

## RISK FACTORS

Risk factors are characteristics or exposures that are associated with a greater risk of ill-health. For cardiovascular disease they include heredity and behavioural and physiological factors. Cardiovascular disease and its risk factors are strongly influenced by the circumstances in which people live and work.

Interaction between risk factors can lead to greater risks of cardiovascular disease in people who have more than one risk factor.

### WHAT ARE THE RISK FACTORS FOR CARDIOVASCULAR DISEASE?

Increasing age and male sex are risk factors for heart, stroke and vascular disease. That is, the risk for both males and females increases sharply with age. However, at any age the risk for males is greater than for females.

Risk factor	Coronary heart disease	Stroke
<b>Demographic and hereditary factors</b>		
Age	♥	♥
Sex	♥	—
Family history	♥	♥
<b>Behavioural risk factors</b>		
Physical inactivity	♥	♥
Tobacco smoking	♥	♥
Nutrition	♥	♥
<b>Physiological risk factors</b>		
High blood pressure	♥	♥
High blood cholesterol	♥	♥
Overweight	♥	♥
Diabetes	♥	♥
Non-valvular atrial fibrillation	—	♥

♥ substantial evidence of association between the risk factor and the disease.  
 — no known association.

Behavioural risk factors can influence physiological risk factors (e.g. poor diet and physical inactivity promote overweight, high blood pressure and high blood cholesterol). Behavioural and physiological risk factors can be modified, unlike heredity, sex and age.

Risk for a cardiovascular disease rises steadily with increasing risk factor values. People below the threshold level will still be at risk to some degree. This risk will be higher in people with more than one risk factor present.

### HOW MANY AUSTRALIANS HAVE A MODIFIABLE CARDIOVASCULAR DISEASE RISK FACTOR?

In 1995, over 10 million adult Australians (about 80% of the adult population) had at least one of the following risk factors: tobacco smoking, insufficient physical activity, high blood pressure, or overweight. This information is from the 1995 National Health and National Nutrition surveys. These surveys did not measure blood cholesterol and hence this risk factor is not included here.

#### Trends

Between 1980 and 1989 there was a decrease in the proportion of men and women with two or more major risk factors.

Over the past decade it appears that there have been reductions in the proportion of Australians who smoke or have high blood pressure, the proportion of people undertaking physical activity has remained relatively static, but the proportion of Australians who are overweight or obese has risen at an alarming rate.

### DID YOU *know*?

- People's social and economic circumstances influence their health and length of life.
- Men who smoke are 2.9 times more likely to have a heart attack than men who do not; men who smoke and have high blood pressure are 4.5 times more likely to have a heart attack than men who do not have either risk factor.
- 4 in 5 men and 3 in 4 women have at least one modifiable risk factor.

## Heart, stroke and vascular diseases

### Sex and age

In 1995, 84% of men and 74% of women had at least one major modifiable risk factor (i.e. tobacco smoking, high blood pressure, overweight, physical inactivity). Around 12% of men and 9% of women had 3 or more of these risk factors.

Prevalence of risk factors was low among younger Australians and generally increased with age, peaking around 'middle-age', after which it remained relatively stable. Over 90% of men aged 45–79 years and over 80% of women aged 55 years and over had at least one major modifiable risk factor.

### Socioeconomic groups

In 1995, 81% of women in the lowest socioeconomic group had a cardiovascular disease risk factor (i.e. tobacco smoking, high blood pressure, overweight, physical inactivity) compared with 68% in the highest group. Around 11% of women in the lowest socioeconomic group had 3 or more risk factors, compared with 5% of women in the highest group.

Men in the lowest socioeconomic group were over twice as likely to have 3 or more risk factors than were men in the highest group (13% and 6% respectively). However, for one or more risk factors, there was no significant difference between men in the lowest socioeconomic group (86%) and those in the highest group (81%).

### Indigenous Australians

There are no age-standardised national data to directly compare multiple risk factor prevalence rates in Indigenous and other Australians. For individual risk factors, however, Indigenous Australians are more likely to smoke tobacco, not participate in leisure-time physical activity and be obese than other Australians. In 1995, 8% of Indigenous Australians drank alcohol at harmful levels compared with 3% of other Australians.

### Urban, rural and remote areas

In 1995, there were no significant differences between prevalence of at least one risk factor (i.e. tobacco smoking, high blood pressure, overweight, physical inactivity) among people living in urban, rural or remote areas.

Although not significantly different from each other, almost 88% of men in remote areas of Australia had at least one risk factor, compared with 85% of men in rural and 83% of men in urban areas. Similarly, 77% of women in remote areas had at least one risk factor compared with 73% in rural and urban areas.

### States and Territories

In 1995, there were no significant differences in the prevalence of at least one risk factor (tobacco smoking, high blood pressure, overweight, physical inactivity) between the States and Territories. The highest rate was in Tasmania (83%) and the lowest was in the Northern Territory (73%).

## FURTHER INFORMATION

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### Detailed data

Refer to the **Statistical tables** section.

### Main data sources

1995 National Health Survey (Australian Bureau of Statistics).

1995 National Nutrition Survey (Australian Bureau of Statistics and Commonwealth Department of Health and Aged Care).

### References/further reading

Australian Bureau of Statistics (ABS) 1999. 1995 National Health Survey: Aboriginal and Torres Strait Islander results. ABS Cat. No. 4806.0. Canberra: ABS.

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## PHYSICAL INACTIVITY

Physical activity reduces the risk of coronary heart disease. People who do not participate in regular physical activity are almost twice as likely to die from coronary heart disease as those who participate. Insufficient physical activity is recognised as being as important as high blood pressure and high blood cholesterol in contributing to Australia's level of cardiovascular disease.

Evidence suggests that physical activity may also play a protective role against stroke. Leisure-time physical activity and vigorous work-related physical activity have been shown to lower the incidence of stroke.

Insufficient physical activity is likely to be associated with other risk factors for cardiovascular disease such as overweight, high blood pressure and high blood cholesterol. There is also evidence that people who increase their level of physical activity will reduce their levels of these risk factors.

### WHAT IS PHYSICAL ACTIVITY?

The US Surgeon General's Report on Physical Activity and Health recommends that at least 30 minutes of physical activity at a moderate intensity be carried out on most if not all days of the week to obtain a health benefit. Moderate physical activities include brisk walking, swimming, jogging, digging in the garden, and cycling.

### DID YOU *know?*

- Physical inactivity is also a risk factor for some cancers, type 2 diabetes, injury, osteoporosis, and mental health problems.
- At least thirty minutes of moderate physical activity on most days of the week will benefit health.
- Up to a third of new cases of diabetes could be prevented by physical activity.

Physical activity can be measured in different ways, so results from different surveys provide different estimates of the proportions of physically active Australians. The information presented here is derived from the Australian Bureau of Statistics National Health Survey, and is but one of several approaches. The measure enables trend information to be reported and reflects some components of physical activity, but does not reflect incidental or occupational physical activity. For the purposes of this report, people reporting no leisure-time physical activity for recreation or exercise in the two weeks before the interview are considered at risk.

### HOW MANY AUSTRALIANS ARE PHYSICALLY INACTIVE?

In 1995, over 4.5 million adult Australians (or over one-third of the adult population) reported doing no leisure-time physical activity in the two weeks before the interview.

#### Trends

There was little change in physical activity patterns during the 1980s and little change since. The proportion of people doing no physical activity during their leisure-time decreased only slightly between 1989–90 and 1995 from 36% to 34%. This fall was mainly due to an increase in physical activity among people aged 35–54 years.

Walking for physical activity increased in popularity during the 1990s with 45% of men and 53% of women walking for recreation or exercise in 1995 compared with 41% and 49% respectively in 1989–90.

#### Proportion not engaged in physical activity

Sex	1989–90	1995
	Per cent	
Men	35.6	33.5
Women	36.0	33.8

#### Notes

1. Age-standardised to the 1991 Australian population.
2. Includes persons aged 18 years and older.

Source: AIHW analysis of the 1989–90 and 1995 National Health Surveys.

### Sex and age

In 1995, rates of physical activity were highest among younger adults and generally decreased with age.

The proportions of people undertaking walking, moderate or vigorous physical activity for an average of 30 minutes at least 5 times per week were similar for men (18%) and women (17%). The highest rates occurred among people aged 65–69 years. An increase in physical activity by people aged 50–70 years may be due to increased leisure-time that typically occurs with reduced work and family responsibilities.

This pattern supports other evidence that ‘lack of time’ is a major barrier to leisure-time physical activity.

### Socioeconomic groups

In 1995, men and women in the lowest socioeconomic group were more likely to be physically inactive, 37% and 39% respectively, than those in the highest group, 27% and 29% respectively.

### Indigenous Australians<sup>1</sup>

Indigenous Australian adults are more likely than other Australian adults to report no physical activity in their leisure-time. In 1995, 40% of Indigenous Australians reported no leisure-time physical activity, compared with 34% of other Australians. Indigenous women of all ages were more likely than their other Australian counterparts to be physically inactive in their leisure-time. For men, however, this was true only for 18–44-year-olds.

### Urban, rural and remote areas

In 1995, rates of physical inactivity during leisure-time were higher among people living in remote areas of Australia (37%) than for people living in urban (34%) or rural (32%) areas.

### States and Territories

Rates of physical inactivity were highest in the Northern Territory (40%), and lowest in the Australian Capital Territory (25%) and Western Australia (29%).

## FURTHER INFORMATION

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### Detailed data

Refer to the **Statistical tables** section.

### Main data sources

1989–90, 1995 National Health Surveys (Australian Bureau of Statistics).

### References/further reading

Armstrong TP 1998. Monitoring trends in prevalence of physical activity in Australia (1989/90–1995). *Medicine and Science in Sports and Exercise* 30:S202.

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1. Excludes Indigenous Australians living in remote areas.

## TOBACCO SMOKING

Tobacco smoking increases the risk of coronary heart disease, stroke and peripheral vascular disease as well as a range of cancers and other diseases and conditions.

### WHAT IS TOBACCO SMOKING?

Smoking here refers to the daily smoking of tobacco products, including packet cigarettes, roll-your-own cigarettes, pipes and cigars.

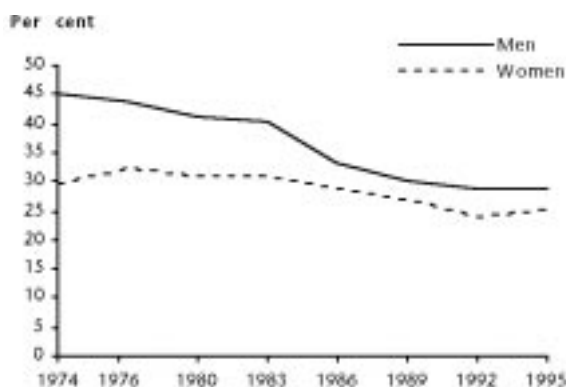
### HOW MANY AUSTRALIANS CURRENTLY SMOKE?

In 1995, almost 3.2 million adult Australians (around 24% of the adult population) were at risk of developing heart disease and other chronic conditions from smoking tobacco products.

#### Trends

Adult smoking rates have been declining since the 1960s and this trend has continued into the 1990s. National surveys by the Anti-Cancer Council of Victoria show that the rate of decline of current smokers has slowed in more recent years.

Smoking among 15-year-old school students has stayed relatively constant over the past 10 years.



Note: Age-standardised to the 1986 Australian population.

Sources: Hill 1988; Hill et al. 1991; Hill et al. 1995; Hill et al. 1998.

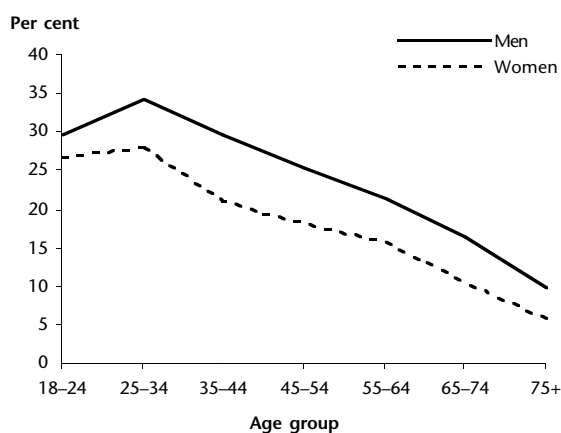
### People smoking 1974-95

#### Sex and age

In 1995, about 27% of men and 20% of women aged 18 years and over smoked. Men and women aged 25-29 years had the highest proportion of smokers at around 33%. After 30 years of age, the rate of smoking declined with increasing age to be lowest among men and women aged 80 years and over.

In 1995, the proportion of ex-smokers in Australia was 32% for men and 23% for women. The proportion of people reporting to have never smoked was 40% for men and 57% for women.

In 1996, 24% of 15-year-old school boys and 29% of 15-year-old school girls smoked tobacco.



Source: AIHW analysis of the 1995 National Health Survey.

### Smoking rate, 1995

#### Socioeconomic groups

Smoking is more common among people in the lowest socioeconomic group than those in higher socioeconomic groups. In 1995, around 19% of men and 15% of women in the highest socioeconomic group smoked, compared with 36% of men and 28% of women in the lowest socioeconomic group.

In 1995, unemployed men (46%) and women (33%) were much more likely to be smokers than employed men (27%) or women (21%).

### Indigenous Australians<sup>1</sup>

In 1995, adult Indigenous Australians were at least twice as likely to smoke as other Australian adults (51% compared with 23%). A higher proportion of Indigenous adults smoked than other Australians at every age. Smoking was more common among Indigenous men (56%) than women (46%).

### Urban, rural and remote areas

There was no significant difference between rates of smoking among people living in rural (26%) and remote (24%) areas compared with urban Australians (24%). Fifty per cent of urban Australians have never smoked, compared with 46% of those in rural and 47% of those in remote areas.

### States and Territories

In 1995, the highest rates of smoking occurred in the Northern Territory (32%). Lowest rates were found in the Australian Capital Territory (22%).

## DID YOU *know?*

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- One in four men and one in five women are at a greater risk of heart attack, stroke and peripheral vascular disease due to tobacco smoking.
- The rate of decline in current smoking has slowed in more recent years.
- Around 70,000 Australian teenagers start smoking each year.
- The estimated health system cost of smoking-related cardiovascular disease in 1989–90 was \$350 million.

## FURTHER INFORMATION

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Anti-Cancer Council of Victoria surveys.

### References/further reading

Australian Bureau of Statistics (ABS) 1999. 1995 National Health Survey: Aboriginal and Torres Strait Islander results. ABS Cat. No. 4806.0. Canberra: ABS.

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1. Excludes Indigenous Australians living in remote areas.

## NUTRITION

The effect of nutrition on the risk of coronary heart disease, stroke and peripheral vascular disease results from the combined effects of individual dietary factors. Cardiovascular disease cannot be attributed to any one dietary component alone. Nutrition affects several physiological conditions and other risk factors (e.g. blood pressure, blood cholesterol levels, antioxidant levels, overweight, diabetes).

### DIETARY RISK FACTORS FOR CARDIOVASCULAR DISEASE

#### Total intake of fat

High intakes of fat, especially saturated fats, are associated with elevated blood cholesterol levels, overweight and increased death from cardiovascular disease in populations where levels of physical activity are low. Total fat (e.g. saturated, monounsaturated, polyunsaturated) accounts for about 33% of the total energy intake of Australian adults. Although total dietary fat intake has reduced from around 37% in the 1980s, the current level is still above the National Health and Medical Research Council's recommended level of 30%.

#### Intake of saturated fatty acids

Among Australian adults, the contribution of saturated fat as a proportion of total energy intake has declined over the past decade. However, saturated fat still accounts for around 13% of total energy intake, higher than the recommended maximum level of 10%. Consumption of saturated fat is slightly higher among younger Australians than among older Australians. The major sources of saturated fatty acids in the adult diet are cheese, butter and margarine, pastries, milk and meat.

### DID YOU know?

- In 1995, only 37% of 19–24-year-old Australians reported eating fruit.
- Adults in rural and remote areas of Australia are more likely to consume fats and oils than those in urban areas.
- Heavy alcohol consumption increases risk of heart attack and stroke.

### Contribution of saturated fat as a proportion of total energy intake

Sex	1983	1995
	Per cent	
Men	15.9	12.7
Women	16.3	12.8

#### Notes

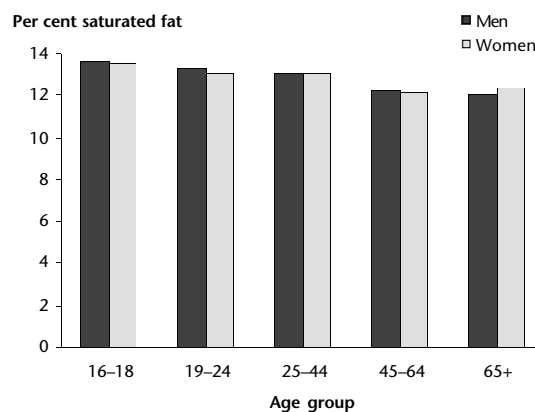
1. Age-standardised to the 1991 Australian population. 1983 estimates are for State capital cities only.

2. Includes persons aged 25–64.

Sources: 1983 National Dietary Survey of Adults; AIHW analysis of data from the 1995 National Nutrition Survey.

#### Intake of trans fatty acids

High intake of *trans* fatty acids increases blood cholesterol levels and risk of coronary heart disease. The major sources of *trans* fatty acids are fat spreads (e.g. some but not all margarines), meat and meat products. Currently there are no national data to assess *trans* fatty acid intake among Australians.



Source: ABS & DHFS 1997.

### Saturated fat as a proportion of total energy intake, 1995

### Intake of dietary cholesterol

The major sources of dietary cholesterol are eggs and meat. In 1995 the mean daily intake of dietary cholesterol among Australian men was 358 mg, and among women, 240 mg. There are no Australian recommendations for dietary cholesterol intake, however, recommendations for the United States are that less than 300 mg of dietary cholesterol be consumed each day.

### High consumption of alcohol

High intake of alcohol (and particularly binge drinking) is associated with higher blood pressure and death from stroke. Evidence shows that each increment of 10 g of alcohol consumed per day increases systolic blood pressure by an average of 1–2 mmHg and diastolic blood pressure by 1 mmHg.

### Abstinence from alcohol

Many studies indicate that abstinence from alcohol increases risk of heart attack and death from coronary heart disease. Although moderate alcohol consumption is associated with a reduced risk of coronary heart disease, it is associated with an increase in overall risk of illness and death. The cardiovascular health benefit of low to moderate alcohol consumption (1–2 drinks per day) relates mainly to men over 40 years of age and post-menopausal women.

In 1995, 45% of Australian adults reported that they do not drink alcohol.

### High consumption of salt

High salt consumption in some people is associated with an increase in blood pressure and possibly risk of cardiovascular illness and death. No national data exist to assess levels of salt consumption among Australians. However, in one study conducted in Hobart, only 6% of men and 36% of women were below the recommended maximum intake of 100 mmol/day.

## FURTHER INFORMATION

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### Detailed data

Refer to the **Statistical tables** section.

### Main data sources

1983 National Dietary Survey of Adults (Commonwealth Department of Health and National Heart Foundation).

1995 National Health Survey (Australian Bureau of Statistics).

1995 National Nutrition Survey (Australian Bureau of Statistics and Commonwealth Department of Health and Aged Care).

### References/further reading

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## HIGH BLOOD PRESSURE

High blood pressure is a major risk factor for coronary heart disease, stroke, heart failure and peripheral vascular disease. The risk of disease increases as the level of blood pressure increases. When high blood pressure is controlled by medication, the risk of cardiovascular disease is reduced, but not to the levels of unaffected people.

Research has shown that high blood pressure is associated with other cardiovascular risk factors, including high cholesterol levels, physical inactivity, overweight and diabetes. Dietary salt intake and mental stress are also factors that may influence blood pressure.

### WHAT IS HIGH BLOOD PRESSURE?

Blood pressure represents the forces exerted by blood on the walls of the arteries and is written as systolic/diastolic (e.g. 120/80 mmHg, stated as '120 over 80').

In people with arteries 'hardened' by deposits of fatty material and minerals, or with great resistance to blood flow resulting from kidney malfunction or stress, systolic blood pressure may increase from 120 to around 300 mmHg and diastolic pressure may exceed 120 mmHg.

For the purposes of this report, high blood pressure is defined as:

- systolic blood pressure greater than or equal to 160 mmHg and/or
- diastolic blood pressure greater than or equal to 95 mmHg and/or,
- receiving treatment for high blood pressure.

### DID YOU *know?*

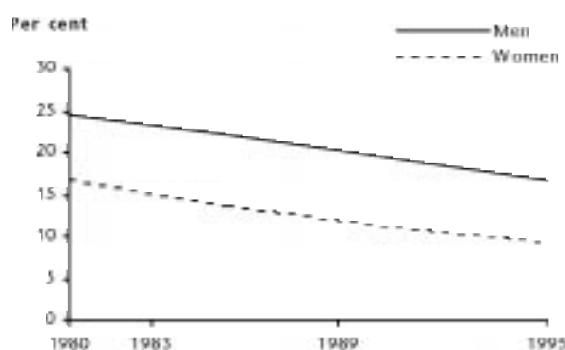
- High blood pressure can increase the risk of cardiovascular disease by 2 to 4 times.
- Both systolic and diastolic blood pressures are predictors of cardiovascular disease, although systolic blood pressure is a stronger predictor of death due to coronary heart disease.

### HOW MANY AUSTRALIANS HAVE HIGH BLOOD PRESSURE?

In 1995, around 2.2 million adult Australians (17% of the adult population) had high blood pressure.

#### Trends

There have been significant declines in the proportion of people with high blood pressure and/or receiving treatment since the 1980s.



#### Notes

1. Age-standardised to the 1991 Australian population.
2. Includes persons aged 25-64.

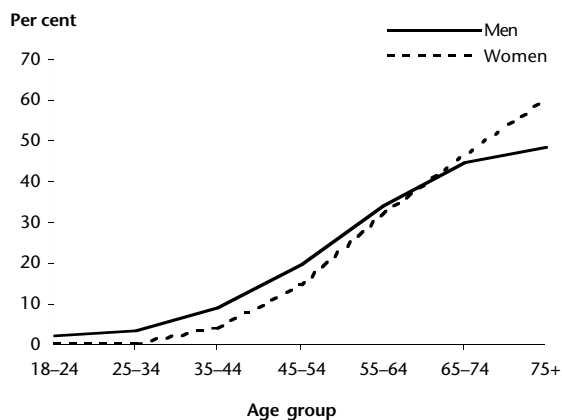
Sources: AIHW analysis of the Risk Factor Prevalence Study and 1995 National Nutrition Survey.

### Rates of high blood pressure, 1980–95

There has also been a significant decline in average blood pressure levels during the same period. This decline occurred equally among those not on medication for high blood pressure as among those on treatment.

#### Sex and age

In 1995, 17% of men and 15% of women aged 18 years and over had high blood pressure. The proportion of men and women with high blood pressure increases with age. Among people aged 65–69 years, about 41% had high blood pressure.



Source: AIHW analysis of the 1995 National Nutrition Survey.

### People with high blood pressure, 1995

#### Socioeconomic groups

In 1995, there was a difference in the prevalence of high blood pressure among women in the lowest socioeconomic group (18%) and those in the highest group (13%). However, there was no significant difference in the prevalence of high blood pressure among men in the lowest socioeconomic group (18%) and those in the highest group (16%).

Data from 1989 showed that high blood pressure was more common among people with low levels of education, and among single men living alone compared with men with partners and/or dependent children.

#### Indigenous Australians

There are no measured national data to assess the rates of high blood pressure among Indigenous Australians. Data from the Kimberley region suggest that high blood pressure is 2 to 3 times more common among Indigenous people than among other Australians. Among the same group of Indigenous people, drinking alcohol, obesity and high blood cholesterol levels were associated with high blood pressure.

#### Urban, rural and remote areas

In 1995 there were no significant differences in the prevalence of high blood pressure between urban, rural and remote areas. Around 15% of urban and rural women had high blood pressure and/or were on treatment for it, compared with 16% of women living in remote areas. For men, estimated rates were 17% in urban areas and 18%–19% in rural and remote regions.

#### States and Territories

In 1995 there were no significant differences in the prevalence of high blood pressure between the States and Territories. Highest rates were in Tasmania and South Australia (18%), and the lowest were in the Northern Territory (13%).

## FURTHER INFORMATION

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#### Detailed data

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#### Main data sources

1995 National Nutrition Survey (Australian Bureau of Statistics and Commonwealth Department of Health and Aged Care).

#### References/further reading

Australian Institute of Health and Welfare (AIHW) 1998. Australia's health 1998: the sixth biennial health report of the Australian Institute of Health and Welfare. AIHW Cat. No. AUS 10. Canberra: AIHW.

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## HIGH BLOOD CHOLESTEROL

High blood cholesterol is a major risk factor for coronary heart disease and stroke. It is the main cause of the process by which the blood vessels that supply the heart and other parts of the body become clogged. Risk of heart disease increases steadily from a low base with increasing blood cholesterol levels.

Saturated fat in the diet is the main factor that raises blood cholesterol levels. Cholesterol in foods can also raise blood cholesterol levels, but less than saturated fat does. Heredity affects blood cholesterol and a few people have high cholesterol levels regardless of their saturated fat and cholesterol dietary intake.

A recent Australian study has shown that the cholesterol lowering drug treatment pravastatin reduces death and illness from cardiovascular disease compared with placebo treatment.

### WHAT IS HIGH BLOOD CHOLESTEROL?

Total blood cholesterol levels above 5.5 mmol/L are an indication of a greatly increased risk of developing coronary heart disease. Levels above 6.5 mmol/L are considered to indicate extremely high risk.

### HOW MANY AUSTRALIANS HAVE HIGH BLOOD CHOLESTEROL?

The last national survey to assess blood cholesterol levels in Australia was conducted in 1989 by the National Heart Foundation. At that time it was estimated that over 4.5 million Australian adults (aged 20–69 years) had higher than desirable cholesterol levels. There are no national data since this survey.

### DID YOU *know?*

- For children, high blood cholesterol is defined as a level of 4.5 mmol/L or greater.
- People with high blood cholesterol feel perfectly well and will usually have no warning signs that they are at risk of heart disease.
- Highly effective drugs to lower high blood cholesterol are now available.
- Dispensing pharmacy drugs to lower blood cholesterol increased over the period 1990–97 from 1.2 million to 6.1 million prescriptions.

### Trends

There were no clear changes in the levels of blood cholesterol during the 1980s and there are no later data on trends during the 1990s. The proportion of people with elevated blood cholesterol levels did not decline during that period.

### Average blood cholesterol levels, 1980–89

Sex	1980	1983		1989
		mmol/L		
Men	5.72	5.67	5.66	5.66
Women	5.68	5.63	5.55	5.55

#### Notes

1. Estimates adjusted for age.

2. Includes persons aged 25–64.

Source: Bennett & Magnus 1994.

### Sex and age

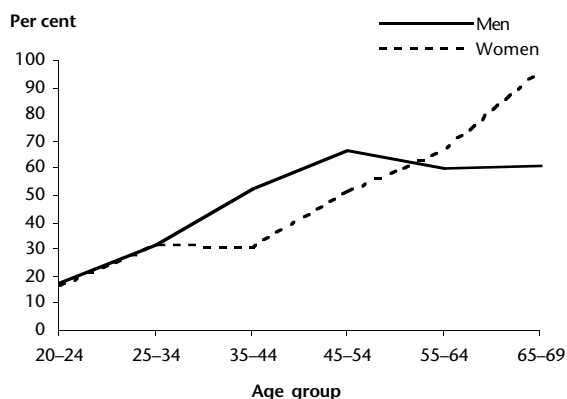
In 1989, over 47% of men and 39% of women aged 20–69 years had blood cholesterol levels above 5.5 mmol/L.

In men there was a rapid increase in the prevalence of elevated total cholesterol after age 34. In women, the increase occurred a decade later, after age 44, and the level exceeded that of men after the age of 55.

In terms of those at very high risk of cardiovascular disease, over 15% of men and women (aged 20–69) had blood cholesterol levels of 6.5 mmol/L or more.

### Socioeconomic groups

There are no strong associations between cholesterol levels and socioeconomic status. However, analysis of data from 1989 showed that high blood cholesterol ( $\geq 6.5$  mmol/L) was more common among unemployed women (25–64 years) than among women in full-time employment. Among men aged 25–64 years, those living alone or previously married had around 1.5 times higher rate for elevated blood cholesterol ( $\geq 6.5$  mmol/L) than those with partners or dependents.



Note: Blood cholesterol levels  $\geq 5.5$  mmol/L.

Source: RFPSMC 1990.

### People with high blood cholesterol, 1989

#### Indigenous Australians

There are no national data on blood cholesterol levels among Indigenous Australians. A New South Wales survey on cardiovascular risk factors showed that a greater proportion of Indigenous women in Wilcannia had cholesterol levels above 6.5 mmol/L compared with other Australian women. However, other studies have shown no difference in cholesterol levels between Indigenous and other Australians.

#### Urban, rural and remote areas

There are no national data on blood cholesterol levels across urban, rural and remote areas of Australia.

#### States and Territories

Data are available only for 1989 for the capital cities of each State and Territory. Hobart had the highest proportion of adults (aged 20–69) with cholesterol levels above 5.5 mmol/L (60% of men and 53% of women) compared with other Australian capitals. The lowest prevalence of high cholesterol for men was in Melbourne (42%) and for women in Darwin (36%).

## FURTHER INFORMATION

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### Detailed data

Refer to the **Statistical tables** section.

### Main data sources

1980, 1983, 1989 Risk Factor Prevalence Surveys (National Heart Foundation).

### References/further reading

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## OVERWEIGHT AND OBESITY

People who are overweight or obese have a higher risk of ill-health including coronary heart disease, stroke, heart failure, and type 2 diabetes. Overweight and obesity is also associated with high blood pressure and high blood cholesterol. Life expectancy is reduced by obesity, mainly through the effects of increased body fat on related conditions.

Evidence that reducing weight reduces the risk of ill health and death from cardiovascular disease is inconclusive. However, among those who are overweight, weight loss reduces the incidence and severity of high blood pressure, high blood cholesterol and diabetes.

### WHAT IS OVERWEIGHT AND OBESITY?

To assess the numbers of people who are overweight or obese in the population, the body mass index (BMI) is used. BMI is calculated by weight (kg) divided by height squared (m). A BMI of 25 or greater indicates overweight, and 30 or greater indicates obesity.

### HOW MANY AUSTRALIANS ARE OVERWEIGHT?

In 1995, around 7.4 million adult Australians (around 56% of the adult population) were overweight (BMI  $\geq$  25). Almost 2.5 million (or 19% of the adult population) of those were obese (BMI  $\geq$  30).

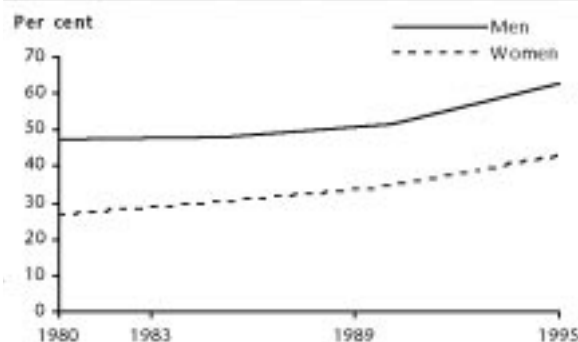
## DID YOU *know?*

- Overweight and obesity are also related to other health conditions such as some cancers, type 2 diabetes, gallstones, sleep apnoea, osteoarthritis and reproductive problems among women.
- On average, women in 1995 weighed 4.8 kg more than their counterparts in 1980, and men 3.6 kg more.
- Obese children tend to become obese adults.
- State surveys suggest that the proportion of overweight children is also increasing.

### Trends

There have been significant increases in the proportions of overweight and obese Australians over the last 15 years. Trend data (from Australian capital cities only) indicate that the proportion of overweight women aged between 25 and 64 years has increased from 27% in 1980 to 43% in 1995.

The proportion of overweight men in that age group increased from 48% to 63% over the same period. The proportion of obese men in that age group has increased dramatically from 8% in 1980 to 18% in 1995 and the proportion of obese women has increased from 7% to 16%.



#### Notes

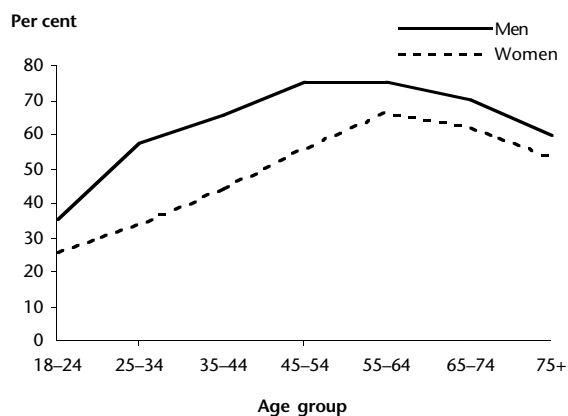
1. Age-standardised to the 1991 Australian population.
2. Includes persons aged 25–64.

Sources: AIHW analysis of the 1980, 1983, 1989 Risk Factor Prevalence Survey and 1995 National Nutrition Survey.

### Rate of overweight people, 1980–95

#### Sex and age

In 1995, men were more likely to be overweight than were women. Around 64% of men and 49% of women aged 18 years and over were overweight. The proportion of overweight people increased with age and peaked at 50–54 years for men (79%) and 55–64 years for women (68%). Around 18% of adult Australians were obese.



Source: AIHW analysis of the 1995 National Nutrition Survey.

### Overweight people, 1995

#### Socioeconomic groups

Being overweight or obese is more common among women in lower socioeconomic groups. In 1995, around 53% of women in the lowest socioeconomic group were overweight, compared with 44% of women in the highest socioeconomic group.

In 1995 there was no significant difference among the rate of overweight men in the highest and lowest socioeconomic groups (around 61%).

#### Indigenous Australians

From data collected in 1994 (Indigenous Australians) and 1995 (all Australians) there was little difference between the age-adjusted proportion of overweight Indigenous Australian men (62%) and all Australian men (63%). However, almost 25% of those Indigenous men were obese, a rate somewhat higher than that for all Australian men (18%).

Almost 60% of Indigenous women were overweight, a rate much higher than seen among all Australian women (49%). Rates of obesity among Indigenous women were also much higher than among all Australian women (30% compared with 18%).

#### Urban, rural and remote areas

In 1995 the majority (53%) of women living in remote areas were overweight. In comparison, around 47% of women living in urban and rural areas were overweight. For men, there was no significant difference, with 65% of men in remote and rural areas being overweight compared with 63% in urban areas.

#### States and Territories

In 1995, there were no significant differences between the proportions of overweight and obese people in the States and Territories. The rate of overweight ranged from 61% in Tasmania to 49% in the Northern Territory.

## FURTHER INFORMATION

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#### Detailed data

Refer to the **Statistical tables** section.

#### Main data sources

1994 National Aboriginal and Torres Strait Islander Survey (Australian Bureau of Statistics).

1995 National Nutrition Survey (Australian Bureau of Statistics and Commonwealth Department Health and Aged Care).

1980–1989 Risk Factor Prevalence Study (National Heart Foundation).

#### References/further reading

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## DIABETES

People with diabetes are at an increased risk of developing coronary heart disease, stroke and peripheral vascular disease.

### WHAT IS DIABETES?

Diabetes is a condition in which the body makes too little of the hormone insulin or cannot use it properly. This disturbs the body's main energy processes. The two most common types of diabetes are type 1 (also known as insulin-dependent diabetes mellitus, or IDDM) and type 2 (also known as non-insulin-dependent diabetes mellitus, or NIDDM).

Type 1 diabetes occurs when the body does not produce any insulin, which helps the body use sugar, glucose and other carbohydrates. It generally occurs in people under the age of 40 years. People with type 1 diabetes must take daily insulin and follow a careful diet to stay healthy.

Type 2 diabetes, which accounts for about 85–90% of all diabetes, is a disorder resulting from the body's inability to make enough, or to properly use, insulin. Type 2 diabetes is usually associated with obesity and other cardiovascular risk factors.

### HOW MANY AUSTRALIANS HAVE DIABETES?

There are no national estimates of the prevalence of diabetes based on blood glucose testing. In 1995, over 350,000 Australians (2% of the population) reported having type 1 or type 2 diabetes. Self-reported diabetes underestimates the true prevalence of the condition. Studies suggest that there is one undiagnosed person for each known case of type 2 diabetes.

## DID YOU *know?*

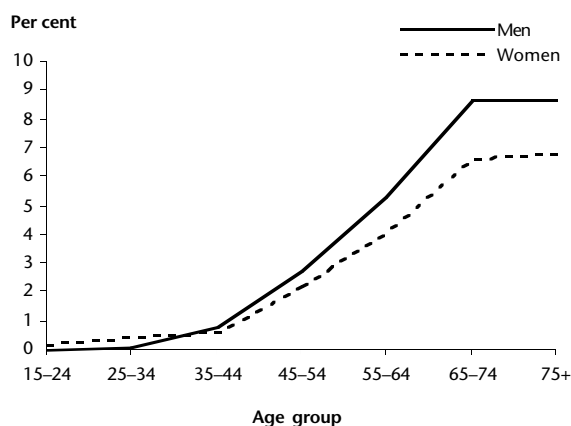
- Diabetes causes:
  - Blindness
  - High blood pressure
  - Limb amputation
  - Impotency in men
  - Kidney complications
  - Heart disease and stroke—risk of these conditions are 2–5 times higher among diabetics than non-diabetic individuals.
- Diabetes may develop during pregnancy.

### Trends

There are no national data to assess time trends in the prevalence of diabetes.

### Sex and age

Type 2 diabetes rates increase with age, with a greater increase after 40 years of age. In 1995, from self-reported data, prevalence increased from 0.1% among people aged less than 15 years to 8% among those aged 75 years or older. The increase in prevalence after 40 years of age was greater among males than females.



Source: AIHW analysis of the 1995 National Health Survey.

### People with type 2 diabetes, 1995

#### Socioeconomic groups

In 1995, Australians in the lowest socioeconomic group had higher rates of type 2 diabetes than people in higher socioeconomic groups. Women in the lowest socioeconomic group (2.5%) were 2.5 times as likely to report diabetes than those in the highest group (1.0%). Men in the lowest socioeconomic group had a rate of type 2 diabetes of 2.3%, compared with 1.5% for men in the highest group.

Self-reported type 2 diabetes is also associated with employment. In 1995, unemployed men and those not in the labour force reported rates of type 2 diabetes that were 2–3 times that of employed men. The differences were more marked for women, with unemployed women reporting over 13 times the rate of type 2 diabetes (8%) than did employed women (0.6%).

### Indigenous Australians

Indigenous Australians have one of the highest rates of type 2 diabetes in the world. In 1995, self-reported diabetes was 7–8 times higher among Indigenous Australians than other Australians among those aged 25–55 years. The rates were more than twice as high among those aged 55 years or more.<sup>1</sup> However, other evidence suggests that the overall prevalence of diabetes among Indigenous adults could be as high as 10–30% (i.e. 2–4 times that of other Australians). It is not clear why diabetes is so common among Indigenous Australians, however, it is thought to have a genetic basis coupled with the rapid change from a traditional way of life to a more 'westernised' lifestyle. This lifestyle is marked by decreased physical activity and a high-fat, low-fibre diet that promotes obesity, high blood cholesterol and high blood pressure.

### Urban, rural and remote areas

In 1995, there were no significant differences between the reported rates of type 2 diabetes among people from urban, rural or remote areas of Australia.

### States and Territories

In 1995, there were no significant differences in reported type 2 diabetes across the States and Territories.

### Non-English-speaking backgrounds

Certain migrant groups have a high prevalence of diabetes. In particular, diabetes is very common among Micronesians, Polynesians and Melanesian Islanders, migrant Asian Indians and Chinese, and people from Southern Europe.

## FURTHER INFORMATION

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### Detailed data

Refer to the **Statistical tables** section.

### Main data sources

1995 National Health Survey (Australian Bureau of Statistics).

### References/further reading

Australian Bureau of Statistics (ABS) 1999. 1995 National Health Survey: Aboriginal and Torres Strait Islander results. ABS Cat. No. 4806.0. Canberra: ABS.

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1. Excludes Indigenous Australians living in remote areas.