

Australian Burden of Disease Study 2018: Interactive data on disease burden

Web report | Last updated: 24 Nov 2021 | Topic: [Burden of disease](#) | [Media release](#)

About

Burden of disease is a measure of the years of healthy life lost from living with, or dying from disease and injury. These interactive data visualisations display burden of disease estimates from the Australian Burden of Disease Study 2018. There is also another interactive data set to explore: [risk factor burden](#).

Cat. no: BOD 34

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

Findings from this report:

- [5.0 million years of healthy life were lost from all diseases and injuries in 2018](#)
- [The leading causes of total burden in 2018 were coronary heart disease, back pain, dementia, COPD and lung cancer](#)
- [Musculoskeletal conditions and mental & substance use disorders caused the most non-fatal burden in 2018](#)
- [Remote and very remote areas experienced total burden 1.4 times as high as Major cities in 2018](#)

Summary

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. It combines health loss from living with illness and injury (non-fatal burden, or YLD) and dying prematurely (fatal burden, or YLL) to estimate total health loss (total burden, or DALY).

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

The Australian Burden of Disease Study 2018, published in 2021, provides the most recent Australian-specific estimates of disease burden. Estimates 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, 2015 and 2018 can be explored, including key drivers of change over time in overall disease burden and for the top 50 diseases and injuries. In this release there is a *NEW* visualisation which allows users to generate a summary of total burden (DALY) in 2018 for a specific disease or injury.

Estimates for 2015, 2011 and 2003 from the ABDS 2018 replace the estimates for these years in the ABDS 2015. Estimates in the previous studies differ due to updates in disease-specific methodology. Note that trend data for sub-national estimates start at 2011.

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

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](#).

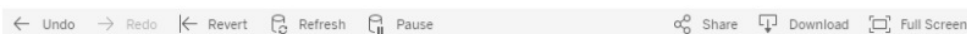
The AIHW aims to meet the Australian Government's web accessibility requirements. If any of the interactive burden of disease pages are inaccessible to you, or you are experiencing problems accessing content for any reason, please contact us at burdenofdisease@aihw.gov.au.

What is included in this data visualisation tool?

This data visualisation tool includes estimates of total burden (DALY), non-fatal burden (YLD), fatal burden (YLL) and deaths for:

- Australia for 2003, 2011, 2015 and 2018
- States and territories for 2011, 2015 and 2018
- Remoteness area and socioeconomic group for 2011, 2015 and 2018
- Comparisons between years
- Disease/injury-specific summary for total burden (DALY) in 2018 *NEW*
- Information about the quality of data and methods used to generate estimates
- Frequently asked questions on methods, data sources and definitions.

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)



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 by disease or injury in 2003, 2011, 2015 and 2018.

See Chapter 2 in the *Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018* 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) 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 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) by 5-year age groups. The third section is a tree map showing the amount of burden 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.

Australian Burden of Disease Study 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

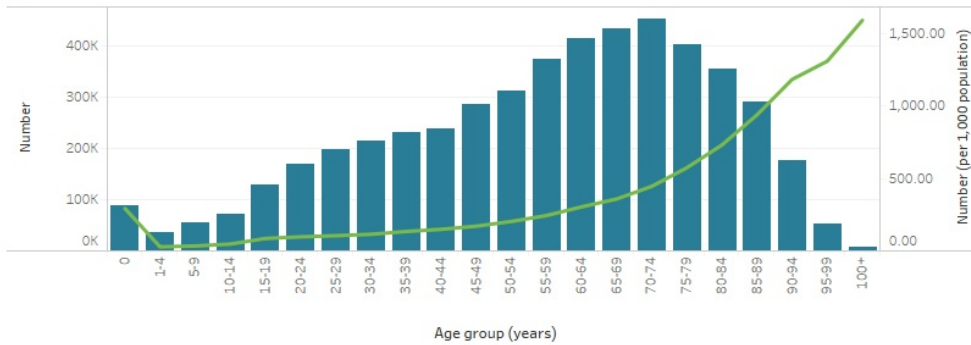


In Australia in 2018 there were 4,983,519 DALY in Persons from the disease/s selected, equivalent to 181.8 per 1,000 population

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

DALY in Persons by age, 2018

■ Number
■ Number (per 1,000 population)

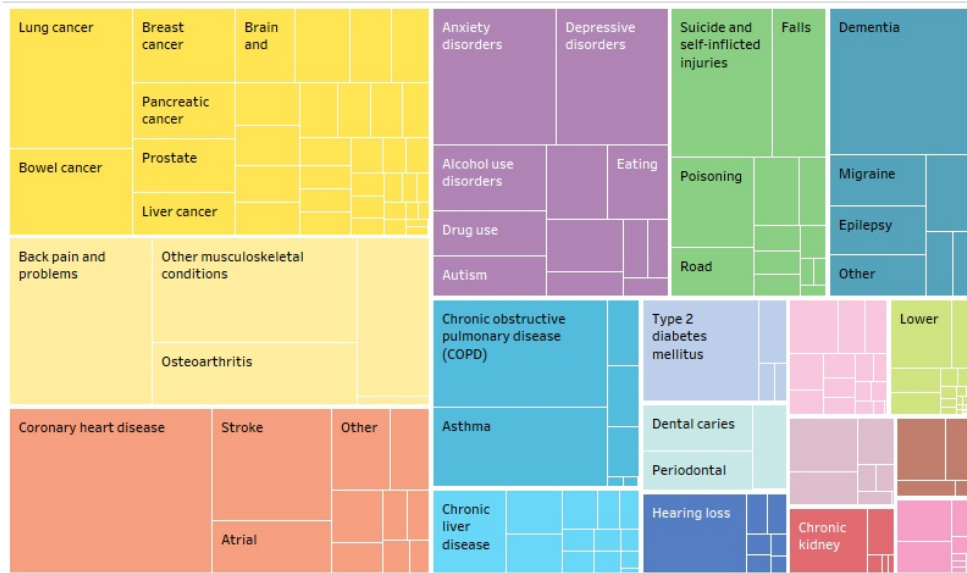


DALY in Persons by disease, 2018

Disease group

- Blood and metabolic disorders
- Cancer and other neoplasms
- Cardiovascular diseases
- Endocrine disorders
- Gastrointestinal disorders
- Hearing and vision disorders
- Infant and congenital conditions
- Infectious diseases
- Injury (external cause)
- Kidney and urinary diseases
- Mental/substance use
- Musculoskeletal conditions
- Neurological conditions
- Oral disorders
- Reproductive and maternal conditions
- Respiratory diseases
- Skin disorders

Hover over boxes for more information.



Notes: Rates were age-standardised to the 2001 Australian Standard Population and are expressed as per 1,000 population. 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.

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 and non-fatal burden to the total burden experienced 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 graphs to explore the contribution of fatal burden (YLL) and non-fatal burden (YLD) to the total burden of disease (DALY) in Australia for 2003, 2011, 2015 and 2018 by sex, age group and disease or injury.

See Chapters 3 and 4 in the *Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018* report for more information on non-fatal (YLD) and fatal burden (YLL).

This interactive data visualisation compares the amount and proportion of burden that is fatal vs. non-fatal. 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.

Australian Burden of Disease Study 2018

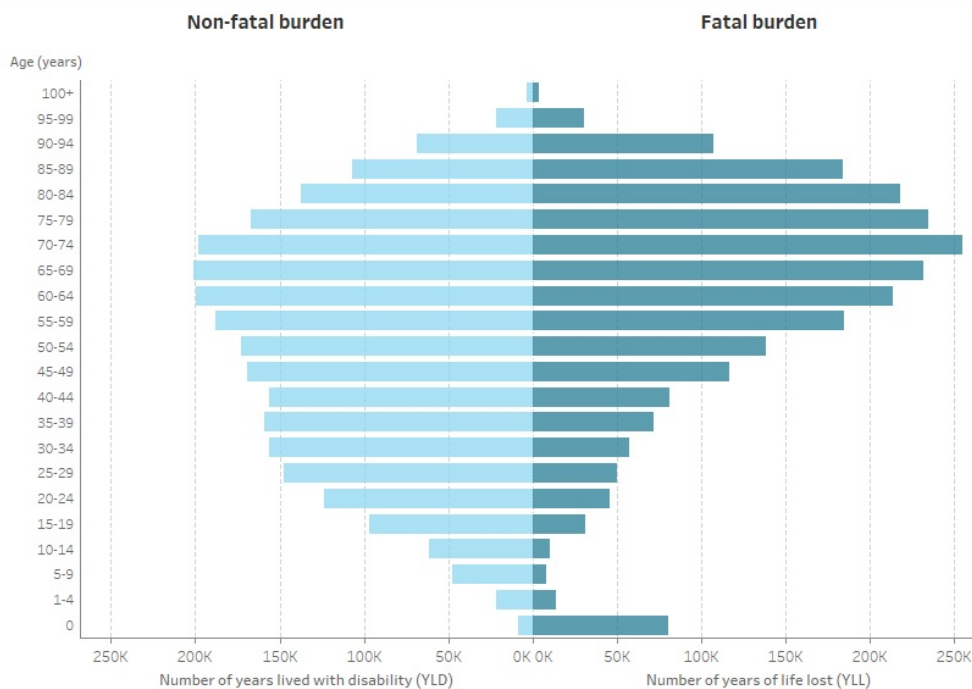
Select from the following:

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

Fatal vs. Non-fatal burden in Persons, 2018



Fatal vs. Non-fatal burden by age, Persons, 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.

State and territory estimates

Disease burden, as well as the number of deaths in 2011, 2015 and 2018 have been estimated for each Australian state and territory by sex, age group, disease group and by specific disease or injury.

Use the 'State/territory estimates' interactive graphs to explore the number of deaths, and the number or rate of disease burden (DALY, YLD or YLL) in each Australian state or territory for diseases (or disease groups) of interest.

Use the 'State/territory comparison' interactive graphs to compare the age-standardised rate of disease burden (DALY, YLD or YLL) across states and territories for disease groups in 2011, 2015 or 2018 by sex. The table showing age-standardised rates compares the state/territory with the national average (Australia) and colours the cells if lower (blue) or higher (yellow, orange or red).

See Chapter 8 in the *Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018* report for more information on burden by state/territory.

Tab 1: This interactive data visualisation gives an overview of burden of disease in Australia 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, disease group and disease. 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, disease group and disease. 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, disease group and disease. A line graph is superimposed on the column chart to show the rate of burden (per 1,000 population) by 5-year age groups. The third section is a tree map showing the amount of burden due to each disease and injury for the selected state or territory, 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.

Tab 2: This interactive data visualisation compares the age-standardised rates of burden (per 1,000 population) of each state and territory and of the whole of Australia. 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 of the whole of Australia for the selected type of burden, year, sex and disease group. The second section is a table which reports the age-standardised rates of burden (per 1,000 population) of each state and territory and of the whole of Australia for each of the specific diseases within the disease group selected and according to the type of burden, year and sex selected. Cells of the table are shaded to indicate whether the rate is equal or lower than the national average or the degree to which the rate is higher than the national average.

Visualisation not available for printing

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

Remoteness areas

Disease burden was estimated by remoteness areas for 2011, 2015 and 2018.

Remoteness is divided into Major cities, Inner regional, Outer regional and Remote and very remote defined by an area's relative access to services.

The key results include estimates of excess burden. Excess burden refers to the reduction in disease burden that would occur if all areas experienced the same rate of burden experienced in Major cities. In the data visualisation the key results show the excess burden if Remote and very remote areas experienced the same rate of burden experienced in Major cities (shown in the grey box on the right).

The table showing age-standardised rates compares the remoteness areas with the national average (Australia) and colours the cells if lower (blue) or higher (yellow, orange or red).

Use the interactive graphs to explore the number and rate of disease burden (DALY, YLD or YLL) across remoteness areas for disease groups in 2011, 2015 or 2018 by sex.

See Chapter 8 in the *Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018* report for more information on burden by remoteness area.

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 two sentences. The first sentence reports how many times higher the rate was in Remote and Very Remote areas compared to Major Cities for the selected type of burden, year, sex and disease group. The second sentence reports what proportion of burden could have been avoided if Remote and Very Remote areas had the same rate of burden as 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 and of the whole of Australia for the selected type of burden, year, sex and disease group. The third section is a table which reports the age-standardised rates of burden (per 1,000 population) of each remoteness area and of the whole of Australia for each of the specific diseases within the disease group selected and according to the type of burden, year and sex selected. Cells of the table are shaded to indicate whether the rate is equal or lower than the national average or the degree to which the rate is higher than the national average.

Australian Burden of Disease Study 2018

Select from the following:

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

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

The DALY rate in *Remote and very remote areas* was **1.4** times as high as *Major Cities*. **28.8% of** in *Remote and very remote areas* could have been avoided if the rate was the same as *Major cities*.

Comparison of age-standardised DALY rate: Persons, 2018, selected disease group



Comparison of age-standardised DALY rate by disease: Persons, 2018

Rate difference compared to national average (AUS)

- Lower than national ..
- <10% greater
- 10-19% greater
- 20-29% greater
- 30-39% greater
- 40-49% greater
- 50%+ greater
- No difference

Hover over boxes for more information and scroll for more diseases/injuries.

| Disease group | Disease/Injury | Australia | Major cities | Inner regional | Outer regional | Remote and very remote |
|----------------------------|--|-----------|--------------|----------------|----------------|------------------------|
| Cancer and other neoplasms | Lung cancer | 5.4 | 4.9 | 6.1 | 7.0 | 7.4 |
| | Bowel cancer | 3.4 | 3.1 | 4.1 | 4.0 | 3.3 |
| | Breast cancer | 2.6 | 2.5 | 2.8 | 2.5 | 2.0 |
| | Pancreatic cancer | 1.8 | 1.8 | 2.0 | 1.9 | 1.7 |
| | Prostate cancer | 1.7 | 1.5 | 1.9 | 2.0 | 2.3 |
| | Brain and central nervous system cancer | 1.5 | 1.5 | 1.6 | 1.5 | 1.1 |
| | Liver cancer | 1.4 | 1.4 | 1.3 | 1.4 | 2.5 |
| | Other malignant neoplasms (cancers) | 1.4 | 1.3 | 1.4 | 1.4 | 1.5 |
| | Melanoma of the skin | 1.0 | 0.9 | 1.3 | 1.2 | 0.9 |
| | Cancer of unknown primary site | 0.9 | 0.8 | 1.0 | 1.1 | 1.3 |
| | Non-Hodgkin lymphoma | 0.9 | 0.8 | 1.0 | 0.9 | 1.0 |
| | Oesophageal cancer | 0.8 | 0.7 | 1.1 | 1.1 | 1.3 |
| | Stomach cancer | 0.8 | 0.8 | 0.7 | 0.9 | 0.7 |
| | Acute myeloid leukaemia (AML) | 0.7 | 0.7 | 0.7 | 0.6 | 1.1 |
| | Ovarian cancer | 0.7 | 0.7 | 0.7 | 0.8 | 0.5 |
| | Myeloma | 0.6 | 0.5 | 0.7 | 0.5 | 0.4 |
| | Kidney cancer | 0.6 | 0.5 | 0.7 | 0.7 | 0.7 |
| | Bladder cancer | 0.5 | 0.4 | 0.5 | 0.5 | 0.8 |
| | Non-melanoma skin cancer | 0.4 | 0.4 | 0.5 | 0.6 | 0.6 |
| | Lip and oral cavity cancer | 0.4 | 0.3 | 0.4 | 0.6 | 0.7 |
| | Mesothelioma | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 |
| | Other blood cancers | 0.4 | 0.4 | 0.3 | 0.4 | 0.6 |
| | Uterine cancer | 0.4 | 0.4 | 0.3 | 0.4 | 0.6 |
| | Other benign, insitu and uncertain neoplasms | 0.3 | 0.2 | 0.3 | 0.3 | 0.4 |
| | Cervical cancer | 0.3 | 0.3 | 0.3 | 0.3 | 0.7 |
| | Other oral cavity and pharynx cancers | 0.3 | 0.2 | 0.3 | 0.4 | 0.6 |
| | Benign and uncertain brain tumours | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| | Other leukaemias | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 |
| | Gallbladder cancer | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 |

Notes:
 1. Coloured cells showing a rate of 0.0 have been rounded and have a very small number to display rate. Dark grey shaded cells that do not display a number indicate there was no burden from that disease or injury.
 2. Rates were age-standardised to the 2001 Australian Standard Population and 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.

Socioeconomic groups

Disease burden was estimated by socioeconomic group for 2011, 2015 and 2018.

In Australian Burden of Disease Study 2018, socioeconomic groups are based on the index of relative socioeconomic disadvantage defined by the area in which a person lives. The index is determined by factors such as household income, employment and education level.

Socioeconomic areas are grouped where group 1 represents the 20% of the population with the lowest (most disadvantaged) socioeconomic characteristics and group 5, the 20% of the population with the highest (most advantaged) socioeconomic characteristics.

Use the interactive graphs to explore the number and rate of disease burden (DALY, YLD or YLL) across socioeconomic groups for disease groups in 2011, 2015 or 2018 by sex.

The table showing age-standardised rates compares the socioeconomic group with the national average (Australia) and colours the cells if lower (blue) or higher (yellow, orange or red).

Data visualisations displaying estimates of disease burden by socioeconomic group due to risk factors are available in the interactive web report: [*Interactive data on risk factor burden*](#).

See Chapter 8 in the [*Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018*](#) report for more information on burden by socioeconomic group.

This interactive data visualisation compares burden of disease in Australia by socioeconomic group. 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 two sentences. The first sentence reports how many times higher the rate was in the lowest socioeconomic group compared to the highest socioeconomic group for the selected type of burden, year, sex and disease group. The second sentence reports what proportion of burden could have been avoided if the lowest socioeconomic group had the same rate of burden as the highest socioeconomic group 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 socioeconomic group and of the whole of Australia for the selected type of burden, year, sex and disease group. The third section is a table which reports the age-standardised rates of burden (per 1,000 population) of each socioeconomic group and of the whole of Australia for each of the specific diseases within the disease group selected and according to the type of burden, year and sex selected. Cells of the table are shaded to indicate whether the rate is equal or lower than the national average or the degree to which the rate is higher than the national average.

Australian Burden of Disease Study 2018

Select from the following:

Measure: DALY Sex: Persons Select year: 2018 Select disease group: All

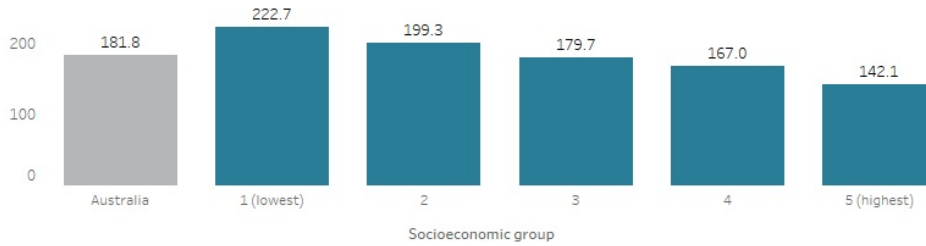
DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost

The DALY rate in the lowest socioeconomic group (1) was **1.6** times as high as the highest group (5).

34.9% of the DALY in the lowest group (1) could have been avoided if they experienced the same rate as the highest group (5).

Comparison of age-standardised DALY rate: Persons, 2018, for selected disease group

Age-standardised rate



Age-standardised DALY rate by disease and socioeconomic group: Persons, 2018

Rate difference compared to national average (AUS)

- Lower than national ..
- <10% greater
- 10-19% greater
- 20-29% greater
- 30-39% greater
- 40-49% greater
- 50%+ greater
- No difference

Hover over boxes for more information and scroll for more diseases/injuries.

| Disease group | Disease/Injury | Australia | 1 (lowest) | 2 | 3 | 4 | 5 (highest) |
|----------------------------|--|-----------|------------|-----|-----|-----|-------------|
| Cancer and other neoplasms | Lung cancer | 5.4 | 7.4 | 6.3 | 5.2 | 4.6 | 3.3 |
| | Bowel cancer | 3.4 | 4.0 | 3.9 | 3.3 | 3.1 | 2.6 |
| | Breast cancer | 2.6 | 2.8 | 2.6 | 2.5 | 2.7 | 2.4 |
| | Pancreatic cancer | 1.8 | 2.1 | 1.8 | 1.7 | 1.8 | 1.6 |
| | Prostate cancer | 1.7 | 1.8 | 1.8 | 1.7 | 1.5 | 1.5 |
| | Brain and central nervous system cancer | 1.5 | 1.5 | 1.6 | 1.3 | 1.6 | 1.5 |
| | Liver cancer | 1.4 | 1.9 | 1.5 | 1.3 | 1.1 | 1.0 |
| | Other malignant neoplasms (cancers) | 1.4 | 1.5 | 1.5 | 1.4 | 1.1 | 1.2 |
| | Melanoma of the skin | 1.0 | 1.1 | 1.1 | 1.0 | 0.9 | 1.0 |
| | Cancer of unknown primary site | 0.9 | 1.2 | 1.0 | 0.9 | 0.7 | 0.6 |
| | Non-Hodgkin lymphoma | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.7 |
| | Oesophageal cancer | 0.8 | 1.1 | 0.9 | 0.8 | 0.7 | 0.7 |
| | Stomach cancer | 0.8 | 0.9 | 0.8 | 0.8 | 0.7 | 0.5 |
| | Acute myeloid leukaemia (AML) | 0.7 | 0.7 | 0.6 | 0.8 | 0.6 | 0.7 |
| | Ovarian cancer | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 |
| | Myeloma | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 |
| | Kidney cancer | 0.6 | 0.7 | 0.7 | 0.6 | 0.5 | 0.4 |
| | Bladder cancer | 0.5 | 0.6 | 0.5 | 0.5 | 0.4 | 0.3 |
| | Non-melanoma skin cancer | 0.4 | 0.6 | 0.6 | 0.4 | 0.4 | 0.3 |
| | Lip and oral cavity cancer | 0.4 | 0.6 | 0.4 | 0.3 | 0.3 | 0.2 |
| | Mesothelioma | 0.4 | 0.3 | 0.4 | 0.4 | 0.3 | 0.4 |
| | Other blood cancers | 0.4 | 0.4 | 0.3 | 0.4 | 0.4 | 0.3 |
| | Uterine cancer | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 |
| | Other benign, insitu and uncertain neoplasms | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.2 |
| | Cervical cancer | 0.3 | 0.4 | 0.3 | 0.3 | 0.2 | 0.2 |
| | Other oral cavity and pharynx cancers | 0.3 | 0.4 | 0.3 | 0.2 | 0.2 | 0.1 |
| | Benign and uncertain brain tumours | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 |
| | Other leukaemias | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 |
| | Gallbladder cancer | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| | Acute lymphoblastic leukaemia (ALL) | 0.1 | 0.1 | 0.2 | 0.0 | 0.1 | 0.2 |
| | Chronic lymphocytic leukaemia (CLL) | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 |
| | Laryngeal cancer | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 |
| Thyroid cancer | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | |
| Testicular cancer | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | |

Notes:
 1. Coloured cells showing a rate of 0.00 have been rounded and have a very small number to display rate. Dark grey shaded cells that do not display a number indicate there was no burden from that disease or injury.
 2. Rates were age-standardised to the 2001 Australian Standard Population and 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.

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.

For fatal burden (YLL) estimates, notable changes in cause of death coding practices occurred 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 needs to be interpreted with caution. Refer to the [Quality information on YLD estimates](#) and [Frequently asked questions](#) pages 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, 2015 and 2018. Estimates are displayed by sex and for disease groups or by specific disease or injury.

Note that care should be taken when comparing disease level information in age groups over 85 years. Data for this population is often limited, leading to greater variability.

See Chapter 7 in the *Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018* report for more information on changes over time in disease burden.

This interactive data visualisation compares burden of disease in Australia over time for the years 2003, 2011, 2015 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.

Australian Burden of Disease Study 2018

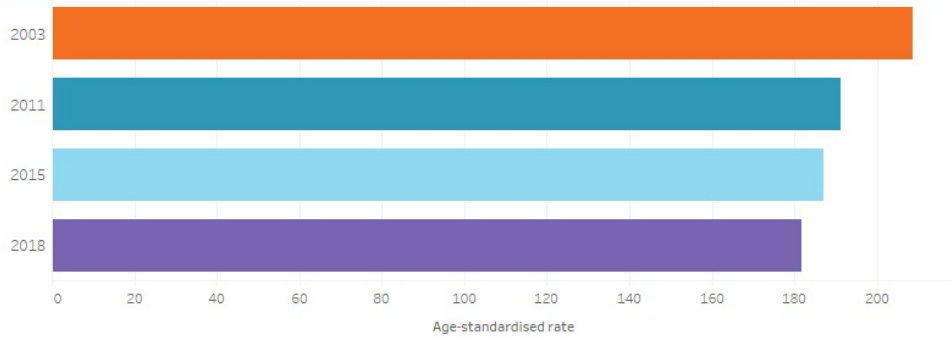
Select from the following:

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

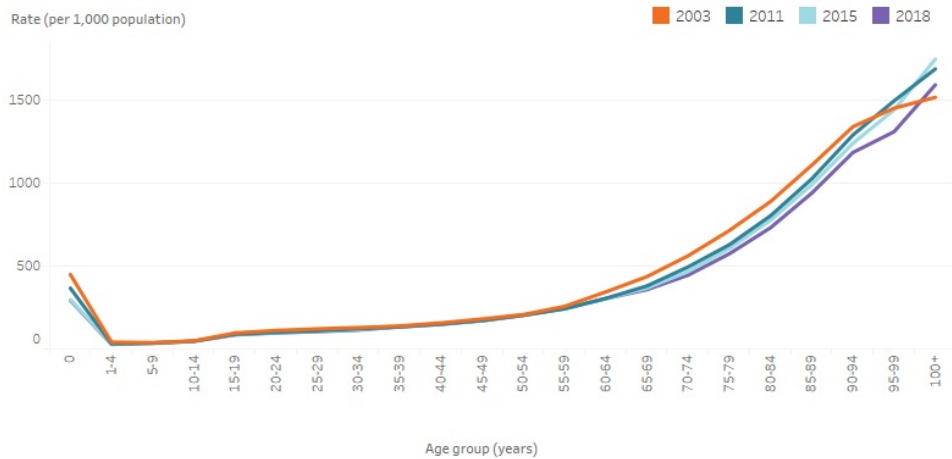
DALY= Disability-adjusted life years; YLD= Years lived with disability; YLL= Years of life lost

12.8% decrease
in the DALY rate between 2003 and 2018 for the disease/s selected

Comparison of age-standardised DALY rates: Persons



Comparison of age-specific DALY rates: Persons



Note: Rates were age-standardised to the 2001 Australian Standard Population and expressed as per 1,000 population.
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 20% increase in the total number of DALY in Australia, from 4.2 million to 5.0 million DALY. Note this is different to changes in the age-standardised rate of DALY per 1,000 population which decreased from 209 DALY per 1,000 in 2003 to 182 DALY per 1,000 in 2018.

The main factors contributing to the change in the total number of DALY were population growth (the Australian population increased by 26% 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](#) data table.

What factors contribute to changes over time?

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

- population growth—in Australia population size is increasing over time
- population ageing—in Australia the age structure of the 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 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](#)).

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 and 2015 data are also available, 2003 and 2018 were chosen as the comparison time points to enable the longest possible time series.

Disease groups

For most disease groups, DALY numbers were higher in 2018 compared to 2003, largely reflecting increases in population and ageing. The exceptions were cardiovascular diseases, infectious diseases and infant & congenital conditions 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 Australia between 2003 and 2018.

For more interactive data on changes in age-standardised rates of burden over time, see [comparisons over time](#).

This interactive data visualisation reports on the drivers of change in disease burden in Australia 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 over time

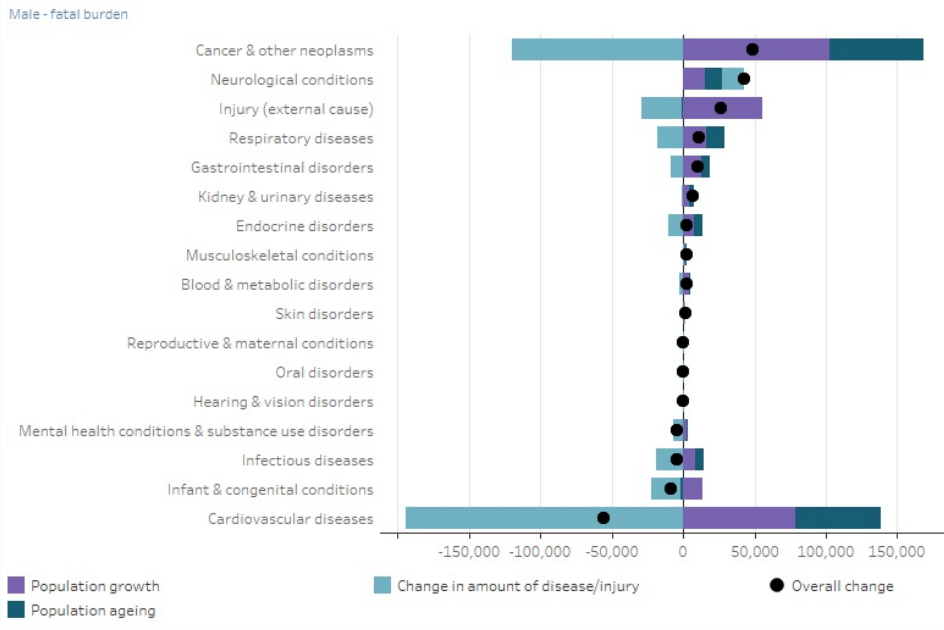
Select from the following:

Sex: Male Type of burden: YLL Disease group: All Circles

There was a **6% ▲ (82,716 YLL)** in **all disease and injury** burden in **males** between 2003 and 2018, which was driven by a:

- 25% ▲ (322,159 YLL)** due to population growth
- 13% ▲ (173,475 YLL)** due to population ageing
- 32% ▼ (-412,918 YLL)** 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.

Top 50 specific diseases

The change in disease burden over time shows a different pattern depending on the leading cause selected and the type of burden (DALY, YLL or YLD). For example, DALY has decreased for coronary heart disease and stroke, mainly driven by large declines in the amount of disease for both fatal (YLL) and non-fatal (YLD) burden. In contrast, there has been an increase in the amount of burden due to dementia, which is largely driven by increases in the amount of disease for fatal burden (partly due to changes in death coding practices over the period).

Use the interactive text and graph below to explore the different drivers of change in burden (DALY, YLD or YLL) by sex for the top 50 (by DALY) specific diseases or injuries in Australia between 2003 and 2018 (ordered by diseases with highest to lowest burden in 2018).

For more interactive data on changes in age-standardised rates of burden over time, see [comparisons over time](#).

This interactive data visualisation reports on the drivers of change in disease burden in Australia between 2003 and 2018 for each of the leading 50 diseases according to total burden in 2018. There are 3 sections which can be customised to report data according to type of burden, sex and disease or injury. 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 or injury. 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 or injury. The second and third section are stacked horizontal bar charts. The first chart shows the per cent change in burden due to each of the 3 drivers of change, as well as the total per cent change in burden, for the selected type of burden and disease or injury. The second chart 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 the selected type of burden and disease or injury. Each chart has 3 bars which corresponds to males, females and persons. The bars are 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 or injury, 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 leading causes of disease burden over time

Select from the following:

Sex:
Males

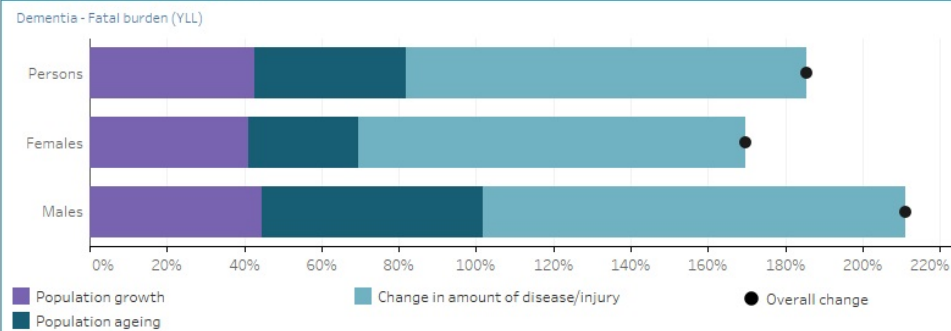
Type of burden:
YLL

Disease/injury:
Dementia

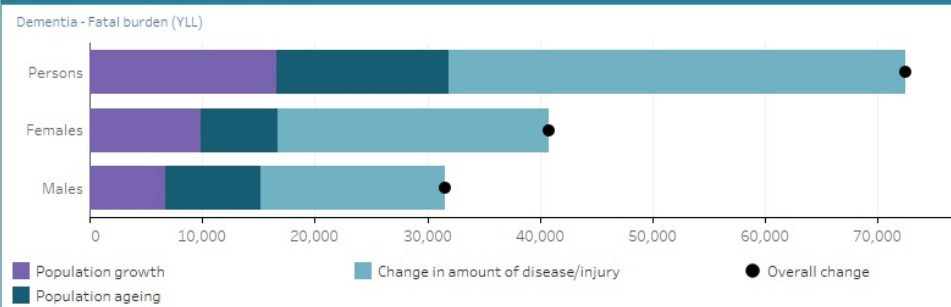
There was a **211% ▲ (31,595 YLL)** in **Dementia** fatal burden in **males** between 2003 and 2018, which was driven by a:

- 45% ▲ (6,688 YLL)** due to population growth
- 57% ▲ (8,536 YLL)** due to population ageing
- 109% ▲ (16,369 YLL)** due to the change in amount of disease/injury

Per cent change by sex



Amount of change by sex



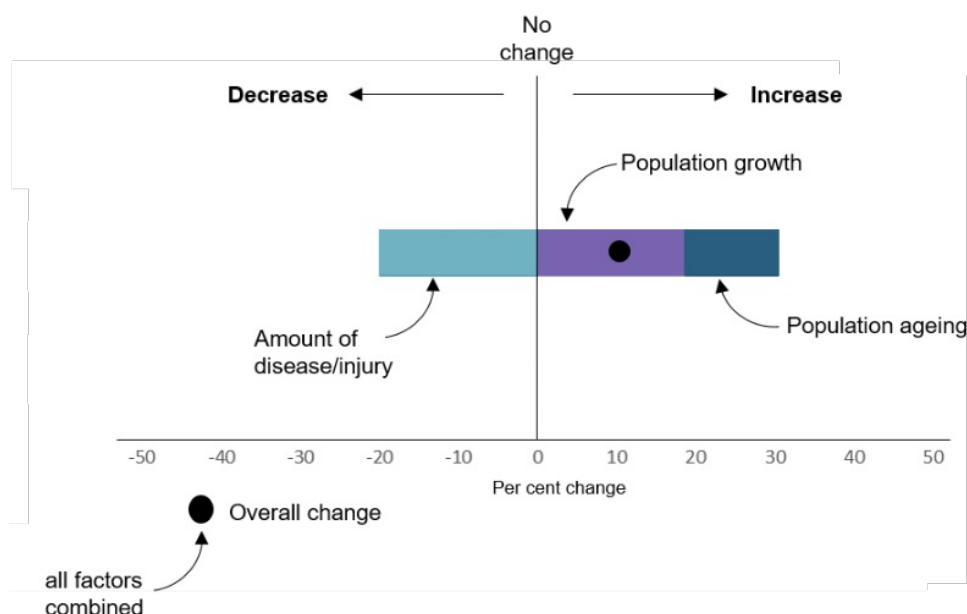
Note: Overall change is equal to the sum of the effects of all factors (population growth, population ageing and changes in the amount of disease/injury). For fatal burden (YLL) estimates, notable changes in cause of death coding practices over time occurred for dementia and accidental poisoning. For 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>).

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?

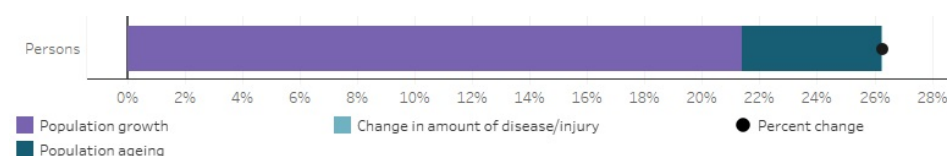
The accuracy of the estimates for changes in disease/injury over time are impacted by the quality of the mortality and morbidity data used in the calculation of the fatal (YLL) and non-fatal burden (YLD) estimates underpinning these calculations.

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 from the Australian Burden of Disease Study (ABDS) 2018 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, 2015, 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 in Australia. 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) in Australia, by age-standardised rate for 2003, 2011, 2015 and 2018, or the 'Rank by number' interactive graph to explore rankings by number of YLL, YLD or DALY. The 'Rank by number' graph can be filtered by Sex and/or Age group, while the 'Rank by ASR' graph can be filtered by Sex.

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: impact and causes of illness and death in Australia 2018* 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 in Australia over time for the years 2003, 2011, 2015 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 in Australia over time for the years 2003, 2011, 2015 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.

Australian Burden of Disease Study 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 2015, 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

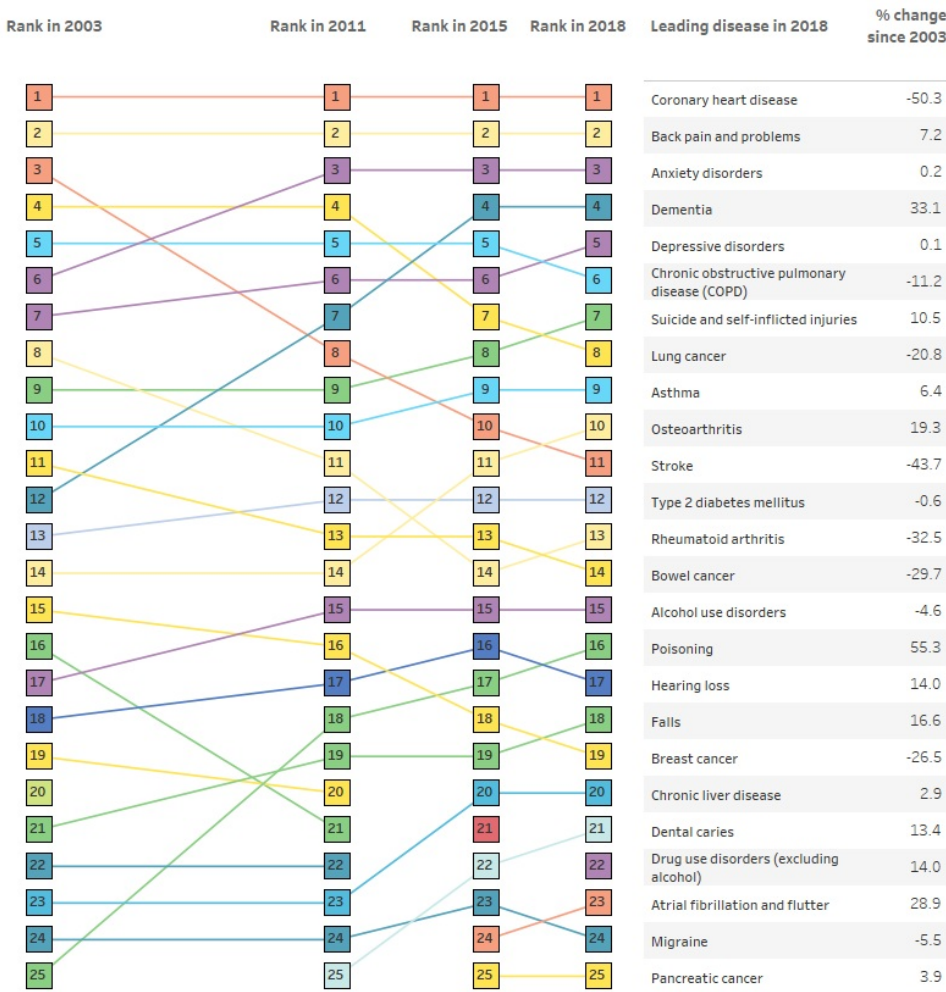
Sex:
Persons

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

Ranking by age-standardised DALY rate: Persons

Disease groups

- Cancer and other neoplasms
- Cardiovascular diseases
- Endocrine disorders
- Gastrointestinal disorders
- Hearing and vision disorders
- Infectious diseases
- Injury (external cause)
- Kidney and urinary diseases
- Mental/substance use
- Musculoskeletal conditions
- Neurological conditions
- Oral disorders
- Respiratory diseases



Note: Diseases ranked in the leading 25 in 2003 which are not ranked in 2011, 2015 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 *NEW*

Use the interactive graphs to generate a summary of total burden (DALY) in Australia in 2018 for a specific disease or injury.

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
This View ▼

Scaling
Automatic ▼

Page Size Orientation
A4 Portrait

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.

 Download

See Chapter 2 in the *Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018* 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 in Australia, 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, 2015 and 2018). There are 4 column charts showing the amount and rate of total burden for males and females by 5-year age groups. There is a column chart showing the age-standardised rates of total burden by state and territory and for the whole of Australia. There are 2 tables which show the age-standardised rates of total burden by remoteness areas and by socioeconomic group and for the whole of Australia. The cells of the table are shaded to indicate whether the rate is equal or lower than the national average or the degree to which the rate is higher than the national average.

Australian Burden of Disease Study 2018

Coronary heart disease

Select a disease or injury:
Coronary heart disease

For Persons in Australia in 2018 there were:
312,045 DALY, equivalent to 10.4 per 1,000 population

Download PDF

Fatal burden
243,202 YLL,
equivalent to 8.16 per 1,000 population

Non-fatal burden
68,843 YLD,
equivalent to 2.24 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 Persons, 2018

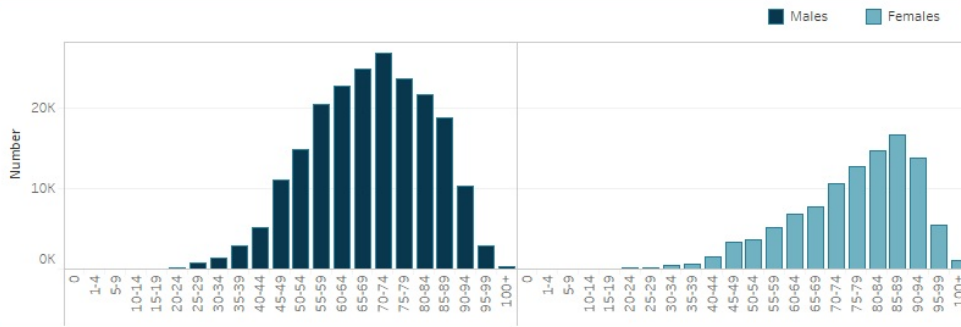
77.9% Fatal

22.1% Non-fatal

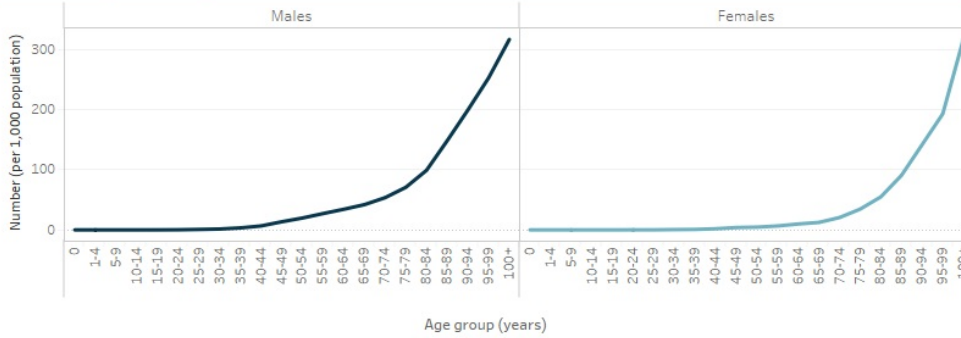
Age-standardised rates (ASRs) over time

| | Males | | | | Females | | | |
|---------------------------|---------|---------|---------|---------|---------|--------|--------|--------|
| | 2003 | 2011 | 2015 | 2018 | 2003 | 2011 | 2015 | 2018 |
| DALY ASRs (per 1,000 pop) | 29.4644 | 20.3042 | 17.1356 | 15.1639 | 13.4606 | 8.6508 | 7.0714 | 6.0725 |
| YLL ASRs (per 1,000 pop) | 24.4153 | 16.4174 | 13.9036 | 12.1252 | 10.7955 | 6.6261 | 5.4165 | 4.5312 |
| YLD ASRs (per 1,000 pop) | 5.0492 | 3.8868 | 3.2320 | 3.0388 | 2.6651 | 2.0247 | 1.6549 | 1.5413 |

Number of DALY by sex and age, 2018



DALY rates by sex and age, 2018



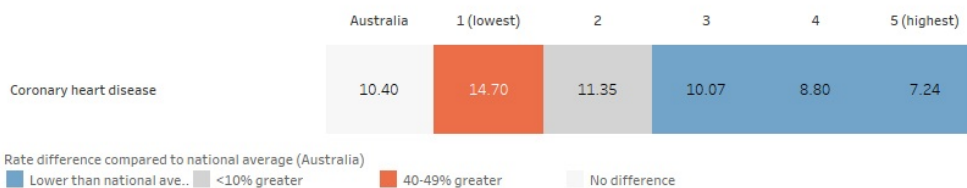
DALY age-standardised rates by State/Territory



DALY age-standardised rates by Remoteness Area



DALY age-standardised rates by Socioeconomic group



Notes: Rates were age-standardised to the 2001 Australian Standard Population and are expressed as per 1,000 population. Diseases displaying a rate of 0.0 per 1,000 population refer to a rate <0.05 per 1,000 population. 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>

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: impact and causes of illness and death in Australia 2018* 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 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 YLD estimates

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

Disease group: Hearing and vision disorders
Disease: Glaucoma

Glaucoma

Data score: ★★ Method score: ★★★★★

Description of data and methods used:

National prevalence estimates by cause of vision loss, were based on estimates from the Melbourne Visual Impairment Project (Taylor et al. 2005; VanNewkirk et al. 2001), a small Australian study with data more than 5 years from the reference date. Some transformations were required to calculate estimates by age, sex and severity using population data, the ABDS 2003 estimates, or expert advice, when required.

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 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

Using and understanding the data - frequently asked questions

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).

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.

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 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 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 Australian Burden of Disease Study 2018 instead of the Australian Burden of Disease Study 2015?

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 provides burden of disease estimates best matched to the Australian public health context for the Australian population (including subnational estimates) for 2018. It also provides estimates for 2015, 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 Health Survey, deaths data, hospital admission 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
- greater use of linked hospital/deaths data
- new or revised conceptual models to estimate YLD for some diseases in line with changes to the disease list or new evidence
- estimates for 2003, 2011 and 2015 were recalculated, 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 or non-fatal 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 Australian population-based rates for 2018 and 2015 were calculated using populations rebased to the 2016 Census (released 27 June 2017) (ABS 2017). Population-based rates for 2011 were calculated using final population estimates from the 2011 Census (released 15 December 2016) (ABS 2016).

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

References

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

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

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.

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

More information on the Australian Burden of Disease 2018 study can be found in the following reports:

- [Australian Burden of Disease Study 2018 - Key findings](#)
- [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018 – Summary](#)
- [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018](#)
- [Australian Burden of Disease Study: methods and supplementary material 2018](#)
- [Australian Burden of Disease Study 2018: Interactive data on risk factor burden.](#)

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



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





Report editions

This release

Australian Burden of Disease Study 2018: Interactive data on disease burden | 24 Nov 2021

Previous releases

- Australian Burden of Disease Study 2015: Interactive data on disease burden |
Web report | 06 Aug 2020





Related material

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- [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
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