



# Determinants of health

4



# Key points

## Behavioural factors

- In 2012–13, 42% of Indigenous people aged 15 and over smoked daily. They were 2.6 times as likely to smoke daily as their non-Indigenous counterparts (based on age-standardised rates).
- The proportion of Indigenous people aged 18 and over who smoked daily decreased from 51% in 2001 to 44% in 2012–13.
- In 2011, Indigenous mothers were 4 times as likely as non-Indigenous mothers to have smoked during pregnancy (age-standardised rates of 49% and 12%). Between 2005 and 2011, the proportion of Indigenous mothers who smoked during pregnancy declined significantly (6% based on age-standardised rates).
- In 2012–13, 54% of Indigenous people aged 15 and over had consumed a risky amount of alcohol in a single occasion in the previous year, with Indigenous Australians significantly more likely to have done so than non-Indigenous Australians (1.1 times as likely, based on age-standardised rates), but the proportions who consumed alcohol at a lifetime risky level were similar (age-standardised rates of 18% and 19%).
- In 2012–13, about 3 in 5 (61%) Indigenous adults living in non-remote areas reported that they were sedentary or had only exercised at low intensity in the previous week.

## Biomedical factors

- Liveborn singleton babies born to Indigenous mothers were more than twice as likely to be of low birthweight as babies born to non-Indigenous mothers (11.2% and 4.6%, respectively in 2011). Between 2000 and 2011, there was a significant decrease (of 9%) in the low birthweight rate among liveborn singleton babies of Indigenous mothers.
- In 2012–13, 10.2% of Indigenous children aged 2–14 were obese; Indigenous children were significantly more likely than non-Indigenous children (6.5%) to be obese (1.6 times as likely).
- Almost 2 in 5 (37%) Indigenous people aged 15 and over were obese in 2012–13. They were 1.6 times as likely as their non-Indigenous counterparts to be obese (based on age-standardised rates).
- In 2012–13, 1 in 5 (20%) Indigenous adults had measured high blood pressure. Indigenous adults had 1.2 times the rate of measured high blood pressure as non-Indigenous adults (based on age-standardised rates).
- In 2012–13, 1 in 4 (25%) Indigenous adults had abnormal total cholesterol levels.
- In 2012–13, nearly 1 in 5 (18%) Indigenous adults had indicators of chronic kidney disease; they were 2.1 times as likely as non-Indigenous adults to have these indicators (based on age-standardised rates).

## Psychological factors

- In 2012–13, almost one-third (30%) of Indigenous adults were assessed as having high or very high levels of psychological distress. They were 2.7 times as likely as non-Indigenous adults to have these levels of psychological distress (based on age-standardised rates).
- In 2012–13, almost half (48%) of Indigenous adults reported that either they or their relatives had been removed from their natural family. Levels of high or very high psychological distress were significantly more common among Indigenous adults who had been removed from their family (35% compared with 29% for those who had not been removed), and among those who had relatives removed (34% compared with 26% of those who had not had relatives removed).



## Socioeconomic and environmental factors

- In 2012–13, 16% of Indigenous people aged 15 to 64 who were employed assessed their health as fair or poor compared with 24% of those who were unemployed, and 33% of those not in the labour force.
- In 2012–13, about 3 in 5 (57%) Indigenous children aged 0–14 were living in a household with a daily smoker, compared with 26% of non-Indigenous children. The proportion of Indigenous children living in households with a daily smoker declined from 68% in 2004–05 to 57% in 2012–13.
- In 2012–13, 7% of Indigenous adults (an estimated 26,500 people) reported avoiding seeking health care because they had been treated unfairly by doctors, nurses or other staff at hospitals or doctor surgeries.

## Comparison by remoteness

- Among Indigenous people aged 15 and over, rates of daily smoking were significantly higher among those living in remote compared with non-remote areas (50% and 39%, respectively) in 2012–13. Rates of tobacco smoking among Indigenous adults declined in non-remote areas between 2002 and 2012–13 (a significant fall of 8 percentage points), but remained relatively stable in remote areas.
- In 2012–13, Indigenous people aged 15 and over living in non-remote areas (55%) were significantly more likely to consume alcohol at single occasion risk levels than those living in remote areas (48%). However, there was no significant difference between the proportion of Indigenous people living in non-remote (18%) and remote (17%) areas who drank at levels exceeding the guidelines for lifetime risk.
- In 2012–13, Indigenous people aged 15 and over in non-remote areas (23%) were significantly more likely to report having used an illicit substance in the previous 12 months than those in remote areas (19%).
- Among Indigenous people aged 15 and over in 2012–13, those living in remote areas were significantly more likely than those in non-remote areas to consume an adequate amount of fruit daily (46% compared with 41%), and significantly less likely to consume an adequate amount of vegetables daily (3% compared with 5%).
- Rates of obesity among Indigenous people aged 15 and over were significantly higher in non-remote (38%) than remote (34%) areas in 2012–13.
- Indigenous adults in remote areas were significantly more likely to have self-reported and/or measured high blood pressure than those in non-remote areas (34% and 25%, respectively) in 2012–13.
- Indigenous adults living in remote areas were significantly more likely to have indicators of chronic kidney disease than those in non-remote areas (34% compared with 13%) in 2012–13.
- In 2012–13, Indigenous adults living in non-remote areas were significantly more likely to have high or very high levels of psychological distress than those in remote areas (32% and 24%, respectively).

## 4.1 Introduction

A person's health is dependent on a complex interaction of a range of factors, including behavioural, biological, psychological, socioeconomic and environmental factors. Some factors, such as regular exercise and a healthy diet, can have positive effects on health. Others, including tobacco smoking and lack of exercise, can have negative effects—such factors are referred to as health risk factors. Access to health services that are affordable, are culturally acceptable and meet people's health needs is another important determinant of health.

According to the World Health Organization, factors such as education, income, physical environment and personal behaviour can have a greater impact on health than factors such as access to, and use of, health services (WHO 2014a). The relative significance of particular risk factors may change throughout the life course, both in terms of prevalence rates and relative risk.

This chapter presents information on the following topics in relation to Indigenous Australians:

- behavioural risk factors, including tobacco use, alcohol and illicit drug use, physical activity and diet
- biomedical risk factors, including excess body weight, high blood pressure and cholesterol levels
- psychological factors such as psychological distress and life stressors
- the relationship between socioeconomic factors (education and employment) and health
- environmental factors such as exposure to tobacco smoke, discrimination and removal from family.

Access to health services is covered in Chapter 7.

Data presented in this chapter were sourced primarily from the ABS 2012–13 Australian Aboriginal and Torres Strait Islander Health Survey—information about this data collection is provided in Appendix A.2. Comparisons with the non-Indigenous population are presented when possible, with those data sourced from the ABS 2011–12 Australian Health Survey (AHS) (ABS 2012a, 2013d).

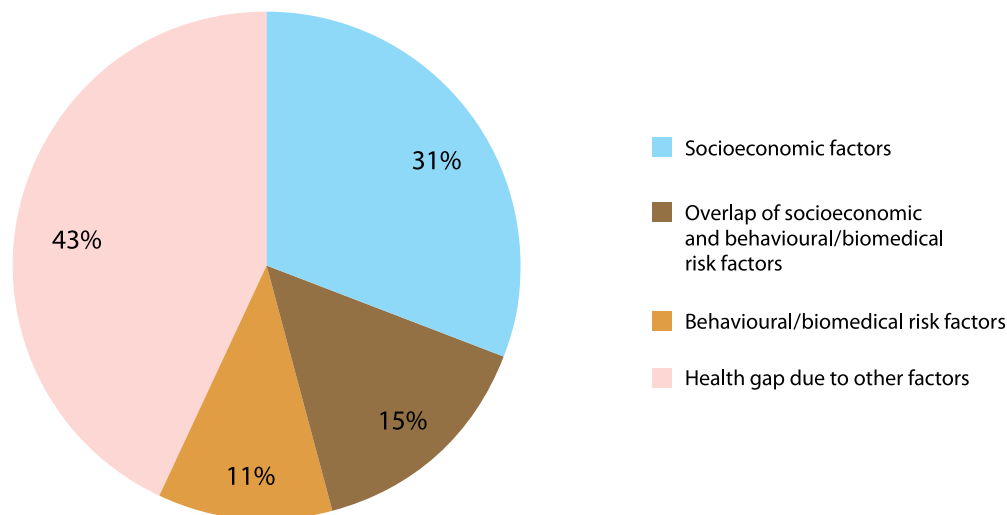
### Contribution of various determinants to the health gap

While it is well known that many different factors contribute to the health gap between Indigenous and non-Indigenous Australians, less is known about the relative contribution of particular factors. The AIHW undertook a study on this issue, using data for Indigenous and non-Indigenous people aged 15 to 64 (AIHW 2014c). The study suggested that:

- selected socioeconomic factors explained a larger proportion of the health gap (31% of the gap) than did selected behavioural/biomedical risk factors (11%)
- an additional 15% of the health gap was estimated to be due to the combined effects of socioeconomic determinants and behavioural/biomedical risk factors
- the remaining 43% of the gap was due to other unexplained factors, which may include poorer access to health services (Figure 4.1).

The socioeconomic factors with the greatest estimated impact were household income, highest level of school completed and employment status, while the behavioural/biomedical risk factors with the greatest impact were smoking status, body mass index and binge drinking (7 or more drinks on a single occasion).





*Notes*

1. The analysis controlled for differences in demographic characteristics (age, sex, marital status and remoteness) of the 2 populations.
  2. Based on AIHW analyses of the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the ABS 2004–05 National Health Survey.
- Source: AIHW 2014c.

**Figure 4.1: Proportion of the health gap between Indigenous and non-Indigenous people explained by selected risk factors, people aged 15 to 64**

## 4.2 Behavioural factors

This section includes information on the following behavioural risk factors: substance use (tobacco, alcohol and illicit substances), physical activity, dietary behaviour and breastfeeding practices.

### Substance use

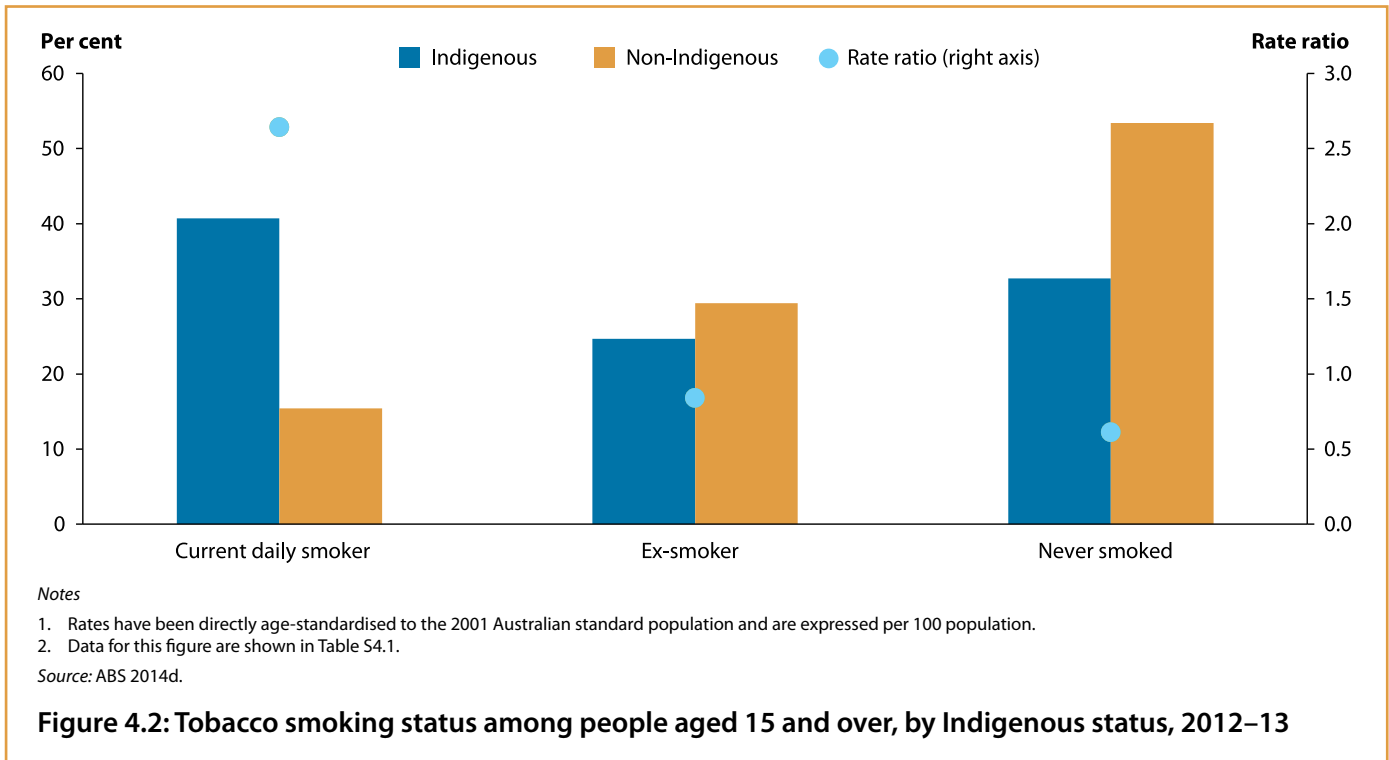
#### Tobacco

Tobacco smoking can increase the risk of developing various chronic health conditions, including heart disease, stroke, cancer and chronic respiratory conditions. While tobacco use is common among the Indigenous population, smoking rates have declined since 2001.

In 2012–13, among Indigenous people aged 15 and over:

- 44% reported being current smokers—42% smoked daily and 2% smoked weekly or less than weekly
- 20% were ex-smokers
- 36% had never smoked
- rates of daily smoking were significantly higher among those living in remote areas compared with non-remote areas (50% and 39%, respectively) (ABS 2014d).

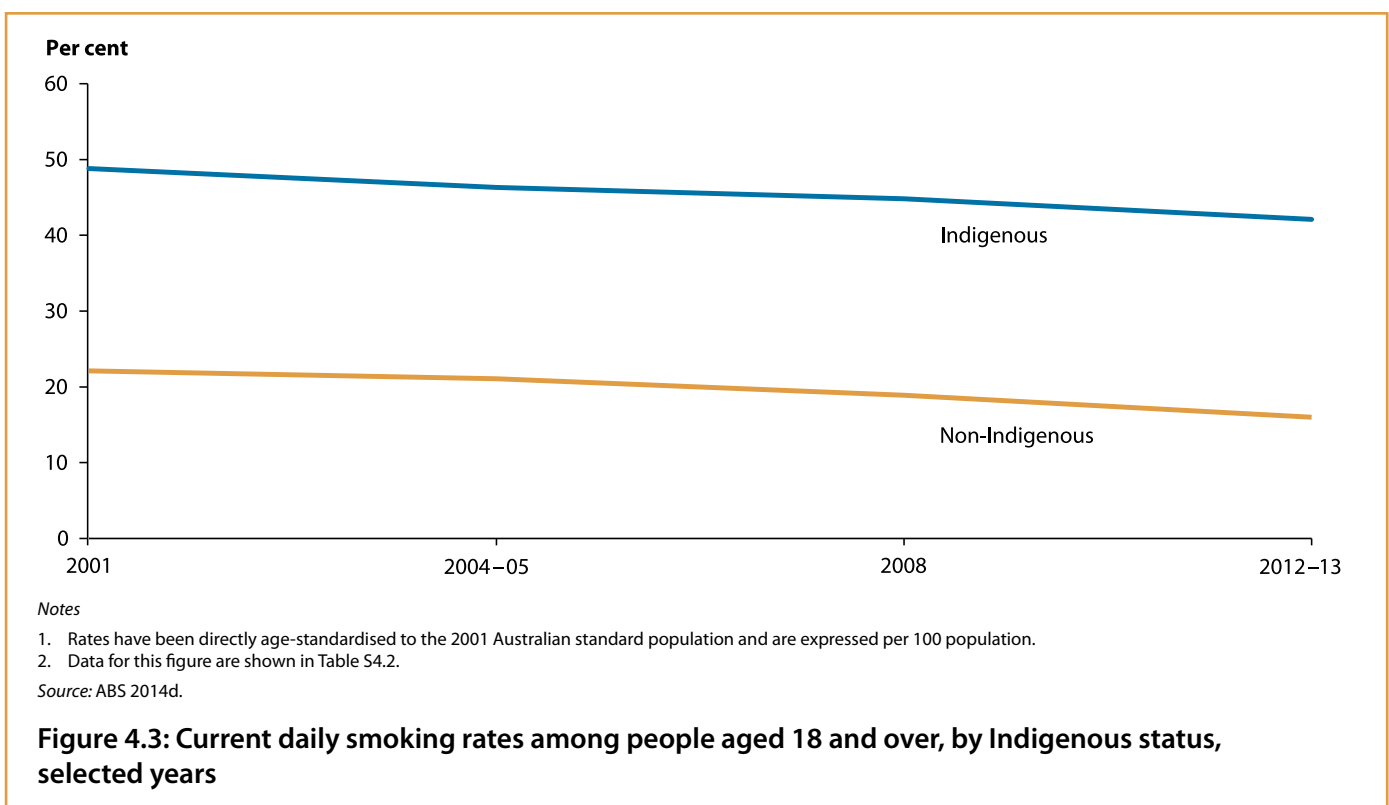
Indigenous people aged 15 and over were 2.6 times as likely as their non-Indigenous counterparts to smoke daily in 2012–13, based on age-standardised rates (Figure 4.2).



Indigenous young people were significantly more likely than non-Indigenous young people to smoke:

- those aged 15–17 were 4.5 times as likely to smoke daily (18% and 4%, respectively)
- those aged 18–24 were 2.7 times as likely to smoke daily (43% and 16%) (ABS 2014d).

Between 2001 and 2012–13, the proportion of Indigenous adults who smoked daily decreased significantly—from 51% to 44%. Non-Indigenous adult smoking rates also fell, and the gap between the age-standardised Indigenous and non-Indigenous rates remained fairly stable (27% in 2001 compared with 26% in 2012–13) (Figure 4.3).





Between 2002 and 2012–13:

- most of the change in rates of tobacco smoking occurred among Indigenous adults in non-remote areas—a significant fall of 8 percentage points from 50% to 42%
- rates in remote areas remained stable at around 52% to 53% (Table S4.3).

Over the same period, the proportion of Indigenous people aged 15 and over who had never smoked increased significantly from 33% to 36% (ABS 2014d).

Tobacco smoking while pregnant is considered a leading preventable risk factor for adverse birth outcomes including low birthweight. In 2011, half (50%) of Indigenous mothers who gave birth reported smoking during pregnancy (Li et al. 2013). Indigenous mothers were 4 times as likely as non-Indigenous mothers to have smoked during pregnancy (age-standardised rates of 49% and 12%, respectively). Between 2005 and 2011, there was a statistically significant decline (of 6%) in the age-standardised proportion of Indigenous mothers who smoked during pregnancy (AIHW 2014f).

Several programs that aim to reduce smoking rates among Indigenous people have been evaluated for their effectiveness; these evaluations have shown reductions in smoking rates (Adams et al. 2006; Eades et al. 2012; Mark et al. 2004; Richmond et al. 2006). A Cochrane review examined controlled trials evaluating smoking cessation initiatives for Indigenous people (Cochrane reviews are internationally recognised reviews of evidence-based health research). The review found that while the evidence base is not strong (due to a limited number of methodologically sound trials), programs specifically targeting Indigenous people can be effective (Carson et al. 2012).

## Alcohol

Excessive alcohol consumption is a major cause of liver disease, brain damage, transport accidents, domestic violence and crime. It can also contribute to family breakdowns and job loss (MCDS 2011).

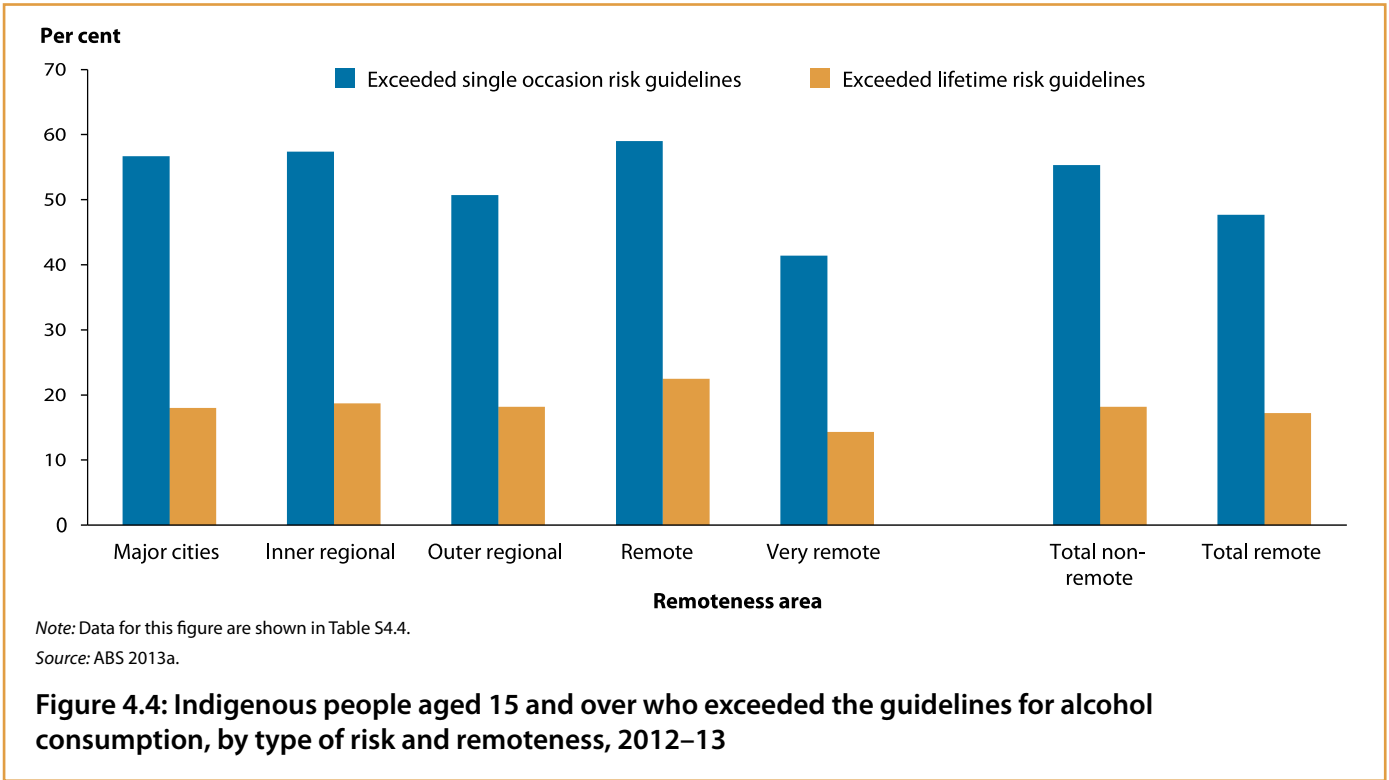
In 2012–13, almost 3 in 4 (72%) Indigenous people aged 15 and over reported that they had consumed alcohol in the previous 12 months, 13% had consumed alcohol 12 or more months ago, and 14% indicated they had never consumed alcohol. Indigenous people aged 15 and over were:

- significantly less likely than non-Indigenous people to report having consumed alcohol in the previous 12 months (age-standardised rates of 71% and 81%, respectively)
- significantly more likely than non-Indigenous people to report they had never consumed alcohol (age-standardised rates of 13% and 11%) (ABS 2013a).

### Single occasion risk

In 2012–13, among Indigenous people aged 15 and over:

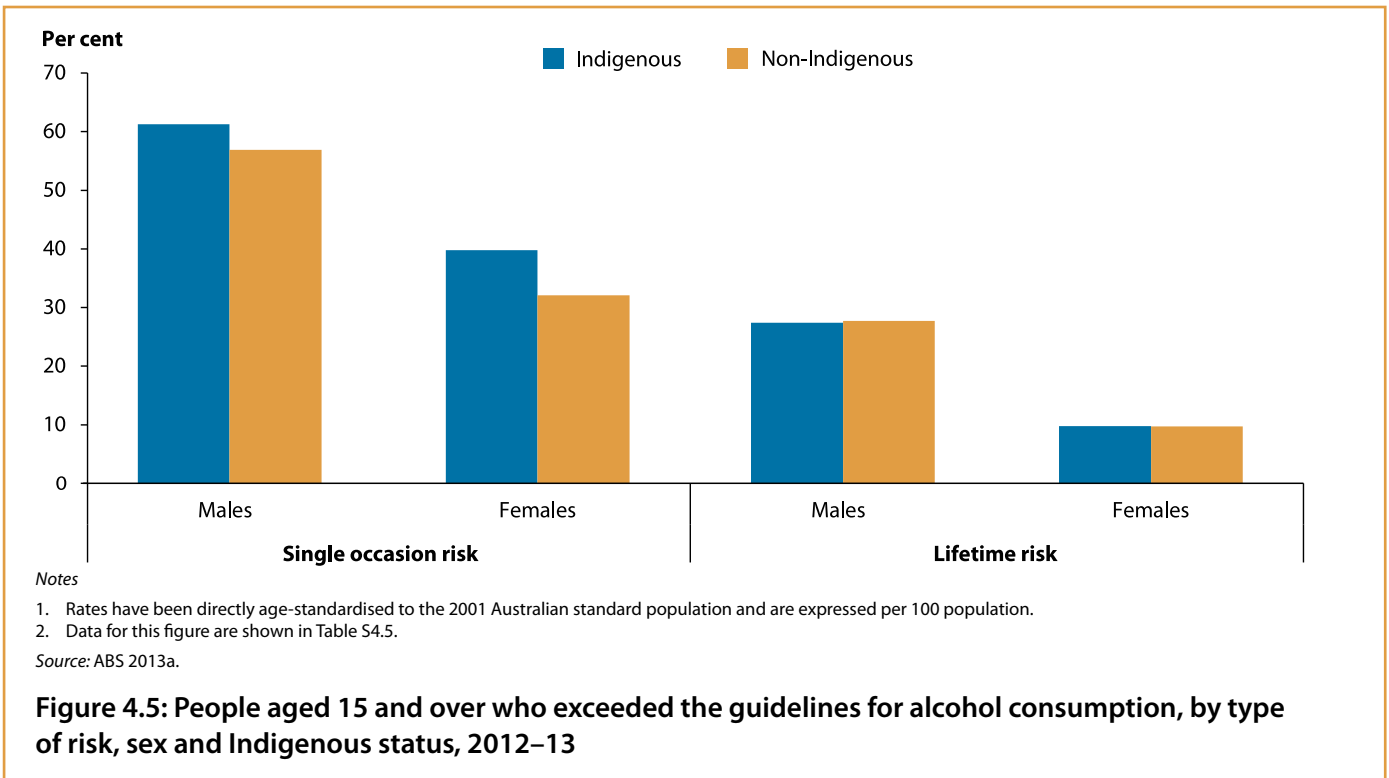
- 54% reported consuming more than 4 standard drinks on a single occasion in the previous year, exceeding the guidelines for single occasion risk (see Appendix C.2)
- males were significantly more likely to report drinking at these levels than females (64% compared with 44%)
- the proportion of 15–17 year olds exceeding the guidelines for single occasion risk was 24%; this rose to 68% among those aged 18–24 and then fell with age to 31% among those 55 and over
- those living in non-remote areas (55%) were significantly more likely to consume alcohol at single occasion risk levels than those living in remote areas (48%) (Figure 4.4; ABS 2013a).



Based on age-standardised rates:

- Indigenous people aged 15 and over were 1.1 times as likely to have exceeded the guidelines for single occasion risk as non-Indigenous Australians—a statistically significant difference
- Indigenous females were significantly more likely to have exceeded the guidelines than non-Indigenous females (1.2 times as likely); for males, the difference was not statistically significant (Figure 4.5).

Trends in alcohol consumption at single occasion risk levels are not available due to differences in the survey questions over time (ABS 2013a).







### Lifetime risk

In 2012–13, among Indigenous people aged 15 and over:

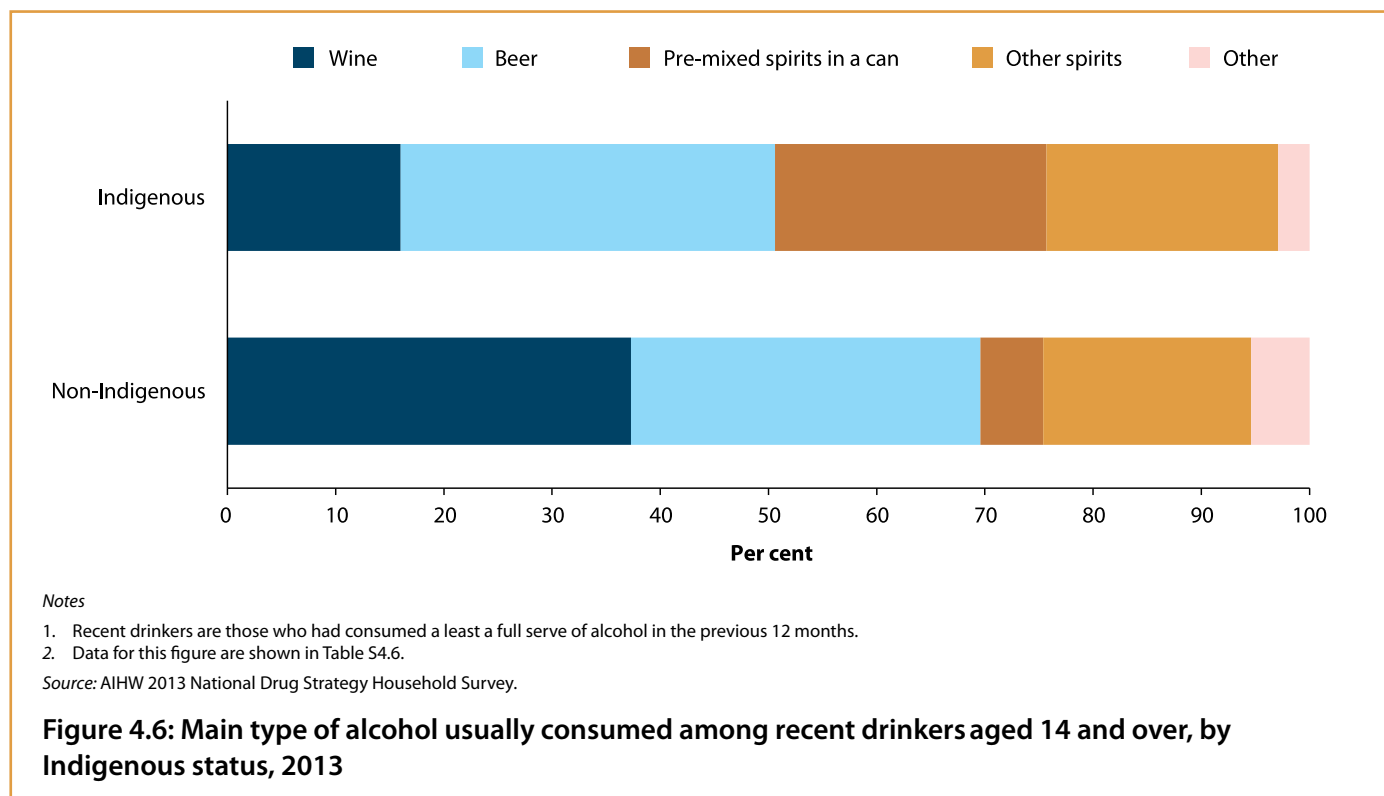
- 18% reported drinking more than 2 standard drinks per day on average over the previous year, exceeding the guidelines for lifetime risk (see Appendix C.2)
- males (26%) were significantly more likely than females (10%) to have exceeded these guidelines
- lifetime risky alcohol consumption peaked at 23% among those aged 35–44 and was lowest among those aged 15–17 (3%) and those aged 55 and over (16%); these differences were statistically significant
- there was no statistically significant difference between the proportion of people living in non-remote (18%) and remote (17%) areas who drank at levels exceeding the guidelines for lifetime risk (Figure 4.4)
- age-standardised rates of lifetime risky alcohol consumption were not significantly different from those for non-Indigenous people (18% and 19%, respectively) (Table S4.5; ABS 2013a).

The proportion of Indigenous people aged 18 and over who reported consuming alcohol at levels exceeding the guidelines for lifetime risk did not change significantly between 2001 and 2012–13 (19% and 20%, respectively) (ABS 2013a).

### Type of alcohol consumed

According to the 2013 National Drug Strategy Household Survey, among people aged 14 and over who were recent drinkers (that is, had consumed alcohol in the previous 12 months):

- Indigenous Australians were significantly more likely than non-Indigenous Australians to drink spirits as the main type of alcohol usually consumed (47% and 25%, respectively), with this difference largely due to differences in the consumption of pre-mixed spirits in a can (25% and 6% of recent drinkers, respectively)
- Indigenous Australians were significantly less likely than non-Indigenous Australians to drink wine as their main type of alcohol consumed (16% compared with 37%)
- there was no significant difference in the proportion who drank beer as their main type of alcohol consumed (Figure 4.6).



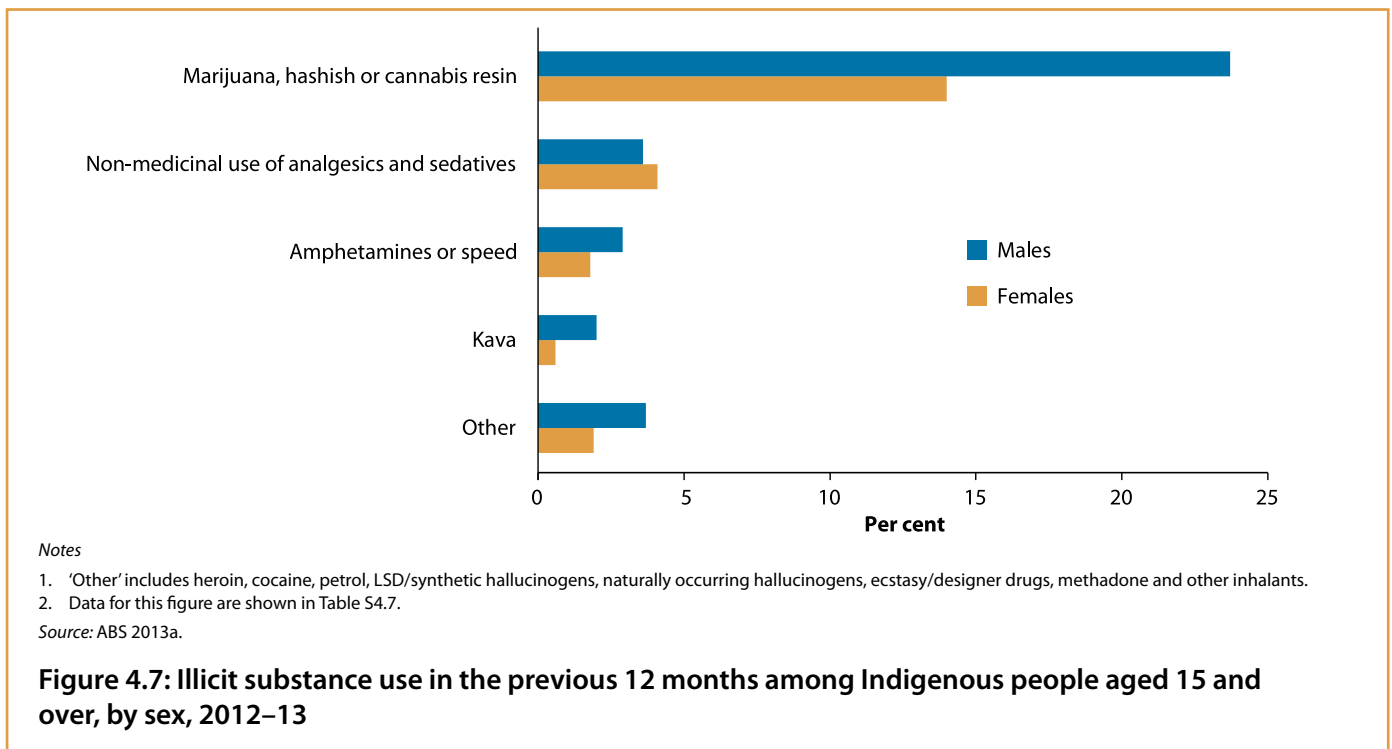
## Illicit substances

Illicit substance use includes the use of drugs whose production, sale or possession is prohibited and the misuse of substances that are legally available (for example, the use of solvents and petrol as inhalants, and the non-medical use of prescribed drugs such as painkillers). Illicit drug use not only has adverse health effects—such as a greater risk of mental health problems and premature death due to overdose—it can also lead to accidents, domestic violence, crime and the breakdown of family relationships. Unsafe injecting of intravenous drugs can also increase the risk of acquiring blood-borne infections such as hepatitis C and HIV/AIDS (MCDS 2011).

In 2012–13, among Indigenous people aged 15 and over:

- 22% reported having used an illicit substance in the previous 12 months
- 23% reported that they had used illicit substances, but not in the previous 12 months
- 52% reported that they had never used illicit substances
- 3% did not state whether they had or had not used illicit substances (Table S4.7).

The most commonly used substance by Indigenous people aged 15 and over was cannabis (reported by 19%), followed by the non-medical use of analgesics and sedatives (4%) (Table S4.7). Males were more likely to report cannabis use than females (24% and 14%) (Figure 4.7).



Among Indigenous people aged 15 and over:

- males were significantly more likely than females to report they had used an illicit substance in the previous 12 months (27% and 18%, respectively)
- those in non-remote areas were significantly more likely than those in remote areas to report having used an illicit substance in the previous 12 months (23% and 19%) (Table S4.7).

Comparable data on non-Indigenous rates of illicit drug use and trends over time are not available.



## Physical activity

Being physically inactive is associated with several chronic diseases including cardiovascular disease, Type 2 diabetes, some cancers and osteoporosis. It is also related to biomedical risk factors such as excess body weight, high blood pressure and high cholesterol. The ABS 2012–13 AATSIHS collected information about physical activity from all respondents aged 5 and over in both remote and non-remote areas, and from children aged 2–4 in non-remote areas. Different questions were asked of people living in non-remote and remote areas.

### Children in non-remote areas

Regular physical activity early in life can establish good habits that are maintained in adulthood. In 2012–13, among Indigenous children aged 2–4 living in non-remote areas:

- 82% met the physical activity recommendation for children in this age group of at least 3 hours of activity each day in the 3 days prior to interview
- an average of 6.6 hours per day was spent on physical activity, which was similar to the non-Indigenous average of 6.2 hours per day
- there was no difference between boys and girls in the proportion who met the recommendation or the average amount of time spent being physically active (ABS 2014c).

Indigenous children aged 5–17 in non-remote areas were less likely than those aged 2–4 to meet their physical activity recommendation (1 hour or more per day in the 3 days prior to the interview). In 2012–13, among Indigenous children aged 5–17 in non-remote areas:

- almost half (48%) met the physical activity recommendation—this was significantly higher than the proportion for non-Indigenous children (35%)
- an average of 2 hours per day was spent on physical activity, which was more than the average for non-Indigenous children (1.6 hours)
- boys were more likely than girls to meet the recommendation (54% compared with 41%) and spent more time being physically active per day (2.2 compared with 1.7 hours) (ABS 2014c).

### Screen-based activity

Screen-based activities are those activities that use a screen-based device such as a television, computer or electronic gaming device. In 2012–13, Indigenous children in non-remote areas:

- aged 2–4 spent an average of 1.5 hours per day on screen-based activity (similar to the non-Indigenous average of 1.4 hours)
- aged 5–17 spent an average of 2.6 hours per day on screen-based activity (similar to the non-Indigenous average of 2.5 hours)
- spent more time on screen-based activity as they got older (1.9 hours per day among those aged 5–8 compared with 3.3 hours among those aged 15–17) (ABS 2014c).

### Adults in non-remote areas

As part of the AATSIHS, information was collected on the frequency, intensity and duration of exercise undertaken in the week prior to being interviewed; that information was used to derive a score to represent exercise intensity with 4 categories: sedentary, low, moderate and high.

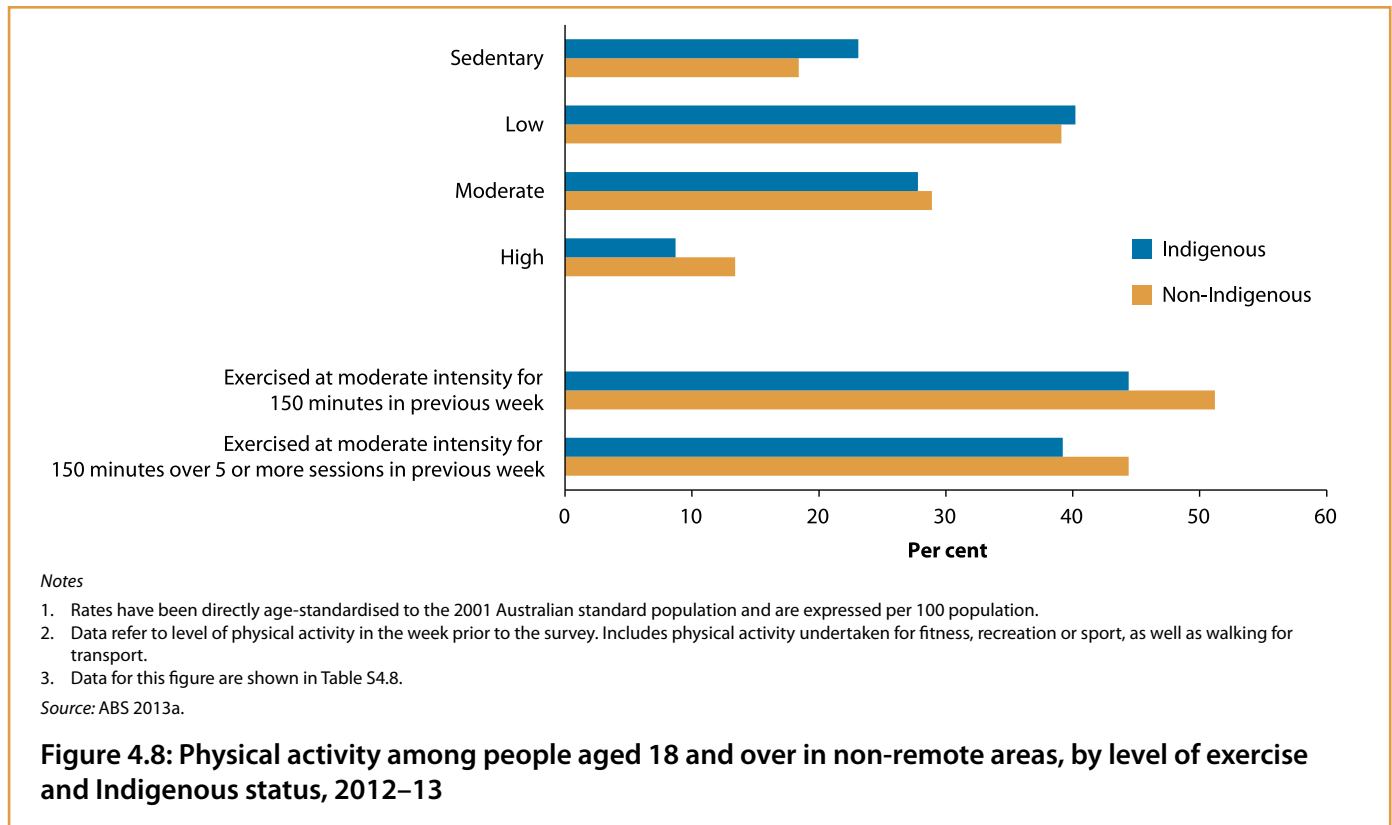
In 2012–13, among Indigenous adults in non-remote areas:

- about 3 in 5 (61%) reported that they had been sedentary or had exercised at low intensity in the week before the survey
- almost 3 in 10 (29%) had exercised at moderate intensity
- 1 in 10 (10%) had exercised at high intensity (ABS 2013a).

The proportion of Indigenous adults in non-remote areas who were sedentary or exercised at low intensity:

- was significantly lower among younger than older adults (53% of those aged 18–24 compared with 72% of those aged 55 and over)
- was higher for women than men (68% compared with 53%), with this difference being statistically significant for all age groups (AIHW analysis of ABS 2013a).

The proportion of Indigenous adults in non-remote areas who were sedentary or exercised at low intensity was significantly higher than for their non-Indigenous counterparts (1.1 times as high based on age-standardised rates) (Figure 4.8).



At the time of the 2012–13 AATSIHS, the National Physical Activity Guidelines recommended that people aged 18 and over be active for at least 30 minutes on most, if not all, days of the week and that each week, they accumulate at least 150 minutes of moderate intensity physical activity (ABS 2013b). Moderate intensity activities are those that require some effort but still allow for conversation—such as brisk walking, swimming, social tennis or dancing.

In 2012–13, among adults living in non-remote areas:

- 47% of Indigenous adults met the target of 150 minutes of moderate intensity physical activity in the week prior to the survey, and 41% had exercised for at least 150 minutes over 5 or more sessions in the previous week
- Indigenous men were significantly more likely than Indigenous women to have met the target of 150 minutes in the previous week (52% compared with 42%)
- Indigenous adults were significantly less likely than non-Indigenous adults to have met the target of 150 minutes of exercise, and to have exercised for 150 minutes over 5 or more sessions in the previous week (both having a rate ratio of 0.9 based on age-standardised rates) (ABS 2013a).

### Sedentary behaviour

Indigenous adults living in non-remote areas who participated in the physical activity survey component of the 2012–13 AATSIHS (see Appendix A.2) spent an average of 5.3 hours per day on sedentary behaviour (that



is, sitting or lying down for leisure and work-related activities, excluding sleeping) in the week prior to being interviewed. This included:

- 2.2 hours watching television or videos
- 0.8 hours sitting at work
- 0.6 hours sitting for transport.

On average, among adults in non-remote areas, Indigenous adults spent significantly less time than non-Indigenous adults on sedentary behaviour (age-standardised mean of 5.1 hours and 5.6 hours per day, respectively). This difference was due to Indigenous adults spending less time sitting at work (0.8 and 1.5 hours, respectively), rather than to sedentary behaviour for leisure (4.4 and 4.1 hours) (ABS 2014c).

### Remote areas

As part of the AATSIHS, the ABS used different questions to measure physical activity among people living in remote and non-remote areas and the data are not comparable.

In 2012–13, data for Indigenous people in remote areas showed that on the day prior to being interviewed:

- 82% of Indigenous children aged 5–17 were physically active for more than 60 minutes and 4.1% had not participated in any type of physical activity
- 55% of Indigenous adults were physically active for more than 30 minutes and 21% had not participated in any type of physical activity (ABS 2014c).

## Dietary behaviour

Poor diet is a risk factor for cardiovascular disease, Type 2 diabetes, some cancers, tooth decay and other conditions associated with overweight or obesity. Unhealthy diets are considered to be those that are low in fibre and high in salt, fats and sugar.

Data on fruit and vegetable consumption for children and adults are presented in this section. More information on the dietary behaviours of Indigenous people will be available when further results from the National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey are published by the ABS. That survey (which is a component of the AATSIHS) collected information through a 24-hour dietary recall on all foods and beverages consumed on the day prior to the interview.

### Fruit and vegetable consumption

In 2012–13, among Indigenous children aged 2 to 14:

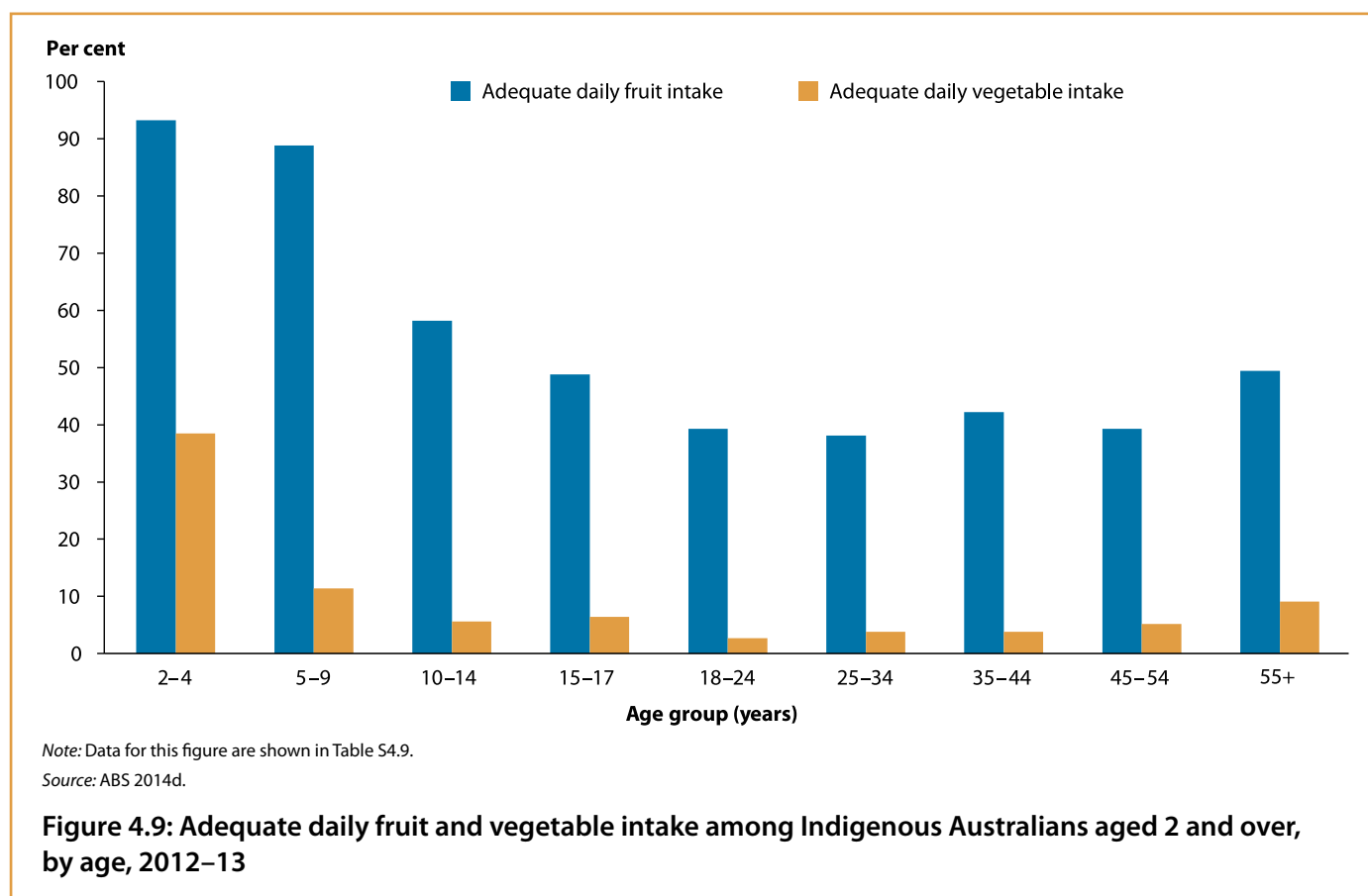
- 85% did not consume an adequate amount of fruit and/or vegetables daily
- more were likely to consume an adequate amount of fruit daily (78%) than an adequate amount of vegetables daily (16%)
- 9% consumed no fruit or less than 1 serve daily, and 10% consumed no vegetables or less than 1 serve daily
- there was no significant difference between remote and non-remote areas in the proportion who consumed an adequate amount of fruit and vegetables (13% and 15%, respectively) (ABS 2014d).

In 2012–13, among Indigenous people aged 15 and over:

- the rates of adequate daily fruit and vegetable consumption were significantly lower than those observed among Indigenous children aged 2 to 14 (Figure 4.9)
- 97% did not consume an adequate amount of fruit and/or vegetables daily
- 42% consumed an adequate amount of fruit and 5% consumed an adequate amount of vegetables
- adequate daily fruit and vegetable intake was highest among those aged 55 and over (6%)
- those living in remote areas were significantly more likely to consume an adequate amount of fruit daily than those in non-remote areas (46% compared with 41%), and significantly less likely to consume an adequate amount of vegetables daily (3% compared with 5%) (ABS 2014d).



Indigenous people aged 15 and over were significantly less likely than non-Indigenous people to consume an adequate amount of fruit daily (0.9 times as likely, based on age-standardised rates) and an adequate amount of vegetables daily (0.8 times as likely, based on age-standardised rates) (ABS 2014d).



Data on changes to fruit and vegetable consumption over time are only available for Indigenous Australians aged 15 and over living in non-remote areas. Among these Indigenous Australians:

- there was no difference in the level of inadequate daily fruit consumption in 2012–13 compared with 2004–05 (both 59%)
- there was a statistically significant increase in inadequate daily vegetable consumption (92% in 2004–05 and 95% in 2012–13) (ABS 2014d).

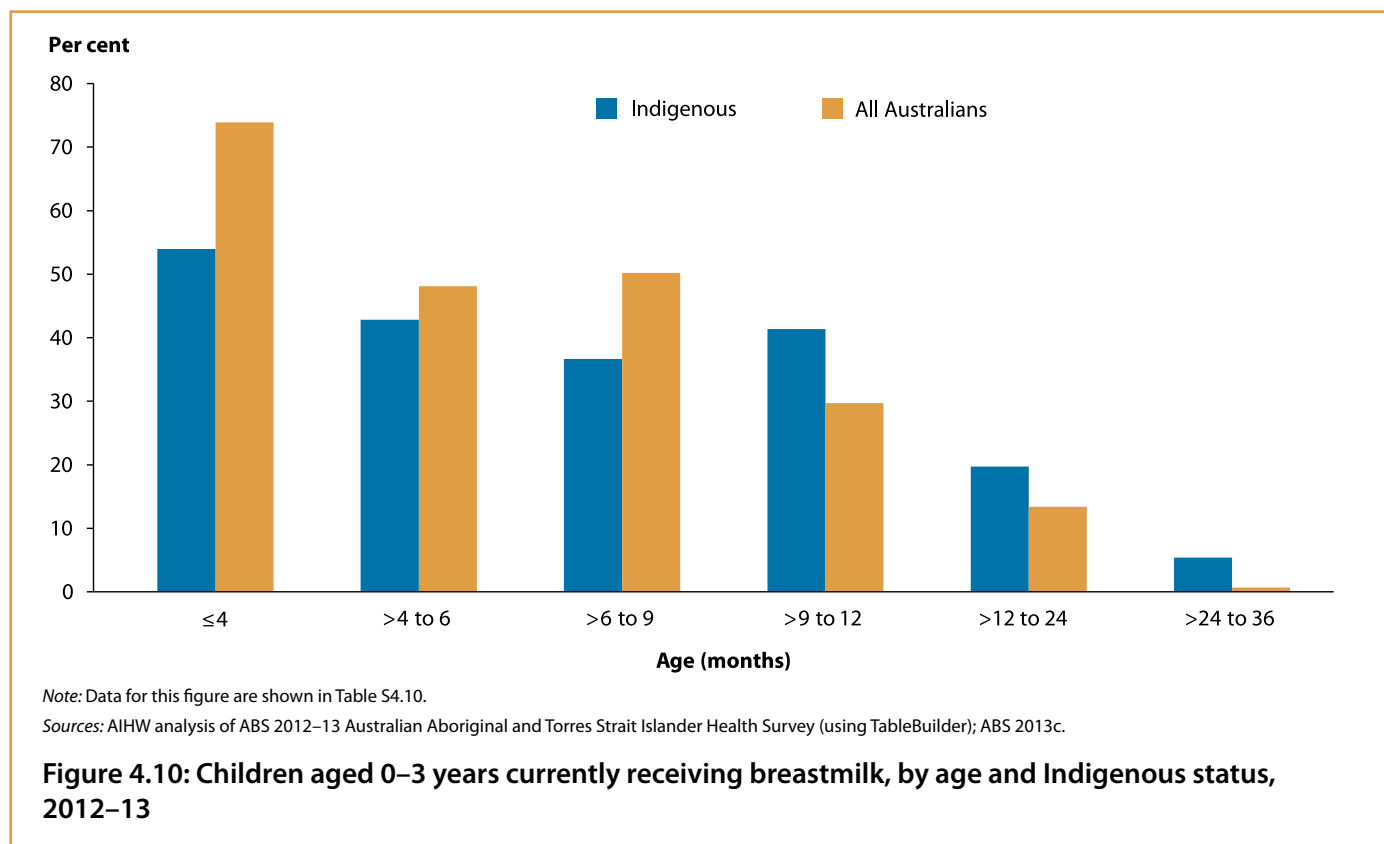
## Breastfeeding practices

Breastfeeding offers protection to infants against conditions such as sudden infant death syndrome (SIDS), diarrhoea, respiratory infections and middle ear infections, as well as the development of diabetes in later life (AHMAC 2012). The National Health and Medical Research Council recommends that infants be exclusively breastfed for the first 6 months of life and that breastfeeding be ideally continued until 12 months of age in combination with solid food. Breastfeeding beyond 12 months, if the mother and child desire it, is encouraged (NHMRC 2013).

In 2012–13:

- 83% of Indigenous children aged 0–3 years had ever received breastmilk, compared with 92% of all children (ABS 2013c; AIHW analysis of 2012–13 AATSIHS)
- 54% of Indigenous children aged 4 months or under were currently receiving breastmilk, compared with 37% of those aged 6–9 months and 5% of those aged over 24 months to 36 months

- Indigenous children aged 4 months or under were significantly less likely than all Australian children at that age to be currently receiving breastmilk (Figure 4.10).



Of Indigenous children aged 0–3 years who were no longer breastfed in 2012–13:

- 21% had been breastfed for less than 1 month
- 38% had been breastfed for 1 to less than 6 months
- 24% had been breastfed for 6 to less than 12 months
- 16% had been breastfed for 12 months or more (AIHW analysis of 2012–13 AATSIHS).

The most commonly reported reason for stopping breastfeeding was inadequate or no milk supply (24%), followed by the feeling it was time to stop (17%).

## 4.3 Biomedical factors

Biomedical risk factors can be a product of behaviours, genetics and the environment. This section describes the following biomedical factors for Indigenous people: body weight, blood pressure, cholesterol, glucose control, kidney function, liver function and haemoglobin levels. While some information on how each of these factors is measured is provided, further details are shown in Appendix C.1.

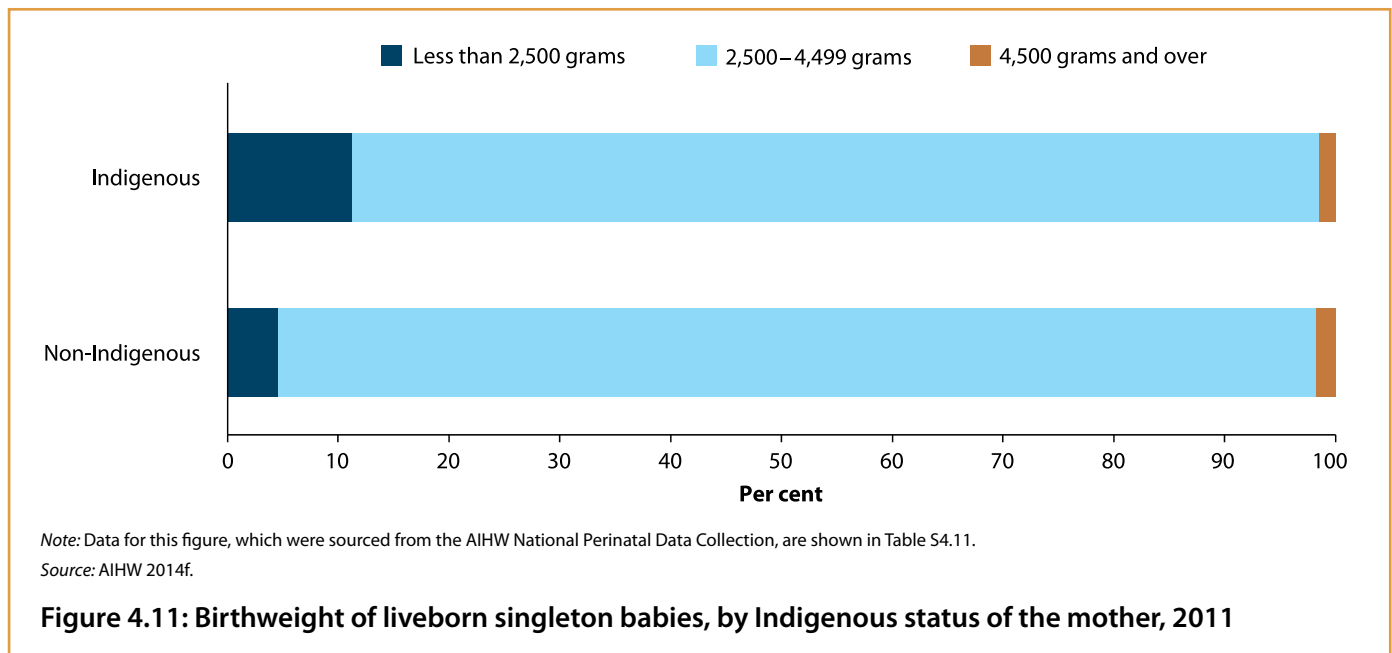
### Body weight

Healthy body weight is important for overall health. Being underweight can increase the risk of developing osteoporosis and anaemia, and lead to problems with fertility and the immune system. Conversely, having excess body weight is a risk factor for chronic conditions such as cardiovascular disease, Type 2 diabetes, certain cancers, sleep apnoea and osteoarthritis (AIHW 2012f). Data on body weight presented in this report are based on measured (rather than reported) height and weight.

## Low birthweight

A person's birthweight is a principal determinant of a baby's chance of survival and good health. It is also an important indicator of infant health in its own right. In 2011:

- liveborn babies born to Indigenous mothers were about twice as likely as babies born to non-Indigenous mothers to be of low birthweight (weighing less than 2,500 grams) (12.6% and 6.0%, respectively) (Table S4.11)
- excluding multiple births, 11.2% of liveborn singleton babies born to Indigenous mothers were of low birthweight, compared with 4.6% of babies born to non-Indigenous mothers (Figure 4.11).



Between 2000 and 2011, there was:

- a statistically significant decrease of 9% in the low birthweight rate among liveborn singleton babies of Indigenous mothers, compared with no significant change for babies born to non-Indigenous mothers
- a statistically significant narrowing of the gap in the low birthweight rate (AIHW 2014f).

Factors that may be contributing to the reduction in the rate of low birthweight babies among Indigenous mothers include an increase in the proportion of Indigenous women attending antenatal care during pregnancy (see Section 7.2), and a reduction in the proportion of Indigenous women smoking during pregnancy (see Section 4.2).

Further information about the birthweight of babies born to Indigenous mothers can be found in *Birthweight of babies born to Indigenous mothers* (AIHW 2014f).

## Underweight

In 2012–13:

- 8.0% of Indigenous children aged 2–14 were considered to be underweight
- Indigenous children aged 2–14 were 1.7 times as likely as non-Indigenous children to be underweight (8.0% compared with 4.8%)
- 3.5% of Indigenous people aged 15 and over were considered to be underweight
- Indigenous people aged 15 and over were significantly more likely than non-Indigenous people to be underweight (1.6 times as likely, based on age-standardised rates) (ABS 2014d).



## Overweight and obesity

Obesity is a risk factor for many chronic health conditions, including heart disease and diabetes. For example, in 2012–13, obese Indigenous adults were 7 times as likely to have diabetes compared with those who were of normal weight or underweight. Further, obese Indigenous Australians were more likely than obese non-Indigenous Australians to have biomedical risk factors for cardiovascular disease, diabetes and chronic kidney disease (ABS 2014b).

In 2012–13, among Indigenous children aged 2–14:

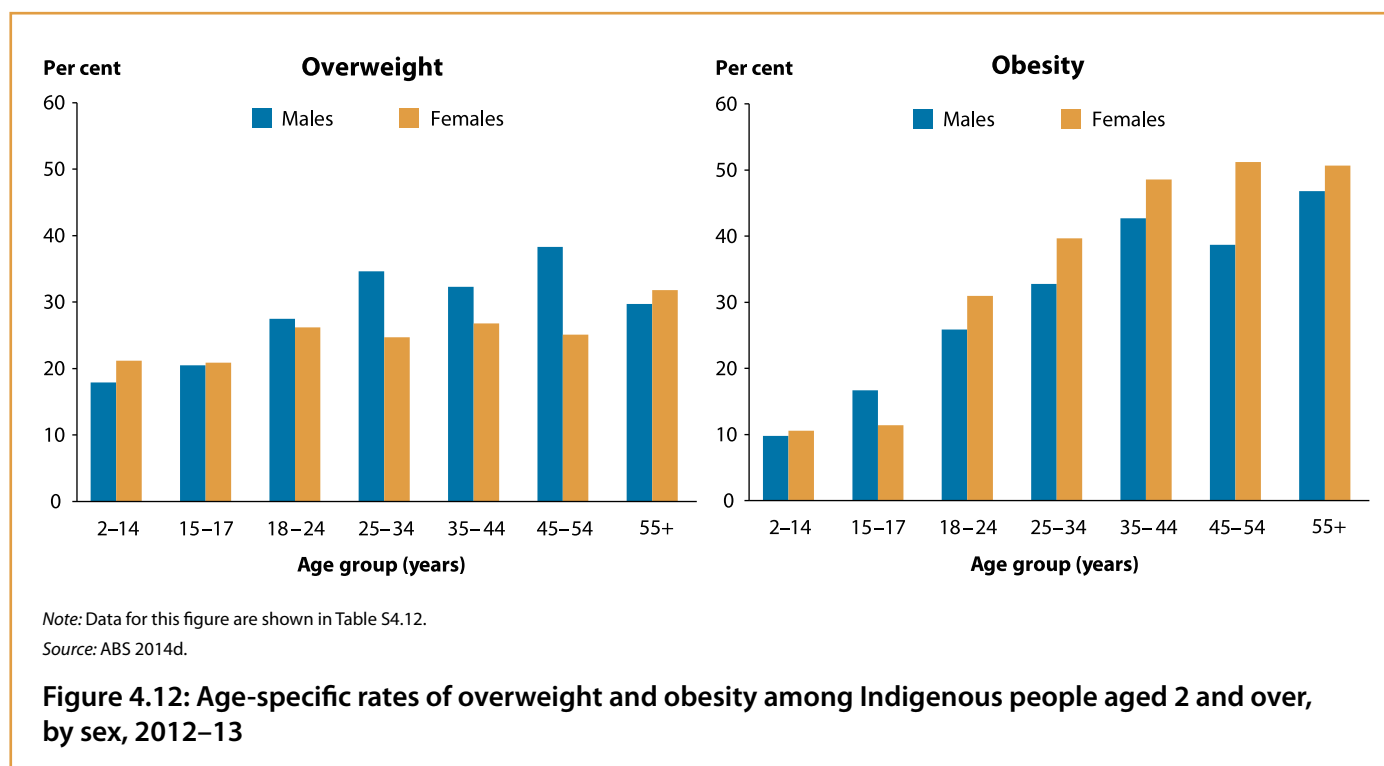
- 30% were classified as overweight (20%) or obese (10%)
- the proportion of girls who were classified as overweight (21%) or obese (10%) was not statistically different from the proportion of boys who were overweight (18%) or obese (10%).

Indigenous children aged 2–14 were significantly more likely than non-Indigenous children to be either overweight or obese (1.2 times as likely; 30% compared with 25%), and to be obese (1.6 times as likely; 10.2% compared with 6.5%) (ABS 2014d).

In 2012–13, among Indigenous people aged 15 and over:

- 66% were classified as overweight (29%) or obese (37%)
- overweight and obesity rates were significantly higher among older people (80% of those aged 55 and over were overweight or obese compared with 35% of those aged 15–17)
- males were significantly more likely than females to be overweight (31% compared with 26%) while females were significantly more likely than males to be obese (40% compared with 34%) (ABS 2014d).

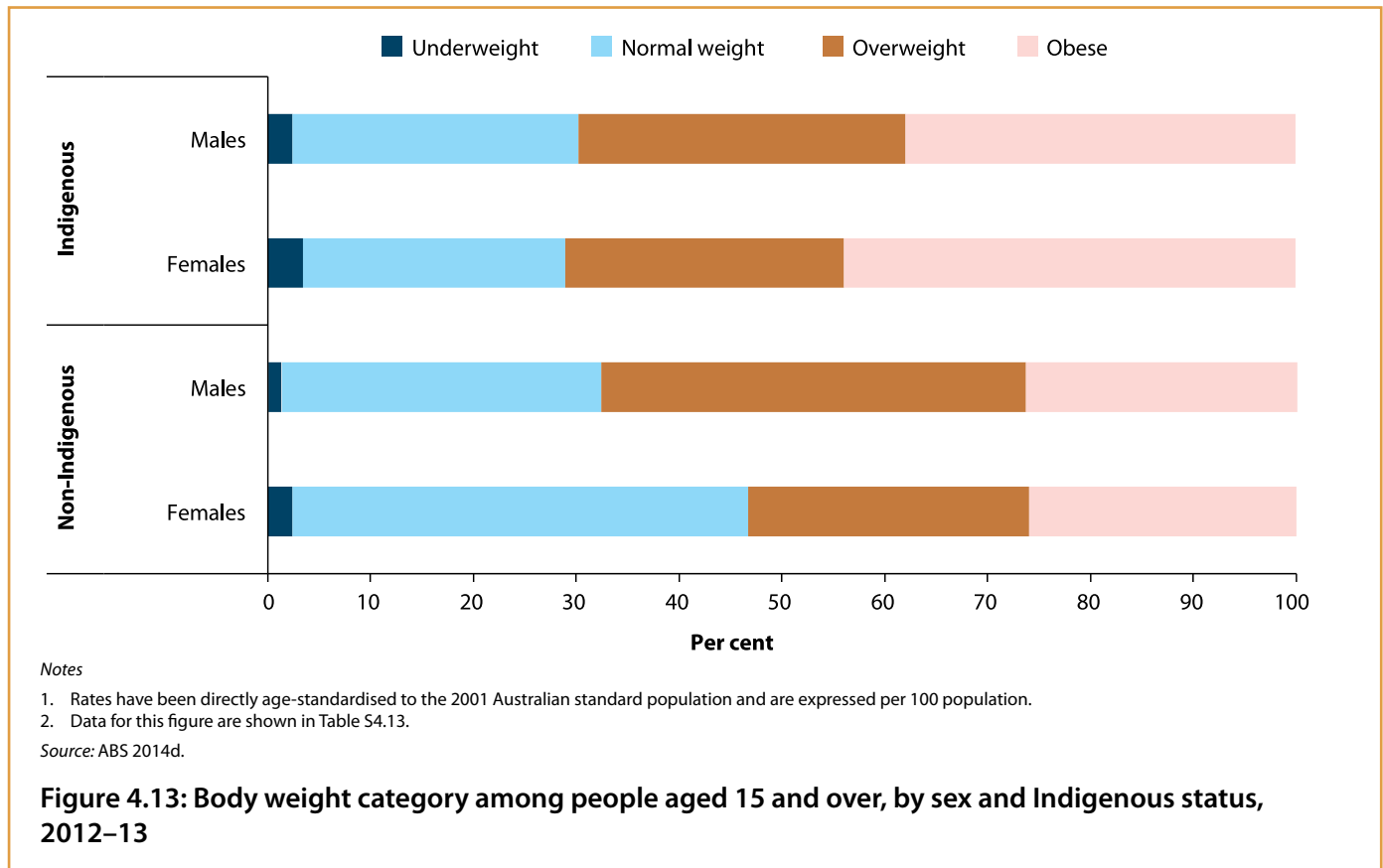
Indigenous women aged 25–34 and 45–54 were significantly more likely than their male counterparts to be obese (Figure 4.12) (ABS 2014d).



In 2012–13, rates of obesity among Indigenous people aged 15 and over were significantly higher in non-remote areas (38%) than remote areas (34%) (ABS 2014d).

Based on age-standardised rates, among people aged 15 and over:

- Indigenous people were significantly more likely than non-Indigenous people to be either overweight or obese (1.2 times as likely) and to be obese (1.6 times as likely) (Table S4.13)
- both Indigenous males and Indigenous females were significantly more likely to be obese than their non-Indigenous counterparts (1.4 times as likely for males and 1.7 times as likely for females) (Figure 4.13).



## Blood pressure

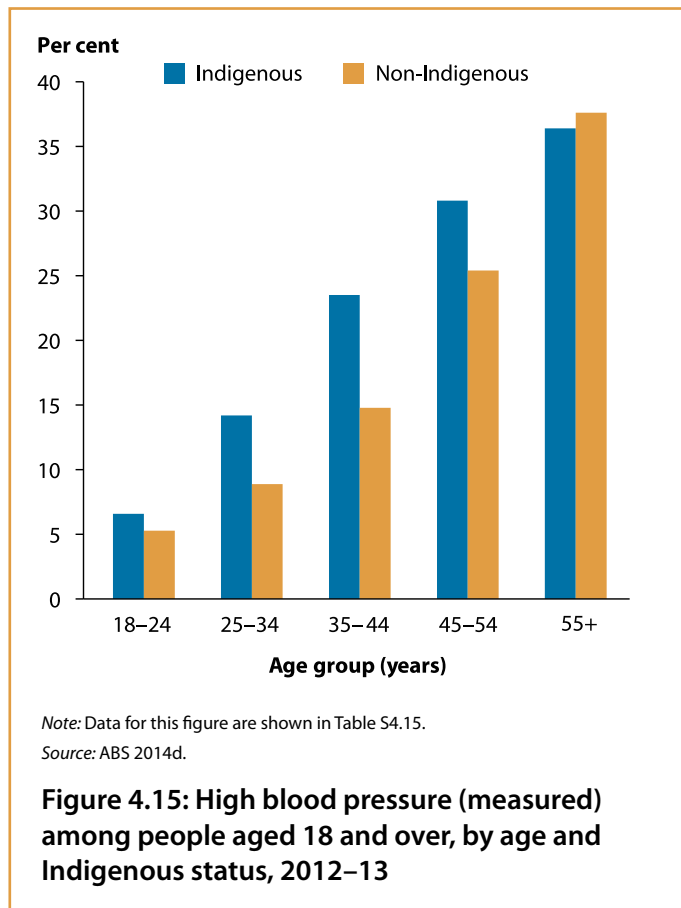
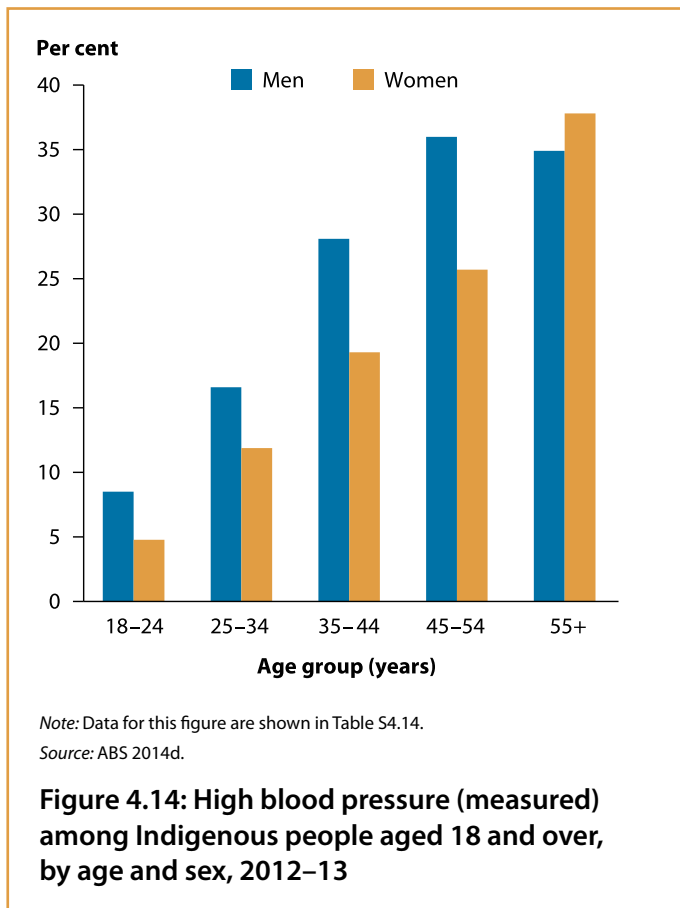
High blood pressure, also known as hypertension, is a risk factor for stroke, coronary heart disease, heart failure and chronic kidney disease. It is also a cardiovascular condition in its own right. In the 2012–13 AATSIHS, high blood pressure was defined as blood pressure of 140/90 mmHg or more as measured in the survey (ABS 2014d).

In 2012–13:

- 1 in 5 (20%) Indigenous adults had measured high blood pressure
- Indigenous men were significantly more likely than Indigenous women to have measured high blood pressure (23% compared with 18%); this was true for all age groups except those aged 25–34 and 55 and over (Figure 4.14)
- the proportion of Indigenous adults with measured high blood pressure increased with age from 6.6% among those aged 18–24 to 36% among those aged 55 and over (Figure 4.15)
- 4 in 5 (79%) of Indigenous adults who had measured high blood pressure did not report that they had high blood pressure as a long-term condition (ABS 2014d).

Indigenous adults were significantly more likely than non-Indigenous adults to have measured high blood pressure (1.2 times as likely, based on age-standardised rates). Indigenous people were significantly more likely than non-Indigenous people to have high blood pressure in the 25–34, 35–44 and 45–54 age groups (Figure 4.15).





The information above relates to measured high blood pressure only; it does not include people who might otherwise have had high blood pressure but were effectively managing their condition (for example, through the use of blood pressure medications). When those who reported having high blood pressure are also taken into account, the 2012-13 AATSIHS indicates:

- 27% of Indigenous adults had self-reported and/or measured high blood pressure, with a significantly higher rate among Indigenous men than Indigenous women (29% compared with 25%)
- Indigenous adults in remote areas were significantly more likely to have high blood pressure than those in non-remote areas (34% and 25%, respectively) (Table S4.16).

Indigenous adults who reported having certain long-term health conditions were significantly more likely to have self-reported and/or measured high blood pressure than those without these conditions. In 2012-13, among Indigenous adults:

- those who reported heart/cardiovascular problems were 3.7 times as likely to have self-reported and/or measured high blood pressure as those without these problems (63% compared with 17%)
- those with kidney disease were 2.2 times as likely to have high blood pressure as those without (57% compared with 26%)
- those with diabetes were 2.2 times as likely to have high blood pressure as those without (51% compared with 23%) (Table S4.16).

Since blood pressure was not measured in previous Indigenous health surveys, comparisons over time of the proportion with measured high blood pressure cannot be made. However, trends in the self-reporting of high blood pressure can be monitored. A statistically significant smaller proportion of Indigenous people reported having high blood pressure in 2012-13 (6%) than in 2004-05 (7%) (ABS 2014d).



## Cholesterol

Cholesterol is a fatty substance produced by the liver and elsewhere in the body. It is needed for metabolising fat and producing hormones and Vitamin D. High blood cholesterol levels are a major risk factor for heart disease and stroke. There are 2 main types of cholesterol: high density lipoprotein (HDL) (known as 'good' cholesterol) and low density lipoprotein (LDL) (known as 'bad' cholesterol). Total blood cholesterol levels above 5.5 mmol/L indicate an increased risk of developing coronary heart disease (AIHW 2013g).

In 2012–13, according to blood test results:

- 25% of Indigenous adults had abnormal total cholesterol levels ( $\geq 5.5$  mmol/L)
- rates of abnormal total cholesterol levels were not significantly different for Indigenous men and women, nor between those living in remote and non-remote areas
- abnormal total cholesterol levels increased with age until 45–54, and then dropped among those aged 55 and over (however, this may be due to more older people than younger people taking cholesterol-lowering medication—see information about dyslipidaemia below)
- Indigenous adults who were obese were twice as likely to have abnormal total cholesterol as those who were normal weight or underweight (30% compared with 16%)
- Indigenous adults were significantly less likely than non-Indigenous adults to have abnormal total cholesterol (0.8 times as likely, based on age-standardised rates); however, this may be due to more Indigenous people taking cholesterol-lowering medication particularly among those aged 55 and over (ABS 2014b).

About 1 in 10 (9.1%) Indigenous adults with measured high total cholesterol levels reported that they had high cholesterol as a long-term condition. This suggests that the majority of Indigenous people with high total cholesterol levels were either not aware of this condition or did not report it for reasons such as not considering it a long-term or current problem (ABS 2014b).

In 2012–13, according to blood test results:

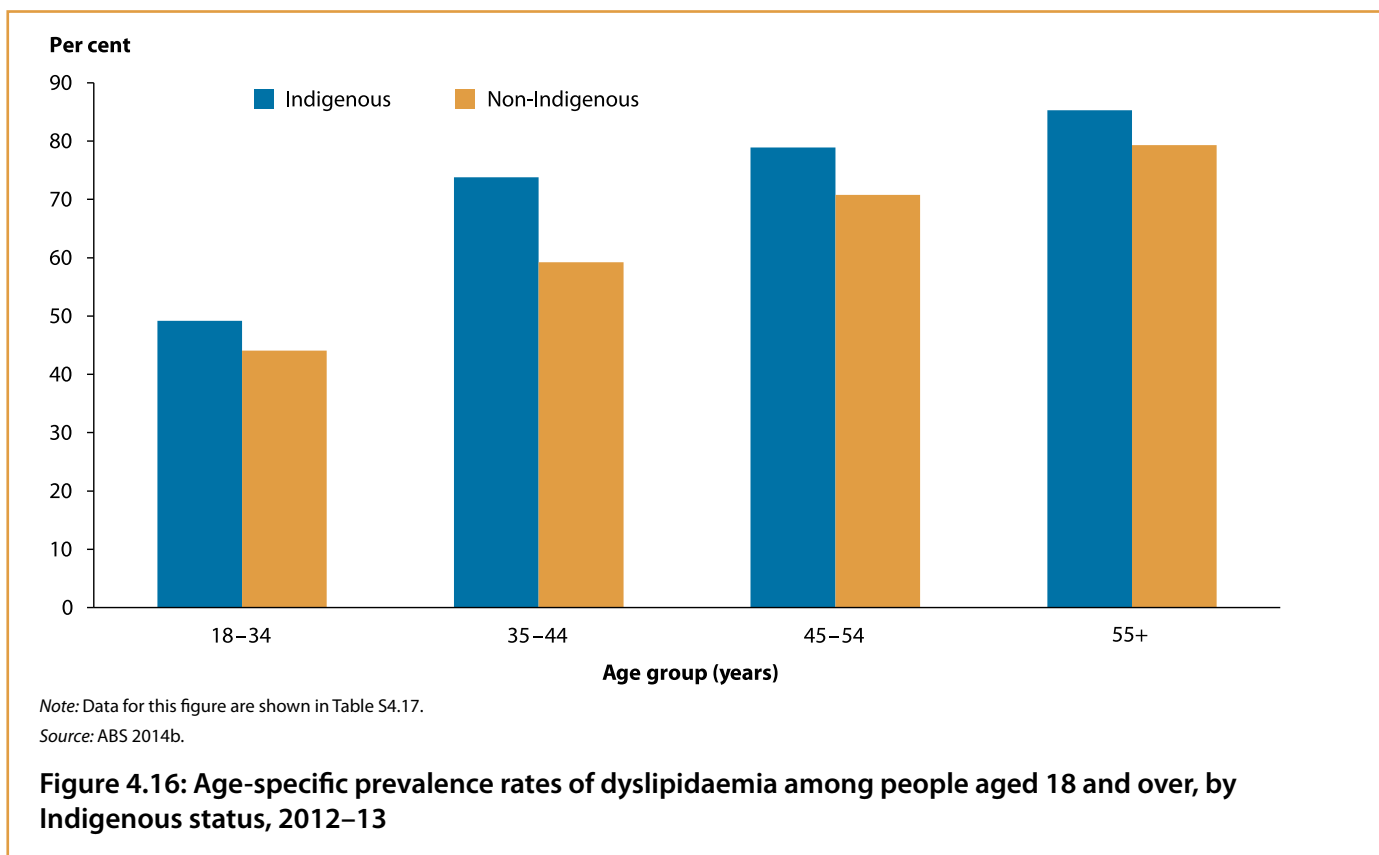
- 25% of Indigenous adults had high levels of LDL ('bad') cholesterol ( $\geq 3.5$  mmol/L)
- 40% of Indigenous adults had abnormal levels of HDL ('good') cholesterol ( $< 1.0$  mmol/L for men and  $< 1.3$  mmol/L for women) (ABS 2014b).

## Dyslipidaemia

Dyslipidaemia is a collective term for conditions where there are abnormal levels of lipids (fats) in the blood. It is a risk factor for heart disease and stroke. In the 2012–13 AATSIHS, people with dyslipidaemia included those who had measured abnormal lipid levels (cholesterol and triglycerides), as well as those with normal lipid levels who were taking cholesterol-lowering medication (see Appendix C.1 for further information).

In 2012–13:

- 65% of Indigenous adults had dyslipidaemia—14% were taking cholesterol-lowering medication and 51% had abnormal levels but were not taking medication
- the proportions of Indigenous men and women with dyslipidaemia were not significantly different
- rates of dyslipidaemia increased with age from 49% among Indigenous people aged 18–34 to 85% among those aged 55 and over (Figure 4.16)
- Indigenous adults in remote areas (79%) were significantly more likely to have dyslipidaemia than those in non-remote areas (63%)
- Indigenous adults were significantly more likely than non-Indigenous adults to have dyslipidaemia (1.1 times as likely, based on age-standardised rates) (ABS 2014b).



## Glucose control

Maintaining blood glucose levels within the normal range is important to prevent the development of diabetes. The 2012–13 AATSIHS used 2 tests to measure glucose control:

- fasting plasma glucose—this test requires fasting for 8 hours prior to the test and is the standard test for diabetes in Australia
- glycosylated haemoglobin (HbA1c)—this test does not require prior fasting.

In 2012–13, among those who did not have diabetes and based on fasting plasma glucose results:

- 4.7% of Indigenous adults were at high risk of diabetes (their fasting plasma glucose level was between 6.1 and <7.0 mmol/L)
- the proportion of Indigenous adults at high risk of diabetes did not differ significantly by sex or between remote and non-remote areas (ABS 2014b)
- Indigenous adults were significantly more likely to be at high risk of diabetes than non-Indigenous adults (1.8 times as likely, based on age-standardised rates).

About 1 in 5 (22%) survey respondents did not fast, so their fasting plasma glucose level could not be measured. Results using the alternative measure of HbA1c suggested 4.2% of Indigenous adults were at high risk of developing diabetes (that is, their HbA1c level was between 6.0% and 6.5%).

## Kidney function

The kidneys remove waste from the blood and regulate the level of water and hormones in the body. Reduced kidney function may indicate the presence of kidney disease, which if diagnosed early can be managed to reduce the risk of disease progression and its complications such as heart disease. Chronic kidney disease occurs when kidney function is reduced or damaged (see Section 5.3). In the 2012–13 AATSIHS, kidney function was measured using estimated glomerular filtration rate (the amount of blood the kidneys filter in 1 minute) and the presence

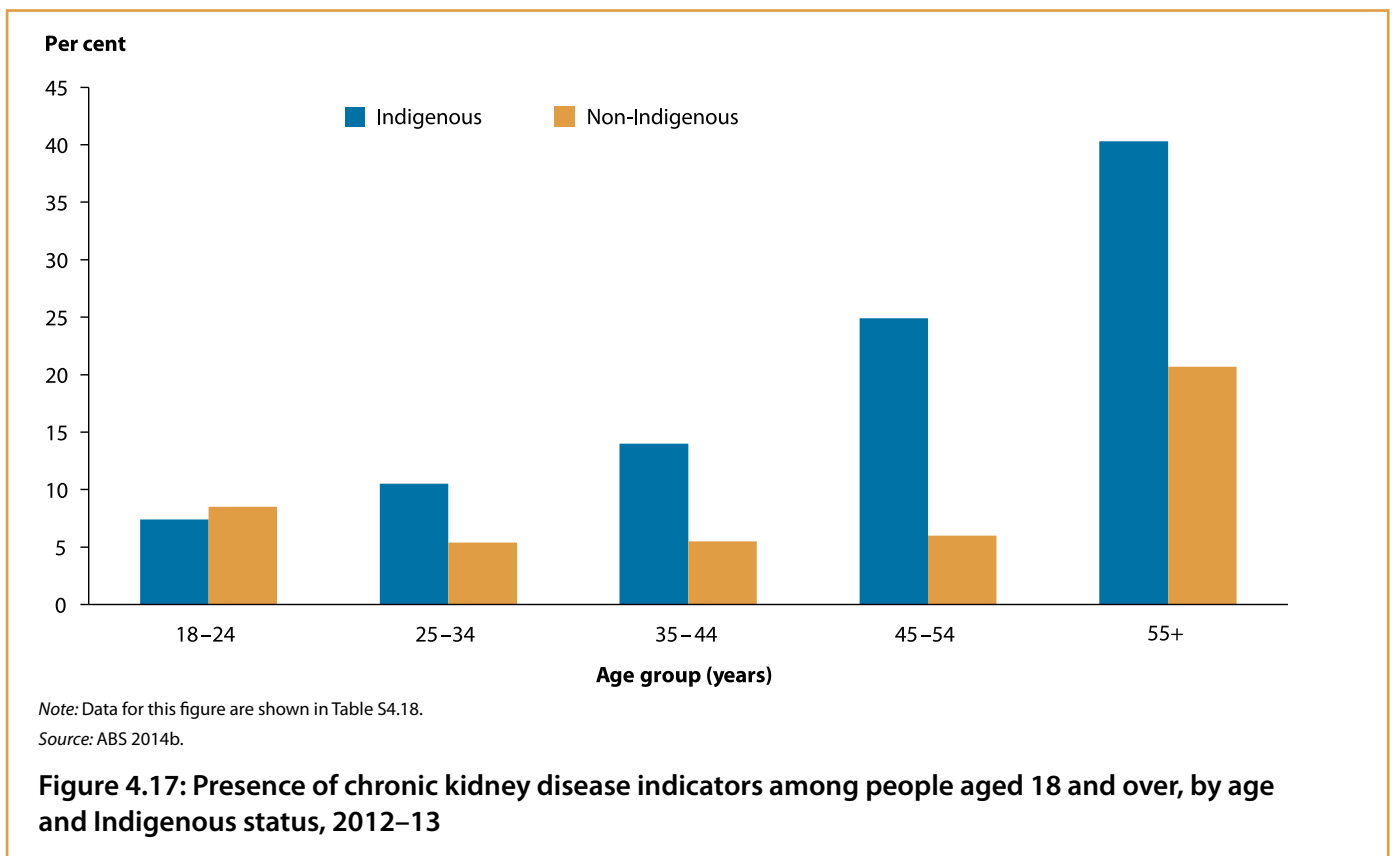
of protein in the urine. The results were used to determine chronic kidney disease stages, ranging in severity from Stage 1 (evidence of kidney damage but usually no symptoms) to Stage 5 (end-stage kidney disease which means the person is likely to require dialysis or a kidney transplant) (see Appendix C.1).

In 2012–13, among Indigenous adults:

- 18% had signs of chronic kidney disease—12% were in Stage 1, 3% in Stage 2, 2% in Stage 3 and 1% in Stages 4–5
- the proportion with indicators of chronic kidney disease did not differ significantly by sex, although it did increase with age (Figure 4.17)
- those living in remote areas were significantly more likely to have indicators of chronic kidney disease than those in non-remote areas (34% compared with 13%)
- 11% who had indicators of chronic kidney disease reported having the condition (ABS 2014b).

Indigenous adults were significantly more likely than non-Indigenous adults to have indicators of chronic kidney disease (2.1 times as likely, based on age-standardised rates). This pattern was evident in all age groups from 25–34 onwards (Figure 4.17). The difference may be partly due to the greater prevalence of diabetes and high blood pressure in the Indigenous population, especially at younger ages (ABS 2014b).

See Chapter 5 for information on the prevalence of chronic kidney disease in the Indigenous population.



## Liver function

The liver metabolises food, makes proteins, secretes bile and removes toxins from the blood. Poor liver function may indicate the presence of liver disease which, if not treated, may cause liver damage or failure. Liver disease can impair the liver’s function, causing complications such as abdominal fluid retention (ascites), cancer and gastrointestinal bleeding. In the 2012–13 AATSIHS, the levels of 2 enzymes related to liver function—alanine aminotransferase (ALT) and gamma glutamyl transferase (GGT)—were measured. High levels of either or both of these enzymes may indicate poor liver function.



In 2012–13, among Indigenous adults:

- 17% had elevated levels of ALT and 23% had elevated levels of GGT
- men were significantly more likely to have elevated ALT levels than women (20% compared with 13%), but their rates of elevated GGT levels were similar (24% and 23%, respectively)
- those in remote areas were significantly more likely than those in non-remote areas to have elevated ALT levels (22% compared with 15%) and elevated GGT levels (35% compared with 20%) (ABS 2014b).

Indigenous adults were significantly more likely than non-Indigenous adults to have elevated ALT levels (1.4 times as likely, based on age-standardised rates) and elevated GGT levels (2.1 times as likely, based on age-standardised rates) (ABS 2014b).

## Haemoglobin levels

Haemoglobin is a protein in red blood cells that contains iron, which helps to transport oxygen around the body. People with low levels of haemoglobin are at risk of developing anaemia.

In 2012–13, among Indigenous adults:

- 7.6% had haemoglobin levels indicating they were at risk of anaemia
- women were significantly more likely to have low levels than men (10.3% compared with 4.8%)
- those in remote areas were significantly more likely to have low levels than those in non-remote areas (10.1% compared with 6.9%) (ABS 2014b).

Indigenous adults were significantly more likely to have low haemoglobin levels than non-Indigenous adults (1.9 times as likely, based on age-standardised rates) (ABS 2014b).

## 4.4 Psychological factors

Mental health can have a positive or negative effect on a person's physical health and, conversely, physical health can influence a person's mental health.

### Psychological distress

The 2012–13 AATSIHS collected information from adults on psychological distress using the 'Kessler-5' scale. This scale, which consists of 5 questions from the Kessler Psychological Distress Scale, measures levels of negative emotional states experienced by respondents in the 4 weeks prior to interview. A high score may be associated with the person having feelings of anxiety or depression regularly, whereas a low score indicates that the person has these feelings less often or not at all.

In 2012–13, among Indigenous adults:

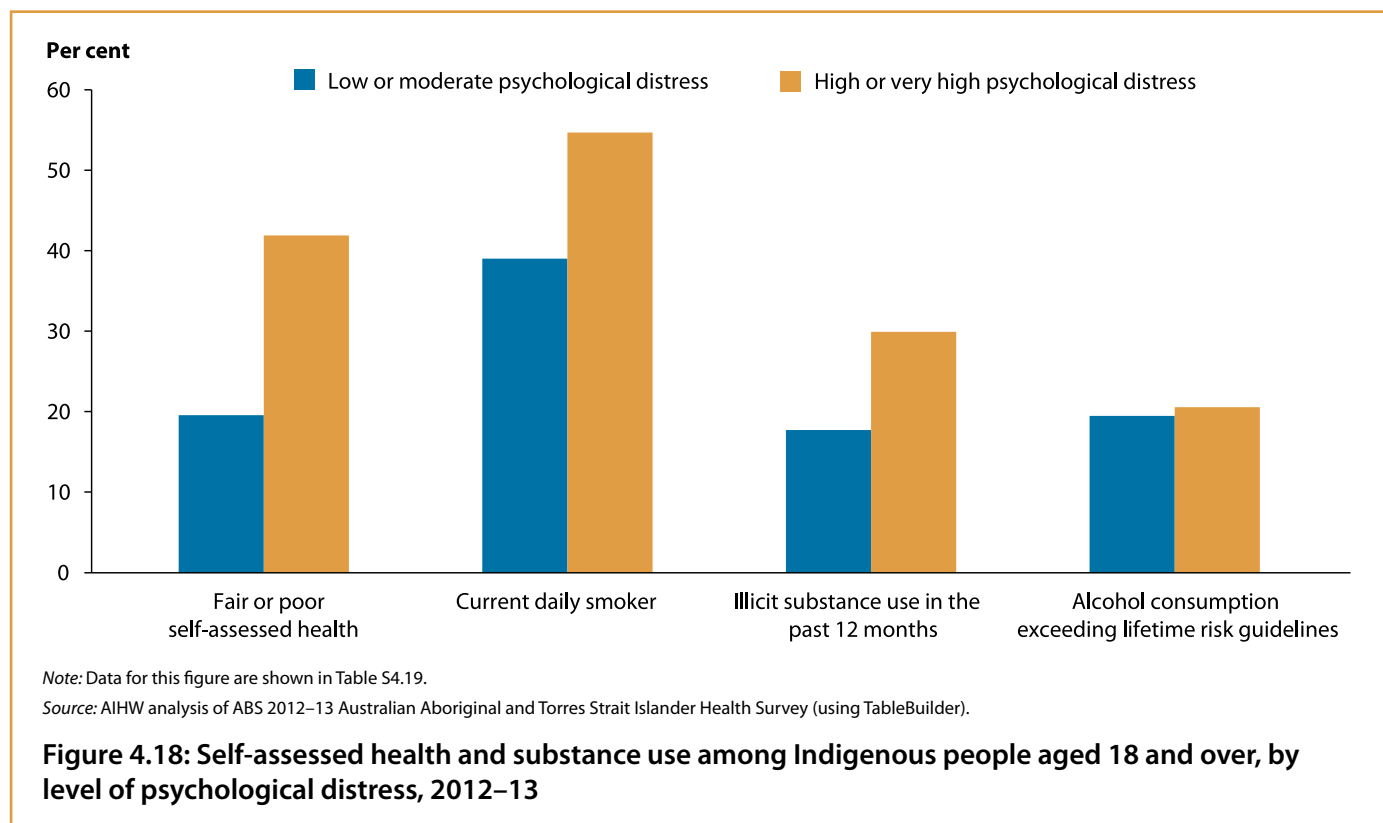
- 30% had high or very high levels of psychological distress in the 4 weeks prior to the survey
- women had significantly higher rates of high or very high levels of psychological distress (36%) than men (24%)
- those in non-remote areas were significantly more likely to have high or very high levels of psychological distress than those in remote areas (32% compared with 24%)
- the proportion who had high or very high levels of psychological distress was significantly higher in 2012–13 (30%) than in 2004–05 (27%) (ABS 2013a).

In 2012–13, Indigenous adults were significantly more likely to have high or very high levels of psychological distress than non-Indigenous adults (2.7 times as likely, based on age-standardised rates) (ABS 2013a).



Indigenous adults with high or very high levels of psychological distress were significantly more likely than those with lower levels of psychological distress to:

- assess their health as fair or poor (42% and 20%, respectively)
- smoke daily (55% and 39%)
- have used illicit substances in the past 12 months (30% and 18%) (Figure 4.18).



## Life stressors

Continued stress can lead to conditions such as anxiety, depression, high blood pressure and digestive problems, and can impair quality of life. In the 2012–13 AATSIHS, respondents were asked whether they, or their family or friends had experienced 1 or more of a range of personal or family stressors in the previous year. The results indicated that among Indigenous people aged 15 and over:

- nearly 3 in 4 (73%) reported that they or their family or friends had experienced at least 1 stressor
- females were significantly more likely to have reported 1 or more stressors than males (77% compared with 70%)
- those in non-remote areas were significantly more likely to have reported 1 or more stressors than those in remote areas (75% compared with 69%) (ABS 2013a).

The most commonly reported stressors by Indigenous people aged 15 and over were:

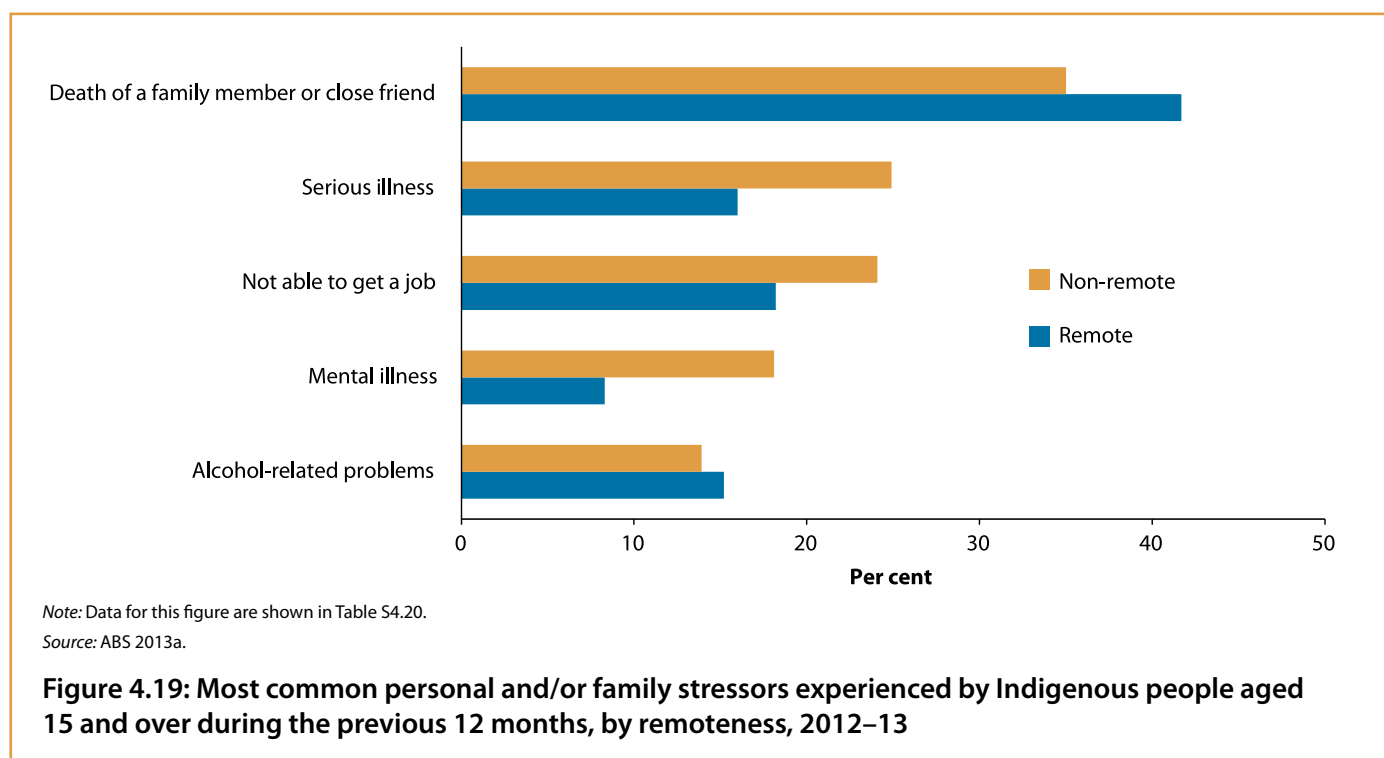
- death of a family member or close friend (reported by 37%)
- serious illness (23%)
- not able to get a job (23%)
- mental illness (16%)
- alcohol-related problems (14%) (ABS 2013a).



Indigenous people aged 15 and over living in non-remote areas were significantly:

- more likely than those in remote areas to report inability to get a job (24% and 18%, respectively), serious illness (25% and 16%) and mental illness (18% and 8%) as a stressor
- less likely than those in remote areas to report the death of a family member or close friend as a stressor (35% compared with 42%) (Figure 4.19).

See Chapter 5 for information about Indigenous people with mental health conditions.



## 4.5 Socioeconomic and environmental factors

Socioeconomic factors are associated with a person’s health. For example, having a low income and/or a low level of education can limit choices and opportunities for improving health outcomes, and may influence other health-related factors, such as dietary choices and access to health care.

The relationship between health and socioeconomic factors is complex because both aspects can be an outcome or a determinant (WHO 2014b). For example, people with higher incomes may have better health outcomes because they have better access to a broader range of health services, while people with poorer health may have lower incomes due to work limitations caused by their health condition.

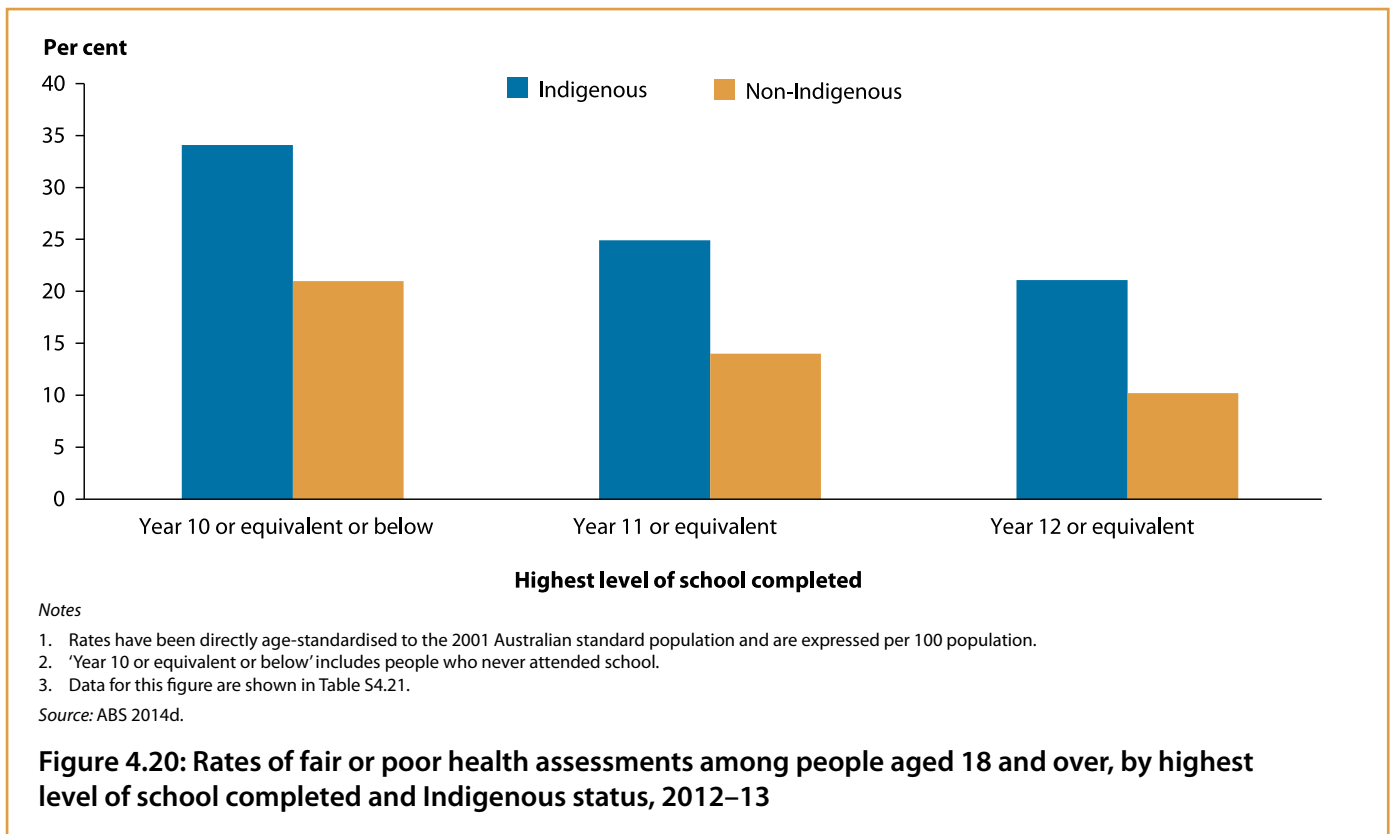
As described in Chapter 3, Indigenous Australians have lower levels of educational attainment and employment compared with non-Indigenous Australians. This section presents data on the relationship between education, employment and health status.

In addition to socioeconomic factors, environmental factors can also have an impact on a person’s health and wellbeing. Examples of risk factors in the physical environment include exposure to air pollution or tobacco smoke. A lack of community safety and discrimination are examples of risk factors in the social environment. This section concludes by presenting information on exposure to tobacco smoke in the home and Indigenous people’s experience of discrimination and removal from family.

## Education

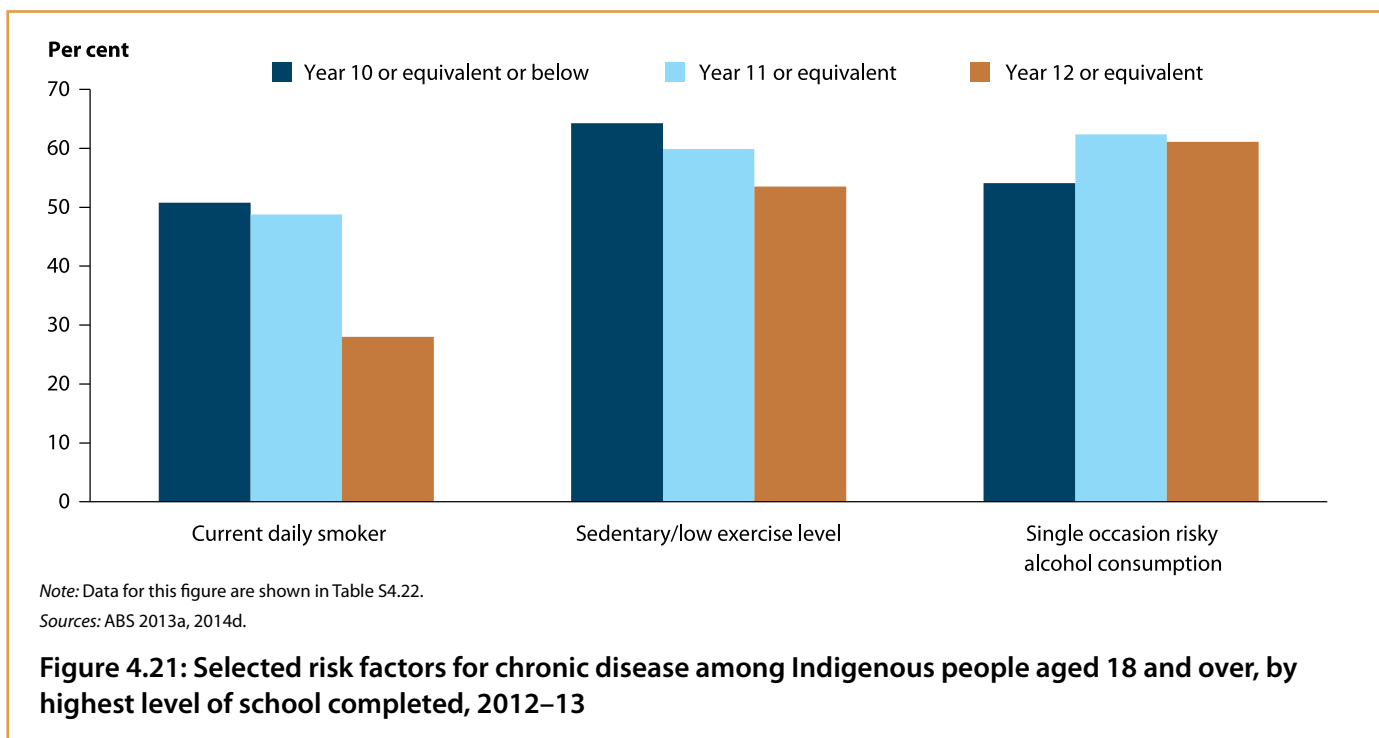
As described in more detail in Section 5.2, as part of the 2012–13 AATSIHS, respondents were asked to assess their health status on a scale ranging from ‘poor’ to ‘excellent’. Compared with those with higher levels of school completion, Indigenous people with lower levels of school completion were more likely to assess their health as fair or poor; part of this difference may be due to lower educational attainment among older people who are more likely to assess their health as fair or poor (see Sections 3.1 and 5.2). Specifically, in 2012–13:

- Indigenous adults whose highest level of school completion was Year 10 or equivalent or below were more likely to assess their health as fair or poor than those who had completed Year 12 or equivalent (33% compared with 15%)
- non-Indigenous adults with lower levels of education were also more likely to assess their health as fair or poor than those who had higher levels of school completion
- Indigenous adults were significantly more likely than non-Indigenous adults to assess their health as fair or poor at each level of educational attainment (based on age-standardised rates) (Figure 4.20).



Lower levels of schooling were also associated with several risk factors for chronic disease. Compared with those who had completed Year 12 or equivalent, Indigenous adults whose highest level of school completion was Year 10 or equivalent or below were significantly:

- more likely to smoke tobacco daily (51% of those who had completed Year 10 or equivalent or below compared with 28% of those who had completed Year 12 or equivalent)
- more likely to be sedentary or exercise at a low level (64% compared with 54%)
- less likely to consume alcohol at levels exceeding single occasion risk guidelines (54% compared with 61%) (Figure 4.21).

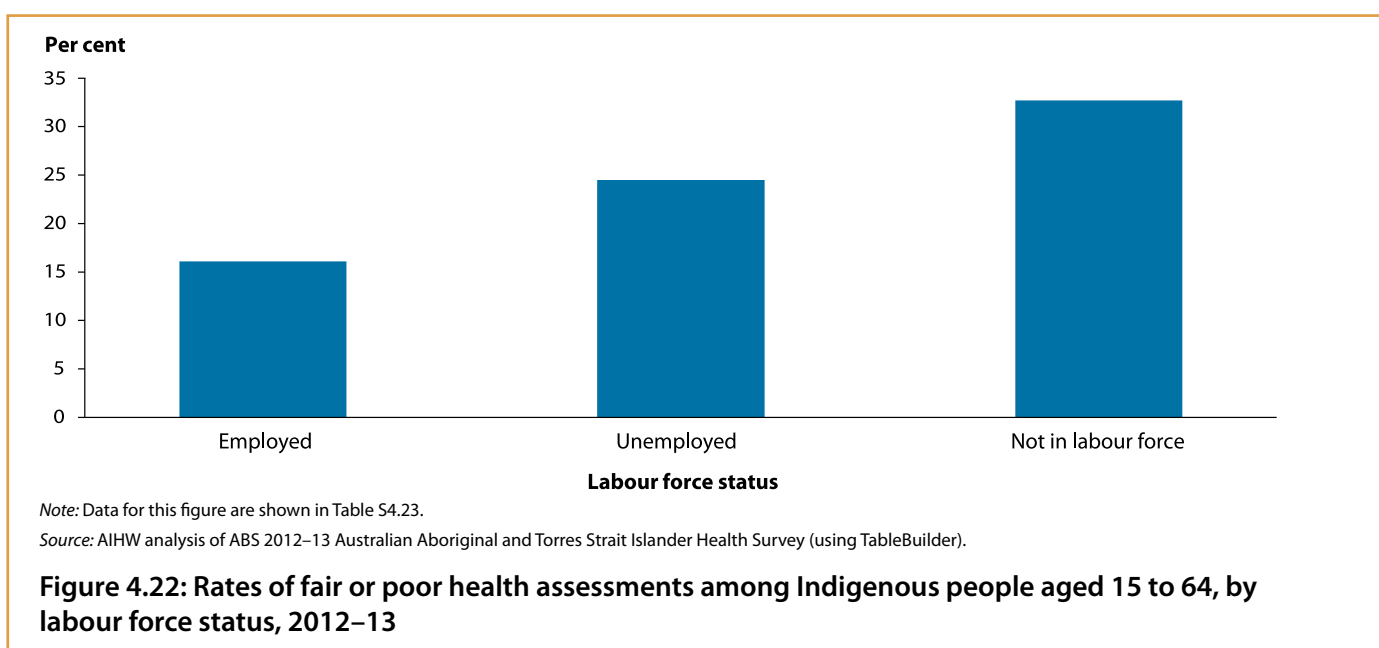


While educational attainment can impact one’s health status, the reverse is also true—health status can also affect educational attainment. For example:

- the odds of an Indigenous child aged 5–17 with a poor self-assessed health status currently studying were one-fifth that of an Indigenous child with an excellent self-assessed health status (AIHW analysis of the 2008 National Aboriginal and Torres Strait Islander Social Survey)
- in the 2 weeks prior to being surveyed, 19% of Indigenous people aged 5–24 who were studying reported that they had days away from study due to their own illness or injury (AIHW analysis of 2012–13 AATSIHS).

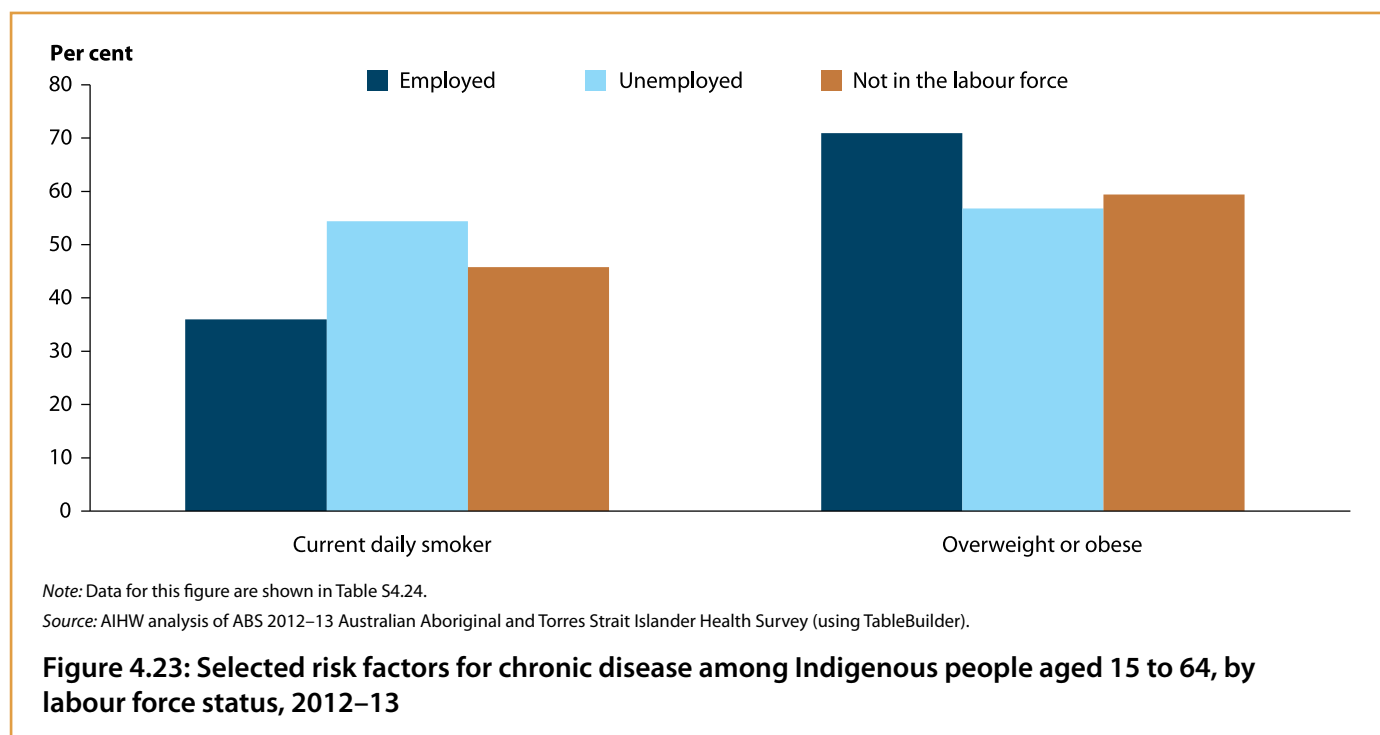
## Employment

Self-assessed health status and employment are also associated. According to data from the 2012–13 AATSIHS, Indigenous people aged 15 to 64 who were not in the labour force were significantly more likely to assess their health as fair or poor (33%) than those who were employed (16%) or unemployed (24%) (Figure 4.22).



Employment was also associated with some behavioural risk factors for chronic disease. Compared with those who were unemployed or not in the labour force, Indigenous people aged 15 to 64 who were employed were significantly:

- less likely to smoke tobacco daily (36% of those employed compared with 46% of those not in the labour force and 54% of those who were unemployed)
- more likely to be overweight or obese (71% of those employed compared with 57% of those not in the labour force and 59% of those who were unemployed) (Figure 4.23).



Indigenous people aged 15 to 64 who were employed were also significantly more likely than those who were not in the labour force to consume alcohol at risky levels, whereas those not in the labour force were significantly more likely than those who were employed or unemployed to be sedentary or to exercise at low intensity (Table S4.24).

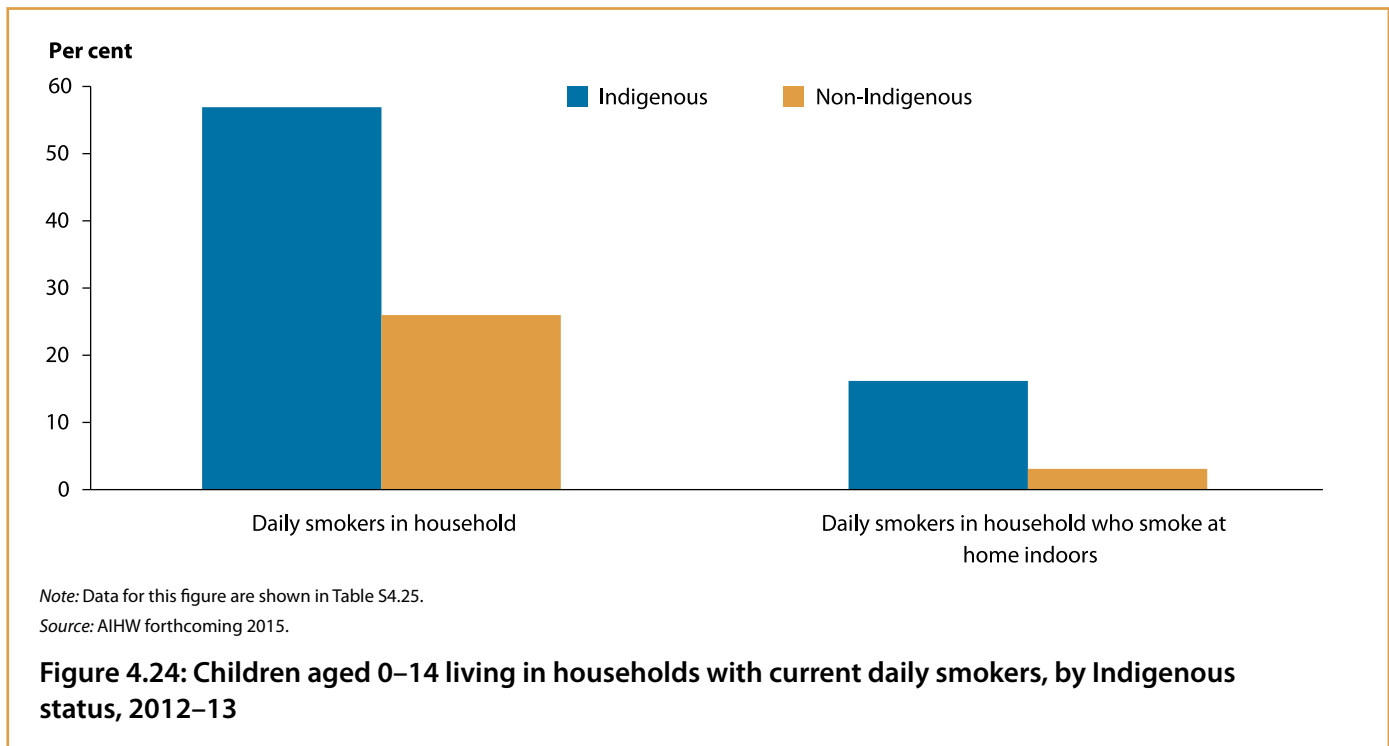
The observed association between employment and health status can be looked at in 2 ways. While being employed has been shown to be beneficial to health, people are more likely to participate in the labour force if they are healthy (AIHW 2014c). For example, Indigenous Australians aged 15 to 64 who reported poor or fair self-assessed health were less likely to be employed compared with those who reported excellent health. Having circulatory disease, high cholesterol, high blood pressure, diabetes, arthritis or high psychological distress also decreased the likelihood of being employed full-time (AIHW analysis of the 2008 National Aboriginal and Torres Strait Islander Social Survey).

## Exposure to tobacco smoke

Exposure to tobacco smoke increases a child’s risk of ear infections and developing asthma (ABS & AIHW 2008). In 2012–13, almost 3 in 5 Indigenous children aged 0–14 (57%, or 130,610 children) were living in a household with a daily smoker, compared with about 1 in 4 non-Indigenous children (26%) (Figure 4.24). The proportion of Indigenous children aged 0–14 living in a household with a daily smoker declined from 68% in 2004–05 to 57% in 2012–13 (AIHW forthcoming 2015).

In 2012–13, Indigenous children aged 0–14 were 5 times as likely as non-Indigenous children to live in households with a daily smoker who smoked at home indoors (16% and 3%, respectively) (Figure 4.24).





## Discrimination

Discrimination and racism have been associated with ill health and adverse health outcomes for Indigenous people—in particular, mental health conditions (such as anxiety) and risky health behaviours (Paradies et al. 2008). According to the 2012–13 AATSIHS:

- 7% of Indigenous adults (about 26,500 people) reported that they avoid seeking health care because they had been treated unfairly by doctors, nurses or other staff at hospitals or doctor surgeries
- 16% of Indigenous adults (about 59,000 people) reported that they felt they were treated badly in some type of situation in the previous year because they were Indigenous (AIHW analysis of 2012–13 AATSIHS).

The most common situations or places where Indigenous adults felt unfairly treated in the previous year included:

- by the general public (46% of those who reported being treated badly)
- when at work or when applying for work (29%)
- by the police, security people, lawyers or in a court of law (25%) (AIHW analysis of 2012–13 AATSIHS).

Data from an Aboriginal Experience of Racism survey conducted in Victoria in 2010 and 2011 indicated that almost all (97%) respondents had experienced at least 1 racist incident in the preceding 12 months (Kelaher et al. 2014). The survey, which interviewed 755 Indigenous adults living in 2 rural and 2 metropolitan areas, found that 2 in 3 (67%) experienced racism in shops, 59% in public spaces and 29% within health settings. Indigenous adults who had experienced high levels of racism were more likely to have high or very high levels of psychological distress than those who had experienced no, low or medium levels of racism (Ferdinand et al. 2012; Kelaher et al. 2014).

## Removal from family

Between 1910 and 1970, an estimated one-tenth to one-third of Indigenous children in Australia were forcibly removed from their family (HREOC 1997). Removal from natural family has been associated with poorer mental health and general vitality, as well as higher levels of psychological distress (Dockery 2011).

In the 2012–13 AATSIHS:

- 13% of Indigenous adults reported having been removed from their natural family by welfare or the government or by being taken away to a mission
- 44% of Indigenous adults reported that they had relatives who had been removed from their natural family
- 9.2% of Indigenous adults fell into both groups—thus, in total, almost half (48%) of Indigenous adults reported that either they or their relatives had been removed from their natural family (Table S4.26)
- levels of high or very high psychological distress were significantly more common among Indigenous adults who:
  - had been removed from their family (35%) compared with those who had not (29%)
  - had relatives removed (34%) compared with those who had not (26%) (Figure 4.25).

