.3	3.8
45–54	4.6	9.5
55+	7.3	19.0
Sex		
Men and boys	1.4	7.0
Women and girls	2.0	6.8
Persons	1.7	6.9

Source: Australian Bureau of Statistics, 4727.0.55.001 – Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012–2013  
Notes: Proportion of people. Totals by sex and overall include all ages combined. Age group data for those under 25 years of age are not presented because of small numbers, but are included in totals. Proportions are non-age standardised. np, not available for publication but included in totals where applicable.

## Part C | Chapter 9

# Blood pressure

### Key facts

- There has been a substantial decline in the proportion of Australian adults with measured high blood pressure since the 1980s, due largely to improvements in treatment.
- One in four Aboriginal and Torres Strait Islander Australians had high blood pressure, while one in five non-Indigenous Australians had high blood pressure.



### Introduction

Raised blood pressure (hypertension) causes stress to the heart and blood vessels, leading to damage over time and an increased risk of ischaemic heart disease (IHD) and stroke.<sup>41</sup> Globally, an estimated 45% of heart disease deaths and 51% of stroke deaths are attributable to hypertension,<sup>42</sup> and about 40% of adults over 25 years old worldwide had elevated blood pressure in 2008.<sup>43</sup> High blood pressure was the leading risk factor for global disease burden in 2010, surpassing tobacco smoking. High blood pressure contributed 7% of the total burden of disease and 53% of IHD burden globally.<sup>40</sup> In Australia in 2010, 7% of the total disease burden and 48% of cardiovascular disease burden were attributable to high blood pressure.<sup>9</sup>

In addition to being a risk factor for heart disease, hypertension is itself mediated by behavioural risk factors, including tobacco use, poor diet, physical inactivity, alcohol use and overweight and obesity.<sup>39</sup> In its early stages, raised blood pressure rarely causes noticeable symptoms. Therefore it is important that Australians are assessed for raised blood pressure on a regular basis.<sup>42</sup>

In this compendium, hypertension is defined as a measured systolic blood pressure greater than or equal to 140 mmHg, a measured diastolic blood pressure greater than or equal to 90 mmHg, or being on hypertensive medicine. In Australia, several surveys collect data on blood pressure, some through objective measurements, which are relatively easy to obtain, and some from self-reporting of having been previously diagnosed with, or currently being treated for, high blood pressure.

### Key facts

- The prevalence of high blood pressure increased substantially with age, from less than 10% in the 25 to 34-year age group to almost 50% in people aged 75 years and over.
- There has been a substantial decline in the proportion of Australian adults with measured high blood pressure since the 1980s, due largely to improvements in treatment.
- One in five Australians had high blood pressure and the prevalence was higher in men than women.
- One in four Aboriginal and Torres Strait Islander Australians had high blood pressure, while one in five non-Indigenous Australians had high blood pressure.



Tables and figures

Population blood pressure levels

Table 9.1 Mean measured systolic and diastolic blood pressure, by sex, age and state or territory, 2011–2012

	Australian Capital Territory		New South Wales		Northern Territory		Queensland		South Australia		Tasmania		Victoria		Western Australia	
	SBP	DBP	SBP	DBP	SBP	DBP	SBP	DBP	SBP	DBP	SBP	DBP	SBP	DBP	SBP	DBP
Men																
18–24	118.2	70.8	119.2	70.8	119.1	71.5	118.3	70.3	116.0	68.0	118.8	67.8	119.6	69.9	118.8	68.4
25–34	120.6	76.0	119.2	74.4	119.8	74.7	120.3	74.6	123.9	76.9	124.4	78.5	121.0	75.2	122.4	76.5
35–44	120.1	78.5	121.7	78.6	118.4	76.9	121.7	79.2	124.9	80.2	125.8	80.1	121.9	78.5	122.6	78.7
45–54	124.5	80.1	125.4	80.7	126.0	79.4	124.2	80.8	126.8	81.0	127.0	81.2	130.1	82.6	126.6	81.2
55–64	132.0	81.2	130.9	80.1	128.6	79.6	128.7	79.7	132.4	79.8	138.1	84.2	133.5	81.1	128.9	79.2
65+	133.5	73.0	134.6	74.2	132.5	74.1	131.8	75.0	137.2	74.6	143.1	76.9	138.0	76.7	136.6	75.3
All men	124.0	76.9	125.1	76.6	123.0	76.2	124.0	76.8	127.6	77.3	130.5	78.6	127.2	77.4	125.8	77.0
Women																
18–24	107.0	71.3	110.3	72.6	110.9	70.8	106.5	69.9	111.2	72.3	111.5	74.3	109.8	72.7	107.3	71.0
25–34	110.8	75.0	108.6	72.4	109.3	73.2	108.9	73.3	111.4	74.4	111.8	74.9	108.9	72.4	108.8	72.3
35–44	110.5	75.6	112.8	75.1	111.0	74.7	113.3	76.1	114.4	76.2	118.8	79.4	112.7	75.7	111.6	75.3
45–54	121.2	79.3	122.4	80.0	118.9	78.8	119.8	79.1	120.2	78.0	126.1	82.3	122.6	79.7	119.8	78.8
55–64	124.4	78.5	127.5	77.8	124.1	78.7	124.2	76.6	130.0	79.1	130.6	80.4	129.5	79.1	128.3	78.6
65+	139.7	77.3	138.9	74.9	136.0	78.1	134.7	76.0	140.9	76.2	143.7	76.8	139.2	76.2	135.6	76.1
All women	117.9	76.3	119.9	75.5	115.9	75.4	117.7	75.3	122.1	76.1	125.2	78.2	120.3	76.0	118.3	75.4
Persons																
18–24	112.7	71.1	114.7	71.7	115.2	71.2	112.3	70.1	113.5	70.3	115.3	70.9	114.7	71.3	113.0	69.7
25–34	115.9	75.5	113.9	73.4	114.2	73.9	114.6	74.0	117.3	75.6	117.6	76.6	115.3	73.9	115.9	74.5
35–44	115.3	77.1	117.1	76.8	114.6	75.8	117.5	77.7	119.6	78.2	122.3	79.8	117.2	77.1	117.2	77.1
45–54	122.8	79.7	123.9	80.4	122.6	79.1	121.9	79.9	123.4	79.5	126.6	81.7	126.3	81.1	123.2	80.0
55–64	128.1	79.8	129.2	79.0	126.3	79.1	126.4	78.1	131.3	79.5	134.4	82.3	131.4	80.1	128.6	78.9
65+	136.7	75.2	136.8	74.6	134.1	75.9	133.2	75.5	139.2	75.4	143.4	76.8	138.6	76.4	136.1	75.7
All persons	120.9	76.6	122.4	76.0	119.4	75.8	120.8	76.1	124.8	76.7	127.8	78.4	123.8	76.7	122.1	76.2

Source: Australian Bureau of Statistics, 4364.0.55.001 – Australian Health Survey: First Results, 2011–2012

Notes: Measured blood pressure levels in mmHg. Adults aged 18 years and over. Systolic blood pressure (SBP) is the peak pressure when the heart pumps; diastolic blood pressure (DBP) is the pressure when the heart rests. Blood pressure readings are normally reported as SBP over DBP. High blood pressure or hypertension is defined as ≥140/90 mmHg.

Prevalence of high blood pressure

Table 9.2 Prevalence of measured elevated blood pressure, by sex and age, 2011–2012

		Elevated blood pressure categories		
	Low/normal (<140/90)	High (140/90 to <160/100)	Very high (160/100 to <180/110)	Severe (180/110 and higher)
Men				
18–24	94.0	6.8	1.5	0.0
25–34	86.5	11.0	1.2	0.6
35–44	80.9	15.4	3.1	0.8
45–54	70.6	23.5	4.6	1.5
55–64	65.9	24.8	6.3	2.2
65–74	63.4	27.4	7.2	2.6
75+	56.2	27.4	11.3	4.9
Women				
18–24	94.8	3.7	1.0	0.0
25–34	94.4	3.4	1.3	0.2
35–44	88.2	9.8	1.6	0.4
45–54	77.3	16.3	4.7	1.1
55–64	72.5	20.6	5.3	1.6
65–74	59.9	28.7	9.2	2.5
75+	48.0	27.8	17.4	7.5
Persons				
18–24	94.5	5.4	0.6	0.0
25–34	90.7	7.2	1.5	0.4
35–44	84.7	12.5	2.2	0.6
45–54	74.0	20.0	4.6	1.1
55–64	69.3	23.0	5.8	1.6
65–74	61.5	28.1	7.9	2.4
75+	52.4	27.3	14.5	5.9

Source: Australian Bureau of Statistics, 4324.0.55.001 – Microdata: Australian Health Survey, National Health Survey, 2011–2012

Notes: Proportion of people. Adults aged 18 years and over who presented a blood pressure reading. Based on measured blood pressure levels in mmHg. Systolic blood pressure (SBP) is the peak pressure when the heart pumps; diastolic blood pressure (DBP) is the pressure when the heart rests. Blood pressure readings are normally reported as SBP over DBP. High blood pressure or hypertension is usually defined as ≥140/90 mmHg.

Table 9.3 Prevalence of self-reported diagnosed or treated high blood pressure, by sex, age and state or territory, 2009 to 2013 (pooled)

	Australian Capital Territory	New South Wales	Northern Territory	Queensland	South Australia	Tasmania	Victoria	Western Australia	Australia
Men									
30–39	25.1	22.6	19.7	19.1	16.9	20.3	21.9	19.9	21.0
40–49	29.9	32.7	29.9	31.4	34.4	26.0	27.6	32.8	30.6
50–59	48.0	48.6	37.9	43.8	46.8	48.0	46.2	45.1	45.9
60–65	50.8	60.5	40.7	58.3	53.1	51.6	56.9	59.8	55.3
All men	35.8	39.0	31.8	36.7	37.2	34.9	35.2	37.5	36.4
Women									
30–39	18.3	17.0	16.3	17.6	18.3	18.6	15.1	19.2	17.4
40–49	26.3	23.6	21.6	26.0	27.2	26.6	24.8	26.6	25.4
50–59	45.7	41.6	31.9	35.9	41.7	43.4	43.0	40.5	40.6
60–65	57.5	52.7	40.6	52.8	50.2	47.3	49.8	47.2	50.1
All women	31.6	31.1	24.7	30.0	31.6	32.7	29.3	30.9	30.4
Persons									
30–39	21.4	19.9	17.5	18.3	17.6	19.3	18.4	19.5	19.1
40–49	28.0	28.4	24.9	28.8	30.5	26.4	26.2	29.3	27.9
50–59	46.9	45.2	34.5	40.2	44.2	45.2	44.7	42.6	43.2
60–65	54.1	57.1	40.6	55.9	51.9	49.3	53.8	53.4	52.9
All persons	33.7	35.3	27.7	33.5	34.3	33.6	32.3	33.8	33.3

Source: National Heart Foundation of Australia, HeartWatch survey, 2009 to 2013

Notes: Proportion of people. Survey included only adults aged 30–65 years. Data from 2009 to 2013 have been pooled. Respondents were asked if they had ever been told by a doctor that they had high blood pressure, or if they were currently taking any medicines for high blood pressure. Responses ‘Prefer not to say’ have been excluded.

Figure 9.3a Prevalence of self-reported diagnosed or treated high blood pressure, men aged 30–65 years, by age, 2009 to 2013 (pooled)

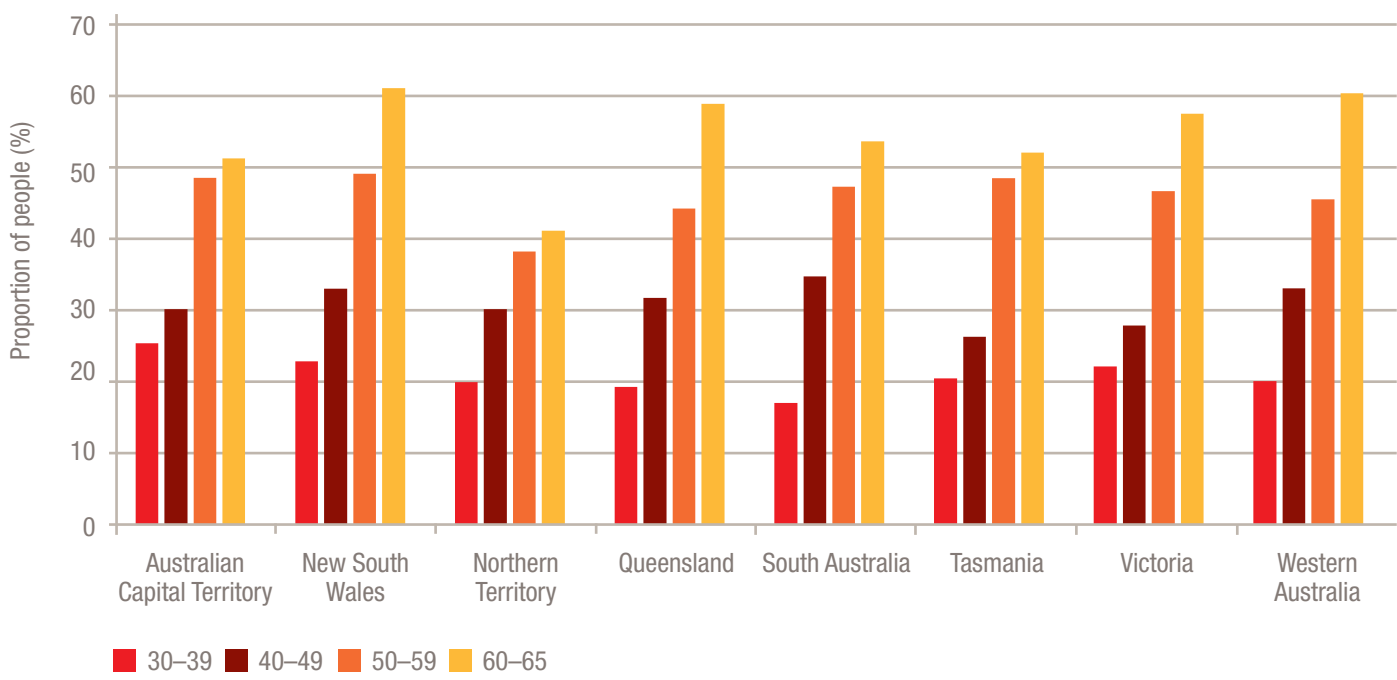
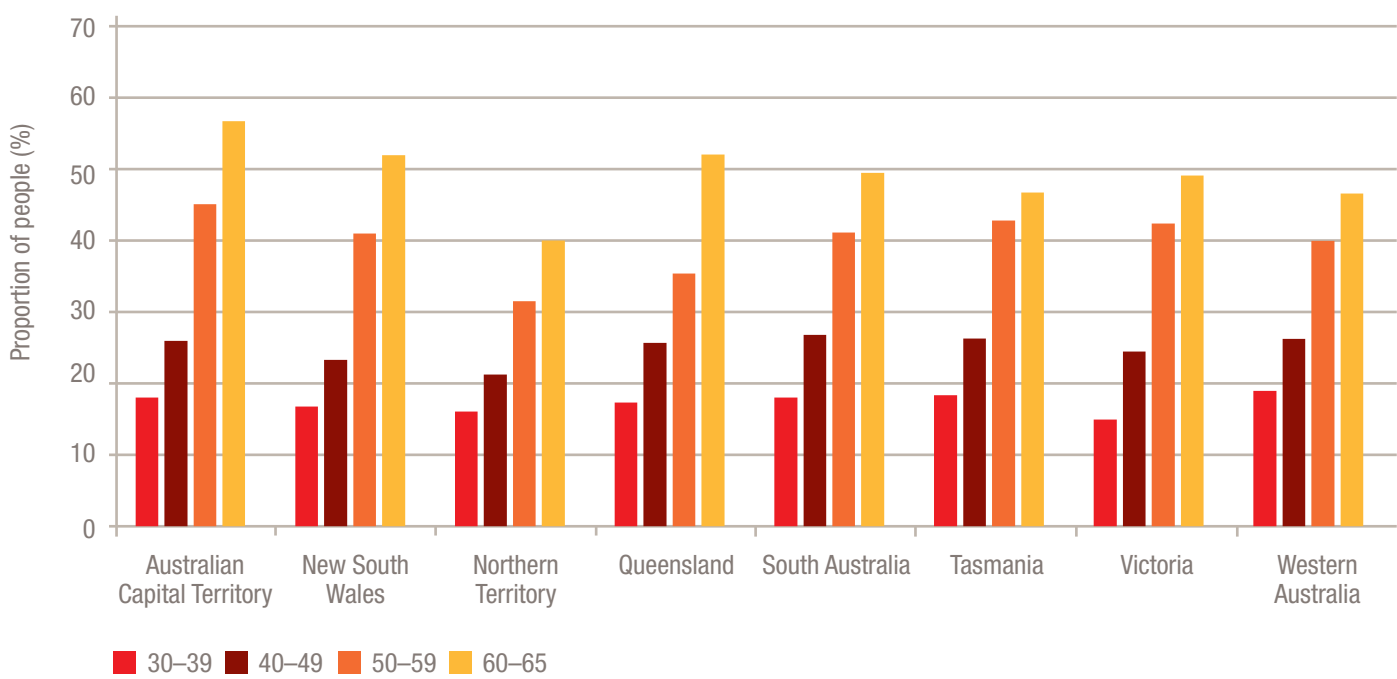


Figure 9.3b Prevalence of self-reported diagnosed or treated high blood pressure, women aged 30–65 years, by age, 2009 to 2013 (pooled)



International comparisons

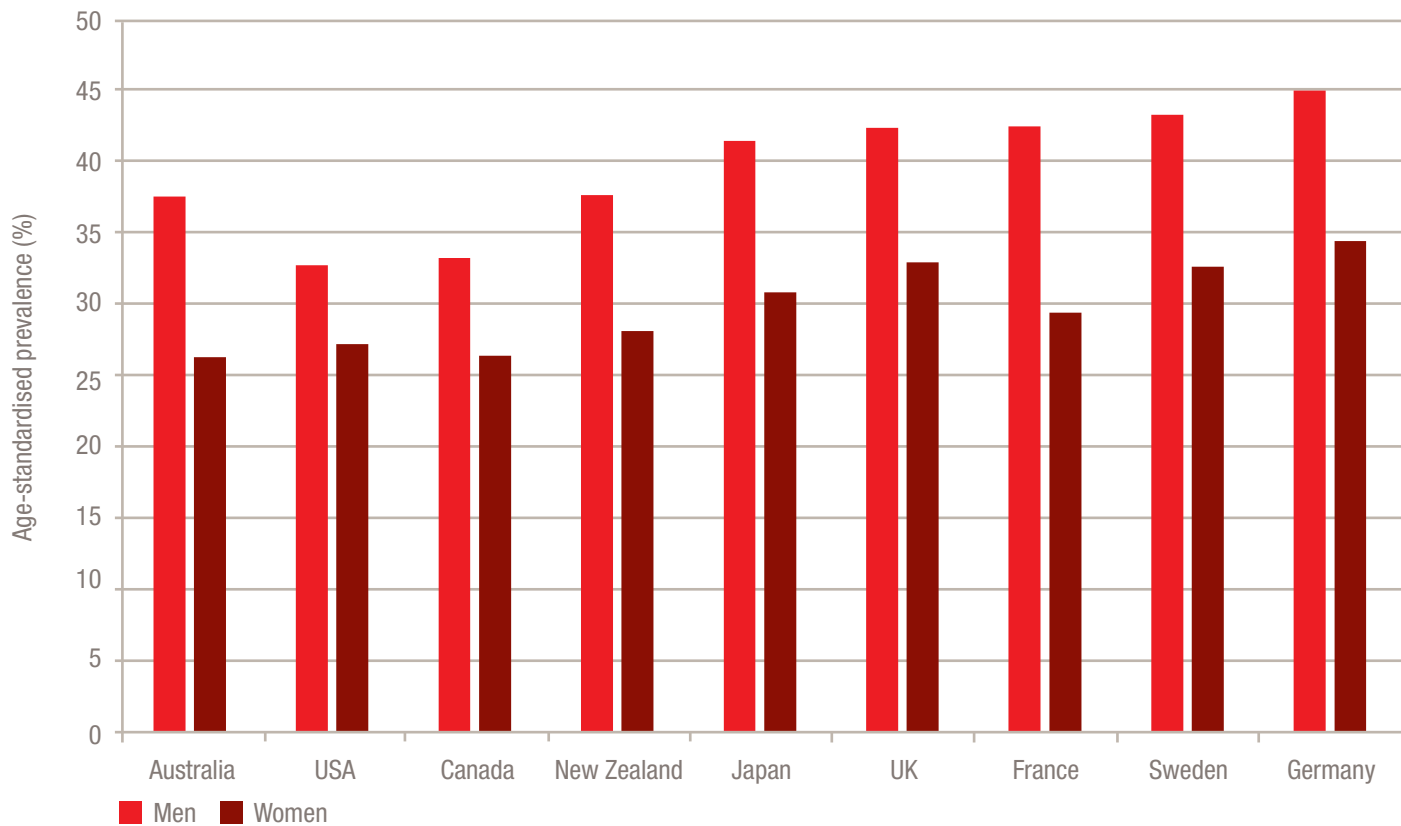
Table 9.4 Prevalence of hypertension, adults, Australia and selected countries, by sex, 2008

	Men	Women	Persons
Country			
Australia	37.4	26.2	31.8
Canada	33.1	26.3	29.7
France	42.3	29.3	35.7
Germany	44.8	34.3	39.7
Japan	41.3	30.7	36.0
New Zealand	37.5	28.0	32.6
Sweden	43.1	32.5	37.9
UK	42.2	32.8	37.5
USA	32.6	27.1	29.9

Source: World Health Organization, Global Health Observatory Data Repository, [www.who.int/gho/database/en/](http://www.who.int/gho/database/en/)

Notes: Proportion of people. Adults aged 25 years and over, age-standardised using the WHO standard population. Hypertension (high blood pressure) was defined as  $\geq 140/90$  mmHg or taking blood-pressure-regulating medicines. Estimates are based on a combination of published and unpublished survey data with adjustments for risk factor definition, age groups for reporting, reporting year and representativeness of population.

Figure 9.4 Prevalence of hypertension, adults aged 25 years and over, Australia and selected countries, by sex, 2008



Trends in high blood pressure

Table 9.5 Trends in prevalence of measured high blood pressure, by sex and age, 1980 to 2011–2012

	1980	1983	1989	1999–2000	2011–2012
Men					
18–24					5.8
25–34	28.5	22.5	14.9	7.0	12.1
35–44	40.2	29.1	23.8	16.9	17.7
45–54	55.7	45.1	37.0	30.6	29.0
55–64	67.3	62.7	52.4	46.7	35.7
65–74				67.9	38.4
75+				78.1	45.1
Women					
18–24					5.2
25–34	7.4	5.5	2.8	3.9	5.6
35–44	18.4	14.0	8.8	7.5	12.2
45–54	44.0	34.3	27.1	23.0	22.1
55–64	61.2	56.3	46.5	42.7	28.6
65–74				67.0	40.5
75+				74.4	49.2
Persons					
18–24					5.5
25–34	17.9	13.8	8.6	5.4	8.9
35–44	29.2	21.5	16.1	12.2	14.9
45–54	49.8	39.6	32.0	26.8	25.6
55–64	64.2	59.3	49.5	44.7	32.2
65–74				67.4	39.4
75+				76.0	47.3

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012; Baker IDI Heart & Diabetes Institute, Australian Diabetes, Obesity and Lifestyle study (AusDiab), Diabetes and Associated Disorders in Australia report, 2000; National Heart Foundation of Australia, Risk Factor Prevalence surveys, 1980, 1983, 1989, accessed via the Australian Data Archive

Notes: Proportion of people. Adults aged 18 years and over. High blood pressure or hypertension was defined as a reading  $\geq 140/90$  mmHg. Does not account for currently treated hypertension. Blank cells indicate no data were available for this age group. The Heart Foundation Risk Factor Prevalence surveys included only adults aged 25–64 years.



Figure 9.5 Trends in prevalence of measured high blood pressure, ages 25–64 years, by sex, 1980 to 2011–2012

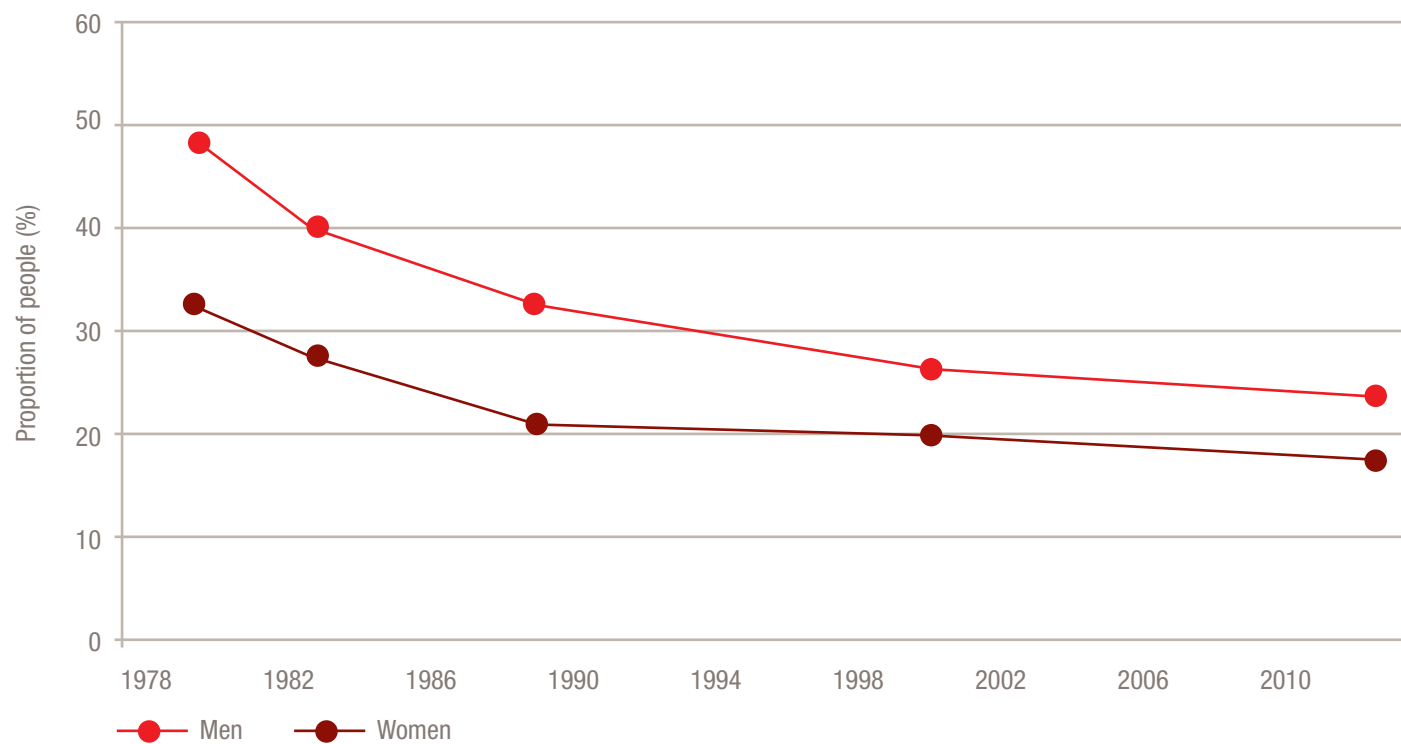


Table 9.6 Prevalence and annual incidence of hypertension according to baseline age, by sex, 1999–2000 to 2011–2012

	Prevalence at baseline	Incidence per year	
	1999–2000	2004–2005	2011–2012
Men			
25–34	7.0	1.7	1.3
35–44	16.9	2.2	2.3
45–54	30.6	3.0	3.6
55–64	46.7	5.2	4.8
65–74	67.9	8.8	7.5
75+	78.1	8.5	7.6
All men	30.6	3.4	3.3
Women			
25–34	3.9	0.6	0.9
35–44	7.5	1.2	1.5
45–54	23.0	2.8	2.9
55–64	42.7	4.9	4.6
65–74	67.0	8.0	7.1
75+	74.4	6.9	7.5
All women	27.1	2.7	2.6
Persons			
25–34	5.4	1.0	1.0
35–44	12.2	1.6	1.8
45–54	26.8	2.9	3.2
55–64	44.7	5.0	4.7
65–74	67.4	8.4	7.3
75+	76.0	7.6	7.5
All persons	28.8	3.0	2.9

Source: Baker IDI Heart & Diabetes Institute, Australian Diabetes, Obesity and Lifestyle study, AusDiab 2000 report, Diabetes and Associated Disorders in Australia, AusDiab 2005 report, Tracking the Accelerating Epidemic: Its Causes and Outcomes, and AusDiab 2012 report

Notes: Proportion of people. Adults aged 25 years and over. Hypertension or high blood pressure was defined as having a blood pressure reading  $\geq 140/90$  mmHg or taking blood-pressure-regulating medicines. Data have not been age-standardised. Incident hypertension was defined as individuals who had normal blood pressure at baseline, but had developed hypertension at follow-up in either 2004–2005 or 2012–2013. Thus, the annual incidence listed under 2004–2005 represents people who did not have hypertension at baseline but who had developed hypertension by 2004–2005 (a 5-year follow-up period), and the annual incidence in 2011–2012 represents only people who did not have hypertension at baseline but who had developed hypertension by 2011–2012 (a 12-year follow-up period).

Actions taken for high blood pressure

Table 9.7 Proportion of hypertensive and non-hypertensive adults who have taken action related to blood pressure in the last 2 years, by sex and age, 2009 to 2013 (pooled)

	Proportion who took action	
	Hypertensive	Not hypertensive
Men		
30–39	93.5	73.3
40–49	95.6	82.8
50–59	98.3	90.6
60–65	99.4	92.5
All men	97.2	82.7
Women		
30–39	95.8	86.0
40–49	97.2	88.6
50–59	98.6	93.4
60–65	98.9	94.8
All women	97.8	89.4
Persons		
30–39	94.6	80.4
40–49	96.4	85.9
50–59	98.4	92.1
60–65	99.2	93.6
All persons	97.5	86.3

Source: National Heart Foundation of Australia, HeartWatch survey, 2009–2013

Notes: Proportion of people. Survey included only adults aged 30–65 years. Data from 2009 to 2013 have been pooled. Actions related to blood pressure included participants having spoken to a general practitioner or other health professional about his or her blood pressure, or having had a blood pressure check. Responses ‘Prefer not to say’ have been excluded.

Figure 9.7a Proportion of men who have taken action related to blood pressure in the last 2 years, aged 30–65 years, by age and diagnosis, 2009 to 2013 (pooled)

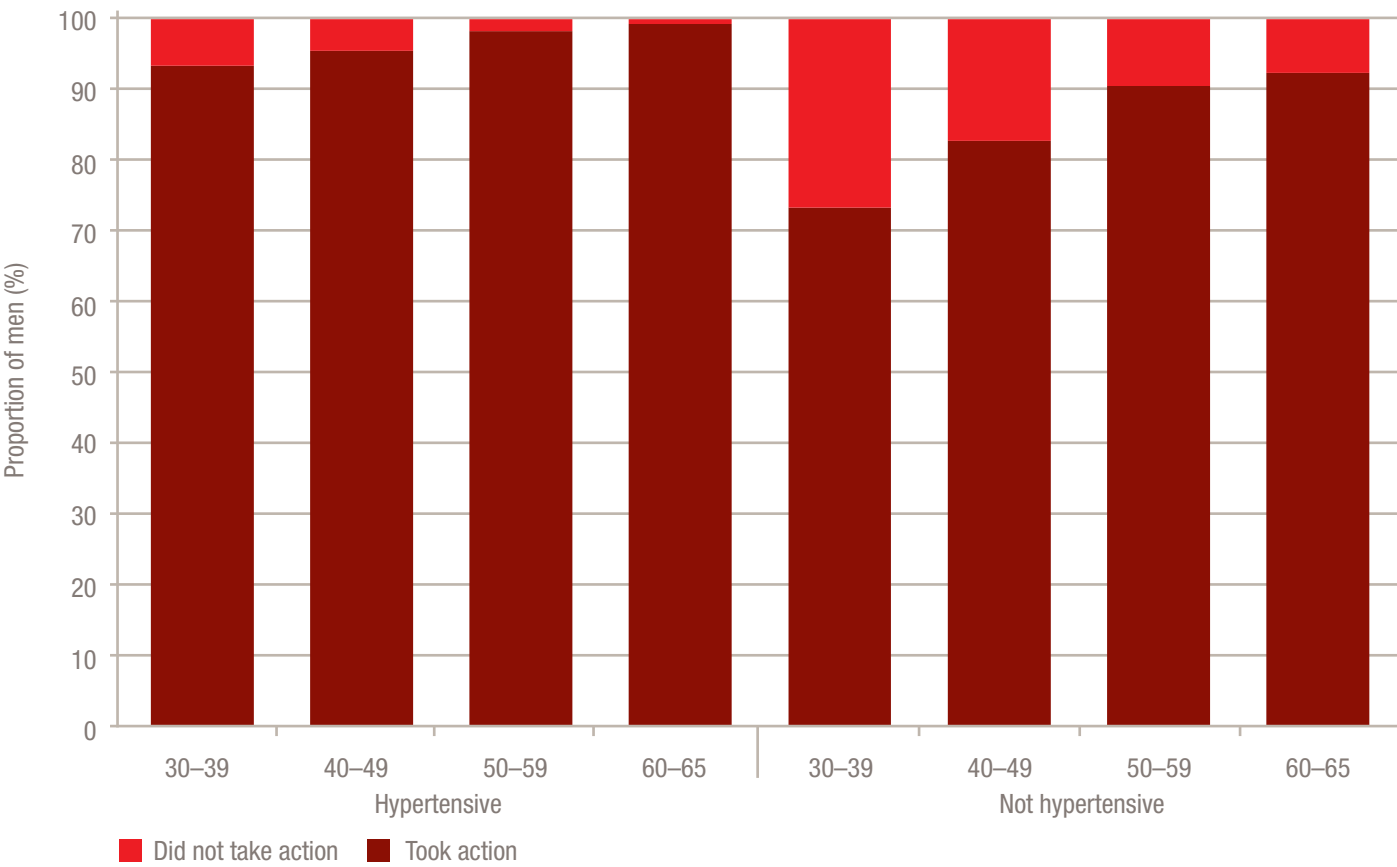
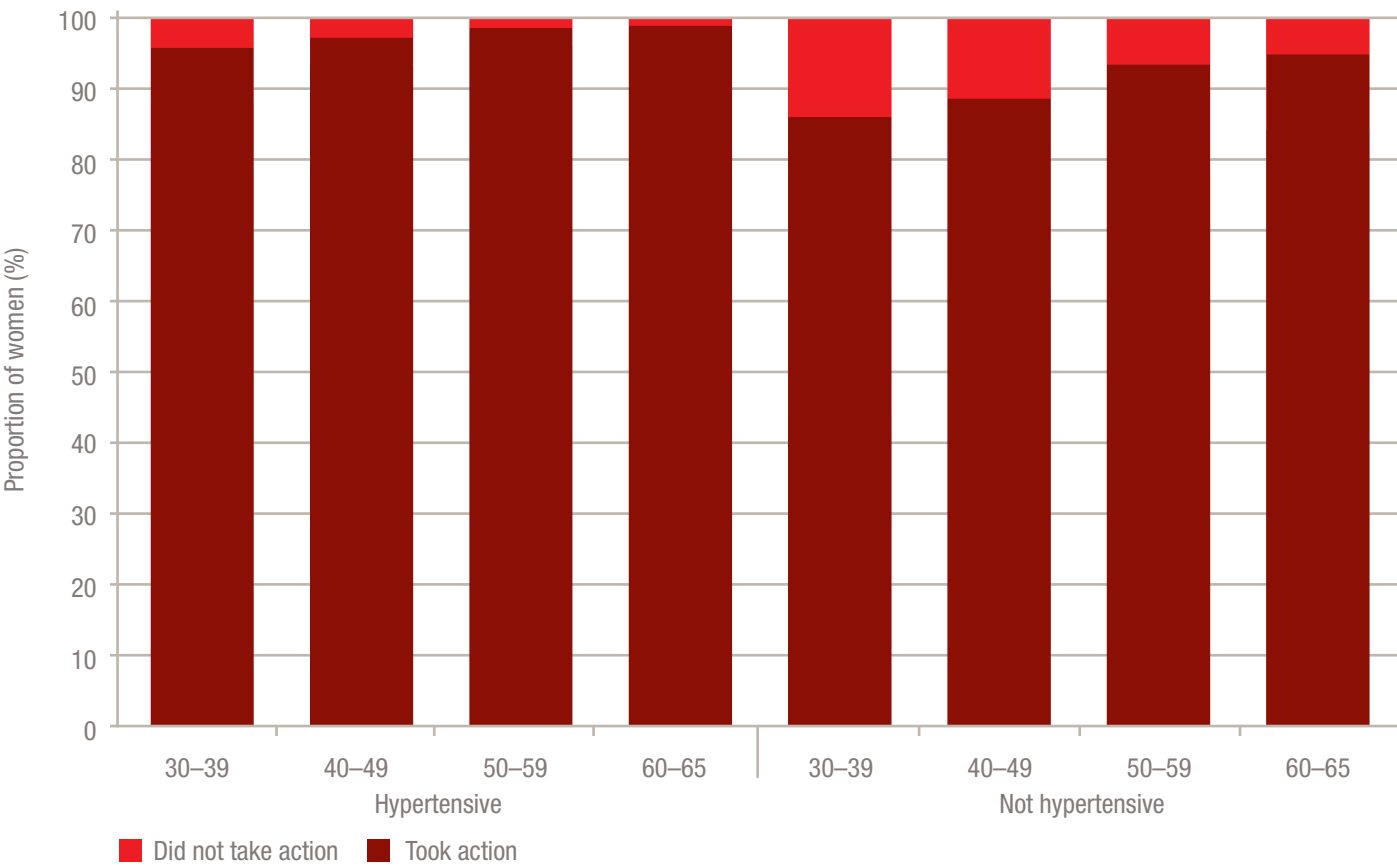


Figure 9.7b Proportion of women who have taken action related to blood pressure in the last 2 years, aged 30–65 years, by age and diagnosis, 2009 to 2013 (pooled)



Blood pressure in Aboriginal and Torres Strait Islander peoples

Table 9.8 Prevalence of measured normal or high blood pressure, by sex, age and Indigenous status, 2012–2013

	Normal or low blood pressure		High blood pressure	
	Aboriginal and Torres Strait Islander	Non-Indigenous	Aboriginal and Torres Strait Islander	Non-Indigenous
Men				
18–24	91.5	94.8	8.5	5.2
25–34	83.4	87.9	16.6	12.1
35–44	71.9	82.4	28.1	17.6
45–54	64.0	70.9	36.0	29.1
55+	65.1	61.7	34.9	38.3
All men	73.2	76.9	26.8	23.1
Women				
18–24	95.2	94.7	4.8	5.3
25–34	88.1	94.4	11.9	5.6
35–44	80.7	88.1	19.3	11.9
45–54	74.3	78.3	25.7	21.7
55+	62.2	63.2	37.8	36.8
All women	77.4	81.1	22.6	18.9
Persons				
18–24	93.4	94.7	6.6	5.3
25–34	85.8	91.1	14.2	8.9
35–44	76.5	85.2	23.5	14.8
45–54	69.2	74.6	30.8	25.4
55+	63.6	62.4	36.4	37.6
All persons	75.4	79.0	24.6	21.0

Source: Australian Bureau of Statistics, 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. Adults aged 18 years and over. High blood pressure or hypertension is defined as ≥140/90 mmHg. Totals for each sex and overall have been age standardised to the 2001 Australian Estimated Resident Population to account for differences in the age structure of the two populations. Data for non-Indigenous people are taken from the Australian Health Survey 2011–2013 (2011–2012 Core component).

Table 9.9 Trends in prevalence of hypertensive disease, Aboriginal and Torres Strait Islander peoples, by remoteness, 2001 to 2012–2013

	2001	2004–2005	2012–2013
Remoteness			
Non-remote	6.3	6.4	4.3
Remote	8.9	10.3	11.4
All persons	7.0	7.4	5.8

Source: Australian Bureau of Statistics, 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. Aboriginal and Torres Strait Islander people aged 2 years and over who self-reported they had diagnosed current hypertensive disease which had lasted, or was expected to last, for 6 months or more.



## Part C | Chapter 10

# Overweight and obesity

### Key facts

- Rates of obesity among Australian adults have almost tripled in the last two decades.
- One-quarter of children aged 2–17 years were classified as overweight or obese.



### Introduction

The World Health Organization defines overweight and obesity as 'excessive and abnormal fat accumulation that may impair health'.<sup>44</sup> Obesity has nearly doubled worldwide since 1980, for all age groups, and is considered to be a major yet preventable risk factor for ischaemic heart disease (IHD).<sup>44,45</sup>

The most commonly used measure of overweight and obesity in populations is the body mass index (BMI), which is a simple equation that uses a person's weight (in kilograms) divided by height (in metres) squared ( $\text{kg/m}^2$ ). The World Health Organization defines overweight and obesity as:

- overweight = BMI greater than or equal to  $25 \text{ kg/m}^2$
- obesity = BMI greater than or equal to  $30 \text{ kg/m}^2$ .

The 2011–2012 Australian Health Survey results highlighted the growing problem of obesity in Australia. Using measured data on more than 25,000 Australians, it was estimated that 62.8% of Australian adults were overweight or obese, a substantial increase from 56.3% in 1995.<sup>36</sup> The 2010 Global Burden of Disease study found that high BMI contributed to almost 30% of the burden of cardiovascular diseases in Australia (up from 22% in 1990), and more than 8% of the total burden of disease.<sup>9</sup>

Increased body fat accumulation causes changes in metabolism, which can lead to an increase in circulating blood lipids, a condition known as dyslipidaemia.<sup>36,46</sup> This increase in circulating lipids can cause fatty deposits in arteries, which increases the risk of IHD.<sup>46,47</sup> In the recent Australian Health Survey, people who were obese were nearly five times more likely than people of normal weight or underweight to have dyslipidaemia.<sup>36</sup>

### Key facts

- More than two-thirds of men were classified as overweight or obese in 2011–2012, as were 55% of women.
- Rates of obesity among Australian adults have almost tripled in the last two decades.
- One-quarter of children aged 2–17 years were classified as overweight or obese.
- Overweight and obesity tended to increase with age, particularly after the age of 18 years.
- The prevalence of overweight and obesity increased with more socioeconomic disadvantage among women, but not among men.
- The prevalence of overweight was higher in non-Indigenous men than in Aboriginal and Torres Strait Islander men, but the reverse was true for women.
- Obesity was higher for both sexes in Aboriginal and Torres Strait Islander peoples than in non-Indigenous people.
- Internationally, most people over 20 years old in high-income countries were overweight by 2008. The prevalence of overweight was higher in most countries among men than women.
- Rates of overweight and obesity (combined) in Australia were comparable to those in Canada and the UK, and substantially higher than the Netherlands, France and Japan, but remained lower than the USA.

Tables and figures

Prevalence of overweight and obesity

Table 10.1 Prevalence of weight status categories, by sex and age, 2011–2012

	Underweight (BMI < 18.5)	Normal range (BMI 18.5 – 24.9)	Overweight (BMI 25.0 – 29.9)	Obese (BMI ≥ 30.0)
Men and boys				
2–4	*3.2	74.0	19.5	3.4
5–7	*4.2	75.3	11.6	8.9
8–11	3.7	71.7	18.2	6.4
12–15	5.7	66.0	21.5	6.8
16–17	4.9	69.1	19.0	7.1
18–24	4.5	54.8	27.7	13.1
25–34	*1.3	34.1	43.7	20.9
35–44	*0.5	24.6	45.6	29.3
45–54	*0.7	20.8	45.1	33.4
55–64	*0.3	21.1	40.6	37.9
65–74	**0.2	19.2	46.3	34.3
75–84	np	np	48.9	23.6
85+	np	np	44.7	*16.0
All men and boys	1.8	37.6	37.3	23.2
Women and girls				
2–4	5.8	71.5	15.9	6.8
5–7	5.9	66.3	19.7	8.2
8–11	4.8	67.1	21.1	7.0
12–15	6.4	68.8	17.4	7.4
16–17	7.4	68.8	15.5	8.2
18–24	6.6	61.6	14.6	17.2
25–34	2.8	54.0	23.1	20.2
35–44	0.9	44.4	27.3	27.4
45–54	*1.0	35.3	33.0	30.6
55–64	*0.9	30.0	33.6	35.5
65–74	*0.9	29.8	33.2	36.1
75–84	np	np	38.1	29.6
85+	np	np	36.4	21.9
All women and girls	2.9	47.4	26.2	23.5
Persons				
2–4	4.4	72.8	17.8	5.0
5–7	5.0	70.9	15.5	8.5
8–11	4.2	69.5	19.6	6.7
12–15	6.1	67.4	19.5	7.1
16–17	6.0	69.0	17.4	7.6
18–24	5.5	58.1	21.3	15.1
25–34	2.0	43.5	34.0	20.5
35–44	0.7	34.4	36.6	28.4
45–54	0.9	28.0	39.1	32.0
55–64	0.6	25.5	37.2	36.7
65–74	*0.6	24.5	39.8	35.2
75–84	*1.6	28.5	43.2	26.8
85+	*2.4	38.3	40.0	19.4
All persons	2.3	42.4	31.9	23.4

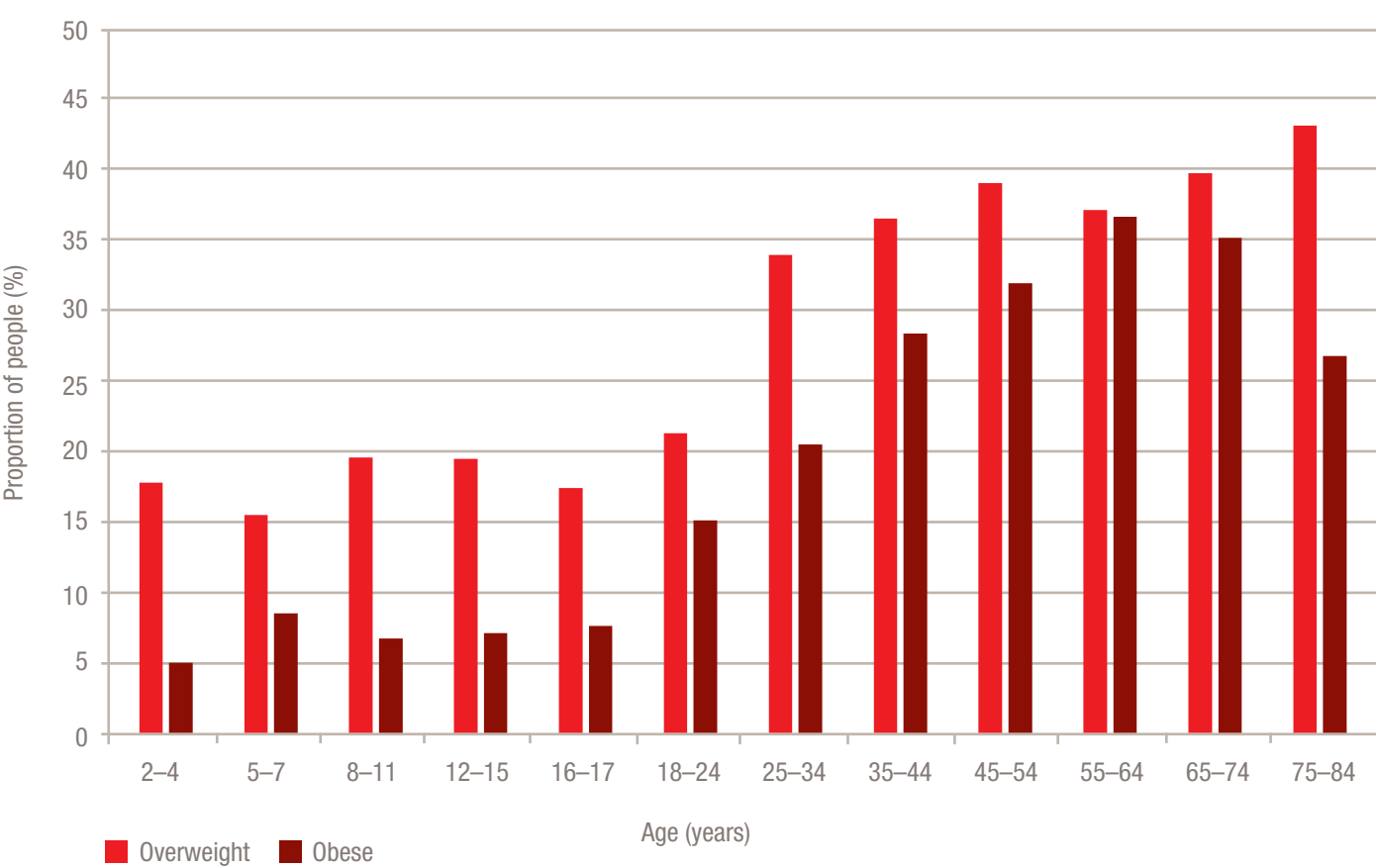
\* Estimate has a relative standard error 25–50% and should be interpreted with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. Includes people aged 2 years and over for whom height and weight were measured. np, not available for publication but included in totals where applicable. BMI classification into weight status categories differed for children, and was based on the age- and sex- specific cut-offs provided in Cole TJ, Bellizzi MC, Flegal KM and Dietz WH. Establishing a standard definition for child overweight and obesity worldwide: international survey, BMJ 2000; 320.

Figure 10.1 Prevalence of overweight and obesity, by age, 2011–2012



Sociodemographic distribution of overweight and obesity

Table 10.2 Prevalence of overweight and obesity, children and adults, by sex and quintile of socioeconomic status, 2011–2012

	First quintile (most disadvantaged)	Second quintile	Third quintile	Fourth quintile	Fifth quintile (least disadvantaged)	Total
Adults						
Men	69.0	70.5	71.1	69.3	68.6	69.7
Women	63.8	59.4	57.9	52.2	47.7	55.7
All adults	66.4	64.9	64.6	61.1	58.5	62.8
Children 2–17 years						
Boys	30.3	30.4	21.7	19.9	22.1	24.6
Girls	27.5	32.0	29.9	21.7	20.4	25.7
All children	28.9	31.1	25.7	20.8	21.3	25.1

Source: Australian Bureau of Statistics, 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012

Notes: Proportion of people. Based on measured height and weight data for children aged 2–17 years, and adults aged 18 years and over. Socioeconomic status based on the 2006 Index of Relative Socio-Economic Disadvantage. A lower Index of Disadvantage quintile (e.g. the first quintile) indicates an area with relatively greater disadvantage and a lack of advantage in general. A higher Index of Disadvantage quintile (e.g. the fifth quintile) indicates an area with a relative lack of disadvantage and greater advantage in general.

Figure 10.2a Prevalence of overweight and obesity, adults aged 18 years and over, by sex and socioeconomic status, 2011–2012

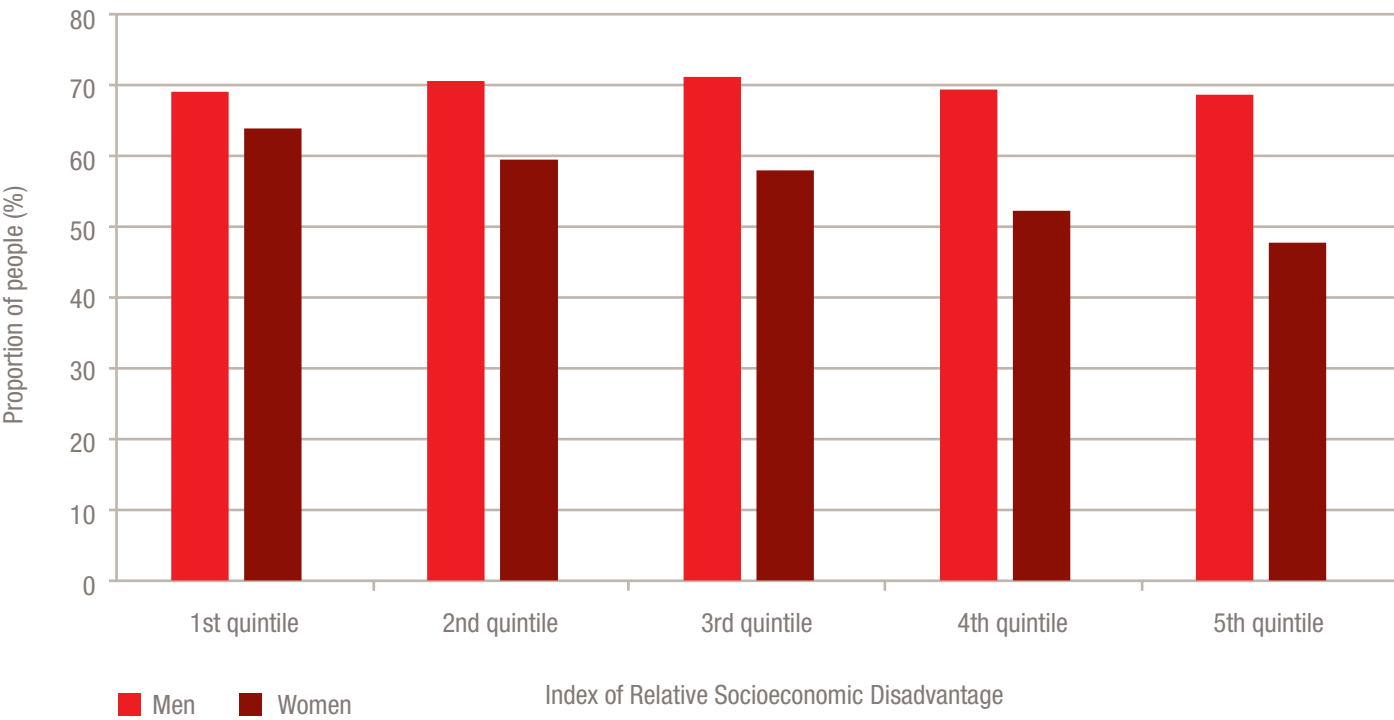
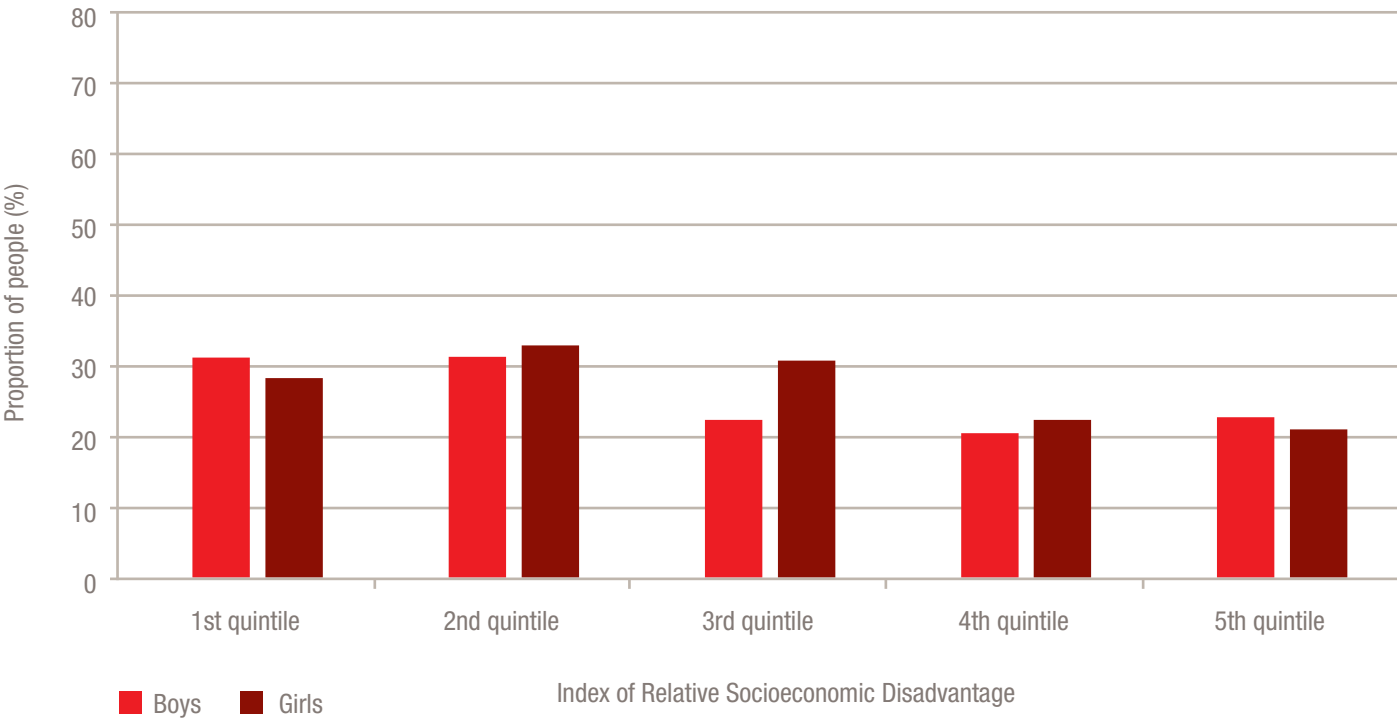


Figure 10.2b Prevalence of overweight and obesity, children aged 2–17 years, by sex and socioeconomic status, 2011–2012



International comparisons

Table 10.3 Prevalence of overweight and obesity in adults aged 20 years and over, Australia and selected countries, by sex, 2008

	Overweight and obese (BMI ≥ 25)			Obese (BMI ≥ 30)		
	Men	Women	Persons	Men	Women	Persons
Country						
Australia	66.5	56.2	61.3	25.2	27.1	26.8
Canada	65.7	55.2	60.5	24.6	26.4	26.2
France	52.0	40.0	45.9	16.8	17.4	18.2
Germany	62.8	46.6	54.8	23.1	24.4	25.1
Japan	28.9	15.9	22.4	5.5	4.4	5.0
Netherlands	52.4	43.2	47.8	16.1	19.5	18.8
New Zealand	67.8	60.6	64.1	26.2	29.3	28.3
Sweden	57.3	42.5	50.0	19.9	17.3	18.6
UK	65.6	57.5	61.5	26.0	27.7	26.9
USA	72.5	66.3	69.4	31.1	34.8	33.0

Source: World Health Organization, Global Health Observatory Data Repository, [www.who.int/gho/database/en/](http://www.who.int/gho/database/en/)

Notes: Proportion of people. Adults aged 20 years and over. Overweight estimates include people classified as obese. Estimates based on a combination of published and unpublished survey data with adjustments for risk factor definition, age groups for reporting, reporting year and representativeness of population. Age-standardised using the WHO standard population.



Trends in prevalence of overweight and obesity

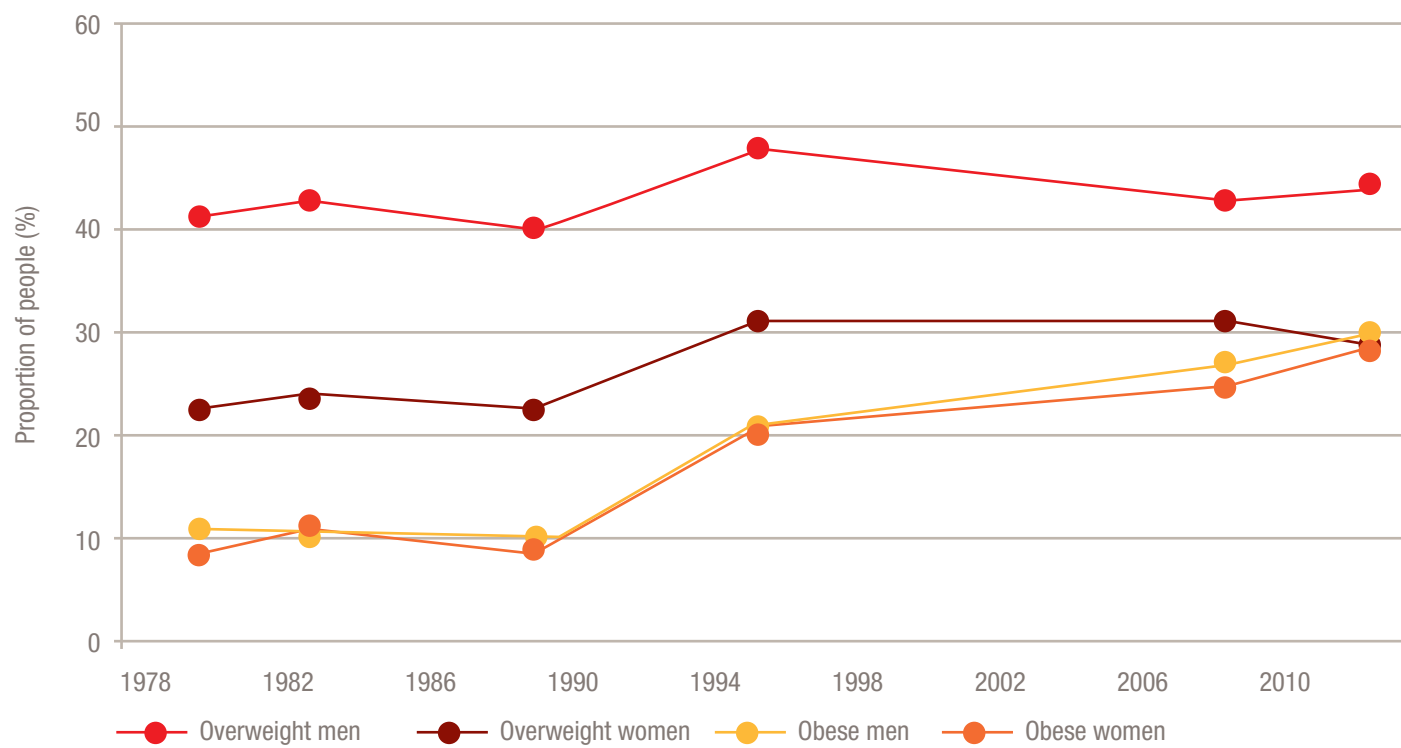
Table 10.4 Trends in prevalence of overweight and obesity, adults, by sex and age, 1980 to 2011–2012

	1980		1983		1989		1995		2007–2008		2011–2012	
	Over-weight	Obese	Over-weight	Obese	Over-weight	Obese	Over-weight	Obese	Over-weight	Obese	Over-weight	Obese
Men												
25–34	32.3	6.1	32.2	6.1	32.8	6.4	44.3	14.5	42.5	19.5	43.7	20.9
35–44	45.4	10.5	43.6	9.2	40.3	8.1	48.1	18.3	44.2	26.6	45.6	29.3
45–54	43.9	12.9	47.4	13.9	45.1	12.0	51.2	25.7	47.0	29.7	45.1	33.4
55–64	45.6	13.1	50.4	13.0	43.9	9.4	50.6	25.6	40.0	34.9	40.6	37.9
Women												
25–34	11.5	5.2	14.7	6.6	15.7	6.5	23.1	15.0	26.4	18.0	23.1	20.2
35–44	17.9	7.3	20.6	9.4	21.3	7.3	29.4	16.1	32.4	22.7	27.3	27.4
45–54	28.1	10.9	30.8	13.9	24.3	12.7	32.6	24.7	32.5	26.3	33.0	30.6
55–64	33.7	13.1	32.1	16.9	29.0	11.6	41.8	26.6	34.7	33.2	33.6	35.5
Persons												
25–34	21.8	5.7	23.3	6.3	24.2	6.5	34.2	14.7	34.8	18.8	34.0	20.5
35–44	31.5	8.9	32.0	9.3	31.1	7.7	38.8	17.2	38.2	24.6	36.6	28.4
45–54	35.9	11.9	39.1	14.0	34.9	12.3	42.1	25.2	39.8	28.0	39.1	32.0
55–64	39.5	13.1	41.0	15.0	37.0	10.4	46.3	26.1	37.4	34.1	37.2	36.7

Source: Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2007–2008, and 4364.0.55.003 – Australian Health Survey: Updated Results, 2011–2012; National Heart Foundation of Australia, Risk Factor Prevalence surveys, 1980, 1983, 1989, accessed via the Australian Data Archive.

Notes: Proportion of people. Based on measured height and weight data for adults aged 25–64 years. Overweight included people with a BMI 25.0–29.9. Obese included people with BMI ≥ 30. Figures from 1995 are from the 1995 National Health Survey, as presented in the 2007–2008 National Health Survey data package.

Figure 10.4 Trends in prevalence of overweight and obesity, adults, by sex, 1980 to 2011–2012



Overweight and obesity in Aboriginal and Torres Strait Islander peoples

Table 10.5 Prevalence of overweight and obesity, adults, by sex, age and Indigenous status, 2004–2005 and 2012–2013

	2004–2005		2012–2013	
	Aboriginal and Torres Strait Islander	Non-Indigenous	Aboriginal and Torres Strait Islander	Non-Indigenous
Prevalence of overweight (BMI 25.0 – 29.9)				
Men and boys				
15–17			20.5	16.7
18–24 <sup>a</sup>	19	22	27.5	28.4
25–34	34	41	34.6	43.8
35–44	28	44	32.3	45.6
45–54	34	43	38.3	45.4
55+	33	43	29.7	44.0
Women and girls				
15–17			20.9	17.1
18–24 <sup>a</sup>	15	14	26.2	14.6
25–34	23	22	24.7	22.9
35–44	27	24	26.8	27.3
45–54	33	27	25.1	32.8
55+	35	29	31.8	34.5
Prevalence of obesity (BMI ≥ 30)				
Men and boys				
15–17			16.7	7.6
18–24 <sup>a</sup>	12	5	25.9	12.4
25–34	22	17	32.8	20.7
35–44	33	21	42.7	29.3
45–54	29	23	38.7	33.2
55+	30	18	46.8	33.5
Women and girls				
15–17			11.4	7.1
18–24 <sup>a</sup>	12	6	31.0	16.5
25–34	28	13	39.7	19.9
35–44	30	15	48.6	27.1
45–54	34	18	51.2	30.6
55+	33	18	50.7	33.7

<sup>a</sup> In 2004–2005, 15–17-year olds were included with older ages in a 15–24 age group.

Sources: Australian Bureau of Statistics, 4715.0 – National Aboriginal and Torres Strait Islander Health Survey, 2004–2005; and 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. Based on measured height and weight data for people aged 15 years and over. Blank cells indicate data were not available for this age group. Proportions from 2004–2005 were only reported as integers. The 2004–2005 and 2012–2013 data for non-Indigenous people are from the National Health Survey 2004–2005 and the Australian Health Survey 2011–2013 (2011–2012 Core component), respectively.

Figure 10.5a Prevalence of overweight and obesity among Aboriginal and Torres Strait Islander men, by age, 2004–2005 and 2012–2013

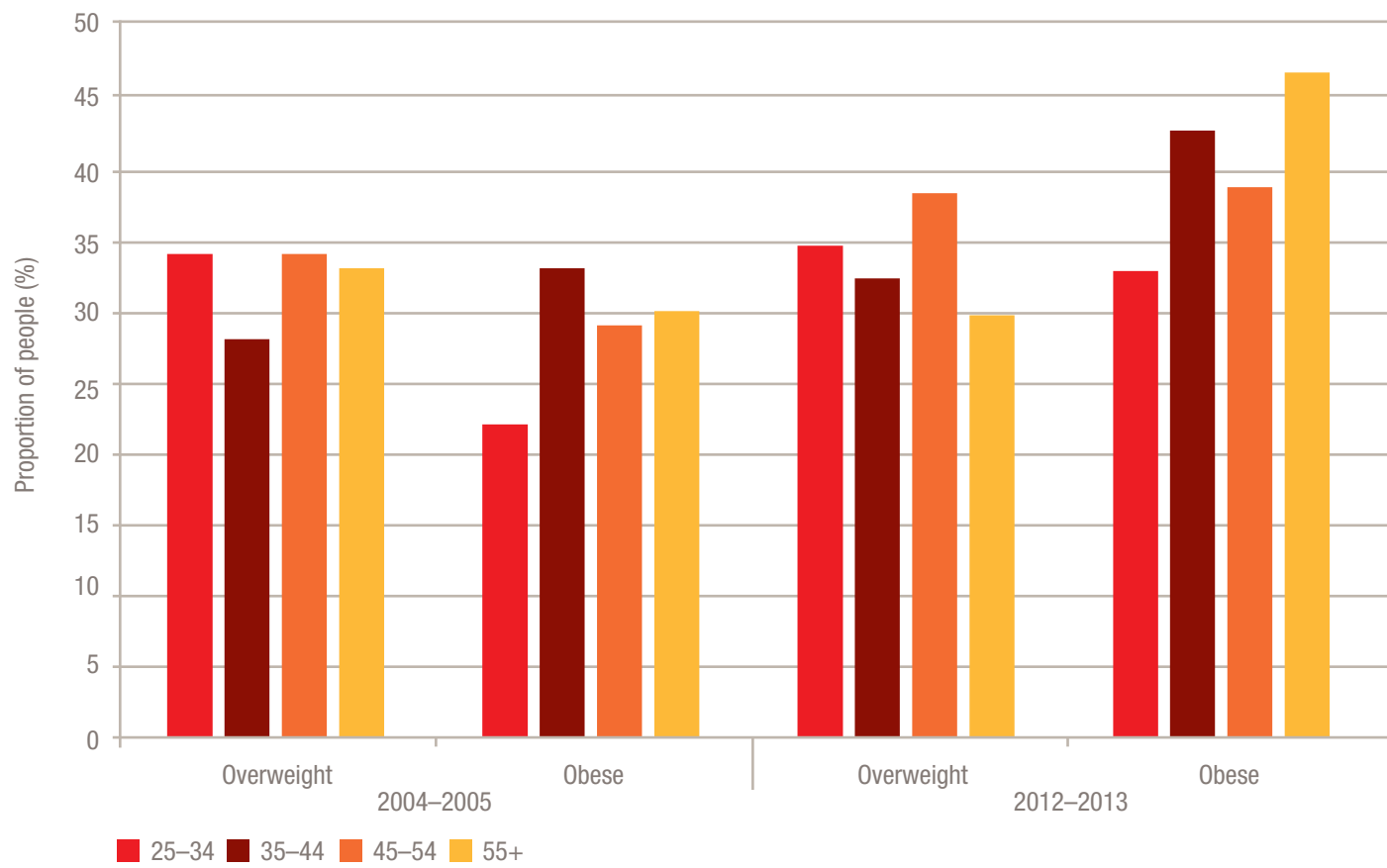


Figure 10.5b Prevalence of overweight and obesity among Aboriginal and Torres Strait Islander women, by age, 2004–2005 and 2012–2013

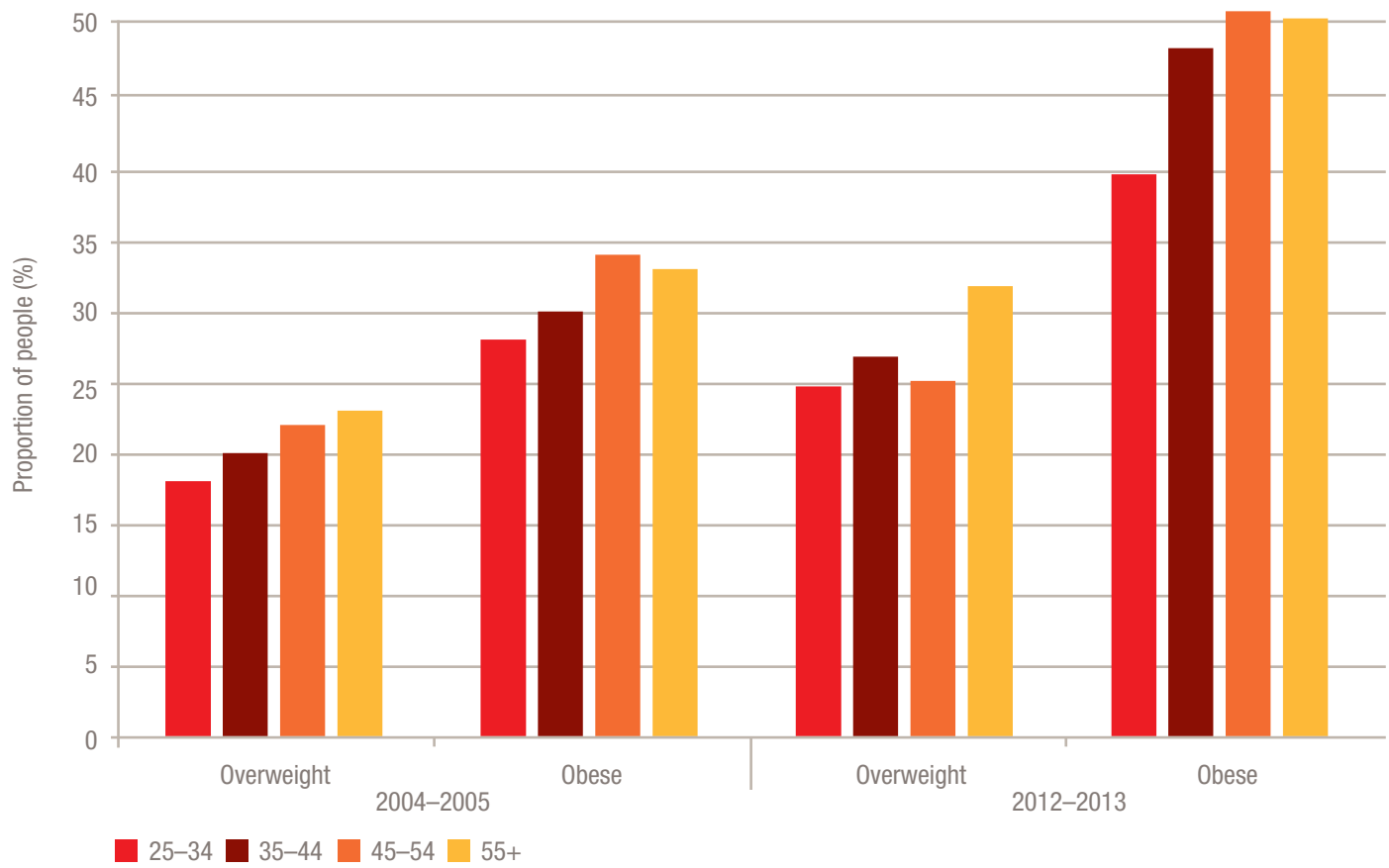


Table 10.6 Prevalence of overweight and obesity, children, by sex, age and Indigenous status, 2012–2013

	Aboriginal and Torres Strait Islander	Non-Indigenous
	Prevalence of overweight	
Boys		
2–4	11.5	19.6
5–9	14.3	14.6
10–14	26.1	22.1
All boys	17.9	18.7
Girls		
2–4	21.7	15.7
5–9	17.2	18.5
10–14	25.0	19.3
All girls	21.2	18.2
	Prevalence of obesity	
Boys		
2–4	*5.8	3.4
5–9	9.6	7.9
10–14	12.5	6.0
All boys	9.8	6.1
Girls		
2–4	*6.2	7.0
5–9	12.8	7.2
10–14	11.1	6.6
All girls	10.6	6.9

\* Proportion has a relative standard error 25–50% and should be used with caution.

Sources: Australian Bureau of Statistics, 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. Based on measured height and weight data for children aged 2–14 years. Data for non-Indigenous people are from the Australian Health Survey 2011–2013 (2011–2012 Core component). Overweight and obesity definitions are based on the age- and sex-specific BMI cut-points recommended by the International Obesity TaskForce; refer to Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. Establishing a standard definition for child overweight and obesity worldwide: international survey. BMJ 2000; 320: 1240.



# Part C | Chapter 11

## Diabetes

### Key facts

- The overall prevalence of diabetes among Australians was more than 5%, while measurements of blood glucose and HbA1c levels showed a further 5% of people were at increased risk of diabetes.
- Rates of type 2 diabetes appear to have decreased slightly between 2007–2008 and 2011–2012 for adults aged 25–64 years, but have increased in adults older than 64 years.



### Introduction

Diabetes mellitus is a chronic and progressive metabolic disorder that is characterised by abnormally high blood glucose levels (hyperglycaemia), and causes long-term damage, dysfunction and failure of various organs and tissues.<sup>48</sup> People with diabetes are susceptible to multiple complications including vision loss, amputations, renal disease and cardiovascular disease.<sup>49</sup>

Globally, cardiovascular disease is the cause of between 50% and 80% of deaths in people with diabetes.<sup>49</sup>

There are many different variations of the condition but the most commonly recognised include type 1, type 2 and gestational diabetes. The most prevalent type of diabetes globally is type 2, and it is the main focus of national surveys collecting data on diabetes prevalence.

Prevalence data for diabetes are mostly collected by self-reporting methods, and less often through more accurate biomedical measures. A large proportion of the Australian population who have diabetes may be unaware of it (an estimated one in four people with diabetes).<sup>50</sup> This finding limits the value of self-reported data for estimating population prevalence. The National Health Measures Survey component of the Australian Health Survey helped to remedy this in 2011–2012 by collecting fasting plasma glucose and glycated haemoglobin (HbA1c) levels from participants.

### Key facts

- The overall prevalence of diabetes among Australians was more than 5%, while measurements of blood glucose and HbA1c levels showed a further 5% of people were at increased risk of diabetes.
- Self-reported diabetes rates were slightly lower, at 4%, indicating that many people living with diabetes are unaware of their condition.
- Self-reported rates of diabetes have increased steadily since 1989.
- Rates of both type 1 and type 2 diabetes were consistently higher in men than in women using both self-reported and measured prevalence.
- Rates of type 2 diabetes appear to have decreased slightly between 2007–2008 and 2011–2012 for adults aged 25–64 years, but have increased in adults older than 64 years.

Tables and figures

Population prevalence of diabetes

Table 11.1 Prevalence of diabetes according to measured fasting plasma glucose and HbA1c levels, by age or sex, 2011–2012

	Fasting plasma glucose		HbA1c	
	Impaired fasting plasma glucose	Has diabetes	At high risk of diabetes	Has diabetes
Age group				
12–17	0.3	0.3	0.0	0.2
18–24	0.1	0.3	0.0	0.2
25–34	0.8	0.6	1.4	0.8
35–44	2.1	2.8	2.5	2.7
45–54	3.5	4.6	6.4	5.3
55–64	4.7	8.3	8.4	8.8
65–74	6.5	15	11.4	15.5
75+	7.5	11.3	15.8	12.8
Sex				
Men (18+)	4.1	6.3	5.5	6.6
Women (18+)	2.1	3.9	5.3	4.2
Persons (18+)	3.1	5.1	5.4	5.4

Source: Australian Bureau of Statistics, 4364.0.55.005 – Australian Health Survey: Biomedical Results for Chronic Diseases, 2011–2012

Notes: Proportion of people. Diabetes prevalence is derived using a combination of blood test results and self-reported information on diabetes diagnosis and medicine use. Only people who fasted for 8 hours or more prior to their blood test were included. Approximately 79% of Australians aged 18 years and over who participated in the National Health Measures Survey had fasted. Totals by sex are not age-standardised.

Figure 11.1a Prevalence of diabetes by measured fasting plasma glucose level, by age, 2011–2012

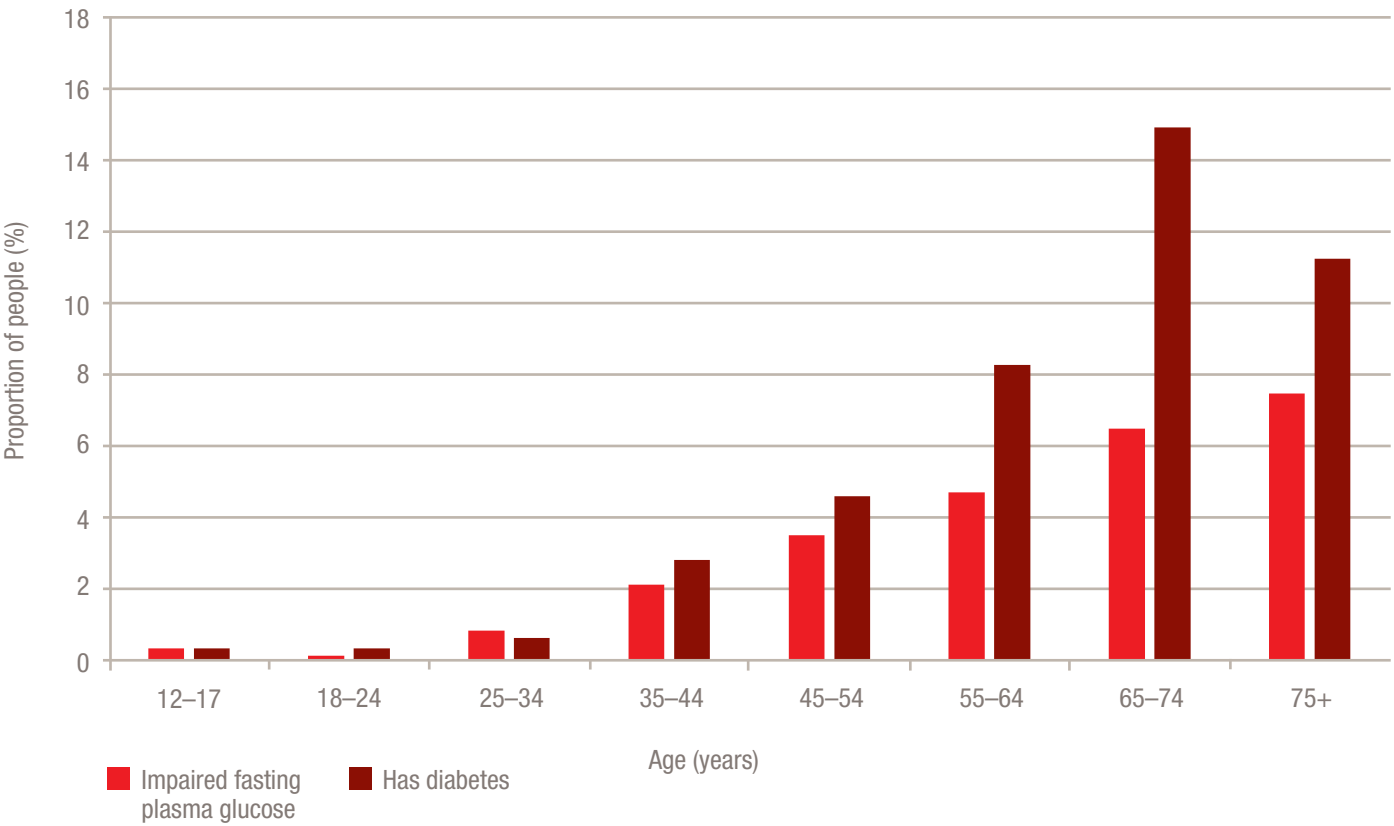
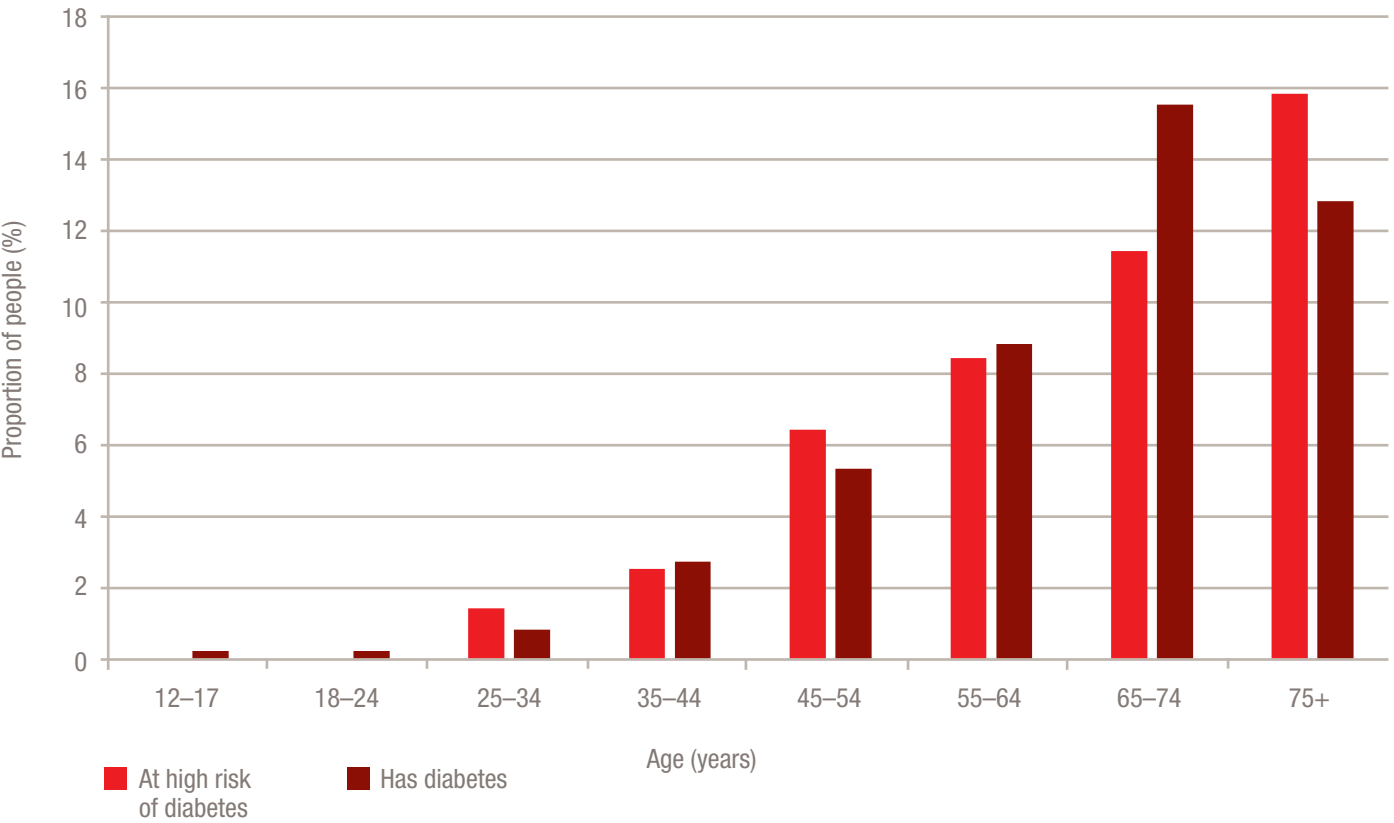


Figure 11.1b Prevalence of diabetes by measured by HbA1c level, by age, 2011–2012



Trends in prevalence of diabetes

Table 11.2 Trends in prevalence of self-reported diagnosed diabetes, by sex, 1989–1990 to 2011–2012

	1989–1990	1995	2001	2004–2005	2007–2008	2011–2012
Sex						
Men and boys	1.4	2.6	3.0	4.0	4.5	4.3
Women and girls	1.1	2.2	2.9	3.0	3.4	3.6
All persons	1.3	2.4	2.9	3.5	4.0	4.0

Sources: Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2001, 2004–2005, 2007–2008; and 4364.0.55.001 – Australian Health Survey: First Results, 2011–2012

Notes: Proportion of people (all ages). Includes type 1 and type 2 diabetes, as well as diabetes of unknown type. Excludes gestational diabetes. Figures for each sex for 2004–2005 were only provided as integers.

Figure 11.2 Trends in prevalence of self-reported diagnosed diabetes, by sex, 1989–1990 to 2011–2012

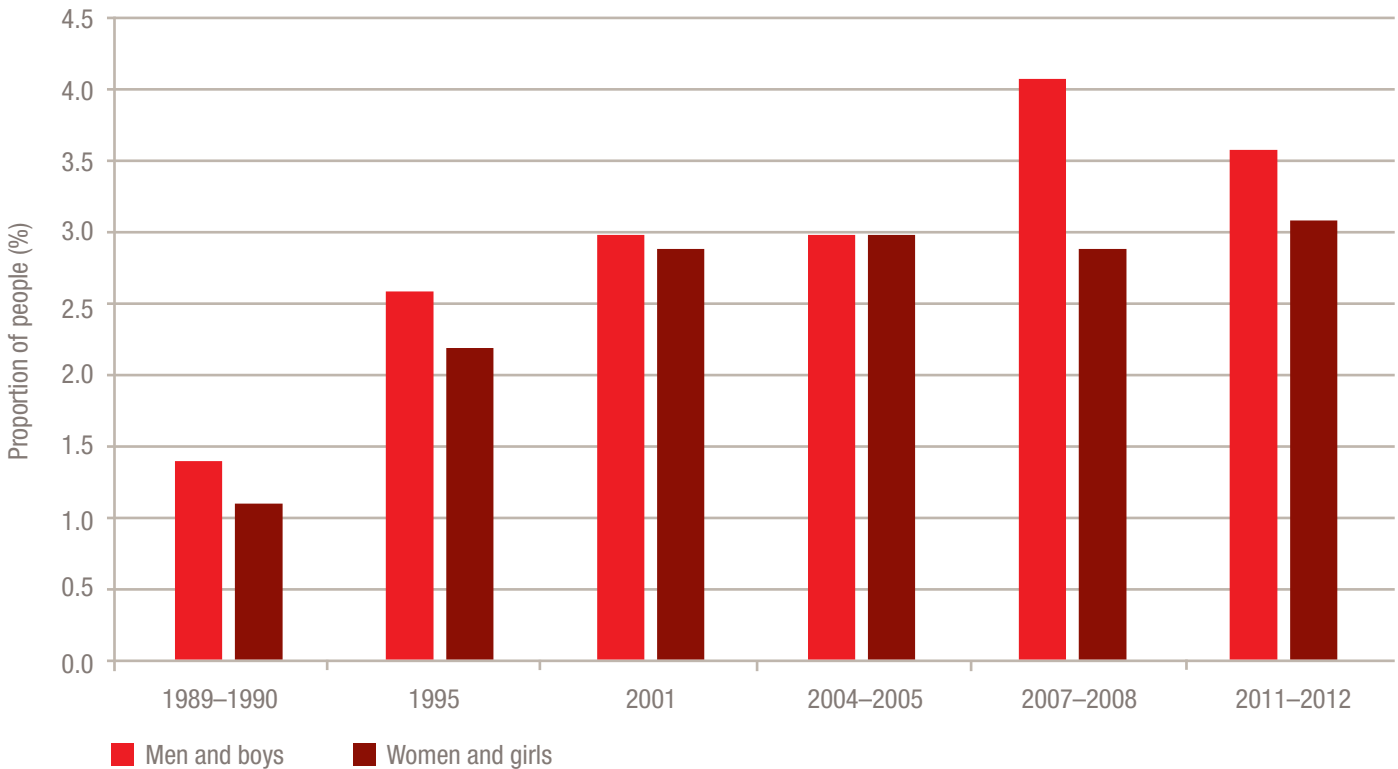


Table 11.3 Prevalence of self-reported diagnosed diabetes, by type and age then sex, 2007–2008 and 2011–2012

	2007–2008			2011–2012		
	Type 1	Type 2	Total DM	Type 1	Type 2	Total DM
Age group						
0–14	*0.1	na	*0.1	*0.1	0.0	*0.1
15–24	*0.4	0.0	*0.4	**0.4	**0.1	*0.5
25–34	*0.2	*0.3	*0.5	*0.5	**0.1	*0.7
35–44	*0.6	1.5	2.2	*0.4	1.3	1.8
45–54	*0.5	4.0	4.5	*0.8	3.3	4.1
55–64	*0.6	9.3	10.0	*0.4	7.7	8.2
65–74	*0.4	13.5	14.3	*1.0	14.5	16.0
75+	*0.8	12.0	13.3	*1.2	12.8	14.3
Sex						
Men and boys	0.4	4.1	4.5	0.6	3.6	4.3
Women and girls	0.4	2.9	3.4	0.4	3.1	3.6
All persons	0.4	3.5	4.0	0.5	3.4	4.0

\* Estimate has a relative standard error of 25–50% and should be used with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Sources: Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2007–2008; and 4364.0.55.001 – Australian Health Survey: First Results, 2011–2012

Notes: Proportion of people (all ages). Total DM includes type 1, type 2 and type unknown diabetes mellitus. For Australia in 2011–2012, a further 111,500 persons reported they had diabetes but that it was not current at the time of interview. na, nil or rounded to zero

Figure 11.3 Prevalence of self-reported diagnosed diabetes (total), by age, 2007–2008 and 2011–2012

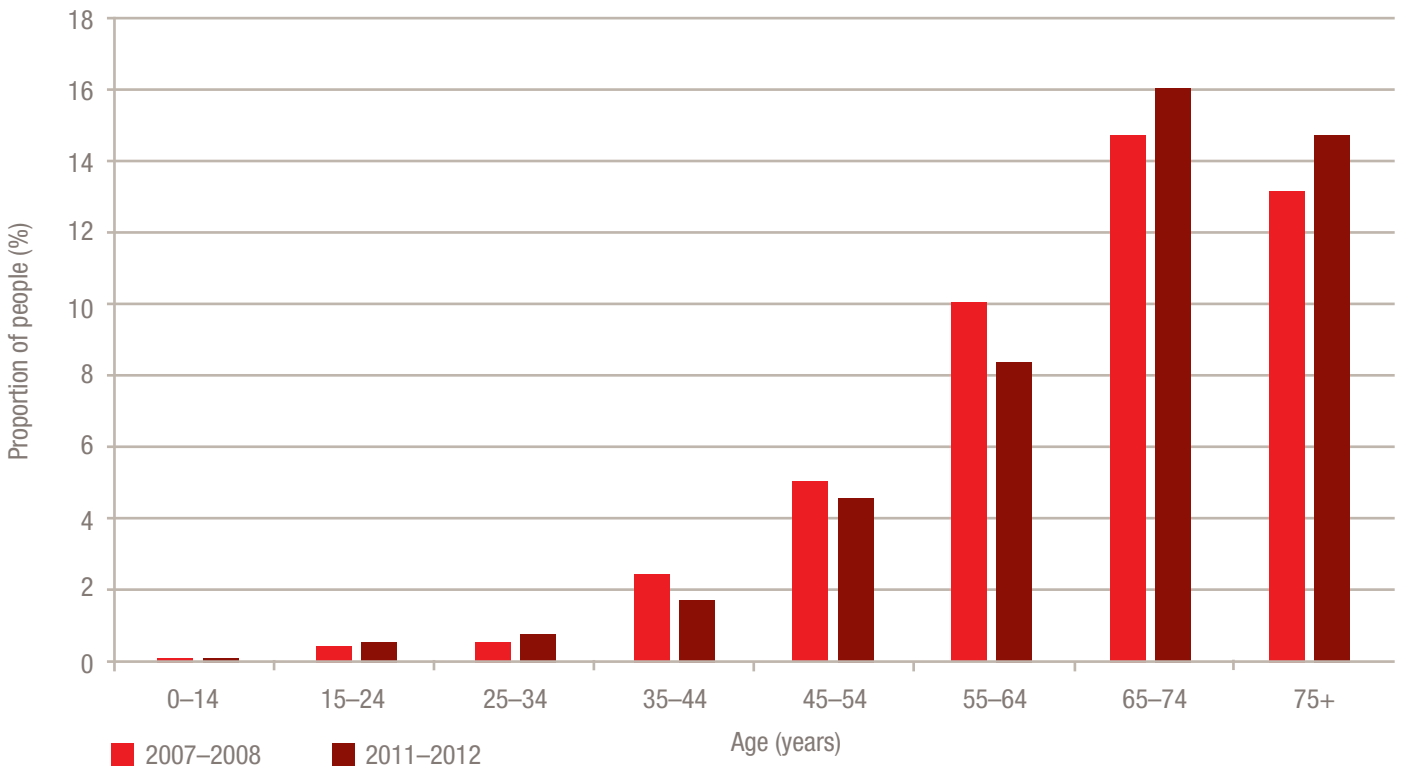


Table 11.4 Incidence (number and rate) of insulin-treated diabetes, by type, state or territory, and sex, 2000 to 2009 (pooled)

State or territory	Type 1 diabetes – number			Type 1 diabetes – age-standardised rate per 100,000 population			Type 2 diabetes – number			Type 2 diabetes – age-standardised rate per 100,000 population		
	Men and boys	Women and girls	Persons	Men and boys	Women and girls	Persons	Men and boys	Women and girls	Persons	Men and boys	Women and girls	Persons
Australian Capital Territory	129	77	206	9.0	5.4	7.3	967	853	1,820	79.3	62.8	70.6
New South Wales	2,746	1,699	4,445	10.3	6.2	8.3	33,782	28,266	62,048	114.8	88.8	101.1
Northern Territory	68	33	101	7.8	5.1	6.5	647	638	1,285	95.2	96.5	96.3
Queensland	1,633	968	2,601	10.4	6.1	8.3	18,292	14,822	33,114	108.8	84.3	96.1
South Australia	658	436	1,094	10.8	7.0	8.9	8,044	6,301	14,345	112.7	81.1	95.9
Tasmania	228	159	387	12.5	8.3	10.4	2,413	2,144	4,557	108.2	89.7	98.3
Victoria	2,052	1,337	3,389	10.3	6.5	8.4	23,045	18,648	41,693	106.7	78.4	91.6
Western Australia	989	535	1,524	12.1	6.7	9.4	7,387	5,849	13,236	87.1	66.2	76.2
Australia	8,508	5,248	13,756	10.6	6.4	8.5	94,663	77,583	172,246	108.1	82.4	94.5

Source: Australian Institute of Health and Welfare, 2009 National Diabetes Register

Notes: Number of people and rate per 100,000 people. People aged 15 years and over. Rates age-standardised to the 2001 Australian Estimated Resident Population.

Figure 11.4a Incidence of insulin-treated type 1 diabetes per 100,000 population, by state or territory, 2000 to 2009 (pooled)

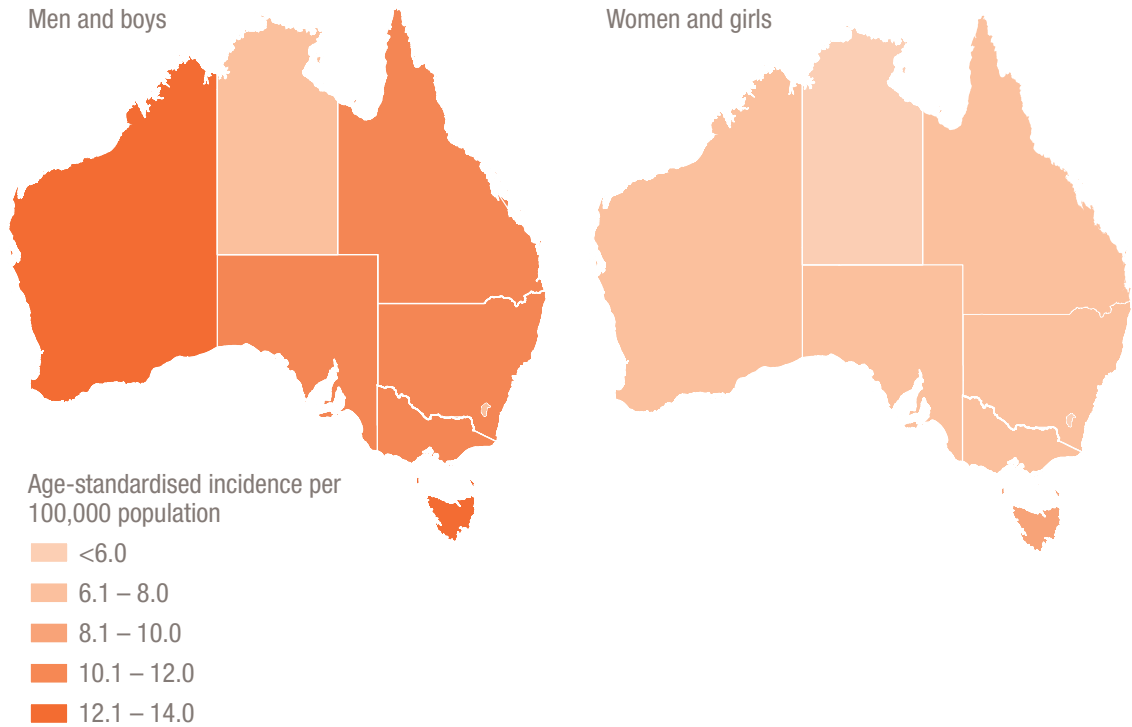


Figure 11.4b Incidence of insulin-treated type 2 diabetes per 100,000 population, by state or territory, 2000 to 2009 (pooled)

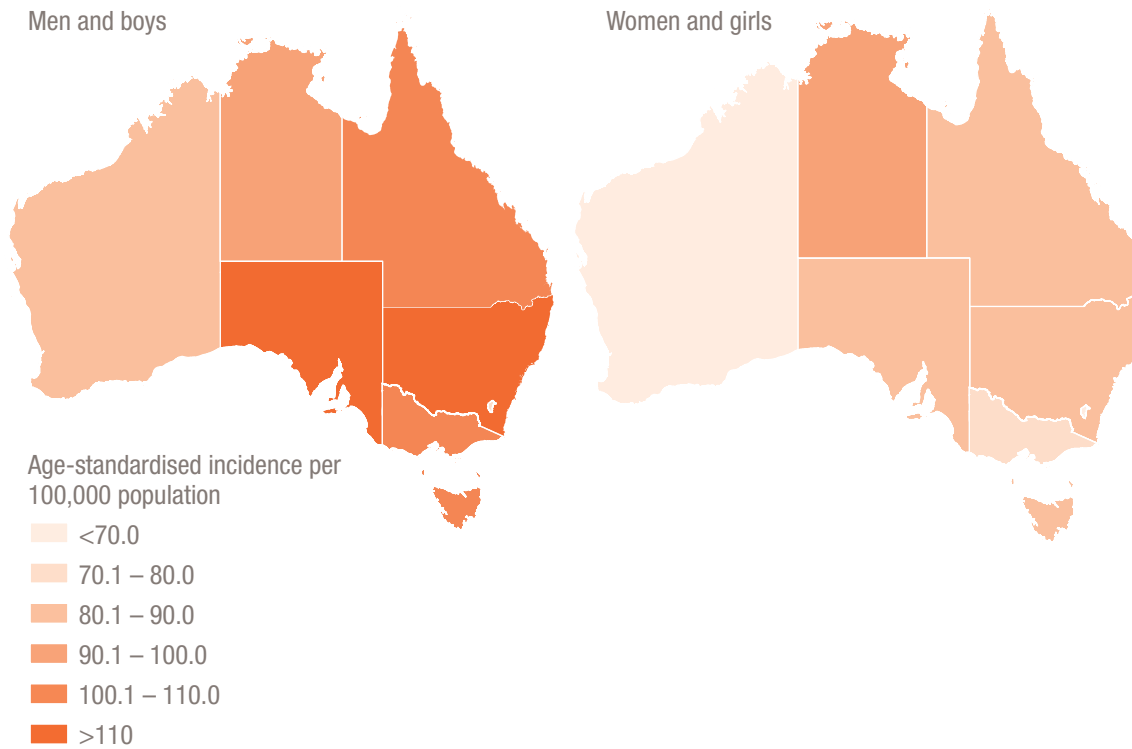




Table 11.5 Trends in incidence (number and rate) of insulin-treated diabetes, by type and sex, 2000 to 2009

Year	Type 1 diabetes – number			Type 1 diabetes – age-standardised rate per 100,000 population			Type 2 diabetes – number			Type 2 diabetes – age-standardised rate per 100,000 population		
	Men and boys	Women and girls	Persons	Men and boys	Women and girls	Persons	Men and boys	Women and girls	Persons	Men and boys	Women and girls	Persons
2000	933	613	1,546	12.5	7.9	10.2	6,386	5,706	12,092	81.2	67.4	73.9
2001	932	658	1,590	12.3	8.4	10.3	6,490	5,932	12,422	80.6	68.4	74.0
2002	782	460	1,242	10.1	5.8	7.9	7,176	6,158	13,334	86.7	69.2	77.5
2003	826	521	1,347	10.6	6.5	8.5	8,189	7,026	15,215	96.9	77.0	86.4
2004	815	487	1,302	10.3	6.0	8.2	9,793	7,991	17,784	113.2	85.9	98.8
2005	741	466	1,207	9.2	5.8	7.5	9,089	7,624	16,713	103.2	80.4	91.1
2006	852	529	1,381	10.4	6.4	8.4	9,121	7,551	16,672	101.2	78.0	88.9
2007	1,051	598	1,649	12.6	7.1	9.9	11,957	9,578	21,535	129.1	96.7	112.1
2008	866	484	1,350	10.2	5.7	7.9	12,992	9,899	22,891	137.0	97.6	116.3
2009	710	432	1,142	8.1	5.0	6.6	13,470	10,118	23,588	138.3	97.7	117.1

Source: Australian Institute of Health and Welfare, 2009 National Diabetes Register

Notes: Number of people and rate per 100,000 people. People aged 15 years and over. Rates age-standardised to the 2001 Australian Estimated Resident Population.

Table 11.6 Trends in incidence of type 1 diabetes by state or territory of usual residence, children, 2000 to 2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average 2000–2009
State or territory											
Australian Capital Territory				23.0	31.6		22.4	47.5			27.4
New South Wales	18.6	20.4	20.9	20.7	23.8	20.7	21.2	22.4	23.6	21.3	21.3
Northern Territory				10.3	20.1		10.0	10.0			9.0
Queensland	20.2	23.3	21.3	25.9	24.4	24.4	25.1	26.7	21.4	21.1	23.4
South Australia	23.0	21.8	26.7	32.0	29.1	21.8	27.8	20.7	31.5	22.1	25.6
Tasmania	14.9	24.1	26.6	29.7	31.6	38.9	31.8	20.7	28.9	33.8	28.0
Victoria	20.0	22.3	24.4	27.1	24.2	24.8	25.6	27.4	24.1	23.9	24.4
Western Australia	17.2	20.9	25.4	26.4	23.9	21.2	21.9	27.1	23.8	19.3	22.7
Australia	19.2	21.4	22.7	24.8	24.7	22.9	23.8	25.1	23.8	22.1	23.0

Source: Australian Institute of Health and Welfare, 2009 National Diabetes Register

Notes: Rates standardised to the 2001 Australian Estimated Resident Population. Children aged 0–14 years. Blank cells indicate estimates were not available for publication due to low numbers.

Table 11.7 Prevalence and annual incidence of diabetes according to baseline age, by sex, 1999–2000 to 2011–2012

	Prevalence at baseline	Incidence per year	
	1999–2000	2004–2005	2011–2012
Men			
25–34	0.1	0.2	0.3
35–44	2.6	0.6	0.4
45–54	6.8	0.6	0.7
55–64	16.1	1.5	1.3
65–74	21.6	1.5	1.3
75+	22.4	1.2	0.8
All men		0.9	0.8
Women			
25–34	0.4	0.5	0.3
35–44	2.3	0.4	0.2
45–54	5.5	0.7	0.7
55–64	9.9	0.6	0.6
65–74	16.1	1.3	1.3
75+	24.5	1.3	1.0
All women		0.7	0.6
Persons			
25–34	0.3	0.4	0.3
35–44	2.5	0.5	0.3
45–54	6.2	0.7	0.7
55–64	13.1	1.0	0.9
65–74	18.6	1.4	1.3
75+	23.6	1.3	0.9
All persons		0.8	0.7

Source: Baker IDI Heart & Diabetes Institute, Australian Diabetes, Obesity and Lifestyle study, AusDiab 2012 report

Notes: Proportion of people. Adults aged 25 years and over. Data have not been age-standardised. Incident diabetes was defined as individuals who had either normal glucose tolerance, impaired fasting glucose or impaired glucose tolerance at baseline, but had developed diabetes at follow-up in either 2004–2005 or 2012–2013. Thus the annual incidence listed under 2004–2005 represents people who did not have diabetes at baseline but who had developed diabetes by 2004–2005 (a 5-year follow-up period), and the annual incidence in 2011–2012 represents only people who did not have diabetes at baseline but who had developed diabetes by 2011–2012 (a 12-year follow-up period). Blank cells indicate data were not made available.

Table 11.8 Annual incidence of diabetes according to baseline glucose tolerance and baseline weight status, by sex, 2011–2012

	Glucose tolerance			BMI status		
	Normal glucose tolerance at baseline	Impaired fasting glucose at baseline	Impaired glucose tolerance at baseline	Normal weight	Overweight	Obese
Men	0.3	2.0	3.5	0.3	0.7	1.7
Women	0.2	2.8	2.6	0.3	0.6	1.3
Persons	0.3	2.2	3.0	0.3	0.6	1.5

Source: Baker IDI Heart & Diabetes Institute, Australian Diabetes, Obesity and Lifestyle study, AusDiab 2012 report

Notes: Incidence among people without diabetes at baseline. Adults aged 25 years and over. Weight status determined by BMI (overweight, 25.0–29.9; obese, ≥30).

Actions taken for diabetes

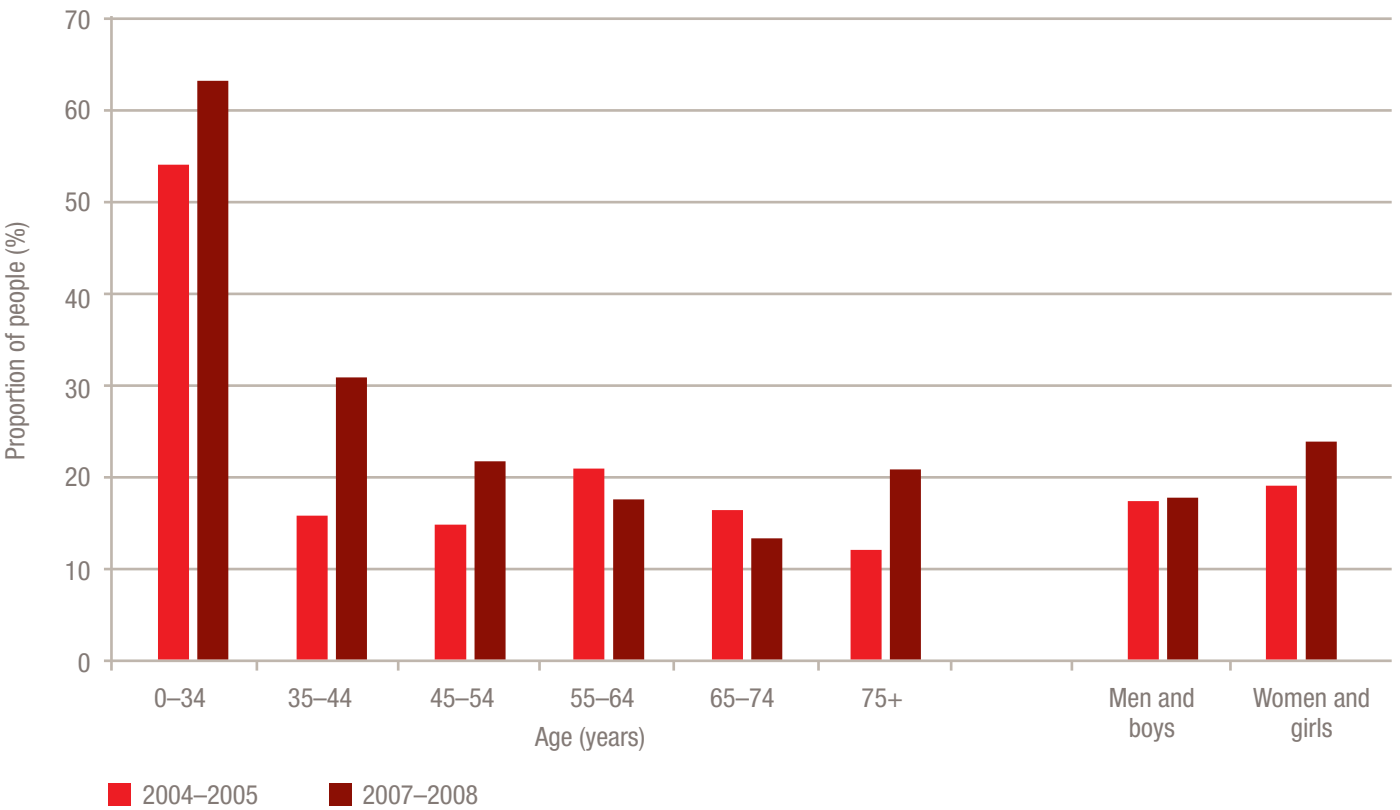
Table 11.9 Proportion of people with diabetes who have taken insulin in the past 2 weeks, by age then sex, 2004–2005 to 2007–2008

	2004–2005	2007–2008
Age group		
0–34	54.7	64.0
35–44	15.9	31.2
45–54	14.9	21.9
55–64	21.1	17.7
65–74	16.5	13.4
75+	12.1	21.0
Sex		
Men and boys	17.5	17.9
Women and girls	19.2	24.1
Persons	18.5	20.6

Sources: Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2004–2005 and 2007–2008

Notes: Proportion of people (all ages). Included only people who used insulin for diabetes in the 2 weeks prior to interview.

Figure 11.9 Proportion of people with diabetes who have taken insulin in the past 2 weeks, by age then sex, 2004–2005 to 2007–2008



Diabetes in Aboriginal and Torres Strait Islander peoples

Table 11.10 Prevalence of diabetes, by Indigenous status and age, then sex, 2012–2013

	Aboriginal and Torres Strait Islander	Non-Indigenous
Age group	Age-specific proportion	
2–14	*0.4	*0.2
15–24	*1.1	*0.5
25–34	4.8	1.0
35–44	9.8	2.3
45–54	22.1	4.9
55+	38.4	12.9
Sex	Age-standardised proportion	
Men and boys	13.7	4.8
Women and girls	14.9	3.7
Persons	14.3	4.2

\* Proportion has a relative standard error of 25–50% and should be used with caution.

Source: Australian Bureau of Statistics, 4727.0.55.006 – Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–2013

Notes: Proportion of people. People aged 2 years and over who reported they had diagnosed diabetes mellitus which had lasted, or was expected to last, for 6 months or more. Includes type 1 and type 2 diabetes, and type unknown. Includes people who reported they had diabetes but that it was not current at the time of interview. Total proportions for men and boys, women and girls, and overall, were standardised to the 2001 Australian Estimated Resident Population to account for differences in the age structure of the two populations.



# Part C | Chapter 12

## Mental health

### Key facts

- The prevalence of mental disorders in 2007 was 17.6% in men and 22.3% in women.
- There was a decrease in the proportion of Aboriginal and Torres Strait Islander men reporting high levels of distress between 2008 and 2012–2013 in most age groups. Among Aboriginal and Torres Strait Islander women, however, there were small increases in most age groups.



### Introduction

Depression is a robust risk factor for the development of ischaemic heart disease (IHD) in healthy populations, is more prevalent in populations with pre-existing heart disease, and is predictive of adverse cardiovascular outcomes among people with heart disease.<sup>51</sup> In the six months following myocardial infarction (heart attack), major depressive disorder is an independent risk factor for death and other cardiovascular outcomes. Depression also acts as a risk factor for stroke, peripheral artery disease and heart failure.

Depression and heart disease form a mutually reinforcing cycle, and research shows that a diagnosis of heart disease is itself a risk factor for depression. The mechanisms behind this two-directional relationship are not fully understood but are likely to involve intermediate factors such as physical inactivity and poor nutrition, which have been shown to increase risk of both depression and cardiovascular disease.<sup>51</sup>

In Australia, an estimated 13% of disease burden (measured in DALYs – see chapter 2) has been attributed to mental illness.<sup>9</sup> There is no global data collection system in place for mental disorders;<sup>52</sup> however, the Global Burden of Disease (2010) study estimated that mental illness accounts for about 7.4% of all disease burden worldwide, and the bulk of that burden is attributable to depressive or anxiety disorders.<sup>53</sup>

### Key facts

- The prevalence of mental disorders in 2007 was 17.6% in men and 22.3% in women.
- Anxiety disorders were the most prevalent mental disorders in both sexes.
- Substance use disorders were more common in men than were affective disorders, while the reverse was true in women.
- The population prevalence of elevated psychological distress (as measured using the Kessler scale) decreased slightly for both sexes from 2001 to 2011–2012 in the general population.
- There was a decrease in the proportion of Aboriginal and Torres Strait Islander men reporting high levels of distress between 2008 and 2012–2013 in most age groups. Among Aboriginal and Torres Strait Islander women, however, there were small increases in most age groups.



Tables and figures

Prevalence of common mental disorders

Table 12.1 Prevalence of 12-month mental disorders, by sex, age and disorder group, 2007

	Anxiety disorders	Affective disorders	Substance use disorders	Any mental disorder
Men and boys				
16–24	9.3	4.3	15.5	22.8
25–34	11.5	7.0	11.3	22.8
35–44	14.9	8.4	6.5	20.8
45–54	13.9	6.3	*4.4	18.6
55–64	8.9	*2.6	*1.6	10.9
65–74	5.6	np	np	7.7
75–85	*2.5	np	np	*4.8
All men and boys	10.8	5.3	7.0	17.6
Women and girls				
16–24	21.7	8.4	9.8	30.1
25–34	21.2	8.7	3.3	26.9
35–44	21.2	8.3	*2.6	25.9
45–54	21.2	7.8	*3.2	24.2
55–64	13.8	5.9	**0.6	16.3
65–74	7.0	np	np	9.5
75–85	*5.2	np	np	*6.9
All women and girls	17.9	7.1	3.3	22.3
Persons				
16–24	15.4	6.3	12.7	26.4
25–34	16.3	7.9	7.3	24.8
35–44	18.1	8.3	4.6	23.3
45–54	17.6	7.1	3.8	21.5
55–64	11.3	4.2	*1.1	13.6
65–74	6.3	2.8	*0.6	8.6
75–85	4.0	*1.8	*0.8	5.9
All persons	14.4	6.2	5.1	20.0

\* Estimate has a relative standard error of 25–50% and should be interpreted with caution.

\*\* Estimate has a relative standard error >50% and is considered too unreliable for general use.

Source: Australian Bureau of Statistics, 4326.0 – National Survey of Mental Health and Wellbeing: Summary of Results, 2007

Notes: Proportion of people. People aged 16–85 years. This survey used the World Health Organization’s Composite International Diagnostic Interview. Diagnoses were based on the presence of symptoms in the 12 months prior to the survey. np, not available for publication but included in totals where applicable.

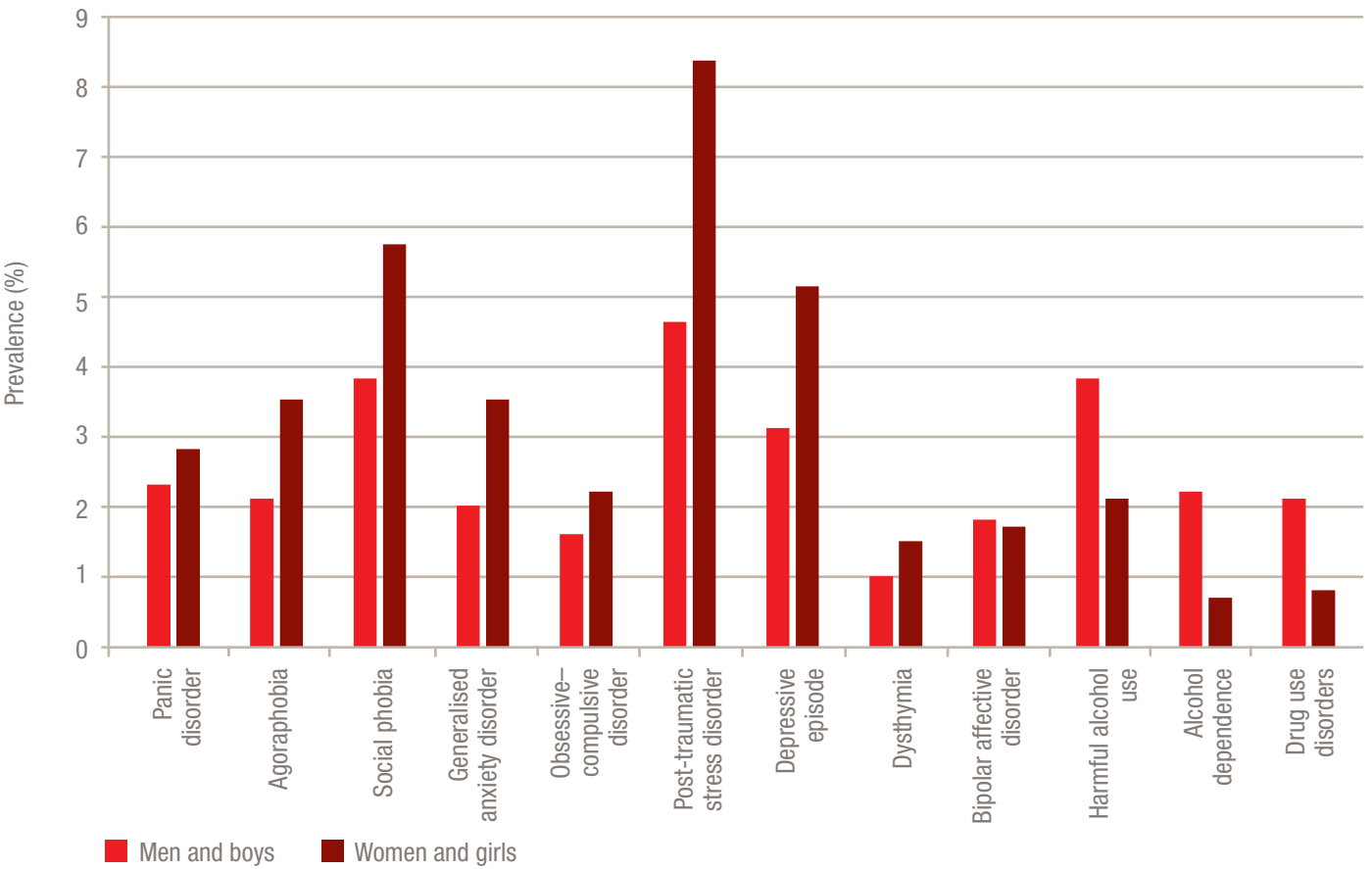
Table 12.2 Prevalence of 12-month mental disorders, by specific type of disorder and sex, 2007

	Men and boys	Women and girls	Persons
Anxiety disorders			
Panic disorder	2.3	2.8	2.6
Agoraphobia	2.1	3.5	2.8
Social phobia	3.8	5.7	4.7
Generalised anxiety disorder	2.0	3.5	2.7
Obsessive–compulsive disorder	1.6	2.2	1.9
Post-traumatic stress disorder	4.6	8.3	6.4
Any anxiety disorder	10.8	17.9	14.4
Affective disorders			
Depressive episode	3.1	5.1	4.1
Dysthymia	1.0	1.5	1.3
Bipolar affective disorder	1.8	1.7	1.8
Any affective disorder	5.3	7.1	6.2
Substance use disorders			
Alcohol harmful use	3.8	2.1	2.9
Alcohol dependence	2.2	0.7	1.4
Drug use disorders	2.1	0.8	1.4
Any substance use disorder	7.0	3.3	5.1
Any mental disorder	17.6	22.3	20.0

Source: Australian Bureau of Statistics, 4326.0 – National Survey of Mental Health and Wellbeing: Summary of Results, 2007

Notes: Proportion of people. People aged 16–85 years. This survey used the World Health Organization’s Composite International Diagnostic Interview. Diagnoses were based on the presence of symptoms in the 12 months prior to the survey.

Figure 12.2 Prevalence of 12-month mental disorders by specific type of disorder and sex, 2007





Mean mental health scores

Table 12.3 Mean SF-36 mental health scores, by sex and age, 2001 to 2011 (pooled)

	Mean mental health scores	Poor mental health scores (%)
Men and boys		
15–29	74.5	9.0
30–39	74.6	8.7
40–49	74.0	9.7
50–59	75.8	8.4
60–69	77.0	7.6
70+	77.2	7.1
All men and boys	75.2	8.6
Women and girls		
15–29	71.4	12.1
30–39	72.2	11.4
40–49	72.5	11.8
50–59	73.0	11.2
60–69	75.1	9.5
70+	75.0	8.0
All women and girls	72.8	11.0

Source: Household, Income and Labour Dynamics in Australia (HILDA) Survey, Ninth statistical report, Waves 1–11, released 2014

Notes: Mean scores. People aged 15 years and over. The SF-36 Health Survey is a 36-item questionnaire addressing eight health measures, including mental health. Scores are transformed and standardised to a 100-point scale, with higher values corresponding to better mental health. The HILDA survey resampled each household in each wave, and all household members over the age of 15 years were included in a given sample wave. When participants sampled in a previous wave left their initial household to form a new household, the new household and all its members were added to the sample in subsequent waves.

Table 12.4 Mean SF-36 mental health scores, adults, by sex and BMI category, 2006 to 2011 (pooled)

	Mean mental health scores		Poor mental health scores (%)	
	Men	Women	Men	Women
BMI category				
Underweight	67.7	67.9	13.8	17.0
Normal weight	75.0	73.6	8.3	10.2
Overweight	75.8	73.5	8.1	10.4
Obese	73.6	71.7	10.5	12.6

Source: Household, Income and Labour Dynamics in Australia (HILDA) Survey, Ninth statistical report, Waves 1–11, released 2014

Notes: Mean scores. People aged 18 years and over. The SF-36 Health Survey is a 36-item questionnaire addressing eight health measures, including mental health. Scores are transformed and standardised to a 100-point scale, with higher values corresponding to better mental health. The HILDA survey resampled each household in each wave, and all household members over the age of 15 years were included in a given sample wave. When participants sampled in a previous wave left their initial household to form a new household, the new household and all its members were added to the sample in subsequent waves. Refer to chapter 10 for definitions of body mass index (BMI) categories.

Trends in prevalence of psychological distress

Table 12.5 Trends in prevalence of psychological distress by sex, age and severity of distress, 2001 to 2011–2012

	2001			2004–2005			2007–2008			2011–2012		
	Moderate	High	Very high	Moderate	High	Very high	Moderate	High	Very high	Moderate	High	Very high
Men												
18–24	28.8	8.1	2.7	27.1	9.1	3.3	22.3	5.3	*1.2	22.5	7.5	3.1
25–34	26.1	8.4	2.1	26.4	7.0	2.3	21.9	8.2	2.7	17.7	6.2	*2.0
35–44	19.7	7.8	2.5	23.8	7.9	3.4	19.9	6.1	2.7	17.1	6.6	2.5
45–54	20.5	6.1	3.7	21.0	7.0	4.0	16.4	7.1	4.0	17.7	5.0	3.9
55–64	15.9	6.7	3.6	18.0	6.7	4.6	17.7	8.2	3.4	15.2	5.3	3.6
65–74	14.2	5.8	*1.9	15.5	7.3	2.5	12.7	4.6	2.8	12.5	5.5	*1.5
75+	19.3	4.6	*1.9	19.7	7.3	3.5	14.2	6.5	*2.3	11.6	5.7	*2.2
All men	21.2	7.1	2.7	22.4	7.5	3.3	18.6	6.8	2.8	16.9	6.0	2.8
Women												
18–24	31.7	16.7	5.4	31.8	15.2	3.5	30.1	13.1	*4.3	29.1	10.2	*2.9
25–34	29.8	11.2	4.6	30.2	10.9	3.5	26.9	9.7	4.2	19.4	9.9	3.7
35–44	25.1	11.3	4.2	26.1	11.5	5.1	22.7	10.2	4.0	20.4	8.8	3.9
45–54	22.7	10.0	5.5	24.1	10.7	5.5	19.8	10.5	4.8	17.9	7.4	6.4
55–64	20.2	9.3	3.6	17.8	8.8	4.3	20.0	9.8	4.9	18.1	8.3	3.7
65–74	18.4	7.0	3.4	20.9	8.8	3.7	15.2	8.4	*2.2	14.0	8.6	2.9
75+	19.2	9.1	3.0	24.9	7.3	3.3	21.1	8.9	3.4	19.1	6.8	*3.7
All women	24.7	10.9	4.4	25.7	10.8	4.3	22.6	10.2	4.1	19.7	8.7	4.0
Persons												
18–24	30.2	12.3	4.0	29.5	12.1	3.4	26.2	9.1	2.7	25.7	8.8	3.0
25–34	28.0	9.8	3.4	28.3	9.0	2.9	24.4	8.9	3.4	18.5	8.1	2.8
35–44	22.4	9.6	3.4	25.0	9.7	4.3	21.3	8.1	3.4	18.8	7.7	3.2
45–54	21.6	8.0	4.6	22.6	8.9	4.8	18.1	8.8	4.4	17.8	6.2	5.2
55–64	18.0	8.1	3.6	17.9	7.8	4.4	18.9	9.0	4.2	16.6	6.8	3.6
65–74	16.4	6.4	2.7	18.3	8.1	3.1	14.0	6.5	2.5	13.3	7.1	2.2
75+	19.2	7.2	2.5	22.7	7.3	3.4	18.1	7.9	2.9	15.8	6.3	3.0
All persons	23.0	9.0	3.6	24.1	9.2	3.8	20.6	8.5	3.5	18.4	7.4	3.4

\* Estimate has a relative standard error of 25–50% and should be interpreted with caution.

Sources: Australian Bureau of Statistics, 4364.0 – National Health Survey: Summary of Results, 2001, 2004–2005 and 2007–2008; and 4364.0.55.001 – Australian Health Survey: First Results, 2011–2012

Notes: Proportion of people. Adults aged 18 years and over. Levels of psychological distress were determined by the Kessler Psychological Distress Scale-10 (K10), a scale of non-specific psychological distress based on 10 questions about negative emotional states in the past 30 days. The K10 is scored from 10 to 50. Higher scores indicate a higher level of distress; low scores indicate a low level of distress. A moderate level of distress was indicated by a score of 16–21, high levels by a score of 22–29, and very high levels by a score of 30–50.

Figure 12.5a Trends in prevalence of high or very high psychological distress, men, by age, 2001 to 2011–2012

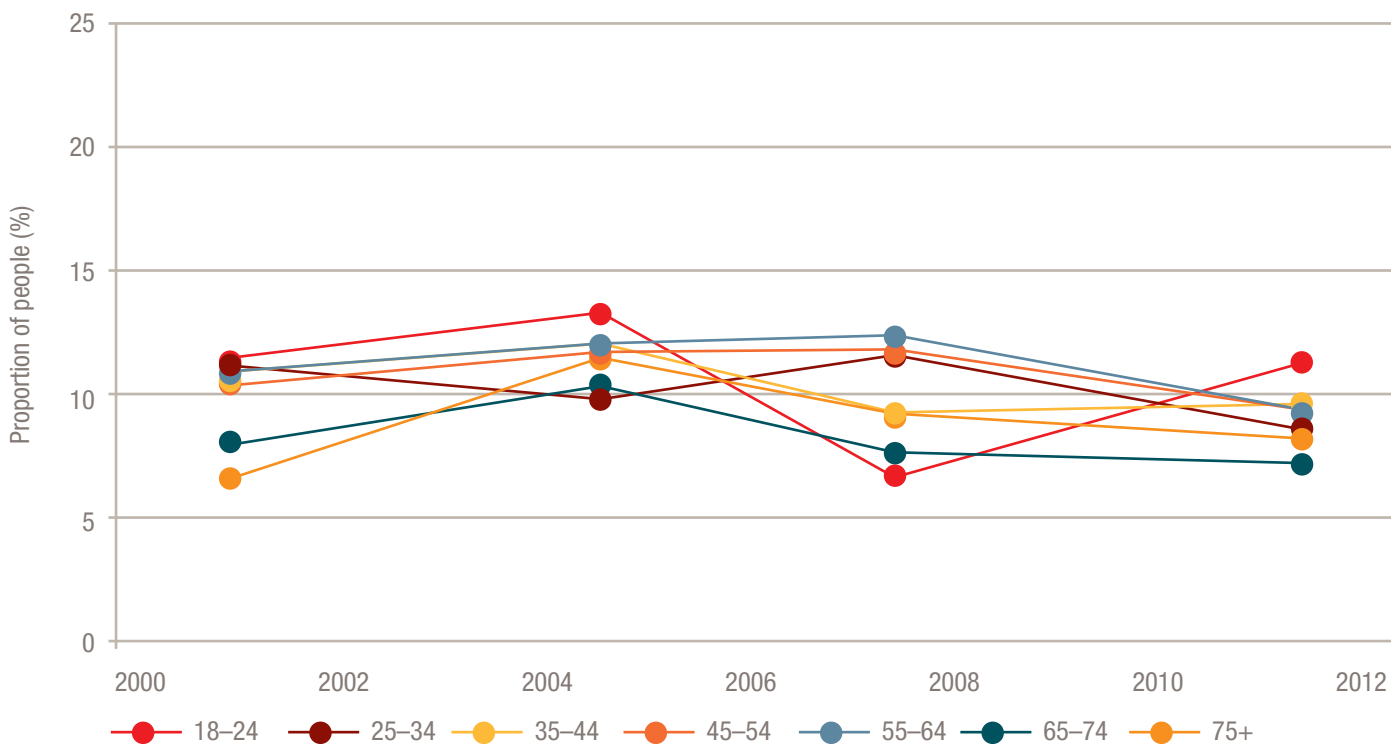
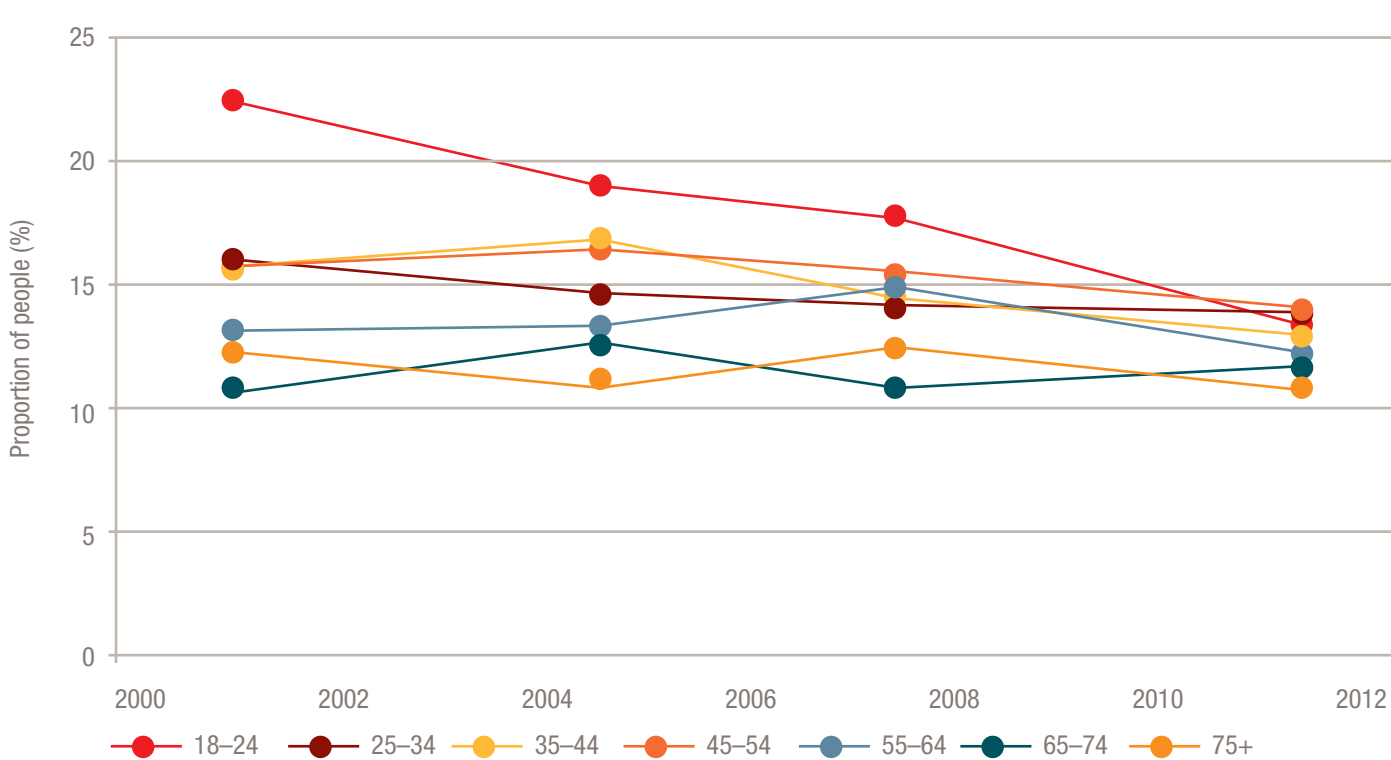


Figure 12.5b Trends in prevalence of high or very high psychological distress, women, by age, 2001 to 2011–2012



Mental health in Aboriginal and Torres Strait Islander peoples

Table 12.6 Prevalence of psychological distress among Aboriginal and Torres Strait Islander adults, by sex and age, 2008 and 2012–2013

	2008		2012–2013	
	Low–moderate	High–very high	Low–moderate	High–very high
Men				
18–24 <sup>a</sup>	72.8	24.8	78.3	21.2
25–34	73.5	25.4	73.9	25.6
35–44	68.7	29.6	74.3	24.9
45–54	68.6	28.9	69.6	30.4
55+	70.5	27.4	82.0	17.8
All men	71.3	26.7	75.5	24.0
Women				
18–24 <sup>a</sup>	64.9	33.9	60.3	39.4
25–34	63.8	35.4	65.8	34.0
35–44	64.5	34.9	63.7	35.7
45–54	62.5	36.7	60.6	38.8
55+	67.3	30.2	69.0	30.4
All women	64.6	34.3	63.8	35.8
Persons				
18–24 <sup>a</sup>	68.9	29.3	69.4	30.2
25–34	68.4	30.6	69.8	29.9
35–44	66.4	32.4	68.8	30.5
45–54	65.4	33.0	64.9	34.7
55+	68.7	29.0	75.1	24.5
All persons	67.8	30.7	69.5	30.1

a In 2008, data included participants 15–24 years old.

Sources: Australian Bureau of Statistics, 4714.0 – National Aboriginal and Torres Strait Islander Social Survey, 2008, and 4727.0.55.001 – Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012–2013

Notes: Proportion of people. Aboriginal and Torres Strait Islander adults aged 18 years and over. Levels of psychological distress were determined by the Kessler-5 (K5) measure of psychological distress, which is a subset of five questions from the Kessler Psychological Distress Scale-10 (K10). The K10 is a non-specific psychological distress scale designed to measure levels of negative emotional states experienced by people in the four weeks prior to interview. The K5 is scored from 5 to 25. Higher scores indicate a higher level of distress; low scores indicate a low level of distress. A low–moderate level of distress was indicated by a score of 5–11, while a high–very high level of distress was indicated by a score of 12–25. Percentages do not add to 100% because the level of psychological distress was unable to be determined for a small proportion of people.

# Abbreviations

ABS	Australian Bureau of Statistics	LDL	low-density lipoprotein
ADA	Australian Data Archive	MBS	Medicare Benefits Scheme
AHS	Australian Health Survey	NCDs	non-communicable diseases
AIHW	Australian Institute of Health and Welfare	NHMRC	National Health and Medical Research Council
ATC	Anatomical Therapeutic Chemical	NHS	National Health Survey
A\$	Australian Dollars	OECD	Organisation for Economic Cooperation and Development
AusDiab	Australian Diabetes, Obesity and Lifestyle study	PBS	Pharmaceutical Benefits Scheme
BMI	body mass index	RPBS	Repatriation Pharmaceutical Benefits Scheme
CVD	cardiovascular disease	RTDs	ready-to-drink (pre-mixed) alcoholic beverages
DALY	disability-adjusted life year	SBP	systolic blood pressure
DBP	diastolic blood pressure	SDR	standardised death rates
DM	diabetes mellitus	SF-36	Short Form Health Survey
FAO	Food and Agriculture Organization of the United Nations	UK	United Kingdom
HbA1c	haemoglobin A1c, glycosylated haemoglobin	USA	United States of America
HDL	high-density lipoprotein	WHO	World Health Organization
HILDA	Household, Income and Labour Dynamics in Australia survey		
ICD-10-AM	International Classification of Diseases, Tenth Revision, Australian Modification		
IHD	ischaemic heart disease		
K10/K6/K5	Kessler Psychological Distress Scale – 10-question, 6-question, 5-question scales		

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