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# Introduction

## Background

Significant progress has been made in recent years in improving the cardiovascular health of Australians. Death rates have fallen markedly, levels of some risk factors have improved and there have been major advances in treatment.

Nevertheless, heart, stroke and vascular diseases<sup>1</sup> continue to impose a heavy burden on Australians in terms of illness, disability and death, and the associated direct health care expenditure exceeds that of any other disease group. The total burden is expected to increase over the coming decades due to the growing number of elderly Australians, among whom heart, stroke and vascular diseases are most common.

Some groups within the community have much higher rates of illness and death from these diseases than others, especially Aboriginal and Torres Strait Islander peoples and those who are at a socioeconomic disadvantage.

A large part of the deaths, disability and illness caused by these diseases is preventable. Many Australians remain at higher risk of the diseases through tobacco smoking, being physically inactive, eating a diet high in saturated fats and being overweight. Levels of blood pressure and blood cholesterol among many Australians are also higher than recommended, as is the intake of alcohol. Psychosocial factors, such as depression, social isolation and lack of quality social support can also affect the development of heart, stroke and vascular diseases. Risk factors themselves are strongly influenced by wider circumstances. The importance of factors such as people's economic resources, education, living and working conditions, social support, and access to health care and social services is widely recognised.

## National Strategy

A National Strategy for Heart, Stroke and Vascular Health in Australia has been developed 'to improve the cardiovascular health status of the Australian population to be among the best in the world'. The strategy is an initiative of the National Heart, Stroke and Vascular Health Strategies Group of the National Health Priority Action Council.

In broad terms the strategy sets out to:

- progressively reduce the inequalities in health outcomes associated with heart, stroke and vascular disease, particularly through a focus on preventive and management practices for Aboriginal and Torres Strait Islander peoples;
- improve care and management of heart, stroke and vascular diseases across the continuum of care, and optimise the outcomes by identifying and promoting proven interventions;
- support the dissemination and uptake of best preventive practices for heart, stroke and vascular diseases, and promote consistency in these practices; and
- enhance the role of consumers in maintaining and managing their own vascular health.

The strategy identifies the following seven 'arenas for national action' where there is most potential for improvement, and identifies goals and priorities for national action against each arena:

- heart, stroke and vascular diseases in Aboriginal and Torres Strait Islander peoples
- consumer engagement and information
- prevention of heart, stroke and vascular diseases
- cardiac emergency and acute care
- stroke emergency and acute care
- chronic heart failure
- rehabilitation after an acute heart, stroke or vascular event.

Copies of the strategy can be obtained electronically through the web site of the Australian Government Department of Health and Ageing (DoHA) at <<http://www.health.gov.au>>.

<sup>1</sup> Heart, stroke and vascular diseases cover all diseases and conditions of the heart and blood vessels (also known as cardiovascular or circulatory diseases).



## Purpose and structure of this report

The National Centre for Monitoring Cardiovascular Disease at the Australian Institute of Health and Welfare (AIHW) produced this report in collaboration with the DoHA and the National Heart Foundation of Australia (NHFA). The report aims to provide the community, health professionals and policy makers with a concise summary of the latest available data and trends in heart, stroke and vascular diseases in Australia. As such, there are many medical details it does not cover. It is not designed to be a source of personal medical advice.

The report includes three main chapters, on diseases, risk factors and associated conditions, and treatment and care. Within these chapters are sections on the main diseases and on selected risk factors. There are also sections on general practice care, drug treatment, procedures in hospital, and rehabilitation and secondary prevention. The focus section for this report is on Aboriginal and Torres Strait Islander peoples.

Methods and data sources are included at the back of the report. More detailed statistical tables can be found in the National Cardiovascular Disease Database on AIHW's web site at <<http://www.aihw.gov.au>>.

## New in the 2004 edition

In the 2004 edition of this report, there is a new section on congenital heart diseases, which account for a large proportion of malformations present at birth. In the chapter on risk factors and associated conditions, there are new sections on alcohol consumption—a risk factor for particular types of stroke—and kidney failure. The treatment and care chapter includes a new section on general practice care.

The overarching theme of this report is health inequalities, one of the major contemporary issues for heart, stroke and vascular health in Australia. To focus on inequalities, a table at the end of each of the disease and risk factor sections summarises available information on health inequalities.

## Historical perspective

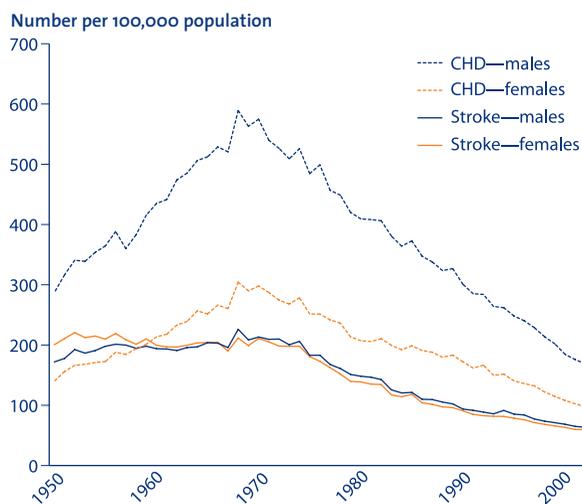
Before looking at the sections which contain the latest information, it is useful to look at the history of heart, stroke and vascular diseases in Australia.

Age-standardised death rates associated with the 20th century epidemic of coronary heart disease and stroke peaked in 1968 and have since fallen by around 70%. These falls are dramatic, especially when compared with declines of around 36% in deaths from other diseases.

The dramatic decline in deaths from heart, stroke and vascular diseases is illustrated by the percentage of all age-standardised deaths that are due to these diseases. In 1968, heart, stroke and vascular diseases accounted for 56% of all deaths in Australia. By 2002, this figure had fallen to 38%. However, these diseases were still the leading cause of death in Australia in 2002, followed by cancers which accounted for 29% of all deaths.

Despite these declines, death rates remain higher than those in many other developed countries, indicating the potential for further declines in death rates from heart, stroke and vascular diseases in Australia.

### Death rates from CHD and stroke, 1950–2002



#### Notes

1. CHD = coronary heart disease.
2. Age-standardised to the 2001 Australian population.

Source: AIHW National Mortality Database.

The fall in death rates from coronary heart disease may be due to the reduced occurrence of heart attacks and/or better survival of those who do have a heart attack.

For stroke, a decline in attack rates is likely to have been the main reason for the fall in stroke death rates.

The declines in heart attack and stroke rates suggest that levels of risk factors in the population may have improved. Consistent with this, blood pressure levels, tobacco smoking and saturated fat in the diet have declined. However, the proportion of Australians doing sufficient physical activity to provide a health benefit has fallen, and the proportion of Australians who are overweight and obese has risen sharply. Blood cholesterol levels have remained relatively constant since the 1980s.

Improved survival rates after heart attack suggest that emergency interventions are becoming more effective, along with better long-term treatment for these patients, including the increased use of particular drugs such as angiotensin-converting enzyme (ACE) inhibitors, statins, thrombolytics and antiplatelet agents.

The increased use and effectiveness of drugs to lower blood pressure and a dramatic increase in the use of cholesterol-lowering drugs would have also played a role in reducing the risk of heart attacks. The rise in coronary revascularisation (procedures used to restore good blood supply to the heart) from the 1980s would also be expected to have reduced death rates.

For stroke, it is likely that the increased use of blood pressure-lowering drugs, antiplatelet agents (such as aspirin) and anticoagulant therapy (warfarin) have contributed to the decline in death rates. Stroke units are known to improve survival and reduce dependency after stroke, and their increased use in recent years will have contributed to the decline.

In summary, the evidence suggests that the declines in death rates from coronary heart disease and stroke have been influenced by changes in some risk factors, drug use, emergency care, medical and surgical treatment, rehabilitation and follow-up care.

Where data are available, these factors are considered in more detail in the sections that form the main body of this report.

## Current situation

The latest national information on heart, stroke and vascular disease deaths, prevalence and disability, and risk factor prevalence is shown in the table.

These diseases and risk factors are described in the following chapters.

### Number of deaths and number of people with a risk factor in Australia

Number of deaths in Australia <sup>(a)</sup>	Males	Females
Coronary heart disease	13,855	12,208
Stroke	4,969	7,564
Peripheral vascular disease	1,347	1,234
Heart failure	1,033	1,696
Acute rheumatic fever and chronic rheumatic heart disease	83	191
Other heart, stroke and vascular diseases	2,701	3,413
<i>Total heart, stroke and vascular diseases</i>	<i>23,988</i>	<i>26,306</i>
Congenital heart and vascular diseases	125	99
<b>All causes of death</b>	<b>68,885</b>	<b>64,822</b>

Number of Australians with a risk factor	Men	Women
Daily smoking <sup>(b)</sup>	1,627,000	1,429,100
Insufficient physical activity for health <sup>(c)</sup>	3,581,500	3,684,400
'Risky' or 'high risk' alcohol consumption <sup>(b)</sup>	790,700	747,200
High blood pressure <sup>(d)</sup>	1,895,500	1,794,000
High blood cholesterol <sup>(d)</sup>	3,133,300	3,264,400
Overweight <sup>(d)</sup>	4,120,400	3,299,300
Diabetes <sup>(d)</sup>	497,700	447,800

(a) Data are from 2002 and include people of all ages.

(b) Data are from 2001 and include those aged 14 years and over.

(c) Data are from 2000 and include those aged 18–75 years.

(d) Data are from 1999–00 and include those aged 25 years and over.

Sources: AIHW National Mortality Database; 1999–00 AusDiab Study; 2000 National Physical Activity Survey; 2001 National Drug Strategy Household Survey.



## Number of people with heart, stroke and vascular diseases and associated disabilities in Australia, all ages, 1998 and 2001

Disease	Prevalence (2001)	Disability (1998)	
		Need assistance with daily activities	Total disability <sup>(a)</sup>
Coronary heart disease	355,600	86,000	224,400
Stroke	217,500	139,200	230,300

(a) Total disability includes those who need assistance or have difficulties with activities of daily living, have a schooling or employment restriction, or have no difficulty with these activities but use aids or equipment.

(b) Care should be taken in comparing the prevalence and disability data as they are obtained from separate surveys conducted over different time periods and with different scopes.

Sources: 1998 Disability, Ageing and Carers Survey; 2001 National Health Survey.

## Health inequalities

Certain sections of the Australian population experience a greater burden of ill health due to heart, stroke and vascular diseases than others, reflecting broader social and economic disadvantages.

Indigenous Australians have higher rates of death and illness from heart, stroke and vascular diseases. Death rates are 2.6 times and hospitalisation rates 1.4 times those of other Australians. These are likely to be underestimates due to the under-identification of Indigenous people in hospital and death records. Indigenous Australians have one of the highest rates of acute rheumatic fever and chronic rheumatic heart disease in the world, with death rates from these conditions 19 times those of other Australians. Indigenous Australians are also more likely to smoke, undertake no physical activity, have high blood pressure, be overweight, be obese, have diabetes, drink alcohol at harmful levels and have kidney failure.

Australians who are at a socioeconomic disadvantage are also more likely to die from heart, stroke and vascular diseases than other Australians. There are also differences in risk factor profile, with daily smoking, obesity and diabetes all more prevalent among the most disadvantaged.

## Further reading

ABS 1999. 1998 disability, ageing and carers: summary of findings, Australia. ABS Cat. No. 4430.o. Canberra: ABS.

AIHW 2004 (forthcoming). Health system expenditure on disease and injury in Australia, 2000–01. Preliminary estimates. Canberra: AIHW.

AIHW 2003. GRIM (General Record of Incidence of Mortality) books. Canberra: AIHW.

AIHW 2002. Australia's health 2002. AIHW Cat. No. AUS 25. Canberra: AIHW.

DoHA 2004 (forthcoming). National strategy for heart, stroke and vascular health in Australia. Canberra: DoHA.



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## Aboriginal and Torres Strait Islander peoples

## Key points

- Indigenous Australians have higher rates of death and illness from heart, stroke and vascular diseases than other Australians. In 2000–02, death rates were 2.6 times as high and hospitalisation rates 1.4 times as high in 2001–02 as for other Australians.
- These rates underestimate the extent of death and illness among Indigenous Australians due to the under-identification of Indigenous people in hospital and death records.
- Based on self-reports from the National Health Survey, around one in five Indigenous Australians (46,600 people) had heart, stroke and vascular conditions in 2001. The age-standardised prevalence in Indigenous Australians (19%) was not significantly different from that of other Australians (17%).
- Indigenous Australians have one of the highest rates of acute rheumatic fever and chronic rheumatic heart disease in the world.
- Tobacco smoking, high blood pressure, overweight, obesity, harmful alcohol consumption, poor nutrition, diabetes and kidney failure are all more prevalent among Indigenous Australians.

Aboriginal and Torres Strait Islander peoples continue to suffer a substantially greater burden of ill health than other Australians. This health disadvantage begins at an early age and continues throughout adult life. It reflects the broader social and economic disadvantages faced by Indigenous Australians.

Indigenous Australians experience higher rates of death and illness from heart, stroke and vascular diseases than other Australians. In 2001–02, death rates were 2.6 times as high and hospitalisation rates 1.4 times as high as for other Australians. These rates are likely to underestimate the extent of death and illness among Indigenous Australians due to the under-identification of Indigenous people in hospital and death records. Indigenous Australians continue to have less favourable risk factor profiles than other Australians, notably tobacco smoking, overweight, harmful alcohol consumption and poor nutrition. Furthermore, depression, social isolation and lack of quality social support are recognised as significant risk factors for heart, stroke and vascular diseases.

## Data quality

The availability and quality of data about Indigenous Australians are limited by a number of factors that include:

- uncertainties in the estimation of the size and composition of the Indigenous Australian population;
- incomplete identification of Indigenous Australians in administrative data collections such as hospital records, and birth and death registrations; and
- issues related to the collection of individual and household survey data about Indigenous Australians living in remote areas and the relevance of the questions and concepts used.

In addition, changes over time in the availability and quality of data make the assessment of trends difficult and potentially misleading (see **Methods and data sources** for further information).

The AIHW and the Australian Bureau of Statistics (ABS), in partnership with state and territory authorities, are making considerable efforts to improve the completeness of Indigenous identification in a number of key data collections.

## Age structure

The Indigenous Australian population has a younger age structure than other Australians. At 30 June 2001, the median age of Indigenous Australians was around 21 years, compared with 36 years for other Australians.

## How many Aboriginal and Torres Strait Islander peoples have heart, stroke and vascular diseases?

Based on self-reports from the National Health Survey, around one in five Aboriginal and Torres Strait Islander peoples had long-term heart, stroke and vascular conditions in 2001. This corresponds to an estimated 46,600 people affected. The age-standardised prevalence of these conditions among Indigenous Australians (19%) was not significantly different from that of other Australians (17%).



Since 1995, the prevalence of these conditions in non-remote areas declined by 33% for Indigenous Australians and 19% for other Australians.

The prevalence of heart, stroke and vascular conditions for Indigenous Australians was similar among males and females (18% and 21% respectively). The prevalence of these conditions increased rapidly from 35 years of age, rising from 16% among 35–44-year-olds to 31% among 45–54-year-olds, and to 47% for those aged 55 years and over. Indigenous Australians living in remote areas were more likely to report heart, stroke and vascular conditions than those living in non-remote areas (24% compared with 18%).

Despite the apparent similar overall prevalence rate among Indigenous and other Australians, age-standardised hospitalisation and death rates from heart, stroke and vascular diseases for Indigenous Australians were 1.4 and 2.6 times as high, respectively, as for other Australians in 2000–02. Also, Indigenous Australians have one of the highest rates of acute rheumatic fever and chronic rheumatic heart disease in the world.

### **Incidence of acute rheumatic fever**

Acute rheumatic fever is frequently misdiagnosed or underreported and, therefore, the true incidence is underestimated.

In 2002, there were 58 people identified with acute rheumatic fever in the Top End of the Northern Territory and 27 in Central Australia—all were Aboriginal and Torres Strait Islander peoples. In the Top End most cases (83%) required hospitalisation and 35% were for recurrences. In Central Australia, 30% were recurrences. Recurrences are defined as cases diagnosed in someone with established rheumatic heart disease three months or more after the most recent episode of acute rheumatic fever. Children aged 5–14 years accounted for the majority of cases (55%), with an incidence rate of 346 per 100,000 population in the Top End of the Northern Territory and 365 per 100,000 population in Central Australia. While the peak age group is 5–14 years, cases do occur in adults but are rare in children under four years of age. Females accounted for over two-thirds of acute rheumatic fever in the Top End of the Northern Territory.

### **Prevalence of rheumatic heart disease**

In 2002, there were 696 people with chronic rheumatic heart disease in the Top End of the Northern Territory and 283 people in Central Australia. Almost all of these (92–94%) were Aboriginal or Torres Strait Islander peoples. The prevalence rate among Aboriginal or Torres Strait Islander peoples was 16.6 per 1,000 population in the Top End of the Northern Territory and 12.5 per 1,000 in Central Australia, compared with 1.7 per 1,000 and 0.6 per 1,000 among other Australians living in the Top End and Central Australia, respectively.

Chronic rheumatic heart disease occurs mainly in those aged 15 years and over. In the Top End of the Northern Territory 8% of cases occur in those aged 5–14 years. Results from Central Australia indicate that over two-thirds of cases occur in the 15–44-year age range.

### **Hospitalisation for heart, stroke and vascular diseases**

In 2001–02, there were 6,836 hospitalisations with a principal diagnosis of heart, stroke and vascular diseases among Aboriginal and Torres Strait Islander peoples. The rate for these conditions was 1.4 times as high as for other Australians.

The largest disparity in hospitalisations exists for acute rheumatic fever and chronic rheumatic heart disease. Indigenous males and females were six and eight times as likely to be hospitalised for these conditions as other Australians. For heart failure and coronary heart disease, hospitalisation rates were also considerably higher among Indigenous Australians than for other Australians (between 1.5 and three times as high).

The reporting of the Indigenous identifier in hospital records is not always complete, so the rates presented may underestimate true hospital use by Indigenous Australians (see **Methods and data sources** for more information).

## Hospitalisations for heart, stroke and vascular diseases<sup>(a)</sup> for Aboriginal and Torres Strait Islander peoples, 2001–02

	Indigenous Australian males				Indigenous Australian females			
	No.	% <sup>(b)</sup>	Rate <sup>(c)</sup>	Rate ratio <sup>(d)</sup>	No.	% <sup>(b)</sup>	Rate <sup>(c)</sup>	Rate ratio <sup>(d)</sup>
Acute rheumatic fever & chronic rheumatic heart disease	125	0.2	0.5	5.7	216	0.2	0.9	8.1
Coronary heart disease	1,568	1.9	15.9	1.4	1,243	1.1	11.6	2.2
Heart failure	516	0.6	5.9	2.4	507	0.5	5.7	3.1
Peripheral vascular disease	90	0.1	1.3	0.7	50	0.0	0.6	0.7
Stroke	238	0.3	2.8	1.2	304	0.3	3.4	1.9
Other heart, stroke and vascular diseases	951	1.2	8.7	0.9	1,028	0.9	8.3	1.0
<b>Total heart, stroke and vascular diseases</b>	<b>3,488</b>	<b>4.3</b>	<b>35.0</b>	<b>1.3</b>	<b>3,348</b>	<b>3.1</b>	<b>30.6</b>	<b>1.7</b>

(a) Data are for public and most private hospitals.

(b) Percentage of all Indigenous hospitalisations 2001–02.

(c) Rates are per 1,000 population and are directly age-standardised using the 2001 Australian population.

(d) Rate ratio is equal to the rate of hospitalisations identified as Indigenous divided by the rate of hospitalisations for other Australians.

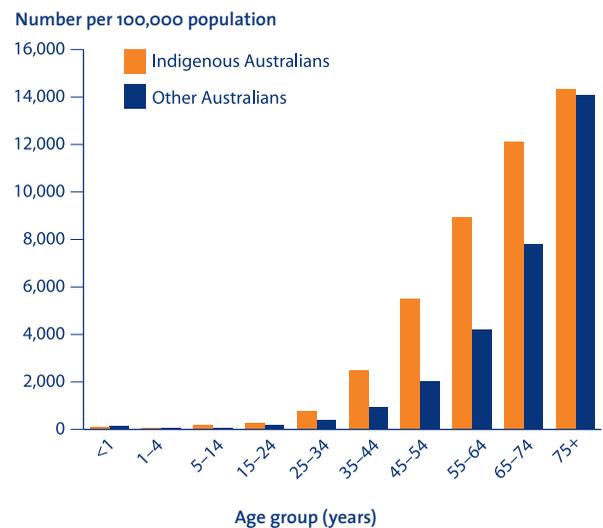
Source: AIHW National Hospital Morbidity Database.

### Sex and age

Indigenous Australian males were more likely to be hospitalised for heart, stroke and vascular diseases than Indigenous Australian females in 2001–02, a similar pattern to that observed for other Australians. However, Indigenous Australian females were 1.7 times as likely to be hospitalised for these conditions as other Australian females, while Indigenous Australian males were 1.3 times as likely.

Indigenous Australians were hospitalised for heart, stroke and vascular diseases at younger ages than other Australians—59% of all these hospitalisations occurred before the age of 65, compared with around 23% for other Australians. Hospitalisation rates for heart, stroke and vascular diseases exceeded those for other Australians in every age group. The greatest difference in age-specific rates occurred in the 35–54-year-old age group, where Indigenous hospitalisation rates were three times those of other Australians.

### Hospitalisations for heart, stroke and vascular diseases among Aboriginal and Torres Strait Islander peoples and other Australians, 2001–02



Source: AIHW National Hospital Morbidity Database.



### Length of stay

Of patients hospitalised for heart, stroke and vascular diseases, Indigenous Australians had a longer length of stay in hospital as other Australians. Excluding same-day stays, the average length of stay for Indigenous Australians was 7.2 days, and for other Australians, 5.3 days.

### Deaths

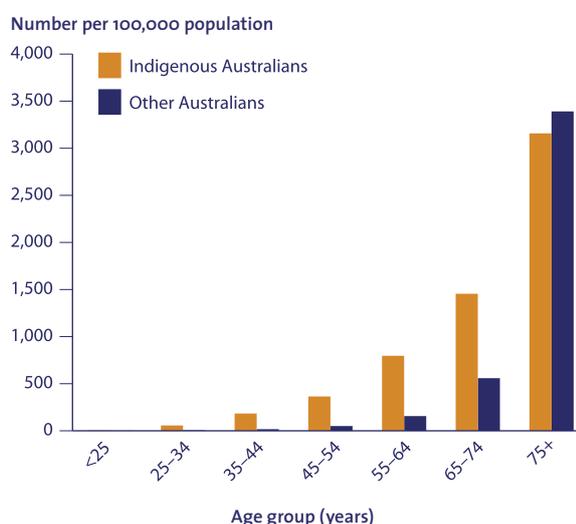
In 2000–02, heart, stroke and vascular diseases were the leading causes of death among Indigenous Australians in Queensland, Western Australia, South Australia and the Northern Territory<sup>2</sup>, accounting for 26% of all deaths among Indigenous Australians in these four jurisdictions. Indigenous Australians experienced higher death rates from heart, stroke and vascular diseases than other Australians—2.6 times those of other Australians. The largest disparity in death rates was for acute rheumatic fever and chronic rheumatic heart disease, where death rates were 19 times those of other Australians.

### Sex and age

Consistent with their younger age structure, Indigenous Australians died from heart, stroke and vascular diseases at younger ages than other

Australians—62% of such deaths occurred before the age of 65, compared with around 10% for other Australians. Death rates from heart, stroke and vascular diseases exceeded those of other Australians in every age group up to the age of 75 years. The greatest difference in age-specific death rates occurred in the 25–44-year age group, where death rates in Indigenous Australians were 10 times those of other Australians.

### Deaths from heart, stroke and vascular diseases among Aboriginal and Torres Strait Islander peoples and other Australians, 2000–02



Source: AIHW National Mortality Database.

### Deaths from heart, stroke and vascular diseases for Aboriginal and Torres Strait Islander peoples<sup>(a)</sup>, 2000–02

	Males		Females	
	No. deaths <sup>(b)</sup>	SMR <sup>(c)</sup>	No. deaths <sup>(b)</sup>	SMR <sup>(c)</sup>
Acute rheumatic fever & chronic rheumatic heart disease	6	16.6	12	21.1
Coronary heart disease	139	2.9	89	2.5
Heart failure	9	3.8	8	2.2
Peripheral vascular disease	3	0.8	4	1.3
Stroke	32	2.3	34	1.7
<b>Total heart, stroke and vascular diseases</b>	<b>222</b>	<b>2.8</b>	<b>172</b>	<b>2.4</b>

(a) Data are for Indigenous deaths for usual residents of Queensland, Western Australia, South Australia and Northern Territory.

(b) The number of deaths have been averaged over the period 2000–02.

(c) SMR (standardised mortality ratio) is the ratio of the observed number of deaths to the number of expected deaths if Indigenous Australians had experienced the same age–sex-specific death rates as other Australians.

Source: AIHW National Mortality Database.

<sup>2</sup> These states and territory are considered to have sufficient coverage of Indigenous Australian deaths.

## Risk factors for heart, stroke and vascular diseases

The risk factor profile of Aboriginal and Torres Strait Islander Australians is one reason for the considerably higher heart, stroke and vascular illness and death that this population group experiences when compared with other Australians. Several risk factors for heart, stroke and vascular diseases are more prevalent among Indigenous Australians than other Australians— tobacco smoking, insufficient physical activity, poor nutrition, harmful alcohol consumption, high blood pressure, and overweight and obesity.

Prevalence of risk factors for heart, stroke and vascular diseases among Indigenous Australians is discussed below with further details contained in the individual risk factor sections of this report.

### Tobacco smoking

Based on self-reports from the 2001 National Drug Strategy Household Survey, Indigenous Australians aged 14 years and over were twice as likely to smoke compared with other Australians (43% compared with 19%). Indigenous Australians were also less likely than other Australians to be former smokers or to have never smoked.

### Insufficient physical activity

Comparable data on levels of insufficient physical activity are not available for Indigenous Australians

### Nutrition

There are limited national data on the diet and nutritional status of Indigenous Australians. The diet of Indigenous Australians living in remote communities is typically high in energy and sugars, moderately high in fat and relatively low in complex carbohydrates, fibre, and fruits and vegetables. The limited availability and access to good quality, nutritious food that is affordable contributes to this problem. Bushfoods, once a source of considerable variety and nutrients, are now eaten only in small quantities. The diet of Indigenous Australians living in urban areas is more similar to that of other Australians than that of Aboriginals living in remote parts of Australia.

## Alcohol consumption

Based on self-reports from the 2001 National Drug Strategy Household Survey for people aged 14 years and over, around 10.5% of Indigenous males drank alcohol at 'high risk' levels compared with other Australian males (3.3%). Among females, there was no significant difference in the proportions drinking at 'high risk' levels. Indigenous Australians were three times more likely to consume alcohol at 'high risk' levels than other Australians (9.3% compared with 2.7%). However, Indigenous Australians were more likely to abstain from alcohol than other Australians.

### High blood pressure

There are no national data on measured blood pressure to assess the prevalence of high blood pressure among Indigenous Australians. However, based on self-reports from the 2001 National Health Survey<sup>3</sup>, for people of all ages, 14% of Indigenous Australians reported high blood pressure, compared with 10% of other Australians. Indigenous Australians reported high blood pressure from a younger age compared with other Australians.

### High blood cholesterol

There are no national data on measured blood cholesterol levels for Indigenous Australians.

### Overweight

Available data show that Indigenous Australians are more likely than other Australians to be overweight. While there are no national data on measured weight for Indigenous Australians, self-reported data are available from the 2001 National Health Survey<sup>3</sup>. Among people aged 18 years and over living in non-remote areas, 64% of Indigenous Australians were overweight compared with 50% of other Australians. The disparity in obesity rates in non-remote areas is even stronger—Indigenous Australians were nearly twice as likely to be obese as other Australians (31% compared with 16%).

<sup>3</sup> Differences between the Indigenous and non-Indigenous populations should be interpreted with caution as the Indigenous population was sampled over a six-month period and other Australians over a 10-month period; seasonal effects may be exaggerated in the Indigenous sample.



## Diabetes

Indigenous Australians have one of the highest rates of diabetes, especially Type 2, in the world. There are no national data on measured prevalence of diabetes among Indigenous Australians. However, based on self-reports from the 2001 National Health Survey<sup>3</sup>, the age-standardised prevalence of diabetes among Indigenous Australians was almost four times as high as among other Australians (11% compared with 3%). Indigenous Australians from remote areas were almost twice as likely as those from non-remote areas to report having diabetes (16% compared with 9%). Indigenous females were slightly more likely to report diabetes than Indigenous males (12% compared with 9%).

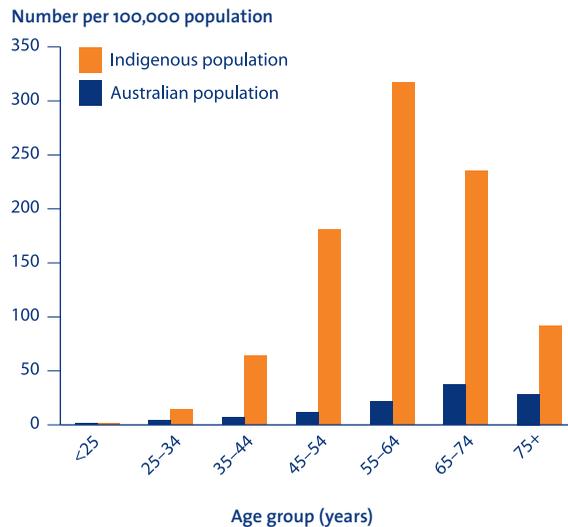
While in both Indigenous and other Australian populations the prevalence of diabetes is higher in older age groups, the prevalence among Indigenous Australians aged 35–44 years is almost as high as among other Australians aged 55 years and over.

## Kidney (renal) failure

Kidney failure is more common among Indigenous Australians than among other Australians. At the end of 2001, there were 643 Indigenous Australians with end-stage renal disease (ESRD) on dialysis, which represents seven times the age-standardised rate of all Australians for males and 11 times for females. Among people with ESRD in the ANZDATA registry, 16% of Indigenous Australians had a functioning kidney transplant, but for all Australians the proportion was 44% in 2001. There were 175 Indigenous Australians with ESRD who began kidney replacement treatment in 2001, which is six times the age-standardised rate in the total population for males and 11 times for females.

Indigenous Australians tend to develop ESRD at a younger age than other Australians. In 2001, nearly 90% of new Indigenous patients receiving treatment for ESRD were aged 64 years or under, compared with 49% in this age group among the rest of the patients.

## New patients starting treatment for ESRD in 2001



Source: ANZDATA 2002.

The age-standardised incidence rate of ESRD among Indigenous Australians is highest in remote areas, where it is up to 30 times the national incidence for all Australians. In urban areas the standardised incidence for Indigenous people is much lower, but it is still significantly higher than the national incidence. Almost half of Indigenous ESRD patients come from regions without dialysis or transplant facilities and 16% from regions with only satellite dialysis facilities. In addition, socioeconomic disadvantage is strongly associated with incidence of ESRD, and Indigenous Australians are more likely to be referred late for care and are less likely to receive a kidney transplant. Other factors that probably contribute to the excess kidney disease levels in this group are a high prevalence of diabetes, smoking and poor diet; a life exposure to repeated infection and inflammation that damage the kidneys; maternal malnutrition leading to reduced nephron number at birth; and inadequate access to effective preventive care, especially for high blood pressure and diabetes.

## Treatment and care

For Aboriginal and Torres Strait Islander peoples, treatment and care may be affected by a number of factors. These include distance to health services, the availability of transport to access services, and language and cultural differences.

Information on treatment and care of Indigenous Australians is limited. Presented here are data on care in general practice and use of selected cardiac procedures.

### General practice care of heart, stroke and vascular diseases and their risk factors

For the period 1998–99 to 2002–03, there were significant differences between private general practice visits by Aboriginal and Torres Strait Islander peoples and by all Australians. However, these data may underestimate GP care provided by Aboriginal Community Controlled Health Services. This is unlikely to explain all of the differences observed.

GPs managed heart, stroke and vascular conditions overall at significantly lower rates in encounters with Indigenous patients than in total encounters (13 per 100 versus 17 per 100). High blood pressure<sup>4</sup> was managed significantly less often at Indigenous encounters than at all encounters (6.7 per 100 versus 8.8 per 100). Given that one in five Indigenous Australians have heart, stroke and vascular diseases, the lower rates of management of these problems should be noted.

Diabetes was the most frequently managed problem at encounters with Indigenous Australians and it was 2.5 times as common as in the total population (7.1 per 100 Indigenous encounters versus 2.8 per 100 total encounters). The greater rate of management of diabetes in Indigenous patients reflects the high prevalence of the condition in this population and indicates that GPs play an important part in treating it for this group.

Among patients attending general practice between 1998–99 and 2002–03, Indigenous Australians were more likely to be overweight (62%) than all Australians (54%). Daily smoking was also much more common among Indigenous patients than in all patients (45% compared with 19%).

## Procedures

In 2000–01, Indigenous Australian males were less likely to receive procedures in hospital for heart, stroke and vascular diseases than other Australian males, while Indigenous Australian females were more likely to receive these procedures than other Australian females.

### Coronary artery bypass grafting

During 1998–01, there were 8% fewer CABG operations for Indigenous Australian males than for other Australian males. Among Indigenous Australian females the reverse was true, with CABG rates being 31% higher for Indigenous Australian females than for other Australian females. The disparity in operations between males and females is found for both Indigenous and other Australians—for Indigenous Australians operation rates in males were twice those of females, and for other Australians rates in males were four times those of females.

Between 1995–98 and 1998–01, CABG rates increased among both male and female Indigenous Australians—by 35% and 21% respectively. However, among other Australians, CABG rates declined by 9% over this period for both males and females.

### Coronary angioplasty

During 1998–01, there were 55% fewer coronary angioplasty procedures for males identified as Indigenous compared with other Australian males. Among Indigenous Australian females there were 16% more coronary angioplasty procedures than for other Australian females. The disparity between males and females in coronary angioplasty procedures is found for both Indigenous and other Australians—for Indigenous males and females, procedure rates in males were 1.7 times those of females, and for other Australians, rates in males were three times those of females.

Between 1995–98 and 1998–01, coronary angioplasty rates increased by 61% and 93% for Indigenous males and females, whereas for other Australians the rate increases (27% for males and 28% for females) were more modest.

4 Includes ICPC-2 codes K86 (hypertension, uncomplicated) and K87 (hypertension, complicated).



## Further reading

ABS 2002. 2001 national health survey: Aboriginal and Torres Strait Islander results, Australia. ABS Cat. No. 4715.o. Canberra: ABS.

ABS & AIHW 2003. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples. ABS Cat. No. 4704.o. Canberra: ABS.

AIHW: Davies J 2003. Coronary revascularisation in Australia, 2000. AIHW Cat. No. AUS 35. Canberra: AIHW (Bulletin No. 7).

AIHW: Britt H, Miller GC, Know S et al. 2003. General practice activity in Australia 2002–03. AIHW Cat. No. GEP 14. Canberra: AIHW (General Practice Series No. 14).

AIHW 2002. 2001 national drug strategy household survey: detailed findings. AIHW Cat. No. PHE 41. Canberra: AIHW (Drug Statistics Series No. 11).

NHMRC 2000. Nutrition in Aboriginal and Torres Strait Islander peoples. An information paper. Canberra: NHMRC.

