

# Risk and protective factors



- The prevalence of daily smoking in Queensland has more than halved in the past 20 years to 11% in 2018. Youth smoking is decreasing rapidly—about 5% of Queensland teenagers aged 14–19 years smoked daily in 2016. Two-thirds of women who smoked during pregnancy lived in the more socioeconomically disadvantaged areas. Maternal smoking is 4 times higher in Indigenous Queenslander mothers than non-Indigenous.
- Most Queenslanders do not meet the guidelines for healthy eating from healthy food sources. The over-consumption of unhealthy food and drinks is contributing more than one-third to total energy intake and impacting on subsequent weight gain.
- Maintaining a healthy weight is a challenge for many Queenslanders—1 in 4 children and 2 in 3 adults are overweight or obese. Obesity in children living in disadvantaged areas was 2.5 times that of those in advantaged areas.
- Three-quarters of risky alcohol drinkers are male. Consumption is decreasing among younger adult males and increasing among older males. Many pregnant women do not completely stop drinking alcohol during their pregnancy.
- Many Queenslanders are keeping active with 60% of adults sufficiently active for health benefit. Adults need to sustain physical activity throughout their life to stay healthy longer. Most children (71%) are active on four or more days per week, however, less than half (41%) are active daily—free-time and schools are key settings for daily activity.
- About half of 5–6 year olds had decay experience in their primary teeth and one-third of those aged 6–14 years, in their permanent teeth. One-quarter of hospitalisations for dental conditions were for children aged up to 14 years.
- High blood pressure and high blood cholesterol are leading metabolic risk factors for cardiovascular disease—about 1 in 4 adults have high blood pressure and about 1 in 3 adults have high cholesterol. Two-thirds of adults at risk of a cardiovascular event are not receiving the recommended treatment to reduce blood pressure and cholesterol.
- Sun protection behaviours are effective in limiting exposure to ultraviolet radiation that leads to 6% of all cancers—only about 1 in 2 children and 1 in 5 adults used daily sun protection, and 1 in 2 (children and adults) were sunburnt in the previous 12 months.
- Screening programs improve the health outcomes of Queenslanders through early detection of breast, cervical and bowel cancers. About half the target age groups are participating in the national screening programs—56% for BreastScreen Queensland, 53% for cervical cancer screening and lower at 40% for bowel cancer screening.
- About 1 in 6 Queenslanders aged 14 years and older had used an illicit drug in the previous 12 months—cannabis was most commonly used (12%), while 4% misused painkillers and analgesics. An increase in the use of ‘ice’ (crystal meth) resulted in a 20-fold increase in related hospitalisations over the past six years.
- Immunisation coverage remained high with over 90% of children fully immunised.
- Young women and Indigenous Queenslander women have experienced higher rates of domestic and family violence—1 in 20 women experienced violence in the past year.
- Environmental risks to health occur from foodborne pathogens, lead exposure, illegal drug laboratories in housing, and the quality of drinking water.



## Graeme's story

*It was time to give it up.*

Retired miner Graeme is enjoying a smoke-free lifestyle after successfully quitting with support from [Quitline](#) and using nicotine replacement therapy.

After smoking for over 50 years, Graeme was motivated to stop smoking when he saw the [10,000Lives Central Queensland](#) launch on television. Graeme said Quitline has helped him to approach quitting with a plan and a positive frame of mind.

Graeme has volunteered to share his story with others including his fellow miners and let them know of the support available from Quitline to quit smoking.



**1 in 9**  
adults  
smokes daily



**Smoking**  
is the leading cause of  
**premature death**  
and disease



**1 in 4**  
children  
lives with a daily smoker

# Smoking

Smoking continues to be the leading cause of premature death and disease in Queensland, despite a significant reduction in rates over recent decades. The disease burden remains high because of the considerable lag period between smoking and adverse health outcomes, rather than a lack of progress in reducing the prevalence of smoking. Smoking also remains a leading contributor to health inequalities based on socioeconomic status, geographical remoteness and Indigenous status.

Tobacco is highly addictive and various strategies help smokers to quit, prevent smoking uptake and reduce exposure to other people's smoke. Smoking increases the risk of diseases such as lung cancer, COPD and coronary heart disease. Smoking carries a high social and financial cost largely associated with the impact of early death. Tobacco use was the leading individual risk factor in Queensland and Australia in 2011, responsible for 9% of total disease burden.

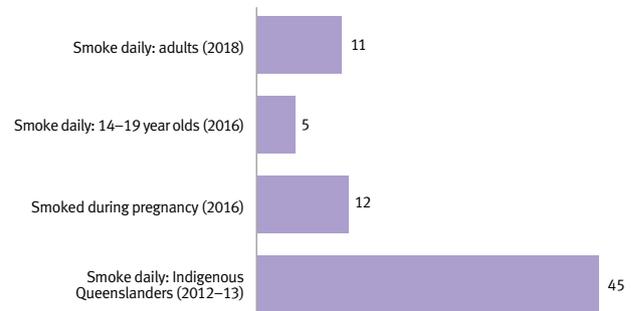
Among socioeconomically disadvantaged groups, higher rates of smoking contribute to poorer health and financial stress, both of which create social conditions that make quitting more difficult. Smoking is a significant contributor to the 10-year health gap between Indigenous Queenslanders and non-Indigenous. Despite a relatively small decline in daily smoking among non-remote Indigenous Queenslanders between 2002 and 2014–15, there has been no change among those living in remote areas.

Women who smoke during pregnancy increase the risk of adverse birth outcomes and risk of disease later in life. Although maternal smoking is declining overall, high rates persist among pregnant women living in socioeconomically disadvantaged areas, pregnant teenagers and Indigenous Queenslander mothers. Furthermore, exposure to tobacco use by role models such as parents continues to normalise smoking among children and young people, perpetuating smoking uptake.

Smoke-free healthcare facilities support patients to quit smoking including those admitted to mental health facilities. This can be challenging as the smoking prevalence among adults living with mental health issues is high. In addition, for those admitted to a hospital for a mental health condition, the immediate priority will be the treatment of their presenting condition.

Improvement is evident among young people with a relatively rapid decline in youth smoking, combined with an increase in those who have never smoked. However, new generations of young people are still likely to consider taking up smoking, and therefore prevention strategies must be alert, active and ongoing. The evidence is building on the influence of novel products on young people as a gateway to future smoking. Experimentation

Figure 13: Smoking prevalence, Queensland



## What are the numbers?

- An estimated 424,000 Queensland adults smoked daily in 2018: 230,000 were males.
- An estimated 593,000 adult males and 493,000 females were ex-smokers in 2018.
- 19,000 Queensland teenagers aged 14–19 years smoked daily in 2016.
- 49,000 Indigenous Queenslander adults smoked daily in 2012–13.
- About 7400 women smoked at some time during their pregnancy in 2016—1800 were Indigenous Queenslander women.
- 246,000 children aged 0–14 years lived in a household with a daily smoker in 2014–15, and 42,000 or 17% were Indigenous Queenslander children.
- 115,000 Queensland adults were currently using e-cigarettes in 2018 (based on 2015–16 prevalence) and 382,000 had ever tried them.



with e-cigarettes by young people has the potential to increase future smoking and nicotine dependence.

Over recent decades the success of multifaceted tobacco initiatives has resulted in declining smoking rates. However, there is still the challenge to address disparities and reduce smoking associated with social disadvantage and Indigenous status.

# Smoking

## Prevalence and differentials

In 2018, of adult Queenslanders (Figure 13, Table 17)<sup>34</sup>:

- 11% smoked daily.
- 5% were current smokers but not daily.
- 28% were ex-smokers.
- 56% never smoked.

Among Queenslanders:

- The age of initiation of tobacco use was 16.1 years in 2016.<sup>52</sup>
- 5% of Queensland teenagers aged 14–19 years smoked daily in 2016.<sup>51,52</sup>
- 7% of Queensland school students aged 12–17 years smoked in the previous week in 2017.<sup>50</sup>
- 12% of women smoked at some time during their pregnancy in 2016.<sup>38</sup>
- 39% of smokers lived in a household with children in 2017–18.<sup>34</sup>
- 27% of children aged 0–14 years lived in a household with a daily smoker in 2014–15.<sup>53</sup>
- 22% of adults reported being frequently exposed to second-hand smoke in public places in 2015.<sup>89</sup>
- 10% of adults had ever tried an e-cigarette, and 3% were current e-cigarette users in 2015–16.<sup>34</sup>
- About 8% of Queensland school students aged 12–17 years had ever used e-cigarettes, and of those about one-third had done so in the previous month in 2017.<sup>50</sup>

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**11%** of Queensland adults **smoked daily** in 2018.

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### By sex

In 2018 the adult male daily smoking rate was 22% higher than the female rate (12% compared with 10%, Table 17).<sup>34</sup> Males were 24% more likely to be ex-smokers than females. Females were 21% more likely to have never smoked than males.

In 2016 Queensland females, on average, started smoking about one year earlier than males (15.6 years of age compared with 16.5 years).<sup>51,52</sup>

Teenage males and females (aged 12–17 years) were equally likely to have smoked in the previous week (in 2017).<sup>50</sup>

Adult males were more likely to have ever tried e-cigarettes than females (12% compared with 9%) and to currently use e-cigarettes (4% compared with 2%) in 2015–16.<sup>34</sup>

Queensland schoolboys aged 12–17 years were twice as likely as schoolgirls to have ever used e-cigarettes (11% compared with 5% in 2017).<sup>50</sup>

### By age

Older males were more likely to be an ex-smoker than any other age group, indicating a history of smoking—more than half of males aged 65 years and older were ex-smokers in 2018.<sup>34</sup> Two-thirds of females aged 65 years and older had never smoked.

Older Queensland students were more likely than younger students to have ever used e-cigarettes—about 13% of students aged 16–17 years compared with 9% of students aged 14–15 years and 2% of students aged 12–13 years.<sup>50</sup>

### By socioeconomic status

There is a socioeconomic gap in daily smoking in Queensland—rates in the most disadvantaged areas were more than double (2.4 times) those in advantaged areas in 2018 (17% compared with 6.8%) (Figure 14).<sup>34</sup>

Adults living in advantaged areas were 26% more likely than those in disadvantaged areas to have never smoked (63% compared with 50% in 2018).<sup>34</sup>

The proportion of ex-smokers was 29% higher in disadvantaged areas than in advantaged areas illustrating a greater past history of smoking in disadvantaged areas.<sup>34</sup>

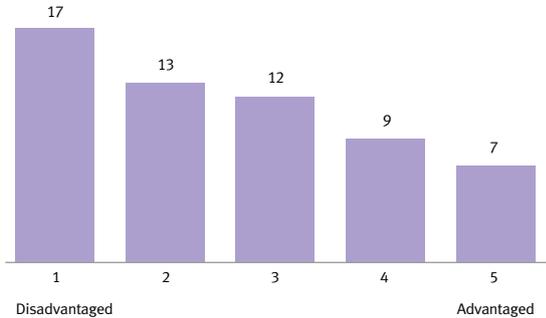
Daily smoking in unemployed adults was 2.3 times that of the employed (25% compared with 11% in 2018).<sup>34</sup>

### By remoteness

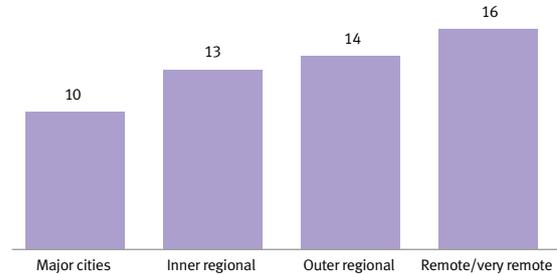
Rates of daily smoking were higher outside major cities—41% higher in outer regional areas and 66% higher in remote areas than in major cities in 2018 (Figure 15).<sup>34</sup>

# Smoking

**Figure 14: Daily smoking by quintile of socioeconomic disadvantage/advantage, Queensland, 2018<sup>34</sup>**



**Figure 15: Daily smoking by remoteness, Queensland, 2018<sup>34</sup>**



## Indigenous Queenslanders

In 2012–13, 45% of Indigenous Queensland adults smoked daily.<sup>65,90</sup> After adjusting for age differences, the Indigenous daily smoking rate was 2.5 times the non-Indigenous rate.<sup>65</sup>

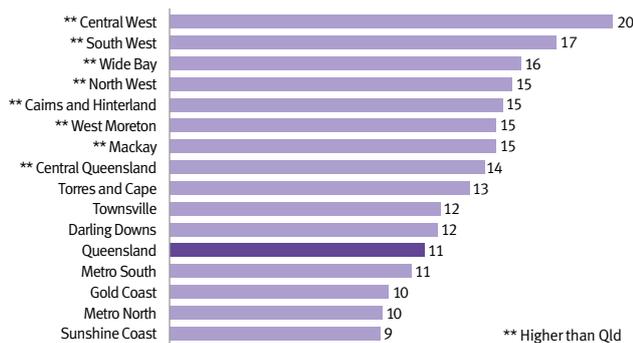
Young Indigenous Australians (15–17 years) were almost five times more likely to smoke daily than non-Indigenous youth (18% compared with 3.9% in 2012–13), indicating that a focus on reducing smoking uptake remains a critical factor in tobacco control among Indigenous Queenslanders.<sup>65</sup>

More than half of Indigenous Queensland children (0–14 years) lived with a daily smoker, compared with one-quarter of non-Indigenous children (57% compared with 24% in 2014–15).<sup>53</sup>

## Regional Queenslanders

In 2017–18, daily smoking rates were higher than the state average in eight HHSs—varying from 74% higher in Central West to 24% higher in Central Queensland (Figure 16).

**Figure 16: Daily smoking by HHS, percentage, adults, Queensland, 2017–18<sup>34</sup>**



More information on HHSs is available from the data visualisations and statistical tables online (page vii).

Indigenous Queensland children were

**2.4 times** more likely to live in a household with a smoker than non-Indigenous children.

## Maternal smoking

One in 8 (12%) women smoked at some time during their pregnancy in 2016 (about 7400 women).<sup>38</sup> Of these, about 1 in 6 quit during the first 20 weeks and 9.5% of women continued to smoke after 20 weeks of gestation. (For further detail see Table 6, page 32)

About two-thirds (63%) of women who smoked at some point during pregnancy were living in socioeconomically disadvantaged areas (around 4600 women).<sup>38</sup> The smoking rate for pregnant women living in disadvantaged areas was 5.4 times that of those living in advantaged areas (24% compared with 4.3% in 2016).<sup>38</sup>

The prevalence of maternal smoking in remote areas was three times that in major cities (28% compared with 9%).<sup>38</sup>

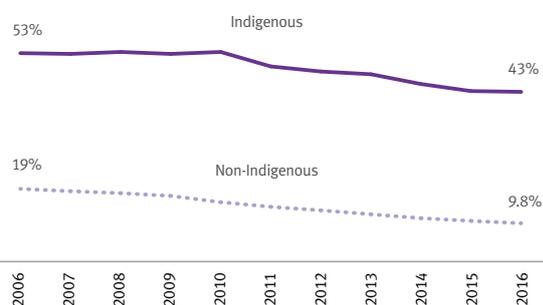
For teenagers, the maternal smoking rate was 32%, compared to 11% for older mothers. While there has been an improvement in maternal smoking over the past decade, the decrease among teenagers was not as great as that for older mothers (–32% compared with –41% between 2006 and 2017).

Maternal smoking was higher among Indigenous Queensland mothers—they were four times more likely to have smoked at some time during pregnancy than non-Indigenous mothers in 2016 (43% compared with 10%).<sup>38</sup> (For further detail see Table 6, page 32.)

Non-Indigenous teenagers were more likely to smoke than older non-Indigenous women (25% compared with 9.4%) while for Indigenous Queensland women in 2016, the smoking rate in teenagers was lower than for older women (39% compared with 44%).

# Smoking

**Figure 17: Maternal smoking by Indigenous status, 2006–2016<sup>38</sup>**



Rates of smoking during pregnancy declined for both Indigenous and non-Indigenous mothers between 2006 and 2016. However, the relative gap has widened—Indigenous Queenslander mothers were about three times as likely as non-Indigenous mothers to smoke at any point during their pregnancy in 2006, and about four times as likely in 2016 (Figure 17). Nevertheless there has been a 10 percentage point decrease in smoking among Indigenous Queenslander women over 10 years.

Rates varied by age group and HHS (for further detail see Table 6, page 32). In 2016, the proportion of pregnant women who smoked during pregnancy was highest in Torres and Cape (45%), North West (25%) and Wide Bay (22%), and lowest in Gold Coast (5.5%), Metro South (8.9%) and Metro North (10%), compared with 12% statewide.<sup>38</sup>

Maternal smoking in Queensland was 21% higher than national, and equal third highest (with South Australia) among the jurisdictions for mothers who smoked at any time during pregnancy following Northern Territory and Tasmania and in 2016.<sup>42</sup>

Maternal smoking is declining but still

**7400 women**  
smoked during their pregnancy.

## How we compare

### Nationally

Compared with other jurisdictions, the prevalence of daily smoking for Queensland adults was 19% higher than national in 2016 and was ranked third highest following Northern Territory (highest) and Tasmania.<sup>51,52</sup>

For Indigenous Australians, the rate was similar to national and Queensland was ranked fourth highest following Northern Territory (highest), Western Australia and Victoria in 2014–15.<sup>12</sup>

### Internationally

Of 35 OECD countries with comparable data for daily smoking, Australia was ranked sixth lowest in 2017 (or latest available data) for persons aged 15 years and older.<sup>71</sup> Mexico had the lowest smoking rates, followed by Iceland, Sweden, Norway and the United States.

## Trends

Daily smoking has halved since 1998 and the proportion who never smoked has doubled (Figure 18).

The prevalence of daily smoking continues to decline, a 43% decrease between 2002 and 2018—similar for males and females.<sup>91</sup> Rates declined across all ages—the greatest decline was among young adults aged 18–29 years—53% decrease between 2002 and 2018, 46% for those aged 30–44 years, 29% for 45–64 year olds, and 24% for those aged 65 years or older (Figure 19).<sup>91</sup>

Daily smoking declined more in the most advantaged areas—51% decrease compared with 28% decrease in disadvantaged areas between 2004 and 2018 indicating a widening socioeconomic gap.<sup>91</sup> While the rate of smoking was higher in remote and very remote areas than in cities the rate of decline was similar.

While the cessation rate increased by 10% across Queensland over the past nine years (Figure 21), there was no change in cessation based on areas of socioeconomic disadvantage or by remoteness.<sup>91</sup>

Nationally, about 1 in 14 (7.1%) teenagers aged 12–17 year olds had tried or ever used e-cigarettes in 2016, a significant increase from 4.3% in 2013.<sup>52</sup>

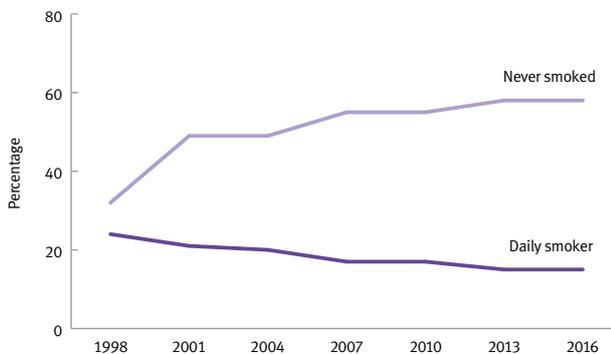
If the prevalence of daily smoking continues to decline at a similar rate as it has over the past decade, in 2026 there will be about 353,000 adults smoking daily, about 132,000 fewer than there would be if the 2018 rate was to prevail in 2026.

## Tobacco smoking

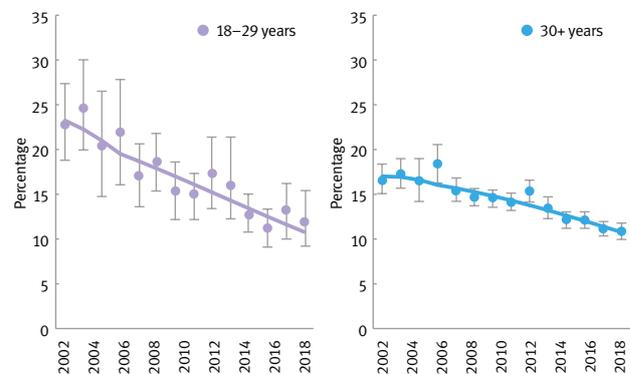
is the **leading modifiable risk factor** associated with the disease burden.

# Smoking

**Figure 18: Daily smoking and never smoked, adults, Queensland, 1998–2016<sup>52</sup>**



**Figure 19: Trends in daily smoking by age group, Queensland, 2002–2018<sup>34</sup>**



## Impacts and costs

### Burden of disease

In 2011, of the modifiable risk factors, tobacco smoking was responsible for the greatest disease burden in Queensland (9% of total DALYs) (Table 2, page 10).<sup>25</sup> The majority of burden was associated with premature death and accounted for one-seventh (14%) of the total YLL burden. Males experienced the majority of the tobacco related burden (62%) and more than half (55%) was associated with being older (aged 65 years and older).

The two leading specific conditions associated with tobacco smoking were COPD and lung cancer, accounting for 31% and 30% of smoking burden respectively in 2011, followed by coronary heart disease (13%), stroke (4%), oesophageal cancer (3%) and the remaining 19% for a number of other diseases.<sup>25</sup> Conversely, 80% of the lung cancer burden was due to tobacco smoking, 75% of the COPD burden and 54% of the oesophageal cancer burden.<sup>24</sup>

### Life expectancy

For smokers, the risk of dying prematurely diminishes with increasing time since smoking cessation, where the life expectancy of ex-smokers who quit before age 45 years is similar to those who had never smoked.<sup>92</sup> Smokers are likely to die 10 years earlier than non-smokers.

In 2011, smoking accounted for 23% of the health gap between Indigenous Australians and non-Indigenous—the largest contributing risk factor (Table 3, page 11).

### Deaths

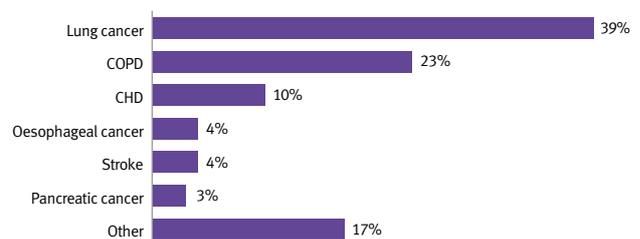
In 2016, it was estimated that smoking accounted for 3600 deaths (12% of all deaths) in Queensland<sup>25,93</sup> (Table 9, page 34). Two-thirds of current smokers are likely to die of smoking-related illness.<sup>92</sup> Of the deaths due to tobacco exposure, 1741 were from lung cancer, 1370 from COPD and 360 from coronary heart disease (Figure 20).<sup>25</sup>

### Disability and hospitalisations

Of the risk factors, smoking was the largest cause of disability in Queensland in 2011, causing 4.5% of YLD burden (Table 2, page 10).<sup>25</sup>

In 2015–16, smoking accounted for about 58,700 hospitalisations<sup>25</sup>, of which 35,372 were males and 23,411 females (total patient days were 204,700).<sup>93</sup> Of the 58,700 hospitalisations 22% were for COPD, 22% lung cancer, 11% coronary heart disease, and 15% accounted for stroke and other cardiovascular diseases. Hospitalisations attributed to tobacco exposure were associated with being older—over half (57%) were in those aged 65 years and older.

**Figure 20: Deaths due to tobacco, Queensland, 2011**



Over the past nine years,  
**adult smoking rates**  
 have declined across all HHSs.

# Smoking

In 2014–15, after accounting for age, adults with current self-reported mental or behavioural problems that had lasted for at least six months were 53% more likely to smoke daily than those without these problems (22% compared with 15%).<sup>49</sup> People living with psychotic illness have considerably higher prevalence of smoking than the general population—two-thirds (66%) of people who were treated for psychosis were current smokers (aged 18–64 years in 2010), and were smoking on average 21 cigarettes per day.<sup>94</sup>

In 2016, Australian adult daily smokers were twice as likely to report high or very high levels of psychological distress and twice as likely to have been diagnosed or treated for a mental health condition compared with those who had never smoked.<sup>52</sup>

### Health and community costs

In 2004–05, the total cost of smoking in Australia was estimated at \$32 billion, where 38% (\$12 billion) related to tangible costs including the health system, labour, crime and other quantifiable impacts. The remaining \$19.5 billion (62%) was for intangible costs and tobacco-related loss of life.<sup>95</sup> More recent data is not available.

Based on Queensland’s share of the Australian population, tobacco smoking was estimated to cost the Queensland economy \$2.4 billion in 2004–05. A small percentage (3%) was associated with health costs including hospital, medical, related aged care, pharmaceutical and ambulance services and a greater proportion (97%, \$1.15 billion) was associated with net labour costs including lost productivity and household finances. Intangible costs due to premature death were estimated at \$3.9 billion, contributing to the overall cost of smoking to Queensland in 2004–05 of about \$6.3 billion.

The full costs of smoking extend beyond the individual consumer to be borne by the rest of society. Although the smoking prevalence has continued to decline, the significant lag period between smoking and the adverse impacts on health and the workforce have meant the overall social costs of smoking continue to increase.<sup>95</sup> Looking forward, the real smoking costs can be expected to eventually decline if smoking prevalence remains low and the positive impacts are realised in society.

Figure 21: Trends in smoking initiation and cessation, Queensland<sup>91</sup>

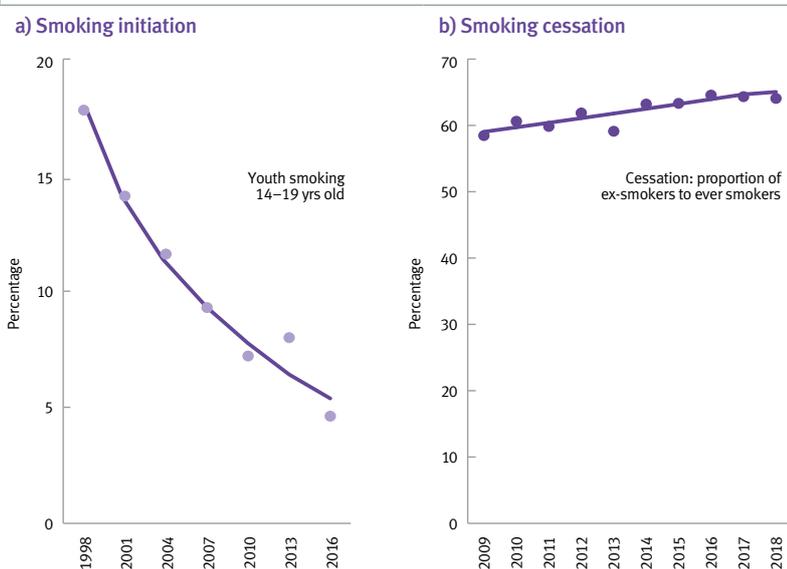


Table 16: Nine-year trends in daily smoking by HHS, adults Queensland, 2009 to 2018<sup>91</sup>

HHS	Trend
Gold Coast	-44% sig
Torres and Cape	-42% sig
Darling Downs	-40% sig
Sunshine Coast	-40% sig
West Moreton	-33% sig
Metro South	-31% sig
Metro North	-31% sig
North West	-29% sig
Townsville	-29% sig
Central Queensland	-27% sig
Cairns and Hinterland	-27% sig
Mackay	-20% ns
South West	-14% ns
Wide Bay	-12% ns
Central West	-3% ns
Queensland	-31% sig

sig: significant decline

ns: non significant trend

# Smoking

## 20 years of smoking reduction

Over the past twenty years (1998–2018), the Queensland Government has successfully implemented a comprehensive range of tobacco control initiatives including introducing some of the toughest legislation in the country (Figure 22). Queensland was recognised as a national leader in 2017 and 2018 for achieving outstanding results from tobacco initiatives, especially in the protection of Queenslanders from second-hand smoke in indoor and outdoor public places, workplaces and public transport.<sup>96</sup> Community expectations for smoke-free environments was an important driving factor in these changes.

Success is evident in the steady reduction in smoking, with the rate more than halving over 20 years. In 1998, 24% of adults smoked daily, and in 2018, 11% did so. It is estimated there are about 480,000 fewer adults smoking daily in 2018 than there would have been if the smoking rate had remained at 24%. As about two-thirds of regular smokers are likely to die from a smoking related illness, some 300,000 Queenslanders have avoided an early death.

There has been widespread decline in smoking across regional Queensland. The latest data is showing a 40% decrease in rates of adult smoking in four of the 15 HHSs over the past eight years, with strong gains evident in all other HHSs (Table 16).

Youth smoking is decreasing rapidly. Smoking starts in the teenage years and the 70% reduction in daily smoking rates among those aged 14–19 years is indicative of a reduction in uptake (Figure 21a). This will provide a lifelong benefit to this generation and contribute to lower incidence and severity of disease, generating benefits to the health system through reduced demand for services over the longer term. Productivity gains will also be achieved with fewer people dying prematurely. Reduced rates of youth smoking have been a major influence in achieving smoking rate reduction in Queensland.

More people are quitting. The cessation rate in Queensland has been steadily increasing with a 10% improvement in the past nine years (Figure 21b). This reflects an increasing proportion of ex-smokers. Reducing the period of exposure to tobacco decreases the disease risk associated with smoking. For example, if a person quits by 45 years of age, the long-term impact of smoking is equivalent to that of a person who has never smoked.<sup>92</sup>



Queensland is becoming increasingly smoke-free. Legislative change over the past 20 years has contributed to a changing culture and re-set community norms about smoking (Figure 22). The first important step was the introduction of legislative measures to prevent the supply of tobacco to children, followed closely by the first bans on smoking at indoor public places and workplaces. Over time, retail controls have continued to be strengthened with bans introduced prohibiting advertising, display and promotion of tobacco products, as well as restrictions on pack size and on the supply of flavoured or novelty tobacco products. Smoke-free public places have also been extended over the last two decades and now apply at many high-density public areas such as public transport waiting points, building entrances and hospitals, as well as at places where families and young people gather to spend time together such as beaches, playgrounds, skate parks, sporting events and national parks.

Success in smoking reduction has been hard won and has come as a result of sustained commitment in the health sector in Queensland over the past 20 years, combined with significant and strategic action at a national level. Future success is not assured and challenges remain. Tobacco smoking is still the leading cause of preventable illness and premature death in Queensland due to the long lag in health impacts from exposure. In 2016, an estimated 3600 people died from illnesses caused by their smoking—a number more than 10 times the annual road toll.

A new generation of potential smokers is reaching young adulthood every year so it is most important that strategies continue and are effective at preventing uptake.

# Smoking

Furthermore, the evidence is building on the influence of novel products which may serve as a gateway to future smoking. Experimentation with e-cigarettes by young people has the potential to increase uptake and nicotine dependence. A resurgent tobacco industry determined to secure future markets and potentially position themselves as a part of the solution, may promote the use of these devices as ‘reduced risk’ products.<sup>97</sup>

Lifetime use of e-cigarettes doubled between 2013 and 2016. Current smokers were six times more likely to have ever used e-cigarettes than non-smokers.<sup>52</sup> The promoted use of e-cigarettes as an aid for smoking cessation is not supported by robust evidence.<sup>97,98</sup>

Smoking is a key contributor to health inequalities. The most unequal health outcomes in Queensland are those for Indigenous Queenslanders and people from low socioeconomic circumstances.

The smoking rate among Indigenous Queenslanders was 2.5 times the non-Indigenous rate (page 57).

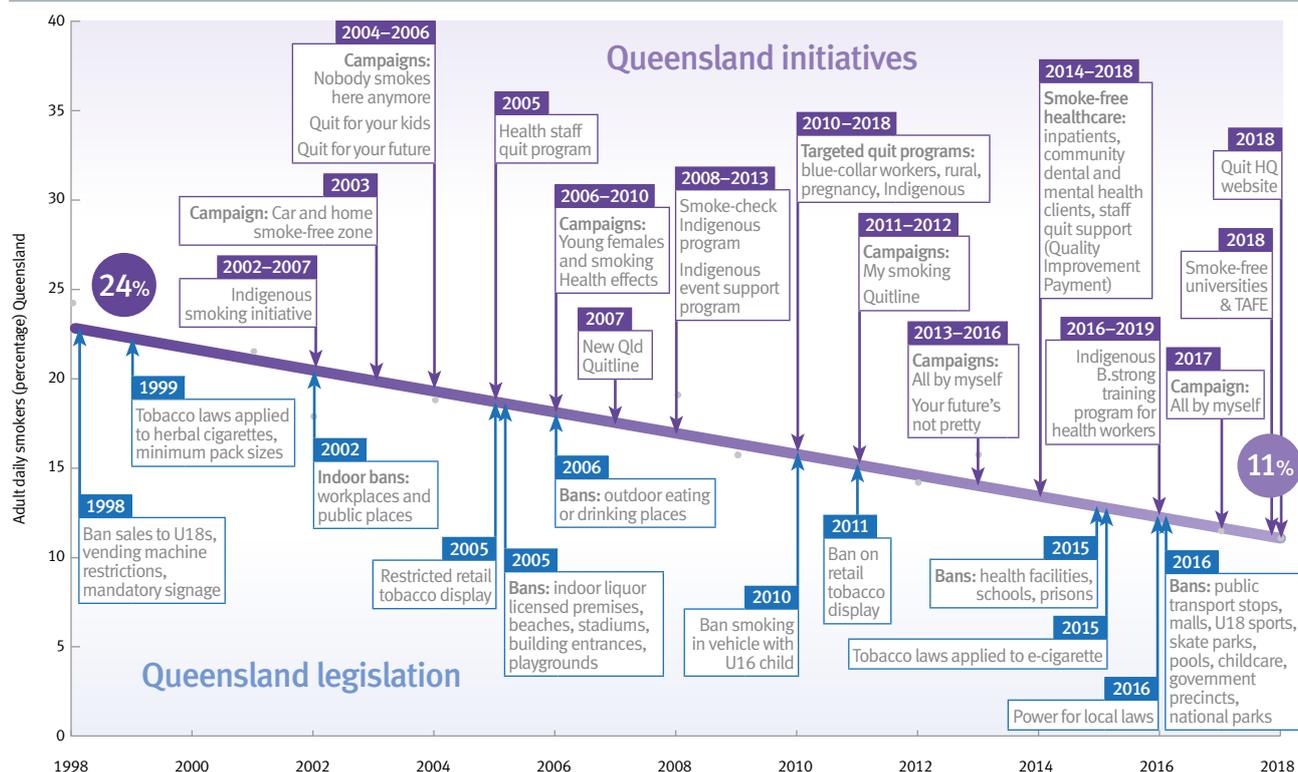
Initiation is high with smoking rates in young Indigenous Australians more than five times the non-Indigenous rate (among 15–17 year olds in 2012–13, page 57).

Rates of maternal smoking are higher among Indigenous Queenslander mothers—they were four times more likely to have smoked at some time during pregnancy than non-Indigenous mothers in 2016 (page 32). While there has been a decrease in maternal smoking over the past decade, the rate of decline for Indigenous Queenslander mothers is about half that of non-Indigenous mothers. Furthermore, 57% of Indigenous Queenslander children live in a household with a smoker.

Significant challenges remain as the socioeconomic gap is widening. The burden of smoking rests heavily on the most disadvantaged populations. Over the past eight years compared to adults living in the most advantaged areas, for those in disadvantaged areas:

- smoking rates were three times higher and the downward trend was slower (14% compared with 41%)
- rates of cessation were lower and fewer gains have been achieved (5% increase compared with 10%)
- youth smoking rate was double and downward trends slower (13% compared with 37%)
- maternal smoking rate was higher (5.4 times) and downward trend lower (21% compared with 48%).

Figure 22: Smoking prevalence and key tobacco initiatives, Queensland, 1998–2018



# Smoking

		Current daily	Current – not daily	Ex-smoker	Never smoked
18+ years	Persons	11.1 (10.2–12.1)	4.7 (3.9–5.6)	28.4 (27.1–29.6)	55.9 (54.3–57.4)
	Male	12.2 (10.7–13.9)	5.9 (4.8–7.3)	31.5 (29.6–33.4)	50.4 (48.1–52.8)
	Female	10.0 (8.9–11.2)	3.6 (2.6–4.9)	25.4 (23.8–27.0)	61.1 (59.1–63.0)
Persons	18–24 years	11.2 (7.2–17.0)	13.2 (8.7–19.6)	*4.1 (2.5–6.7)	71.5 (64.2–77.8)
	25–34 years	11.9 (9.6–14.6)	6.8 (5.1–8.9)	18.1 (15.5–21.2)	63.2 (59.4–66.9)
	35–44 years	12.0 (10.2–14.1)	5.6 (4.2–7.4)	27.0 (24.3–30.0)	55.3 (52.0–58.6)
	45–54 years	14.9 (12.8–17.2)	2.1 (1.3–3.1)	33.0 (30.1–36.0)	50.1 (46.9–53.2)
	55–64 years	12.5 (10.9–14.5)	1.9 (1.3–2.9)	40.2 (37.4–43.0)	45.4 (42.5–48.2)
	65–74 years	6.7 (5.6–7.9)	*0.9 (0.5–1.6)	43.6 (41.1–46.2)	48.8 (46.2–51.4)
	75+ years	2.4 (1.6–3.6)	*1.2 (0.6–2.2)	38.1 (34.8–41.4)	58.4 (55.0–61.8)
Males	18–24 years	*13.3 (6.9–23.9)	*13.7 (8.0–22.6)	*5.2 (2.8–9.7)	67.8 (56.7–77.2)
	25–34 years	11.6 (8.3–16.1)	9.7 (6.9–13.4)	19.1 (15.1–23.8)	59.6 (53.8–65.2)
	35–44 years	13.5 (10.8–16.8)	7.8 (5.4–11.1)	24.8 (21.0–29.0)	53.9 (49.0–58.8)
	45–54 years	15.8 (12.6–19.6)	*1.9 (1.1–3.1)	33.4 (29.1–37.9)	49.0 (44.2–53.8)
	55–64 years	15.3 (12.6–18.4)	*2.9 (1.8–4.8)	42.9 (39.0–47.0)	38.9 (34.9–43.0)
	65–74 years	7.2 (5.7–9.1)	*1.4 (0.7–2.8)	55.3 (51.5–59.0)	36.1 (32.5–39.9)
	75+ years	*1.6 (0.9–2.8)	**	59.4 (54.1–64.5)	38.6 (33.6–43.9)
Females	18–24 years	*9.1 (5.4–15.0)	*12.7 (6.5–23.3)	*3.0 (1.3–6.6)	75.2 (65.3–83.0)
	25–34 years	12.1 (9.3–15.6)	*3.9 (2.3–6.5)	17.2 (13.8–21.2)	66.9 (61.9–71.5)
	35–44 years	10.5 (8.3–13.3)	3.6 (2.3–5.5)	29.2 (25.3–33.5)	56.7 (52.2–61.1)
	45–54 years	14.0 (11.5–17.0)	*2.3 (1.2–4.2)	32.6 (28.9–36.6)	51.1 (46.9–55.3)
	55–64 years	9.8 (8.0–12.1)	*0.9 (0.5–1.6)	37.4 (33.7–41.3)	51.8 (47.9–55.7)
	65–74 years	6.2 (4.8–7.9)	*0.4 (0.2–1.0)	32.1 (28.9–35.4)	61.3 (58.0–64.6)
	75+ years	*3.0 (1.7–5.0)	*1.8 (0.9–3.6)	21.2 (18.0–24.9)	74.0 (70.0–77.7)
Socioeconomic status	Disadvantaged	16.6 (14.7–18.7)	3.9 (2.8–5.2)	29.6 (27.4–31.9)	49.9 (47.2–52.7)
	Quintile 2	12.5 (11.0–14.1)	4.9 (3.5–6.8)	32.4 (30.1–34.7)	50.2 (47.6–52.8)
	Quintile 3	11.5 (9.5–13.8)	2.6 (1.8–3.6)	30.1 (27.5–32.9)	55.8 (52.5–59.1)
	Quintile 4	8.8 (7.1–11.0)	*4.6 (2.7–7.7)	27.3 (24.4–30.3)	59.3 (55.6–62.8)
	Advantaged	6.8 (4.5–10.2)	7.3 (5.2–10.3)	22.9 (20.1–26.0)	63.0 (58.8–66.9)
Remoteness	Major cities	9.6 (8.3–11.1)	5.5 (4.3–7.0)	26.6 (24.9–28.3)	58.4 (56.1–60.6)
	Inner regional	13.1 (11.6–14.8)	3.2 (2.4–4.3)	32.8 (30.8–34.9)	50.9 (48.6–53.2)
	Outer regional	13.5 (11.8–15.4)	3.4 (2.6–4.5)	29.3 (27.0–31.7)	53.8 (50.9–56.6)
	Remote/very remote	15.9 (13.4–18.8)	*5.0 (2.9–8.5)	29.2 (26.0–32.6)	49.9 (46.0–53.8)

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

\*\* Estimate has a relative standard error greater than 50% and is not reported.



### Albert's story

*My coach and I discussed my goals, portion control, nutrition, exercise and what I had achieved each fortnight, including weight loss.*

*My health for life* 

Albert is retired and has a complex medical history including multi-site cancers, a painful knee condition requiring surgery, and spinal damage, leaving him an incomplete paraplegic. As he was unable to exercise his weight had significantly increased.

While waiting for knee surgery, Albert was referred by the *Get Set for Surgery* program to *My health for life*. This motivated him to tackle his physical limitations and manage his weight through regular exercise and a balanced diet. Albert says he now plans his meals, rides his tricycle and lifts weights to stay active and keep his weight down.



**Less than 10%**  
of Queenslanders consume  
sufficient vegetables



**Poor diet**  
is a risk factor for  
chronic disease



**More than 1/3**  
of total daily energy  
is consumed from  
unhealthy foods

# Food and nutrition

Good nutrition is necessary to maintain healthy weight, mental and physical health, resistance to infection, quality of life, and protection against chronic disease, disability and premature death.

This section includes an assessment of food consumption in Queensland based on the five food groups of the Australian Dietary Guidelines, a summary on infant nutrition, an update on fruit and vegetable consumption and the impact of diet on the health system and society.

The guidelines recommend Australians enjoy a wide variety of nutritious foods in sufficient amounts to meet energy needs, and limit the intake of food and drinks containing saturated fat, added salt, added sugar and alcohol. Despite the abundance of healthy food available in Queensland, most people were not meeting the recommendations for daily dietary intakes.

Furthermore, people are over-consuming discretionary or unhealthy foods and drinks that are not necessary for a healthy diet and contribute to weight gain.

These unhealthy foods are significant contributors to total daily energy intake. A concern is that these foods are also contributing to the five food groups. For example, potatoes in the form of chips and fries are contributing to vegetable serves, despite being discretionary due to added fat and salt.

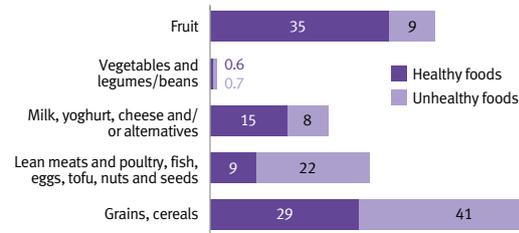
Food is frequently used in symbolic ways, playing an integral role in social bonding, relationships, and religious and social celebrations. It is a significant component of the cultural diversity in Australia. Food avoidance (for allergies, cultural, religious or ethical reasons), eating disorders and food insecurity contribute to the complexity of maintaining a healthy diet for some people.

Given the amount of food and drink consumed outside of the home, increasing the availability of healthier options is important. This can be achieved by reducing portion sizes, reformulating food and drinks to lower saturated fat, added sugar and/or salt content, adding more vegetables to meals, offering fruit, vegetable-based side dishes and water as the default options, and the use of wholegrain breads and flours. Food manufacturers, food service businesses and retailers are central to healthier options being available to Queenslanders.

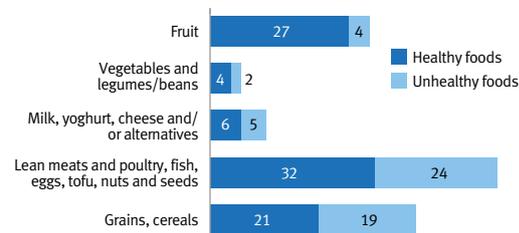
Changing the food and drink supply in communities, workplaces, health facilities, schools and clubs, can support people to make healthier choices, as can social marketing, community education, front-of-pack food labelling with nutritional profiles and kilojoule information on menus.

**Figure 23: Proportion meeting recommended consumption of the five food groups of the Australian Dietary Guidelines from healthy foods, and additional discretionary or unhealthy foods, children and adults, Queensland, 2011–12<sup>49</sup>**

## a. Children



## b. Adults



## What are the numbers?

- In 2018, based on self-report data an estimated:
  - 1.8 million adults and 243,000 children were not meeting recommendations for fruit consumption
  - 3.5 million adults and 805,000 children were not meeting recommendations for vegetable consumption.
- Almost all infants receive breastmilk at birth. At six months of age, 2 in 3 were receiving some breastmilk and at 12 months, 1 in 3.



# Food and nutrition

## Are Queenslanders meeting the Australian dietary guidelines?

The 2013 *Australian Dietary Guidelines*<sup>99</sup> recommend the consumption of five food groups: 1) fruit 2) vegetables and legumes/beans 3) milk, yoghurt, cheese and/or alternatives 4) lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes and beans and 5) grains (includes cereal foods, mostly wholegrain and/or high cereal fibre varieties). Consumption is recommended in quantities that are appropriate to life stage, sex, and energy needs.

Included within the guidelines is the recommendation to limit the consumption of discretionary foods, that is, foods that provide excess energy (kilojoules) and have little nutritional value, such as sweets, snacks, processed meats, potato chips, pastries, cakes, ice-cream, alcohol and sugary drinks. Those who are sedentary, short for age, or trying to lose weight do not need the additional energy from unhealthy discretionary foods to meet their nutrient needs. Those who are a healthy weight, more active or taller than average should consume healthy foods for extra energy, however, they may choose some unhealthy foods in small amounts on occasion for variety—contributing no more than 10% of total energy.<sup>99,100</sup>

Most Queenslanders do not meet the recommendations for any of the five food groups regardless of whether consumption is from healthy food sources or unhealthy discretionary food sources (Table 18).<sup>49</sup> Consumption of discretionary foods and drinks is widespread in the Queensland diet. More than one-third (37%) of the total daily energy intake by Queenslanders aged two years and older was from discretionary foods in 2011–12, and was highest for 14–18 year olds (45%).<sup>49</sup> Among Australian children, the consumption of discretionary hot foods, such as pies and hot chips, and sugary drinks throughout childhood by those living in the most disadvantaged areas accounted for an 11% excess weight gain compared with those living in the advantaged areas.<sup>101</sup> For Queensland males aged 19 year and older the proportion of daily energy from alcoholic drinks was relatively high at about 7–8%.<sup>49</sup>

This section reports on the extent to which the diet of average Queensland children and adults met the recommendations of the Australian Dietary Guidelines based on 24-hour food recall diaries, and the additional consumption from discretionary (unhealthy) food sources (Table 18).

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**37%** of the **energy intake** of Queenslanders is from **unhealthy food sources**.

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### Group 1: Fruit

In 2011–12, 35% of Queensland children and 27% of Queensland adults met the recommendation for daily fruit consumption based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included, this rises to 44% and 31% respectively. These unhealthy sources were mostly fruit from non-alcoholic drinks, and in cereals and cereal products.<sup>102</sup>

### Group 2: Vegetables and legumes/beans

In 2011–12, 0.6% of Queensland children and 4% of Queensland adults met the recommendation for daily vegetable consumption based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included, this rises to 1.3% and 6% respectively. These unhealthy sources were mostly potatoes as chips and fries, potato snack foods, and pastries.<sup>102</sup>

### Group 3: Milk, yoghurt, cheese and/or alternatives

In 2011–12, 15% of children and 6% of adults met the recommendation for milk, yoghurt, cheese and/or alternatives based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included, this rises to 23% and 11% respectively. These unhealthy sources were mostly ice-cream, chocolate products and high saturated fat pizza.<sup>102</sup>

### Group 4: Lean meats, poultry, fish, eggs, tofu, nuts/seeds, and legumes/beans

In 2011–12, 9% of children and 32% of adults met the recommendation for lean meats and alternatives based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included this rises to 31% and 56% respectively. These unhealthy sources were mostly higher fat meat from sausages, lamb, mutton, ham and other processed meats.<sup>102</sup>

### Group 5: Grain (cereal) foods

In 2011–12, 29% of children and 21% of adults met the recommendation for grain (cereal) foods based on healthy food sources (Table 18).<sup>49</sup> If discretionary, unhealthy foods are included, this rises to 70% and 39% respectively. These unhealthy sources were mostly pastries, cakes and muffins, sweet biscuits, and cereal products.<sup>102</sup>

### Unsaturated spreads and oils

The consumption of small amounts of unsaturated fats and oils is recommended for a healthy diet to provide essential fatty acids and fat soluble vitamins.<sup>99</sup> About half (52%) of Australian children and one-third (34%) of Australian adults exceeded the recommendation, usually from healthy foods.<sup>102</sup>

# Food and nutrition

**Table 18: Recommended consumption of food from the five food groups, children and adults, Queensland, 2011–12<sup>49</sup>**

Five food groups		5–17 years			18+ years		
		% meeting recommendation			% meeting recommendation		
		Total foods	Healthy foods	Unhealthy foods	Total foods	Healthy foods	Unhealthy foods
Fruit	Persons	44	35	9	31	27	4
	Males	40	31	9	36	31	5
	Females	48	39	10	26	23	3
Vegetables and legumes/beans	Persons	1.3	0.6	0.7	6	4	2
	Males	1.1	0.6	0.5	6	4	2
	Females	1.4	0.6	0.8	6	5	2
Milk, yoghurt, cheese and/or alternatives	Persons	23	15	8	11	6	5
	Males	23	14	9	17	11	7
	Females	23	16	7	6	2	4
Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans	Persons	31	9	22	56	32	24
	Males	41	13	28	64	37	27
	Females	20	5	15	47	27	20
Grain (cereal) products	Persons	70	29	41	39	21	19
	Males	74	29	45	47	24	24
	Females	65	29	36	31	18	14

Up to one third (0–33%) of the total food group consumed from unhealthy foods

Between one third and up to two thirds (34–65%) of the total food group consumed from unhealthy foods

Two thirds or more (66–100%) of the total food group consumed from unhealthy foods

## Salt intake

Australian adults continue to exceed the maximum added salt intake of 5g per day recommended by the World Health Organization. Males consumed up to double the recommended daily amount at 10g per day, compared with 7g per day for females.<sup>103</sup>

## Sugar sweetened drinks

The recommendation is for Australians to limit their intake of added sugars from foods and drinks.<sup>99</sup> The consumption of sweetened drinks was a key component of added sugar intake. Water is recommended as the drink of choice.<sup>99</sup>

Half (51%) of Queensland children and one-third (33%) of Queensland adults consumed sugar sweetened drinks in the previous 24 hours in 2011–12.<sup>49</sup> The prevalence of daily sugar sweetened drink consumption by adults and children in Queensland did not differ from national consumption in 2011–12.<sup>49</sup> Consumption of sugar sweetened drinks and sugar intake declined in Australia between 1995 and 2011–12, by 23% for children and 6% for adults.<sup>104</sup> Despite this decline, added sugar intake remains too high.

## Food avoidance

In 2011–12, 17% of Queenslanders aged two years or older reported avoiding a food due to allergy or intolerance, which was the same as the national rate.<sup>100</sup> Queenslanders were less likely to avoid particular foods for cultural, religious or ethical reasons than nationally (4% compared with 7%).<sup>100</sup>

## Food security

The reality of food security in some households is an additional barrier to meeting the dietary guidelines. Food security requires constant access to sufficient, safe, nutritious food to maintain a healthy and active life—financial barriers to purchasing food impact on food security.<sup>100</sup> The tendency to overcome financial barriers to food security by ‘filling up’ on cheaper, unhealthy foods rather than healthy foods is a short-term fix that may lead to longer term malnutrition and chronic health issues.<sup>105</sup>

In 2011–12, 5.2% of Queenslanders aged two years or older were living in a household that had run out of food in the previous 12 months (nationally 4.0%), and of these less than half were unable to buy more food and about one-third went without food.<sup>100</sup>

Among Indigenous Australians aged two years or older, 22% were living in a household that had run out of food in the previous 12 months in 2012–13, and the percentage was higher (31%) for those living in remote areas.<sup>64</sup> One-third (7.0%) went without food, higher (9.2%) for those in remote areas in 2012–13.<sup>64</sup>

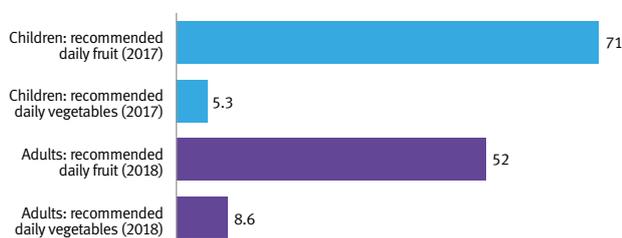
# Food and nutrition

## Fruit and vegetable consumption in children and adults

Prevalence data was based on adult self-report in 2018, and proxy report for children in 2017, and may significantly over-estimate actual consumption considering data from food recall diaries (as reported on the previous page).

The recommended intakes are an average to aim for each day and the number of recommended serves per day varies by age group and sex for both children and adults.<sup>99</sup>

**Figure 24: Recommended daily fruit and vegetable consumption, children and adults, Queensland<sup>34</sup>**



In Queensland (Table 19, Figure 24)<sup>34</sup>:

- 71% of children (in 2017) and 52% of adults (in 2018) met the recommendation for daily serves of fruit.
- 5.3% of children (in 2017) and 8.6% of adults (in 2018) met the recommendation for daily serves of vegetables.

### By sex

Compared to adult males in 2018 (Table 19), adult females were<sup>34</sup>:

- 13% more likely to consume the recommended daily serves of fruit
- three times more likely to consume the recommended daily serves of vegetables.

Among children, there was no difference between girls and boys for their daily intake of fruit or vegetables in 2017.<sup>34</sup>

### By age

Older adults (65 years and older) were 18% more likely to meet the recommended serves of fruit than those aged 18–24 years in 2018 (Table 19).<sup>34</sup>

Younger children (5–7 years) were 52% more likely to consume the recommended daily serves of fruit than older children 16–17 years in 2017 (Table 19).<sup>34</sup>

Less than 10% of children and adults met the recommendation for daily serves of vegetables (Figure 24, Table 19). There was no difference between age groups.

More adults achieved the daily consumption of three or more serves of vegetables (40% in 2018), with higher consumption for females than males (48% compared with 32%).<sup>34</sup> There was no difference in achieving three or more serves of vegetables between age groups.

One-third (33%) of children consumed three or more serves of vegetables daily in 2017.<sup>34</sup>

### By socioeconomic status

For adults in 2018 the recommended daily consumption of fruit or vegetables did not differ by socioeconomic status (Table 19).<sup>34</sup>

Children living in the most advantaged areas were 17% more likely to meet the recommendation for daily fruit consumption than those in the most disadvantaged areas in 2017. There was no difference for daily vegetable consumption.

### By remoteness

The recommended daily consumption of fruit or vegetables did not differ by area of remoteness for children in 2017 or adults in 2018 (Table 19).<sup>34</sup>

### Indigenous Queenslanders

In 2012–13, 41% of Indigenous Queensland adult consumers the recommended serves of fruit, and 4.2% consumed the recommended serves of vegetables per day.<sup>90</sup> Fruit consumption was about 12% lower than for non-Indigenous adults after adjusting for age differences but did not differ for vegetable consumption.

For Indigenous Queensland children, 68% consumed the recommended serves of fruit per day and 8.9% consumed the recommended serves of vegetables. Fruit and vegetable consumption did not differ from that of non-Indigenous children.

For children, since 2013, the prevalence of **recommended fruit consumption** has

**increased by 10%**

while **vegetable consumption** has

**decreased by 32%.**

# Food and nutrition

## Regional Queenslanders

For adults in 2017–18, the prevalence of recommended daily fruit consumption in North West HHS was 13% lower than the state average but did not differ for the remaining HHSs (Figure 25).<sup>34</sup>

For adults in 2017–18, the prevalence of recommended daily vegetable consumption in Sunshine Coast HHS was 36% higher than the state average but did not differ for the remaining HHSs (Figure 26).<sup>34</sup> About one-third

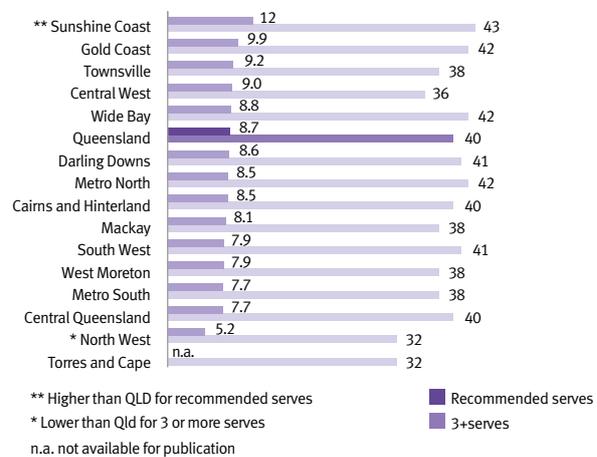
or more of adults achieved the daily consumption of three or more serves of vegetables, across the HHSs in 2017–18 (Figure 26). There was little variation among the HHSs with the exception of North West HHS which was 20% lower than the state average.

There were no differences for children between the HHSs and the state average for recommended daily fruit and vegetable consumption in 2015–16.<sup>34</sup>

**Figure 25: Proportion meeting recommended daily fruit consumption, by HHS, adults, Queensland, 2017–18<sup>34</sup>**



**Figure 26: Proportion meeting recommended daily vegetable consumption, and consuming three or more daily serves of vegetables, by HHS, adults, Queensland, 2017–18<sup>34</sup>**



More information on HHSs is available from the data visualisations and statistical tables online (page vii).

## How we compare

### Nationally

Queensland adults did not differ from national for recommended fruit or vegetable consumption in 2014–15.<sup>33</sup> Queensland was ranked second highest among the jurisdictions for recommended daily fruit consumption (after Western Australia), and third highest for vegetables (after Tasmania and Western Australia).

Queensland children did not differ from children nationally in their fruit and vegetable consumption in 2014–15.<sup>33</sup> Queensland was ranked fourth highest of the jurisdictions for recommended daily serves of fruit and sixth highest for vegetables.

### Internationally

Australians (aged 15 years and older) had the highest proportion of daily fruit consumption and the second highest daily vegetable consumption (behind Korea) among 27 OECD countries in 2014 (or nearest year).<sup>71</sup>

## Trends

The prevalence of recommended fruit consumption for adults has not changed over the past 10 years (2008–2018). The trend did not vary by age or socioeconomic status, although there was year to year variation.<sup>91</sup>

For children the prevalence of recommended daily fruit consumption increased by 9.9% between 2013 and 2017.<sup>91</sup> The trend did not vary by age or socioeconomic status.

For adults the proportion meeting the recommended vegetable consumption has not changed over the past 10 years (2008–2018).<sup>91</sup> However, for younger adults (18–29 years) there was a 62% increase in prevalence. For those aged 30–44 years it was steady, it declined by 23% for middle-aged adults (45–64 years) and by 32% for those aged 65 years and older.

# Food and nutrition

For adults, the prevalence of consuming three or more serves of vegetables daily (less than the recommendation) decreased by 8.7% between 2008 and 2018.<sup>91</sup> The trend did not differ by age.

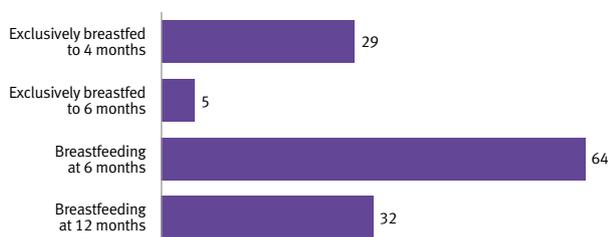
For children, the proportion meeting the recommended daily serves of vegetables declined by 32% between 2013 and 2017.<sup>91</sup> The trend did not differ by sex, age or socioeconomic status.

## Infant feeding

Breastfeeding provides optimal infant nutrition and has important health benefits for mothers, as well as social and economic benefits. The 2012 *Australian Infant Feeding Guidelines* encourage and support exclusive breastfeeding to around 6 months of age, and continued breastfeeding until 12 months of age and beyond.<sup>106</sup>

The introduction of solid foods between six and 12 months of age should complement breastmilk or infant formula, and be highly nutritious. Cow's milk is not recommended for children until around 12 months of age.

Figure 27: Prevalence of breastfeeding, Queensland, 2014<sup>43</sup>



In 2014<sup>43</sup> (Figure 27):

- 96% of infants aged up to two years had ever been breastfed, while exclusive breastfeeding was initiated for 92%.
- 29% of infants were exclusively breastfed to four months of age and 5% to six months.
- 64% were receiving some breastmilk at six months and 32% at 12 months.
- At four months of age, 36% of infants had been introduced to solid or semi-solid foods, while 26% were consuming them daily.
- 7% of infants were consuming cow's milk at 10 months.

There were some signs of improvement in infant nutrition between 2003 and 2014<sup>43</sup>:

- While the proportion of infants exclusively breastfed to four months did not change between 2008 and 2014, the proportion receiving some breastmilk at each month in the first year has increased—from 33% in 2003 to 48% in 2014 at nine months of age, and from 17% in 2003 to 32% in 2014 at 12 months. This was mirrored by a decrease in the proportion of children receiving formula at each month over the first year.
- The continuation of breastfeeding (or infant formula) as the main food was supported by the decrease in the proportion of infants receiving solid food daily at four months of age, from 59% in 2003 to 22% in 2014.
- The recommendation to introduce cow's milk from 12 months of age or older was supported by the decrease in the proportion of infants who consumed cow's milk at 10 months of age, from 35% in 2003 to only 7% in 2014.
- In 2003, about three times as many infants were consuming sweetened drinks as in 2014: 38% compared with 12% at 12 months of age and 61% compared with 26% at two years of age.

## Impacts and costs

### Burden of disease

The combined impact of dietary factors was the second largest cause of health loss in Queensland in 2011, accounting for 7.8% of the total burden of disease and injury (Table 2, page 10).<sup>25,93</sup> When considered individually, a diet low in fruit explained 1.9% of the total burden, and a diet low in vegetables explained 1.5% (proportions cannot be summed due to shared effects). Dietary risks (combined) explained 39% of cardiovascular disease burden and 7.2% of cancer burden in 2011. Individually, low fruit consumption explained 10% of the cardiovascular disease burden, and 2.5% of cancer burden. Low vegetable consumption explained 9.3% of the cardiovascular disease burden, and 0.6% of cancer burden.

Among Indigenous Australians, dietary risks (combined) were the second largest cause of health loss accounting for 9.7% of the total burden of disease and injury, and 15% of the health gap between Indigenous Australians and non-Indigenous (Table 3, page 11).<sup>26</sup>

# Food and nutrition

## Deaths

In 2016, the combined impact of dietary risks accounted for an estimated 3800 deaths in Queensland (13% of all deaths) (Table 2, page 10).<sup>25,93</sup> Diets low in fruit accounted for an estimated 950 deaths, and low in vegetables an estimated 750 deaths in 2016.

## Disability and hospitalisation

Dietary risks (combined) caused 3.3% of the total disability burden in 2011.<sup>25,93</sup> The combined impact of dietary risks accounted for 48,300 hospitalisations (2% of total) and 169,500 patient days in 2015–16.<sup>25,93</sup>

Combined dietary risks was associated with about 21,300 hospitalisations for coronary heart disease, 8700 for stroke and 8100 for bowel cancer in 2015–16 (Figure 28).<sup>93</sup> When considered individually, a diet low in fruit resulted in 4900 hospitalisations for coronary heart disease and 3800 for stroke. A diet low in vegetables resulted in 4300 hospitalisations for coronary heart disease and 3600 for stroke.

## Household expenditure on food

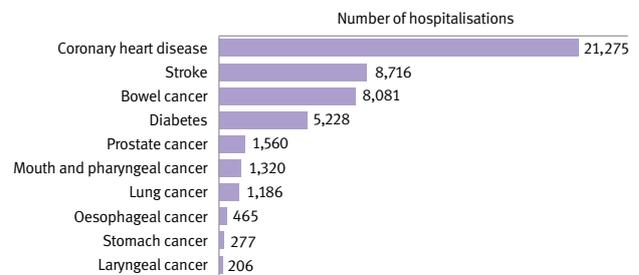
In 2015–16, Queensland households in the highest income category (by quintile) spent more than double (\$302 weekly) that of the lowest quintile (\$131).<sup>107</sup>

The average weekly spend in Queensland was \$218, compared with \$237 nationally in 2015–16. Queenslanders spent a further \$31 per week on alcoholic drinks, similar to national. One-third (31%) of the weekly expenditure on food and non-alcoholic drinks by Queensland households was for meals outside of the home, fast food and takeaway food, followed by 12% on meat including the discretionary higher fat and processed meat (and excluding fish and seafood), 11% on condiments, confectionary, food additives and packaged prepared meals, and 8.8% on bakery products, flour and cereals including the discretionary foods of cakes, biscuits and puddings. Only 6.4% was spent on fresh and frozen vegetables and 6.1% on fruit and nuts.

## Health expenditure

In 2008, it was estimated that inadequate fruit and vegetable consumption resulted in \$206 million in health sector costs nationally, and \$63 million in production losses.<sup>108</sup> Based on population share, that was a total of \$54 million in Queensland, where 77% or \$41 million was associated with costs to the health sector. An estimated \$595 million of federal government health expenditure and \$384 million of state and territory government health expenditure was attributed to the low consumption of vegetables in 2015–16.<sup>109</sup> If the average vegetable consumption were 10% higher, it was estimated the government expenditure would have been reduced by \$100 million in 2015–16 dollars.

Figure 28: Hospitalisations for combined dietary risks, by cause, Queensland, 2015–2016<sup>25,93</sup>



**15%** of the **health gap** between non-Indigenous and Indigenous Queenslanders was **due to dietary factors**.

# Food and nutrition

**Table 19: Recommended daily fruit and vegetable consumption, adults and children, Queensland<sup>34</sup>**

	Adults (2018)		Children (2017)	
	Recommended daily serves		Recommended daily serves	
	fruit	vegetables	fruit	vegetables
<b>18+ years</b>				
Persons	52.1 (50.6–53.7)	8.6 (7.8–9.6)	71.4 (69.2–73.5)	5.3 (4.3–6.5)
Male	48.8 (46.4–51.1)	4.2 (3.3–5.4)	68.9 (65.8–71.8)	5.0 (3.8–6.7)
Female	55.3 (53.3–57.4)	12.8 (11.5–14.3)	74.1 (70.9–77.0)	5.5 (4.1–7.4)
<b>Persons</b>				
18–24 years	53.2 (45.6–60.7)	*8.4 (4.9–14.1)	86.3 (82.6–89.3)	5.4 (3.5–8.3)
25–34 years	45.2 (41.3–49.2)	8.0 (6.1–10.4)	74.7 (70.8–78.2)	6.0 (4.2–8.5)
35–44 years	48.5 (45.1–51.8)	8.3 (6.5–10.5)	63.4 (59.1–67.5)	5.0 (3.4–7.3)
45–54 years	48.9 (45.7–52.1)	10.4 (8.6–12.5)	56.9 (51.2–62.4)	*4.1 (2.4–6.7)
55–64 years	54.1 (51.2–56.9)	8.4 (7.0–10.0)		
65–74 years	62.3 (59.8–64.7)	8.4 (7.2–9.8)		
75+ years	63.4 (59.9–66.7)	8.2 (6.6–10.2)		
<b>Males</b>				
18–24 years	50.8 (39.4–62.0)	**	87.1 (82.3–90.7)	*8.0 (4.8–13.1)
25–34 years	41.2 (35.6–47.0)	*2.0 (1.1–3.8)	74.6 (69.1–79.4)	5.3 (3.3–8.5)
35–44 years	47.4 (42.5–52.4)	*6.2 (3.7–10.1)	59.1 (53.3–64.7)	*2.6 (1.4–4.8)
45–54 years	49.7 (44.9–54.5)	4.3 (2.7–6.8)	47.5 (39.5–55.6)	*4.5 (2.3–8.8)
55–64 years	46.8 (42.8–50.9)	3.2 (2.2–4.6)		
65–74 years	55.6 (51.8–59.3)	4.0 (2.9–5.5)		
75+ years	60.2 (55.1–65.2)	7.5 (5.2–10.7)		
<b>Females</b>				
18–24 years	55.8 (45.8–65.3)	*12.2 (6.9–20.8)	85.5 (79.4–90.0)	**
25–34 years	49.2 (43.9–54.6)	13.9 (10.5–18.2)	74.8 (69.1–79.8)	*6.7 (4.0–11.0)
35–44 years	49.5 (45.0–54.0)	10.3 (8.0–13.3)	67.9 (61.4–73.8)	7.6 (4.7–11.9)
45–54 years	48.2 (44.0–52.4)	16.0 (13.2–19.4)	66.8 (59.3–73.5)	**
55–64 years	61.3 (57.4–65.0)	13.6 (11.1–16.5)		
65–74 years	68.9 (65.6–72.0)	12.8 (10.7–15.2)		
75+ years	65.8 (61.0–70.3)	8.8 (6.7–11.6)		
<b>Socioeconomic status</b>				
Disadvantaged	47.2 (44.5–49.9)	7.1 (5.9–8.5)	66.7 (61.8–71.4)	*5.9 (3.6–9.6)
Quintile 2	53.5 (50.8–56.1)	9.5 (7.8–11.4)	67.5 (62.9–71.9)	5.0 (3.4–7.3)
Quintile 3	52.5 (49.0–55.9)	8.5 (6.9–10.3)	70.3 (65.3–74.9)	5.2 (3.5–7.8)
Quintile 4	53.0 (49.2–56.7)	8.4 (6.7–10.6)	74.9 (69.9–79.4)	.8 (3.6–9.4)
Advantaged	54.0 (49.7–58.2)	9.5 (7.1–12.6)	77.9 (72.8–82.2)	*4.4 (2.6–7.4)
<b>Remoteness</b>				
Major cities	52.6 (50.3–54.9)	8.9 (7.7–10.3)	73.9 (70.9–76.7)	4.6 (3.4–6.3)
Inner regional	51.4 (49.1–53.7)	8.6 (7.5–9.9)	71.0 (66.8–74.9)	6.0 (4.1–8.6)
Outer regional	51.9 (48.9–54.9)	7.4 (6.1–8.8)	62.3 (57.2–67.1)	5.7 (3.6–8.9)
Remote/very remote	48.8 (44.9–52.7)	8.7 (6.1–12.3)	71.6 (62.4–79.2)	*10.4 (6.1–17.2)

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

\*\* Estimate has a relative standard error greater than 50% and is not reported.

# Weight status

About one-third of Queensland adults and two-thirds of children are currently in the healthy weight range. After several decades of increase, rates of obesity appear to be steady in Queensland.

Obesity remains a major issue with 30% of adults obese, and of those about one-third are severely obese (12% or about 460,000 adults)—a similar proportion to the number of smokers. The average obese adult would need to lose 29kg to achieve a healthy weight, a total excess of 33,700 tonnes among all obese adults in Queensland.

Avoiding weight gain is a challenge for many Queenslanders and over the past decade the average Queenslanders has gained a kilogram every four to five years. Many Queenslanders have taken action to either maintain their weight or lose weight through strategies such as reduced portion sizes and increased physical activity.

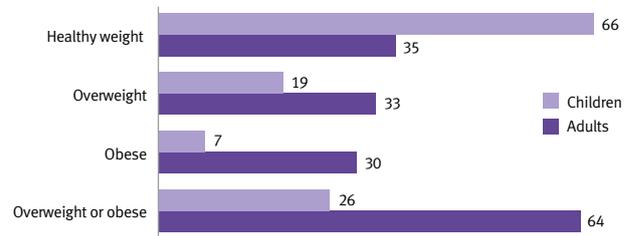
The pathway to obesity is complex—a combination of food (energy in), physical activity (energy out), genetics and environment. Over the past 30 years, changes to the environment in which we live, work and play have made it easier to consume excess energy compared to our needs. For example, readily available, cheap, energy-dense and nutrient-poor foods and drinks in combination with work and leisure activities that are mainly sedentary have been driving increases in obesity in Queensland and Australia.

The financial cost of obesity is high and directly impacts on the health system through disability and hospitalisations. Community costs occur through productivity losses including absenteeism from work, loss of wellbeing and premature death.

Continued downward pressure on obesity must be maintained through investment in a range of preventive health initiatives including front-of-pack food labelling, kilojoule information on menus, social marketing campaigns and healthy lifestyle programs to improve eating patterns, increase physical activity and reduce sedentary behaviours.

With two-thirds of adults being overweight or obese, changing norms and culture about body weight may take time to achieve. Widespread action is required with governments, community groups, industry, media, families and individuals all having a role to play. We need community infrastructure that promotes active transport and physical activity and healthy food and drink supply strategies in schools, sporting clubs and hospitals.

Figure 29: Measured weight status\*, children and adults, Queensland, 2014–15<sup>49</sup>



\* Measured data for 2017–18 is due for release in December 2018.

## What are the numbers?

In 2018, based on measured prevalence in 2014–15:

- An estimated:
  - 558,000 children and 1.4 million adults were healthy weight
  - 163,000 children and 1.3 million adults were overweight
  - 61,000 children and 1.2 million adults were obese.
- Adult obesity prevalence did not change between 2011–12 and 2014–15, consistent with national trends.
- Childhood obesity prevalence did not change between 2007–08 and 2014–15, consistent with national trends.
- The prevalence of overweight and obesity (combined) in Queensland adults and children was similar to national prevalence in 2014–15, and among jurisdictions, Queensland was ranked fourth highest for adults and fifth highest for children.





Tevita's story

*Since losing the weight, I feel great. I feel lighter on my feet, I can move easier and faster, I'm stronger and have heaps more energy. I can play a full game of rugby.*

Brisbane schoolboy Tevita was headed for bariatric surgery, weighing 178kg in April 2016. This was a turning point for Tevita, who lost more than 65kg in 12 months by making changes to his diet and activity levels. Tevita credits the support of his family, friends and the weight management clinic at the Queensland Children's Hospital for his successful weight loss.

*'When I was at my heaviest and the word surgery was mentioned, I knew I didn't want to go down that road, so I chose instead to change the way I eat, exercise more and get healthier. My mum and sister help prepare my meals and are always encouraging me to stay on track. My mates have been very supportive too, always pushing me to keep going and do better.'*



# Weight status

The reporting of overweight and obesity is based on body mass index (BMI). BMI is calculated by dividing a person's weight in kilograms by their height in metres squared. It categorises people's weight status into underweight, healthy weight, overweight, or obese.

The preferred use of physical measurements of weight and height to calculate BMI provides higher accuracy, however, collection is costly. Weight and height were measured during the national health survey interviews held in 2007–2008<sup>110</sup>, 2011–2012<sup>111</sup> and 2014–15<sup>33</sup> (Table 20).<sup>49</sup> The survey was repeated in 2017–18 and will provide updated measured prevalence once data becomes available from December 2018.

Self-reported or proxy-reported data were collected annually in Queensland state surveys and are used for trend reports and regional assessments.<sup>34,91</sup>

Adult self-report underestimates the true prevalence of overweight and obesity because people tend to underestimate their weight and overestimate their height.

## Prevalence and differentials

Height and weight data were recorded by physical measurement (Table 20)<sup>33,49</sup>, proxy-report for children aged 5–17 years (Table 21)<sup>34</sup>, and adult self-report (Table 22).<sup>34</sup>

### Healthy weight

- Measured: 35% of adults and 66% of children were healthy weight in 2014–15.<sup>33,49</sup>
- Self/proxy-reported: 37% of adults were healthy weight and 74% of children were healthy weight/underweight\* in 2018.<sup>34</sup>

### Overweight

- Measured: 33% of adults and 19% of children were overweight in 2014–15.<sup>33</sup>
- Self/proxy-reported: 36% of adults and 18% of children were overweight in 2018.<sup>34</sup>

### Obesity

- Measured: 30% of adults and 7.2% of children were obese in 2014–15.<sup>33</sup>
- Self/proxy-reported: 24% of adults and 7.9% of children were obese in 2018.<sup>34</sup>

\* Proxy-reported weight status for children does not provide reliable distinctions between healthy weight and underweight, therefore the combined category was reported (Table 21).

### Overweight and obesity

- Measured: 64% of adults and 26% of children were overweight or obese in 2014–15.<sup>33</sup>
- Self/proxy-reported: 60% of adults and 26% of children were overweight or obese in 2018.<sup>34</sup>

### Underweight

- Measured: 1.2% of adults and 8.0% of children were underweight in 2014–15.<sup>49</sup>
- Self-reported: 2.4% of adults were underweight in 2018.<sup>34</sup>

### By sex

By measurement in 2014–15, the average adult male weighed 88.4kg and was 176.7cm tall, while the average adult female weighed 72.4kg and was 162.7cm.<sup>49</sup>

Based on self-report in 2018, the average male weighed 87.3kg and was 178.1cm tall, while the average female was 72.0kg and 164.5cm.<sup>34</sup>

Adult females were 36% more likely to be a healthy weight than males in 2018 based on self-reported data (Table 22). This difference was mainly due to the higher prevalence of self-reported overweight for males (43% compared with 30%) while obesity was similar.

By measurement or proxy-report for children there was no difference between girls and boys for any weight category.<sup>33,34</sup>

### By age

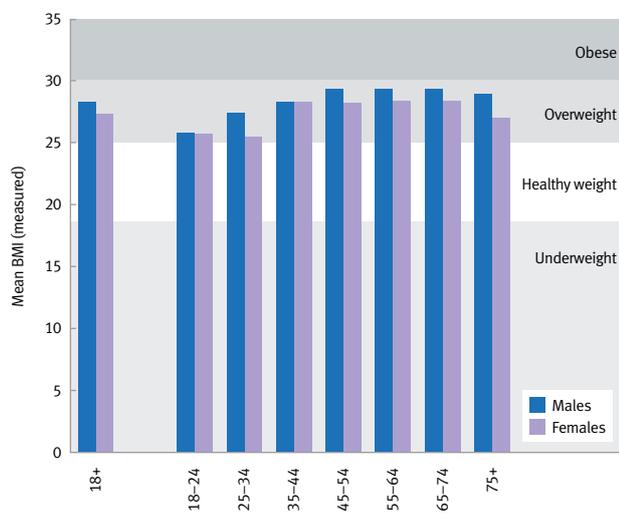
In 2014–15 based on measurement, the average Queensland adult was overweight, independent of sex or age group (Figure 30).<sup>33</sup> The average younger female (18–34 years) was closest to the healthy weight range, and the average male aged 45–74 years was closest to the obese range.

The prevalence of self-reported overweight and obesity increased with age up to 74 years and then decreased (Table 22). Obesity prevalence peaked in adults aged 55–64 years in 2018.

Proxy-reported childhood healthy weight/underweight, overweight, obesity and the combined category of overweight and obesity, did not differ by age in 2018 (Table 21).

# Weight status

**Figure 30: Measured weight status of average adult, by age group and sex, Queensland, 2014–15<sup>49</sup>**



## By socioeconomic status

Based on measured estimates in 2014–15, adults in disadvantaged areas were 29% less likely to be in the healthy weight and underweight category and 49% more likely to be obese than those in advantaged areas.<sup>49</sup> Considering those with a BMI of 35 or greater, there was a larger differential— those in disadvantaged areas were 2.8 times more likely to be severely obese than those in advantaged areas.

Children living in the most disadvantaged areas were 2.5 times more likely to be obese than children in the most advantaged areas, based on proxy-reported data in 2018 (Table 21). Conversely, children living in the most advantaged areas were 25% more likely to be healthy weight than those in the most disadvantaged areas. Overweight prevalence did not differ.

Children in disadvantaged areas were

**2.5 times**  
more likely to be  
**obese**

than children in advantaged areas.

## By remoteness

The prevalence of self-reported adult obesity in areas outside major cities varied from 35% higher in inner regional areas to 39% higher in remote areas in 2018 (Table 22). Overweight prevalence did not differ, while the combined category of overweight and obesity was about 12% higher outside major cities. Adults living in major cities were 27% more likely to be healthy weight compared to those in remote areas.

There was no difference in the prevalence of proxy-reported childhood healthy weight/underweight, overweight or obesity (or combined) between major cities, and regional and remote areas in 2018 (Table 21).

## Indigenous Queenslanders

In 2012–13, more than two-thirds (70%) of Indigenous Queensland adults were measured as overweight or obese—30% were overweight and 40% were obese.<sup>90</sup> After adjusting for age differences, Indigenous Queenslanders were 39% more likely to be obese and 25% less likely to be healthy weight by measurement (12% more likely to be overweight or obese) compared with non-Indigenous adults.<sup>90</sup> Indigenous Queenslanders were third highest of the jurisdictions for overweight and obesity after New South Wales and Western Australia.<sup>64</sup>

In 2012–13, 30% of Indigenous Queensland children were measured as overweight or obese—17% overweight and 13% obese—and did not differ from non-Indigenous.<sup>90</sup>

## Regional Queenslanders

The prevalence of self-reported adult healthy weight was 12% higher in Gold Coast HHS than the state average in 2017–18 (Figure 31a).<sup>34</sup> Six HHSs had lower prevalence of self-reported adult healthy weight, varying from 24% lower in Wide Bay to 13% lower in West Moreton.

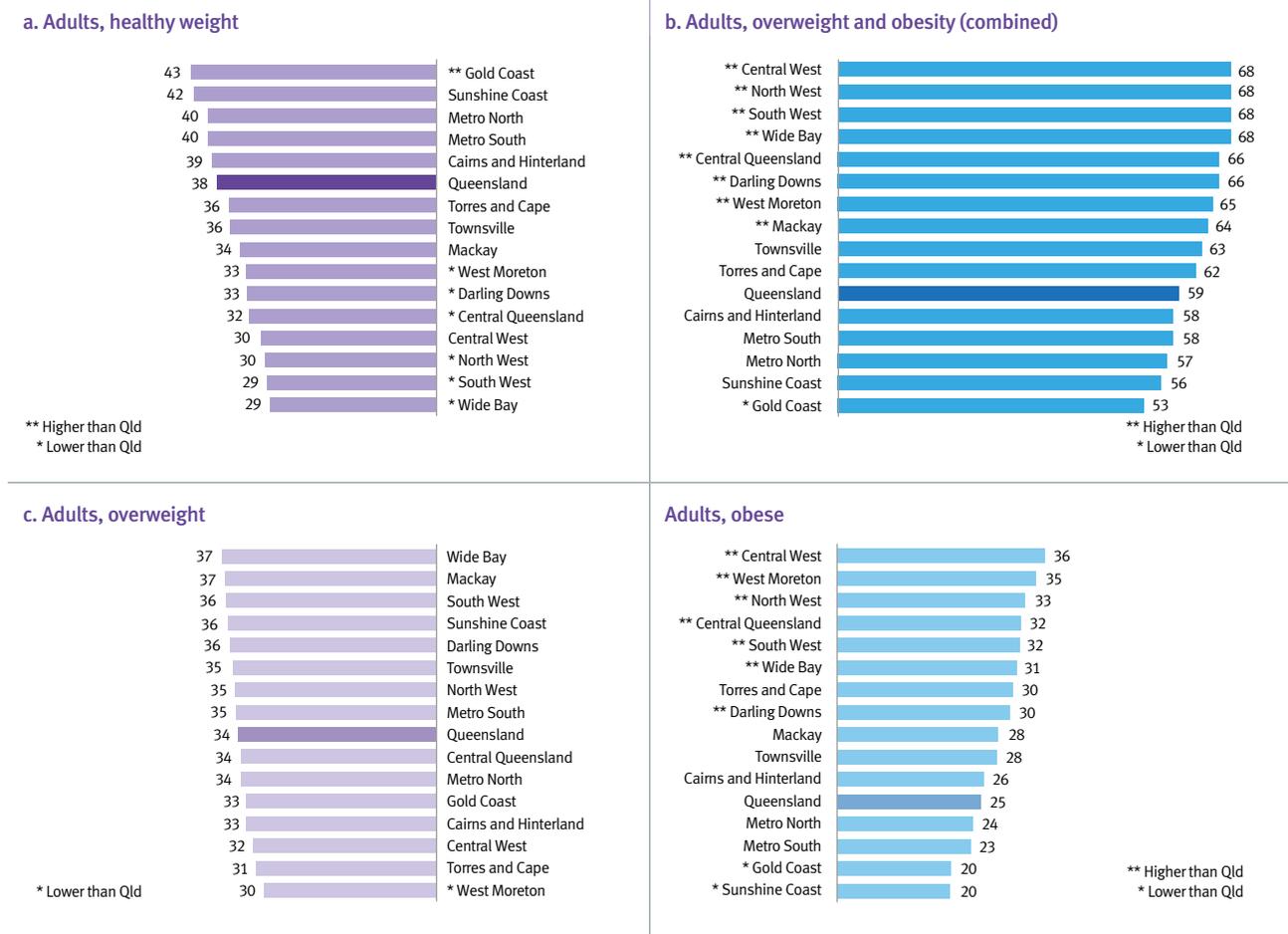
Eight HHSs had higher prevalence of self-reported adult overweight and obesity (combined) than the state average in 2017–18, varying from 9% higher in Mackay to 14% higher in Central West (Figure 31b).<sup>34</sup> Gold Coast HHS had an 11% lower prevalence.

In 2017–18, there was no difference across Queensland for self-reported adult overweight with one exception— while the prevalence of self-reported adult overweight was 13% lower in West Moreton HHS, the corresponding prevalence of obesity was 39% higher (Figure 31c).

Seven HHSs had higher prevalence of self-reported adult obesity than the state average in 2017–18, varying from 20% higher in Darling Downs to 45% higher in Central West (Figure 31d).<sup>34</sup> Prevalence was lower in Sunshine Coast HHS and Gold Coast HHS (both 20%).

# Weight status

Figure 31: Self-reported weight status, by BMI category and HHS, adults, Queensland, 2017–18<sup>34</sup>



Among HHSs, the mean self-reported weight of adults varied by 9.2kg while height varied by less than 2cm in 2017–18.<sup>34</sup> The highest mean weight for females and males was in Central West (Figure 32). The variation was greater among males (11.1kg difference between highest and lowest) than females (9.5kg).

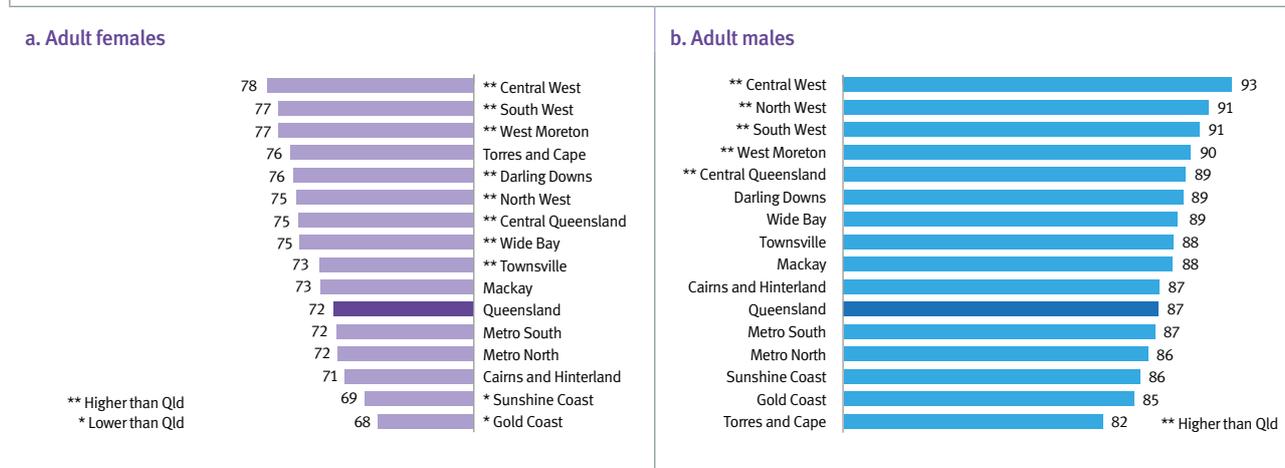
In 2017–18, proxy-reported childhood healthy weight and obesity did not differ between HHSs from the state

average with one exception—Metro North had a lower prevalence of childhood obesity than the state (5.2% compared with 8.8%). Although the prevalence of overweight and obesity combined varied, none of the HHSs differed significantly from the state average.<sup>34</sup>

*More information on HHSs is available from the data visualisations, HHS booklet and statistical tables online (page vii).*

# Weight status

Figure 32: Mean adult weight (kg), by sex and HHS, adults, Queensland, 2017–18<sup>34</sup>



## How we compare

### Nationally

In 2014–15, based on measurement, Queensland adults were similar to national for rates of overweight, obesity and combined overweight and obesity.<sup>33</sup> After adjustment for age differences, Queensland was ranked second highest for healthy weight (after Western Australia), lowest for overweight (Australian Capital Territory was highest), and equal second highest for obesity (Tasmania was highest).<sup>33</sup>

In 2014–15, based on measurement, Queensland children were similar to national for rates of healthy weight, and for combined overweight and obesity.<sup>33</sup> After adjustment for age differences in children, Queensland was ranked fifth for healthy weight (South Australia was highest), fourth for overweight (Victoria was highest), and fourth for obesity (Northern Territory was highest).<sup>33</sup>

### Internationally

Based on measured data for 35 OECD countries in 2015 (or nearest year), Australia was ranked fifth highest for measured adult obesity following the United States, Mexico, New Zealand and Hungary. Australia was about 40% above the OECD average.<sup>71</sup> The 2017 OECD report recognised the positive impact of Australia’s efforts to reduce obesity through front-of-pack food labelling with nutritional profiles and kilojoule information on menus.<sup>71</sup>

## Trends

For adults, the prevalence of measured obesity did not change between 2011–12 and 2014–15, having increased by 22% in the three years up to 2011–12.<sup>112</sup> The prevalence of measured overweight, and combined overweight and obesity, did not change between 2007–08 and 2014–15.

For children, the prevalence of measured overweight and obesity did not change between 2007–08 and 2014–15.<sup>112</sup>

The prevalence of self-reported healthy weight in adults declined by 9.5% in the past 10 years (2008–2018).<sup>91</sup> There was greater decline among younger adults (17% for those aged 18–29 years) and older adults (18% for 65 years and older) than other age groups (30–64 years) where there was no change in prevalence.

For children, the prevalence of proxy-reported healthy weight/underweight did not change between 2011 and 2018.<sup>91</sup> There were no differences in trend by sex, age or socioeconomic areas.

The average adult gained 290g per year between 2004 and 2010, a kilogram every three to four years.<sup>91</sup> Since then weight gain has slowed and between 2011 and 2018, the average increase was 116g per year—equivalent to a kilogram every nine years. Over the full period since 2004, the average adult male increased from 82.8kg to 85.9kg, that is a kilogram increase every five years. The average female increased from 66.4kg in 2004 to 71.1kg in 2018, a kilogram increase every four years.

In Queensland, if the prevalence of adult overweight and obesity remains the same as that measured in 2014–15 (64%), in 2026 there will be 2.8 million overweight or obese adults, that is, 375,000 more than in 2018.

Among Queensland children, if the prevalence of overweight and obesity remains the same as that measured in 2014–15 (26%), in 2026 there will be 250,000 overweight or obese children, that is 27,000 more than in 2018.

# Weight status

## Impacts and costs

### Burden of disease

High body mass accounted for 6.5% of total burden (DALYs) in Queensland in 2011 (compared with 5.5% nationally).<sup>24,25</sup> It was the third largest cause of disease burden of the risk factors, after smoking and the combined effect of all dietary factors.

In Queensland, high body mass affected the total disease burden through its impact on coronary heart disease (accounting for 30% of BMI attributable DALYs), diabetes (20%), osteoarthritis (9%) and stroke (8%).<sup>25</sup> The majority of the total burden in Queensland in 2011 was associated with premature death (68% YLL) with 32% due to disability (YLD).<sup>93</sup> Conversely, 25% of coronary heart disease and 54% of diabetes was due to high body mass.

### Life expectancy

Obesity reduces life expectancy and there are many studies that have quantified its impact.<sup>113</sup> While the mortality risk from excess body weight increases from BMI of 25, that is, the overweight category, it is not substantial until BMI exceeds 32–35, that is, among the severely obese.

It has become evident over the past three decades that, while obesity has been increasing, life expectancy has also increased, not decreased as had been predicted.<sup>114</sup> There are reasons for this contradictory outcome, including more effective treatment and management of obesity related diseases, as well as improvement in other risks, enabling people to lead longer, but less healthy lives.<sup>115–117</sup> This reflects a decoupling of risk factor prevalence from impact as reported for New Zealand.<sup>118</sup>

Gains in the medical management of blood pressure and cholesterol over recent decades in Australia, for example, are helping to mitigate the cardiovascular effects of the obesity epidemic. It may also be that the negative effect of current obesity on life expectancy will be realised in the future.<sup>117</sup> Conversely, healthy weight was associated with a life free of chronic disease and an increase in the period of life spent in full health.<sup>119</sup>

### Deaths

In 2016, high body mass accounted for an estimated 2400 deaths in Queensland (8.2% of all deaths).<sup>24,25,93</sup> If all those who were overweight or obese were within the healthy weight range, about 1 in 6 premature deaths could be avoided.<sup>120</sup>

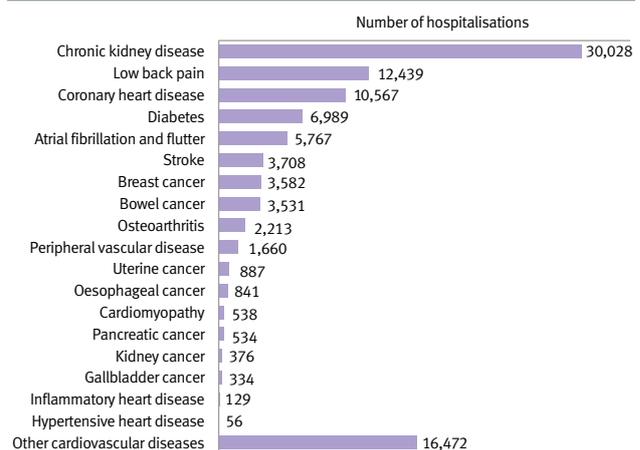
### Disability and hospitalisation

High body mass caused 4.9% of the total disability burden (YLD) in Queensland in 2011.<sup>24,25</sup> Obesity reduces health and wellbeing, with obese adults more than twice as likely to report poor health as healthy weight adults in 2011–12, about three times as likely to be dissatisfied with their health and twice as likely to report poor quality of life.<sup>34</sup>

Obesity increases the risk of chronic disease, particularly diabetes. In 2011–12, Queensland adults who had been measured as obese were about four times as likely to also have diabetes (based on blood measurement) as those who were not obese. The prevalence of diabetes was 11% among obese adults compared with 2.6% in non-obese adults.<sup>49</sup> Although about 90% of obese adults did not have diabetes at the time of the survey in 2011–12, of those adults with diabetes (and about 87% of these had type 2), almost two-thirds were obese. More recently, in 2014–15, adults who were severely obese (by measurement) were eight times more likely to report diabetes than healthy weight adults.<sup>49</sup>

High body mass accounted for about 100,600 hospitalisations and 256,500 patient days in Queensland in 2015–16<sup>25</sup>, about 4% of the 2.4 million hospitalisations for all causes in that year.<sup>93</sup> About one-third (30%) of the hospitalisations were associated with chronic kidney disease, where the vast majority of hospital admissions (81%) were for dialysis.<sup>25</sup> About 20% of hospitalisations for high body mass were associated with stroke and other cardiovascular diseases, and 10% with coronary heart disease (Figure 33).<sup>121</sup> In 2013–14, when adjusted for the frequency of repeat admissions for diabetes-related renal dialysis, about 2% of patients accounted for 55% of hospitalisations due to excess body mass. With renal dialysis excluded, 1.8% of hospitalisations was due to excess body mass.<sup>93</sup> Additional information is reported on page 44 and in statistical tables online (page vii for more details).

**Figure 33: Hospitalisations for high body mass, by cause, Queensland, 2015–16<sup>93</sup>**



# Weight status

Reductions in body mass will reduce the risk of some cancers.<sup>122</sup> The cancer types that can be explained by high body mass include uterine cancer (53% attributable to high BMI), oesophageal (49% attributable), breast (39%), kidney (30%), liver (29%), gallbladder (28%), colorectal (15%), pancreatic (10%), and ovarian (5%).<sup>93,122</sup> Overall, about 27% of the new cases of these nine cancers diagnosed in 2012–13 could be attributed to high body mass. Predictive modelling for Queenslanders with high body mass has demonstrated that a 2kg weight loss has the potential to reduce the number of new cases by 210, a 5kg loss could reduce cases by 500, and a 10kg loss by 930.<sup>93</sup> If all people maintained a healthy body mass, there could be 2200 fewer cancer cases.

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If all people  
maintained a healthy weight  
there could be  
**2200 fewer  
cancer cases**  
diagnosed.

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## Health and community costs

The financial cost of obesity is high and was estimated in 2015 at \$8.6 billion nationally (about \$1.72 billion in Queensland).<sup>123</sup> Of this, 44% was due to health system costs (\$0.76 billion in Queensland), 40% to tax foregone (\$0.75 billion), 12% to productivity losses including absenteeism (\$0.20 billion), and 4% to government subsidies. The impact of loss of wellbeing and early death was assessed at \$47.4 billion nationally (\$9.5 billion in Queensland) taking the total cost of obesity in Queensland in 2015 to \$11.2 billion.

## Causes of obesity

The pathway to obesity is complex—a combination of food (energy in), physical activity (energy out), genetics and environment. Our environments have had major changes over the past three decades in ways that make it easier to over-consume food and drinks relative to our energy needs and increasingly sedentary lifestyles. These environmental changes are a major contributor to overweight and obesity among Queenslanders and Australians.

Weight status results from the complex interaction of physiological, biological and genetic factors with behaviours, lifestyles, personal histories and environmental settings. For example, adults who were inactive or insufficiently active in 2012, were 65% more likely to be obese than those who met the guidelines for physical activity.<sup>124</sup>

Food avoidance (for allergies or cultural, religious or ethical reasons), eating disorders and food security are contributors to the complexity of eating healthy foods and maintaining a healthy weight.

Childhood overweight and obesity is a major concern as a metabolically unhealthy life course is established at a younger age.<sup>125,126</sup> For adults who may have never experienced the benefits of healthy weight, it is especially difficult to change the metabolic pathways to obesity.<sup>125</sup>

Across Australia, obesity is more prevalent in regional areas than the major cities.<sup>127</sup> A social gradient of obesity is evident where lower levels of education are associated with increased likelihood of transitioning from healthy weight to overweight and obesity.

The environments in which people live have physical surroundings, socioeconomic opportunities or conditions that may promote weight gain.<sup>128</sup> Infrastructure that provides for increased physical activity through active transport (for example walking and cycling) and use of public transport has contributed to healthier weight status.<sup>129</sup> The complexity of obesity demands interventions and efforts at the individual, family, community, industry and population levels.

# Weight status

**Table 20: Measured weight status, children and adults by year and sex, percentage, Queensland and Australia<sup>49,110</sup>**

	Children (5–17 years)		Adults	
	Queensland	Australia	Queensland	Australia
<b>Persons by year</b>				
<b>2014–15</b>				
Underweight	8.0 (4.8–11.2)	5.7 (4.5–6.9)	1.2 (0.7–1.7)	1.6 (1.3–1.9)
Healthy weight	65.7 (60.7–70.7)	66.7 (64.4–69.0)	35.3 (33.1–37.5)	35.0 (34.0–36.0)
Overweight	19.2 (15.2–23.2)	20.2 (18.2–22.2)	33.4 (31.4–35.4)	35.5 (34.6–36.4)
Obese	7.2 (4.4–10.0)	7.4 (6.1–8.7)	30.2 (27.8–32.6)	27.9 (26.9–28.9)
Overweight/obese	26.2 (21.9–30.5)	27.4 (25.2–29.6)	63.6 (61.5–65.7)	63.4 (62.4–64.4)
<b>2011–12</b>				
Healthy weight/underweight	72.5 (68.6–76.4)	74.3 (72.6–76.0)	35.1 (33.2–37.0)	37.2 (36.3–38.1)
Overweight	18.2 (15.5–20.9)	18.3 (16.9–19.7)	34.5 (32.7–36.3)	35.3 (34.6–36.0)
Obese	9.3 (7.0–11.6)	7.4 (6.4–8.4)	30.4 (28.8–32.0)	27.5 (26.7–28.3)
Overweight/obese	27.5 (23.6–31.4)	25.7 (24.1–27.3)	64.9 (63.0–66.8)	62.8 (61.9–63.7)
<b>2007–08</b>				
Healthy weight/underweight	73.3 (67.3–79.3)	75.3 (72.5–78.1)	39.2 (36.5–41.9)	38.8
Overweight	17.9 (12.7–23.1)	17.2 (15.1–19.3)	35.9 (33.4–38.4)	36.7 (35.5–37.9)
Obese	8.8 (4.8–12.8)	7.5 (5.8–9.2)	24.9 (22.4–27.4)	24.6 (23.5–25.7)
Overweight/obese	26.7	24.7	60.8 (58.1–63.5)	61.2 (60.2–62.2)
<b>2014–15 by sex</b>				
<b>Males</b>				
Underweight	5.8 (1.0–9.8)	5.7 (4.0–7.4)	1.1 (0.3–1.9)	1.2 (0.9–1.5)
Healthy weight	67.0 (60.6–73.4)	65.9 (62.9–68.9)	28.3 (24.9–31.7)	28.1 (26.6–29.6)
Overweight	18.3 (13.2–23.4)	21.9 (19.4–24.4)	38.4 (35.1–41.7)	42.4 (41.0–43.8)
Obese	7.4 (4.1–10.7)	6.6 (4.9–8.3)	31.9 (28.3–35.5)	28.4 (26.9–29.9)
Overweight/Obese	26.9 (21.4–32.4)	28.4 (25.5–31.3)	70.7 (67.3–74.1)	70.8 (69.2–72.4)
<b>Females</b>				
Underweight	8.8 (3.5–14.1)	5.7 (4.2–7.2)	1.2 (0.4–2.0)	2.1 (0.7–2.5)
Healthy weight	63.8 (55.9–71.7)	67.5 (64.1–70.9)	42.4 (39.8–45.0)	41.7 (40.3–43.1)
Overweight	19.3 (13.1–25.5)	18.2 (15.5–20.9)	28.6 (26.2–31.0)	28.8 (27.6–30.0)
Obese	7.1 (2.1–12.1)	8.2 (6.2–10.2)	28.4 (25.6–31.2)	27.4 (26.1–28.7)
Overweight/Obese	27.2 (19.8–34.6)	26.6 (23.3–29.9)	56.6 (54.1–59.1)	56.3 (55.0–57.6)

Note: Confidence intervals were not available for all estimates.

2017–18 measured data to be released in December 2018.

**Table 21: Proxy-reported weight status, children 5–17 years, percentage, Queensland, 2018<sup>34</sup>**

		Healthy weight/ underweight	Overweight	Obese	Overweight/obese
5–17 years	Persons	74.4 (72.1–76.5)	17.7 (15.9–19.7)	7.9 (6.7–9.4)	25.6 (23.5–27.9)
	Males	73.5 (70.4–76.4)	17.9 (15.5–20.7)	8.6 (6.9–10.7)	26.5 (23.6–29.6)
	Females	75.3 (71.9–78.4)	17.5 (14.8–20.5)	7.3 (5.6–9.4)	24.7 (21.6–28.1)
Persons	5–7 years	70.4 (64.9–75.3)	17.3 (13.4–22.0)	12.4 (9.0–16.7)	29.6 (24.7–35.1)
	8–11 years	70.2 (65.8–74.2)	21.4 (17.8–25.5)	8.4 (6.2–11.2)	29.8 (25.8–34.2)
	12–15 years	80.2 (76.7–83.3)	14.8 (12.1–18.0)	4.9 (3.5–7.0)	19.8 (16.7–23.3)
	16–17 years	77.5 (72.5–81.8)	16.5 (12.7–21.2)	6.0 (4.1–8.8)	22.5 (18.2–27.5)
Males	5–7 years	70.5 (62.8–77.1)	15.8 (10.9–22.3)	13.7 (9.0–20.5)	29.5 (22.9–37.2)
	8–11 years	69.4 (63.4–74.7)	22.7 (17.8–28.5)	8.0 (5.4–11.5)	30.6 (25.3–36.6)
	12–15 years	80.4 (75.8–84.3)	14.5 (11.1–18.8)	5.0 (3.3–7.6)	19.6 (15.7–24.2)
	16–17 years	72.5 (65.4–78.6)	18.6 (13.6–25.1)	8.9 (5.6–13.8)	27.5 (21.4–34.6)
Females	5–7 years	70.2 (62.3–77.1)	18.9 (13.2–26.3)	10.9 (6.8–16.8)	29.8 (22.9–37.7)
	8–11 years	71.0 (64.4–76.8)	20.2 (15.2–26.2)	8.8 (5.6–13.6)	29.0 (23.2–35.6)
	12–15 years	80.0 (74.5–84.6)	15.1 (11.1–20.2)	*4.9 (2.7–8.5)	20.0 (15.4–25.5)
	16–17 years	82.7 (75.2–88.3)	14.3 (9.1–21.7)	**	17.3 (11.7–24.8)
Socioeconomic status	Most disadvantaged	65.7 (60.1–71.0)	22.4 (18.0–27.6)	11.8 (8.5–16.2)	34.3 (29.0–39.9)
	Quintile 2	71.1 (66.4–75.5)	19.9 (16.3–24.1)	9.0 (6.3–12.6)	28.9 (24.5–33.6)
	Quintile 3	72.7 (67.8–77.1)	18.4 (14.8–22.7)	8.9 (6.2–12.6)	27.3 (22.9–32.2)
	Quintile 4	79.1 (74.0–83.5)	15.1 (11.3–19.9)	5.8 (3.7–8.9)	20.9 (16.5–26.0)
	Most advantaged	81.9 (76.6–86.3)	13.3 (9.5–18.4)	4.8 (3.0–7.6)	18.1 (13.7–23.4)
Remoteness	Major cities	75.5 (72.2–78.5)	16.5 (13.9–19.4)	8.0 (6.3–10.3)	24.5 (21.5–27.8)
	Inner regional	73.2 (69.2–76.9)	19.4 (16.2–23.1)	7.4 (5.5–9.8)	26.8 (23.1–30.8)
	Outer regional	72.8 (68.2–77.0)	17.6 (14.2–21.7)	9.5 (7.0–12.9)	27.2 (23.0–31.8)
	Remote/very remote	68.7 (59.8–76.4)	27.4 (20.0–36.4)	*3.9 (2.3–6.5)	31.3 (23.6–40.2)

\* Estimate has a relative standard error of 25% to 50% and should be used with caution. \*\* Estimate has a relative standard error greater than 50% and is not reported.  
 Note: Proxy-reported weight status for children does not provide reliable distinctions between healthy weight and underweight, therefore the combined category was reported (see page 75).

**Table 22: Self-reported weight status, adults, percentage, Queensland, 2018<sup>34</sup>**

		Underweight	Healthy weight	Overweight	Obese	Overweight/obese
18+ years	Persons	2.4 (1.9–3.1)	37.1 (35.6–38.7)	36.3 (34.8–37.8)	24.2 (23.0–25.4)	60.4 (58.8–62.0)
	Male	1.0 (0.6–1.5)	31.4 (29.1–33.7)	43.2 (40.9–45.5)	24.5 (22.7–26.3)	67.7 (65.3–69.9)
	Female	3.8 (2.9–5.0)	42.8 (40.7–44.9)	29.5 (27.7–31.4)	23.9 (22.3–25.5)	53.4 (51.2–55.5)
Persons	18–24 years	*7.0 (4.1–11.8)	52.2 (44.4–59.9)	29.0 (22.1–37.0)	11.8 (8.2–16.7)	40.8 (33.3–48.6)
	25–34 years	*1.5 (0.8–2.5)	43.3 (39.3–47.3)	34.0 (30.3–38.0)	21.3 (18.2–24.6)	55.3 (51.2–59.3)
	35–44 years	*2.4 (1.4–4.0)	35.8 (32.6–39.1)	38.5 (35.3–41.9)	23.3 (20.6–26.1)	61.8 (58.4–65.0)
	45–54 years	*1.3 (0.7–2.2)	32.0 (29.1–35.1)	37.4 (34.4–40.6)	29.3 (26.5–32.2)	66.7 (63.6–69.7)
	55–64 years	*1.3 (0.7–2.3)	31.8 (29.2–34.6)	36.1 (33.4–38.9)	30.8 (28.2–33.4)	66.9 (64.1–69.5)
	65–74 years	1.8 (1.1–2.7)	28.8 (26.5–31.2)	39.1 (36.6–41.6)	30.3 (28.0–32.8)	69.4 (67.0–71.8)
	75+ years	3.4 (2.4–4.9)	36.0 (32.6–39.5)	41.7 (38.2–45.4)	18.8 (16.5–21.5)	60.6 (57.0–64.0)
Males	18–24 years	**	53.5 (41.9–64.8)	32.8 (22.2–45.4)	12.1 (7.4–19.1)	44.8 (33.6–56.6)
	25–34 years	**	34.4 (29.0–40.2)	41.9 (36.1–48.0)	22.4 (17.9–27.8)	64.4 (58.6–69.8)
	35–44 years	**	28.0 (23.7–32.7)	50.1 (45.1–55.0)	21.4 (17.8–25.6)	71.5 (66.8–75.8)
	45–54 years	**	24.3 (20.3–28.7)	44.1 (39.3–48.9)	30.8 (26.6–35.4)	74.9 (70.5–78.9)
	55–64 years	*0.6 (0.3–1.2)	25.8 (22.4–29.5)	41.8 (37.8–45.9)	31.8 (28.1–35.9)	73.6 (69.9–77.0)
	65–74 years	**	25.9 (22.6–29.4)	43.2 (39.5–46.9)	30.3 (26.9–34.0)	73.5 (70.0–76.8)
	75+ years	*2.2 (1.0–4.5)	30.8 (26.3–35.7)	48.9 (43.6–54.1)	18.2 (14.8–22.2)	67.1 (62.1–71.7)
Females	18–24 years	*12.7 (7.1–21.5)	50.9 (40.7–61.0)	25.0 (17.2–34.8)	*11.5 (6.6–19.4)	36.5 (27.3–46.7)
	25–34 years	*1.7 (0.9–3.2)	52.1 (46.7–57.5)	26.1 (21.7–31.1)	20.1 (16.4–24.4)	46.2 (40.9–51.6)
	35–44 years	*4.3 (2.5–7.3)	43.5 (39.0–48.1)	27.1 (23.3–31.4)	25.1 (21.4–29.1)	52.2 (47.6–56.8)
	45–54 years	*1.7 (0.9–3.2)	39.3 (35.2–43.6)	31.2 (27.4–35.2)	27.9 (24.3–31.7)	59.0 (54.8–63.2)
	55–64 years	*2.0 (1.0–4.1)	38.0 (34.1–42.0)	30.3 (26.9–34.0)	29.6 (26.3–33.2)	60.0 (55.9–63.9)
	65–74 years	2.9 (1.8–4.8)	31.8 (28.6–35.1)	35.0 (31.7–38.4)	30.3 (27.2–33.7)	65.3 (61.9–68.6)
	75+ years	4.5 (3.0–6.6)	40.2 (35.5–45.1)	35.9 (31.2–41.0)	19.4 (16.2–22.9)	55.3 (50.4–60.1)
Socioeconomic status	Disadvantaged	2.3 (1.7–3.3)	31.9 (29.1–34.8)	33.6 (31.1–36.3)	32.1 (29.7–34.7)	65.8 (62.9–68.6)
	Quintile 2	*3.2 (1.8–5.4)	34.3 (31.8–36.9)	34.8 (32.5–37.2)	27.8 (25.6–30.0)	62.6 (59.8–65.2)
	Quintile 3	1.9 (1.2–3.0)	37.7 (34.3–41.3)	36.3 (33.1–39.7)	24.0 (21.3–26.9)	60.4 (56.8–63.8)
	Quintile 4	*2.8 (1.6–4.9)	36.2 (32.5–40.0)	37.1 (33.6–40.8)	23.9 (21.0–27.1)	61.0 (57.1–64.7)
	Advantaged	*2.0 (1.1–3.3)	44.7 (40.5–49.0)	39.1 (34.8–43.5)	14.3 (11.9–17.0)	53.3 (49.0–57.6)
Remoteness	Major cities	2.8 (2.0–3.8)	39.0 (36.7–41.3)	36.8 (34.6–39.1)	21.4 (19.8–23.2)	58.2 (55.9–60.5)
	Inner regional	1.7 (1.1–2.6)	35.3 (33.0–37.6)	34.1 (32.0–36.3)	28.9 (26.9–31.0)	63.0 (60.7–65.3)
	Outer regional	2.1 (1.5–3.0)	33.6 (30.6–36.7)	36.7 (34.0–39.5)	27.6 (25.1–30.2)	64.3 (61.2–67.3)
	Remote/very remote	1.6 (1.0–2.4)	30.6 (27.2–34.1)	38.1 (34.3–41.9)	29.8 (26.0–33.9)	67.9 (64.3–71.3)

\* Estimate has a relative standard error of 25% to 50% and should be used with caution. \*\* Estimate has a relative standard error greater than 50% and is not reported.

# Alcohol consumption

Alcohol is widely used in Australian society, with relatively high community acceptance and approval of its use. While most people consume alcohol at levels that pose little or no risk to themselves or others, 1 in 5 adult Queenslanders is drinking at risky levels. The impact of risky alcohol drinking is evident through a range of short and longer-term health, social, cultural and economic harms.

Three-quarters of risky drinkers are males, however, there are differences for men across their life course. Since 2010, fewer younger adult males have been drinking at risky levels, but consumption by older males is increasing. This pattern may pose further complexities for individuals and the healthcare system given an ageing population with an increased prevalence of chronic diseases, and greater use of prescription medications, in combination with risky levels of alcohol consumption. Older people may also experience greater difficulties with pain and medication management, social isolation, poor health and loss of independent living that may lead to increased and riskier alcohol use.

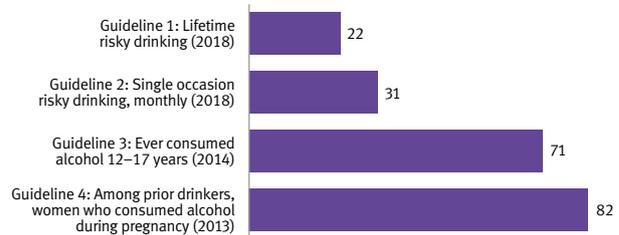
At the other end of the age spectrum, the age at first use of alcohol has increased. This is a positive trend as delayed onset of alcohol use contributes to reduced levels of risky consumption and longer-term harms and costs.

For women of childbearing age, the safest option is to avoid alcohol when planning for pregnancy, during pregnancy and when breastfeeding. Highly risky alcohol consumption prior to pregnancy is a key predictor of continuing consumption during pregnancy. There is a risk that alcohol consumption during pregnancy can lead to poorer birth outcomes and neurodevelopmental and behavioural abnormalities of the baby.

Alcohol is a frequent contributor to violence that impacts on families, communities and frontline service providers such as nursing and medical staff, ambulance officers and police. Alcohol is a common contributor to detention by police and contact with the criminal justice system. Drug induced deaths and injuries often occur in association with alcohol intoxication. There is increased community awareness of the potential life-threatening consequences of violence occurring near entertainment precincts. Alcohol plays a role in some cases of domestic violence and associated homicides.

The *National Drug Strategy 2017–2026*, and sub-strategy the *National Alcohol Strategy 2018–2026* (in development), aim to prevent and minimise harm from the misuse of alcohol.<sup>130</sup> These strategies embed a commitment to harm minimisation in national policy, and identify priorities for action across the pillars of demand, supply and harm reduction.

**Figure 34: Alcohol consumption by Australian guidelines, percentage, Queensland<sup>34</sup>**



## What are the numbers?

- 853,000 adults exceeded the guideline for lifetime risky drinking in 2018, and 625,000 were males.
- 1.2 million adults exceeded the guideline for single occasion risky drinking at least monthly in 2018, and 819,000 were males.
- 175,000 secondary students (aged 12–17 years) had consumed alcohol in the previous 12 months and 109,000 in the previous four weeks in 2017.
- 16.1 years was the average age of first serve of alcohol in 2016.

**Figure 35: Australian guidelines to reduce health risks from drinking alcohol, 2009<sup>131</sup>**

<b>Guideline 1: lifetime risk</b>
Healthy men and women
<i>No more than 2 standard drinks on any one day</i>
<b>Guideline 2: single occasion risk</b>
Healthy men and women
<i>No more than 4 standard drinks on a single occasion</i>
<b>Guideline 3: risks for adolescents</b>
Children and young people under 18 years of age
<i>Not drinking is the safest option</i>
<b>Guideline 4: risks to fetus and breastfeeding baby</b>
Pregnant and breastfeeding women
<i>Not drinking is the safest option</i>

It is acknowledged that the actions of government, in partnership with other agencies and the community, contribute to reducing harms associated with alcohol misuse.



# Alcohol consumption

The measurement and monitoring of alcohol consumption is based on the 2009 National Health and Medical Research Council (NHMRC) guidelines (Figure 35).<sup>131</sup> A standard drink is any drink containing 10g of alcohol. These guidelines have been set to reduce health risks from alcohol consumption.

Since 2010, **risky alcohol consumption** among young males has decreased by **31%**

## Prevalence and differentials

Consumption of alcohol is common among Queenslanders. Based on the national guidelines (Figure 34, Figure 35)<sup>34</sup>:

- 22% of adults exceeded Guideline 1 for lifetime risky drinking in 2018
- 31% of adults exceeded Guideline 2 for single occasion risk at least monthly in 2018
- 52% of secondary students aged 12–17 years had consumed alcohol in the previous 12 months in 2017, and 32% had done so in the previous four weeks<sup>50</sup>—conflicting with Guideline 3 that the safest option for those aged under 18 years of age is to not drink alcohol
- 82% of women who consumed alcohol prior to pregnancy continued to drink alcohol during pregnancy<sup>40</sup>—conflicting with Guideline 4 that the safest option is to avoid alcohol during pregnancy.

The average age of first serve of alcohol increased to 16.1 years of age in 2016 (compared with 15.7 years in 2013), and was similar to national.<sup>51,52</sup>

### By sex

Adult males were two to three times more likely than females to drink at risky levels in 2018 with 33% drinking at levels for lifetime risk compared with 12% for females, and 44% at levels for single occasion risk on a monthly basis compared to 20% for females (Table 23).<sup>34</sup>

Among secondary students in 2017, boys and girls were equally likely to have had an alcoholic drink in the previous 12 months.<sup>50</sup>

### By age

Lifetime risky alcohol consumption varied very little by age for adult males in 2018 with about 1 in 3 exceeding the guidelines in young adulthood and into their seventies (Table 23).

Females were less likely to exceed the risky drinking guidelines—about 1 in 9 for lifetime risk and 1 in 5 for single occasion risk in 2018 (Table 23). Drinking patterns in females decreased markedly with increasing age.

Among secondary students in 2017, older age was associated with increased consumption of alcohol. The prevalence of having had an alcoholic drink in the previous 12 months increased from 30% among 12–13 year olds to 55% among 14–15 year olds and 78% among 16–17 year olds.<sup>50</sup>

### By socioeconomic status

There was no difference in risky alcohol consumption among areas of socioeconomic advantage and disadvantage whether drinking at lifetime risk or single occasion risk in 2018 (Table 23).

### By remoteness

In 2018, adults living in remote areas were 58% more likely to exceed the lifetime risk guidelines, and 32% more likely to exceed single occasion risk (at least monthly), than those in major cities (Table 23).

### Indigenous Queenslanders

Lifetime risky drinking among Indigenous Queenslanders did not differ from non-Indigenous. After adjusting for age, there was no difference for lifetime risk or yearly single occasion risk in 2012–13 (latest data available).<sup>65</sup> Alcohol use was, however, the third largest risk associated with disease burden for Indigenous Australians (see page 11).

Among Indigenous communities, the social determinants of harmful alcohol use include stress, early life experiences, social exclusion, social support, addiction and the impact of the availability of food, transport and work.<sup>132</sup> Some remote Indigenous communities have high levels of risky drinking that are contributing to social harms including violence.<sup>133</sup>

### Regional Queenslanders

In 2015–16 (latest data for HHSs), lifetime risky alcohol consumption was higher than the state average for six HHSs—53% higher for Central West, 37% for North West, 34% for Mackay, 32% for South West, 18% for Cairns and Hinterland and 15% for Sunshine Coast. Darling Downs was 31% lower.<sup>34</sup>

Single occasion risky consumption (at least monthly) was higher than the state average in six HHSs—45% higher in North West and about 20% higher for Mackay, Central West, South West, Cairns and Hinterland and Central Queensland. Darling Downs was 15% lower.

*More information on HHSs is available from the data visualisations and statistical tables online (page vii).*

# Alcohol consumption

## How we compare

### Nationally

In 2016, the prevalence of lifetime risky drinking in Queensland was 13% higher than national. Queensland was ranked second highest following Northern Territory.<sup>52</sup>

In 2016, the prevalence of single occasion risky drinking (at least monthly) in Queensland was 12% higher than national. Queensland was ranked second highest following Northern Territory.<sup>52</sup>

### Internationally

Australia had the 15th highest per capita consumption of alcohol (persons 15 years and older) among 35 OECD countries in 2013.<sup>71</sup> Annual alcohol consumption in Australia at 9.7 litres per capita was 8% higher than the OECD average of 9.0 litres per capita.<sup>71</sup>

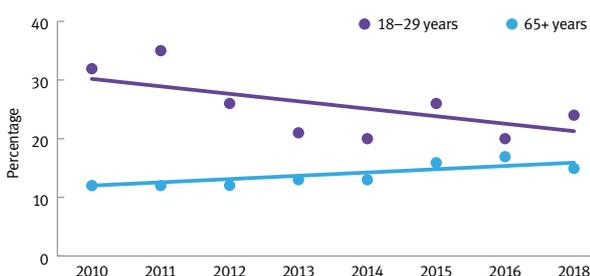
Per capita **alcohol consumption** is at the **lowest level nationally** since the 1960s.

## Trends

The prevalence of lifetime risky alcohol consumption did not change between 2010 and 2018. There were age differences for adult males—a 32% increase for older males (65 years and older) and 31% decrease for young males (18–29 years) (Figure 36).<sup>91</sup>

Since 2010, young adults (18–29 years) have decreased the number of drinks they have on any drinking day from 3.7 drinks in 2010 to 3.3 drinks in 2018, a decline of 0.4 drinks per drinking day.<sup>91</sup> For older adults there was no change. This decrease was almost entirely due the decrease among young males who decreased their drinks on a drinking day from 4.4 drinks in 2010 to 3.9 drinks in 2018 a decrease of 0.6 drinks over the period. There was no corresponding decrease for females of the same age who were consuming 2.8 drinks per drinking day.

**Figure 36: Trends in prevalence of lifetime risky alcohol consumption, adult males aged 18–29 years and 65 years or older, Queensland, 2010–2018<sup>91</sup>**



Nationally, in 2016–17, there were 185.8 million litres of pure alcohol available for consumption from alcoholic beverages, 9.4 litres per person.<sup>134</sup> Per capita consumption decreased by about 10% over the previous decade and was at its lowest level since 1961–62 (9.4 litres per person).

Of the total amount of pure alcohol available for consumption in 2016–17, beer contributed 39%, wine 38%, spirits 13%, ready to drink beverages (RTDs) 6% and cider 3%.<sup>134</sup> Per capita consumption of beer peaked in the 1970s and 80s and since then has halved. Per capita consumption of wine has been steady over the past decade but prior to that it had been increasing and is now about three times consumption in the 1960s. Per capita consumption of RTDs has decreased by about 20% over the past decade while per capita consumption of cider, although very low, has increased five-fold over a decade.

## Impacts and costs

### Burden of disease

Of the risk factors, alcohol was the fourth largest cause of disease and injury burden in Queensland in 2011, accounting for 5.4% of total DALYs.<sup>24,25</sup> The total burden of alcohol was 20% higher in Queensland than nationally in 2011.<sup>135</sup>

Overall, males experienced 72% of the burden due to alcohol.<sup>93</sup> Alcohol use affected the total burden largely through its impact on alcohol use disorders, injuries and falls (Figure 37).<sup>93</sup>

### Deaths

In 2016, alcohol use accounted for an estimated 1300 deaths in Queensland (4.3% of all deaths).<sup>24,25</sup>

Alcohol was the seventh most common substance present in drug induced deaths in Australia in 2016, accounting for 12% of deaths—benzodiazepines were highest (37%) and other opioids second (30%). All of these deaths were due to multiple drug overdose.<sup>68</sup>

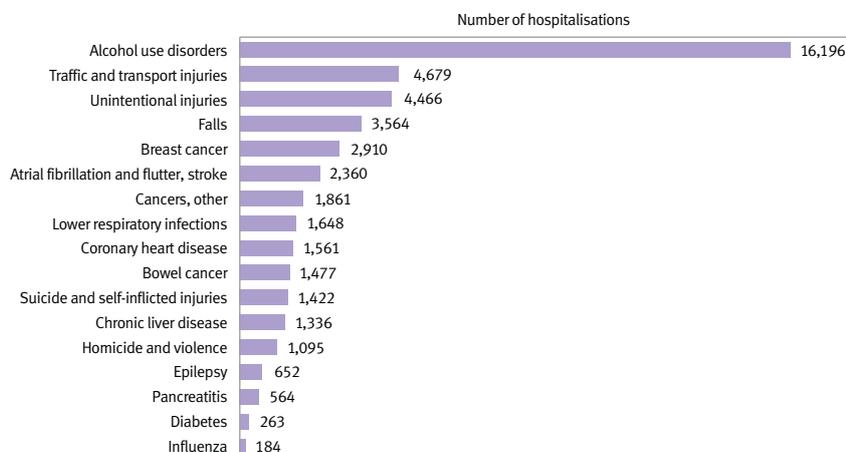
### Disability and hospitalisation

Alcohol use caused 4.6% of the total disability burden (YLD) in Queensland in 2011.<sup>24,25</sup>

Alcohol use caused about 46,200 hospitalisations and 146,100 patient days in Queensland in 2015–16, 2% of the 2.4 million hospitalisations for all causes in that year.<sup>93</sup> One-third (35%) was associated with alcohol use disorders, followed by falls (7.7%), breast cancer (6.3%), and road traffic injuries (6.3%) (Figure 37).<sup>93</sup> Hospitalisation data does not fully reflect the impact of alcohol on the health system.<sup>73</sup>

# Alcohol consumption

Figure 37: Number of hospitalisations due to alcohol consumption, Queensland, 2015–16<sup>93</sup>



## Expenditure

The most recent national assessment of the costs of alcohol use was in 2004–05.<sup>95</sup> Based on Queensland’s share of the Australian population in 2004–05, the financial cost of alcohol consumption to the Queensland economy was \$2.2 billion, with \$400 million spent on healthcare, \$720 million in productivity losses including absenteeism, \$310 million in home production losses, \$320 million in crime and \$440 million in road transport injuries.

Health system costs were 18% of the tangible or financial costs. Intangible losses associated with early death and wellbeing losses were assessed at \$0.9 billion taking the total cost of excess alcohol to Queensland society in 2004–05 to \$3.06 billion. However, more than 80% of the financial costs associated with alcohol occurred outside the health system.

## Women of childbearing age

The NHMRC guidelines recommend that not drinking is the safest option for women during pregnancy, breastfeeding and planning for pregnancy.<sup>131</sup> There is insufficient data to fully understand the extent of alcohol consumption during pregnancy and breastfeeding among Queensland women. This section includes information from a longitudinal cohort study of Australian women<sup>136,137</sup> and a national survey.<sup>51,52</sup>

Insights are obtained from a nationally representative cohort study of Australian women born between 1973 and 1978 who were surveyed prospectively from 1996 (the women would be aged 40–45 years in 2018).<sup>136</sup> From a sample of 1600 women who were pregnant between 2000 and 2006, 1 in 5 (22%) drank alcohol and smoked tobacco prior to pregnancy and most of these women changed these behaviours during their pregnancy—3 in 4 (73%) drank less alcohol, 3 in 4 (72%) smoked less, and 1 in 2 (53%) drank less and smoked less.<sup>137</sup>

While most women are motivated to reduce their alcohol consumption during pregnancy, many do not completely stop drinking. From the same nationally representative cohort study<sup>136</sup>, 4 in 5 (82%) women who drank alcohol prior to pregnancy continued to do so during pregnancy at lower levels.<sup>40</sup> Highly risky alcohol consumption prior to pregnancy was a key predictor of continuing consumption during pregnancy—most notably, women who drank at risky levels on single occasions prior to pregnancy were more than twice as likely to continue drinking during pregnancy.<sup>40</sup>

Data from the 2016 national drug survey showed for Queensland women who were pregnant, 1 in 2 (55%) reported not drinking alcohol and 44% drank less alcohol during pregnancy.<sup>51,52</sup> For those who were breastfeeding, 43% did not drink alcohol and 54% drank less alcohol.

# Alcohol consumption

## Neurodevelopmental impairment: fetal alcohol spectrum disorder

Alcohol consumption during pregnancy has been associated with poorer birth outcomes and neurodevelopmental impairment. Fetal alcohol spectrum disorder (FASD) describes the range of permanent and severe neurodevelopmental impairments that result from an acquired brain injury in the fetus caused by prenatal alcohol exposure.<sup>138</sup>

FASD occurs across all parts of Australian society—it is likely to be under-recognised and under-diagnosed. Guidelines for diagnosis have been developed.<sup>138</sup> Children with FASD may be misdiagnosed with a range of mental health, learning, behavioural, and other neurodevelopmental disorders.<sup>139</sup> The lifelong effects of FASD are costly to health, education, disability and justice systems, and to the families living with FASD.<sup>140</sup>

FASD data is variable and incomplete, and a nationally representative prevalence estimate is unavailable.<sup>141</sup> A study of 10–17 year olds held in youth detention, in Western Australia in 2015–2016, found 88% had severe neurodevelopmental impairment and 36% were diagnosed with FASD.<sup>142</sup>

FASD is a preventable disability. The safest option is for women to avoid drinking alcohol during pregnancy, breastfeeding or planning for pregnancy.<sup>131,138</sup>

---

Many women continue  
**drinking alcohol**  
**during their pregnancy**  
 and  
**while breastfeeding**  
 although at a lower level.

---

## Alcohol and other drug treatment services

In Queensland, mental health, alcohol and other drug services are delivered through HHSs and funded non-government providers.

Specialist alcohol and other drug services provide treatment for people living with moderate-to-severe problematic substance use. Treatment may include withdrawal management, medication assisted treatment, psychosocial intervention, rehabilitation and harm reduction services.<sup>143</sup>

In 2016–17, 168 publicly funded alcohol and other drug treatment agencies in Queensland provided 44,396 treatment episodes to 33,541 clients (98% of episodes were for their own alcohol and other drug use).<sup>144</sup> Among clients, 52% were aged 20–39 years and 67% were male.

Cannabis was the most common drug of concern for Queensland clients (33% of episodes in 2016–17) as a result of the clients being diverted to treatment by the police and justice system (alcohol was the second most common, 31%, followed by amphetamines, 21%).<sup>144</sup>

Among Queensland clients in 2016–17, there were age differences, with 76% of clients aged 60 years or older having sought treatment for alcohol misuse, and 65% of those aged 10–19 years having sought treatment for cannabis misuse.<sup>144</sup>

For Queenslanders with opioid dependence, pharmacotherapy was delivered through 253 prescribers in 2016–17, and the majority of dosing points were located in pharmacies (493 of 600 sites).<sup>145</sup> On an average day in Queensland in 2017, about 6600 people received opioid pharmacotherapy (62% were males).

# Alcohol consumption

**Table 23: Alcohol consumption, adults, percentage, Queensland, 2018<sup>24</sup>**

		Abstainers	Lifetime risky drinking	Single occasion risky drinking at least monthly	Single occasion risky drinking at least weekly
18+ years	Persons	17.1 (16.0–18.1)	22.3 (21.1–23.7)	31.3 (29.8–32.9)	15.3 (14.2–16.5)
	Males	13.5 (12.0–15.0)	33.2 (31.0–35.5)	43.5 (41.2–45.9)	23.5 (21.5–25.6)
	Females	20.5 (19.1–22.1)	11.9 (10.7–13.2)	19.6 (17.9–21.4)	7.4 (6.4–8.6)
Persons	18–24 years	9.2 (5.9–14.0)	23.7 (17.7–30.9)	46.0 (38.5–53.6)	18.6 (13.2–25.4)
	25–34 years	12.2 (9.8–15.0)	25.0 (21.7–28.6)	40.2 (36.4–44.2)	17.6 (14.8–20.8)
	35–44 years	15.6 (13.1–18.3)	25.0 (22.3–27.9)	36.0 (32.8–39.2)	17.3 (15.0–19.9)
	45–54 years	15.7 (13.6–18.2)	23.6 (21.0–26.3)	30.4 (27.5–33.4)	16.3 (14.1–18.7)
	55–64 years	18.9 (16.8–21.2)	23.0 (20.7–25.5)	24.7 (22.4–27.2)	15.3 (13.3–17.5)
	65–74 years	22.4 (20.4–24.6)	18.7 (16.8–20.7)	19.1 (17.1–21.1)	10.2 (8.8–11.8)
	75+ years	36.0 (32.7–39.4)	9.2 (7.6–11.3)	9.6 (7.8–11.8)	5.3 (4.0–7.1)
Males	18–24 years	*8.0 (3.7–16.4)	34.7 (24.6–46.4)	55.4 (43.9–66.4)	26.4 (17.5–37.8)
	25–34 years	9.0 (6.3–12.7)	37.9 (32.4–43.8)	54.7 (48.8–60.6)	27.6 (22.7–33.1)
	35–44 years	12.8 (9.6–16.9)	37.2 (32.7–42.0)	50.8 (45.8–55.7)	26.0 (22.0–30.4)
	45–54 years	15.1 (11.8–19.1)	31.4 (27.2–35.9)	40.6 (36.0–45.3)	22.9 (19.2–27.0)
	55–64 years	17.1 (14.1–20.6)	33.9 (30.2–37.8)	36.3 (32.5–40.3)	23.7 (20.4–27.3)
	65–74 years	15.0 (12.6–17.9)	28.9 (25.6–32.3)	30.1 (26.8–33.6)	17.7 (15.1–20.6)
	75+ years	22.4 (18.5–26.8)	17.4 (14.0–21.4)	19.2 (15.4–23.6)	11.2 (8.2–15.0)
Females	18–24 years	*10.4 (6.3–16.9)	12.4 (7.6–19.7)	36.3 (27.4–46.3)	*10.5 (6.0–17.8)
	25–34 years	15.3 (11.7–19.8)	12.2 (9.3–15.9)	25.9 (21.6–30.8)	7.8 (5.5–10.9)
	35–44 years	18.2 (14.8–22.1)	13.2 (10.6–16.4)	21.7 (18.3–25.5)	8.9 (6.8–11.7)
	45–54 years	16.3 (13.6–19.4)	16.3 (13.5–19.6)	20.9 (17.7–24.5)	10.2 (8.0–12.9)
	55–64 years	20.7 (17.8–23.9)	12.1 (9.7–15.0)	13.1 (10.8–15.9)	6.8 (4.9–9.4)
	65–74 years	29.7 (26.8–32.9)	8.6 (6.9–10.6)	8.2 (6.5–10.2)	2.9 (2.0–4.1)
	75+ years	46.8 (42.1–51.5)	2.8 (1.8–4.3)	2.1 (1.3–3.3)	*0.7 (0.4–1.4)
Socioeconomic status	Disadvantaged	23.6 (21.2–26.2)	21.0 (18.9–23.3)	29.2 (26.6–31.9)	14.1 (12.5–16.0)
	Quintile 2	17.0 (15.4–18.8)	27.1 (24.7–29.5)	33.7 (31.1–36.3)	18.4 (16.3–20.7)
	Quintile 3	16.6 (14.4–19.0)	21.8 (19.4–24.3)	32.2 (29.1–35.5)	14.8 (12.8–16.9)
	Quintile 4	15.7 (13.4–18.3)	19.5 (16.8–22.4)	27.2 (24.0–30.7)	13.1 (10.8–15.7)
	Advantaged	13.1 (10.8–15.9)	22.4 (18.6–26.8)	34.2 (29.9–38.7)	16.1 (12.7–20.2)
Remoteness	Major cities	15.8 (14.4–17.4)	20.8 (18.9–22.8)	30.7 (28.5–33.0)	14.4 (12.8–16.3)
	Inner regional	18.9 (17.2–20.6)	23.3 (21.4–25.3)	31.0 (28.8–33.3)	15.6 (14.0–17.4)
	Outer regional	19.5 (17.0–22.4)	24.9 (22.7–27.3)	32.1 (29.5–34.8)	16.6 (14.8–18.7)
	Remote/very remote	17.8 (15.0–20.9)	32.8 (29.2–36.6)	40.5 (36.5–44.6)	22.8 (19.5–26.6)

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

Note 1: Low risk drinking has not been included, and neither has more than monthly occasion risky drinking.

Note 2: Single occasion risky drinking at least monthly also includes at least weekly drinking.

# Physical activity

Regular physical activity reduces the risk of cardiovascular disease, type 2 diabetes, some cancers, and depression. It improves wellbeing and helps in weight maintenance.

The average Queensland child is accumulating about 11 hours a week in physical activity—about eight hours in free time and at school. Club-based sport accounted for an additional 1.5 hours, and about one hour in active transport to and from school and other places. Free time and school settings are central to physical activity in childhood.

Queensland adults have become increasingly active over the past decade with 60% meeting the guidelines for sufficient physical activity for health benefit in 2018, however annual gains have slowed in recent years.

Increased walking is a key contributor to the improved levels of physical activity. This increase is largely being achieved by employed adults (full-time or part-time) with the trend evident in cities, regional areas and remote areas.

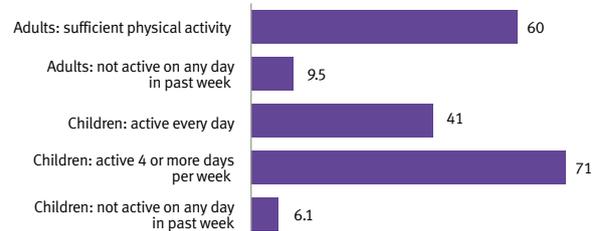
Healthy ageing is about optimising opportunities for good health including older people remaining physically active. Supporting older Queenslanders to stay healthy longer is a priority.

Active recreation and sport systems in combination with accessible environments support physical activity participation by all Queenslanders across the lifespan. Local environments with green space that are walkable, enjoyable and safe, encourage and support daily physical activity.

Recommended strategies to improve physical activity include:

- promoting active, healthy lifestyles for Queenslanders of all ages, including in retirement
- establishing physical activity in childhood as a part of everyday life and daily routines
- avoiding sedentary behaviours and lifestyles
- providing safe environments for walking and active transport.

**Figure 38: Physical activity, adults and children, percentage, Queensland, 2018<sup>34</sup>**



## What are the numbers?

In 2018, based on self/proxy report data, an estimated:

- 2.1 million Queensland adults were sufficiently active
- 336,000 adults were not active in the past week
- 345,000 Queensland children met the recommendation of being active every day of the week
- 600,000 children were active on four or more days in the week
- 52,000 children were not active in the past week.





Laura's story

*My fitness levels have improved, I have lost a lot of weight and now I can play with my grandchildren.*

In 2011, Laura joined the Heart Foundation walking group in the Morayfield shopping centre. Laura was motivated to lose weight and improve her heart health. Regular walking and making healthy changes to her diet have resulted in over 60kg maintained weight loss.

*'I now walk Monday to Friday at the centre and I have become a walk organiser. I have met so many new people and made so many friends. Everybody made me feel so welcome. If it rains we don't get wet and in the heat, we keep cool. We really have no excuse not to attend!'*



**60%**  
of  
adults

are **sufficiently active**  
for health benefit



**Daily physical activity**

**reduces the risk**  
of cardiovascular disease



**41%**  
of  
children

are **active every day**

# Physical activity

The measurement and monitoring of physical activity in this section is based on multiple indicators including those derived from the *Australian physical activity and sedentary behaviour guidelines*.<sup>146</sup> For adults to be sufficiently active to obtain health benefit, they need to have participated in at least 150 minutes of moderate intensity physical activity on at least five sessions in the previous week. For children, the recommended physical activity was a minimum of one hour every day. This section reports on achievement of the recommendations, activity levels that are not meeting the guidelines and inactivity.

## Prevalence and differentials

In Queensland in 2018 (Figure 38, Table 24)<sup>34</sup>:

- 60% of adults were sufficiently active in the previous week, that is they were active for the recommended minimum of 150 minutes of moderate intensity physical activity on at least five sessions in the previous week
- 41% of children were active for the recommended minimum of one hour every day
- 31% of adults were insufficiently active in the past week due to the limited time (less than 150 minutes) or number of sessions (less than five sessions per week) spent on physical activity
- 71% of children were active on four or more days per week
- less than 10% of adults and children reported no physical activity at any time in the previous week (9.5% adults and 6.1% children)—that is, they were inactive.

Among adults in 2014–15<sup>33</sup>:

- 1 in 5 (21%) had undertaken strength or toning activities on two or more days in the previous week, 5% had done so on one day and 74% had done none.

The most common forms of activity for adults in 2013–14 (of those who had participated at least once in some type of sport or physical activity in the previous 12 months) were<sup>147</sup>:

- walking for exercise (19%)
- attending a gym (17%)
- jogging (7%), cycling (6%) or swimming (6%).

Most school children were participating in some form of physical activity in 2017<sup>54</sup>:

- 98% in some form of activity at school
- 91% in their free time at home or local environment
- 66% in club-based physical activities, 44% in individual sports and 39% in team sports
- 65% in active transport, 45% for school trips and 45% for other trips.

School children averaged about 11 hours per week of physical activity in 2017<sup>54</sup>:

- 4.5 hours (41%) during the child's free time
- 3.6 hours (33%) at school
- 1.7 hours (16%) in club based sport
- one hour (10%) through active transport.

## By sex

In 2018, adult males were 11% more likely to be sufficiently active than females (Table 24).<sup>34</sup> Females were 22% more likely to be insufficiently active. There was, however, no difference in levels of inactivity.

For children, boys were 23% more likely to be active daily than girls (45% compared to 36%). There was no difference in levels of inactivity in the past week.

Adult females did not differ from males for:

- frequency of exercising for fitness, recreation, sport or transport on five or more days in the previous week, 40% for males and 36% of females in 2014–15<sup>33</sup>
- frequency of strength and toning activities on two or more days a week, 21% of males and 20% of females in 2014–15<sup>33</sup>
- participation in sport and physical recreation activities in the previous 12 months, 55% of females and 53% of males in 2013–14.<sup>147</sup>

## By age

In 2018, the prevalence of sufficient physical activity in adults decreased with increasing age: from 71% in 18–24 year olds to 40% in those aged 75 years and over, with a similar age pattern for males and females (Table 24).<sup>34</sup> The prevalence of various types of physical activity also decreased with age:

- Young people (18–24 years) were 2.4 times more likely than those aged 65 years and older to participate in strength or toning activities on two or more days per week (29% compared with 12% in 2014–15)<sup>33</sup>
- The highest participation in sport and recreation was 64% for 18–24 year olds and the lowest was 40% for those aged 65 years and older in 2013–14.<sup>147</sup>

For children, the prevalence of being active daily was highest for 5–7 year olds (63%) and lowest for 16–17 year olds (18%) with a similar age pattern for boys and girls. Participation in organised sport declined in the senior high school years: from 82% of 8–11 year olds and 77% of 12–15 year olds to 51% of 16–17 year olds, with a similar age pattern for boys and girls in 2016 (Table 24).

# Physical activity

## By socioeconomic status

In 2018, Queensland adults living in the most advantaged areas were 27% more likely to be sufficiently active than those in the disadvantaged areas—who were twice as likely to report no activity in the previous week (14% compared with 6.8%) (Table 24).<sup>34</sup>

Queensland children did not differ in their physical activity across socioeconomic areas in 2018, based on achieving the recommended one hour every day (Table 24).<sup>34</sup>

There were socioeconomic differences in children’s participation in organised sport in 2016.<sup>34</sup>

- Children living in socioeconomically advantaged areas were 33% more likely to play organised sport in the previous 12 months than those living in disadvantaged areas (84% compared with 64%).
- Children in higher income households were 2.2 times more likely to have participated in club based organised sport than those from lower income households (67% compared with 31%), and 72% more likely to participate in school-based organised sport (60% compared with 35%).

## By remoteness

The prevalence of sufficient physical activity for adults differed very little by remoteness (Table 24).

Adult inactivity was higher outside major cities—15% of adults in remote areas and 12% in inner regional areas, compared with 8.1% in major cities in 2018.<sup>34</sup>

Children living in regional areas were 29% more likely to meet the recommendation than children in major cities (46% inner regional areas and 48% outer regional areas compared with 36% in 2018), where children living in remote areas did not differ (Table 24).

## Indigenous Queenslanders

In 2012–13<sup>148</sup>, 1 in 3 (31%) Indigenous Queensland adults in non-remote areas was sufficiently active for health benefit, compared with 41% for non-Indigenous, and 2 in 3 had not been active in the previous week (26%) or were insufficiently active (42%), similar to non-Indigenous.

About half (49%) of Indigenous Queensland children were active for the recommended minimum one hour per day in the previous three days, similar to non-Indigenous.

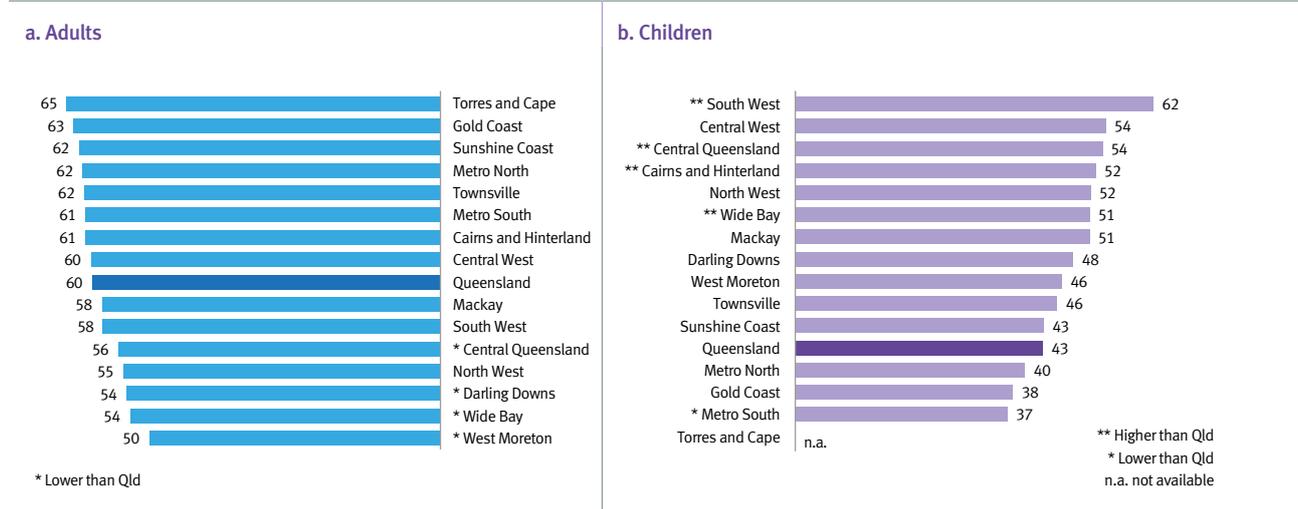
## Regional Queenslanders

In 2017–18, the prevalence of sufficient activity in adults was lower than the state average in four HHSs (West Moreton, Wide Bay, Darling Downs and Central Queensland) (Figure 39).<sup>34</sup>

In 2017–18, the prevalence of children being active every day was 45% higher in South West HHS than the state average, 20% higher in Central Queensland, Cairns and Hinterland, and Wide Bay HHSs, and 16% lower in Metro South HHS (Figure 39).<sup>34</sup>

More information on HHSs is available from the data visualisations, HHS booklet and statistical tables online (page vii).

Figure 39: Sufficient physical activity by HHS, adults and children, Queensland, 2017–18<sup>34</sup>



# Physical activity

## How we compare

### Nationally

In 2014–15, the Queensland adult prevalence of sufficient physical activity was 9% lower than national.<sup>33</sup> Queensland was ranked seventh highest among the jurisdictions (ACT was highest and Tasmania lowest).<sup>33</sup>

Queensland was similar to national for strength and toning activities on two or more days in the previous week, and Queensland was ranked seventh highest of the jurisdictions in 2014–15 (ACT was highest and Tasmania lowest).<sup>33</sup>

The prevalence of recommended activity was 18% higher for Queensland children aged 2–17 years than nationally in 2011–12, and Queensland was ranked third highest following Northern Territory and South Australia.<sup>149</sup>

Activity levels in Queensland children were

**18% higher**  
than children nationally.

## Trends

The prevalence of sufficient physical activity in adults increased by 15% over the past 10 years (2008–2018) and increases occurred across all age groups.<sup>91</sup> However, larger gains were made in the preceding years—sufficient physical activity increased by 35% (6.2% per year) between 2004 and 2009, and slowed to an increase of 13% (1.5% per year) between 2010 and 2018.

The amount of time Queensland adults spent walking each week increased substantially from an average of about 120 minutes per week in 2004 to 220 minutes in 2018. Adults who were employed (full-time, part-time or casual) made the greatest gains in walking time with an average increase from 100 minutes per week in 2004 to about 240 minutes in 2018. Those not in the workforce (includes retired) also increased their walking time over these 14 years, but by a smaller amount (from about 160 minutes on average to 190 minutes per week). There was no change among those who were unemployed. These changes were independent of the remoteness or socioeconomic characteristics of the place where people lived.

The prevalence of daily physical activity in children remained steady between 2011 and 2018.

The gains in adult physical activity have diminished in recent years and based on current trends, in 2026 there will be about 2.3 million adult Queenslanders achieving sufficient physical activity, an increase of about 229,000 adults from 2018.

## Impacts and costs

### Burden of disease

Physical inactivity accounted for 5.0% of total burden (DALYs) in 2011, and was the fifth largest risk factor associated with health loss.<sup>25</sup> More than half the physical activity related health loss was associated with coronary heart disease (52% of the DALY burden), diabetes (15%) and bowel cancer (12%).

### Deaths

In 2016, physical inactivity accounted for an estimated 2200 deaths in Queensland (7.5% of all deaths).<sup>25,93</sup>

### Disability and hospitalisation

Physical inactivity accounted for 2.3% of disability burden (YLD) in 2011.<sup>25</sup>

Physical inactivity accounted for about 41,900 hospitalisations and 111,100 patient days in Queensland in 2015–16.<sup>93</sup> These hospitalisations were associated with coronary heart disease (33%), breast cancer (27%), bowel cancer (21%), diabetes (9.8%) and stroke (9.2%).

### Expenditure

In 2008 it was estimated that insufficient physical activity resulted in \$672 million in health sector costs nationally, and \$1135 million in production losses (includes workforce, household productivity and leisure time).<sup>108</sup> Based on population share for Queensland, an estimated \$134 million was associated with health sector costs and \$227 million was for production losses, a total of \$361 million in costs resulting from insufficient physical activity. More recent data is not available.

## Young children and 24-hour movement

In 2017 the 24-hour movement guidelines for babies, toddlers and pre-schoolers (aged up to five years) were released and focus on various ways to engage in physical activity, limit sedentary behaviour, and ensure good quality sleep.<sup>146</sup> Screen-based inactivity was not recommended for children younger than two years, and up to one hour at a time for children aged 2–5 years. During sedentary periods, quality behaviours such as reading, singing, doing puzzles and storytelling with a caregiver was recommended.

# Physical activity

## Keeping children active at school and home

### Are children meeting the guidelines?

The foundation for lifelong physical activity is established in childhood. The Australian guidelines recommend that school-aged children and adolescents engage in at least one hour of physical activity every day of moderate-to-vigorous intensity.<sup>146</sup> Despite this recommendation (to accumulate at least seven hours per week), the reality is children are not necessarily achieving this duration of activity every day but rather in longer sessions on fewer days of the week. This pattern of physical activity results in a lower number of children meeting the daily recommendation despite regularly achieving more than the required number of hours per week on average (based on latest Queensland data).<sup>34</sup>

### When are children active?

For Queensland school children in 2017, 41% of their proxy-reported physical activity was achieved during free time, 33% in school, 16% at club based sport and 10% in active transport.<sup>54</sup> The average Queensland child accumulated about 11 hours per week in physical activity, with about eight hours being achieved in their free time and at school, about 1.7 hours in club-based sport, and about one hour in active transport to and from school and other places. Free time at school and within local environments is therefore important for physical activity from childhood to adolescence.<sup>54</sup> Additional opportunities for activity occur through the physical education curriculum and school-organised sports that occur during school time and outside of school hours.

### What are the barriers to children being active?

Parents have an important influence on children's physical activity. Children whose parents knew the guideline for children's daily physical activity were twice as likely to meet the recommendation in 2017 as children whose parents did not have this knowledge.<sup>54</sup> Half (55%) of Queensland parents reported their child participated in school-based sport and 26% reported their child had access to these sporting activities but did not participate.<sup>54</sup> For the remaining 19%, school-based sport was not available, highlighting an opportunity to expand access through their local schools.

An identified barrier to young children participating in organised out-of-school hours activities was the parent's perception that the child was too young to start playing organised sport.<sup>150</sup> Participation by younger children in team sports may be constrained by parents, although age-modified sport formats, equipment and rules are utilised to promote skill development and minimise injury.

### What about children with a medical condition or disability?

Based on proxy-report in 2017–18, 14% of Queensland school children were limited in their ability to be physically active or play sport due to a medical condition, such as asthma, autism spectrum, and neurological and musculoskeletal conditions.<sup>34</sup> Children with a medical condition were 24% less likely to be active daily than those without a condition (34% compared with 45%), and 18% less likely to be active on four or more days per week (61% compared with 75%). There were no differences between girls and boys.

Children living with a chronic condition may be discouraged from participating in physical activity, however, unnecessary restrictions deny the child the potential benefits from their involvement in appropriate activities. Childhood chronic conditions such as congenital heart disease, cerebral palsy, chronic asthma and other respiratory conditions can be accommodated within exercise sessions where the benefits to the child outweigh any risk of injury or worsening of the chronic condition.<sup>151</sup>

Active recreation and sport programs increasingly encourage the inclusion of children living with disability.<sup>152</sup> In 2015, 1 in 10 children aged 5–14 years reported a disability—5% had a profound or severe core activity limitation of communication, mobility and self-care.<sup>17</sup> Practical modifications to equipment and the set-up of games to meet the needs of the individual players ensure inclusion of children with a disability.

### Are children active beyond school?

Club-based sport accounted for an additional 1.7 hours of activity for Queensland children beyond school-based activities. Participation in an individual sport was higher than a team sport (44% compared with 39% in 2017).<sup>54</sup>

Organised active recreation and sport often occurs outside of school hours with two-thirds (62%) of Queensland children aged up to 14 years participating at least once per week in 2017 (an increase from 55% in 2016).<sup>150</sup> There were age differences in participation. As a single activity, 30% of Australian children aged up to 14 years participated in swimming outside of school hours in 2016–2017.<sup>150</sup> Learning to swim was the most popular activity for 34% of children up to four years of age, and swimming continued to be popular with 44% of 5–8 year olds participating outside of school hours.

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Queensland children are accumulating about

**11 hours a week**  
of activity on average.

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# Physical activity

Team sports become increasingly popular between nine and 14 years of age—football and soccer for boys (30% participation at age 9–11 years and 27% at 12–14 years) and netball for girls (24% at age 9–11 years and 31% at 12–14 years).<sup>150</sup> Participation in team sports typically requires recurrent scheduled commitment and older children may be more able to adhere to these schedules.

Free time, active transport and active recreation represent important opportunities that significantly expand children's physical activity beyond the time they spend at school. Keeping more children active early in childhood and sustaining this activity through adolescence sets the pathway for healthy, active lifestyles in adulthood.



## Active lifestyles for all Queenslanders

### How are Queenslanders keeping active?

Many Queenslanders have embedded regular and sustained physical activity into their everyday life and daily routines. Increased walking is an important contributor to the overall increase in physical activity. This increase is largely being achieved by employed adults (full-time or part-time) rather than those who are not employed. The upward trend is evident in cities, regional areas and remote areas. Being employed remains strongly associated with physical activity compared with those who are unemployed or unable to work. The working population who can maintain full-time or part-time work were more likely than non-workers to achieve daily physical activity.

Walking for recreation is the most popular physical activity—43% of Australian adults participated in 2017 (52% of adult females and 33% of males).<sup>153</sup> Fitness clubs and gym activities ranked second—35% of females and 29% of males participated.<sup>153</sup> The benefits of participation in physical activities and sport extended beyond physical health to include enjoyment, socialising and improved wellbeing.<sup>153</sup>

The promotion of fitness and weight loss continues to raise the health consciousness of Queenslanders. The growth in the fitness industry and personal training reflects an increased demand from Queenslanders to support active lifestyles—across Australia about one in four gyms and fitness centres (23%) and one in four (24%) personal trainers were located in Queensland in 2017–18, slightly higher than would be expected based on population share.<sup>154,155</sup>

**47%** of adults walk for recreation.

### What about Queenslanders living with disability?

Supporting physical activity for adults living with disability can be a challenge due to the type of disability and availability of suitable programs to match the individual. In 2015, 18% of Queensland adults reported a disability where 6% had a profound or severe core activity limitation of communication, mobility and self-care.<sup>17</sup> The proportion of Queenslanders reporting a disability increases steadily with age—about half (56%) of all those reporting a disability were aged 35–74 years, and 3 in 4 of those aged 80 years and older reported a disability (Figure 2, page 15).<sup>17</sup>

A disability can restrict learning and employment opportunities, and in turn limit the achievement of daily physical activity through getting to and from school or work. However, there are few disabilities or chronic conditions that completely preclude participation in any physical activity or organised sport.<sup>153</sup> Among Australian adults living with a disability or physical condition that restricted their life in some way, 69% participated in organised sports at least once per week compared with 84% for those without a disability in 2017.<sup>153</sup>

### How can our environments keep Queenslanders active?

Local environments provide opportunities for daily physical activity through walkability and accessibility to transport options (active and public). Developing active recreation environments and sport systems to support participation across the lifespan will contribute to lifelong health and healthy ageing. Green space needs to be accessible by Queenslanders of all ages and those living with disabilities. Encouraging appropriate physical activity as part of everyday life in Queensland communities will be key to achieving greater health gains. This will be driven by improvements to the walkability and availability of green spaces where we live, work, learn, play and do business, as well as when travelling between local destinations.

# Physical activity

**Table 24: Physical activity, adults and children, percentage, Queensland, 2018<sup>34</sup>**

Adults (self-reported)				Children (proxy-reported)			
	Sufficient physical activity: 150 minutes or more over at least 5 sessions in past week	Insufficient physical activity: insufficient time or sessions	Inactive: not active on any day in past week		Sufficient physical activity: active every day of the past week	Active 4 or more days of the past week	Inactive: not active on any day in past week
<b>18+ years</b>				<b>5–17 years</b>			
Persons	59.7 (58.1–61.3)	30.7 (29.2–32.2)	9.5 (8.7–10.4)	Persons	40.6 (38.2–43.1)	70.6 (68.4–72.8)	6.1 (5.1–7.3)
Male	62.9 (60.5–65.2)	27.7 (25.6–30.0)	9.3 (8.1–10.7)	Male	44.7 (41.4–48.0)	74.0 (71.0–76.8)	5.2 (4.0–6.7)
Female	56.6 (54.4–58.8)	33.7 (31.6–35.7)	9.7 (8.6–10.9)	Female	36.4 (33.0–39.9)	67.1 (63.6–70.4)	7.1 (5.5–9.0)
<b>Persons</b>				<b>Persons</b>			
18–24 years	71.0 (63.8–77.3)	24.5 (18.6–31.5)	*4.5 (2.4–8.1)	5–7 years	62.5 (57.2–67.6)	88.5 (85.0–91.2)	*1.3 (0.7–2.6)
25–34 years	62.7 (58.6–66.7)	30.0 (26.3–33.9)	7.3 (5.2–10.1)	8–11 years	47.2 (42.8–51.6)	75.9 (71.6–79.7)	*3.2 (1.9–5.2)
35–44 years	59.7 (56.4–63.0)	32.2 (29.2–35.4)	8.1 (6.4–10.1)	12–15 years	26.7 (23.1–30.7)	60.5 (56.2–64.6)	10.4 (8.1–13.4)
45–54 years	60.7 (57.6–63.8)	28.6 (25.9–31.6)	10.6 (8.9–12.7)	16–17 years	18.3 (14.5–22.8)	50.3 (44.5–56.1)	11.6 (8.5–15.6)
55–64 years	55.8 (52.9–58.6)	31.1 (28.6–33.8)	13.1 (11.4–15.0)				
65–74 years	48.3 (45.7–50.9)	37.5 (35.0–40.1)	14.2 (12.5–16.1)				
75+ years	39.8 (30.9–49.5)	46.7 (37.5–56.2)	13.5 (9.0–19.6)				
<b>Males</b>				<b>Males</b>			
18–24 years	73.3 (62.2–82.0)	22.9 (14.7–33.9)	**	5–7 years	69.4 (62.5–75.6)	89.4 (84.8–92.7)	n.a.
25–34 years	65.7 (59.5–71.4)	27.1 (22.0–33.0)	*7.2 (4.3–11.8)	8–11 years	49.9 (44.2–55.6)	79.6 (74.4–84.0)	*3.5 (1.7–6.9)
35–44 years	64.2 (59.3–68.8)	28.0 (23.8–32.5)	7.8 (5.4–11.3)	12–15 years	29.9 (24.7–35.6)	64.6 (58.5–70.3)	8.3 (5.6–12.1)
45–54 years	65.3 (60.6–69.7)	25.0 (21.1–29.4)	9.7 (7.3–12.9)	16–17 years	21.7 (16.3–28.2)	54.9 (46.9–62.6)	9.9 (6.6–14.6)
55–64 years	57.3 (53.2–61.3)	29.0 (25.5–32.8)	13.7 (11.3–16.6)				
65–74 years	51.5 (47.6–55.3)	33.9 (30.3–37.6)	14.7 (12.1–17.6)				
75+ years	41.4 (28.5–55.6)	48.6 (35.1–62.4)	*10.0 (5.4–17.7)				
<b>Females</b>				<b>Females</b>			
18–24 years	68.8 (59.1–77.1)	26.1 (18.4–35.5)	*5.2 (2.3–11.0)	5–7 years	55.2 (47.3–62.9)	87.5 (81.8–91.5)	n.a.
25–34 years	59.8 (54.3–65.1)	32.8 (27.8–38.2)	7.4 (4.9–11.1)	8–11 years	44.3 (37.8–51.1)	72.0 (65.1–78.0)	*2.9 (1.4–5.8)
35–44 years	55.4 (50.8–59.9)	36.3 (32.0–40.9)	8.3 (6.3–10.9)	12–15 years	23.4 (18.5–29.1)	56.1 (50.0–62.1)	12.7 (9.1–17.6)
45–54 years	56.5 (52.3–60.6)	32.0 (28.2–36.1)	11.5 (9.2–14.3)	16–17 years	14.9 (10.1–21.6)	45.7 (37.3–54.2)	13.3 (8.5–20.2)
55–64 years	54.3 (50.3–58.2)	33.2 (29.6–37.1)	12.5 (10.3–15.0)				
65–74 years	45.1 (41.7–48.6)	41.1 (37.7–44.7)	13.7 (11.5–16.3)				
75+ years	38.3 (26.7–51.4)	44.7 (32.7–57.4)	*17.0 (10.1–27.3)				
<b>Socioeconomic status</b>				<b>Socioeconomic status</b>			
Disadvantaged	52.7 (49.7–55.7)	33.1 (30.3–36.1)	14.1 (12.3–16.2)	Disadvantaged	42.9 (37.6–48.4)	73.2 (68.2–77.6)	4.2 (2.9–6.1)
Quintile 2	55.5 (52.7–58.3)	33.1 (30.4–35.8)	11.4 (9.7–13.4)	Quintile 2	47.4 (42.6–52.3)	73.5 (68.8–77.7)	5.5 (3.8–7.9)
Quintile 3	62.4 (59.0–65.7)	28.2 (25.2–31.3)	9.4 (7.8–11.3)	Quintile 3	44.6 (39.5–49.8)	71.9 (67.1–76.3)	5.0 (3.4–7.3)
Quintile 4	59.9 (56.1–63.7)	33.3 (29.7–37.1)	6.8 (5.4–8.5)	Quintile 4	36.2 (30.9–41.8)	68.0 (62.6–73.0)	7.8 (5.4–11.3)
Advantaged	66.8 (62.4–70.9)	26.4 (22.7–30.5)	6.8 (4.8–9.6)	Advantaged	32.7 (27.1–38.7)	67.1 (61.3–72.5)	7.8 (5.1–11.6)
<b>Remoteness</b>				<b>Remoteness</b>			
Major cities	61.6 (59.3–63.9)	30.3 (28.1–32.5)	8.1 (6.9–9.4)	Major cities	36.4 (33.0–39.9)	68.3 (65.0–71.5)	6.2 (4.8–7.9)
Inner regional	55.0 (52.5–57.4)	32.8 (30.5–35.2)	12.2 (10.7–13.9)	Inner regional	46.4 (42.0–50.9)	74.7 (70.7–78.4)	5.6 (3.9–8.1)
Outer regional	59.1 (56.0–62.3)	30.2 (27.2–33.5)	10.6 (9.2–12.3)	Outer regional	47.7 (42.9–52.6)	73.3 (69.0–77.3)	5.6 (3.9–8.0)
Remote/very remote	56.8 (52.5–60.9)	28.6 (25.1–32.4)	14.6 (11.2–18.8)	Remote/very remote	45.9 (37.6–54.4)	72.8 (64.1–80.0)	*9.4 (4.4–19.0)

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

\*\* Estimate has a relative standard error greater than 50% and is not reported.

n.a. not available for publication

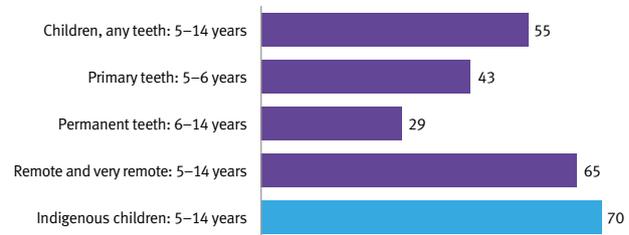
# Dental and oral health

Oral health is fundamental to an individual's overall health, wellbeing and quality of life. The major oral diseases are tooth decay (dental caries), gum disease (periodontal disease) and oral cancers. Oral diseases are among the most common and costly health problems experienced by Queenslanders.

Improving oral health outcomes including reducing the risk of decay, requires a focus on healthy eating, good oral hygiene, regular access to dental services beginning in the infant years, and access to fluoride through community water supplies and oral care products.

This section draws on data collected by the Queensland Health oral health services<sup>156</sup> and national surveys.<sup>33,157</sup> Decay experience is defined as teeth that are decayed, missing or filled because of decay.

**Figure 40: Prevalence of decay experience, children attending Queensland Health oral health services, 2014–15 to 2016–17<sup>156</sup>**



## What are the numbers?

- Of the 31,000 children aged 5–6 years who attended the oral health services\* in 2016–17, 13,350 had experienced tooth decay.

\* Data excludes Central West and North West HHSs.

## Prevalence of dental decay in children

Decay experience in children attending Queensland Health oral health services (2014–15 to 2016–17)<sup>156</sup>:

- 55% of 5–14 year olds in any teeth—24% had four or more teeth affected (Figure 40).
- 43% of 5–6 year olds in their primary teeth—21% had four or more teeth affected.
- 50% of 5–10 year olds in their primary teeth—24% had four or more teeth affected.
- 29% of 6–14 year olds in their permanent teeth—12% had three or more teeth affected.

In 2012–14, the prevalence of decay experience in the primary teeth of children aged 5–6 years in Queensland was 24% higher than children nationally.<sup>158</sup>

## How does it differ?

In children attending Queensland Health oral health services (2014–15 to 2016–17)<sup>156</sup>:

- 52% of 5–6 year olds in socioeconomically disadvantaged areas had decay experience in their primary teeth, compared to 31% of those in advantaged areas (see HHS booklet for more detail).
- 63% of 5–14 year olds in socioeconomically disadvantaged areas had decay experience, compared to 46% of those in advantaged areas.
- 65% of 5–14 year olds in remote and very remote areas had decay experience, compared with 55% in major cities and regional areas.
- 70% of Indigenous Queensland children aged 5–14 years had decay experience, compared with 54% of non-Indigenous children.

- 41% of Indigenous Queensland children aged 5–14 years had four or more teeth affected by decay, compared with 24% of other Queenslanders.
- For 5–14 year olds the prevalence of decay experience was higher than the state average for Darling Downs, Metro South, Torres and Cape, and Wide Bay HHSs, and lower in others including Gold Coast, Metro North, and Townsville HHSs.

## Use of dental services

In 2014–15<sup>157</sup>:

- 46% of Queenslanders aged two years and older had consulted a dental practitioner in the previous 12 months (47% nationally). Queensland was ranked sixth highest among eight jurisdictions.
- 26% of Queenslanders had not consulted a dental practitioner within the previous two years, and 5.4% never had. This compares with the national prevalence of 26% and 5.5% respectively.
- Australian adults who were current smokers were less likely than ex-smokers or those who had never smoked to have visited a dental practitioner in the previous 12 months (35% compared with 48%), as were those who were obese compared to healthy weight (42% and 49% respectively), those who engaged in low or no exercise compared to more active adults (43% and 52%) and those who exceeded the alcohol consumption guidelines compared to those who did not (45% and 51%).

# Dental and oral health

## Impacts and costs

### Dental conditions

- There were 27,569 hospitalisations for dental conditions in 2015–16. Two-thirds were for children and young people (23% for 0–14 years and 46% for 15–29 years) and one-third for adults and older people (28% for 30–64 years and 6% for 65 years and older).
- Over the past decade the admission rate for dental conditions for children has remained steady while for young and middle-aged people (15–64 years) it decreased by about 10%. For older people, there was a modest rate increase of 20%, while the number of admissions increased by 80%.

### Dental decay

- There were on average about 4150 hospital admissions per year for dental decay in children aged 0–9 years (2013–14 to 2015–16) and 13% were for Indigenous Queenslander children (Table 7, page 32).
- Admission rates for non-Indigenous children were higher than the state average in six of 15 HHSs, with the highest rates in North West HHS (2.6 times the state average). If the rate of admission were similar to the state rate there would have been about 360 fewer admissions in these six HHSs—almost 80% of the excess was in Darling Downs, Gold Coast and Wide Bay.
- Admission rates for Indigenous Queenslander children were higher than the state average in three of 15 HHSs, with highest rates in North West and Torres and Cape (three times the state average), and South West HHSs (Figure 41). If the admission rates were similar to the state rate, there would have been about 100 fewer admissions for Indigenous Queenslander children in these three HHSs.
- Over the past 10 years, the admission rate for dental decay in children decreased by 19% for non-Indigenous children and decrease was evident in eight of 15 HHSs (Table 7, page 32). The admission rate increased for Indigenous Queenslander children across the state by 32%.

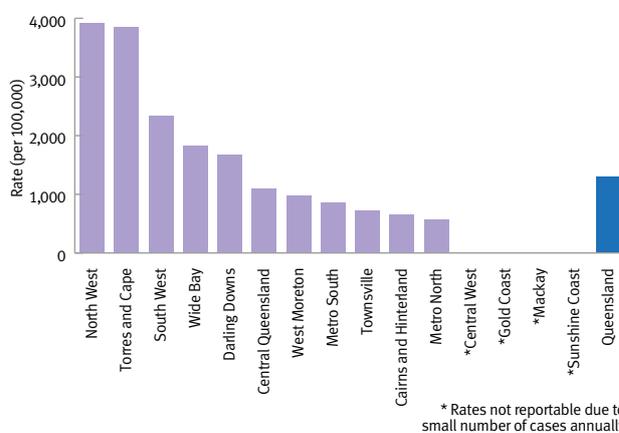
### Expenditure

Oral health was the third largest cause of recurrent, allocated health system expenditure in 2008–09 accounting for 9.7% of spending nationally—95% was for the cost of services provided by private and other dental services.<sup>159</sup>

In 2015–16, \$1.52 billion was spent in Queensland on dental services (Figure 10, page 49).<sup>80</sup>

Considering only admitted patient expenditure, in 2012–13, \$377 million was spent nationally on oral disorders (about \$75 million in Queensland).<sup>82</sup>

Figure 41: Hospitalisations for dental decay in Indigenous Queenslander children (0–9 years), 2015–16



## Causes and prevention

Many factors protect against dental disease including oral hygiene behaviours, use of dental services, diet, cessation of smoking, and access to the protective effect of fluoride.

### Dietary patterns

The main preventable risk factor for tooth decay in children and adults is the consumption of sugary food and drink. Tooth decay can be avoided by making healthy food choices and minimising snacking between meals. Drinking plenty of tap water, especially fluoridated water, reduces the risk of decay.

### Smoking

Smoking is an important preventable risk factor for many oral diseases including gum disease, which may lead to tooth loss. Smokers are more than three times as likely to develop oral cancer<sup>160</sup>, and the risk increases when smoking and high alcohol consumption occur together.<sup>161</sup> Smoking cessation can reduce the risk of some oral diseases.<sup>161</sup> Smoking also affects oral health by staining teeth, changing taste, causing bad breath and by making the mouth more susceptible to infections.<sup>161</sup>

### Fluoride

Fluoride plays a crucial role in reducing tooth decay and can be delivered through a range of methods, predominantly toothpastes and fluoridated water. Community water fluoridation is a cost-effective and equitable means of increasing exposure to the protective effects of fluoride, thereby reducing tooth decay across the population.<sup>162</sup> In 2008, prior to the introduction of the *Water Fluoridation Act 2008*, 4% of Queenslanders had access to fluoridated water. By 2012, this figure had risen to 87%. Since then it has fallen to 72% following decisions of some local councils.



**Thang's story**

*This is a dental home the family can come to.*

Dimity is an Oral Health Therapist. The Metro South Refugee Health Service works in partnership with Metro South Oral Health to support the health needs of refugee families. It is recognised that people from refugee backgrounds often have pressing oral health needs due to lack of access to care and prolonged periods of displacement.

Man and Thang arrived in Australia from Myanmar in June 2018 with their two children. Thang was experiencing severe dental pain and the staff at the Logan Oral Health Centre performed an immediate tooth extraction. The Centre now provides the family with ongoing oral health treatment and education including information on how to best care for their teeth, including instructions on how to assist and supervise their children's tooth brushing, limiting sweet and sticky food, and drinking plenty of tap water.



**43%**

5–6 year olds had decay experience



**of hospitalisations for dental conditions** were in children

**70%**

of Indigenous Queensland children aged 5–14 years had decay experience

# High blood pressure and cholesterol

High blood pressure and high blood cholesterol are described as metabolic risk factors, particularly important in the development of cardiovascular disease, diabetes and kidney disease.

High blood pressure, often referred to as hypertension, is prolonged elevation of the blood pressure. Population reporting of blood pressure was assessed by physical measurement in 2014–15<sup>33</sup>, and cholesterol and other lipids in a blood measurement survey in 2011–12.<sup>111</sup>

High blood pressure is a leading risk factor for total disease burden in people over the age of 65 years, and is the leading individual risk for cardiovascular disease. Although population health gains have been achieved through monitoring blood pressure and cholesterol<sup>86</sup>, there is opportunity for further improvement considering the high proportion of undiagnosed risk in many adults or insufficient treatment to fully reduce risk. Improved lifestyles have potential to minimise risk in many cases, either in combination with medications or alone. This may include reducing salt intake, increasing physical activity and maintaining a healthy weight.

**Figure 42: High blood pressure and total cholesterol, adults, Queensland<sup>33,49</sup>**



## What are the numbers?

Based on nationally measured prevalence, in 2018 an estimated:

- 880,000 adults had measured high blood pressure (based on prevalence in 2014–15)
- 1.2 million adults had measured high cholesterol (based on prevalence in 2011–12).

## What is the prevalence and how does it differ?

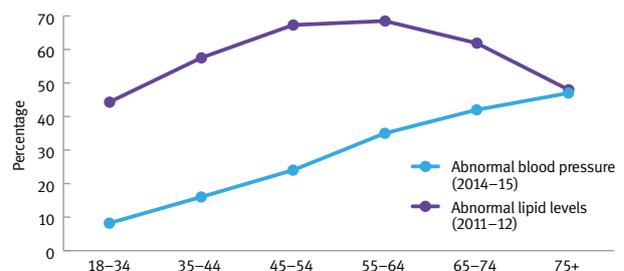
### High blood pressure—hypertension

- In 2014–15, about 1 in 4 (23%) Queensland adults had high blood pressure (Figure 42). This excludes those who were taking medication that effectively controlled the condition (Figure 43).<sup>33</sup>
- The prevalence of high blood pressure in Queensland adults in 2014–15 was:
  - similar for males and females
  - 4–5 times higher in those aged 65 years or older than younger adults aged 18–34 years
  - similar to national
  - ranked fifth highest compared to other jurisdictions.

### High cholesterol—dyslipidaemia

- In 2011–12, about 1 in 3 (31%) of Queensland adults had high total cholesterol (Figure 42).<sup>49</sup> This excludes those who were taking medication that effectively controlled the condition (Figure 43).
- The prevalence of high cholesterol in Queensland adults in 2011–12 was:
  - similar for males and females
  - steadily increasing with age from about 30 years onward
  - similar to national
  - ranked seventh highest compared to other jurisdictions.

**Figure 43: Untreated or ineffectively treated abnormal blood pressure and abnormal lipid levels, by age, Australia<sup>49</sup>**



## Causes of high blood pressure and high cholesterol

Blood pressure naturally adjusts depending on a person's activities. Persistently high blood pressure independent of activity and over a long period of time requires regular monitoring.<sup>163,164</sup> High blood pressure may be due to a number of factors, including increasing age (men more likely than women), smoking, overweight or obesity, high cholesterol, lack of exercise, high salt intake, high alcohol consumption and diabetes.<sup>163</sup> High blood pressure tends to run in families due to shared lifestyles, and common genetics with blood relatives.

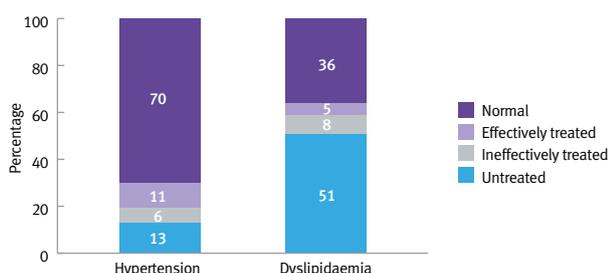
The body produces most cholesterol naturally, and it is found in some foods. When the body is unable to remove enough cholesterol from the blood, total cholesterol levels will rise.<sup>165</sup> High cholesterol is determined by blood lipid profiles including the 'good' and 'bad' cholesterol and triglycerides.<sup>163,164</sup> A family history of high cholesterol is primarily determined by a person having a first-degree relative with high cholesterol or premature coronary and/or vascular disease.<sup>163</sup>

The risk of cardiovascular disease is managed by lifestyle modification and medication.<sup>163</sup>

- Lifestyle modification to reduce blood pressure and cholesterol includes healthy diet, smoking cessation, increased physical activity, reduced salt intake, limiting alcohol, maintaining waist measurement of less than 94cm for men and less than 80cm for women, and a BMI of less than 25.
- Medication to reduce high blood pressure may be used in combination with lipid-lowering therapy to prevent or reduce high cholesterol.<sup>166</sup>

The reality is that many Australians remain untreated or ineffectively treated for high blood pressure and high cholesterol (Figure 43, Figure 44). About one-fifth of Australians aged 45–74 years in 2011–12 were estimated to be at risk of a future cardiovascular event within the next five years. However, two-thirds of those were not receiving the recommended combination therapies to reduce blood pressure and cholesterol.<sup>166</sup>

**Figure 44: Hypertension and dyslipidaemia by treatment status, Queensland, 2011–12<sup>49</sup>**



## Metabolic risk factors and cardiovascular disease

It is recommended that cardiovascular disease risk is assessed every five years from age 45 years, and for Indigenous Australians from age 35 years.<sup>163</sup> Risk is determined from a person's age, sex, smoking status, cholesterol levels, blood pressure, diabetes status, and thickening of the left wall of the heart. Adults at high risk of cardiovascular disease include those with<sup>163</sup>:

- diabetes and are aged 60 years and older
- diabetes and microalbuminuria (based on the urine albumin-to-creatinine ratio)
- moderate or severe chronic kidney disease
- previous diagnosis of family history of high cholesterol
- high blood pressure and high total cholesterol
- Indigenous Australians aged 74 years and older.

## Impacts and costs

### Burden of disease

High blood pressure accounted for 5.3% of total disease burden in 2011, and for 8.2% of early death burden (YLL) in 2011.<sup>25</sup> High cholesterol accounted for 2.5% of total disease burden in 2011, and for 3.8% of early death burden (YLL) in 2011.

### Deaths

High blood pressure accounted for an estimated 3000 deaths in Queensland in 2016 (10% of all deaths), and 51% were females.<sup>24,25,93</sup>

High cholesterol accounted for an estimated 1000 deaths in Queensland in 2016 (3.5% of all deaths), and 52% were males.<sup>24,25,93</sup>

### Disability and hospitalisation

High blood pressure accounted for 2.2% of disability burden (YLD) in 2011 (Table 2, page 10). High blood pressure accounted for about 67,300 hospitalisations and 220,400 patient days in Queensland in 2015–16.<sup>93</sup> One-third (35%) of the hospitalisations were associated with stroke and other cardiovascular diseases (35%), one-third (32%) with chronic kidney disease, and 22% with coronary heart disease.

High cholesterol accounted for 1.0% of disability burden (YLD) in 2011. High cholesterol accounted for about 13,800 hospitalisations and 47,900 patient days in Queensland in 2015–16.<sup>93</sup> Almost all (86%) hospitalisations were associated with coronary heart disease, followed by stroke (14%).

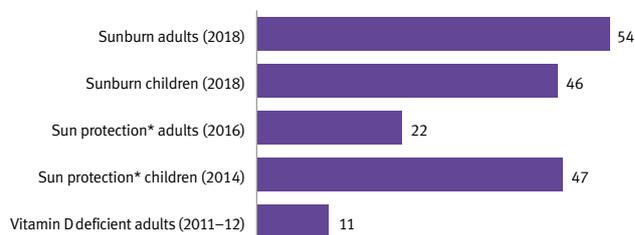
# Sun safety

Melanoma rates in Queensland are the highest of all the states and territories. Australia and New Zealand, have the highest rates in the world.

Compared to non-melanoma skin cancer (NMSC) however, melanoma incidence is low. NMSCs are not required to be registered so data on incidence is limited. However, the cost of diagnosing and treating NMSC reflects the higher burden than melanoma—an estimated seven-fold difference in health system costs in 2008–09.

Ultraviolet radiation (UVR), is carcinogenic with 6% of all cancers diagnosed in Australia due to solar radiation exposure. An estimated 7220 melanoma cases and essentially all non-melanoma skin cancer could be prevented in Australia with effective use of sunscreen. Current sunscreen use has reduced skin cancer incidence by only 10–15%, so there is substantial opportunity for improvement. Daily use of the five sun protection behaviours is required, particularly in Queensland as UVR levels are moderate to extreme all year round.

Figure 45: Sun safety indicators, children and adults, percentage, Queensland<sup>34,167</sup>



\* Uses broad hat, SPF30 or higher sunscreen and protective clothing in summer

## What are the numbers?

- In 2018, an estimated 2.1 million adults and 394,000 children had been sunburnt in the previous 12 months.
- An estimated 841,000 adults and 399,000 children used sun protection methods in 2018.

## What is the prevalence?

- 54% of adults and 46% of children were sunburnt in the previous 12 months in 2018 (Figure 45).<sup>34</sup>
- 22% of adults (in 2016) and 47% of children (in 2014) wore a broad-brimmed hat, long sleeves and long pants or skirts and used SPF 30 or higher sunscreen for sun protection in summer.<sup>34</sup>
- 11% of Queenslanders were vitamin D deficient (mild, moderate or severe) in 2011–12, 6% in summer and 15% in winter.<sup>167</sup>

## How does it differ?

In 2018 (Table 25):

- Adult males were 14% more likely to report sunburn than females, while there was no difference between boys and girls. There were no sex differences regarding use of sun protection behaviours.<sup>34</sup>
- Young people (18–34 years old) were at least 4 times more likely to report sunburn than older people (65 years and older).<sup>34</sup>
- Older children aged 12–17 years were about 60% more likely to have been sunburnt than 5–7 year olds, while young children were 3.4 times more likely to practice sun protection than older children.<sup>34</sup>

In 2017–18, the prevalence of adult sunburn was higher than the state average in four HHSs (29% higher in Torres and Cape, 14% in West Moreton, 13% in Mackay and Central Queensland), and 16% lower in Central West. For children, the prevalence of sunburn in Mackay HHS was 16% higher than the state average in 2013–14, but did not differ in other HHSs (latest available data).<sup>34</sup>

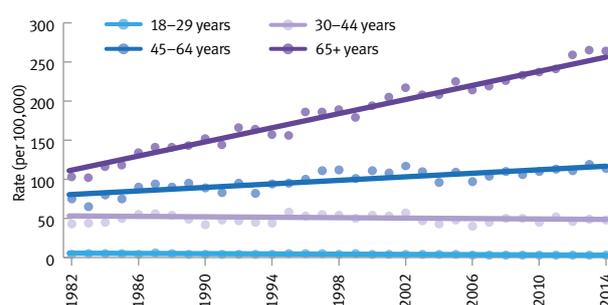
In 2011–12, the prevalence of vitamin D deficiency in Queensland was about half the national prevalence and about one-third that of southern states.<sup>167</sup>

## Skin cancer incidence and trends

There were 3685 new cases of melanoma in 2014 and 59% were male.<sup>59</sup> Over the past decade, the melanoma incidence rate for young people (15–29 years) declined by 23% (Figure 46). It was stable for 30–44 year olds, increased by 13% for those aged 45–64 years, and increased by 27% for those aged 65 years and older.

Melanoma was the most common new cancer diagnosed in young people in 2014 (25% of all cancers diagnosed in people aged 15–29 years: page 20), and was the second most common (25%) for people aged 30–44 years (page 23).<sup>59</sup>

Figure 46: Trends in melanoma incidence by age group, Queensland, 1982–2014<sup>59</sup>



NMSC is the most commonly diagnosed cancer in Queensland, and includes basal cell carcinoma (70% of NMSC) and squamous cell carcinoma (30%).<sup>168</sup> In 2014, the Queensland NMSC incidence rate was estimated to be almost twice the national rate<sup>169</sup> and about 16 times the Queensland melanoma rate.<sup>170</sup>

The melanoma incidence rate varied across HHSs in 2012–14 and was higher than the state average in Darling Downs, Sunshine Coast and Gold Coast HHSs, and lower in Central Queensland, Mackay, Metro South, North West and Torres and Cape HHSs.<sup>59</sup> More information on HHSs is available from the data visualisations and statistical tables online (page vii).

## Deaths

There were 310 deaths due to melanoma in 2016—two-thirds were males.<sup>68</sup> The male rate was 2.5 times the female rate. About 2 in 3 deaths occurring in those aged 65 years and older. Over the past decade the melanoma death rate was unchanged at state level, and for all HHSs with the exception of Metro North where there was a 35% decrease (Table 12, page 38).

## National and international comparisons

In 2016, the Queensland melanoma incidence rate was estimated to be 35% higher than the national rate and highest of the jurisdictions.<sup>170</sup> It was 36% higher than the next highest state (Western Australia) and two times that of the Northern Territory, which was lowest.

The Queensland melanoma death rate was 29% higher than the national rate in 2016 and highest of the jurisdictions (Table 13, page 40).<sup>68</sup>

Australia and New Zealand have the highest melanoma incidence rates globally, more than 11 times the global average in 2012.<sup>171</sup> The Australian melanoma death rate was six times the global average in 2012.

In 2012, 8% of melanoma cases globally were diagnosed in Australia, based on data from 133 countries with reported cases.<sup>172</sup>

## GP visits

In 2015–16, consultations with a GP for skin cancer were the ninth most frequent chronic disease problem with 1.1 consultations per 100 encounters nationally.<sup>173</sup> Considering all encounters, skin cancer and sunburn were among the top 40 reasons for the visit, each with 1.1 consultations per 100 encounters in 2015–16. Sunburn ranked third and skin cancer was the seventh most common problem that was managed with a procedural treatment by a GP (0.7 and 0.5 procedures per 100 encounters, respectively).

## Hospitalisations

In 2015–16, there were about 26,000 hospitalisations for NMSC (60% were males) and 3100 for melanoma (57% were males).

- 65% of NMSC hospitalisations were for people aged 65 years and older.
- 55% of melanoma hospitalisations were for people aged 65 years and older.

## Expenditure

Treatment of skin cancer was estimated to cost the national health system over \$400 million in 2008–09 (\$367 million for NMSC and \$50 million for melanoma).<sup>174</sup>

NMSC treatments almost doubled between 1997 and 2010 and based on trend it was estimated that in 2015, NMSC cost \$705 million in Australia (about \$140 million in Queensland).<sup>175</sup> This includes diagnosis, treatment and pathology.

Based on 2017 Medicare data and considering a three-year period of diagnosis and treatment, including cases that were presumed to be melanoma but were later found to be benign, the estimated annual cost for melanoma was \$272 million nationally (\$54.4 million in Queensland).<sup>176</sup>

**Table 25: Sunburn in the previous 12 months, adults and children, percentage (95% CI), Queensland, 2018<sup>34</sup>**

Adults		Children (5–17 years)	
Persons	54.3 (52.8–55.8)	Persons	46.4 (44.0–48.9)
Male	57.9 (55.6–60.1)	Males	46.9 (43.6–50.2)
Female	50.9 (48.8–52.9)	Females	45.9 (42.3–49.5)
Persons by age			
18–24 years	78.7 (72.0–84.1)	5–7 years	33.0 (28.2–38.3)
25–34 years	74.8 (71.1–78.1)	8–11 years	45.5 (41.2–49.9)
35–44 years	65.5 (62.2–68.7)	12–15 years	55.3 (51.0–59.6)
45–54 years	54.5 (51.3–57.7)	16–17 years	52.5 (46.6–58.3)
55–64 years	41.8 (39.0–44.6)		
65–74 years	23.9 (21.8–26.1)		
75+ years	10.5 (8.6–12.6)		
Socioeconomic status			
Disadvantaged	52.2 (49.5–54.9)	Most disadvantaged	44.8 (39.4–50.3)
Quintile 2	54.7 (52.2–57.3)	Quintile 2	46.8 (41.9–51.7)
Quintile 3	53.1 (49.7–56.5)	Quintile 3	44.8 (39.8–49.9)
Quintile 4	57.5 (53.9–61.0)	Quintile 4	46.9 (41.4–52.5)
Advantaged	53.7 (49.5–57.8)	Most advantaged	48.8 (42.7–54.9)
Remoteness			
Major cities	53.8 (51.6–56.1)	Major cities	44.3 (40.9–47.9)
Inner regional	53.2 (50.9–55.4)	Inner regional	46.9 (42.5–51.4)
Outer regional	56.5 (53.6–59.4)	Outer regional	52.9 (48.1–57.7)
Remote/very remote	59.7 (56.0–63.3)	Remote/very remote	52.9 (44.4–61.3)

# Cancer screening

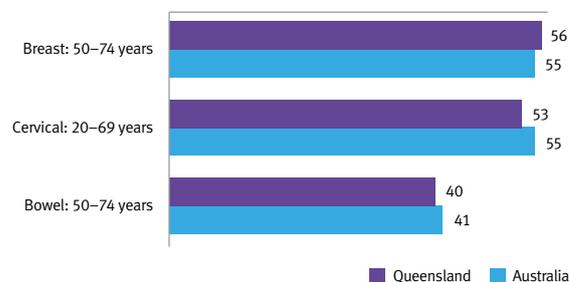
The delivery of population based cancer screening programs continues to improve the health outcomes of Queenslanders through the early detection and prevention of breast, cervical and bowel cancers.

Women over the age of 40 years are eligible to participate in the free BreastScreen Queensland program with the target age group 50–74 years invited to have a mammogram every two years.

The National Cervical Screening Program changed in December 2017 as the Pap test was replaced with a cervical screening test for the human papillomavirus (HPV). The recommended time between tests increased from two to five years, and the recommended age to start screening increased from 18 years to 25 years and extend to 74 years. The changes were a result of new evidence and better technology and is expected to protect up to 30% more women.

Progressive expansion of the National Bowel Cancer Screening Program commenced in 2015, with two-yearly screening of all Australians aged 50–74 years being available from 2020.

Figure 47: Participation in screening programs, percentage, Queensland and Australia, 2015–2016<sup>177,180</sup>



## What are the numbers?

In 2015–2016:

- About 365,000 women aged 50–74 years participated in the BreastScreen Queensland program.
- About 737,000 women aged 20–69 years were screened for cervical cancer (Pap test).
- About 253,000 adults aged 50–74 years participated in the bowel screening program.

## Breast cancer screening

In 2015–2016, 56% of women aged 50–74 years participated in the BreastScreen Queensland program (Figure 47).<sup>177</sup> Participation in the program was lower in 2015–2016 than in 2001–2002 (56% compared with 59% for 50–69 year olds).<sup>178</sup> Participation was 5% higher in areas of socioeconomic advantage (58%) than disadvantage (55%), higher in regional areas (59%) and major cities (55%) than in remote areas (52%), lower for Indigenous Queensland women (49%), lower among culturally and linguistically diverse women (53%), and higher in Queensland than nationally (55%).

## Cervical screening

In 2015–2016, 53% of Queensland women aged 20–69 participated in the program.<sup>177</sup> There has been a decline in participation from the peak of 59% in 2007–2008.<sup>179</sup>

## Bowel cancer screening

In 2015–2016, participation in the program in Queensland was 40%, slightly lower than the national average (41%).<sup>180</sup> Participation in the program was 38% in 2014–2015.<sup>181</sup> In 2016, 11,436 Queenslanders aged 50–74 years returned a positive Faecal Occult Blood Test (FOBT) result (8.0% of participants), and of these, 9146 (80%) participants underwent an assessment colonoscopy.<sup>180</sup>

## Breast, cervical and bowel cancers

### Incidence

- In 2014, there were 3367 new cases of female breast cancer in Queensland, 208 new cases of cervical cancer and 3083 new cases of colorectal cancer.
- Over a decade (between 2004 and 2014) incidence rates for female breast cancer increased by 11%, cervical cancer rates did not change, and colorectal cancer rates decreased by 13%.
- Incidence rates varied very little among the HHSs, with the following differences in 2011–2014:
  - Female breast cancer incidence was lower in Central Queensland, Central West, Darling Downs, North West and Torres and Cape
  - Cervical cancer was lower in Sunshine Coast
  - Colorectal cancer was higher in Cairns and Hinterland and Wide Bay.

### Deaths

- In 2016, there were 560 female breast cancer deaths in Queensland, 59 cervical cancer deaths and 882 colorectal cancer deaths (Table 9, page 34).<sup>68</sup>
- Over a decade (2005 to 2015) death rates for female breast cancer decreased by 14%, cervical cancer rates did not change, and colorectal cancer rates decreased by 17% (Figure 4, page 36).
- The HHSs did not differ from the state average for death rates for any of the three cancers in 2013–2015.

## Challenges and opportunities

### Breast cancer screening

Participation in the breast screening program has trended downwards in recent years but this trend has not been consistent across age groups. Participation is declining in 50–59 year olds, stable in 60–64 year olds and increasing for 65–74 year olds. In older women, participation was higher in 2015–2016 than at any time since 1999–2000.

The Department of Health and HHSs have initiated strategies to enhance participation including:

- provision of a range of financial incentives to BreastScreen Queensland services including increased access through out-of-hours appointments
- establishment of a new BreastScreen Queensland online portal to assist new and existing clients to make or update screening appointments at a time convenient to them
- implementation of the ‘One more thing’ social marketing campaign.

Encouraging women to return for their first re-screen is a challenge. Among women aged 50–67 years who were screened in 2013, 62% of first-time screeners returned for a re-screen within 27 months, and re-screening increased to 86% for those who had attended their third or subsequent screens.<sup>182</sup>

### Cervical cancer screening

On 1 December 2017, changes were introduced to the National Cervical Screening Program to provide better protection against cervical cancer. Increasing participation rates in cervical screening has been a challenge in advance of the new test and testing regime with screening activity in 2017 lower than in previous years.

To assist in the transition, the Department of Health has been providing education to primary healthcare professionals to support timely reminders and follow-up of eligible women, as well as communication and promotional activities occurring at a national level. The Department of Health is currently partnering with pathology laboratories and gynaecologists to closely monitor the effect of the new program guidelines upon referrals for follow-up colposcopy tests to ensure that service supply can meet increased demand resulting from the more sensitive test.

### Bowel cancer screening

Participation in the National Bowel Cancer Screening Program continues to be considerably lower than in the breast and cervical screening programs. Between 2014–2015 and 2015–2016 a greater number of older people were invited into the program but age specific participation was unchanged.

The expansion of the National Bowel Cancer Screening Program will provide further opportunities to increase awareness and participation in the program. Program expansion has impacted the number of colonoscopies performed in Queensland public hospitals. It is estimated that 13,800 colonoscopies will be performed in 2018 for National Bowel Cancer Screening participants with a positive FOBT result and this is expected to increase to 16,800 in 2020. It will be important that patients do not wait longer than clinically recommended. The Department of Health has undertaken the ‘Make No.2 your No.1 priority’ mass media campaign to increase awareness of bowel cancer screening and encourage greater participation.

### Opportunities

Research into new technologies and methodologies continues and developments that could impact screening programs are monitored. Examples include the potential for tailored screening at the population level based on different levels of risk, including genomics, and the impact of mammographic density on the quality of breast screening.

The impact of the HPV vaccination program on the cervical screening program is yet to be fully evident and the introduction of the new ‘Gardasil 9’ vaccination may require further adjustments to the program.

Diet and lifestyle factors can influence an individual’s risk of developing bowel cancer and further work in this area in combination with greater participation in screening could lead to reduced mortality.

The Department of Health is implementing a primary healthcare engagement strategy which aims to enhance effective partnerships with primary healthcare providers, including the seven Primary Health Networks (PHNs) in Queensland, and build the knowledge and capacity of these providers to support participation in the national cancer screening programs.

# Illicit drug use

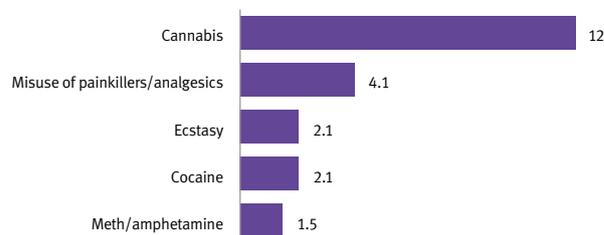
Illicit drug use describes the use of illegal drugs (such as methamphetamine), the non-medical use of prescribed or over-the-counter medications (such as analgesics), and the misuse of commonly available substances (such as the inhalation of deodorants or petrol).

The *National Drug Strategy 2017–2026* and sub-strategy the *National Ice Action Strategy 2015* provide national policy guidance and identify priority actions to reduce illicit drug use and associated harms.<sup>130,183</sup> Key strategies include prevention, treatment and harm reduction, supporting families and communities and improving collection and use of research and data.

Poly-drug use is common—the use of two or more drugs at the same time, or within a short period of time. It can include alcohol, illegal drugs, legal medications and other substances in any combination. Cannabis was the drug most often used with other illegal drugs, particularly in combination with hallucinogens, ecstasy, synthetic cannabinoids and amphetamines.<sup>52</sup>

In recent years, harms associated with the use of methamphetamine (most commonly called ‘ice’) have increased. Queensland Health has recorded increases in emergency department presentations, hospital admissions and alcohol and other drug treatment service episodes in Queensland associated with this drug.<sup>184,185</sup> Increased harms were predominantly associated with increased methamphetamine purity, as well as increased availability and frequency of use (that is, more regular and dependent use).

Figure 48: Prevalence of recent illicit drug use and misuse, persons 14 years or older, percentage, Queensland, 2016<sup>52</sup>



## What are the numbers?

Based on prevalence estimates from 2016, in 2018:

- an estimated 558,000 Queenslanders aged 14 years or older had used illicit drugs in the previous 12 months, and the majority (485,000) had used cannabis.
- an estimated 204,000 Queenslanders aged 14 years or older misused painkillers, analgesics and opioids in the previous 12 months.
- among users, 4 in 10 had used an illicit drug, consumed alcohol or smoked tobacco daily in ways that put them at risk of harm in the previous 12 months, and 3 in 100 had engaged in all three on the same occasion.

## Prevalence and differentials

For Queenslanders aged 14 years and older in 2016<sup>52</sup>:

- 17% reported any drug use in the previous 12 months (defined as recent use) where 14% reported illicit drug use and 5.0% reported misuse of pharmaceuticals, noting many had used both.
- The most commonly used illicit drugs were cannabis (12%), ecstasy (2.1%), cocaine (2.1%), amphetamines (1.5%), and inhalants (1.0%).
- The average age for recent illicit drug use was 34 years for cannabis users, 26 years for ecstasy users, 31 years for cocaine users, and 34 years for amphetamine users.<sup>51,52</sup>
- The most commonly used form of amphetamine was methamphetamine (known as ‘ice’ or ‘crystal’), and the prevalence appeared to have peaked at 2.3% in 2013 (compared with 1.5% in 2016).
- The most commonly misused pharmaceuticals were painkillers/analgesics/opioids (4.1%) and tranquilisers/sleeping pills (1.3%), excluding over the counter medications.

- Recent drug use was 52% higher in males than females (20% compared with 13%).
- Males were twice as likely as females to be recent users of cannabis (16% compared with 8.3%), ecstasy or cocaine (2.8% compared with 1.5% for both drugs).
- Recent drug use was higher in younger adults aged 18–24 years (32%) and 25–34 years (25%) than older adults.
- Prevalence of recent illicit drug use was similar to national, ranked equal third highest compared to other jurisdictions and also third highest for recent misuse of painkillers/analgesics and opioids.

## Impacts and costs

### Burden of disease

In 2011, illicit drug use was the tenth largest cause of disease and injury burden (1.4% of total DALYs) in Queensland.<sup>25</sup> Males experienced 75% of the burden, and the burden peaked between the ages of 25 and 54 years. Total burden was 10% lower in Queensland than nationally in 2011.<sup>135</sup>

## Deaths

In 2016, it was estimated there were 360 deaths due to illicit drug use in Queensland (1.2% of all deaths), and 73% were males (Table 2, page 10)<sup>25,93</sup>, and in 2011, 2.0% of premature death burden (YLL).

## Disability and hospitalisation

Illicit drug use caused 0.7% of disability burden (YLD) in 2011 (Table 2, page 10).<sup>24,25</sup> Queensland had the lowest total disability burden from dependence on amphetamines, cocaine and cannabis (compared with four states with reported estimates), and second lowest for opioid dependence (Tasmania was lowest) compared to other states and territories in 2011.<sup>135</sup>

Illicit drug use caused 40,700 patient days and 9500 hospitalisations in Queensland in 2015–16: 61% was associated with drug use disorders (excluding alcohol), 30% with chronic liver disease and 8.8% with liver cancer.<sup>25,93</sup> Methamphetamine-related hospitalisations increased 20-fold between 2009–10 and 2015–16 and males accounted for about two-thirds of cases.<sup>184</sup> In 2015–16 for Indigenous Queenslanders, the methamphetamine-related hospitalisation rate was almost 5 times the non-Indigenous rate.<sup>184</sup>

Methamphetamine-related public hospital emergency department presentations increased four-fold between 2009–10 and 2014–15, and admissions to mental health units increased 15-fold for illicit drug use or drug dependence, and 16-fold for psychoses.<sup>184</sup>

## Expenditure

The most recent national assessment of the cost of illicit drug use was in 2004–05.<sup>95</sup> Based on Queensland's share of the Australian population, in 2004–05, the financial cost of illicit drugs to the Queensland economy was \$1.4 billion, with \$0.04 billion spent on healthcare, \$0.4 billion on lost production (workplace and home), and \$0.89 billion on crime and road transport injury. Health system costs were 3% of the tangible or financial costs. Intangible losses associated with early deaths and wellbeing were assessed at \$0.26 billion, taking the total cost of illicit drug use to Queensland society in 2004–05 to \$1.64 billion.

## Community harms and concerns

In 2016, 9.3% of Australians reported being a victim of an illicit-drug incident and 2.6% reported being physically abused.<sup>52</sup> The community has focussed on methamphetamine ('ice') as the most likely cause of illicit drug problems and public concerns. Users of methamphetamine may experience mental health issues, increased aggression, poor physical health, sexual risk taking and pregnancy complications.<sup>184</sup> The harms from 'ice' on the community are being addressed by reducing supply, reducing demand, providing early interventions

and treatment, and minimising harms.<sup>185</sup> Random roadside saliva-based illicit drug testing commenced in December 2007. In 2016–17, more than 56,000 roadside saliva tests were undertaken with about 11,000 drivers testing positive for one or more of these drugs.<sup>186</sup>

## Medicines containing codeine

The misuse of painkillers includes codeine-containing medicines previously available over-the-counter from pharmacies. In February 2018 all codeine-containing products became prescription-only to help address increasing harms associated with the misuse of these products.<sup>187</sup> In 2016, codeine products were the most commonly misused opiate painkillers, largely by people in their twenties and thirties.<sup>52</sup> Codeine is converted to morphine in the body and can cause tolerance, dependence, addiction, poisoning and, in high doses, death, in the same way as other opioids.<sup>188</sup> In addition the medicines combined with the codeine (ibuprofen, paracetamol) can also cause considerable harms including gastrointestinal bleeding, kidney or liver damage. All patients who have been using over-the-counter codeine products have been advised to see their pharmacist or GP to determine their pain management requirements.<sup>187</sup>

## Cannabis and mental illness

Cannabis was the most common illicit drug used (in the previous 12 months) by people living with mental illness, especially psychotic disorders.<sup>135,189</sup> Among recent cannabis users in 2016, about 1 in 3 was diagnosed or treated for mental illness.<sup>52</sup> Heavy cannabis users have about four times the risk of schizophrenia and other psychoses.<sup>190</sup> A prospective cohort study of 3800 Queenslanders born between 1981 and 1984 found those who started using cannabis from about 15 years of age were more than twice as likely to develop psychosis, delusions and hallucinations by age 21 years.<sup>191</sup>

## Medical use of cannabis

In 2016, Queenslanders significantly increased their support for clinical trials for people to use cannabis to treat medical conditions (89% supported compared with 74% in 2013), and for relevant changes in legislation (86% compared with 69%).<sup>52</sup> Such support is in line with the rest of Australia. In 2017, the Queensland State Parliament enacted the *Public Health (Medicinal Cannabis) Act 2016* to legislate the provision of medicinal cannabis as prescribed by an approved doctor.<sup>192</sup> The subordinate *Public Health (Medicinal Cannabis) Regulations 2017* became law on 1 March 2017. National guidance documents have been developed by the Therapeutic Goods Administration to assist doctors and their patients in understanding the evidence base for the use of cannabis as a medicine.

# Immunisation

Immunisation is a successful and cost-effective health intervention, as the benefits of personal immunity extend to the whole community. This benefit is known as herd immunity.

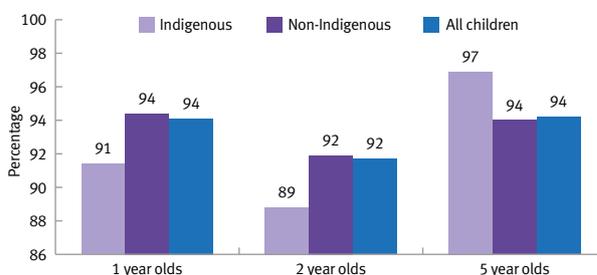
Vaccines funded under the National Immunisation Program for children, adolescents and adults prevent measles, polio, diphtheria, tetanus, pertussis (whooping cough), varicella (chickenpox), herpes-zoster (shingles), hepatitis B, *Haemophilus influenzae* type b (Hib), meningococcal ACWY (from 1 July 2018), influenza, human papillomavirus (HPV) and pneumococcal and rotaviral diseases.

From 1 July 2018, the National Immunisation Program includes whooping cough vaccine for pregnant women. This was previously funded by the Queensland Government.

In addition, the Queensland Government funds meningococcal ACWY vaccine for 15–19 year olds, and influenza vaccine for all children aged from six months to less than five years.

Queensland has achieved high childhood immunisation rates (Figure 49). The overall success of Queensland's immunisation program is reflected in the low numbers of vaccine preventable diseases that in the past have caused significant illness and death. The ongoing success of the program relies on maintaining high immunisation coverage rates in current and future generations.

**Figure 49: Immunisation coverage rates, children aged one, two and five years by Indigenous status, percentage, Queensland, 2017<sup>55</sup>**



## What are the numbers?

In 2017:

- For one-year olds, 58,600 were fully immunised and 3675 were not.
- For two-year olds, 57,100 were fully immunised and 5170 were not.
- For five-year olds, 62,400 were fully immunised and 3840 were not.
- 594 young children aged 1–4 years admitted to hospital tested positive for influenza.
- About 40,500 pregnant women were immunised for whooping cough, based on self report.

## Immunisation coverage

In 2017, coverage rates for fully immunised Queensland children were (Figure 49)<sup>55</sup>:

- 94% for one-year olds.
- 92% for two-year olds.
- 94% for five-year olds.

In 2017, childhood immunisation coverage rates differed between the HHSs:

- For one-year olds, Mackay was highest (96%) and Sunshine Coast lowest (91%).
- For two-year olds, Central West was highest (96%) and North West lowest (89%).
- For five-year olds, South West was highest (97%) and Sunshine Coast lowest (91%).

More information on HHS coverage is available from the HHS booklet.

## Indigenous Queenslanders

In 2017, immunisation coverage rates for Indigenous Queensland children were<sup>55</sup>:

- 91% for one-year olds, 3.0 percentage points lower than for non-Indigenous children
- 89% for two-year olds, 3.1 percentage points lower than for non-Indigenous children
- 97% for five-year olds, 2.9 percentage points higher than for non-Indigenous children.

The immunisation coverage rate for Indigenous Queensland one-year olds increased from 87% in 2015 to 90% in 2016 and 91% in 2017.<sup>55</sup>

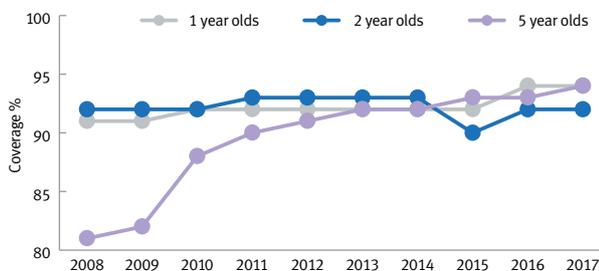
## Trends

Over the past decade, the proportion of fully immunised children increased (Figure 50).<sup>55</sup> In 2008, 91% of one-year olds were fully immunised. This increased to 94% in 2017. Coverage for two-year olds remained steady at about 92% between 2008 and 2017. In 2008, 81% of five-year olds were fully immunised. This increased to 94% in 2017. Coverage rates for two-year olds are lower than the other age milestones due to recent changes in the immunisation schedule.

## Influenza

In 2017, Queensland experienced one of the worst influenza seasons on record, with more than 56,000 laboratory-confirmed cases reported. The highest notification rates were in those aged 80 years or older, and in the youngest aged 1–4 years although affecting all age groups (pages 18, 20, 22, 24, 26, 28). Influenza caused significant illness and was the cause of most hospital admissions of young children aged 1–4 years. In 2017, 594 young children admitted to public hospitals tested positive to influenza, and of these, 62 were admitted to intensive care. In response, from 2018 free influenza vaccine will be provided to all children aged from six months to less than five years.

**Figure 50: Trends in immunisation coverage, by age cohort, Queensland, 2008–2017**



## School Immunisation Program

The School Immunisation Program (SIP) offers Year 7 and Year 10 students in more than 570 state and non-state Queensland schools the opportunity to be vaccinated within the school setting. In 2017:

- 79% of Year 7 students received a dose of diphtheria-tetanus-pertussis (dTpa) vaccine
- 67% of Year 7 students completed the three-dose course of human papillomavirus (HPV) vaccine
- 64% of Year 10 students received a dose of meningococcal ACWY vaccine.

The SIP uptake rates underestimate the actual adolescent vaccination coverage as they only represent vaccinations administered in the school setting. Some students elected to be vaccinated by GPs or other immunisation providers in subsequent years. The National HPV Register reported 77% of females and 70% of males aged 15 years at 30 June 2016 were fully immunised against HPV.

## Challenges and opportunities

Some of the biggest challenges facing Queensland's immunisation program include:

- the gap in coverage rates for Indigenous Queensland children aged one to two years, placing them at a higher risk of contracting vaccine preventable disease
- sub-optimal uptake of adolescent vaccination in the SIP, placing many adolescents at risk of contracting vaccine preventable disease
- misinformation about immunisation circulating in the community, creating unnecessary confusion and concern about a proven, effective and safe public health intervention.

To address these challenges, the *Immunisation Strategy 2017–2022* has set the target that 95% of children aged one to five years be fully immunised. The 95% coverage will need to be maintained to best protect the Queensland population against most vaccine preventable diseases.

To achieve the 95% target, Queensland Health has:

- implemented the 'Immunise to 95' initiative and followed up 84,000 children who were overdue for immunisation, by contacting providers and parents to help resolve each child's immunisation status
- implemented the 'Bubba Jabs on Time' initiative to follow-up all Indigenous Queensland children who were overdue for vaccinations at two, four and six months of age—to date, 2500 children have been followed up
- amended the *Public Health Act 2005* to provide early childhood education and care services a discretionary power to refuse enrolment and/or exclude a child whose immunisation is not up to date
- undertaken state wide marketing campaigns to reinforce the importance of on-time vaccination
- funded a specialist immunisation service at the Queensland Children's Hospital to provide services for children with complex vaccination needs.

# Domestic and family violence

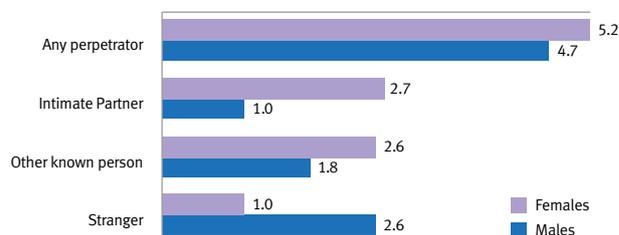
Domestic and family violence is defined as one person exerting power or control over another within family and intimate relationships. It can occur in many forms including physical, sexual, emotional and psychological and coercive control.

Children, adults and the elderly can all be victims of domestic and family violence, although most frequently victims are adult women who experience violence from a current or former intimate partner.

The complex and sensitive nature of domestic and family violence means that surveys, service use and other administrative data are unlikely to capture the true extent of the problem. Much of the data pertains to women only, and their experience of intimate partner violence. The impact for children, men and the elderly is less well known as is the prevalence of the wider notion of family violence.

The most direct estimates of the impact of domestic violence on the hospital system comes from data on hospitalisations for assault where there is relationship to the perpetrator included in the record. This invariably will underestimate the total impact on the hospital system.

**Figure 51: Experience of violence in the previous 12 months by relationship to perpetrator, Queensland, 2016<sup>193</sup>**



## What are the numbers?

- In Queensland, 1 in 5 women and 1 in 13 men experienced intimate partner violence from the age of 15 years.
- For 4 in 5 (79%) Australian girls and women hospitalised for assault, the perpetrator was a domestic partner, spouse, parent or other family member.
- More than one Queensland death a week was associated with family and domestic violence—22 homicides and at least 41 apparent suicide deaths in 2016–17.

## What is the prevalence and how has it changed?

In 2016, 1 in 20 adult women in Queensland experienced violence in the previous 12 months (5.2%) where the perpetrator was known to them (Figure 51).<sup>193</sup> Further, 2.7% of women reported intimate partner violence in the previous 12 months, and 2.6% reported violence where the perpetrator was known to the victim. While the rate of violence in the previous 12 months has not changed since 2005, the rate of emotional abuse by a previous partner was lower in 2016 (1.7%) than 2012 (2.9%). In 2016, 23% of adult Australian women reported they had experienced intimate partner violence from the age of 15—around three times the rate reported by men (7.8%).<sup>193</sup>

For Queensland males, there was an equal risk of violence from a stranger or a known person (both 2.6%).<sup>193</sup> One in 100 men reported being the victim of intimate partner violence in the previous 12 months, and 1.8% experienced violence perpetrated by another known

person. While there has been no significant change in the rate of men experiencing partner violence between 2005 and 2012, the rate of any violence in the last 12 months halved between 2012 and 2016 (declined from 11% to 4.7%). Among Australian men, 7.8% reported they had experienced intimate partner violence from the age of 15.

## Is it the same for everyone?

There are groups within the Queensland community that are at higher risk of domestic and family violence. Children, pregnant women, people with disability and elderly people are particularly vulnerable. Young women and Indigenous Queensland women experienced higher rates of violence. Domestic and family violence occurred at higher rates for Indigenous Queenslanders than non-Indigenous. In 2014–15, 17% of Indigenous Queensland women and 9% of Indigenous Queensland men aged over 15 years experienced physical violence in the previous 12 months.<sup>12</sup> In comparison, for the total Queensland population the rate was 4.4% for women and 4.6% for men.<sup>193</sup>

## Impacts and costs

Beyond the injuries of physical abuse, exposure to domestic and family violence has long lasting consequences. Children who experienced or were exposed to violence can have emotional, cognitive, and behavioural problems and were more likely to go on to experience violence in their adult relationships. Adults who, as children, had witnessed violence against a parent by the parent's partner were more than twice as likely to experience partner violence after the age of 15 years. While those who experienced abuse as a child were three times more likely to have experienced partner violence after the age of 15.<sup>193</sup>

Domestic and family violence for adults impacts physical, mental and reproductive health including increased prevalence of risky health behaviours such as smoking, alcohol and illicit drug use, and the increased risk of miscarriage for women. Homelessness was associated with having experienced domestic and family violence.

### Burden of injury and disease

The most recent estimates of the burden of disease and injury for Queensland include the impact of intimate partner violence on the health loss of women, specifically for the causal relationship with depressive disorders, suicide and self-inflicted injury, homicide and violence, and early pregnancy loss.<sup>24</sup> Limited data on the prevalence and relationship between the wider concept of domestic violence and family violence (where children and men are also exposed to violence) meant that current analysis of health outcomes was restricted to women who had experienced intimate partner violence only.

For young Queensland women aged 15–44 years, intimate partner violence followed alcohol use as the second leading cause of avoidable risk.<sup>24</sup> Around 3.5% of total health loss (DALYs), and 9.4% of years of life lost to premature death (YLL) for women in this age group, were attributed to intimate partner violence. For Queensland women aged over 15 years, 43% of the burden of suicide and injury was attributed to domestic violence, also 15% of the burden of depressive disorders and 50% of the burden of homicide and violence. One in five years of healthy life lost to early pregnancy loss was due to the burden of intimate partner violence. However, this represents less than 1% of the total burden attributed to intimate partner violence.

### Hospitalisations

Analysis of Australian hospital data found that of the women and girls who were hospitalised for injuries from assault, 76% of records included information on the relationship between the victim and the perpetrator (4788 of 6293 hospitalisations).<sup>194</sup> Of these cases, the most commonly reported perpetrator was spouse or domestic partner (59%), parents were the perpetrator

in 4% of cases, and other family members in 15% of hospitalisations. Of the victims of domestic partner assault who were aged over 15 years, 8% were pregnant.

### Deaths and homicide

The Domestic and Family Violence Death Review and Advisory Board reviewed domestic and family violence deaths in Queensland resulting from intimate partner or family violence, including deaths of those outside of the relationship (for example, new partners, or bystanders intervening in a domestic dispute), and suicide deaths with a significant prior history of domestic violence (as a victim or perpetrator). The board identified 63 Queensland deaths in 2016–17 that were associated with a history of domestic or family violence—22 homicides and 41 apparent suicide deaths.<sup>195</sup>

Between 2006–07 and 2016–17 there was little change in the prevalence of domestic and family violence homicides.<sup>196</sup> Over this period there were 270 domestic and family homicides—141 intimate partner homicides, 111 family homicides, and 18 collateral homicides involving new partners and bystanders.

Females were most likely to be killed by an intimate partner and represented 82% of intimate partner homicide, while new partners and bystanders who lost their life to homicide were more likely to be male (95%).<sup>195</sup> Victims of intimate partner homicide were mostly aged 25–44 years (57%), while 38% of family deaths were children aged under five years.

Indigenous Queenslanders were over represented as victims in domestic and family homicide deaths. Almost 1 in 5 deaths was identified as an Aboriginal or Torres Strait Islander person—17% of intimate partner homicides, 19% of family homicides, and 16% of new partner and bystander homicides.<sup>195</sup>

### Suicide

In 2016–17, 41 apparent suicide deaths had a clear history of domestic violence.<sup>195</sup> Of the 66 apparent suicide deaths identified by the Board between 2015–16 and 2016–17, 85% were a perpetrator of domestic and family violence, 8% were a perpetrator and victim, 5% were a victim and 3% were a child victim. Most (94%) apparent suicide deaths were males. Indigenous Queenslanders were over represented, with 14% of victims identified as Aboriginal or Torres Strait Islander.

### Expenditure

Violence against Queensland women and their children was estimated to cost Queensland between \$4.77 and \$5.65 billion in 2015–16.<sup>197</sup> Pain, suffering and premature death caused 48% of the cost, while the impact on the health system was 6.4% of this cost.

# Environmental risks

Environmental risks to health arise from a broad range of sources and are due to physical, chemical and biological factors.

Unhealthy environments have an additional impact on health loss through their interaction with metabolic and behavioural risk factors, generally based on the influence of the built environment, that is, the places where people live, learn, work and play. In 2011 it was estimated that 2% of the total burden of disease and injury in Queensland was due to occupational exposures and hazards.<sup>25</sup>

This section focuses on selected natural environmental risks that showcase the importance of a strong protection response to safeguard and improve the health of Queenslanders.

## Foodborne illness

Salmonella notifications are continuing to decline particularly in relation to *Salmonella typhimurium* (Figure 52), demonstrating the outcomes from the whole-of-government strategy to reduce foodborne illness in Queensland with a particular focus on poultry meat, egg and egg products.<sup>47</sup> Campylobacter rates have also reduced slightly (Figure 53), although not to the same extent as Salmonella.

As part of the Queensland strategy to reduce foodborne illness, a two-year chicken meat survey was finalised in February 2018. The aim of the study was to determine the prevalence of salmonella and campylobacter on raw chicken meat purchased at retail supermarkets in different regions across the state of Queensland. The data showed:

- no significant difference in prevalence between abattoir, region or portion type.
- a slight seasonal variation in campylobacter.
- no significant difference between campylobacter prevalence in delicatessen versus pre-packaged chicken products.
- no correlation between campylobacter counts and shelf life days.

- no significant correlation between chicken weight and campylobacter counts.
- significant difference in the level of campylobacter on chicken meat with or without skin. Chicken without skin had significantly higher loads than chicken with skin on.

Queensland Health is currently evaluating a 12-month retail offal survey to identify contamination rates. The survey identified that 71% of chicken offal was contaminated with campylobacter, highlighting that Queenslanders should take particular care with pâté which does not undergo a further processing step.

The 2017 national strategy for food regulation outlined requirements to reduce the incidence of foodborne salmonellosis and campylobacteriosis through targeting key food supply areas, such as poultry, eggs, horticulture (fresh produce), food service/retail, and consumer behaviours. A long-term objective is the integration of public health surveillance and investigation of food supplies to monitor progress and inform priorities and interventions.

Figure 52: Salmonella notifications, Queensland, 2014–2017<sup>47</sup>

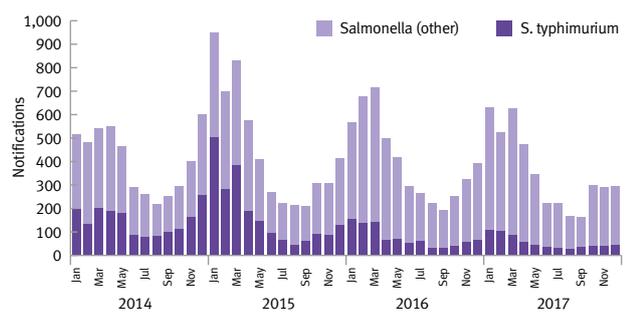
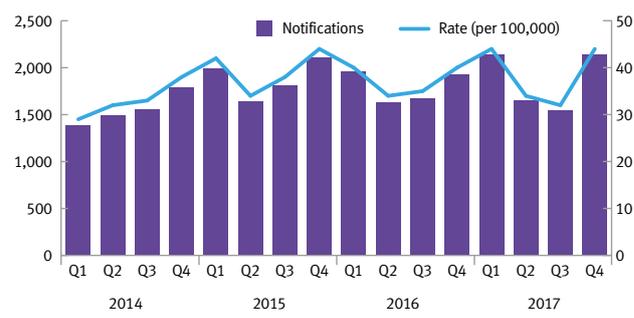


Figure 53: Campylobacter notifications, Queensland, 2014–2017<sup>47</sup>



The Queensland strategy (2018–2021) aligns with the national strategy and key components include:

- undertaking research to better understand the organisms, epidemiology and impact on food safety.
- developing supply chain control strategies to control foodborne illness.
- engagement with industry to identify appropriate interventions.
- a communication and engagement campaign targeting relevant stakeholders including retailers, food services and consumers.

## Lead exposure

Childhood lead exposure, particularly in mining and smelting communities, has been an ongoing public health concern worldwide, with health organisations lowering the health intervention level from 10µg/dL to 5µg/dL. In mining and smelting communities, such as Mount Isa, close attention needs to be paid to lead exposure of children under five years of age, due to their higher hand to mouth actions which increase the risk of exposure. To improve availability and accessibility of blood lead testing, the North West HHS introduced a point of care blood lead testing (POCT) screening program to supplement the venous blood lead testing programs.

During 2017 there were 820 POCT tests undertaken (on average, 68 tests per month), highlighting community acceptance of the program. An individual child may have presented more than once for a POCT. In 2017, 588 individual children (under five years of age) participated in the screening program. The POCT revealed 163 children with a blood lead level exceeding 5µg/dL. By comparison in 2016, 170 children had undertaken venous blood lead testing and 51 children were identified with elevated blood lead levels. The parents of children with elevated levels were provided with appropriate intervention measures to minimise the harmful health effects of lead exposure. The introduction of POCT has provided a significant benefit to the residents of the North West HHS through managing health risks from lead in the environment.

## Clandestine laboratories

Un-remediated former clandestine laboratories (that is, illegal drug laboratories commonly known as ‘clan labs’) have the potential to pose a significant risk to human health. Heavily contaminated areas occur where chemicals were used or cooked, or where chemicals were spilled. Residual contamination can be deposited on the walls, floors, ceilings, ventilation, appliances and other surfaces. Remediated sites have had the residual contamination cleaned and contained to eliminate the risk and to ensure the property is fit for residential occupation.

Health risks from exposure to un-remediated sites include mental health problems, skin conditions, respiratory problems and cardiovascular effects. Young children are most vulnerable. Although the number of clan labs being discovered by the Queensland Police Service has decreased since 2013 (Figure 54), new dangerous manufacturing methods have been identified, posing new risks to health. Controls under the *Public Health Act 2005* are being strengthened to enable the public health risks from clan labs to be addressed through effective enforcement.

Figure 54: Police detection of clandestine illegal drug laboratories, Queensland, 2012–2018

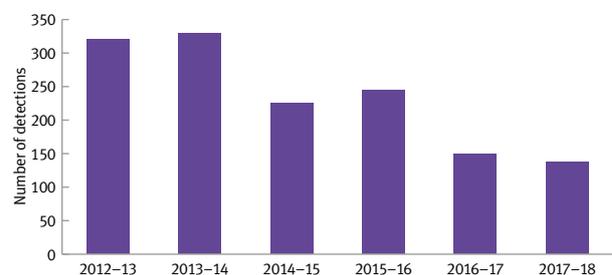
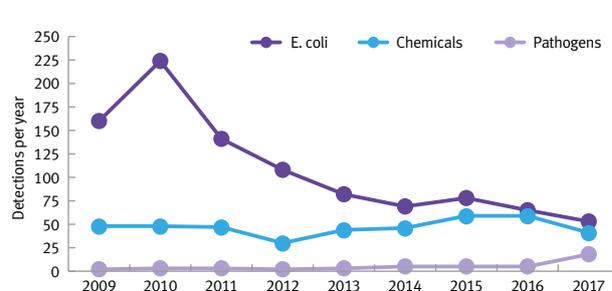


Figure 55: Detection of *E.coli*, chemicals and pathogens in drinking water supplies, Queensland, 2009–2017



## Drinking water quality

Queensland maintains a whole-of-government approach to addressing water quality issues. This includes a joint regulatory framework involving Queensland Health and the Department of Natural Resources, Mines and Energy to manage the quality of drinking water. Fluoridated drinking water is accessible by 72% of Queenslanders (further information on page 98).

All drinking water supplies in Queensland must be monitored for the presence for *Escherichia coli* (*E.coli*) at a frequency specified in public health legislation. *E.coli* is used as an indicator for organisms that live in animal intestines and are typically transmitted via the faecal-oral route. If water treatment processes are appropriately managed, all *E.coli* should be removed.

If *E.coli* is detected in a drinking water supply, the incident must be reported to the Department of Natural Resources, Mines and Energy. There has been a steady decrease in *E.coli* detections in drinking water since 2011 (Figure 55). The detection of chemicals and pathogens in drinking water remained lower than *E.coli* detections. This is an encouraging trend suggesting improved management of Queensland drinking water supplies.

## Safe and healthy drinking water in Indigenous local government areas project

Remoteness, inappropriate infrastructure and limited operator competency can impede provision of safe drinking water supplies in some Indigenous Queensland local governments.

Tropical Public Health Services (Cairns) is pioneering a new approach to building the capacity of Indigenous water operators to ensure the ongoing safety and quality of water supplied by Indigenous local governments, and to improve regulatory compliance.

The project is a key strategy for promoting the well-being of the Indigenous population in the far north and is an essential step towards 'Closing the Gap'.

## Data sources and methods: risk and protective factors

This chapter includes a selection of key risk and protective factors for Queensland. The ordering of risk factors follows the ranking of risks based on burden of disease analysis for Australia as described on page 10.

Many data sources are used in this chapter and each are cited. Prevalence data are largely derived from the Queensland preventive health surveillance system <https://www.health.qld.gov.au/research-reports/population-health/preventive-health-surveys> and from national surveys conducted either by ABS or AIHW.

Additional data on risk factor prevalence and attributable hospitalisation for HHSs and sociodemographic groups are available in the statistical tables published online (page vii for details).

Within this chapter, prevalence estimates are reported as both a percentage and the number of persons at risk. The number at risk is generated from percentage prevalence (derived from survey sample estimates), and estimated resident population. The projected population at risk is generated from prevalence trends and projected population estimates.

Assessment of risk factor trends is based on log linear models which are described in the companion methods report.<sup>1</sup> Trend assessment should not be based on individual year comparisons.

The methodology for estimating hospitalisations due to risk factors is described in the companion methods report.<sup>1</sup>

For further information:

- Preventive health surveys including the self report survey series undertaken by Queensland Health<sup>34</sup>
- Risk factor trends for Queensland<sup>91</sup>
- Previous reports from the Queensland Chief Health Officer<sup>73</sup>
- Australian Bureau of Statistics: National Health Survey series including Australian Health Survey<sup>49,110</sup>
- AIHW: National Drug Strategy Household Survey,<sup>51,52</sup> Australian Burden of Disease Study 2011<sup>24</sup>