



## Risk factors to health

Web report | Last updated: 07 Aug 2017 | Topic: [Risk factors](#)

### About

Health risk factors are attributes, characteristics or exposures that increase the likelihood of a person developing a disease or health disorder. Behavioural risk factors are those that individuals have the most ability to modify. Biomedical risk factors are bodily states that are often influenced by behavioural risk factors.

Cat. no: WEB 195

#### Findings from this report:

- Almost 1 in 8 Australian adults (13%) smoked daily in 2016
  - 1 in 5 Australian adults (18%) consumed more than 2 standard drinks per day in 2016—a decrease from 22% in 2007
  - Over 1 in 2 Australian adults aged 18-64 years (52%) were not sufficiently active in 2014-15—down from 56% in 2011-12
  - Almost 2 in 3 Australian adults (63%) were overweight or obese in 2014-15, similar to 2011-12
- 



## Risk factors and disease burden

To ensure our health system is aligned to our country's health challenges, policy makers must be able to compare the effects of different conditions that cause ill-health and premature death. Burden of disease analysis considers both the non-fatal burden (impact of ill-health) and fatal burden (impact of premature death) of a comprehensive list of diseases and injuries, and quantifies the contribution of various risk factors to the total burden as well as to individual diseases and injuries.

The Australian Burden of Disease Study 2011 found the single leading risks factors contributing to disease burden were:

1. tobacco use (accounting for 9.0% of the total burden)
2. high body mass index (BMI) (related to overweight and obesity) (7.0% based on enhanced analysis by the AIHW published in 2017 which used updated evidence of diseases associated with overweight and obesity and enhanced modelling techniques)
3. alcohol use (5.1%)
4. physical inactivity (5.0%)
5. high blood pressure (4.9%) [1, 2].

In addition, an analysis of the joint effect of all dietary risks suggested that they accounted for around 7.0% of disease burden.

There were 29 risk factors included in this study. All these risk factors combined (the joint effect) contributes greatly to the burden for endocrine disorders, cardiovascular diseases, injuries, kidney and urinary disease and cancer. The joint effect of all the risk factors included in this study accounted for 31% of the total burden of disease and injury in Australia in 2011. This illustrates the potential for health gain through disease and injury prevention by reducing exposure to these risk factors [1].

Enhanced analysis by the AIHW found that overweight and obesity contributed to 7.0% of the disease burden in Australia in 2011 [2]. This is due to updated evidence of diseases associated with overweight and obesity and enhanced modelling techniques.

### References

1. AIHW 2016. [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2011](#). Australian Burden of Disease Study series no. 3. Cat. no. BOD 4. Canberra: AIHW.
2. AIHW 2017. [Impact of overweight and obesity as a risk factor for chronic conditions](#). Australian Burden of Disease Study series no. 11. Cat. no. BOD 12. Canberra: AIHW.

## Tobacco smoking

Smoking is the single most important preventable cause of ill health and death in Australia [1]. Tobacco smoke contains over 7,000 chemicals, of which over 70 cause cancer. When tobacco smoke is inhaled, these chemicals enter the lungs and spread through the body via the lymphatic system [2].

Smoking is linked to a range of conditions including various cancers, cardiovascular diseases, type 2 diabetes, hip fractures and reproductive problems in women [2]. Inhaling environmental tobacco smoke or second-hand smoke [3] is also associated with harmful effects.

A number of nationally representative data sources are available to analyse recent trends in tobacco smoking. The [Australian Institute of Health and Welfare \(AIHW\) National Drug Strategy Household Survey \(NDSHS\)](#) and the [Australian Bureau of Statistics \(ABS\) National Health Survey \(NHS\)](#) have both collected data on tobacco smoking from people aged 18 or over for a number of years. The NHS also collected data from people aged 15-17 from 2007-08 and the NDSHS also collected data from people aged 14-17 from 1985 and from people aged 12-13 from 2004.

Comparisons of data from the NDSHS and NHS show variations in estimates for tobacco smoking, but similar trends. For more information on the technical details of these two surveys, please see [technical notes](#). In this section, total population prevalence estimates and trends are presented for both the NHS and NDSHS, however the remainder of the results by age and population groups are derived from the NHS to ensure consistency in the data source for all risk factors presented here.

### Box 1: How is tobacco smoking measured?

Tobacco smoking is the smoking of tobacco products, including packet cigarettes, roll-your-own cigarettes, cigars or pipes.

The Australian Bureau of Statistics (ABS) 2014–15 National Health Survey (NHS) collected information on tobacco smoking from approximately 19,000 respondents [4].

The 2016 National Drug Strategy Household Survey (NDSHS) collected information from almost 24,000 people across Australia on their tobacco, alcohol and illicit drug use, attitudes and opinions [5].

In both surveys, people were asked whether they had ever smoked, whether they were ex-smokers or had never smoked, and about the frequency of their smoking and the quantity and type of tobacco smoked.

Since daily smoking presents the greatest health risk, the results presented here relate to adults aged 18 and over who reported being daily smokers at the time of the survey.

### Who currently smokes?

Based on self-reported data from the [ABS 2014-15 NHS](#), about 1 in 7 people aged 18 and over (14.5%) smoked daily. Overall, a higher proportion of men (16.9%) smoked than women (12.1%).

Based on self-reported data from the 2016 NDSHS, a slightly lower proportion—about 1 in 8 people aged 18 or older—were daily smokers (12.8%). A higher proportion of men (14.6%) smoked daily than women (11.2%)[5].

After adjusting for differences in the age structure of the population over time, both surveys showed a decline in the rate of daily smoking among adults over a similar period.

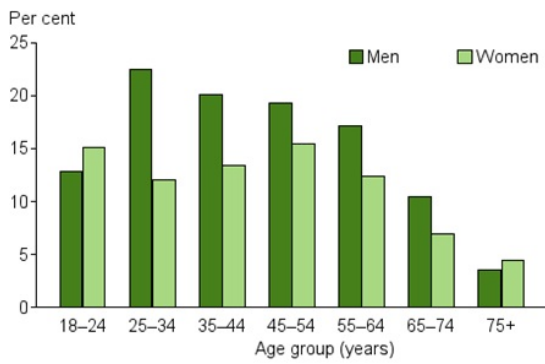
- For the NHS daily smoking rates decreased from 19.1% in 2007-08 to 14.7% in 2014-15.
- For the NDSHS daily smoking rates decreased from 17.5% in 2007 to 12.8% in 2016.

### Smoking by age and sex

Based on the results of the ABS 2014-15 NHS, the greatest difference between the sexes was among 25-34 year olds where smoking among men was at its highest (22.5% compared with 12.1% for women) (Figure 1).

Among older people, daily smoking rates decreased with age and were lowest at age 75 and over—3.6% for men and 4.5% for women.

**Figure 1: Prevalence of daily smoking in persons aged 18 and over, by sex, 2014-15**

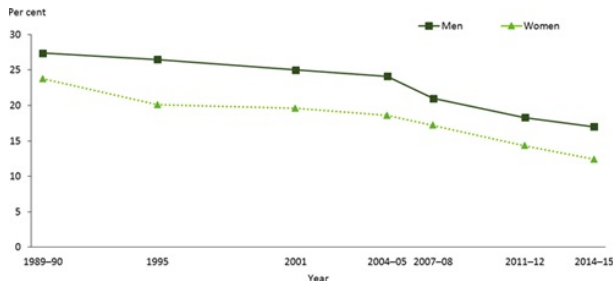


Source: ABS 2015. National Health Survey: First Results, 2014-15. ABS cat. no. 4364.0.55.001. Canberra: Australian Bureau of Statistics (see [source data](#)).

## Trends in daily smoking

In 1989-90, 27.4% of men and 23.8% of women aged 18 and over smoked daily, which fell to 17.0% for men and 12.4% for women in 2014-15 (age-standardised; Figure 2). Australia's suite of tobacco control measures have played a substantial role in reducing smoking prevalence among adults. These control measures include: stronger smoke-free laws, tobacco price increases, plain packaging of tobacco products, graphic health warning labels, provision of support for smokers to quit and greater exposure to mass media campaigns [6]. A decline in uptake of smoking in younger adults since 2001 may have also contributed to a reduction in smoking prevalence [5].

Figure 2: Prevalence of daily smoking in persons aged 18 and over, by sex, 1989-90 to 2014-15



Note: Age-standardised to the 2001 Australian population.

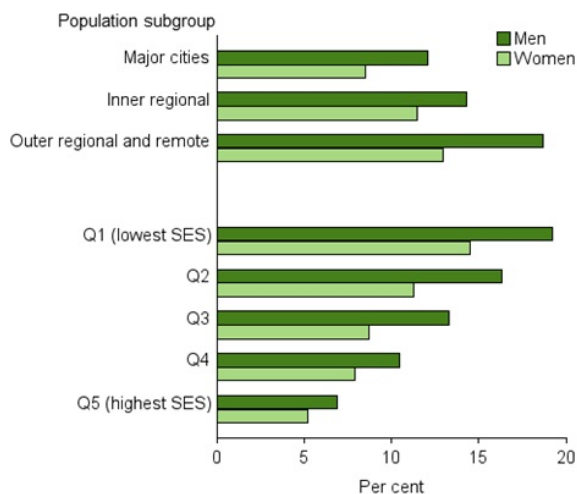
Source: AIHW 2012. Risk factor trends: age patterns in key health risk factors over time. Cat. no. PHE 166. Canberra: Australian Institute of Health and Welfare; and ABS 2015. National Health Survey: First Results, 2014-15. ABS cat. no. 4364.0.55.001. Canberra: Australian Bureau of Statistics (see [source data](#)).

## Inequalities

The proportion of adults who smoke daily differs across geographic areas and socioeconomic groups (Figure 3). Adults in *Outer regional and remote* areas were 1.6 times as likely to be daily smokers as those in *Major cities* (20.9% compared with 13.0%).

Adults living in the most disadvantaged areas were 2.7 times as likely to smoke daily as those living in the least disadvantaged areas (21.3% compared with 7.8%).

Figure 3: Prevalence of daily smoking in persons aged 18 and over, by sex, by selected population characteristics, 2014-15



Note: Q1-Q5 refers to area-based quintiles of socioeconomic position, based on the ABS Index of Relative Socio-Economic Disadvantage (IRSD) [7].

Source: AIHW analysis of ABS Microdata: National Health Survey, 2014-15.

## International comparisons

Daily smoking rates in Australia are around the lowest among Organisation for Economic Cooperation and Development (OECD) countries. In 2014 (or the nearest year), 13.0% of the population aged 15 and over in Australia smoked, compared to 19.0% in the United Kingdom, 14.0% in Canada and 12.9% in the United States. Australia's rate was well below the average across 34 OECD countries (19.3%) [8].

## Source data

- [Risk factors prevalence—Table 4.](#)

## References

1. AIHW (Australian Institute of Health and Welfare) 2012. [Risk factors contributing to chronic disease](#). Cat. no. PHE 157. Canberra: Australian Institute of Health and Welfare.
2. (USDHHS) U.S. Department of Health and Human Services 2014. [The Health Consequences of Smoking—50 years of progress. A report of the Surgeon General](#). Atlanta: U.S. Department of Health and Human Services.
3. Eriksen M & Whitney C 2013. Risk factors: tobacco. In: McQueen DV (ed.). [Global handbook on noncommunicable disease and health promotion](#). Springer, NY, 115-36.
4. ABS (Australian Bureau of Statistics) 2015. [National Health Survey: First Results, 2014-15](#). ABS cat, no. 4364.0.55.001. Canberra: Australian Bureau of Statistics.
5. AIHW 2017. [National Drug Strategy Household Survey \(NDHS\) key findings: 2016](#). Canberra: AIHW. Viewed 6 June 2017.
6. Wakefield MA, Coomber K, Durkin SJ, Scollo M, Bayly M, Spittal MJ et al. 2014. Time series analysis of the impact of tobacco control policies on smoking prevalence among Australian adults, 2001-2011. [Bulletin of the World Health Organization](#) 92:413-22.
7. ABS 2013. [Census of Population and Housing: Socio-Economic Indexes for Areas \(SEIFA\)](#). ABS cat. no. 2033.0.55.001. Canberra: Australian Bureau of Statistics.
8. OECD (Organisation for Economic Cooperation and Development) 2016. [OECD Health Statistics 2016](#). Paris: Organisation for Economic Cooperation and Development Publishing. Viewed 29 June 2014.

## Excessive alcohol consumption

Regular consumption of alcohol at high levels increases the risk of alcohol-related harm. High intakes can contribute to the development of chronic diseases such as liver disease, some cancers, oral health problems and cardiovascular disease. Alcohol consumption can also play a part in excess energy intake, contributing to excess body weight. Reducing alcohol consumption reduces the risk of developing these conditions and other health problems [1].

A number of nationally representative data sources are available to analyse recent trends in alcohol consumption. The [Australian Institute of Health and Welfare \(AIHW\) National Drug Strategy Household Survey \(NDSHS\)](#) and the [Australian Bureau of Statistics \(ABS\) National Health Survey \(NHS\)](#) have both collected data on alcohol consumption from people aged 18 or over for a number of years. The NHS also collected data from people aged 15-17 from 2007-08 and the NDSHS also collected data from people aged 14-17 from 1985 and from people aged 12-13 from 2004.

Comparisons of data from the NDSHS and NHS show variations in estimates for alcohol consumption. For more information on the technical details of these two surveys, see [technical notes](#). In this section, total population prevalence estimates and trends are presented for both the NHS and NDSHS, however the remainder of the results by age and population groups are derived from the NHS.

### Box 1: How is risk of alcohol-related harm measured?

Alcohol consumption refers to the consumption of drinks containing ethanol, commonly referred to as alcohol. The quantity, frequency or regularity with which alcohol is drunk provides a measure of the level of alcohol consumption.

NHMRC guidelines for alcohol consumption provide advice on reducing the risks to health from drinking alcohol. For healthy men and women, drinking no more than 2 standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury. Drinking no more than 4 standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion.

Alcohol-related risk is defined as follows:

- lifetime risk for alcohol consumption of more than 2 standard drinks per day
- single occasion risk for alcohol consumption of more than 4 standard drinks at a single occasion.

Note that one standard drink contains 10g of alcohol (12.5 mL of pure alcohol) [1].

In the Australian Bureau of Statistics (ABS) 2014-15 National Health Survey (NHS), alcohol risk was derived from an individual's average daily consumption over the 3 most recent days that they had consumed alcohol in the week before the interview [2,3].

In the AIHW National Drug Strategy Household Survey (NDSHS), a number of questions are used to calculate lifetime risk including: how many drinks they usually have per occasion and how often they drink (quantity-frequency method); and how often they drink different quantities of alcohol over a 12 month period (graduated quantity-frequency method).

Results presented here relate to lifetime risk of alcohol-related harm or injury as defined above.

### Who exceeds the lifetime alcohol risk guidelines?

Based on self-reported data from the [ABS 2014-15 NHS](#), almost 1 in 5 people aged 18 and over (17%) consumed more than 2 standard drinks per day on average, exceeding the lifetime alcohol risk guidelines. Overall, men were 3 times as likely to be at lifetime risk of harm due to alcohol as women (26% and 9.3%, respectively).

Based on self-reported data from the AIHW 2016 NDSHS, a similar proportion, almost 1 in 5 (18%) people aged 18 or older, consumed more than 2 standard drinks per day on average, exceeding the lifetime risk guidelines [4].

After adjusting for differences in the age structure of the population over time, both surveys showed a decline in the rate of lifetime risky alcohol consumption among adults over a similar period.

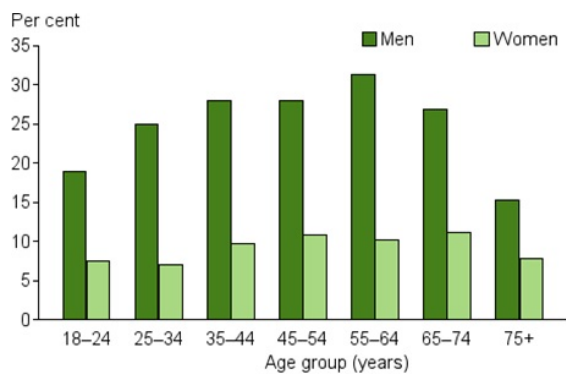
- For the NHS lifetime risky alcohol consumption decreased from 21% in 2007-08 to 17% in 2014-15.
- For the NDSHS lifetime risky alcohol consumption decreased from 22% in 2007 to 18% in 2016.

### Risky alcohol consumption by age and sex

Around one-quarter (26%) of men aged between 18 and 64 exceeded the lifetime alcohol risk guidelines, although rates were lower in the 18-24 year age group. (Figure 1). Among older men the proportion fell sharply, with 15% of those aged 75 and over exceeding recommended levels. Men in the 55-64 year age group were most likely to exceed lifetime alcohol risk guidelines (31%).

For women there was a similar trend across age groups but at lower levels of intake. Women in the 65-74 year age group had the highest rate of exceeding the lifetime alcohol risk guidelines at 11%, slightly decreasing to 7.9% of women aged 75 and over.

**Figure 1: Exceedance of lifetime alcohol risk guidelines in persons aged 18 and over, by sex, 2014-15**

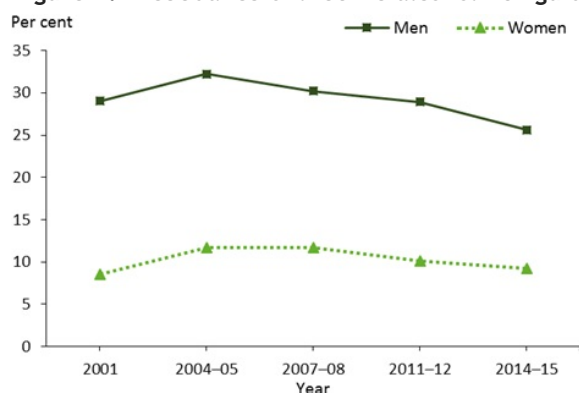


Source: ABS 2015. National Health Survey: First Results, 2014-15. ABS cat. no. 4364.0.55.001. Canberra: Australian Bureau of Statistics (see [source data](#)).

### Trends in alcohol consumption

The proportion of adults at lifetime risk of harm due to excessive alcohol consumption increased between 2001 and 2004-05 but has decreased slightly since then (age-standardised; Figure 2). Between 2001 and 2004-05, the proportion exceeding lifetime alcohol consumption guidelines increased from 29% to 32% for men and from 8.5% to 12% for women. From 2004-05 to 2014-15, the proportion declined in men (from 32% to 26%) but has remained similar for women (from 12% to 9.2%).

Figure 2: Exceedance of lifetime alcohol risk guidelines in persons aged 18 and over, by sex, 2001 to 2014-15



Note: Age-standardised to the 2001 Australian population.

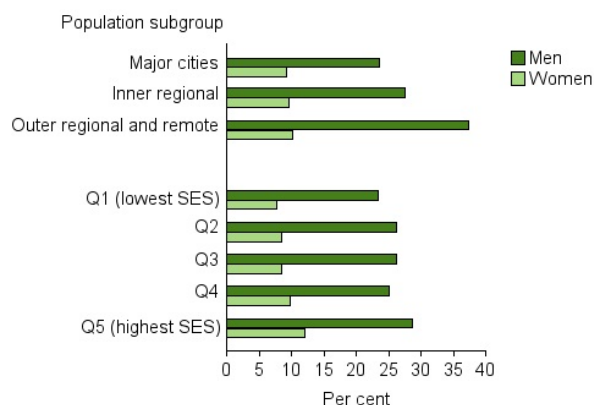
Sources: AIHW analysis of ABS Microdata: National Health Survey; 1989-90, 2001, 2004-05, 2007-08, 2014-15 and Australian Health Survey; 2011-12 (see [source data](#)).

### Inequalities

The proportion of adults at lifetime risk of harm due to alcohol consumption differs across geographic areas and socioeconomic groups (Figure 3). Adults in *Outer regional and remote* areas were 1.4 times as likely to exceed alcohol consumption guidelines as those in *Major cities* (23% and 16% respectively).

Adults living in the least disadvantaged areas were 1.3 times as likely to exceed alcohol consumption guidelines as those living in the most disadvantaged areas (20% and 15%, respectively).

Figure 3: Exceedance of lifetime alcohol risk guidelines in persons aged 18 and over, by sex, by selected population characteristics, 2014-15



Note: Q1-Q5 refers to area-based quintiles of socioeconomic position, based on the ABS Index of Relative Socio-Economic Disadvantage (IRSD) [5].

Source: AIHW analysis of ABS Microdata: National Health Survey, 2014-15.

### International comparisons

International comparisons of alcohol consumption are gauged by annual sales and are converted to pure alcohol. In 2014 (or the nearest year), alcohol consumption averaged 9.7 litres (L) per person aged 15 and over in Australia. This was higher than the average across 34 OECD countries (Organisation for Economic Cooperation and Development), which was 9.0 L per person. Turkey had the lowest average (1.5 L per capita) and Belgium had the highest (12.6 L per capita). Consumption was 8.9 L per capita in the United States, 8.0 L in Canada and 9.4 L in the United Kingdom [6].

Although average adult alcohol consumption per capita gives useful comparisons, it does not identify the number of persons at risk from harmful drinking patterns.

## Source data

- [Risk factors prevalence—Table 3.](#)

## References

1. NHMRC (National Health and Medical Research Council) 2009. Australian Guidelines to reduce health risks from drinking alcohol. Canberra: National Health and Medical Research Council.
2. ABS (Australian Bureau of Statistics) 2015. National Health Survey: First Results, 2014-15. ABS cat, no. 4364.0.55.001. Canberra: Australian Bureau of Statistics.
3. ABS Australian Bureau of Statistics 2015. National Health Survey 2014-15 Questionnaire. ABS cat. no. 4363.0.55.001. Canberra: Australian Bureau of Statistics.
4. AIHW 2017. [National Drug Strategy Household Survey \(NDHS\) key findings: 2016](#). Canberra: AIHW. Viewed 6 June 2017.
5. ABS 2013. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA). ABS cat. no. 2033.0.55.001. Canberra: Australian Bureau of Statistics.
6. OECD (Organisation for Economic Cooperation and Development) 2016. [OECD Health Statistics 2016](#). Paris: Organisation for Economic Cooperation and Development Publishing. Viewed 29 June 2014.





## Abnormal blood lipids (dyslipidaemia)

Blood lipids are fats in the blood and include cholesterol and triglycerides. Cholesterol is a fatty substance produced by the liver and carried by the blood to supply material for cell walls and hormones. Triglycerides play an important role in metabolism as an energy source and in helping to transfer dietary fat throughout the body.

Dyslipidaemia—abnormal blood lipids—can contribute to the development of atherosclerosis, a build up of fatty deposits in the blood vessels which may lead to the development of cardiovascular diseases. Dyslipidaemia is a risk factor for chronic diseases such as coronary heart disease and stroke.

### Box 1: How is dyslipidaemia measured?

Blood tests are used to determine levels of the most commonly measured lipids. The standard lipid blood tests include measurements of total cholesterol, low-density lipoprotein cholesterol (LDL, or 'bad' cholesterol), high-density lipoprotein cholesterol (HDL, or 'good' cholesterol), as well as triglycerides.

In the [Australian Bureau of Statistics \(ABS\) 2011-12 Australian Health Survey \(AHS\)](#), a person was classified as having dyslipidaemia if they had one or more of the following [1]:

- total cholesterol  $\geq 5.5$  mmol/L
- LDL cholesterol  $\geq 3.5$  mmol/L
- HDL cholesterol  $< 1.0$  mmol/L for men, and  $< 1.3$  mmol/L for women
- triglycerides  $\geq 2.0$  mmol/L
- taking lipid-modifying medication.

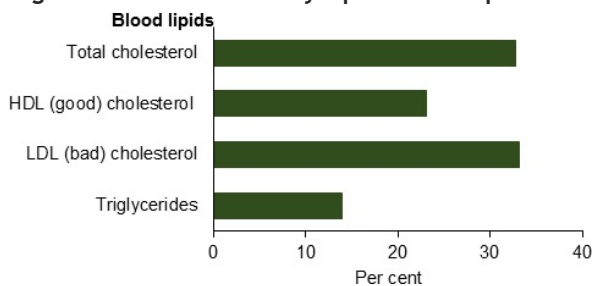
### Who has dyslipidaemia?

Based on measured data from the 2011-12 AHS, almost 2 in 3 people aged 18 and over (63%) have dyslipidaemia. This is comprised of:

- 57% with uncontrolled abnormal blood lipids
- 7% taking some form of lipid-modifying medication but with normal lipid levels.

One in 3 Australian adults (33%) have high levels of LDL (bad) cholesterol, almost 1 in 4 (23%) have low levels of HDL (good) cholesterol and 1 in 7 (14%) have high levels of triglycerides. One in 3 (33%) have a total cholesterol level that is considered high (Figure 1).

**Figure 1: Prevalence of dyslipidaemia in persons aged 18 and over, 2011-12**

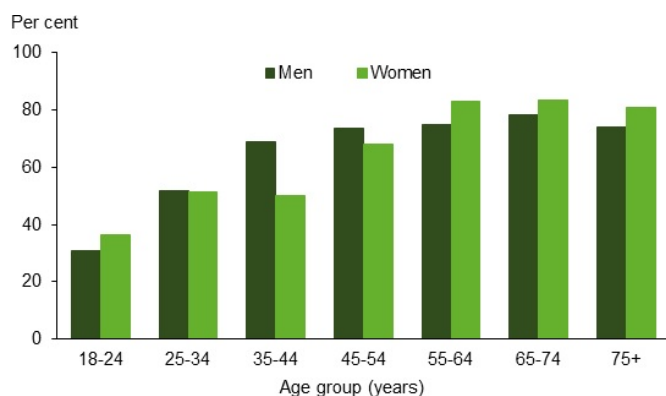


*Note:* Excludes persons who did not fast for 8 hours or more prior to their blood test.

*Source:* ABS 2013. Australian Health Survey: biomedical results for chronic diseases, 2011-12. ABS. cat. no. 4364.0.55.005. Canberra: Australian Bureau of Statistics.

Dyslipidaemia is common among both men and women, with rates over 50% for all age groups except those aged 18-24. Rates increase from age 18-24 to 65-74 (Figure 2).

**Figure 2: Prevalence of dyslipidaemia in persons aged 18 and over, by sex, 2011-12**



Note: Excludes persons who did not fast for 8 hours or more prior to their blood test.

Source: AIHW analysis of unpublished ABS 'Australian Health Survey 2011-12 (National Health Measures Survey Component)' (see [source data](#)).

## Inequalities

The proportion of the population with dyslipidaemia is relatively similar across geographic areas and socioeconomic groups.

## International comparisons

The World Health Organization reported that Australian men and women aged 25 and over had estimated average total cholesterol levels of 5.1 and 5.3 mmol/L respectively in 2009 [2]. This was similar to New Zealand (5.2 mmol/L for both men and women) and Canada (5.1 mmol/L for men and 5.2 mmol/L for women) but lower than in the United Kingdom (5.4 mmol/L for men and 5.5 mmol/L for women). Turkey had the lowest average of 34 OECD countries (Organisation for Economic Cooperation and Development), with total cholesterol of 4.7 mmol/L for both men and for women. The highest average of 5.7 mmol/L was for men and women in Iceland.

## Source data

- [Risk factor prevalence—Table 6](#).

## References

1. ABS (Australian Bureau of Statistics) 2013. Australian Health Survey: users' guide, 2011-13. ABS cat. no. 4363.0.55.001. Canberra: Australian Bureau of Statistics.
2. WHO (World Health Organization) 2014. [WHO global health observatory data repository](#). Mean total cholesterol trends (crude estimate). Data by country. Geneva: World Health Organization. Viewed 11 September 2015.

## Further information

- [Cardiovascular disease, diabetes and chronic kidney disease—Australian facts: risk factors](#)
- [Heart, stroke & vascular diseases](#)
- [Australian Bureau of Statistics \(ABS\) 2011-12 Australian Health Survey \(AHS\)](#)

## Nutrition

The food and beverages we eat and drink (our diet) play an important role in our overall health and wellbeing. Food provides energy, nutrients and other components that, if provided in insufficient or excess amounts can result in ill health. The conditions often affected by our diet include coronary heart disease, stroke, high blood pressure, atherosclerosis, some forms of cancer, type 2 diabetes, dental caries, gall bladder disease and nutritional anaemias.

### How is food associated with health?

Ill health generally cannot be attributed to any one food component alone. Diseases associated with diet are also associated with environmental, behavioural, biological, societal and genetic factors. The complex interplay between food and other risk factors and disease make it difficult to assess the contribution of diet to ill health.

In an optimal diet, the supply of required energy and nutrients is adequate for tissue maintenance, repair and growth. The proteins, carbohydrates, fats, vitamins and minerals required to maintain the human body in good health are met by eating a wide variety of nutritious foods.

More information on diet, nutrition and health can be found at the [Eat for Health](#) website.

### What should Australians eat?

The Australian Dietary Guidelines [1], developed by the National Health and Medical Research Council in 2013, recommend consumption of a wide variety of nutritious food. Essential nutrients for good health are found in varying amounts throughout many different food groups. Variety in a diet maximises the possibility of obtaining enough of these essential nutrients.

The Australian Dietary Guidelines recommend adults, adolescents and children:

1. Be physically active and choose amounts of nutritious food and drinks to meet energy needs.
2. Drink plenty of water and enjoy a wide variety of nutritious foods from the five food groups every day:
  - o plenty of vegetables, including different types and colours, and legumes/beans
  - o fruit
  - o grain (cereal) foods, mostly wholegrain and/or high fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley
  - o lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans
  - o milk, yoghurt, cheese and/or their alternatives, mostly reduced fat (reduced fat milks are not suitable for children under the age of 2 years).
3. Limit intake of foods containing saturated fat, added salt, added sugars and alcohol.
4. Encourage, support and promote breastfeeding.
5. Care for your food; prepare and store it safely.

Each Guideline is considered to be equally important in terms of public health outcomes.

#### Box 1: What is adequate fruit and vegetable intake?

The *Australian Dietary Guidelines* recommend that adults eat 2 serves of fruit and 5-6 serves of vegetables per day. For children and adolescents, depending on age and sex, the recommendations are for 1-2 serves of fruit and 2½ and 5½ serves of vegetables. There are different guidelines for pregnant and breastfeeding women [1].

A standard serve of fruit is about 150 grams, and a serve of vegetables is about 75 grams.

#### Examples of serves

Fruit	Vegetables
1 small apple, orange, banana or pear	½ cup cooked vegetables or legumes
2 small apricots, kiwi fruit or plums	1 cup green leafy or raw salad vegetables
1 cup diced or canned fruit (no sugar)	½ medium potato
125 mL (½ cup) fruit juice	1 medium tomato
30 g dried fruit	

For more information on the amounts and kinds of food that you need each day to get enough nutrients essential for good health visit the [Eat for Health](#) website.

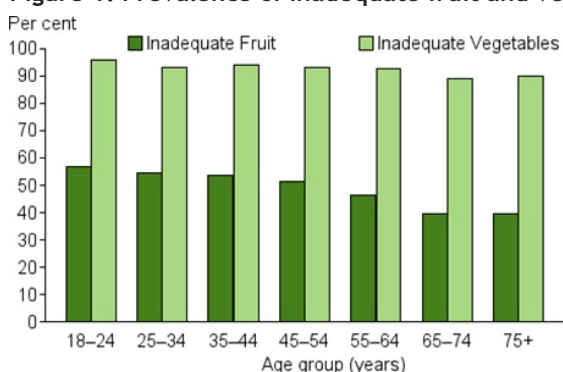
## What do Australians eat?

### Fruit and vegetables

Based on self-reported data from the [Australian Bureau of Statistics \(ABS\) 2014-15 National Health Survey \(NHS\)](#), 1 in 2 people aged 18 and over (50%) did not eat the recommended 2 serves of fruit, while over 9 in 10 (93%) did not eat the recommended 5 serves of vegetables [2].

The proportion of adults with inadequate vegetable intake was similar across age groups (Figure 1). Fruit intake was worse among young people: more than half (57%) of those aged 18-24 had inadequate fruit intake, compared to one-third (35%) of people aged 85 and over.

**Figure 1: Prevalence of inadequate fruit and vegetable intake for persons aged 18 and over, 2014-15**



Source: National Health Survey: First Results, 2014-15. ABS cat. no. 4364.0.55.001. Canberra: Australian Bureau of Statistics (see [source data](#)).

### Nutrient Reference Values

The Nutrient Reference Values (NRVs) are a set of recommendations for Australians' nutritional intake that have been developed by the NHMRC. The Estimated Average Requirement (EAR) sets a nutrient level that is used to estimate the prevalence of inadequate intakes across the population, while intakes above the Upper Level (UL) increases the risk of adverse health effects [2].

The ABS 2011-12 Australian Health Survey (AHS) indicates that:

- calcium intake across the population was largely inadequate, with 73% of females and 51% of males below the EAR
- females were more likely to have inadequate iron intake than males (23% females were below the EAR compared with 3% of males)
- 2% of males and 8% of females did not meet their iodine requirements
- almost all Australians met their nutritional needs for protein, vitamin C, vitamin B12, phosphorus and selenium (approximately 95% or more of all males and females met their requirements) [4].

### Sodium

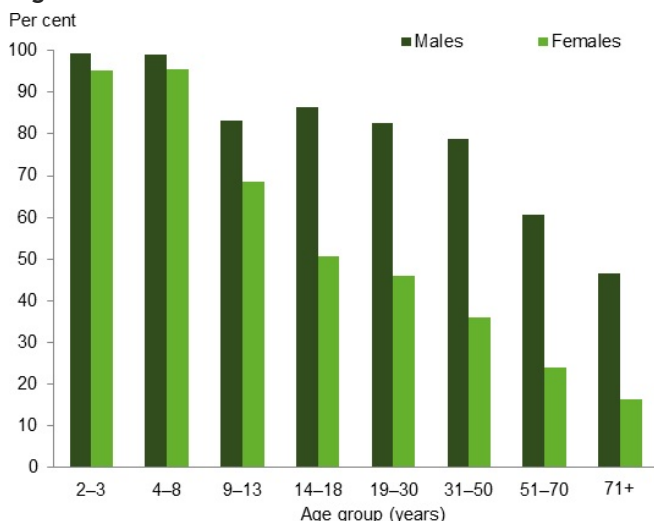
Sodium (often referred to as salt) is an important nutrient in the diet; however, too much sodium can increase blood pressure, which increases the risk of developing heart and kidney problems [3]. While sodium is found naturally in foods such as milk, cream, eggs and meat, the main source in the diet is from processed foods where sodium acts as a flavour enhancer and preservative.

The 2011-12 AHS showed that a large proportion of the population exceeded the UL for sodium, particularly younger age groups. Among children aged 2-8, almost all males exceeded the UL, as did approximately 95% of females (Figure 2).

In general, more males exceeded the UL than females and this difference was more pronounced for every age group over 9 years.

It should be noted that the sodium intake levels to estimate disease burden due to sodium in the Australian Burden of Disease Study 2011 (ABDS 2011) do not align with the UL, as it is used for the purpose of calculating disease burden in the ABDS 2011 [5].

**Figure 2: Prevalence of usual intakes of sodium exceeding the UL for persons aged 2 and over, by sex, 2011-12**



Source: ABS 2015. Australian Health Survey: Usual Nutrient Intakes, 2011-12, ABS cat. no. 4364.0.55.008, Canberra: Australian Bureau of Statistics (see [source data](#)).

### Saturated fat

In the Australian population aged 2 and over, 12% of average energy intake came from saturated fat (including trans fatty acids), which is above the recommended level of no more than 10%. Between 1995 and 2011-12, saturated fat content of the diet decreased by 1 percentage point (a statistically significant reduction) [6].

### Source data

- [Risk factors prevalence—Table 1 and 2](#).

### References

1. NHMRC (National Health and Medical Research Council) 2013. Australian Dietary Guidelines, Canberra: National Health and Medical Research Council.
2. ABS (Australian Bureau of Statistics) 2015. National Health Survey: First Results, 2014-15. ABS cat, no. 4364.0.55.001. Canberra: Australian Bureau of Statistics.
3. NHMRC 2006. Nutrient Reference Values for Australia and New Zealand including Recommended Dietary Intakes. Canberra: National Health and Medical Research Council.
4. ABS 2015. Australian Health Survey: Usual Nutrient Intakes, 2011-12, ABS cat. no. 4364.0.55.008. Canberra: Australian Bureau of Statistics.
5. AIHW 2016. [Australian Burden of Disease 2011: methods and supplementary material](#). Australian Burden of Disease Study series no. 5. Cat. no. BOD 6. Canberra: AIHW.
6. ABS 2014. Australian Health Survey: Nutrition First Results—Foods and Nutrients, 2011-12, ABS cat. no. 4364.0.55.007, Canberra: Australian Bureau of Statistics.



## Insufficient physical activity

Low levels of physical activity are a major risk factor for ill health and mortality from all causes. People who do not do sufficient physical activity have a greater risk of cardiovascular disease, type 2 diabetes and osteoporosis. Being physically active improves mental and musculoskeletal health and reduces other risk factors such as overweight and obesity, high blood pressure and high blood cholesterol.

### Box 1: How is physical activity measured?

Physical activity is any bodily movement produced by the muscles which results in energy expenditure. Although most measures of physical activity focus on deliberate activity during leisure time, other forms of activity such as walking or cycling for transport, work-related activity, and daily household tasks such as housework or gardening all contribute to total physical activity.

Australia's 2014 Physical Activity and Sedentary Behaviour Guidelines recommend that adult Australians aged 18-64:

- be active on most, preferably all, days every week
- accumulate 150 to 300 minutes of moderate intensity physical activity or 75 to 150 minutes of vigorous intensity physical activity, or an equivalent combination of both moderate and vigorous activities, each week
- do muscle-strengthening activities on at least 2 days each week
- minimise the amount of time spent in prolonged sitting
- break up long periods of sitting as often as possible [1].

There are different guidelines for children and young people [2,3,4] and for older adults [5].

In the Australian Bureau of Statistics (ABS) 2014-15 National Health Survey (NHS), people were asked to report the intensity, the duration and the number of sessions spent on physical activity during the week preceding the survey [6].

### Who is insufficiently active?

Based on self-reported data from the ABS 2014-15 NHS, over 1 in 2 Australian adults (56%) did not participate in sufficient physical activity.

#### Children and adolescents

The Australian Physical Activity Guidelines recommend children and young people (aged 5-17) accumulate at least 60 minutes of moderate to vigorous physical activity every day [3,4].

The most recent data available on physical activity in children and adolescents is the ABS 2011-12 Australian Health Survey. In 2011-12, about 3 in 10 (29%) children (aged 5-11) and less than 1 in 10 (8.2%) adolescents (aged 12-17) met the recommended amount of physical activity every day.

Toddlers and pre-schoolers (aged 2-4) spent an average of around 6 hours per day engaged in physical activity [9].

#### Adults (18-64 years)

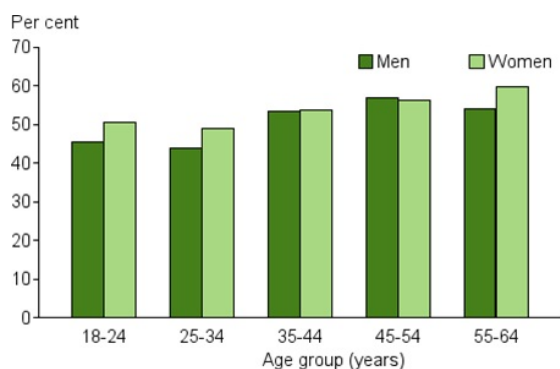
For prevalence reporting we refer to 'insufficient physical activity' for 18-64 year olds as not completing at least 150 minutes of moderate intensity physical activity, or 75 minutes of vigorous intensity physical activity, across 5 or more sessions each week, as this closely matches the Australian Guidelines.

For trend reporting we report 'insufficient physical activity' based on intensity and duration only (no sessions) due to complexities relating to how physical activity data have been collected over various surveys.

Around 1 in 2 adults aged 18-64 (52%) did not participate in sufficient physical activity. Women were more likely than men to be insufficiently active (54% compared to 51%).

The rate of insufficient physical activity increases with age (Figure 1). Among 18-24 year olds, 45% of men and 51% of women were insufficiently active. For those aged 55-64, 54% of men and 60% of women were insufficiently active.

**Figure 1: Prevalence of insufficient physical activity in persons aged 18-64, by sex, 2014-15**



*Note:* Insufficient physical activity is defined as completing less than 150 minutes of moderate intensity physical activity across 5 or more sessions each week.

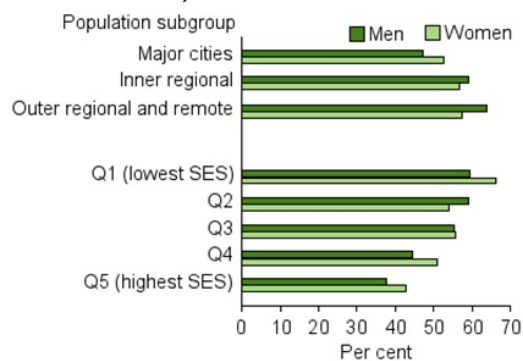
*Source:* ABS 2015. National Health Survey: First Results, 2014-15. ABS cat. no. 4364.0.55.001. Canberra: Australian Bureau of Statistics

### Inequalities

Adults aged 18-64 living in *Inner regional* or *Outer regional and remote* areas are, on average, more likely to be insufficiently active (at 58% and 60% respectively) than those living in *Major cities* (50%) (Figure 2) [7].

The proportion of people aged 18-64 who are insufficiently active increases with socioeconomic disadvantage. In 2014-15, 60% of men and 66% of women living in the most disadvantaged areas were insufficiently active, compared with 38% of men and 43% of women living in the least disadvantaged areas.

**Figure 2: Prevalence of insufficient physical activity in persons aged 18-64, by sex, by selected population characteristics, 2014-15**



*Notes:*

1. Insufficient physical activity is defined as completing less than 150 minutes of moderate intensity physical activity across 5 or more sessions each week.
2. Q1-Q5 refers to area-based quintiles of socioeconomic position, based on the ABS Index of Relative Socio-Economic Disadvantage (IRSD) [8].

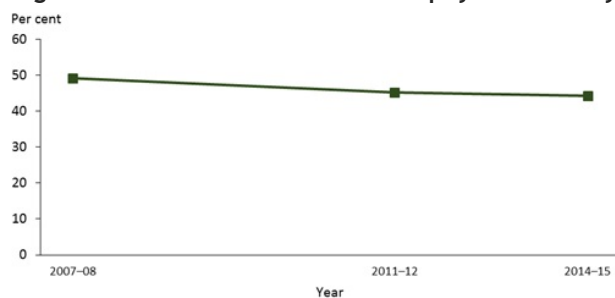
*Source:* AIHW analysis of ABS Microdata: National Health Survey, 2014-15. (see [source data](#)).

### Trends in insufficient physical activity

There is currently no long-term trend data for the level of physical activity in the adult population, using the measures reported by the ABS. Data presented here are based on trends in the proportion of adults who were physically inactive, based on intensity and duration, from the last three national health surveys (see [source data](#)).

There was a slight decrease in the proportion of adults who were insufficiently active between 2007-08 and 2014-15. In 2007-08 the proportion of adults who were insufficiently active was 49%, decreasing to 44% in 2014-15 (age-standardised; Figure 3).

**Figure 3: Prevalence of insufficient physical activity in persons aged 18 and over, 2007-08 to 2014-15**



*Notes*

1. Rates are age-standardised to the 2001 Australian population.
2. Insufficient physical activity is captured here as completing less than 150 minutes of moderate intensity physical activity. Sessions are not included in trend analysis.
3. Physical activity includes walking for fitness, recreation, or sport; walking to get to or from places; moderate exercise; and vigorous exercise recorded in the week prior to interview.

Source: ABS 2017, Customised report.

### Older Australians (65 years or older)

The Australian Physical Activity Guidelines recommend older Australians (65 years and older) should be active every day in as many ways as possible, and accumulate at least 30 minutes of moderate intensity physical activity on most, preferably all days.

In this section we refer to “insufficient physical activity” for people aged 65+ as not accumulating 30 minutes of moderate intensity physical activity on at least 5 days each week [5].

In 2014-15, 3 in 4 (75%) older Australians (aged 65+) were insufficiently active. This rate was similar for males (74%) and females (77%). For women the rate of insufficient physical activity increases with age, but the same trend is not found in men. Among 65-74 year olds, 73% of men and 72% of women were insufficiently active. For those aged 85+, 79% of men and 89% of women were insufficiently active.

### Source data

- [Risk factor prevalence—Table 5](#).

### References

1. DoH (Department of Health) 2014. Australia's physical activity and sedentary behaviour guidelines for adults (18-64 years). Canberra: Department of Health.
2. DoH 2014. National physical activity recommendations for children 0-5 years. Canberra: Department of Health.
3. DoH 2014. Australia's physical activity and sedentary behaviour guidelines for children (5-12 years). Canberra: Department of Health.
4. DoH 2014. Australia's physical activity and sedentary behaviour guidelines for young people (13-17 years). Canberra: Department of Health.
5. DoVA (Department of Veterans' Affairs) and DoH 2005. Choose health: be active—a physical activity guide for older Australians. Canberra: Commonwealth of Australia and the Repatriation Commission.
6. ABS (Australian Bureau of Statistics) 2015. National Health Survey 2014-15 Questionnaire. ABS cat. no. 4363.0.55.001. Canberra: Australian Bureau of Statistics.
7. ABS 2015. National Health Survey: First Results, 2014-15. ABS cat, no. 4364.0.55.001. Canberra: Australian Bureau of Statistics.
8. ABS 2013. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA). ABS cat. no. 2033.0.55.001. Canberra: Australian Bureau of Statistics.
9. ABS 2013. Australian Health Survey: physical activity, 2011-12. ABS cat. no. 4364.0.55.004. Canberra: Australian Bureau of Statistics.

### Further information

The physical activity guidelines referenced here are available on the [Department of Health](#) website.





## Overweight and obesity

Overweight and obesity refers to excess body weight. Excess weight, especially obesity, is a major risk factor for cardiovascular disease, Type 2 diabetes, high blood pressure, sleep apnoea, psychological issues, some musculoskeletal conditions and some cancers. As the level of excess weight increases, so does the risk of developing these conditions. In addition, being overweight can hamper the ability to control or manage chronic disorders. People who are overweight or obese also have higher rates of death.

Rates of overweight and obesity are continuing to rise in Australia. Collecting information on these trends is important for managing the associated health problems.

Body mass index (BMI) is widely used to monitor body weight.

### Body mass index (BMI)

You can quickly check whether your weight is in a healthy range by calculating your Body Mass Index (BMI). It can be used for both men and women, aged 18 or older.

Your BMI is your **body weight in kilograms**, divided by the **square of your height in meters**.

For example, if you weigh 75kg and you are 175cm tall (1.75m), your BMI =  $75 / (1.75 \times 1.75) = 24.5$ .

### BMI calculator

To find out your BMI, enter your details into the [AIHW BMI calculator](#).

---

### Rate your BMI

Your BMI will fall into one of four categories

#### BMI classifications

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

Source: World Health Organization (WHO) 2000. Obesity: preventing and managing the global epidemic. Report of a WHO consultation. WHO technical report series 894. Geneva: WHO.

### Limitations of BMI

BMI does not necessarily reflect body fat distribution or describe the same degree of fatness in different individuals. At a population level however, BMI is a practical and useful measure for identifying overweight and obesity.

### Waist circumference

An alternative way to assess your risk of developing obesity-related chronic diseases is to measure your waist circumference. A higher waist measurement is associated with an increased risk of chronic disease. The risk levels presented below are for Caucasian men; and both Caucasian and Asian women.

	Increased risk	Substantially increased risk
Men	94 cm	102 cm
Women	80 cm	88 cm

Source: National Health and Medical Research Council (NHMRC) 2013. Clinical Practice Guidelines for the Management of Overweight and Obesity in Adults. Canberra: NHMRC.

For information on how to correctly measure your waist, visit the [National Heart Foundation website](#).

### Measuring overweight and obesity in children

As height and body composition are continually changing for children and adolescents, a separate classification of overweight and obesity for children is used based on age and sex.

Information on the [BMI cut-offs for children](#) is available on the Department of Health website.

### Further information

- [Overweight & obesity](#)

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## Overweight and obesity

While many factors may influence your weight, overweight and obesity occur mainly because of an imbalance between energy intake from the diet and energy expenditure (through physical activities and bodily functions). Genetic and environmental factors also play a role. Attention to diet and physical activity is important to help ensure a healthy body weight.

### Energy intake

The total amount of food that your body needs depends on your age, sex, body size, level of physical activity and whether you are pregnant or breastfeeding. Your body converts the protein, fat and carbohydrate in food to energy. Fat is the most concentrated source of energy. Visit [eatforhealth.gov.au](http://eatforhealth.gov.au) to calculate your individual energy requirements.

Energy intake from food varies greatly between individuals. For example, in 2011-12, intake ranged from about 6,000 kilojoules for children aged 2-3 to about 9,000 kilojoules for adolescents aged 14-18. For adults aged 19 and over, the average intake for men was about 10,000 kilojoules and for women was about 7,500 kilojoules [1].

### Energy expenditure

The human body expends energy in 3 ways:

- basal metabolism (the energy used to maintain vital body processes)
- thermic processes (the energy taken to digest and absorb food)
- physical activity (the energy used to move around).

Physical activity is the most variable component of energy expenditure, and the main component a person has control over. For a normally active person, physical activity contributes about 20% to daily energy expenditure.

### The balance

Healthy eating and physical activity are important for a healthy active life. Maintaining your weight means balancing the energy going into your body (as food and drink) and the energy being used for growth and repair, for physical activity, and to keep your bodily functions working. An excess energy intake, even a small amount over a long period, will cause weight gain. Children and adolescents need enough nutritious food to grow and develop normally. Older people need to keep physically active and eat nutritious foods to help maintain muscle strength and a healthy weight.

The [Australian Guide to Healthy Eating](#) is a food selection guide that visually represents the proportion of the five food groups recommended for consumption each day. Following these recommendations and limiting the number of energy-dense, nutrient-poor discretionary foods and drinks is the best way to maintain a healthy weight. Being physically active and eating healthily throughout life helps to promote health and wellbeing and prevent chronic disease.

### References

1. Australian Bureau of Statistics 2014. Australian Health Survey: Nutrition first results—foods and nutrients, 2011-12. ABS cat. no. 4364.0.55.007. Canberra: ABS.

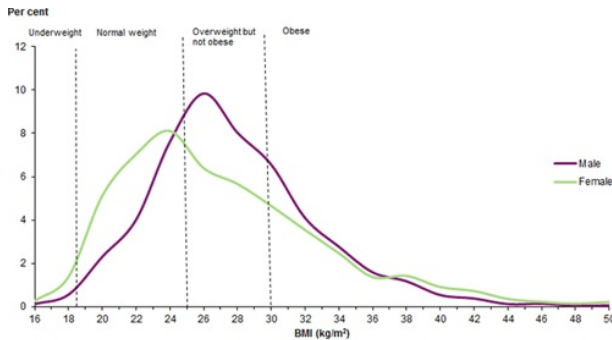
# Overweight and obesity

## Adults

Almost two-thirds (63%) of the population aged 18 and over are overweight or obese (36% overweight, 28% obese) [1]. Only one-third (35%) of Australian adults have a healthy body weight.

The body mass index (BMI) distribution varies between men and women. The distribution for men peaks at higher BMI values, indicating that overweight/obesity is more common in men (71%) than in women (56%).

**Figure 1: Body mass index distribution, persons aged 18 and over by sex, 2014-15**



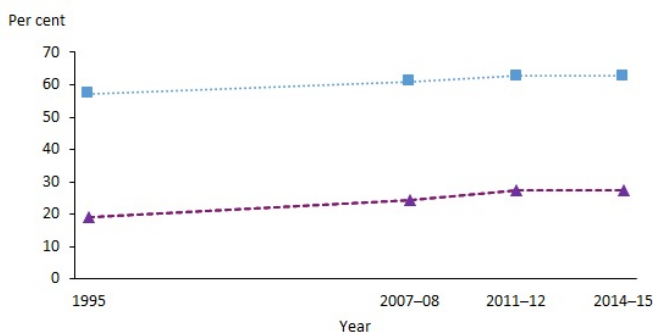
Source: AIHW analysis of ABS Microdata: National Health Survey, 2014-15.

## Trends in overweight and obesity

The proportion of overweight or obese adults in the population (based on measured height and weight) has increased in recent decades, after taking changes in the age structure into account. The prevalence increased from 57% in 1995 to 61% in 2007-08 and to 63% in 2011-12. There was no significant increase between 2011-12 and 2014-15, with prevalence remaining at 63% [1, 2]. The increase was largely driven by a rise in the level of obesity from 19% to 28% between 1995 and 2014-15, with the proportion of overweight but not obese adults remaining similar (38% to 35%) over the same period.

Between 1995 and 2014-15, the relative increase in the proportion of overweight or obese adults was higher in women (12%) than men (8.8%). However, the gap between men and women has remained similar.

**Figure 2: Proportion of the population who is overweight or obese, persons aged 18 and over, 1995 to 2014-15**



## Notes

1. Age-standardised to the 2001 Australian population.
2. Overweight and obesity classification based on measured height and weight in all 4 surveys.

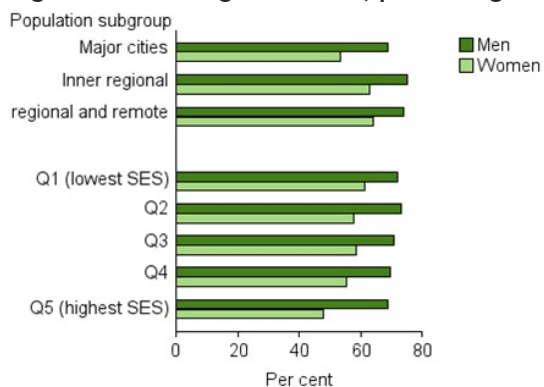
Source: Risk factor trends: age patterns in key health risk factors over time. Cat. no. PHE 166. Canberra: Australian Institute of Health and Welfare and ABS 2015; and National Health Survey: First Results, 2014-15. ABS cat. no. 4364.0.55.001. Canberra: Australian Bureau of Statistics.

## Inequalities

The level of overweight and obesity in adults varies according to geographical location and is higher outside of *Major cities*. In 2014-15, around three-quarters of men living in *Inner regional* (75%) and *Outer regional and remote* (74%) areas were overweight or obese compared with 69% of men living in *Major cities*. Around two-thirds of women living in *Inner regional* (63%) and *Outer regional and remote* (64%) areas were overweight or obese compared with just over half (53%) of women who live in *Major cities*.

The level of overweight and obesity also varies according to socioeconomic group for women. Almost two-thirds (61%) of women in the lowest socioeconomic group were overweight or obese, compared with almost half (48%) of those in the highest socioeconomic group. For men, however, the proportions of overweight or obesity were similar in each socioeconomic group, ranging from 69% to 73%.

**Figure 3: Overweight or obese, persons aged 18 and over, by selected population characteristics, 2014-15**



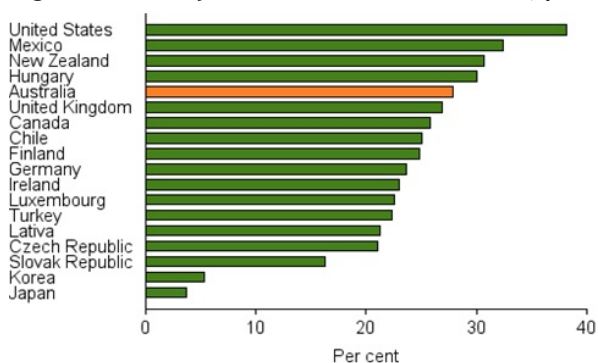
*Note:* Q1-Q5 refers to area-based quintiles of socioeconomic position, based on the ABS Index of Relative Socio-Economic Disadvantage (IRSD) [3].

*Source:* AIHW analysis of ABS 'Microdata: National Health Survey, 2014-15'.

### International comparisons

Based on data for 2015 or the closest available year for people aged over 15 years, more than half (54%) of adults in Organisation for Economic Cooperation and Development (OECD) countries are overweight or obese (based on self-reported or measured data) [4]. Australia's rate of obesity (28% of the population aged 15 and over) is fifth highest among 41 OECD countries, behind the United States (38%), Mexico (32%), New Zealand (31%) and Hungary (30%). The average rate of obesity among OECD countries is 19%. Japan has the lowest rate obesity at 3.7%.

**Figure 4: Obesity in selected OECD countries, persons aged 15 and over, 2015 or nearest year**



*Source:* Organisation for Economic Cooperation and Development (OECD) 2017. Health at a glance 2015: OECD indicators. Paris: OECD Publishing.

### Children

Results from the ABS 2014-15 National Health Survey show that about one-quarter (26%) of children aged 2-17 were overweight or obese, with 18% being overweight and 8.0% obese. The proportion of boys and girls who were overweight or obese was similar (27% compared with 25%).

Rates of overweight and obesity were similar across age groups, ranging from 20% for children aged 2-4 to 33% for adolescents aged 16-17. Boys aged 16-17 had the highest obesity rate (8.2%), and obesity among girls was most common at ages 5-7 (12%).

The proportion of children and adolescents aged 5-17 who were overweight or obese increased between 1995 and 2007-08 (21% and 25%, respectively) then remained stable to 2011-12 (26%) and 2014-15 (27%) [5].

### References

1. ABS (Australian Bureau of Statistics) 2015. National Health Survey: First Results, 2014-15. ABS cat, no. 4364.0.55.001. Canberra: Australian Bureau of Statistics.
2. Australian Institute of Health and Welfare (AIHW) 2012. Risk factor trends: age patterns in key health risk factors over time. Cat. no. PHE 166. Canberra: AIHW.
3. ABS 2013. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA). ABS cat. no. 2033.0.55.001. Canberra: Australian Bureau of Statistics.
4. Organisation for Economic Cooperation and Development (OECD) 2017. Health at a glance 2015: OECD indicators. Paris: OECD Publishing.
5. Australian Bureau of Statistics (ABS) 2013. Australian Health Survey: updated results, 2011-2012. ABS cat. no. 4364.0.55.003. Canberra: ABS.



## High blood pressure

High blood pressure—also known as hypertension—is a major risk factor for chronic diseases including stroke, coronary heart disease, heart failure and chronic kidney disease. High blood pressure is also a cardiovascular disease in its own right. The risk factors for high blood pressure include poor diet (particularly a high salt intake), obesity, excessive alcohol consumption and insufficient physical activity. High blood pressure can be controlled with lifestyle measures and medication to reduce the risk of chronic disease.

### Box 1: How is high blood pressure measured?

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

The World Health Organization defines high blood pressure as including any of the following [1]:

- systolic blood pressure greater than or equal to 140 mmHg, or
- diastolic blood pressure greater than or equal to 90 mmHg, or
- receiving medication for high blood pressure.

The [Australian Bureau of Statistics \(ABS\) 2011-12 Australian Health Survey \(AHS\)](#) measured blood pressure at the time of the interview, and the definitions listed above were used in defining high blood pressure in the results presented here. 'Uncontrolled high blood pressure' is defined as measured systolic blood pressure of 140 mmHg or more, or diastolic blood pressure of 90 mmHg or more, irrespective of the use of blood pressure medication [2].

### Who has high blood pressure?

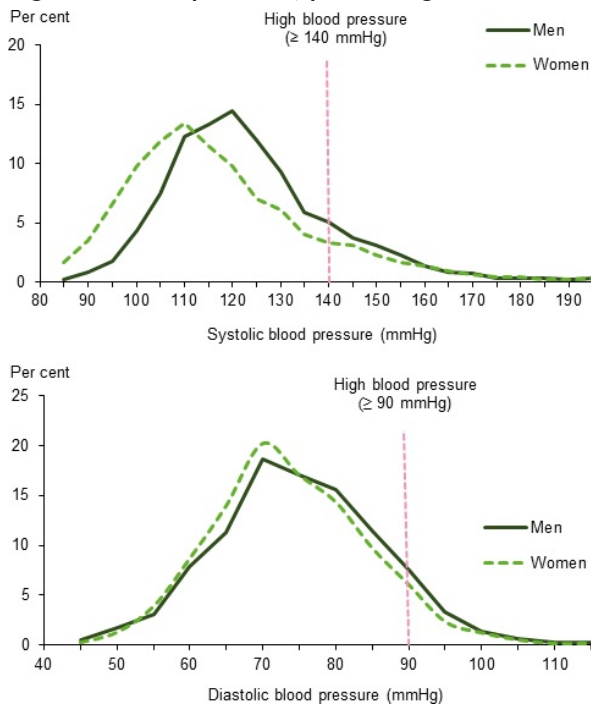
Based on measured data from the 2014-15 AHS, about 1 in 3 people aged 18 and over (34%) have high blood pressure. This is comprised of:

- 23% with uncontrolled high blood pressure
- 11% whose blood pressure was controlled using medication/s.

The average systolic blood pressure is higher for men (126 mmHg) than for women (120 mmHg). The average diastolic blood pressures are similar for men and women (77 and 76 mmHg) (Figure 1).

Over three-quarters (79%) of those with high blood pressure were overweight or obese, and 42% reported doing very little or no exercise in the past week [3].

**Figure 1: Blood pressure, persons aged 18 and over, by sex, 2014-15**

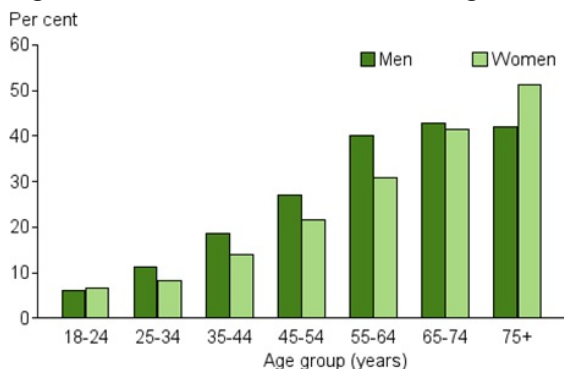


*Note:* Excludes persons for whom blood pressure was not measured or a valid reading was not obtained.

*Source:* AIHW analysis of ABS Microdata: National Health Survey, 2014-15.

In 2014-15, a higher proportion of men (24%) than women (22%) had uncontrolled high blood pressure (Figure 2). The proportion of adults with uncontrolled high blood pressure increased with age—from less than 10% among 18-24 year-olds (6.0% for men and 6.7% for women) to a peak of 53% at age 85 and over (49% for men and 54% for women).

**Figure 2: Prevalence of uncontrolled high blood pressure in persons aged 18 and over, by sex, 2014-15**



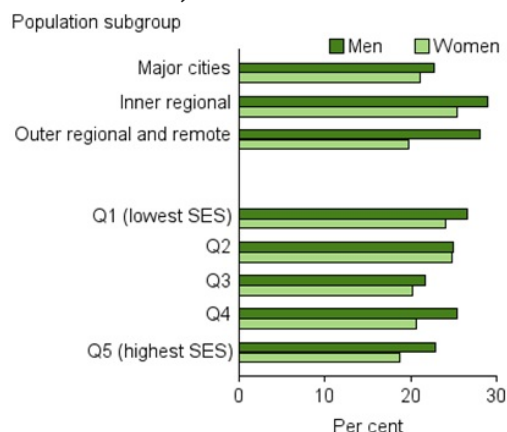
Note: Excludes persons for whom blood pressure was not measured or a valid reading was not obtained.

Source: AIHW analysis of ABS Microdata: National Health Survey, 2014-15 (see [source data](#)).

### Inequalities

Uncontrolled high blood pressure is most prevalent in the population living in *Inner regional* areas (29% of men and 25% of women) and is more common in areas of most disadvantage. Twenty six per cent of people living in the most disadvantaged areas have high blood pressure, compared with 21% of people living in the least disadvantaged areas.

**Figure 3: Prevalence of uncontrolled high blood pressure in persons aged 18 and over, by sex, by selected population characteristics, 2014-15**



Notes:

1. Excludes persons for whom blood pressure was not measured or a valid reading was not obtained.
2. Q1-Q5 refers to area-based quintiles of socioeconomic position, based on the ABS Index of Relative Socio-Economic Disadvantage (IRSD) [4].

Source: AIHW analysis of ABS Microdata: National Health Survey, 2014-15 (see [source data](#)).

### International comparisons

The World Health Organization reported that an estimated 21% of men and 17% of women aged 18 and over in Australia had uncontrolled high blood pressure in 2015 (based on systolic blood pressure and diastolic blood pressure only) [5]. This was a lower proportion than most other OECD countries (Organisation for Economic Cooperation and Development), and lower than the average across the 34 OECD countries (24% for men and 21% for women).

United Arab Emirates had the lowest proportion (15% for men and 8.7% for women), followed by Peru (15% for men and 10% for women) and Korea (15% for men and 11% for women), while central and eastern European countries including Bulgaria, Latvia, Hungary, Slovenia and Croatia had the highest (all above 39% for men and 33% for women).

### Source data

- [Risk factor prevalence—Table 7.](#)

### References



1. Whitworth JA 2003. 2003 World Health Organization/International Society of Hypertension statement on management of hypertension. *Journal of Hypertension* 21:1983-92.
2. ABS (Australian Bureau of Statistics). *Australian Health Survey: users' guide, 2011-13*. ABS cat. no. 4363.0.55.001. Canberra: Australian Bureau of Statistics.
3. ABS 2017. *Health Service Usage and Health Related Actions, Australia 2014-15: Hypertension*. ABS cat no. 4364.0.55.002. Canberra: Australian Bureau of Statistics. Viewed 7 April 2017.
4. ABS 2013. *Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA)*. ABS cat. no. 2033.0.55.001. Canberra: Australian Bureau of Statistics.
5. WHO (World Health Organization) 2015. *WHO global health observatory data repository*. Raised blood pressure (SBP  $\geq$  140 OR DBP  $\geq$  90). Date by country. Geneva: World Health Organization. Viewed 4 April 2017.

### Further information

- [Heart, stroke & vascular diseases](#)
- [Chronic kidney disease \(CKD\)](#)
- [Cardiovascular disease, diabetes and chronic kidney disease—Australian facts: risk factors](#)
- [Nutrition](#)
- [Overweight and obesity](#)
- [Alcohol](#)
- [Physical activity](#)
- [Australian Bureau of Statistics \(ABS\) 2011-12 Australian Health Survey \(AHS\)](#)



## Impaired fasting glucose

The initial stages of type 2 diabetes, also known as pre-diabetes, are characterised by impaired glucose regulation. This includes both **impaired fasting glucose (IFG)** and **impaired glucose tolerance (IGT)**. People who have IFG or IGT are at risk for future development of diabetes and cardiovascular disease.

### Box 1: How is impaired fasting glucose measured?

IFG is characterised by higher than usual levels of glucose in the blood after fasting, in the range of 6.1 to 6.9 mmol/L, but lower than diabetes levels (>7.0 mmol/L).

In the Australian Bureau of Statistics (ABS) 2011-12 Australian Health Survey (AHS), a person with an IFG result ranging from 6.1 to 6.9 mmol/L (but who did not currently have diabetes) was considered to be at high risk of diabetes [1].

Presented here is information on both IFG and diabetes, with 'elevated blood glucose' defined as blood glucose level of 6.1 mmol/L and above.

### Who has impaired fasting glucose?

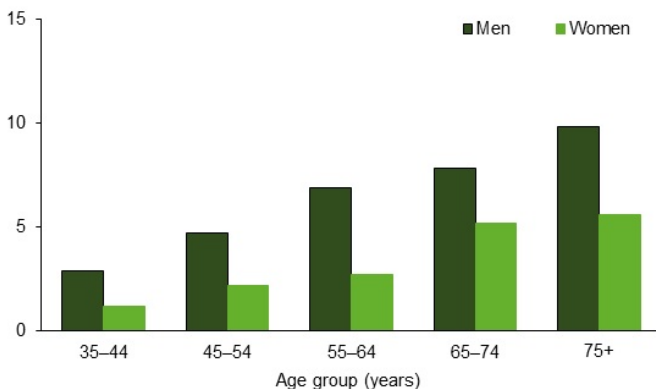
Based on measured data from the 2011-12 AHS, 8.2% of people 18 years and over have elevated blood glucose levels. This is comprised of:

- 5.1% who have diabetes
- 3.1% who have impaired fasting glucose (IFG).

Men are more likely to have IFG than women (4.1% and 2.1% respectively) (Figure 1). The proportion of adults with IFG increases with age—2.1% of those aged 35-44, compared with 7.5% among people aged 75 and over—however, most differences are not statistically significant.

**Figure 1: Prevalence of impaired fasting glucose in persons aged 18 and over, by sex, 2011-12**

Per cent



Notes:

1. Excludes persons with diabetes (i.e. with fasting blood glucose greater than or equal to 7.0 mmol/L), and persons who did not fast for 8 hours or more prior to their blood test.
2. Excludes age groups 18-24 and 25-34 due to small sample counts resulting in Relative Standard Errors greater than 50%.

Source: AIHW analysis of unpublished ABS 'Australian Health Survey 2011-12 (National Health Measures Survey Component)' (see [source data](#)).

### Inequalities

IFG levels range from 2.7% in *Major cities* to 4.5% in *Outer regional and remote* areas, and from 4.3% among people living in the most disadvantaged areas to 2.5% among people living in the least disadvantaged areas. However, these differences by remoteness categories or socioeconomic groups are not statistically significant.

### Source data

- [Risk factors source data—Table 8](#).

### References

1. ABS (Australian Bureau of Statistics) 2013. Australian Health Survey: users' guide, 2011-13. ABS cat. no. 4363.0.55.001. Canberra: Australian Bureau of Statistics.

### Further information

- [Diabetes](#)
  - [Heart, stroke & vascular diseases](#)
  - [Australian Bureau of Statistics \(ABS\) 2011-12 Australian Health Survey \(AHS\)](#)
  - [Cardiovascular disease, diabetes and chronic kidney disease—Australian facts: risk factors.](#)
- 

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## Chronic disease risk factors

See *Evidence for chronic disease risk factors*.

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## Technical notes

Differences in scope, collection methodology and design may account for this variation and comparisons between collections should be made with caution. The questions asked in the surveys also differ and therefore results from the surveys are not directly comparable. It is important to keep this in mind when considering data from each of the surveys—results that may initially seem to contradict one another may reflect the different methodology used or be applicable to different groups within the population.

Data sources are often selected based on which data source was considered the ‘best fit’ to analyse trends over time for a particular topic/project. Each of these data sources has differing strengths and the fact a data source was selected for use does not imply that it is a ‘better’ data source, only that it was considered more appropriate for the particular analysis for which it was used. Table N1 below summarises the differences between the National Health Survey and the National Drug Strategy Household Survey.

[Download Table N1: Summary of methodological differences between the NDSHS and NHS \(130kB PDF\)](#)

### Further information

For more information on the strengths and limitations of the AIHW National Drug Strategy Household Surveys see [2013 National Drug Strategy Household Survey \(NDSHS\)](#).

For more information on the strengths and limitations of the ABS National Health Surveys, see [Australian health Survey: Users’ Guide, 2011-13](#).

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# Data

## Contents

**Table 1:** Prevalence of inadequate fruit and vegetable intake for persons aged 18 and over (per cent), 2014-15

**Table 2:** Prevalence of usual intakes of sodium exceeding the UL for persons aged 2 and over (per cent), 2011-12

**Table 3:** Exceedance of lifetime alcohol risk guidelines in persons aged 18 and over (per cent), by selected population characteristics, 2014-15 and time series

**Table 4:** Prevalence of daily smoking in persons aged 18 and over (per cent), by selected population characteristics, 2014-15 and time series

**Table 5:** Prevalence of insufficient physical activity in persons aged 18 and over (per cent), by selected population characteristics, 2014-15 and time series

**Table 6:** Prevalence of dyslipidaemia in persons aged 18 and over (per cent), by selected population characteristics, 2011-12

**Table 7:** Prevalence of high blood pressure in persons aged 18 and over (per cent), by selected population characteristics, 2011-12

**Table 8:** Prevalence of impaired fasting glucose in persons aged 18 and over (per cent), by selected population characteristics, 2011-12

**Table 9:** Prevalence of overweight and obesity in persons aged 18 and over (per cent), by selected population characteristics, 2014-15 and time series



## Related material

### Related topics

- [Alcohol](#)
  - [Burden of disease](#)
  - [Chronic disease](#)
  - [Chronic kidney disease](#)
  - [Diabetes](#)
  - [Food & nutrition](#)
  - [Heart, stroke & vascular diseases](#)
  - [Overweight & obesity](#)
  - [Physical activity](#)
  - [Rural & remote Australians](#)
  - [Smoking](#)
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