



Measuring risky drinking according to the Australian alcohol guidelines

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Citation

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This report explores the revisions to the Australian alcohol guidelines released by the National Health and Medical Research Council in 2020, and provides a method and rationale for measuring alcohol consumption data according to the revised guidelines.

Methods are illustrated using data from the [2019 National Drug Strategy Household Survey](#) (NDSHS).

Cat. no: PHE 284

Findings from this report:

- [National Drug Strategy Household Survey](#)

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Measuring risky drinking according to the Australian alcohol guidelines

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Summary

In December 2020, the National Health and Medical Research Council (NHMRC) released the revised Australian guidelines to reduce health risks from drinking alcohol (NHMRC 2020). These guidelines were created following a review of the health effects of consuming alcohol, and define drinking behaviours that Australians can follow to reduce their risk of alcohol-related disease or injury.

Australian alcohol consumption behaviours are routinely reported in the National Drug Strategy Household Survey (NDSHS) which is undertaken every three years, the most recent collection occurring in 2019. The aim of this technical paper is to provide a methodology for measuring risky alcohol consumption according to the revised Australian alcohol guidelines.

To illustrate the methodological approach, data from the NDSHS have been used to calculate proportions of people who consumed alcohol in ways that reduced the health risks associated with drinking alcohol. The data provide a benchmark for future reporting to show how drinking behaviours may change following the release of the revised Australian alcohol guidelines.

Introduction

The National Drug Strategy Household Survey (NDSHS) collects self-reported data on the amount of alcohol that people in Australia consume. One way that alcohol consumption is typically reported is whether it occurs at a level that may have increased health risks, as defined by the Australian guidelines to reduce health risks from drinking alcohol (NHMRC 2009, 2020). Many other national sources of alcohol data also report against the Australian alcohol guidelines, including the National Health Survey (NHS) and the National Aboriginal and Torres Strait Islander Social Survey (NATSISS) and Health Survey (NATSIHS).

The revised Australian guidelines to reduce health risks from drinking alcohol were released in December 2020 (NHMRC 2020). The purpose of this paper is to define the method for measuring risky drinking against each of the 2020 guidelines using data from the 2019 NDSHS and prior, with definitions that can be generalised to other sources of alcohol consumption data. While methodological challenges in measuring alcohol consumption are well known (AIHW 2011) they are not addressed here.

What are the revised Australian alcohol guidelines?

These are the Australian guidelines to reduce health risks from drinking alcohol, as published by the National Health and Medical Research Council (2020).

Guideline 1: To reduce the risk of harm from alcohol-related disease or injury, healthy men and women should drink no more than 10 standard drinks a week and no more than 4 standard drinks on any one day.

The less you drink, the lower your risk of harm from alcohol.

Guideline 1 does not describe a “risk-free” level of drinking. As a general rule, the less alcohol a person chooses to drink, the lower their risk of alcohol-related harm. Drinking within the levels outlined in guideline 1 keeps the lifetime risk of dying from an alcohol-related disease or injury to below 1 in 100 for healthy men and women.

Guideline 2: To reduce the risk of injury and other harms to health, children and people under 18 years of age should not drink alcohol.

Guideline 3:

- a. To prevent harm from alcohol to their unborn child, women who are pregnant or planning a pregnancy should not drink alcohol.
- b. For women who are breastfeeding, not drinking alcohol is safest for their baby.

Reporting NDSHS data according to the Australian alcohol guidelines

The NDSHS does not contain questions that specifically address the Australian alcohol guidelines. Instead, general alcohol consumption questions are asked and the proportion of people who are drinking at levels and frequencies considered to be risky by the guidelines is estimated from those results.

The most recent [2019 NDSHS report](#) included analysis of the drinking habits of Australian residents according to the previously released *Australian guidelines to reduce health risks from drinking alcohol* (NHMRC 2009). These guidelines were current advice at the time that the 2019 survey was conducted. As such, the results cannot be used to estimate how many people were aware of the guidelines or how many people knowingly had drinking patterns that put their health at risk.

Results from the NDSHS can be used to inform the current guidelines by re-analysing 2001–2019 alcohol consumption data. Instead of guideline adherence, they show broad changes in drinking behaviour prior to 2020 and can give an indication of how many people were drinking at levels that increased their risk of alcohol-related disease or injury according to the current understanding of what constitutes a 'risky' amount of alcohol.

The re-analysed data may also act as a benchmark for the revised Australian alcohol guidelines. Future results can be compared to this benchmark to show how drinking behaviours change over time.

Each of the following sections provides a definition of the drinking behaviour that is classified as risky according to the guideline, as well as population-level results for 2019 and earlier years. The definitions used in this report will be used by the AIHW to report alcohol risk in future work. All data presented are available through the [online data tables](#).

Guideline 1: How the guideline is measured

Guideline 1 in the *Australian guidelines to reduce health risks from drinking alcohol* (NHMRC 2020) is:

To reduce the risk of harm from alcohol-related disease or injury, healthy men and women should drink no more than 10 standard drinks a week and no more than 4 standard drinks on any one day. The less you drink, the lower your risk of harm from alcohol.

This guideline contains two recommendations: not to consume more than 10 standard drinks per week and not to consume more than 4 standard drinks on any single day. Exceeding either of these recommendations results in an increased risk of alcohol-related disease or injury, so the method for measuring each recommendation must be defined separately.

Recommendation 1: 10 standard drinks a week

The 10 standard drinks per week recommendation defines an average weekly threshold. To assess the recommendation, survey questions must be able to estimate the average number of standard drinks a person consumes each week.

The NDSHS contains several questions which ask about patterns of drinking over the past 12 months, including **quantity-frequency** measures, captured by the following 2 questions:

- In the last 12 months, how often did you have an alcohol drink of any kind?
- On a day that you have an alcohol drink, how many standard drinks do you usually have?

And **graduated quantity-frequency** measures, captured by the following question:

- Please record how often in the last 12 months you have had each of the following number of standard drinks in a day:
 - 20 or more standard drinks a day
 - 11–19 standard drinks a day
 - 7–10 standard drinks a day
 - 5–6 standard drinks a day
 - 3–4 standard drinks a day
 - 1–2 standard drinks a day
 - Some alcohol but less than 1 standard drink a day
 - None i.e. no alcohol in a day.

Both measures are asked of all respondents (Australian residents aged 14 and over). Each respondent's annual alcohol consumption can be estimated either by the quantity-frequency measures or the graduated quantity-frequency measures. This is typically done by totalling the number of standard drinks consumed by a person over the last 12 months, and then dividing it by 52.143 to obtain an average weekly amount of alcohol consumed. If this results in an average weekly consumption of more than 10 standard drinks (for either the quantity-frequency or the graduated quantity-frequency measure), then the respondent is considered to have consumed alcohol at levels that increased their risk of harm above 1 in 100 (Supplementary table G3).

Recommendation 2: 4 standard drinks on any one day

Both the quantity-frequency and graduated quantity-frequency measures in the NDSHS include categories above and below the 4 standard drink threshold, so it is possible to identify responses where respondents have consumed more than that in a single day, as well as how often they did so (typically reported as daily, weekly, monthly or yearly).

Combining both recommendations into a single estimate for drinking that reduces health risks from drinking alcohol

With different frequencies of exceeding 4 drinks in a single day, a single frequency measurement must be chosen for the measurement of guideline 1. Recommendation 1 is calculated across an entire year to estimate whether a respondent has consumed alcohol in ways that increased their risk of harm over a 12 month period. The second recommendation should similarly look at regular drinking behaviour that exceeds the 4 standard drinks in a day recommendation over a 12 month period (Supplementary table G4).

Including people in guideline 1 who have consumed more than 4 standard drinks on any one day in the previous year creates a large disparity between people consuming an average of more than 10 standard drinks per week (i.e. over 500 standard drinks across the year, with an increased chance of dying due to alcohol-related disease or injury) and people who have consumed more than 4 standard drinks once or twice throughout the year (and who had an increased risk of alcohol-related illness or injury during those occasions).

Initial results for risky drinking patterns according to guideline 1 were explored by examining two different frequencies of consuming more than 4 standard drinks in a single day:

- Once per week (to align with the weekly timeframe of the 10 standard drinks recommendation); and
- Once per month (which was the typical frequency that AIHW reported for “single occasion risk” from 2010 to 2019, following the previous iteration of the Australian alcohol guidelines (NHMRC 2009)).

For each survey wave between 2001 and 2019, the difference between the 'once a week' and 'once a month' definitions was 6–7 percentage points but the overall trend was the same. This indicates that the choice of frequency does not impact on trends for risky drinking but does have an effect on the overall prevalence rate.

After consultation with the NHMRC, it was advised that the 'once a month' definition should be used. This has the benefit of being consistent with previous AIHW reporting on alcohol risk, and also captures patterns of risky drinking (such as binge drinking) that may occur frequently, but not as often as weekly (for example, with a person's pay cycle).

This definition does not indicate that drinking more than 4 standard drinks in a single day less often than once a month is safe—the guideline indicates that exceeding 4 standard drinks on any one day results in an increased risk of alcohol-related injury or disease. The less a person drinks, the lower their risk of harm from alcohol. This definition is designed to estimate the proportion of people who consistently exceeded the recommended alcohol consumption guideline over the previous 12 months.

Final measurement definition for guideline 1

Any person who, in the past 12 months:

- Consumed fewer than 10 standard drinks per week on average; and
- Never consumed more than 4 standard drinks on a single day (or did so less often than once per month on average)

will be classified as having consumed alcohol in ways that reduced their risk of experiencing alcohol-related disease or injury (i.e. reduced the lifetime risk of dying from alcohol-related disease or injury to below 1 in 100 for healthy men and women).

In contrast, people who reported drinking more than 10 standard drinks per week or who drank more than 4 standard drinks on a single day at least once a month on average will be classified as having consumed alcohol in ways that increased their risk of harm.

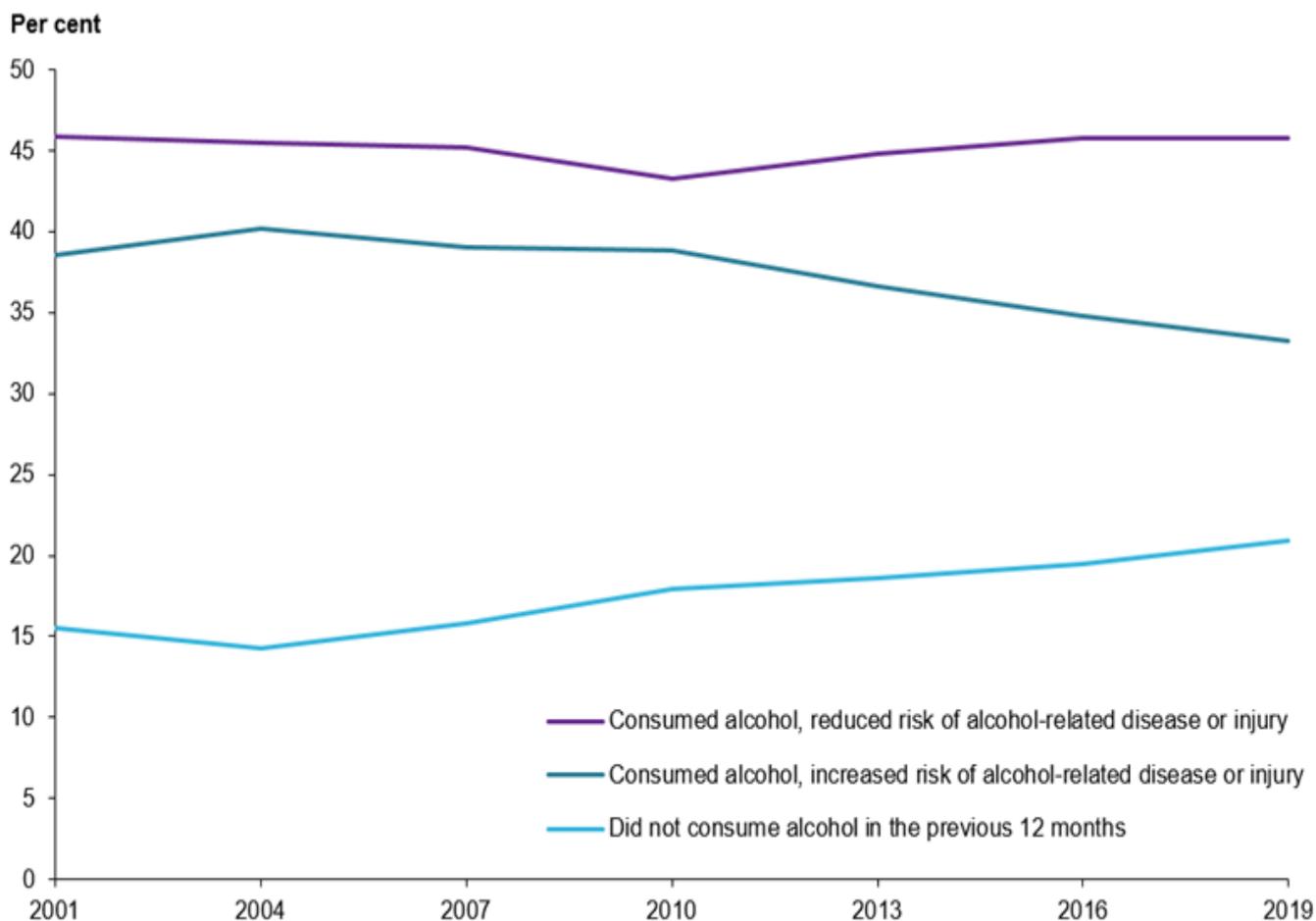
Guideline 1 applies to healthy men and women aged 18 years and over. Results below are for adults aged 18 and over. The online data tables also include results for the entire NDSHS sample, as a measure of alcohol consumption rather than drinking behaviour relative to guideline advice.

How many adults drank at levels that increased their risk of alcohol-related disease or injury?

These results do not indicate how many people knowingly put their health at risk according to the revised Australian alcohol guidelines, as that advice was not available at the time of the survey. Instead, they provide historical information on the proportion of people who drank at levels that increased their risk of harm, according to the current understanding of the health risks of consuming alcohol (NHMRC 2020).

Using this new approach, in 2019 1 in 3 adults (33%) consumed alcohol at levels that put them at risk of alcohol-related disease or injury (Figure 1). This was slightly lower than the proportion of people who did so in 2016 (35%), and has continued a generally declining trend seen since 2004, when 40% of adults consumed alcohol at risky levels.

Figure 1: Alcohol consumption patterns among people aged 18 and over, split by the thresholds outlined in the definition of Guideline 1, 2001 to 2019



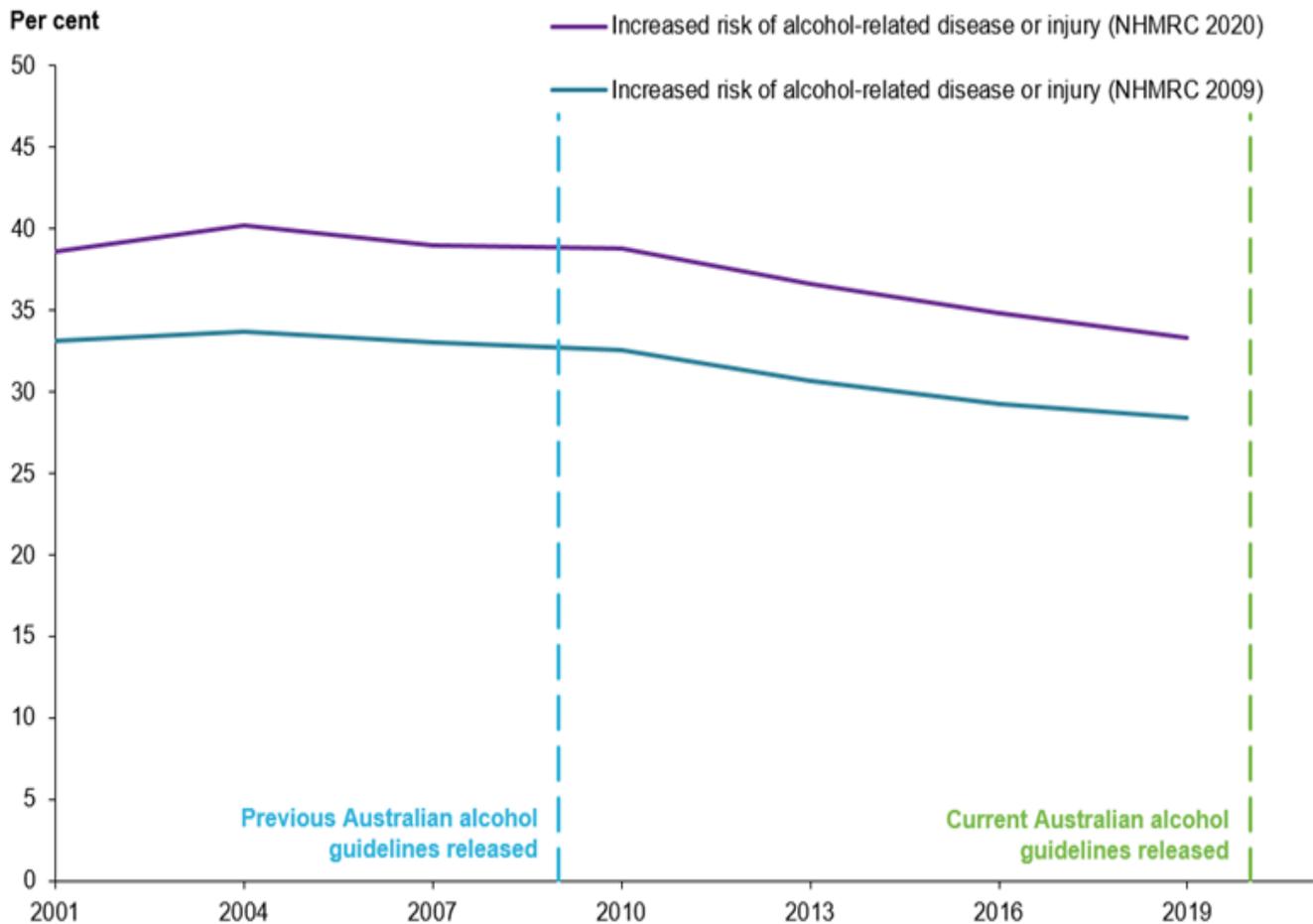
Source: Table G.2

Implications of the guideline revisions on population-level reporting of risky alcohol consumption

The revisions to the Australian alcohol guidelines (NHMRC 2020) included reducing the recommended weekly average alcohol consumption for adults, which has implications for the analysis of population-level alcohol consumption data in the NDSHS.

To examine the impact of this reduction, the total proportion of people drinking 'at risky levels' according to guidelines 1 and 2 of the previous iteration of the Australian alcohol guidelines (NHMRC 2009) is presented in Figure 2. It combines the proportion of people who had exceeded either the lifetime risk (more than 2 drinks per day on average) or the single occasion risk (more than 4 drinks on a single occasion at least monthly) guidelines into a single estimate for risky drinking, and compares it to the proportion of people at increased risk of experiencing alcohol-related disease or injury according to the revised guidelines (more than 10 drinks per week on average or more than 4 drinks on a single day at least monthly) (NHMRC 2020).

Figure 2: Proportion of people aged 18 and over at increased risk of alcohol-related disease or injury, according to the previous and current Australian alcohol guidelines, 2001 to 2019



Notes

1. 2020 risky drinking is derived from NHMRC guideline 1: No more than 10 standard drinks a week and no more than 4 standard drinks on any one day. The proportion drinking in ways that increased their risk includes those who consumed more than 10 standard drinks per week on average, or more than 4 standard drinks in a single day at least once a month on average. Reduced risk refers to a risk of dying due to alcohol-related illness or injury below 1 in 100.

2. 2009 risky drinking is derived from the previous NHMRC alcohol guidelines 1 and 2. The proportion drinking in ways that increased their risk includes those who consumed more than 2 standard drinks per day on average, or consumed more than 4 standard drinks on a single occasion at least once a month on average.

Source: Table G.2

As shown in Figure 2, the changes to the Australian alcohol guidelines result in an increased proportion of adults classified as drinking at risky levels. However, the overall trend is similar: a slight decline in the proportion of people at increased risk of harm from drinking alcohol from 2004 to 2010, followed by a steeper decline to 2019. This shows that the guideline revisions do not affect the trends in alcohol consumption seen since 2001, although they do have an impact on the overall estimate of the proportion of people who are defined as being at increased risk of alcohol-related disease or injury.

Guideline 2: How the guideline is measured

Guideline 2 in the *Australian guidelines to reduce health risks from drinking alcohol* (NHMRC 2020) is:

To reduce the risk of injury and other harms to health, children and people under 18 years of age should not drink alcohol.

In 2019, the scope of the NDSHS was people aged 14 and over. In relation to Guideline 2, the data from the NDSHS captured the drinking behaviours of 14–17 year olds and cannot be used to estimate alcohol consumption among younger age groups.

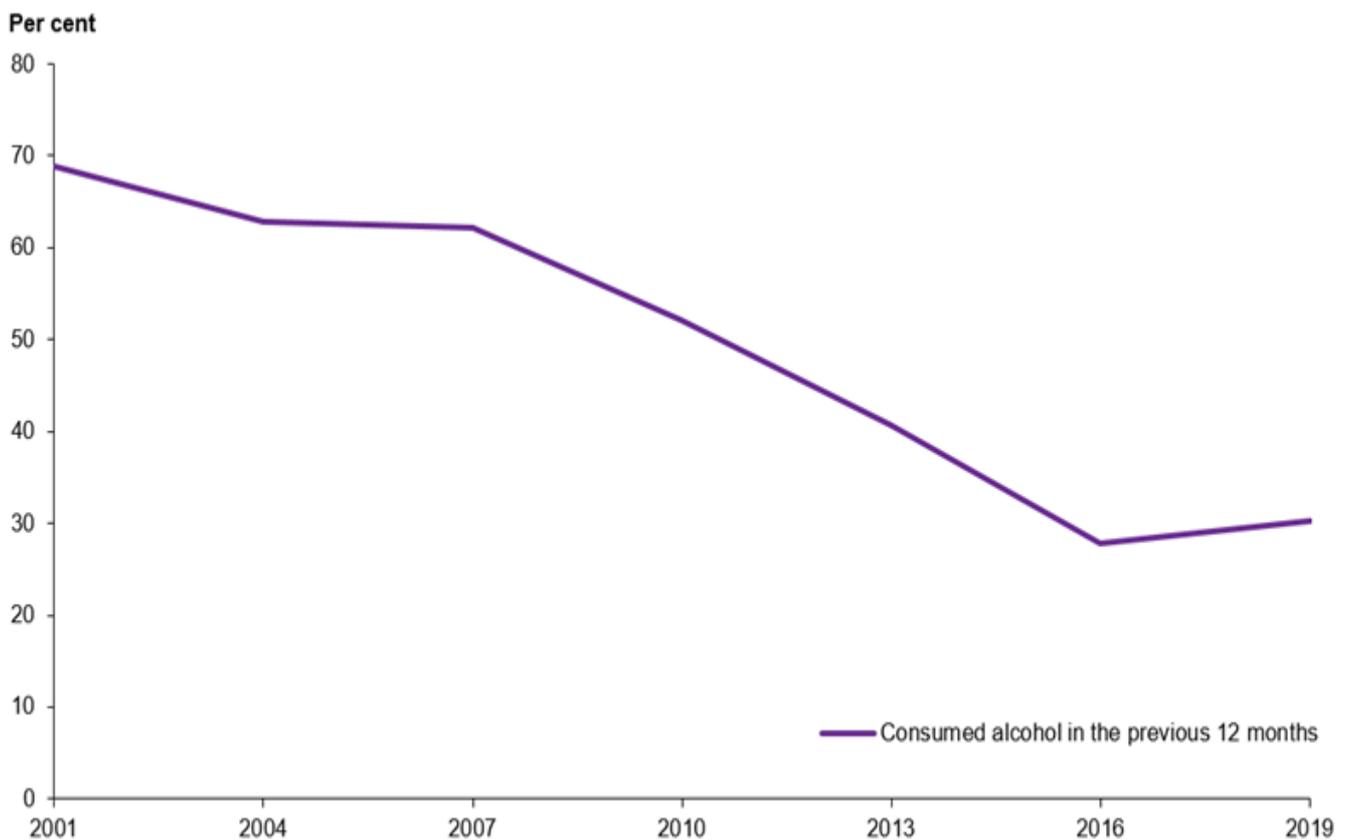
Definition

Any person aged 14–17 who did not consume alcohol in the previous 12 months at the time of the survey is considered to have prevented harm from alcohol by not drinking. Children and young people aged 14–17 who did drink alcohol in the previous 12 months will be classified as having put their health at risk.

How many young people put their health at risk by drinking?

In 2019, 3 in 10 people (30%) aged 14–17 reported that they drank alcohol in the 12 months prior to completing the survey (Figure 3). This was similar to the proportion who reported drinking in the previous 12 months in 2016 (28%), but has substantially declined since 2001 when almost 7 in 10 people (69%) aged 14–17 had consumed alcohol in the previous 12 months.

Figure 3: Proportion of people aged 14 to 17 who consumed alcohol in the previous 12 months, 2001 to 2019



Source: Table G.5

Guideline 3: How the guideline is measured

Guideline 3 in the *Australian guidelines to reduce health risks from drinking alcohol* (NHMRC 2020) contains two guidelines for women who are pregnant or breastfeeding:

- a. To prevent harm from alcohol to their unborn child, women who are pregnant or planning a pregnancy should not drink alcohol.
- b. For women who are breastfeeding, not drinking alcohol is safest for their baby.

The NDSHS has several questions regarding the consumption of alcohol (as well as other drugs) while pregnant or breastfeeding:

- At any time in the last 12 months when you were pregnant but did not yet know, did you use any of the following?
- At any time in the last 12 months when you were pregnant, did you use any of the following after you knew you were pregnant?
- At any time in the last 12 months when you were breastfeeding, did you use any of the following?

There is no explicit question regarding the use of alcohol while planning a pregnancy, so the 2019 NDSHS can only report results for women who consumed or did not consume alcohol while pregnant. This includes drinking either before or after they knew that they were pregnant.

Results from the NDSHS are combined to include women who consumed alcohol either before or after they knew they were pregnant. Results are also included for women who consumed alcohol while breastfeeding.

Definition

Any woman who:

- did not consume alcohol while they were pregnant and did not know; and
- did not consume alcohol while they knew that they were pregnant

is considered to have prevented harm from alcohol to their unborn child according to guideline 3A.

Additionally, any woman who did not consume alcohol while breastfeeding is classified as having prevented harm from alcohol to their child according to guideline 3B.

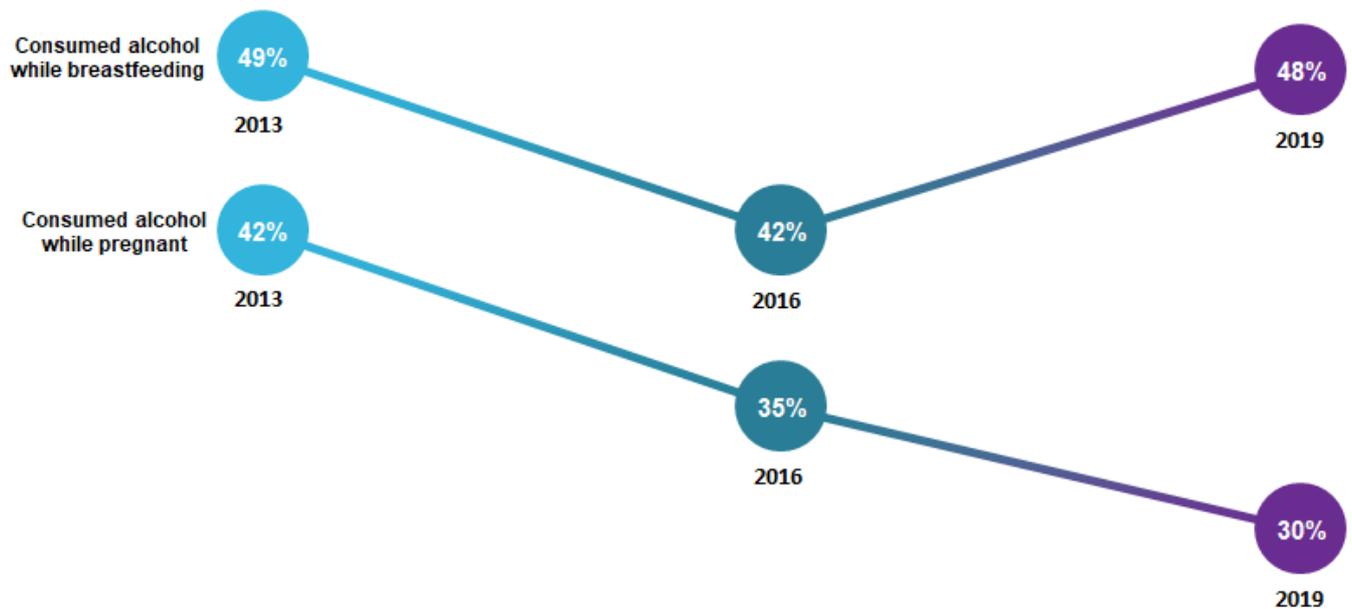
As the base populations for these two results are different, they are reported separately.

How many women consumed alcohol while pregnant or breastfeeding?

In 2019, 30% of women aged 14–49 who were pregnant in the previous 12 months reported drinking alcohol while pregnant (this includes the proportion who consumed alcohol before knowing that they were pregnant). This has substantially decreased since 2013, when 42% had consumed alcohol while they were pregnant.

In 2019, 1 in 2 (48%) women who were breastfeeding in the previous 12 months reported consuming alcohol in that time, a similar proportion to 2013 (49%) (Figure 4).

Figure 4: Proportion of women aged 14 to 49 who consumed alcohol while pregnant or breastfeeding, 2013 to 2019



Source: Table G.6

Future reporting of alcohol consumption data

The AIHW will continue to examine how the revisions to the guidelines impact alcohol data and reporting in Australia. Future data collections, such as the 2022 National Drug Strategy Household Survey, will be reported according to the current advice in the Australian alcohol guidelines (NHMRC 2020).

References

AIHW (Australian Institute of Health and Welfare) 2011. Measuring alcohol risk in the 2010 National Drug Strategy Household Survey: implementation of the 2009 Alcohol Guidelines. Drug Statistics Series no. 26. Cat. no. PHE 152. Canberra: AIHW.

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