



Australian Burden of Disease Study 2018: Interactive data on disease burden among Aboriginal and Torres Strait Islander people

Web report | Last updated: 10 Mar 2022 | Topic: [Burden of disease](#)

About

Burden of disease is a measure of the years of healthy life lost from living with, or dying from disease and injury. The interactive data visualisations display burden estimates from the [Australian Burden of Disease Study 2018: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people](#). Estimates for specific diseases and injuries for Australia are for the years 2003, 2011 and 2018.

There is also another interactive data set to explore: [risk factor burden](#).

Cat. no: BOD 31

- [Data](#)
- [Frequently asked questions](#)

Findings from this report:

- [Indigenous Australians lost 240,000 years of healthy life from all diseases and injuries in 2018](#)
- [The gap in total burden between Indigenous and non-Indigenous Australians narrowed by 16% between 2003 and 2018](#)
- [The leading cause of total burden among Indigenous Australians in 2018 were mental & substance use disorders](#)
- [Injuries, cancer and cardiovascular diseases caused the most fatal burden among Indigenous Australians in 2018](#)



Overview

Burden of disease measures the gap between a population's actual health and the 'ideal', where everyone lives in full health to an ideal age. Disease burden is measured using the summary measure of disability-adjusted life years (DALY). DALY caused by premature death (fatal burden), are known as 'years of life lost' (YLL) and are measured against an ideal life expectancy of 86 years. DALY caused by living in poor health (non-fatal burden) are known as 'years lived with disability' (YLD). YLD are weighted by severity of disease to consider the different impacts of different diseases. 1 DALY is equivalent to 1 year of healthy life lost and is equal to YLL plus YLD.

The Australian Burden of Disease Study (ABDS) 2018 provides the most recent Australian-specific estimates of disease burden in Australia. These pages present information on the burden among Aboriginal and Torres Strait Islander people. Data on burden of disease in the total Australian population can be found in the [Australian Burden of Disease Study 2018: Impact and causes of illness and death in Australia](#) report and in the [Interactive data on disease burden](#). Estimates for Aboriginal and Torres Strait Islander people are available by age and sex for 17 disease groups, 219 diseases and injuries and for selected population groups (state/territory, remoteness areas, and socioeconomic group). In addition, changes between the years 2003, 2011 and 2018 can be explored.

Estimates for 2011 and 2003 from the ABDS 2018 replace the estimates for these years, which were published as part of the ABDS 2011. Estimates in the two studies (ABDS 2011 and ABDS 2018) differ due to updates in disease-specific methodology.

The interactive data visualisations complement the ABDS 2018 detailed PDF reports and summary reports by enabling users to explore the data in more detail and filter/customise the data and figures to meet their information needs.

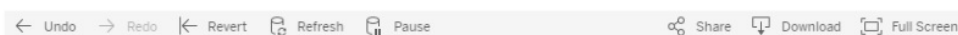
Use the interactive graph below to explore the leading causes of disease burden among Aboriginal and Torres Strait Islander people by age group and disease group for 2018. Data visualisations displaying estimates of disease burden due to various risk factors are available in the interactive web report: [Interactive data on risk factor burden](#).

What is included in the interactive Indigenous burden of disease data visualisations?

The Indigenous Burden of Disease Study 2018 data visualisation tool includes estimates of total, non-fatal and fatal burden, as well as deaths among Indigenous Australians for:

- Australia in the years 2003, 2011 and 2018
- States and territories for 2011 and 2018 (New South Wales, Queensland, Western Australia and the Northern Territory)
- Remoteness area and socioeconomic group for 2011 and 2018
- Gap in health outcomes for Indigenous and non-Indigenous Australians including changes over time
- Information about the quality of data and methods used to generate estimates
- Frequently asked questions on methods, data sources and definitions
- Further information to assist interpretation of the results is shown when hovering over the information icons.

Navigating the dashboards



The toolbar at the bottom of the data dashboards enables users to interact with the data in different ways:

- Undo = Undo the filter
- Redo = Redo the filter
- Revert = Clears all filters and reverts visualisation to defaults
- Refresh = Refreshes the data
- Pause = Pauses the data (filters do not work if this button is selected)
- Share = Generates a link that can be shared (note that filters will not be applied when link is shared)
- Download = Allows a downloadable file as either an image (PNG), PDF or PowerPoint file. This is a useful way to save snapshots of the data to include in a document or presentation.
- Full screen = Displays the dashboard in full screen mode (press Esc to return to original view)

This interactive data visualisation gives an overview of the leading causes of burden of disease in Australia for 2018. There are 2 sections which can be customised to report data according to age group and sex. The first section are disease group icons, for the leading 5 disease groups contributing to total burden (DALY). These icons act as a filter for the second section, which is a stacked bar chart. The stacked bar chart reports the amount of burden among Indigenous Australians for the disease group selected, by disease cause. Each bar is split into fatal burden (number of YLL) and non-fatal burden (number of YLD).

Burden of disease among Indigenous Australians 2018

Select from the following:

Age Group:
All ages

Sex:
Persons

DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost

Top 5 disease groups contributing to burden: Indigenous Australians, All ages

The top 5 disease groups presented below, are ordered in terms of contribution to total burden (DALY) ranking. Click on each icon to vie..



Mental and substance use disorders



Injuries



Cardiovascular diseases

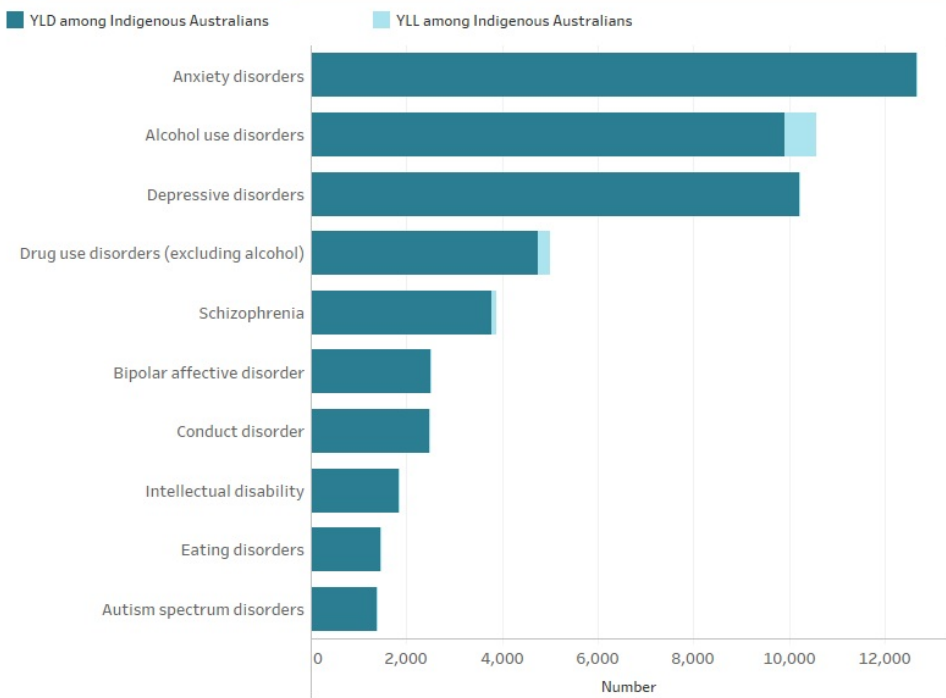


Cancer and other neoplasms



Musculoskeletal disorders

Top 10 causes contributing to the disease group selected above



Note: Estimates for anxiety and depressive disorders relate to people aged 4 years and over only. Estimates for suicide relate to people aged 9 years and over only.

Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.

Burden of disease in Australia

Use the interactive graphs to explore the number or rate of total burden (DALY), non-fatal burden (YLD), fatal burden (YLL) and deaths in Australia among Aboriginal and Torres Strait Islander people by disease or injury in 2003, 2011 and 2018.

See Chapter 2 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death in Aboriginal and Torres Strait Islander people](#) report for more information on total burden (DALY).

This interactive data visualisation gives an overview of burden of disease in Australia. There are 3 sections which can be customised to report data according to type of burden, year, sex, disease group and disease. The first section is a sentence, which reports the total amount and rate of burden (per 1,000 population) among Indigenous Australians for the selected type of burden, year, sex, disease group and disease. The second section is a column chart, which reports the amount of burden among Indigenous Australians by 5-year age groups for the selected type of burden, year, sex, disease group and disease. A line graph is superimposed on the column chart to show the rate of burden (per 1,000 population) among Indigenous Australians by 5-year age groups. The third section is a tree map showing the amount of burden among Indigenous Australians due to each disease and injury for the selected type of burden, year, sex and disease group. Each rectangle within the tree map represents a different disease or injury, is shaded according to the disease group it belongs to and is sized proportionately to the amount of burden the disease or injury caused.

Burden of disease among Indigenous Australians 2018

Select from the following:

Measure: DALY Year: 2018 Sex: Persons Disease group: All Disease or injury: All

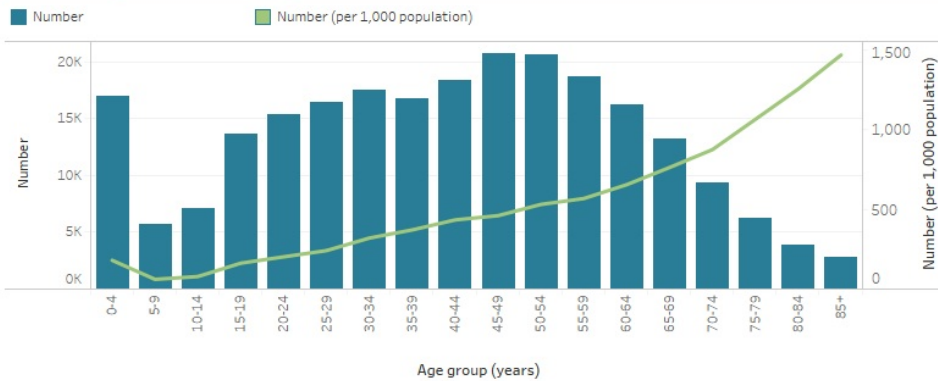
DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost



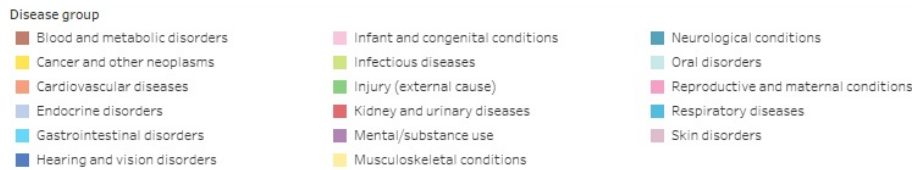
Nationally in 2018, there were 239,942 DALY in Indigenous Australians from the disease/s selected, equivalent to 399.6 per 1,000 population

Note: Diseases displaying a rate of 0.0 per 1,000 population refer to a rate <0.05 per 1,000 population.

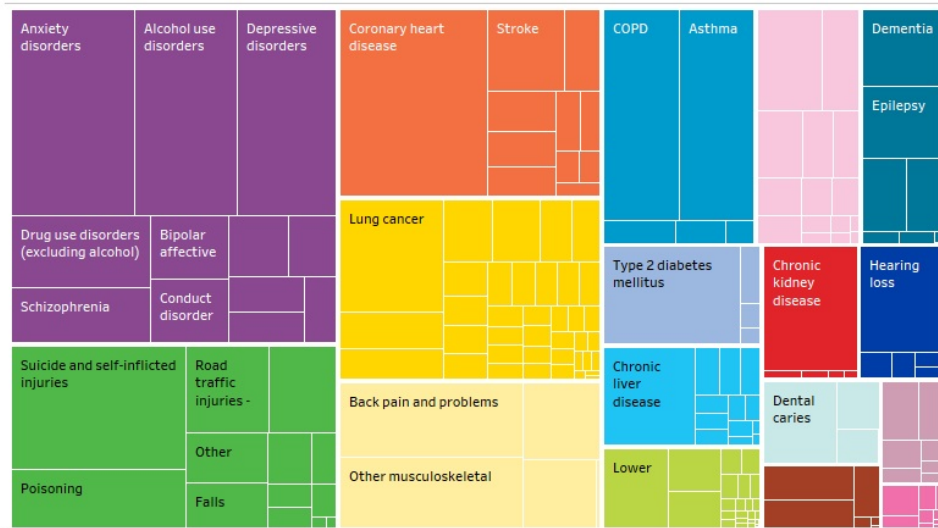
DALY in Indigenous Persons by age, 2018



DALY in Persons by disease, 2018



Hover over boxes for more information.



Notes:

1. Rates were age-standardised to the 2001 Australian Standard Population and are expressed as per 1,000 population.
2. As burden of disease estimates are to some extent based on modelled deaths and prevalence data, individuals cannot be identified where there are small numbers reported.
3. Estimates for anxiety and depressive disorders relate to people aged 4 years and over only. Estimates for suicide relate to people aged 9 years and over only.

Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.

Fatal vs. non-fatal burden

Burden of disease estimates are one of the only population health measures which combines health loss from living with, and dying prematurely from, illness and injury.

The contribution of fatal (YLL) and non-fatal burden (YLD) to the total burden (DALY) experienced among Aboriginal and Torres Strait Islander people in Australia differs by age, sex and disease. Some disease groups, such as cancers, contribute substantial fatal burden, whilst diseases which don't usually cause death, such as back pain, contribute substantial non-fatal burden.

Use the interactive graph to explore the contribution of fatal and non-fatal burden to the total burden of disease among Indigenous Australians for 2003, 2011 and 2018 by sex, age group and disease or injury.

See Chapters 3 and 4 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death in Aboriginal and Torres Strait Islander people](#) report for more information on non-fatal and fatal burden.

This interactive data visualisation compares the amount and proportion of burden that is fatal vs. non-fatal among Indigenous Australians. There are 2 sections which can be customised to report data according to year, sex, disease group and disease. The first section is a single horizontal bar which is shaded to show the proportion of total burden which is non-fatal and fatal for the selected year, sex, disease group and disease. The second section has two horizontal stacked bar charts side by side; the left bar chart represents non-fatal burden and the right bar chart represents fatal burden. Each bar chart shows the amount of burden by 5-year age groups for the selected year, sex, disease group and disease.

Burden of disease among Indigenous Australians 2018

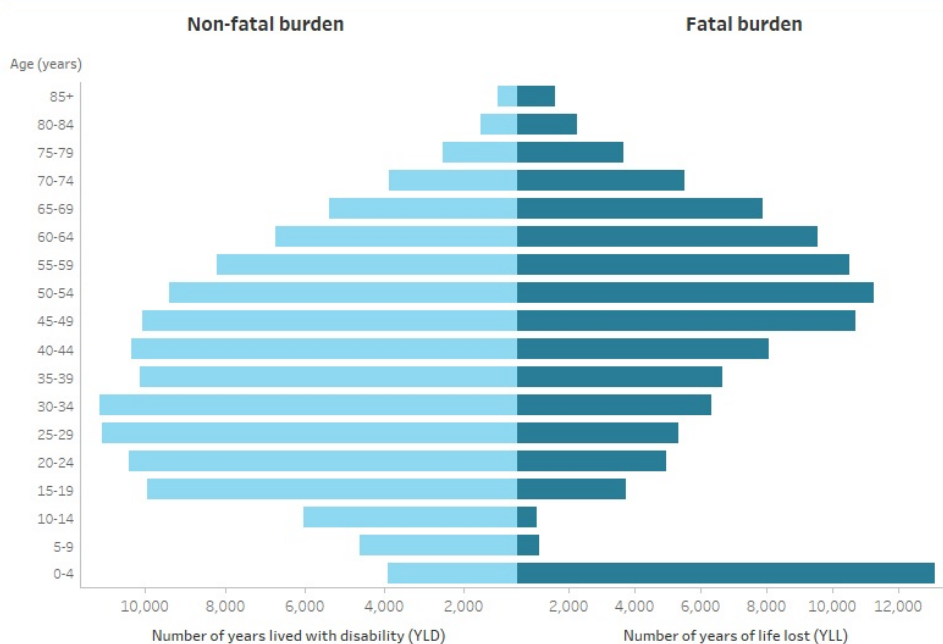
Select from the following:

Year: 2018 Sex: Persons Disease group: All Disease or injury: All

Fatal vs. Non-fatal burden in Indigenous Australians, 2018

52.7% non-fatal 47.3% fatal

Fatal vs. Non-fatal burden by age, Indigenous Australians, 2018



Note: Estimates for anxiety and depressive disorders relate to people aged 4 years and over only. Estimates for suicide relate to people aged 9 years and over only.

Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.



Gap in health outcomes

Measuring the ‘gap’ in disease burden between Indigenous and non-Indigenous Australians is of key interest to current policy makers, as reflected in the National Agreement on Closing the Gap’s socioeconomic outcome target to close the gap in life expectancy within a generation (Joint Council on Closing the Gap 2020).

Indigenous and non-Indigenous rates presented, have been age-standardised in order to remove the effect of differences in age structure between the 2 populations. Rate ratios and rate differences are presented as measures of the gap in disease burden.

In addition, results are presented on the diseases contributing most to the health gap (measured as the proportion that each disease group contributes to the total DALY rate difference).

Disease group contribution to the total burden (DALY) varied for Indigenous and non-Indigenous Australians, and by year. Use the interactive graph below to explore data on how much disease groups contributed to total burden in 2018, 2011 and 2003, for Indigenous and non-Indigenous Australians.

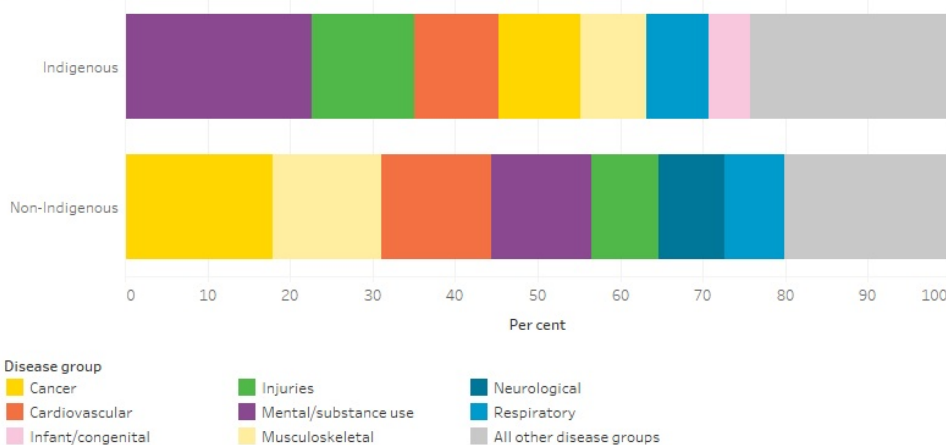
This interactive data visualisation looks at the per cent contribution of disease groups to total burden (DALY, by Indigenous status, for 2018, 2011 and 2003

Burden of disease among Indigenous Australians 2018

Select from the following:

Year:
2018

Disease group contribution to total burden (DALY), by Indigenous status, 2018



Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Use the interactive graph below explore data on the gap in health outcomes between Indigenous and non-Indigenous Australians for 2018, 2011 and 2003. The ‘Contribution’ tab shows disease group contribution to the gap in health outcomes. The ‘Population comparison’ tab compares health outcomes, by disease group using rate differences and rate ratios, and by age group using rate ratios and age-specific DALY rates (per 1,000 people).

See Chapter 6 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death in Aboriginal and Torres Strait Islander people](#) report for more information on the gap in health outcomes.

Tab 1: This tab is an interactive data visualisation looking at the per cent contribution of disease groups to the gap in health outcomes by measure (DALY, YLD, YLL), 5-year age groups and sex, for 2018, 2011 and 2003.

Tab 2: This tab is an interactive data visualisation comparing the gap in health outcomes between Indigenous and non-Indigenous populations for 2018, 2011 and 2003. It is possible to view data by disease group and age group using a filter. The chart presenting data by disease group is a column chart with a mark, the columns show the rate difference and the marks show the rate ratios. The chart presenting data by 5-year age groups is a clustered column chart with two columns and mark that crosses both columns. The columns show the age-standardised DALY rates (per 1,000 population) for Indigenous and non-indigenous Australians, while the marks show the rate ratios.

Burden of disease among Indigenous Australians 2018

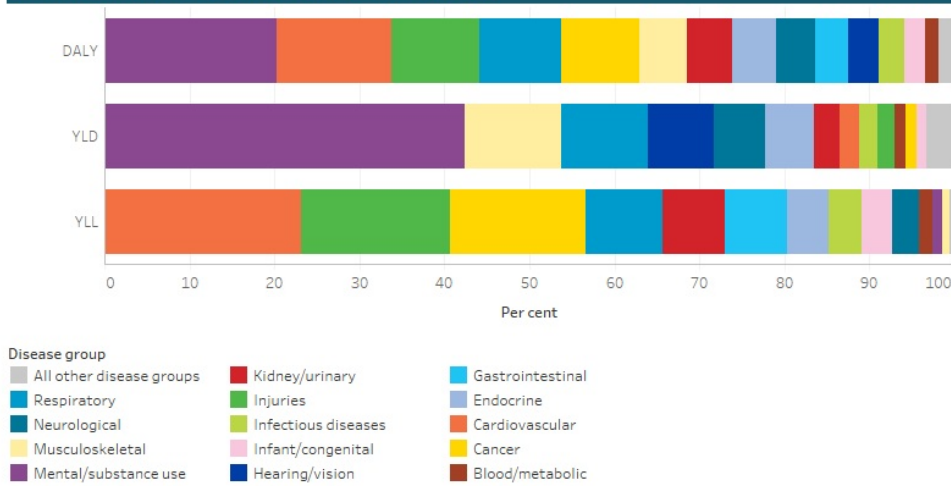
Select from the following:

Year:
2018

Topic:
Measure

DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost

Contribution of disease groups to gap, by Measure, 2018



Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.

Comparisons over time

Changes in burden over time from specific diseases or injuries may be due to changes in population size, population ageing, changes in disease prevalence, epidemics or changes to how causes are reported or coded in health data.

The estimates for 2003 and 2011 in the ABDS 2018 cannot be compared with those for 2003 and 2011 from previous Australian studies as they were developed using different methods. See [Australian Burden of Disease Study: Methods and supplementary material 2018](#) for further information on the methods used to develop the estimates presented here.

For fatal burden (YLL) estimates, there were notable changes in cause of death coding practices over time for dementia and accidental poisoning. For non-fatal burden (YLD) estimates, morbidity data was drawn from a wide variety of sources, with varying availability and data quality over time. Therefore, comparisons over time need to be interpreted with caution. Refer to the [Quality information on YLD estimates](#) and [Frequently Asked Questions](#) for further information.

Use the interactive graphs to explore differences in age-standardised and age-specific rates of burden (DALY, YLD or YLL) in Australia for 2003, 2011 and 2018. Estimates are displayed by sex and for disease groups or by specific disease or injury.

See Chapter 7 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death among Aboriginal and Torres Strait Islander people](#) report for more information on changes over time in disease burden.

This interactive data visualisation compares burden of disease in Australia among Indigenous Australians over time for the years 2003, 2011 and 2018. There are 3 sections which can be customised to report data according to type of burden, start year, end year, sex, disease group and disease. The first section is a sentence which report the percent change (increase or decrease) in the rate of burden between the start and end year selected and according to the type of burden, sex, disease group and disease selected. The second section is a horizontal bar chart which compares the age-standardised rate of burden for each year according to the type of burden, start year, end year, sex, disease group and disease selected. The third section is a line graph which compares age-specific rates of burden for each year according to the type of burden, start year, end year, sex, disease group and disease selected.

Burden of disease among Indigenous Australians 2018

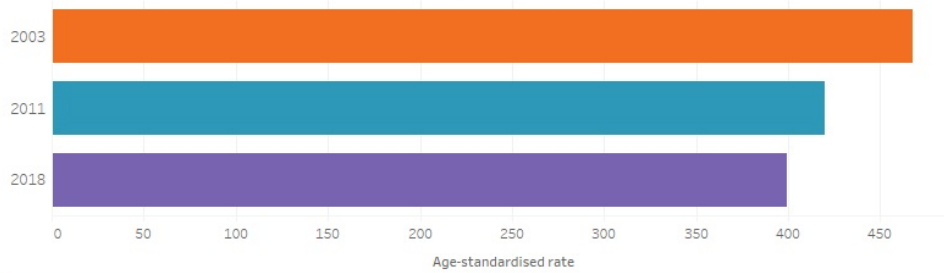
Select from the following:

Measure: DALY Sex: Persons Start year: 2003 End year: 2018 Disease group: All Disease/Injury: All

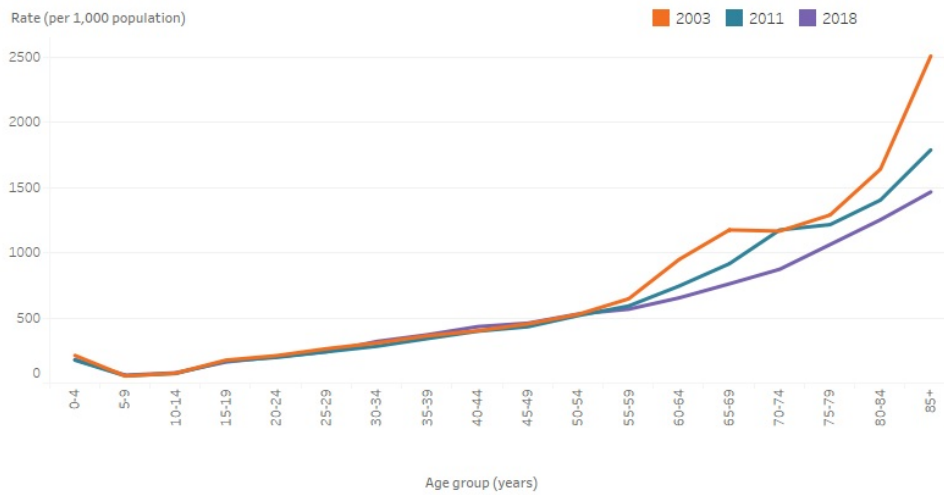
DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost

14.5% decrease
in the DALY rate between 2003 and 2018 for the disease/s selected

Comparison of age-standardised DALY rates: Indigenous Australians



Comparison of age-specific DALY rates: Indigenous Australians



Notes:

- 1. Rates were age-standardised to the 2001 Australian Standard Population and expressed as per 1,000 population.
- 2. Estimates for anxiety and depressive disorders relate to people aged 4 years and over only. Estimates for suicide relate to people aged 9 years and over only.

Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

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Drivers of change in disease burden

This section presents analyses undertaken to explore the different drivers of change in disease burden over time.

Between 2003 and 2018, there was a 44% increase in the total number of DALY among Aboriginal and Torres Strait Islander people, from 167,000 to 240,000 DALY. Note this is different to changes in the age-standardised rate of DALY per 1,000 population, which decreased from 467 DALY per 1,000 in 2003 to 400 DALY per 1,000 in 2018.

The main factors contributing to the change in the total number of DALY were population growth (the Indigenous Australian population increased by 40% between 2003 and 2018), population ageing, and changes in the amount of disease and injury in the population. These 3 factors and the method used to estimate the contribution of each factor to changes in disease burden are explained further in the box below.

Key results from these analyses can be found in the data visualisations below and in Table S1 in the [ABDS 2018 Drivers of change in disease burden for Indigenous Australians](#) data tables.

What factors contribute to changes over time?

Three factors contributing to changes in disease burden over time were included in these analyses:

- population growth—the size of the Aboriginal and Torres Strait Islander population is increasing over time
- population ageing—the age structure of the Aboriginal and Torres Strait Islander population is changing, with the proportion of older people increasing over time
- change in amount of disease/injury - estimated by the prevalence of the disease, the number of deaths and the average age at death. This can be influenced by changes in diagnosis, treatment or survival (resulting in increases or decreases in prevalence and changes in the severity of the disease), and variation in exposure to risk factors linked to the disease.

These factors were selected as they are the main drivers of trends in disease burden examined in global burden of disease studies and are measurable with available data. It was not possible to include other factors (such as changes in socioeconomic status) or estimate the contribution of risk factors to the overall change in disease burden (only to the change in attributable burden—see the drivers of change over time page in the [ABDS 2018: interactive data on risk factor burden among Aboriginal and Torres Strait Islander people](#)).

In this analysis, the contribution of each of the 3 factors to the change in fatal, non-fatal and total burden between 2003 and 2018 were estimated using methods developed by Das Gupta (Das Gupta 1993). This [method](#) considers the size of each factor and the interactions between them.

Each factor may cause burden to increase (indicated by a positive factor of change) or decrease (a negative factor of change) over time. The sum of the effect of all factors represents the overall change in burden between 2003 and 2018. This is expressed as the amount of change (DALY, YLL or YLD) or as a percentage of the change due to the factor. Although 2011 data are also available, 2003 and 2018 were chosen as the comparison time points to enable the longest possible time series.

Disease groups

For almost all disease groups, DALY numbers were higher in 2018 compared to 2003, largely reflecting increases in population and ageing. The exception was infectious diseases, which had a decline in DALY, mainly due to a reduction in the amount of disease.

Use the interactive text and graph below to explore the different drivers of change in burden (DALY, YLD or YLL) by sex and disease group in Indigenous Australians between 2003 and 2018.

For more interactive data on changes in age-standardised rates of burden over time, see [comparisons over time](#). For more information on specific diseases, see the [ABDS 2018: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people](#) report or the [Drivers of change in disease burden among Indigenous Australians](#) data tables.

This interactive data visualisation reports on the drivers of change in disease burden among Indigenous Australians between 2003 and 2018 for each of the 17 disease groups. There are 2 sections which can be customised to report data according to type of burden, sex and disease group. The first section is a text box which reports the total amount of change and the total percent change in disease burden between 2003 and 2018 for the selected type of burden, sex and disease group. The text box also reports the amount of change and the percent change due to each of the 3 drivers of change for the selected type of burden, sex and disease group. The second section is a stacked horizontal bar chart which shows the amount of change in burden due to each of the 3 drivers of change, as well as the total amount of change in burden, for each disease group for the selected type of burden and sex. Each bar corresponds to a different disease group and the bar is shaded to represent each driver of change. The total amount of change is marked on the bar with a large dot. Depending on the disease group, the horizontal axis may extend to the left to represent a decrease in burden and to the right to represent an increase in burden. The vertical axis crosses at 0 (no change in burden).

Drivers of change in disease group burden for Indigenous Australians over time

Select from the following:

Sex:
Persons

Type of burden:
DALY

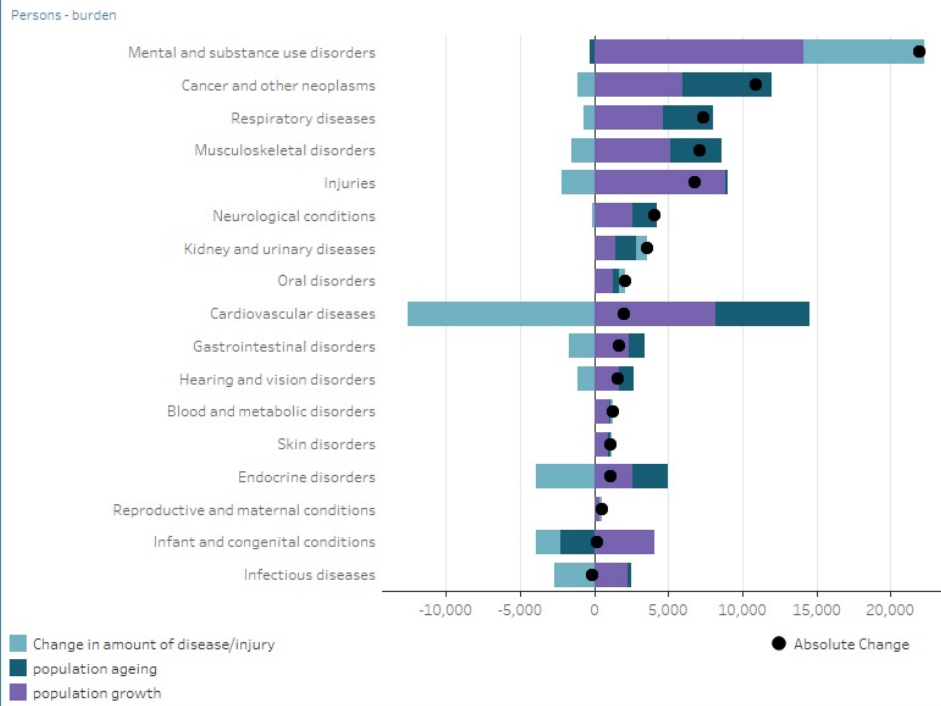
Disease group:
All

circle

There was a **44% ▲ (73,286 DALY)** in **all disease and injury** burden among Indigenous **persons** between 2003 and 2018, which was driven by a:

- 41% ▲ (67,684 DALY)** due to population growth
- 15% ▲ (25,006 DALY)** due to population ageing
- 12% ▼ (-19,404 DALY)** due to the change in amount of disease/injury

Amount of change by disease group



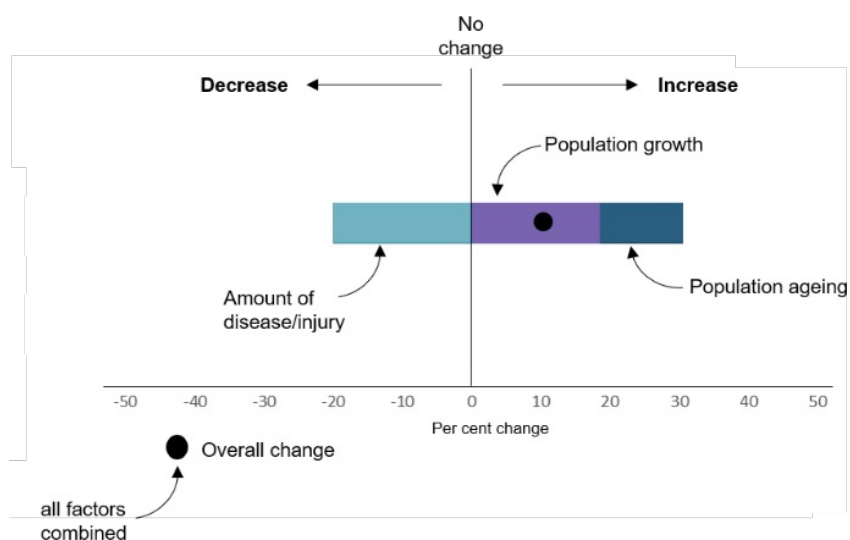
Note: Overall change is equal to the sum of the effects of all factors (population growth, population ageing and changes in the amount of disease/injury). For fatal burden (YLL) estimates, notable changes in cause of death coding practices over time occurred for dementia and accidental poisoning. For non-fatal burden (YLD) estimates, morbidity data was drawn from a wide variety of sources, with varying availability and data quality over time. Therefore comparisons over time need to be interpreted with caution. Refer to the Quality information and Frequently Asked Questions pages for further information.
 Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.

Frequently asked questions

How should the drivers of change over time analyses and charts be interpreted?

The figure below is provided to help readers interpret the analyses and charts presented in this web release. Each factor included in the drivers of change over time analyses (population growth, population ageing and amount of disease/injury) may cause the overall disease burden to increase (indicated by a positive percent change) or decrease (a negative percentage change) over time. The sum of the effect of all factors represents the overall change in disease burden between 2003 and 2018.



Put simply, these analyses show that if the overall burden due to a disease or injury is increasing (i.e. getting worse), we can see which factors are most responsible for this increase and target policy and program responses accordingly.

How are the estimates of drivers of change over time calculated?

The Das Gupta method was used to decompose the changes in burden attributable to each disease group, disease or injury into 3 additive components (Das Gupta 1993). Using a series of scenarios this method calculates the effect of each factor on the changes over time by assuming that all other factors, except the factor under consideration, remain the same at both time points. This provides an indication of the proportionate impact of the specified factors (assuming any other unspecified factors are small and independent of the specific factors). The method distributes the interaction effects (such as the relationship between an ageing population and disease burden) between the factors in proportion to the strength of the main effects (Zhai et al. 2017). This differs to the stepwise approach which requires a logical order to be chosen for the factors to be included in the analyses, and would give a different result if the factors are included in a different order.

The change in overall disease burden is decomposed into changes due to:

- population growth—in Australia population size is increasing over time
- population ageing—in Australia the proportion of older people is increasing over time
- change in amount of disease/injury—estimated by the prevalence of the disease, the number of deaths and the average age at death. This can be influenced by changes in diagnosis, treatment or survival (resulting in increases or decreases in prevalence and changes in the severity of the disease), and variation in exposure to risk factors linked to the disease.

Burden is estimated as the product of these 3 factors using the formula:

$$B_t = \sum_{j=1}^m P_t \times S_{jt} \times R_{jt}$$

where

B_t is the amount of burden (DALY, YLL or YLD) for a particular disease group, disease or injury at time point t .

j is an age and sex group

m is the age and sex groups included (males and females aged 0 to 100+)

t is a time point

P_t is the total population size at time t

S_{jt} is the share of the population in age and sex group j at the time t

R_{jt} is the rate burden for disease/injury in the age and sex group j at the time t .

Σ is the sum of all the age and sex groups j

The effect of each of the 3 factors—population size, population ageing and disease amount—using this method on the change in disease burden between 2003 and 2018 is calculated as:

$$E_A = (B_{03} - B_{18}) \left(\frac{P_{03}S_{03}R_{03} + P_{18}S_{18}R_{18}}{4} \right)$$

$$+ \frac{P_{03}S_{03}R_{18} + P_{03}S_{18}R_{03} + P_{18}S_{03}R_{03} + P_{18}S_{18}R_{03} + P_{18}S_{03}R_{18} + P_{03}S_{18}R_{18}}{12}$$

where

E_A is the effect of factor A (population size, population ageing and disease burden)

B is the amount of burden (DALY, YLL or YLD) due to disease/injury or disease group in 2003 (B_{03}) in 2018 (B_{18})

P is the population size in 2003 (P_{03}) or in 2018 (P_{18})

S is the population age structure in 2003 (S_{03}) or in 2018 (S_{18})

R is the rate burden of the disease/injury of disease group in 2003 (R_{03}) or in 2018 (R_{18})

What are the limitations of the methods used in this analysis?

Only factors that could be easily measured (population ageing, population growth and changes in disease/injury) were included in these analyses. However, these are considered to be among the most important drivers of change in disease burden over time. It is not possible to include other factors in the analyses that may also have an impact on changes in disease burden over time as they are not able to be quantified.

Using this methodology, it was not possible to estimate the contribution of risk factor exposure to the change in total disease burden for each disease/injury. Analysis to estimate the contribution of risk factor exposure to the change in attributable burden, however, has been undertaken and this can be found in [Risk factor attributable burden: drivers of change over time](#).

How do these estimates of drivers of change compare to age-standardised rates?

Both age-standardised rates (which use a 'standard' population to produce rates that can be compared independent of the age structure of the study population(s)) and the drivers of change estimates presented here are methods used to compare rates over time, while taking into account the differing age structures (population ageing) of the population over time.

The percent change in age-standardised rates over time is somewhat comparable to the measure of percent change due to the amount of disease/injury in the drivers of change estimates. However, the advantage of the drivers of change estimates is that they provide an indication of the proportionate impact of each of the specified factors, not just the change in age-standardised population rates. A disadvantage of age-standardised rates is that they are only useful for the purposes of comparison with other standardised rates which have used the same reference population. Once standardised, the rates no longer reflect the actual rate observed in the population.

How accurate are the estimates for changes in disease/injury over time?

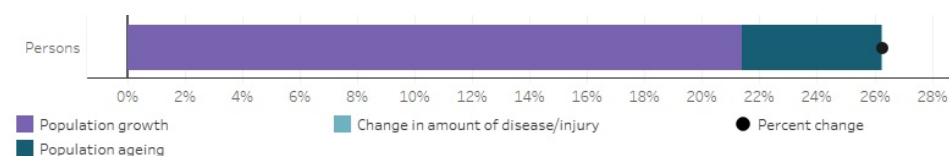
The accuracy of the estimates for changes in disease/injury over time are impacted by the quality of the mortality and morbidity data used in the calculation of the fatal (YLL) and non-fatal burden (YLD) estimates underpinning these calculations.

For fatal burden (YLL) estimates, there have been notable changes in cause of death coding practices over time for dementia and accidental poisoning and these estimates should be interpreted with caution.

For non-fatal burden (YLD) estimates, morbidity data were drawn from a wide variety of sources, with varying availability and data quality over time. Refer to the [Quality information for YLD estimates](#) for further information.

Why is there no change in the amount of disease/injury over time for some diseases?

For some diseases/injuries in ABDS 2018, data were not available on changes in prevalence over time, and based on expert advice the same age-specific prevalence rates were applied in each year (2003, 2011, 2018) of the study. As a result, there is a '0%' value shown in the visualisations for the 'amount of disease/injury' for YLD. The overall percentage change is driven by population ageing and population growth alone. These diseases/injuries highlight data gaps and areas for future improvement and include many of the mental and substance use disorders (anxiety disorders, alcohol use disorders, bipolar affective disorder, depressive disorders, schizophrenia), as well as Parkinson disease and dermatitis and eczema.




References

Das Gupta P 1993. Standardization and decomposition of rates: a user's manual. U.S. Bureau of the Census, Current Population Reports, Series P23-186. Washington, DC: U.S. Government Printing Office.

Zhai T, Goss J, Li J 2017. Main drivers of health expenditure growth in China: a decomposition analysis. BMC Health Services Research 17(1): 185. doi:10.1186/s12913-017-2119-1. <https://doi.org/10.1186/s12913-017-2119-1>

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Leading causes of disease burden

Ranking diseases by burden shows the leading causes of health loss for the Aboriginal and Torres Strait Islander population. Changes in rankings over time may be due to changes in disease prevalence, epidemics or changes to how causes of data is collected, reported or coded.

In this interactive graph, leading causes of death and disease burden (YLL, YLD or DALY) can be ranked by the number or by the age-standardised rate (ASR) in the population.

Note that an increase in rank over time does not always mean the disease or injury has increased in the population, and vice versa. Therefore, changes in ranking of causes of deaths and disease burden over time should be interpreted with caution. In addition, leading causes of death in this data visualisation is based on Australian Burden of Disease Study 2018 methods and will not be comparable to other reports of leading causes of death due to modelling and cause of death alignment to diseases.

Use the 'Rank by ASR' interactive graph to explore the leading 25 causes of disease burden (YLL, YLD or DALY) among Indigenous Australians for 2003, 2011 and 2018, or the 'Rank by number' interactive graph to explore rankings by number of YLL, YLD or DALY. The 'Rank by number' graph ranks diseases/injuries using raw numbers that have not been adjusted to take into account population age structure. The 'Rank by ASR' graph ranks diseases/injuries by age-standardised rates which take into account differences in population age structure and allows for more accurate comparisons.

See Chapter 7 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death among Aboriginal and Torres Strait Islander people](#) report for more information on changes over time in disease burden.

Tab 1: This interactive data visualisation compares changes in the ranking by age-standardised rate of burden for the 25 leading causes of disease burden among Indigenous Australians in Australia over time for the years 2003, 2011 and 2018. The visualisations can be customised to report data according to sex and type of burden. Four vertical columns show the leading causes of burden in each year for the selected sex and type of burden. Each disease or injury is represented with a square shaded according to the disease group the disease or injury belongs to. Horizontal arrows between the squares show whether there was a change (increase or decrease) or no change in the ranking by age-standardised rate of burden over time. On the right there is also a table which lists the per cent change in burden between 2003 and 2018 for each of the leading causes of burden in 2018 for the selected sex and type of burden.

Tab 2: This interactive data visualisation compares changes in the ranking by amount of burden for the 25 leading causes of disease burden among Indigenous Australians in Australia over time for the years 2003, 2011 and 2018. The visualisations can be customised to report data according to sex, age group and type of burden. Four vertical columns show the leading causes of burden in each year for the selected sex, age group and type of burden. Each disease or injury is represented with a square shaded according to the disease group the disease or injury belongs to. Horizontal arrows between the squares show whether there was a change (increase or decrease) or no change in the ranking by amount of burden over time. On the right there is also a table which lists the leading causes with respect to the amount of burden caused in 2018 for the selected sex, age group and type of burden.

Burden of disease among Indigenous Australians 2018

The dynamic data visualisation shows the leading causes of disease burden in Australia ranked by age-standardised rate. The diseases listed on the right are the 25 leading causes in 2018. The connecting lines and numbered box shows what the rank of that disease was in 2018, 2011 and 2003. Selecting each disease group by clicking on its ranking or colour will highlight its change in ranking over time. A positive percent change reflects an increase in disease burden between 2003 and 2018; a negative percent change reflects a decrease in disease burden between 2003 and 2018.

Select from the following:

Measure:
DALY

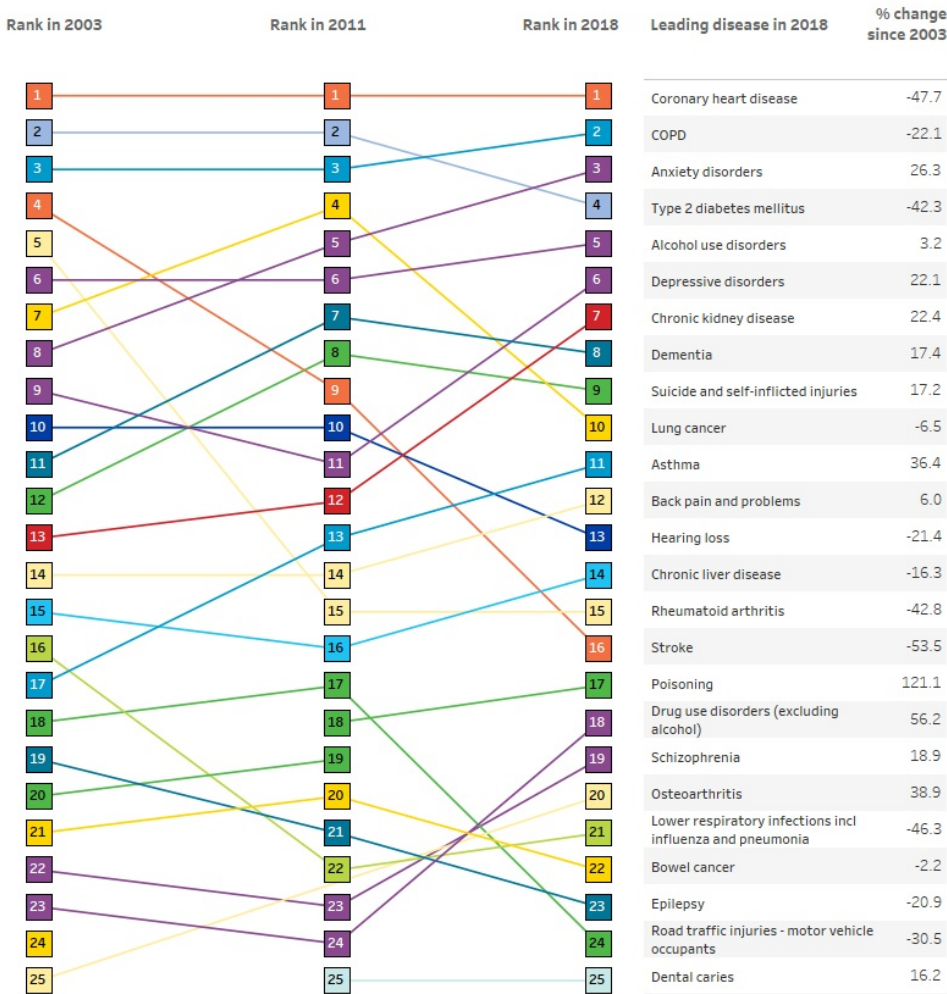
Sex:
Persons

DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost

Ranking by age-standardised DALY rate: Indigenous Persons

Disease groups

- Cancer and other neoplasms
- Cardiovascular diseases
- Endocrine disorders
- Gastrointestinal disorders
- Hearing and vision disorders
- Infectious diseases
- Injuries
- Kidney and urinary diseases
- Mental and substance use di..
- Musculoskeletal disorders
- Neurological conditions
- Oral disorders
- Respiratory diseases



Notes:

1. Rates were age-standardised to the 2001 Australian Standard Population and are expressed as per 1,000 population.
2. Diseases ranked in the leading 25 in 2003 which are not ranked in 2011 and 2018 will not have connecting lines and rankings.

Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.

Disease/injury-specific summary

Use the interactive graphs to generate a summary of total burden (DALY) in Australia in 2018 for a specific disease or injury among Aboriginal and Torres Strait Islander people.

How to use the interactive visualisation

- Select a specific disease or injury using the drop-down list to filter the data displayed in the visualisation.

Select a disease or injury:

- Click on the 'Download PDF' button to download a 1 page PDF for the selected disease/injury.

Download PDF

- Select A4 in the Page Size drop-down.

Download PDF ×

Include

Scaling

Page Size Orientation

Download

- An alternative is to use the 'Download' button at the bottom of the dashboard to generate image (PNG) or PDF versions of the dashboard.

See Chapter 2 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death among Aboriginal and Torres Strait Islander people](#) report for more information on total burden (DALY) estimates by disease and injury.

This interactive data visualisation reports on a range of statistics on the burden of a specific disease or injury among Indigenous Australians, which can be selected by the user. There are a number of sentences reporting the amount and rate of total, fatal and non-fatal burden due to the disease or injury; the proportion of total burden which is due to fatal and non-fatal burden; and the age-standardised rates of total, fatal and non-fatal burden by sex and year (2003, 2011 and 2018). There are 2 column charts showing the number and 2 line graphs showing the rate of total burden for males and females by 5-year age groups.

Burden of disease among Indigenous Australians 2018

Coronary heart disease

Cause Name

Coronary heart disease

For Indigenous Persons in Australia in 2018 there were:
13,992 DALY, equivalent to 28.9 per 1,000 population

[Download PDF](#)

Fatal burden

12,519 YLL,
 equivalent to 25.6 per 1,000 population

Non-fatal burden

1,474 YLD,
 equivalent to 3.3 per 1,000 population

DALY = Disability-adjusted life years; YLD = Years lived with disability; YLL = Years of life lost; ASRs = age-standardised rates.

Fatal vs. Non-fatal burden in Indigenous Persons, 2018

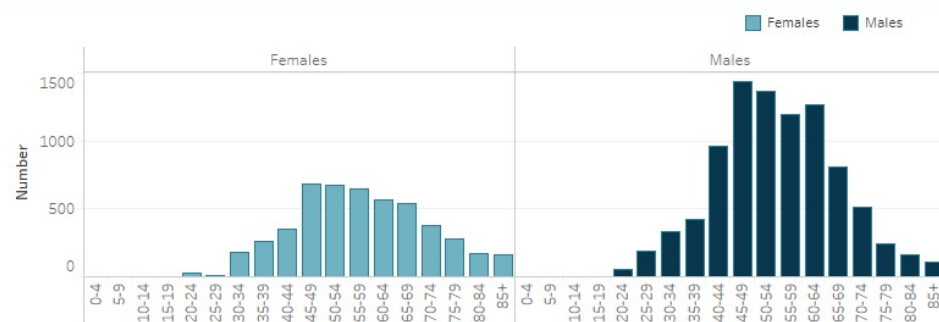
89.5% Fatal

10.5% Non-fatal

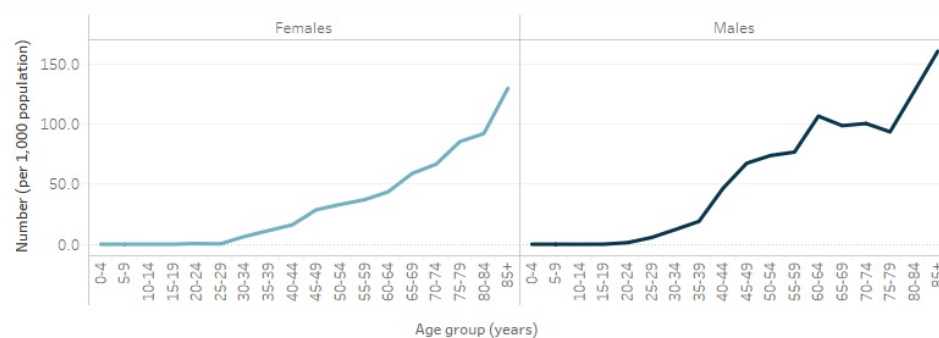
Age-standardised rates (ASRs) over time

	Females			Males		
	2003	2011	2018	2003	2011	2018
DALY ASRs (per 1,000 pop)	39.92	25.97	20.54	72.96	53.41	38.20
YLL ASRs (per 1,000 pop)	35.96	22.73	17.69	67.90	49.10	34.42
YLD ASRs (per 1,000 pop)	3.96	3.24	2.85	5.07	4.31	3.78

Number of DALY by sex and age, 2018



DALY rates by sex and age, 2018



Notes:

1. Rates were age-standardised to the 2001 Australian Standard Population and are expressed as per 1,000 population.
2. Diseases displaying a rate of 0.0 per 1,000 population refer to a rate <0.05 per 1,000 population.
3. As burden of disease estimates are to some extent based on modelled deaths and prevalence data, individuals cannot be identified where there are small numbers reported.

Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>



State and territory estimates

This section focuses on the variability of burden across states and territories, rather than the detailed estimates for each jurisdiction. Variations may reflect not just differences in mortality (deaths) and morbidity (illness) but a complex interaction of a number of other factors, such as demographic (including the age structure of the population and the proportion of the population that is Indigenous) and socioeconomic variations.

Disease burden, as well as the gap in burden, among Aboriginal and Torres Strait Islander people in 2018 and 2011 are presented by sex, age group and disease group for 4 states and territories: New South Wales, Queensland, Western Australia and the Northern Territory. Data are not presented for Victoria, South Australia, Tasmania and the Australian Capital Territory, due to issues relating to the calculation of Indigenous YLL estimates (which are also used in the calculation of DALY estimates). This includes the small number of Indigenous deaths reported for these jurisdictions each year, and individual mortality adjustment factors not being available from the ABS for these states and territories.

Use the 'State/territory estimates' interactive graphs to explore disease burden (DALY, YLD or YLL) by age and sex in each of the 4 jurisdictions for disease groups of interest. Use the 'State/territory comparison' interactive graphs to explore disease burden (DALY, YLD or YLL) across the 4 jurisdictions for disease groups by sex for 2018 and 2011.

See Chapter 10 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death in Aboriginal and Torres Strait Islander people](#) report for more information on estimates by state and territory.

Tab 1: This interactive data visualisation gives an overview of burden of disease among Indigenous Australians by state and territory. There are 3 sections which can be customised to report data according to state or territory, type of burden, year, sex and disease group. The type of burden presented include total burden (DALY), years of life lost (YLL), and years of life lived with disability (YLD). The first section is a sentence which reports the total amount and rate of burden (per 1,000 population) for the selected state or territory, type of burden, year, sex and disease group. The second section is a column chart which reports the amount of burden by 5-year age groups for the selected state or territory, type of burden, year, sex and disease group. A line graph is superimposed on the column chart to show the age-specific rate of burden (per 1,000 population) by 5-year age groups. The third section is a column chart which reports the rate differences and rate ratios, between Indigenous and non-Indigenous Australians, by 5-year age group, for the selected type of burden, state/territory, sex, year and disease group.

Tab 2: This interactive data visualisation compares the age-standardised rates of burden (per 1,000 population) among Indigenous Australians for the 4 state and territories reported and for the whole of Australia. The type of burden presented include total burden (DALY), years of life lost (YLL), and years of life lived with disability (YLD). There are 2 sections which can be customised to report data according to type of burden, year, sex and disease group. The first section is a column chart which reports the age-standardised rate of burden (per 1,000 population) for each state and territory and for the whole of Australia for the selected type of burden, year, sex and disease group. The second section is a column chart which reports the rate difference and rate ratio, between Indigenous and non-Indigenous Australians, for each state/territory and Australia, for the selected type of burden, year, sex and disease group.

Burden of disease among Indigenous Australians 2018

Select from the following:

Measure: DALY State/Territory: NSW Sex: Persons Year: 2018 Disease group: Total (all diseases)

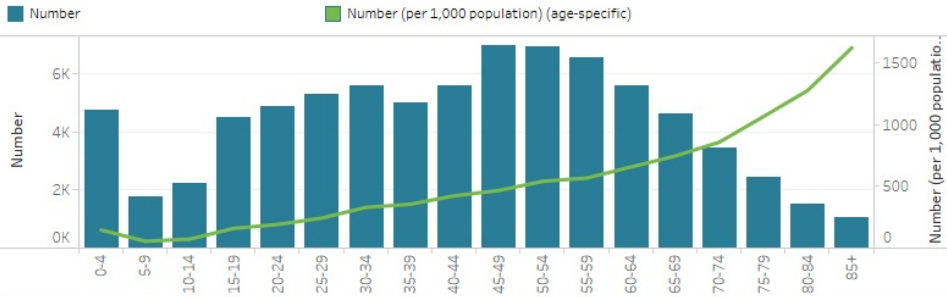
DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost



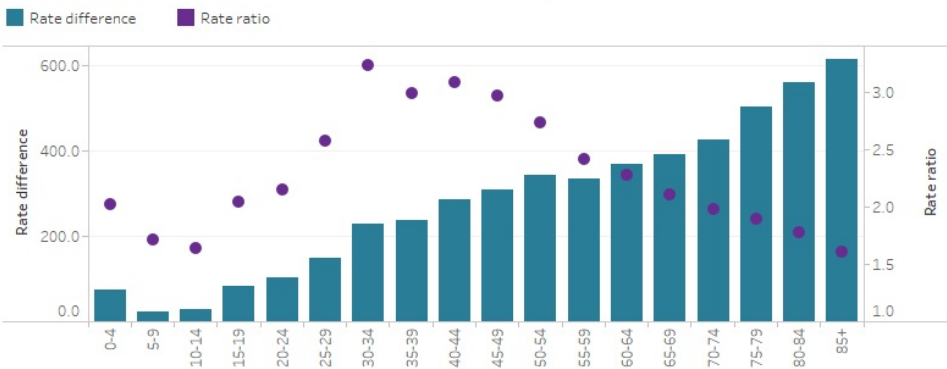
In NSW in 2018 there were 78,521 DALY among Indigenous Persons in the disease/s selected, a rate of burden 2.3 times the rate for non-Indigenous Persons (397.2 and 171.7 DALY per 1,000 population, respectively).

Note: Diseases displaying a number with a rate of 0.0 per 1,000 population refer to a rate <0.05 per 1,000 population.

DALY among Indigenous Persons, NSW, 2018



DALY rate difference and rate ratios, Indigenous and non-Indigenous Persons, NSW, 2018



- Notes:
- Rates were age-standardised to the 2001 Australian Standard Population and are expressed as per 1,000 population.
 - No bar for rate difference on graph indicates that the rate difference is less than zero; rate ratios not shown on graph if ratio is less than 1.
 - As burden of disease estimates are to some extent based on modelled deaths and prevalence data, individuals cannot be identified where there are small numbers reported.

Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.

Remoteness areas

This section focuses on the variability of burden across the 5 remoteness areas, rather than the detailed estimates for a particular remoteness category. It is worth noting that there are a range of important demographic, socioeconomic and environmental factors that differ by remoteness which influence health status. Health behaviours and risks may also differ by remoteness (AIHW 2014b).

Disease burden, as well as the gap in burden, among Aboriginal and Torres Strait Islander people in 2018 and 2011 are presented by sex and disease group for the 5 remoteness categories: *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote*. In 2018, most (62%) of Australia's Aboriginal and Torres Strait Islander population lived in *Major cities* and *Inner regional* areas. However, remote areas have higher proportions of Aboriginal and Torres Strait Islander people resident there.

Use the interactive graph to explore disease burden (DALY, YLD or YLL) among Indigenous Australians for the 5 remoteness areas by sex and disease group in 2011 or 2018.

See Chapter 10 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death in Aboriginal and Torres Strait Islander people](#) report for more information estimates by remoteness areas.

This interactive data visualisation compares burden of disease in Australia by remoteness area. There are 3 sections which can be customised to report data according to type of burden, year, sex and disease group. The first section has a sentence that reports how many times higher the rate was in Very remote areas compared with Major Cities for the selected type of burden, year, sex and disease group. The second section is a column chart which reports the age-standardised rate of burden (per 1,000 population) for each remoteness area for the selected type of burden, year, sex and disease group. The third section is a column chart which reports the rate difference and rate ratio, between Indigenous and non-Indigenous Australians, for each remoteness area for the selected type of burden, year, sex and disease group.

Burden of disease among Indigenous Australians 2018

Select from the following:

Measure: DALY Year: 2018 Sex: Persons Disease group: Total (all diseases)

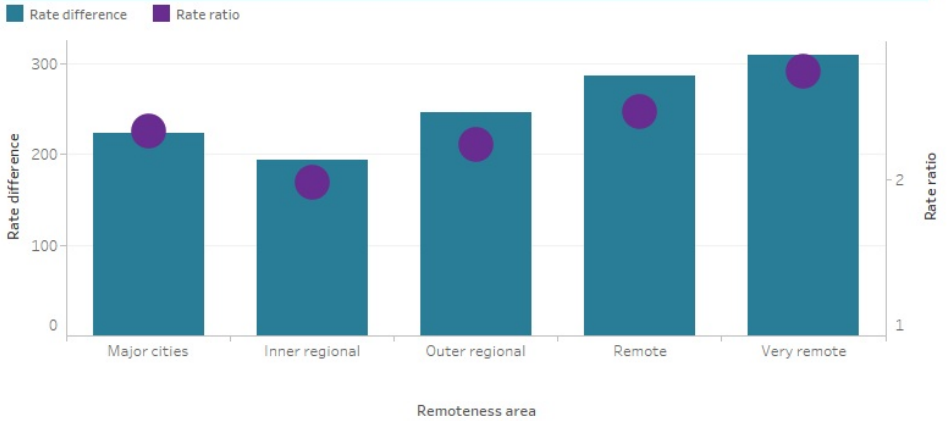
DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost

The DALY rate for all disease groups in *Very remote* areas was **1.3** times the rate in *Major Cities* for Indigenous Australians in 2018.

Comparison of age-standardised DALY rate among Indigenous persons: all disease groups, 2018



Comparison of DALY rate ratios and rate differences between Indigenous and non-Indigenous persons: all disease groups, 2018



Notes:
 1. Rates were age-standardised to the 2001 Australian Standard Population and are expressed per 1,000 population.
 2. No bar for rate difference on graph indicates that the rate difference is less than zero; rate ratios not shown on graph if ratio is less than 1.
 Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.

Socioeconomic groups

This section focuses on the variability of burden across socioeconomic groups, rather than the detailed estimates for a particular socioeconomic category.

Disease burden among Aboriginal and Torres Strait Islander people was estimated by socioeconomic group for 2018 and 2011.

Indigenous burden estimates by socioeconomic group are based on an Indigenous-specific index of socioeconomic disadvantage: the 2016 Indigenous Relative Socioeconomic Outcomes (IRSEO) index. It reflects the level of socioeconomic disadvantage experienced by Indigenous Australians living in each Indigenous Area in Australia and incorporates 9 variables from the 2016 Census of Population and Housing that measure employment, occupation, education, income and housing (Biddle & Markham 2017). The analysis in this section divides the Indigenous population into 'quintiles' (fifths) of disadvantage, where the first quintile (Q1) represents the 20% of Indigenous Areas that have the lowest IRSEO index scores (those which experience the most disadvantage) and the fifth quintile (Q5) the 20% of areas with the highest scores (those which experience the least disadvantage).

Measures of the gap between Indigenous and non-Indigenous Australians are not presented as a comparable index for the non-Indigenous population is not available.

Use the interactive graph to explore the disease burden (DALY, YLD or YLL) among Indigenous Australians across socioeconomic groups by sex and disease group in 2011 or 2018. Crude rates, rather than age-standardised rates, have been used as the socioeconomic index described here incorporates a population age-weighting which results in little difference in the age profile of the populations assigned to each quintile of socioeconomic disadvantage under the index.

See Chapter 10 in the [Australian Burden of Disease Study 2018: impact and causes of illness and death in Aboriginal and Torres Strait Islander people report](#) for more information on estimates by socioeconomic group.

This interactive data visualisation compares burden of disease among Indigenous Australians by quintiles (fifths) of relative socioeconomic disadvantage. The data visualisation has 2 sections. The first section has a sentence that reports how many times higher the rate was in the most disadvantaged areas compared with the least disadvantaged areas for the selected type of burden, year and disease group. The second section is a column graph which reports the crude rate of burden (per 1,000 population) for each socioeconomic group for the selected type of burden, year and disease group.

Burden of disease among Indigenous Australians 2018

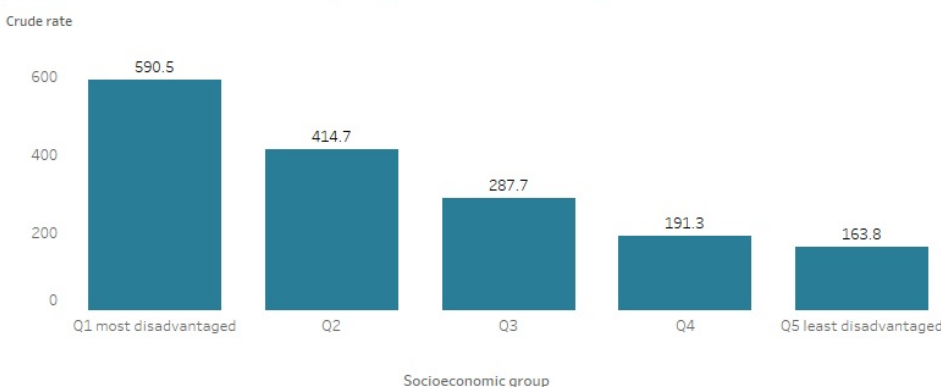
Select from the following:

Measure: DALY Year: 2018 Disease group: Total (all diseases)

DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost

The DALY rate for all disease groups in the most disadvantaged area (Q1) was
3.6
times as high as the least disadvantaged area (Q5) in 2018.

Comparison of crude DALY rate among Indigenous Australians: Total (all diseases), 2018



Note: Rates are expressed per 1,000 population.

Source: AIHW Australian Burden of Disease Database. <http://www.aihw.gov.au>

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.

Quality information for YLD estimates

The Australian Burden of Disease Study 2018 estimates were produced using the best data available in the scope and time frame of the study. To provide information on the quality of estimates, a quality index was developed to rate estimates according to the relevance and quality of source data, and methods used to transform data into a form required for this analysis. Generally, the higher the rating, the more relevant and accurate the estimate.

Fatal burden (YLL) estimates were considered to have the highest rating for both data and methods used, whilst non-fatal burden (YLD) estimates varied depending on the disease or injury and the data sources used.

Use the interactive tool to explore the quality information of YLD estimates for each disease and injury for 2018.

See Appendix B in the [Australian Burden of Disease Study 2018: impact and causes of illness and death in Aboriginal and Torres Strait Islander people](#) report and the [Australian Burden of Disease Study 2018: methods and supplementary material](#) report for more detail on the quality of the YLD estimates and the data and methods used.

This interactive data visualisation reports on the quality information regarding the non-fatal burden estimates among Indigenous Australians for each disease and injury, which can be selected by the user. For each disease and injury, there are two scores - one for data and one for methods. Each score is a whole number out of 5. There is a description of the data and methods used to obtain the non-fatal burden estimate. There is also a table describing the criteria used for all diseases and injuries to assign data and method scores.

ABDS 2018: Quality information for Indigenous YLD estimates

Select the disease group and disease to see the quality scoring & information:

Disease group:
Cardiovascular diseases

Disease:
Coronary heart disease

Coronary heart disease

Data score: ★★★★★ Method score: ★★★★★

Description of data and methods used:

Indigenous prevalence estimates were obtained from the NHMD with a high likelihood of hospitalisation. Severity distribution was obtained from GBD 2013 (Bursetein et al. 2013). Ratios from the Western Australian linked hospitals and deaths data were used to transform estimates from unlinked hospitalisation data into prevalence. Validated adjustment factors for the NHMD were used to adjust for Indigenous under-identification.

Quality scoring guide

Score	Description
Data score	5 stars: Recent, relevant, fully enumerated data of high quality data specific to the Australian population. Where severity is required, this is derived from the same data source.
	4 stars: Relevant, high quality data however data is either not fully enumerated, is non-specific to the population, has high variability, is not derived from the reference year or where severity is required it is not available. This may also be a combination of a 5 and 3 star rating.
	3 stars: Relevant, high quality data however for the condition required it has either medium specificity, derived from a single smaller-scale Australian study or is from a generalisable review or meta-analyses. This may also be a combination of a 4 and 2 star rating.
	2 stars: A small good-quality Australian/ International study/ Review or meta-analyses generalisable to the Australian population that may not be recent or has low specificity for that condition. This may also be a combination of a 3 and 1 star rating.
	1 star: A small Australian study more than 5 years old from the reference year with questionable applicability/an international study with questionable generalisability to the Australian population or is indirect and from a secondary data source.
Method score	5 stars: Minimal or no extra modelling; estimate was derived directly from source data
	4 stars: Modelling such as disaggregating broad age groups into finer age groupings or applying person: separation hospitalisation ratios from linked data to non-linked, however the modelling is minimal and primarily specific to the population condition-specific and is evidence based. This may also be a combination of a 5 and 3 star rating.
	3 stars: Assumptions to be made as there is no information to model trends, or modelling was required using methods which were not specific to the population or were from various sources with differing definitions for the condition. This may also be a combination of a 4 and 2 star rating.
	2 stars: Indirect modelling methods based on evidence which was; less than 5 years from the reference year, non-specific to the condition or population or inferences were made from related data with medium specificity. This may also be a combination of a 3 and 1 star rating.
	1 star: Indirect modelling methods based on evidence which was either; more than 5 years old to the reference year, non-specific to the condition or population or inferences were made from slightly related data.

Please use the 'Download' button at the bottom of the dashboard to generate image or PDF versions of the data.



Using and understanding the data - FAQs

What is burden of disease?

Burden of disease analysis measures the impact of fatal (or years of life lost, YLL) and non-fatal burden (years lived with disability, YLD), with the sum of non-fatal and fatal burden equating the total burden (disability-adjusted life year, DALY). YLD are weighted to account for the severity of health impact.

1 DALY is equivalent to 1 year of healthy life lost.

High quality information on the health impacts and distribution of different diseases and injuries provides an important contribution to the evidence base to inform health policy and program and service delivery. Burden of disease studies allow dying from disease and living with illness to be compared and reported in a consistent manner.

For a more detailed explanation, refer to this ['What is burden of disease?' video](#).

How are burden of disease estimates calculated?

Disability-adjusted life years (DALY) are estimated by combining the years of life lost (YLL) with the years lived with disability (YLD) in a single reference year for each sex, age group and disease or injury.

$DALY = YLL + YLD$

YLL equals the sum of: the number of deaths due to the disease at each age multiplied by the number of remaining years that a person would on average expected to have lived according to an aspirational life expectancy.

YLD is estimated by multiplying the point prevalence of all sequelae (i.e. consequences of a disease) by a disability weight which reflects the severity of the health state. Point prevalence is defined as the number of people with a condition at a particular point in time, for a reference year. The disability weights used in Australian Burden of Disease Study 2018 were sourced from the Global Burden of Disease Study 2013 (GBD 2013 Collaborators 2015).

Australian Burden of Disease Study disease list

Burden disease analysis provides estimates for an extensive list of diseases and injuries, and has been devised to be mutually exclusive (non-overlapping).

The Australian Burden of Disease Study 2018 disease list comprises over 200 specific diseases or conditions (such as coronary heart disease, stroke, lung cancer or bowel cancer), grouped into 17 disease groups of related diseases or conditions—such as cardiovascular diseases or cancer. Estimates for injuries are calculated from two perspectives— external cause of injury (for example, road traffic accident) and nature of injury (such as traumatic brain injury).

Conditions that could not be individually specified are included in a residual category for each disease group— such as 'other cardiovascular conditions'.

Where can I find the data used in the Australian Burden of Disease Study 2018?

Mortality data to calculate YLL estimates was sourced from the AIHW's National Mortality Database (NMD). Given the high quality of these data, no modelling had to be undertaken to adjust for coverage or completeness for national estimates. Some transformation of the data was undertaken to reassign some causes of death to fit the purposes of burden of disease analysis. For Aboriginal and Torres Strait Islander YLL estimates, adjustments were made to account for under-identification of Indigenous Australians in mortality records. More information is provided in [Australian Burden of Disease Study 2018: methods and supplementary material](#) and in Appendix A of the [Australian Burden of Disease Study 2018: impact and causes of illness and death in Aboriginal and Torres Strait Islander people report](#).

For YLD estimates, as there is no single comprehensive and reliable source of data on the incidence, prevalence, severity and duration of all non-fatal health conditions, morbidity estimates were drawn from a wide variety of sources, and generally based on the best single source. This included administrative data, national surveys, disease registers and epidemiological studies. Potential sources for disease-specific morbidity data were required to: have case definitions appropriate to the disease being analysed; be relevant to the Indigenous Australian population; and be timely, accurate, reliable and credible.

Further information on the data and methods used in Australian Burden of Disease Study 2018 can be found in the [Australian Burden of Disease Study 2018: methods and supplementary material](#) report.

Why use estimates from the ABDS 2018 instead of the ABDS 2011?

The Australian Burden of Disease Study 2018 was undertaken to build on the AIHW's previous burden of disease studies and current disease monitoring work. The Australian Burden of Disease Study 2018 provides an update of burden of disease estimates using the infrastructure developed as part of Australian Burden of Disease Study 2011 and 2015, and includes several methodological improvements.

This Australian Burden of Disease Study 2018 Aboriginal and Torres Strait Islander component provides burden of disease estimates best matched to the Australian public health context for the Indigenous Australian population (including subnational estimates) for 2018. It also provides estimates for 2011 and 2003, revised using the same methods as for 2018, to enable direct comparisons. The latest year, 2018, reflects the data availability from key data sources (such as the National Aboriginal and Torres Strait Islander Health Survey, deaths data, hospital admissions data and various disease registers) at the time analyses began.

Improvements made in the Australian Burden of Disease Study 2018 include:

- a more comprehensive list of diseases
- new data sources or evidence from latest epidemiological studies
- new or revised conceptual models to estimate YLD for some diseases in line with changes to the disease list or new evidence
- recalculation of estimates for 2003 and 2011, where methods were updated, to enable comparison with 2018 estimates.

Therefore, published estimates from previous Australian studies are not directly comparable with those for the Australian Burden of Disease Study 2018 due to methodology changes.

Why do some diseases have no fatal (YLL) or non-fatal (YLD) estimates?

Some diseases do not have YLL or YLD estimates as either mortality does not occur from that disease (such as hearing loss) or the disease is only fatal and as such there is no morbidity (Sudden Infant Death Syndrome). For some rare infections, there were no deaths or morbidity associated with the disease in certain reference years.

What population data was used?

All Indigenous population-based rates were calculated using Aboriginal and Torres Strait Islander backcast and projected population estimates as at 30 June 2018 (based on the 2016 Census) (ABS 2019). For the calculation of Indigenous rates of burden by remoteness, experimental Indigenous population estimates derived by the AIHW from the published ABS estimates were used (for 5 remoteness categories, by 5-year age group and sex, as at 30 June).

Non-Indigenous population estimates were calculated by subtracting the Aboriginal and Torres Strait Islander population estimates from the total Australian population estimates for the same years.

The Australian 2001 standard population (published 15 December 2016) was used for all age-standardisation, as per AIHW and ABS standards (ABS 2016).

Where to get more information on data and methods used in ABDS 2018?

More information on the Australian Burden of Disease Study 2018 Aboriginal and Torres Strait Islander estimates can be found in the following reports:

- [Australian Burden of Disease Study 2018 - key findings for Aboriginal and Torres Strait Islander people \(BOD 28\)](#)
- [Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2018 –Summary \(BOD 33\)](#)
- [Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2018 \(BOD 32\)](#)
- [Australian Burden of Disease Study: methods and supplementary material 2018 \(BOD 26\)](#)
- [Australian Burden of Disease Study 2018: Interactive data on risk factor burden \(BOD 36\)](#)

For further information or for customised data requests please contact the AIHW Indigenous Burden of Disease team via indigenusbod@aihw.gov.au.

References

ABS (Australian Bureau of Statistics) 2016. [Australian Demographic Statistics, June 2016](#). ABS cat. No. 3101.0. Canberra: ABS. Viewed 21 November 2017.

ABS 2019. [Estimates and Projections, Aboriginal and Torres Strait Islander Australians 2006-2031](#). Viewed 22 July 2020.

GBD (Global Burden of Disease Study) 2013 Collaborators 2015. Supplement to: Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013: [The Lancet 2015. 386\(10010\): S1-1868](#). doi:org/10.1016/S0140-6736(15)60692-4.



Technical notes

Abbreviations

ABDS	Australian Burden of Disease Study
ASR	Age-standardised rate
COPD	Chronic obstructive pulmonary disease
DALY	Disability-adjusted life years
YLD	Years lived with disability
YLL	Years of life lost

Glossary

[Burden of disease Glossary](#)





Data





Related material

Latest related reports

- Australian Burden of Disease Study 2018: Interactive data on risk factor burden among Aboriginal and Torres Strait Islander people | **Web report** | 10 Mar 2022
- Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2018 | **Publication** | 10 Mar 2022
- Australian Burden of Disease Study: Methods and supplementary material 2018 | **Web report** | 24 Nov 2021
- Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2018 | **Publication** | 24 Nov 2021
- Australian Burden of Disease Study 2018: Interactive data on risk factor burden | **Web report** | 24 Nov 2021
- Australian Burden of Disease Study 2018: Interactive data on disease burden | **Web report** | 24 Nov 2021
- Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2018 - Summary report | **Publication** | 24 Nov 2021
- Australian Burden of Disease Study 2018: key findings for Aboriginal and Torres Strait Islander people | **Web report** | 07 Oct 2021
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