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First Nations Burden of Disease Study 2022

June 2026 update

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First Nations Burden of Disease Study 2022

About

Every year in Australia, millions of years of healthy life are lost because of injury, illness or premature deaths. This loss of healthy life is called the 'burden of disease'. Information on burden of disease and injuries is important for monitoring population health and provides an evidence base to inform health policy and service planning.

The First Nations Burden of Disease Study 2022 includes estimates for 220 diseases and injuries for the Aboriginal and Torres Strait Islander population. Updates will be made to the report to include content on the geographic differences in burden, health-adjusted life expectancy and the burden attributable to risk factors.

Content warning: this report contains information on a range of topics that some readers may find distressing. If you, or someone you know, is looking for help or crisis support, please contact **13YARN** on **13 92 76** or **Beyond Blue** **on 1300 224 636**. Go to the support services page for a list of support services.

Key findings:

First Nations people lost 317,333 years of healthy life due to disease and injury in 2022	The rate of total burden in First Nations people decreased by 6.3% between 2011 and 2022
Injuries, cancer and cardiovascular diseases caused 62% of the fatal burden among First Nations people in 2022	The CHD burden rate has fallen by 30% since 2011, however CHD remained the leading cause of burden in 2022

Contents

Summary

Burden of disease measures the impact of diseases and injuries on a population. It combines the years of healthy life lost due to living with ill health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden). A significant proportion of this burden is preventable, being due to modifiable risk factors. The First Nations Burden of Disease Study (FNBDS) 2022 includes estimates of disease burden due to 220 diseases and injuries in Australia in 2022.

This report presents a summary of the main findings from the FNBDS 2022, with estimates for previous years (2011, 2018) for comparison. The June 2026 update adds pages focused on certain key disease groups and life stages, as well as estimates of the gap in burden between First Nations people and non-Indigenous Australians. Content covering the geographic differences in burden, health-adjusted life expectancy and the burden attributable to risk factors will be added gradually during 2026.

Estimates from the FNBDS 2022 supersede those produced for the Aboriginal and Torres Strait Islander component of ABDS 2018. The latest results for the whole Australian population are presented in Australian Burden of Disease Study 2024.

To explore burden of disease estimates in more detail see the Interactive data on disease burden. See technical notes for methodological changes for FNBDS 2022 and the Australian Burden of Disease Study: methods and supplementary material 2018 for more detailed information.

Living with disease or injury and dying prematurely contribute equally to the burden of disease

In 2022, First Nations people lost 317,333 years of healthy life (total burden, DALY), with 158,944 years lost to non-fatal burden (YLD) and 158,389 years lost to fatal burden (YLL).

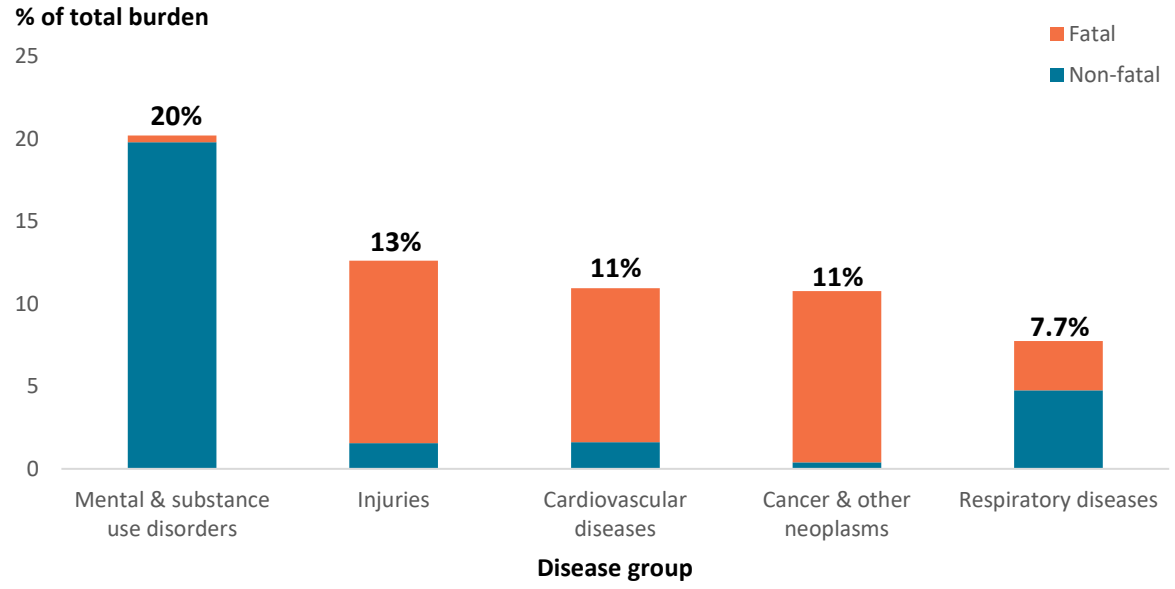
Living with illness or injury (non-fatal): 50% of total burden

Dying prematurely (fatal): 50% of total burden

Chronic diseases and injuries cause most of the burden

Out of the 17 disease groups, the disease groups that caused most of the total burden in 2022 were mental health conditions & substance use disorders, injuries, cardiovascular diseases, cancer & other neoplasms and respiratory diseases; together, these accounted for 62% of the total burden among First Nations people (Figure 1).

Figure 1: Proportion (%) of total burden, and fatal and non-fatal composition of total burden, by top 5 disease groups, First Nations people, 2022

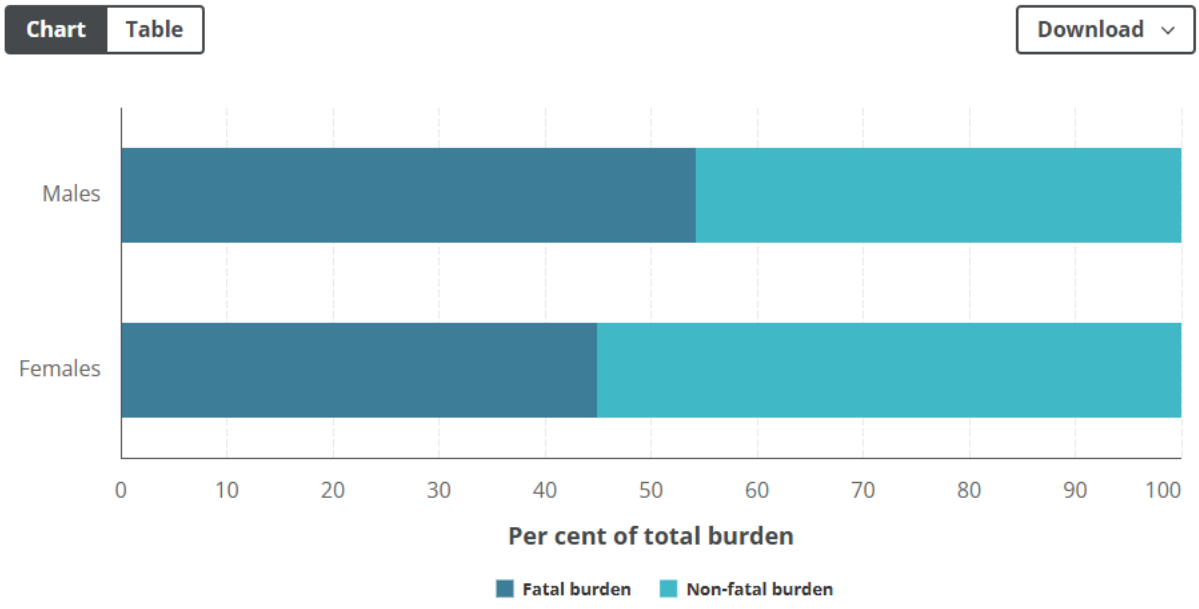


Source: AIHW First Nations Burden of Disease Database

Higher burden for males, particularly fatal burden

In 2022, dying from disease and injury accounted for more of the burden in males (54%), while living with illness accounted for more of the burden in females (55%) (Figure 2).

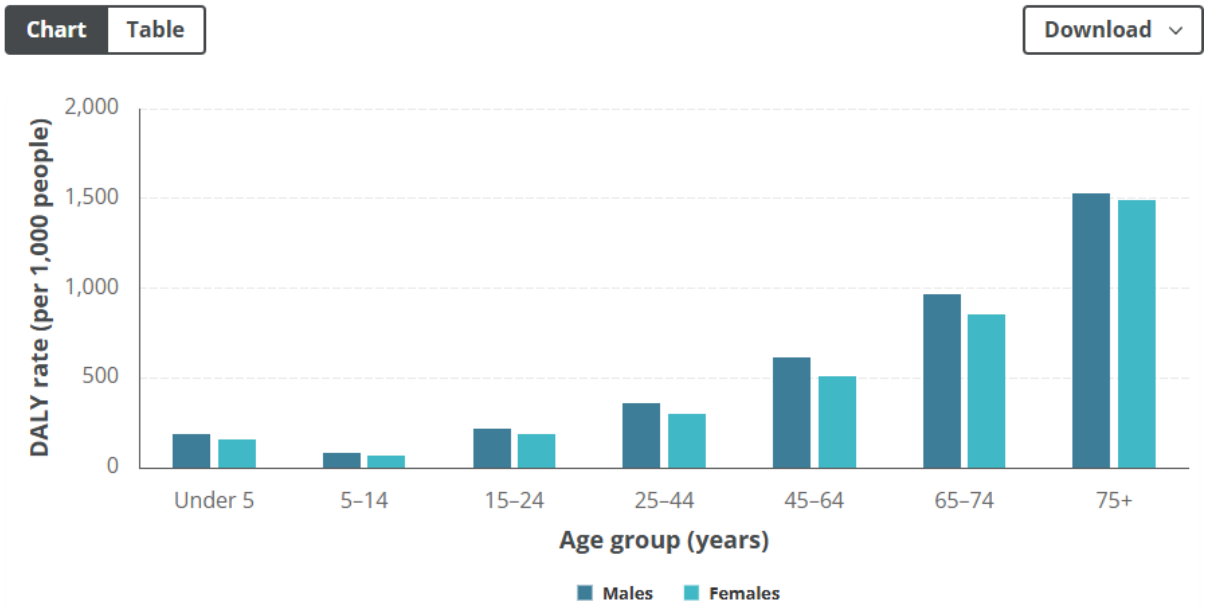
Figure 2: Proportion (%) of total burden due to fatal and non-fatal burden by sex, 2022



Source: AIHW First Nations Burden of Disease Database

First Nations males experienced a greater rate of total burden than First Nations females, particularly in people aged 45–64 and 65–74 (Figure 3).

Figure 3: Rate of total burden (DALY per 1,000 people), by sex and age group, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

Top specific causes of the burden

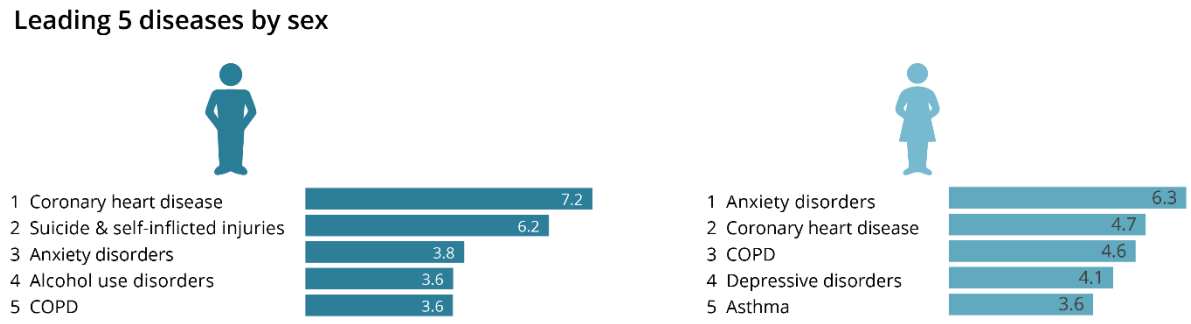
The top 5 specific causes of burden for First Nations people in 2022 were:

- Coronary heart disease (6.0%)
- Anxiety disorders (5.0%)
- Suicide & self-inflicted injuries (4.5%)
- Chronic obstructive pulmonary disease (COPD) (4.0%)
- Depressive disorders (3.4%)

These 5 causes together accounted for 23% of the total burden.

Coronary heart disease, anxiety disorders and COPD were ranked in the top 5 diseases for both sexes; however, the proportion of burden that each contributed was different (Figure 4).

Figure 4: Leading causes of total burden and proportion (%) of total burden by sex, 2022

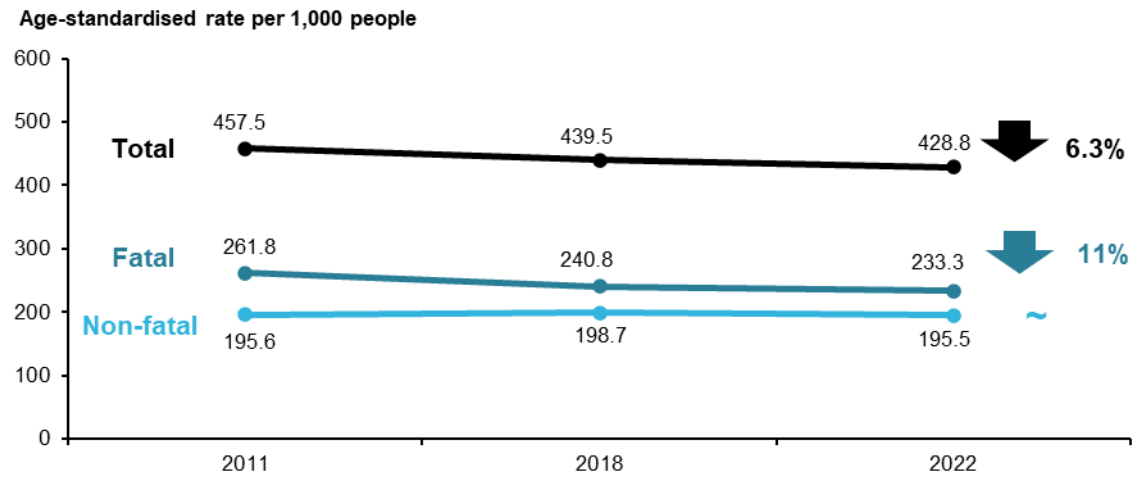


Source: AIHW First Nations Burden of Disease Database

Decline in premature deaths, but levels of illness and injury remain stable

Overall, the health of First Nations people has improved over the period from 2011 to 2022. After adjusting for population growth and ageing, there was a 6.3% decline in total burden – this decrease was driven by an 11% decline in fatal burden (Figure 5). Over the same period there was no substantial change in non-fatal burden.

Figure 5: Change between 2011 and 2022 in rates of total (DALY), fatal (YLL) and non-fatal (YLD) burden rate (per 1,000 people), First Nations people



Note: Rates were age-standardised to the 2001 Australian Standard population.

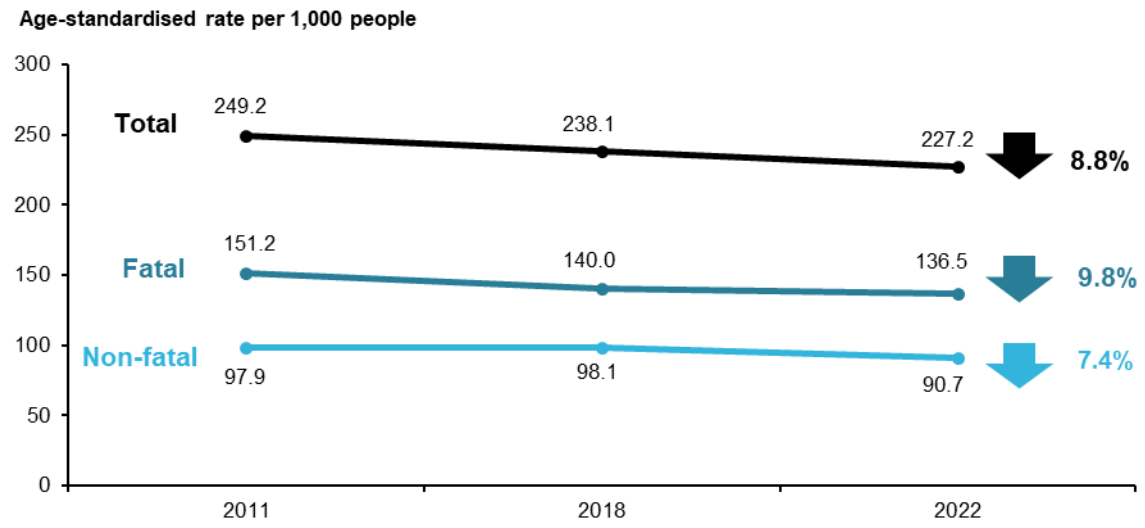
Source: AIHW First Nations Burden of Disease Database

Gap in burden has narrowed over time

After adjusting for differences in population size and age structure, the absolute gap in burden (DALY rate difference) between First Nations people and non-Indigenous Australians decreased by 8.8% between 2011 and 2022, from 249 to 227 per 1,000 people. There was also a small drop in the relative gap, from a rate ratio of 2.2 in 2011 to 2.1 in 2022. This was largely driven by a narrowing of the gap for fatal burden, which decreased by 9.8% between 2011 and 2022. The gap in non-fatal burden also decreased during this period, by 7.4%. There was no change in the relative gap for fatal burden (a rate ratio of 2.4 in 2011 and 2022), while there was a slight drop for non-fatal burden (from a rate ratio of 2.0 in 2011 to 1.9 in 2022).

The decrease in the gap in non-fatal burden was driven by an increase in the rate of non-fatal burden among non-Indigenous Australians between 2011 and 2022 (7.3% increase, from 98 to 105 YLD per 1,000 people).

Figure 6: Change between 2011 and 2022 in the gap in age-standardised total burden (DALY), fatal burden (YLL) and non-fatal (YLD) burden rate (per 1,000 people) between First Nations people and non-Indigenous Australians.



Note: Rates were age-standardised to the 2001 Australian Standard population.

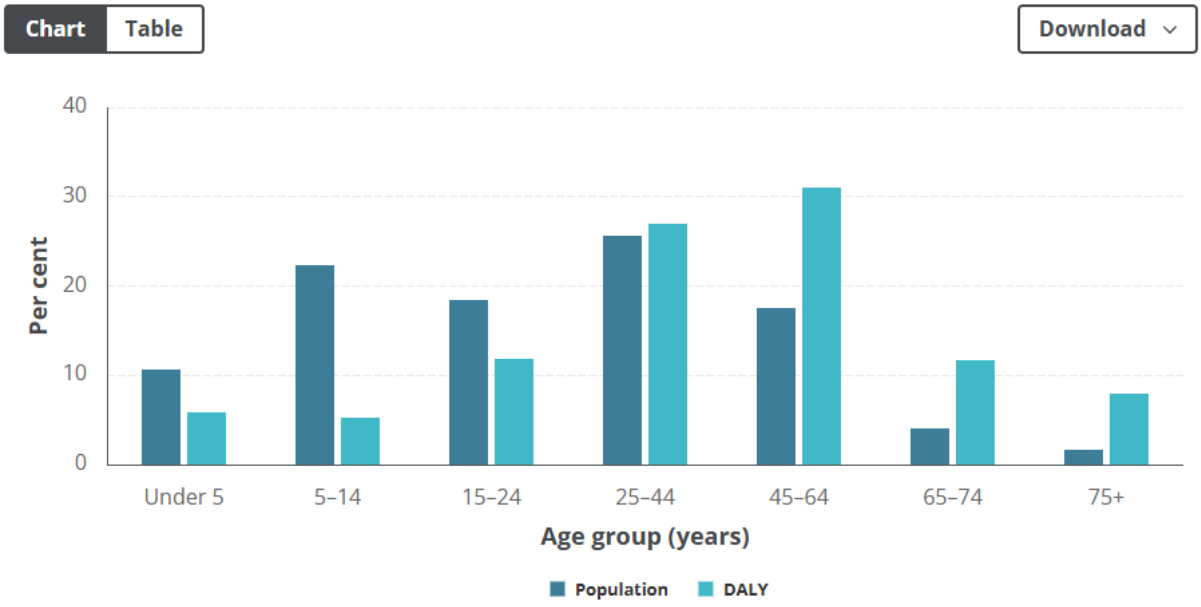
Source: AIHW First Nations Burden of Disease Database

A large proportion of the burden occurs in mid-life

Disease burden is not evenly distributed over the different stages of life.

- Infants, children and young adults aged under 25 comprised around half (51%) of the First Nations population but accounted for just under a quarter (23%) of the total burden in 2022.
- Adults aged 25–64 comprised 43% of the First Nations population and more than half (58%) of the total burden.
- Adults aged 65 and over comprised 5.6% of the population but accounted for 19% of the total burden.

Figure 7: Proportion of First Nations population and total burden (DALY), by age group, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

Burden of disease in First Nations people

For Aboriginal and Torres Strait Islander (First Nations) people, good health is more than the absence of disease or illness; it is a holistic concept that includes physical, social, emotional, cultural, spiritual and ecological wellbeing, for both the individual and the community. Although the health of First Nations people has improved in a number of areas over the past decade (for example, cardiovascular disease deaths), there are still areas where outcomes have not improved, or have worsened (such as potentially preventable hospitalisations, cancer and suicide rates) (AIHW 2025).

This report presents results from the First Nations Burden of Disease Study (FNBDS) 2022. The FNBDS 2022 is based on the Australian Institute of Health and Welfare's previous burden of disease studies and provides an update of estimates for the First Nations population. The current reference year for the FNBDS is 2022 as this was the latest year of data available at the time of analysis for the majority of data sources used to produce burden of disease estimates for First Nations people. Estimates from the FNBDS 2022 supersede those produced for the Aboriginal and Torres Strait Islander component of the Australian Burden of Disease Study (ABDS) 2018. Content covering the geographic differences in burden, health-adjusted life expectancy and the burden attributable to risk factors will be added gradually during 2026.

A separate report presents the latest results for the whole Australian population – Australian Burden of Disease Study 2024.

High-quality information on the health impacts and distribution of different diseases, injuries and risk factors is important in providing an evidence base to inform both health policy and programs and service delivery. This is especially important for the Aboriginal and Torres Strait Islander population because it is known to have unacceptably high levels of mortality, illness and injury (AIHW 2025).

Burden of disease analysis measures the impact of fatal and non-fatal burden; that is, both deaths and living with poor health. More than counting deaths or disease prevalence, it also takes into account age at death and severity of disease, and allows different diseases to be compared and reported in a consistent manner. Estimates produced from a burden of disease study are the best summary measures of a population's health.

Burden of disease analysis also allows the contribution of modifiable risk factors to be estimated. Many factors outside health have a significant impact on the health and wellbeing of the First Nations population – for example, justice issues, racism (both individual and systemic), ongoing poverty and disadvantage, and experiences of multiple and long-term stressors. Past colonisation and the colonial present have had, and continue to have, a devastating impact on First Nations communities and cultures. Violence and epidemic disease associated with past colonisation caused an immediate loss of life, while the occupation of land by settlers, restriction of First Nations people to reserves, controlled employment and the forced removal of children under Aboriginal protection policies disrupted families, communities, culture and the ability of First

Nations people to support themselves. Many First Nations people suffer inter-generational trauma resulting from these past events. Although many of these factors are not able to be explicitly measured in this analysis, their impact on health is evident in the high levels of burden experienced by First Nations people.

What is burden of disease?

Burden of disease analysis measures the impact of disease and injury in a population (in this report, the First Nations population of Australia) by estimating the amount of 'disability-adjusted life years' (DALY) experienced by that population. This measure counts the combined years of healthy life lost due to living with and dying prematurely from disease and injury. It is the difference between a population's actual health and its ideal health, where ideal health is living to old age in good health (without disease or disability).

If a disease has a high number of DALY, it has a high burden on the population. Some diseases have high fatal burden (YLL) due to the number of premature deaths they cause (for example, cancers) or because they cause death at younger ages, while others have high non-fatal burden (YLD) due to the number of people living with the condition and/or the severity of the illness (for example, musculoskeletal conditions).

Burden of disease summary measures

Years lived with disability (YLD): A measure of the years spent in less than full health due to living with illness due to disease and injury, weighted to account for severity of disease. YLD represent non-fatal burden.

Years of life lost (YLL): A measure of the years of life lost due to premature death, defined as dying before the ideal life span. YLL represent fatal burden.

Disability-adjusted life years (DALY): A measure (in years) of healthy life lost either through living with illness due to disease and injury (YLD) or through dying prematurely (YLL). The DALY measure represents total burden (the sum of YLD and YLL) and can be referred to as health loss.

Each of these 3 measures can be expressed as the number of YLD/YLL/DALY in a population, or as a crude or age-standardised rate. See also Different types of statistics presented in this report.

Burden estimates can be reported for individual diseases or injuries, referred to as 'causes', most of which describe a specific health problem (for example, dementia). Reporting can also be for a disease group (for example, neurological conditions), which consists of a number of related causes. For more information on each disease group see Australian Burden of Disease Study: Methods and supplementary material 2018, Disease specific methods - morbidity. 'Residual' causes (for example, other infections) have been excluded from rankings in this report, as these are often made up of several diverse conditions which, as a group, are difficult to interpret. There are 220 separate causes and 17 disease groups in the FNBDS.

Example of calculating disability-adjusted life years

Burden of disease analyses estimate health loss from living with or dying from disease and injury in a single year – measured as DALY.

Joe, aged 65, has angina (a chronic heart condition that causes temporary chest pain on exertion). Joe suffers health loss from living with angina; in burden of disease analyses, this impact is measured using a 'disability weight' that reflects the severity of the disease and its effects on a person's life – see the ABDS methods report for more detail. Angina has a disability weight of 0.2 and, as it is a chronic condition, it would affect Joe for the entirety of that year (0.2 x 1 year = 0.2 YLD). This gives Joe a total of 0.2 YLD health loss due to coronary heart disease (the burden of disease cause that includes angina).

Sam, aged 18, has appendicitis (requiring appendectomy); they would experience short-term health loss (for about 2 weeks) with a disability weight of 0.3 (0.3 x 2/52 = 0.01 YLD). This gives Sam a total of 0.01 YLD health loss due to appendicitis.

Pat, aged 58, dies of liver cancer, and will lose a number of years by dying early. A person aged 58 would (according to the reference life table) live until 91. If Pat dies at 58, they will have lost 33 years (or 33 YLL) due to liver cancer.

Together, Joe, Sam and Pat contribute 33.21 DALY (0.21 YLD plus 33 YLL).

Note: Disability weights and the reference life table used in this report are the same for males and females, for First Nations people and non-Indigenous Australians, and for all reference years. Therefore, the burden estimates are comparable between males and females, between First Nations and non-Indigenous Australians, and over time.

About the data in this report

The results presented here for each reference year (2011, 2018 and 2022) are modelled estimates of the time people spent in less than full health because they died from, or were living with the effects of, disease or injury in that year. The data used to produce these estimates are drawn from a range of Australian sources such as hospital records, disease registers, health surveys, academic studies, and death records. While some of these sources focus on First Nations people exclusively (for example, the National Aboriginal and Torres Strait Islander Health Survey, 2022–23), most data sources include both First Nations people and non-Indigenous Australians, and generally contain information on the sex, age and broad location of cases, as well as their Indigenous status.

It is known from previous investigations that Indigenous status information in many data sources is incomplete, meaning that fewer cases are identified as First Nations people than actually occurred. There are many reasons for this, such as:

- the person (or their representative) may not have been asked about their Indigenous status
- the person may have been asked, but chosen not to identify
- a data recording error.

Responding to the question about Indigenous status is voluntary. A person's choice to identify as an Aboriginal and/or Torres Strait Islander person may be affected by the context in which the question is asked – for example, whether other people are present, whether other information is also being collected, what the circumstances are, and how safe they feel at that time or in that place to share that information.

The National Agreement on Closing the Gap defines a culturally safe environment as one where there is no assault, challenge or denial of the person's identity, who they are and what they need (All Australian governments & Coalition of Aboriginal and Torres Strait Islander Peak Organisations 2020). It is a place where cultural values, strengths and differences are respected, and racism and inequity are addressed (AIHW 2023). Individuals may choose to identify as Aboriginal and/or Torres Strait Islander people in some circumstances but not others, and this may change over time depending on their experiences as well as the impact of wider societal events and changes, such as the 2023 'Voice' referendum or the 2025 Victorian Statewide Treaty Bill.

For this analysis, data from sources where there was evidence to quantify the extent of under-identification were adjusted to better estimate the burden of disease in First Nations people. More detailed information is provided in the Technical notes.

Where no data were available to provide a reliable First Nations prevalence estimate, indirect methods were used to derive prevalence estimates. Such methods included applying rate ratios, such as First Nations-to-non-Indigenous ratios, from proxy data sources (for example, hospitalisations) to the total population prevalence. Indirect methods were used to derive First Nations prevalence for either the whole or part of the disease for 82 diseases across 12 disease groups. For more information on these diseases see: Australian Burden of Disease Study: Methods and supplementary material 2018, Years lived with disability (YLD)

Different types of statistics presented in this report

A range of different statistics and estimates are presented in this report, which are useful for different purposes. These include:

Numbers of DALY, YLD and YLL describe the overall (DALY), non-fatal (YLD) and fatal (YLL) disease burden in the population being analysed. They are useful for summarising the health of that population at a point in time, for assessing health-care needs and planning health services.

Crude rates of DALY, YLL and YLD provide a measure of health loss against the size of the population, but without taking any other features of the population into account. They are useful for measuring the relative impact in one age group compared with another by describing the amount of health loss relative to the size of the age group. They are also useful for assessing health-care needs and planning health services.

Age-standardised rates of DALY, YLL and YLD also provide a measure of the health loss against the size of the population, but take into account the age structure of the population and changes in population size and ageing over time. Age-standardised rates have little use in service provision planning, but are useful for comparing the impact of various diseases between 2 populations with different age structures (for example, First Nations people and non-Indigenous Australians) or between 2 different time points (for example, 2011 and 2022).

Age-specific rates are rates relating specifically to a certain age group. An age-specific rate is calculated as the number of events (DALY, YLD or YLL) in an age group divided by the population of that age group. The resultant rate is then multiplied by 1,000 to create a whole number for easier comparison and interpretation.

An age-specific DALY rate of 450 DALY per 1,000 people means that, for every 1,000 people, the equivalent of 450 years were lost because of injury, illness or premature deaths.

Note that a single person can contribute multiple DALYs to the total population burden. This is because the fatal burden component (YLL) measures the number of years of life lost compared with the ideal life expectancy of 90 years at birth, rather than simply counting deaths. For example, if a person dies 25 years earlier than expected, this contributes 25 YLL, even though it represents one individual. Because DALYs measure years of healthy life lost**,** rather than the number of people affected, the total years lost in a population can exceed the population size. As a result, age-specific DALY rates may sometimes exceed 1,000 per 1,000 people.

Two types of percentages are also used in this report:

- **Percent of burden** – this is a measure of the burden in a particular sex, age group, disease group or cause as a proportion of the total. For example, if the total burden was 2,000 DALY, and the burden due to diabetes was 200 DALY, then diabetes contributes 10% of the total burden (calculated as 200/2,000 x 100).
- **Percent change over time** – this is a measure of how much the burden has changed between one year and another, relative to the burden in the earlier year. For example, if

the total burden was 2,000 in 2011 and 2,500 in 2022, then the burden has changed by 25% (calculated as (2,500 – 2,000)/2,000 x 100).

References

All Australian governments & Coalition of Aboriginal and Torres Strait Islander Peak Organisations (2020), National Agreement on Closing the Gap | Closing the Gap, Department of the Prime Minister and Cabinet. Accessed 13 November 2025.

AIHW (Australian Institute of Health and Welfare) (2023) Cultural safety in health care for Indigenous Australians: monitoring framework, AIHW: Australian Government, accessed 13 November 2025.

AIHW (2025). *Aboriginal and Torres Strait Islander Health Performance Framework: summary report June 2025*, AIHW: Australian Government, accessed 15 October 2025.

Total burden (DALY)

Key messages

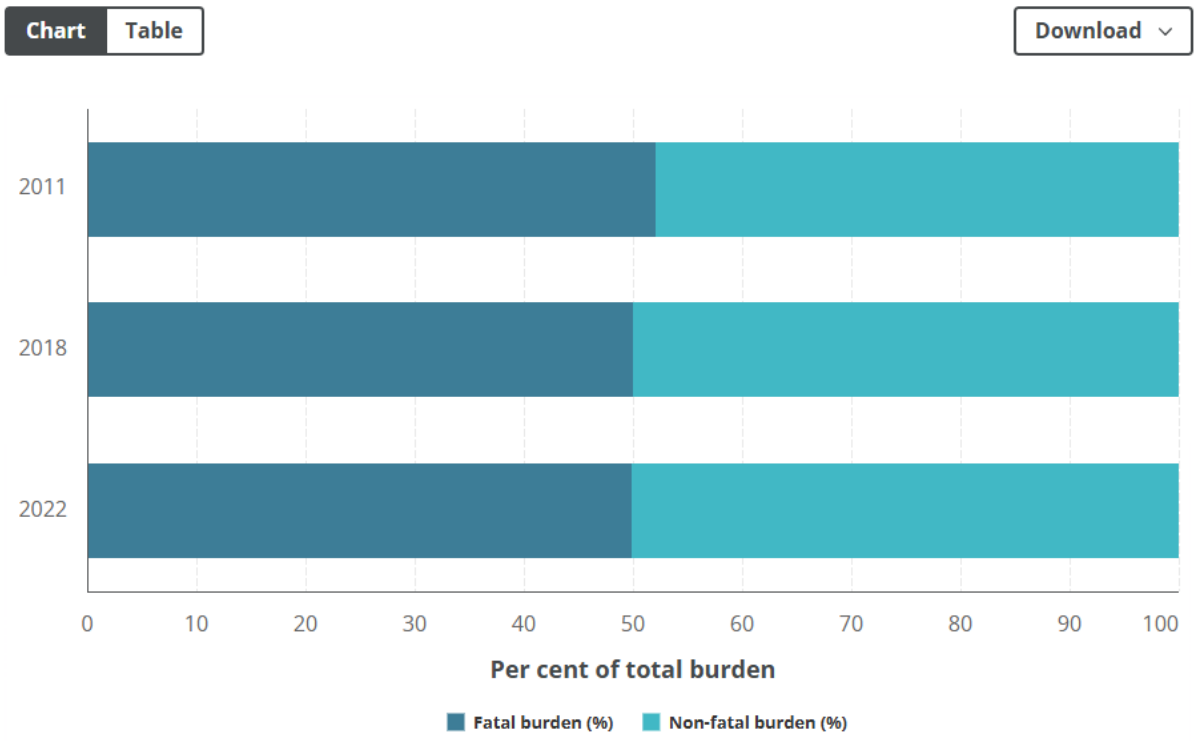
- In 2022, First Nations people lost 317,333 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 311 DALY per 1,000 people.
- Living with disease or injury (50% of total burden, 158,944 YLD) and dying prematurely (50% of total burden, 158,389 YLL) contributed equally to the burden of disease.
- In 2022, the main disease groups contributing to total burden for First Nations people were mental health conditions & substance use disorders (20% of total burden), injuries (13%), cardiovascular diseases (11%), cancer & other neoplasms (11%) and respiratory diseases (7.7%).
- The burden from mental health conditions & substance use disorders and respiratory diseases was predominantly non-fatal. The burden from cancer & other neoplasms, injuries and cardiovascular diseases was predominantly fatal.
- At the individual disease level, the leading causes of total burden in 2022 were coronary heart disease (6.0% of total burden), anxiety disorders (5.0%) and suicide & self-inflicted injuries (4.5%).
- Among First Nations people in 2022, COVID-19 was the 14th leading cause of total burden (contributing 2.0% of DALY). COVID-19 was the largest overall contributor to the infectious diseases group, accounting for 47% of its total burden.
- Dying from disease and injury accounted for more of the burden in males (54%), while living with illness accounted for more of the burden in females (55%).
- For infants and children aged under 5, nearly three-quarters (70%) of the burden was due to premature death (fatal burden). Among children aged 5–14, most of the burden (84%) was due to living with illness (non-fatal burden). For people aged 15–44, around two-thirds (64%) of burden was due to non-fatal burden. For people aged 45 and over, almost two-thirds (62%) of the total burden was due to fatal burden.

In 2022, First Nations people lost 317,333 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 311 DALY per 1,000 people. There was an equal contribution to the total burden from:

- living with disease or injury (50% of total burden, 158,944 YLD)
- dying prematurely (50% of total burden, 158,389 YLL).

Between 2011 and 2018, there was a decrease in the contribution of fatal burden to total burden. As a result, there was an even contribution of fatal and non-fatal burden to total burden in 2018 and 2022 (Figure 1).

Figure 1: Proportion (%) of total burden due to fatal and non-fatal burden among First Nations people in 2011, 2018 and 2022



Source: AIHW First Nations Burden of Disease Database

To further explore the total burden and the contribution of fatal and non-fatal burden over time, see the following interactive data visualisations:

- Dashboard 1: Burden of disease in Australia: This visualisation provides total, fatal and non-fatal burden numbers and rates both overall and for each disease group by sex and age
- Dashboard 2: Fatal vs. non-fatal burden: This visualisation shows the distribution of fatal and non-fatal burden by year, sex, age group and disease group.

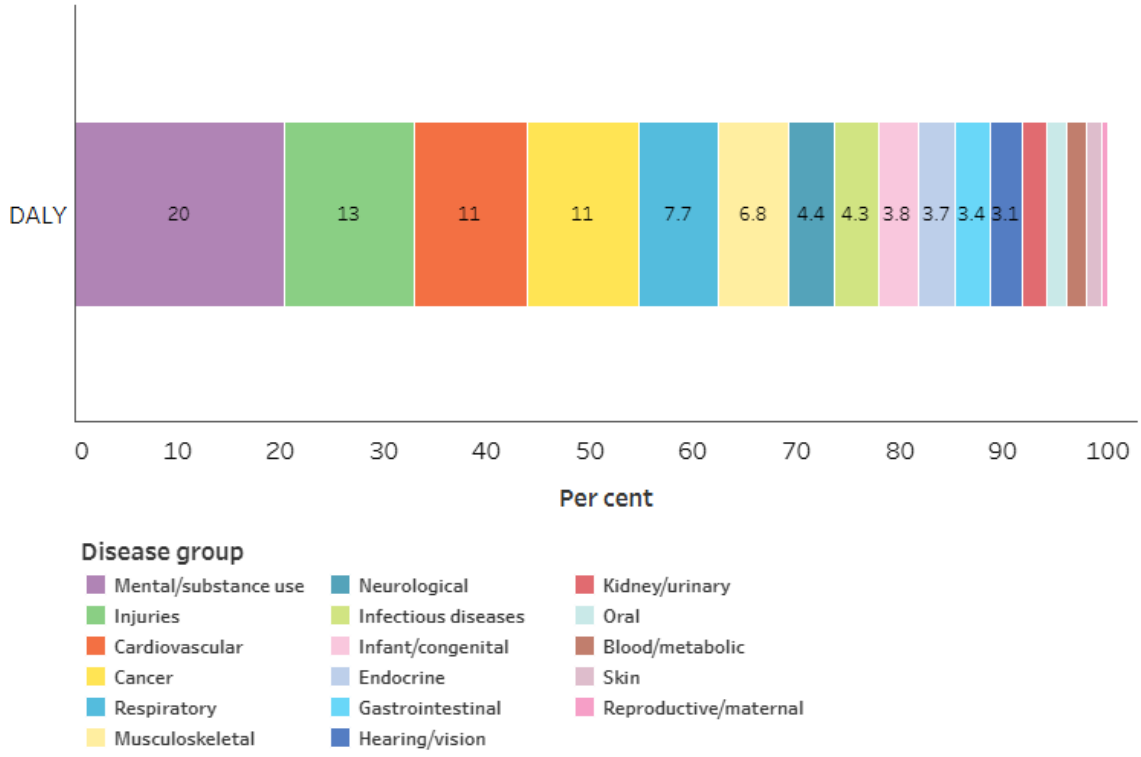
Chronic diseases and injuries dominate

In 2022, the main disease groups contributing to total burden for First Nations people were:

- mental health conditions & substance use disorders
- injuries
- cardiovascular diseases
- cancer & other neoplasms
- respiratory diseases.

Together, these 5 disease groups accounted for almost two-thirds (62%) of the total burden in First Nations people (Figure 2).

Figure 2: Proportion (%) of total burden (DALY) by disease group, First Nations people, 2022



http://www.aihw.gov.au/

Source: AIHW First Nations Burden of Disease Database

Disease groups had different proportions of fatal and non-fatal burden

The contribution of fatal burden and non-fatal burden to total burden differed greatly for each disease group (Figure 3).

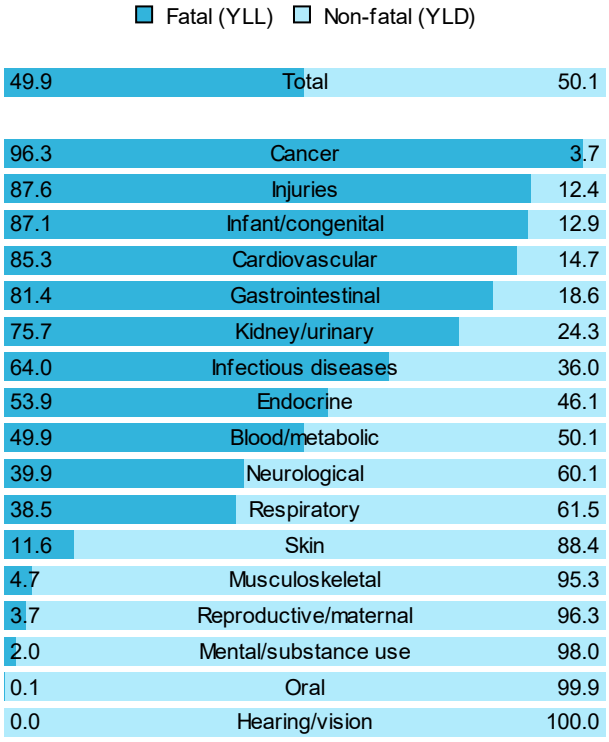
Among the 5 highest burden disease groups:

- the burden from mental health conditions & substance use disorders and respiratory diseases was predominantly non-fatal.
- the burden from cancer & other neoplasms, injuries and cardiovascular diseases was predominantly fatal.

For other disease groups:

- the burden from infant & congenital conditions, gastrointestinal disorders, kidney & urinary diseases and infectious diseases was mostly fatal.
- the burden from neurological conditions, skin disorders, musculoskeletal conditions, reproductive & maternal conditions, and oral disorders was mostly non-fatal, and the burden from hearing & vision disorders exclusively non-fatal.
- the burden from blood & metabolic disorders and endocrine disorders (including diabetes) was made up of similar proportions of fatal and non-fatal burden.

Figure 3: Fatal (YLL) and non-fatal (YLD) burden as a proportion (%) of total burden (DALY), by disease group, First Nations people, 2022



Note: For the oral disease group, the YLL proportion is based on a small number of First Nations deaths so this result should be used with caution.

Source: AIHW First Nations Burden of Disease Database

To explore the contribution of fatal and non-fatal burden by sex, age and year for each disease group, see the interactive data visualisation: Dashboard 2: Fatal vs. non-fatal burden.

Top specific diseases contributing to burden

At the individual disease level, the leading 5 causes of total burden in 2022 were:

- coronary heart disease (6.0% of total burden)
- anxiety disorders (5.0%)
- suicide & self-inflicted injuries (4.5%)
- chronic obstructive pulmonary disease (COPD) (4.0%)
- depressive disorders (3.4%).

Together, these 5 causes accounted for nearly one quarter (23%) of the total burden in First Nations people (Figure 2).

To explore the leading causes of disease and injury in 2022 further, see the interactive data visualisation: Dashboard 5: Disease/injury-specific summary. This visualisation provides numbers, crude and age-standardised rates of total, fatal and non-fatal burden

for the top 50 causes of total burden in 2022, along with charts showing the age and sex distribution for total burden. The information for each cause can be downloaded as a 1-page PDF.

COVID-19 burden in 2022

COVID-19 was not included in the 2018 or 2011 Australian Burden of Disease Studies, having emerged as a new disease in late 2019 and declared a pandemic in March 2020. It has been added to the FNBDS 2022 as a new cause in the infectious diseases group, and estimates of burden are provided for 2022 only.

Among First Nations people in 2022, COVID-19 was the:

- 14th leading cause of total burden (contributing 2.0% of DALY)
- 10th leading cause of fatal burden (contributing 2.7% of YLL)
- 23rd leading cause of non-fatal burden (contributing 1.3% of YLD).

COVID-19 was the largest overall contributor to the infectious diseases group, accounting for 47% of total burden, 49% of fatal burden and 42% of non-fatal burden in the disease group.

For COVID-19:

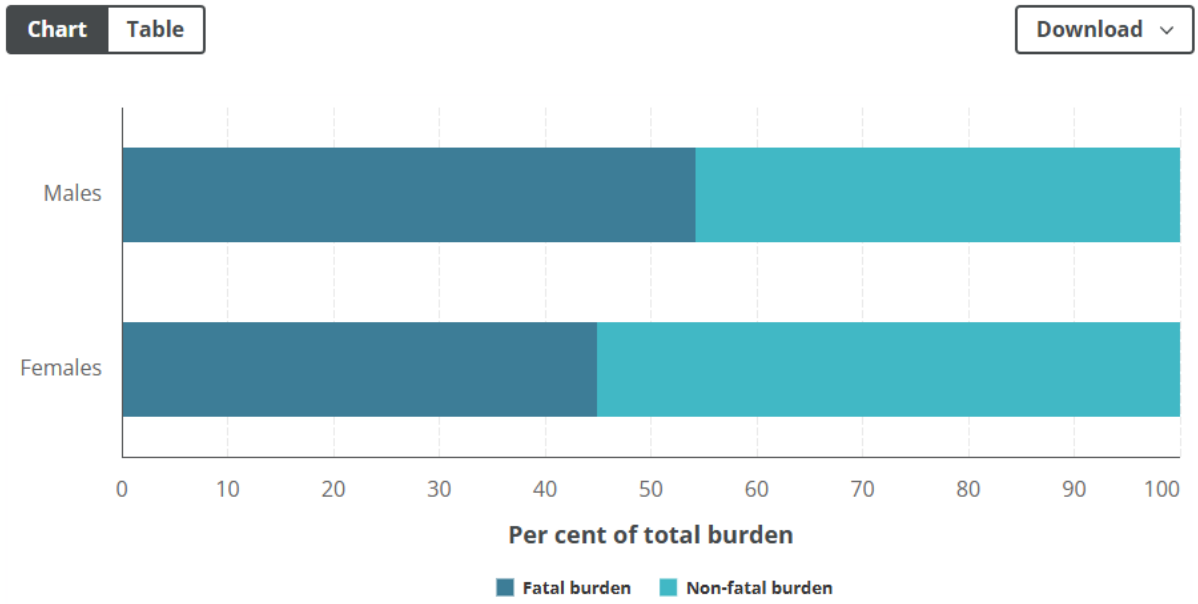
- females experienced more of the total burden than males (53% and 47%, respectively).
- almost one-third (31%) of the total burden was in those aged 45–64.
- the burden was predominantly fatal (68%).
- it was the 5th leading cause of fatal burden among First Nations people aged 75 and over (6.0%).

For information on how disease burden due to COVID-19 was estimated, refer to the Technical notes.

How does total burden differ between males and females?

First Nations males experienced more of the total disease burden (53% of total burden) than First Nations females (47%) in 2022. Dying from disease and injury accounted for more of the burden in males, while living with illness accounted for more of the burden in females (Figure 4).

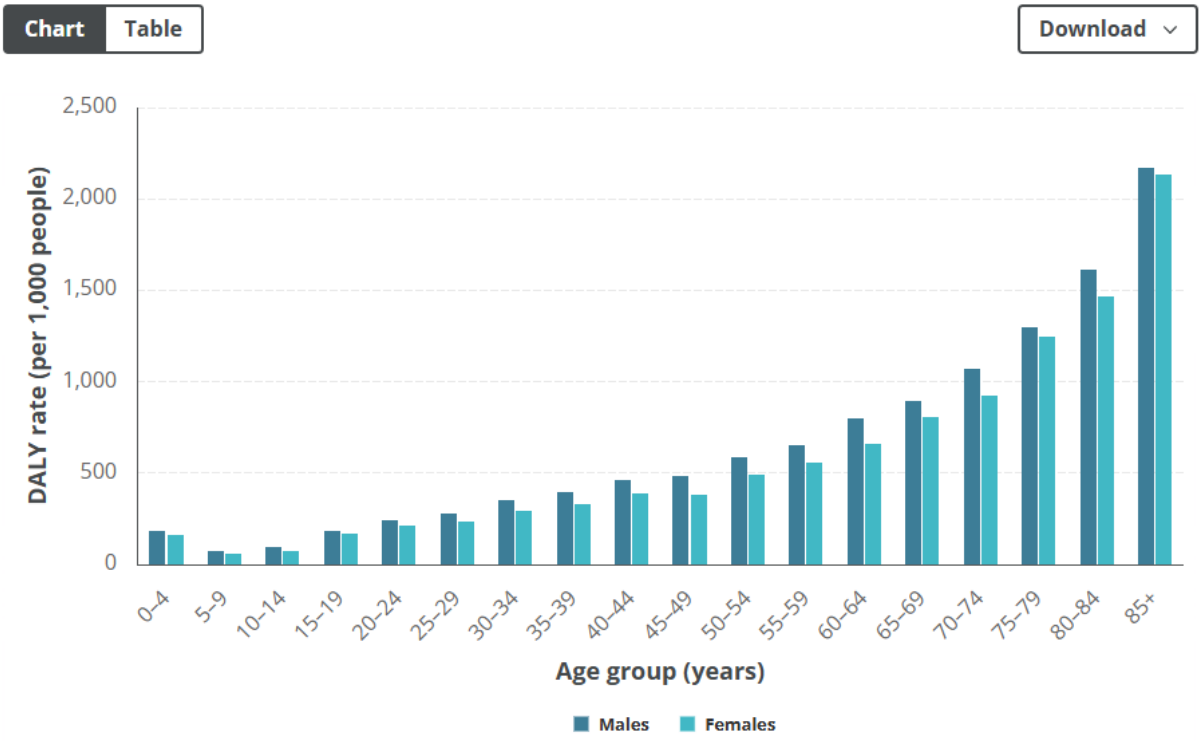
Figure 4: Proportion (%) of total burden due to fatal and non-fatal burden by sex, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

Males experienced a greater rate of total burden than females across all age groups, in particular for those age groups 45 and older (Figure 5).

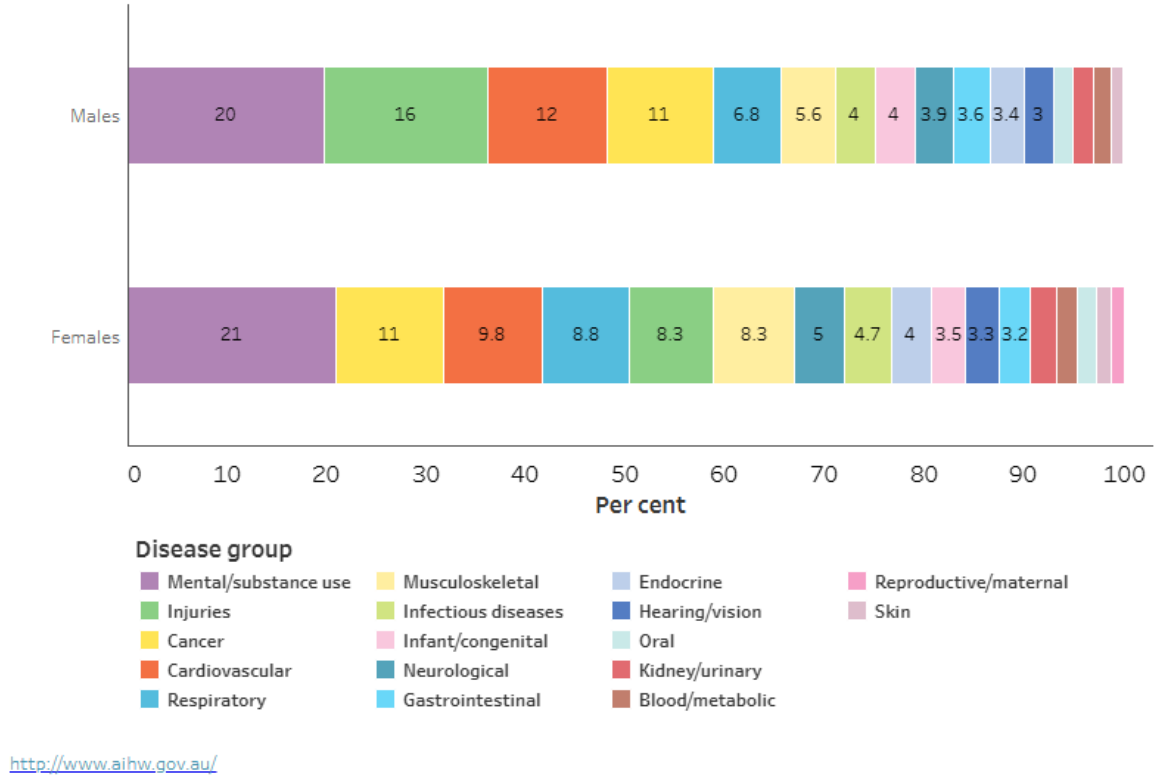
Figure 5: Rate of total burden (DALY per 1,000 people), by sex and age group, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

Mental health conditions & substance use disorders was the greatest contributor to total burden for both males and females, accounting for about one-fifth of the total burden in both sexes. Injuries were responsible for a higher proportion of the total burden in males (16%) than in females (8.3%) (Figure 6).

Figure 6: Proportion (%) of total burden (DALY) by disease group and sex, First Nations people, 2022



http://www.aihw.gov.au/

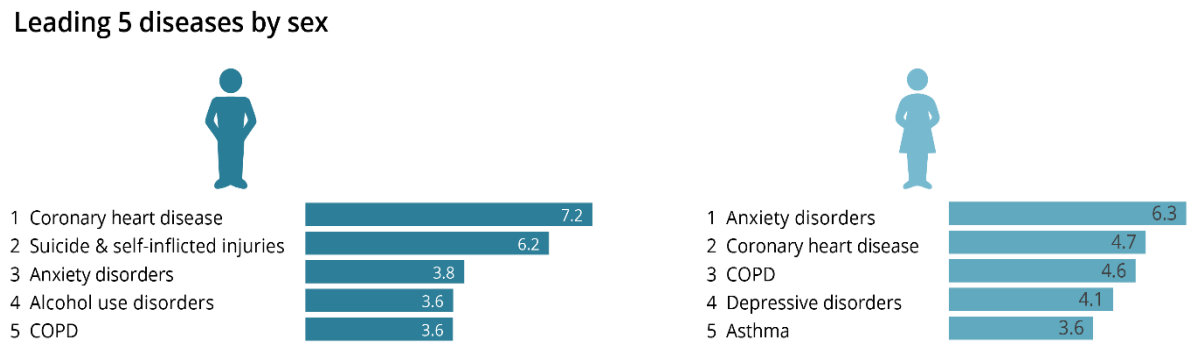
Source: AIHW First Nations Burden of Disease Database

To further explore total, non-fatal and fatal burden by sex and disease group, see the interactive data visualisations: Dashboard 1: Burden of disease in Australia and Dashboard 2: Fatal vs. non-fatal burden.

Top specific causes contributing to total burden by sex

In 2022, the leading specific causes of total burden among First Nations males were coronary heart disease, suicide & self-inflicted injuries, and anxiety disorders. Among First Nations females, the leading specific causes were anxiety disorders, coronary heart disease, and COPD (Figure 7).

Figure 7: Leading causes of total burden and proportion (%) of total burden by sex, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

First Nations males experienced higher rates of total burden due to suicide & self-inflicted injuries (2.9 times), poisoning (such as the toxic effects of medicinal or other substances) (2.1 times), drug use disorders (1.9 times), coronary heart disease and alcohol use disorders (each 1.7 times) compared with First Nations females. First Nations females experienced higher rates of total burden from osteoarthritis (1.8 times), anxiety disorders (1.5 times), asthma (1.4 times), rheumatoid arthritis and depressive disorders (each 1.3 times) compared with First Nations males.

To further explore the leading specific causes of total burden, see the interactive data visualisation: Dashboard 4: Leading causes of disease burden. This visualisation shows the top 20 contributors to total, fatal and non-fatal burden based on age-standardised rates in 2011, 2018 and 2022 for males, females and persons, and how this has changed over time.

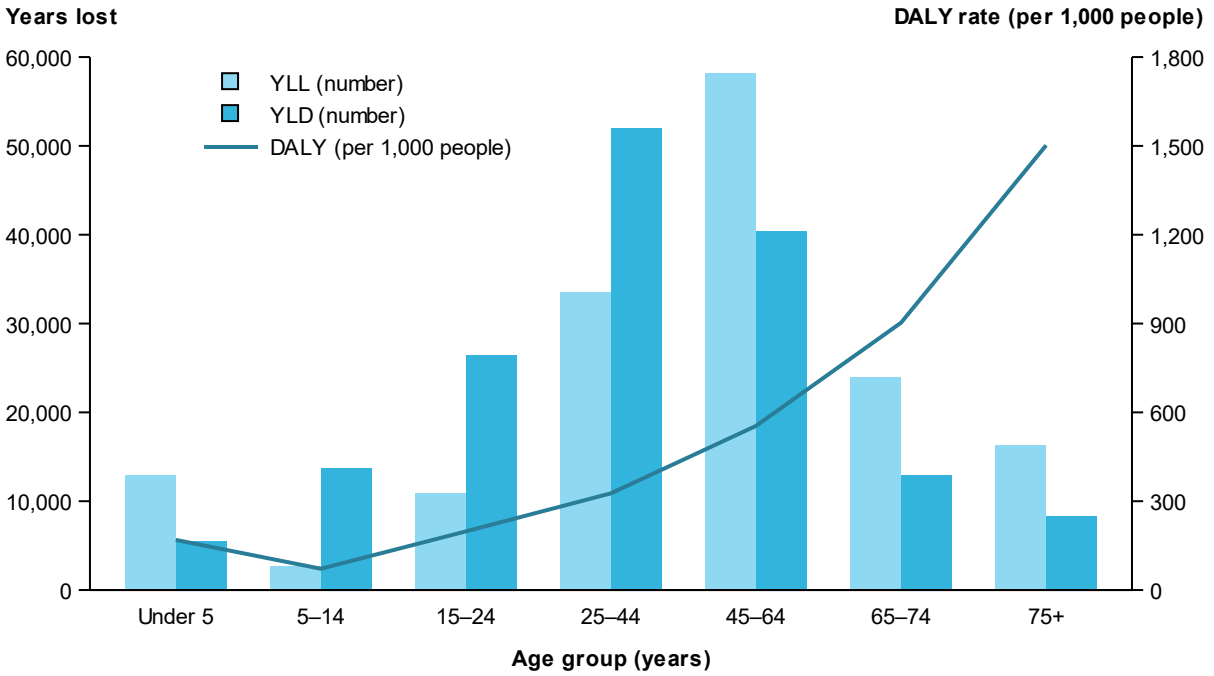
Differences in burden by age

Burden affects First Nations people differently at various stages of life. This is partly due to the different diseases that have an impact at different ages, and partly due to the different causes of death and patterns of age at death for First Nations people.

In 2022, the rate of burden (number of DALY per 1,000 people) increased with age from early childhood. The rate of burden was higher in the under 5 age group than among older children due to the relatively large fatal burden resulting from deaths in infancy.

For infants and children aged under 5, nearly three-quarters (70%) of the burden was due to premature death (fatal burden). Among children aged 5–14, most of the burden (84%) was due to living with illness (non-fatal burden). For people aged 15–44, around two-thirds (64%) of burden was due to non-fatal burden. For people aged 45 and over, almost two-thirds (62%) of the total burden was due to fatal burden (Figure 8).

Figure 8: Fatal (YLL) and non-fatal (YLD) composition of the total burden (DALY) for First Nations people, by age group, 2022



Source: AIHW First Nations Burden of Disease Database

Differences in disease group burden by age

First Nations people experience health loss from different diseases and injuries at various stages of life (Figure 9).

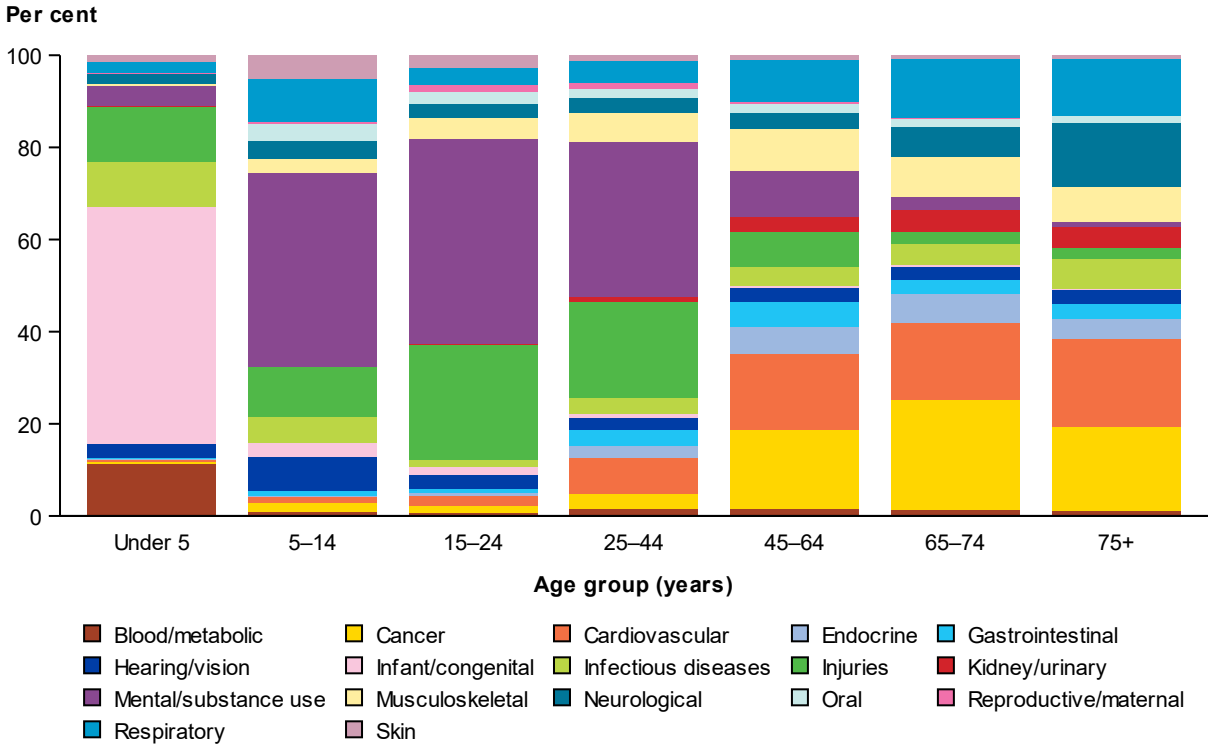
In infancy and young childhood (aged under 5), infant & congenital conditions, such as pre-term birth & low birthweight complications, birth trauma & asphyxia and SIDS, were responsible for just over half (52%) of the burden. Injuries accounted for a further 12% of the total burden in this age group.

Mental health conditions & substance use disorders and injuries (including suicide) were the main causes of burden for late childhood, adolescence and adulthood from ages 5 to 44.

Cardiovascular diseases and cancers started to emerge as major causes of burden from around age 45, and continued to contribute substantially to disease burden in older First Nations people.

Respiratory diseases affected all age groups, accounting for between 2.5% and 13% of total burden across age groups. Musculoskeletal conditions affected all age groups from age 5, accounting for between 3.1% and 9.1% of total burden in First Nations people across age groups.

Figure 9: Relative proportion of total burden (DALY), by disease group and age group, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

To further explore the contribution of disease burden by age, see the interactive data visualisations: Dashboard 1: Burden of disease in Australia and Dashboard 2: Fatal vs. non-fatal burden.

Non-fatal burden (YLD)

Key messages

- In 2022, First Nations people lost 158,944 years of healthy life due to the impact of living with disease and injury (non-fatal burden), or 155 YLD per 1,000 people. This accounted for half (50%) of the total burden.
- In 2022, the main disease groups contributing to non-fatal burden for First Nations people were mental health conditions & substance use disorders, musculoskeletal conditions and respiratory diseases.
- At the individual disease level, the leading causes of non-fatal burden were anxiety disorders (10% of non-fatal burden), depressive disorders (6.9%) and asthma (5.7%).
- First Nations females experienced slightly more of the non-fatal disease burden (52% of YLD) than First Nations males (48%) in 2022.

In 2022, First Nations people lost 158,944 years of healthy life due to the impact of living with disease and injury (non-fatal burden), or 155 YLD per 1,000 people. This accounted for half (50%) of the total burden.

To explore the contribution of non-fatal burden for each disease group, see the interactive data visualisation: Dashboard 1: Burden of disease in Australia. This visualisation provides total, fatal and non-fatal burden numbers and rates both overall and for each disease group by sex and age.

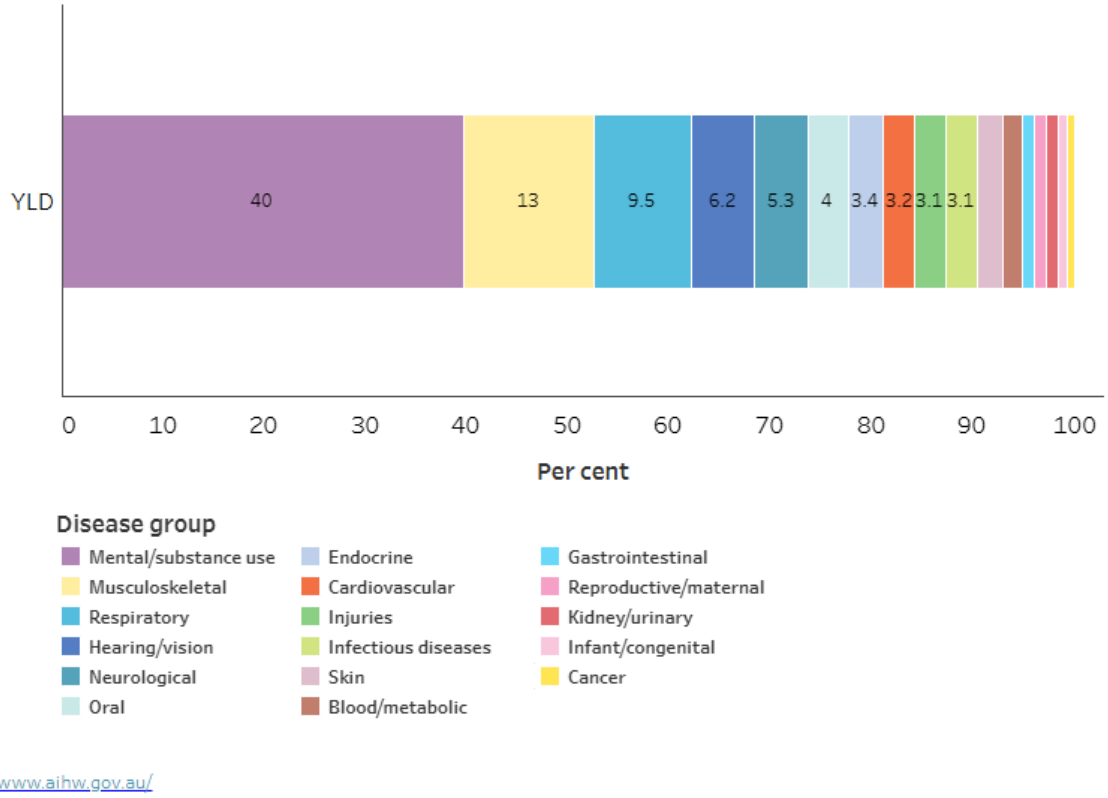
Mental health conditions & substance use disorders were the main causes of non-fatal burden

In 2022, the main disease groups contributing to non-fatal burden for First Nations people were:

- mental health conditions & substance use disorders (40%)
- musculoskeletal conditions (13%)
- respiratory diseases (9.5%)
- hearing & vision disorders (6.2%)
- neurological conditions (5.3%).

Together, these 5 disease groups accounted for about three-quarters (74%) of the non-fatal burden in First Nations people (Figure 10).

Figure 10: Proportion (%) of non-fatal burden (YLD) by disease group, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

Top specific diseases contributing to non-fatal burden

At the individual disease level, the leading 5 causes of non-fatal burden were:

- anxiety disorders (10% of non-fatal burden)
- depressive disorders (6.9%)
- asthma (5.7%)
- alcohol use disorders (5.5%)
- back pain & problems (5.3%).

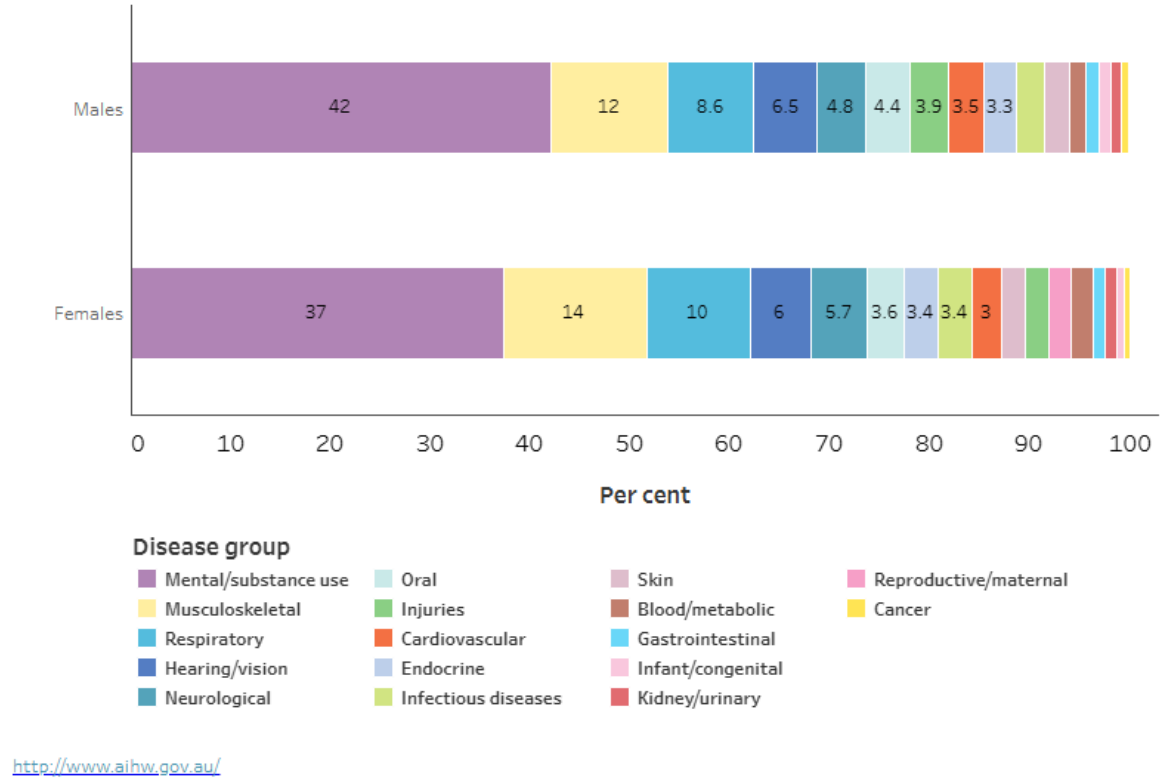
How does non-fatal burden differ between males and females?

First Nations females experienced slightly more of the non-fatal disease burden (52% of YLD) than First Nations males (48%) in 2022.

Mental health conditions & substance use disorders was the greatest contributor to non-fatal burden for both sexes. The other main disease groups contributing to non-fatal burden for males and females were musculoskeletal conditions, respiratory diseases, hearing & vision disorders and neurological conditions (Figure 11).

Together these 5 disease groups accounted for 73% of non-fatal burden in males and 74% in females.

Figure 11: Proportion (%) of non-fatal burden (YLD) by disease group and sex, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

Top specific causes contributing to non-fatal burden by sex

In 2022, the leading specific causes of non-fatal burden among First Nations males were:

- anxiety disorders (8.3% of non-fatal burden)
- alcohol use disorders (7.0%)
- depressive disorders (6.2%).

Among First Nations females, the leading specific causes were:

- anxiety disorders (11.5%)
- depressive disorders (7.5%)
- asthma (6.0%).

First Nations males experienced higher rates of non-fatal burden due autism spectrum disorders (3.2 times), schizophrenia (2.2 times) and drug use disorders (2.0 times) compared with First Nations females. First Nations females experienced higher rates of non-fatal burden due to migraine (2.3 times), bipolar affective disorders (2.2 times),

osteoarthritis (1.8 times) and anxiety disorders (1.5 times) compared with First Nations males.

To further explore the leading specific causes of non-fatal burden, see the interactive data visualisation: Dashboard 4: Leading causes of disease burden. This visualisation shows the top 20 contributors to total, fatal and non-fatal burden based on age-standardised rates in 2011, 2018 and 2022 for males, females and persons, and how this has changed over time.

Fatal burden (YLL)

Key messages

- In 2022, there were an estimated 4,932 deaths of First Nations people, which resulted in 158,389 YLL (fatal burden), or 155 YLL per 1,000 people. Fatal burden accounted for 50% of the total burden of disease.
- Injuries (22%), cancer (21%) and cardiovascular diseases (19%) caused most of the fatal burden for First Nations people in 2022.
- At the individual disease level, the leading 5 causes of fatal burden were coronary heart disease (11% of fatal burden), suicide & self-inflicted injuries (9.0%) and lung cancer (5.5%).
- First Nations males experienced more of the fatal disease burden (58% of YLL) than First Nations females (42%) in 2022.

In 2022, there were an estimated 4,932 deaths of First Nations people, which resulted in 158,389 YLL (fatal burden), or 155 YLL per 1,000 people. Fatal burden accounted for 50% of the total burden of disease.

To explore the contribution of fatal burden for each disease group, see the interactive data visualisation: Dashboard 1: Burden of disease in Australia. This visualisation provides total, fatal and non-fatal burden numbers and rates both overall and for each disease group by sex and age.

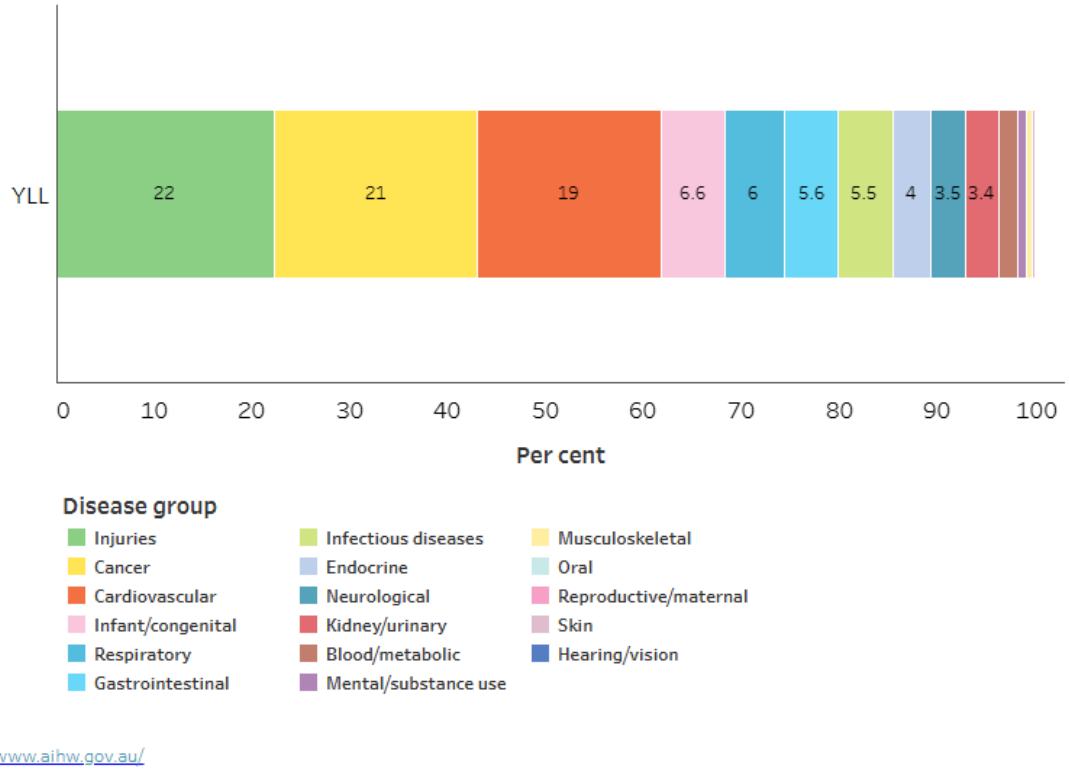
Injuries, cancer and cardiovascular diseases caused most of the fatal burden

Injuries (22%), cancer (21%) and cardiovascular diseases (19%) caused most of the fatal burden for First Nations people in 2022. Together, these 3 disease groups accounted for 62% of the fatal burden in First Nations people (Figure 12).

Other disease groups that contributed substantially to fatal burden were:

- infant & congenital conditions (6.6%)
- respiratory diseases (6.0%)
- gastrointestinal disorders (5.6%)
- infectious diseases (5.5%).

Figure 12: Proportion (%) of fatal burden (YLL) by disease group, First Nations people, 2022



Note: Hearing & vision disorders are excluded as they did not cause any fatal burden.

Source: AIHW First Nations Burden of Disease Database

Top specific diseases contributing to fatal burden

At the individual disease level, the leading 5 causes of fatal burden were:

- coronary heart disease (11% of fatal burden)
- suicide & self-inflicted injuries (9.0%)
- lung cancer (5.5%)
- chronic obstructive pulmonary disease (COPD) (4.8%)
- poisoning (such as the toxic effects of medicinal or other substances) (4.5%).

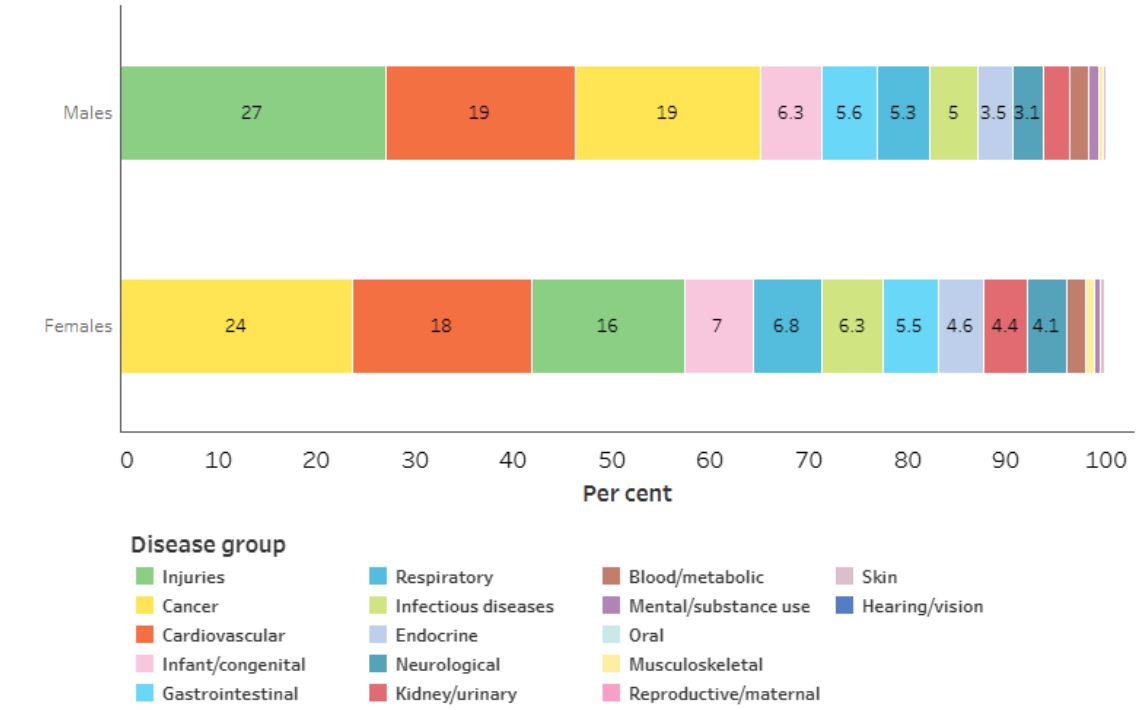
How does fatal burden differ between males and females?

First Nations males experienced more of the fatal disease burden (58% of YLL) than First Nations females (42%) in 2022.

Injuries, cardiovascular diseases and cancer & other neoplasms were the leading 3 contributors to fatal burden for both males and females, however the disease group rankings and the proportion of fatal burden that each contributed were different (Figure 13).

Injuries was the leading cause of fatal burden for males, accounting for over a quarter (27%) of fatal burden among males, but was the third leading cause for females, accounting for 16% of fatal burden among females. Cancer & other neoplasms was the leading cause of fatal burden for females and was the third leading cause for males, accounting for 24% and 19% of fatal burden, respectively.

Figure 13: Proportion (%) of fatal burden (YLL) by disease group and sex, First Nations people, 2022



Note: Hearing & vision disorders are excluded as they did not cause any fatal burden.

Source: AIHW First Nations Burden of Disease Database

Top specific causes contributing to fatal burden by sex

In 2022, the leading specific causes of fatal burden among First Nations males were:

- coronary heart disease (12% of fatal burden)
- suicide & self-inflicted injuries (11%)
- poisoning (5.3%).

Among First Nations females, the leading specific causes were:

- coronary heart disease (8.7%)
- lung cancer (6.3%)
- suicide & self-inflicted injuries (5.8%).

First Nations males experienced higher rates of fatal burden due to oesophageal cancer (3.4 times), suicide & self-inflicted injuries (2.9 times), cardiomyopathy (2.8 times), poisoning (2.1 times) and coronary heart disease (1.7 times) compared with First Nations females. First Nations females experienced higher rates of fatal burden due to dementia and atrial fibrillation and flutter (each 1.3 times) compared with First Nations males.

To further explore the leading specific causes of fatal burden, see the interactive data visualisation: Dashboard 4: Leading causes of disease burden. This visualisation shows the top 20 contributors to total, fatal and non-fatal burden based on age-standardised rates in 2011, 2018 and 2022 for males, females and persons, and how this has changed over time.

Changes in burden over time

Key messages

- There was a 6.3% decrease in the age-standardised rate of total burden between 2011 and 2022, from 457 to 429 DALY per 1,000 people.
- The decrease in total burden was driven by a reduction (of 11%) in the age-standardised rate of fatal burden between 2011 and 2022, from 262 to 233 YLL per 1,000 people.
- There was no substantial change in the age-standardised rate of non-fatal burden between 2011 and 2022.
- Between 2011 and 2022 there were notable decreases in the age-standardised total burden rate for cardiovascular diseases (decrease of 21 DALY per 1,000 people), endocrine disorders (decrease of 7.2 DALY per 1,000), and musculoskeletal conditions (decrease of 7.0 DALY per 1,000)
- Between 2011 and 2022 there were notable increases in the age-standardised total burden rate for infectious diseases (increase of 8.5 DALY per 1,000) and mental health conditions & substance use disorders (increase of 6.5 DALY per 1,000). Most of the increase in burden due to infectious diseases was due to the emergence of COVID-19.
- Although coronary heart disease (CHD) remained the leading cause of disease burden in 2022, the total burden age-standardised rate for CHD fell by 30% between 2011 and 2022, from 45 to 32 DALY per 1,000 people.

Overall, the health of First Nations people has improved over the period from 2011 to 2022.

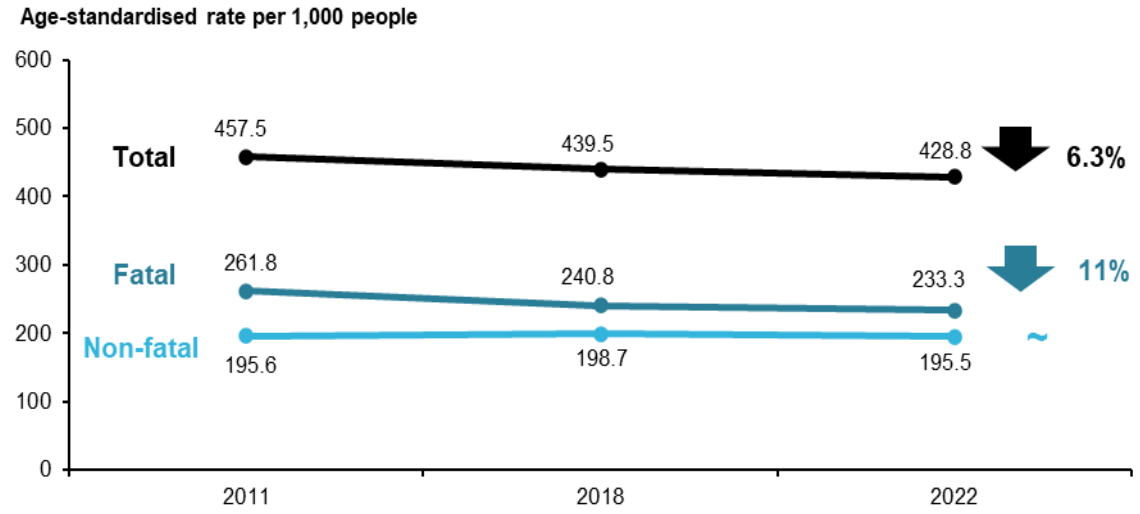
After accounting for the increase in size and ageing of the First Nations population (by using age-standardised rates), there was a 6.3% decrease in the rate of total burden between 2011 and 2022, from 457 to 429 DALY per 1,000 people. Most of this decline was observed between 2011 and 2018, while the DALY rate remained relatively stable between 2018 and 2022 (Figure 14).

The decrease in total burden was driven by a reduction (of 11%) in the age-standardised rate of fatal burden between 2011 and 2022, from 262 to 233 YLL per 1,000 people. There was no substantial change in the age-standardised rate of non-fatal burden between 2011 and 2022 (Figure 14).

Note that this stability from 2018 to 2022 may be attributed to the COVID-19 pandemic which had both direct health effects from the virus itself, and indirect health effects from COVID-19 acting as a risk factor for other diseases, and as a result of the public health measures and restrictions put in place (AIHW 2022). Due to the impact of these indirect health effects, simply subtracting the estimated disease burden due to COVID-19 from the total burden does not necessarily reflect the disease burden that would have been experienced if the COVID-19 pandemic did not occur.

To explore changes in disease burden by disease group and leading causes see the interactive data visualisation Dashboard 3: Comparisons over time. This visualisation presents comparisons of age-standardised and age-specific rates of total, fatal and non-fatal burden by year, sex and disease group.

Figure 14: Change between 2011 and 2022 in the age-standardised total burden (DALY), fatal burden (YLL), and non-fatal burden (YLD) rate (per 1,000 people), First Nations people



Note: Rates were age-standardised to the 2001 Australian Standard population.

Source: AIHW First Nations Burden of Disease Database

Changes by disease group

Between 2011 and 2022 there were decreases in the age-standardised total burden rate in around half of the 17 disease groups. The most notable decreases in DALY were for:

- cardiovascular diseases – a decrease of 21 DALY per 1,000 people, or 26%
- endocrine disorders – a decrease of 7.2 DALY per 1,000, 28%
- musculoskeletal conditions – a decrease of 7.0 DALY per 1,000, 18%
- cancer & other neoplasms – a decrease of 4.7 DALY per 1,000, 7.6%.

Increases were observed for infectious diseases (increase of 8.5 DALY per 1,000, or 74%) and mental health conditions & substance use disorders (increase of 6.5 DALY per 1,000, 11%). Most of the increase in burden due to infectious diseases was due to the emergence of COVID-19.

Non-fatal burden

Most disease groups showed little change in the age-standardised rate of non-fatal burden between 2011 and 2022. The largest increase in YLD was for:

- mental health conditions & substance use disorders – an increase of 7.9 YLD per 1,000 people, or 14%.

The largest decreases in the age-standardised rate of non-fatal burden were for:

- musculoskeletal conditions – a decrease of 6.9 YLD per 1,000, or 19%
- hearing & vision disorders – a decrease of 4.8 YLD per 1,000, 27%.

Fatal burden

Over the period 2011 to 2022, there were large reductions in the age-standardised rate of fatal burden from:

- cardiovascular diseases – a decrease of 19 YLL per 1,000 people, or 28%
- endocrine disorders – a decrease of 7.4 YLL per 1,000, 42%
- cancer & other neoplasms – a decrease of 5.1 YLL per 1,000, 8.6%.

There was an increase in the age-standardised rate of fatal burden due to infectious diseases of 7.0 YLL per 1,000, or 89%, primarily due to the emergence of COVID-19.

To explore the changes over time in the DALY, YLD, and YLL for each disease group, see the interactive data visualisation: Dashboard 3: Comparisons over time.

Changes in leading specific causes

The 15 leading causes of total burden, based on age-standardised DALY rate, among First Nations people remained largely the same between 2011 and 2022, except for the introduction of COVID-19 in 2022 (Figure 15).

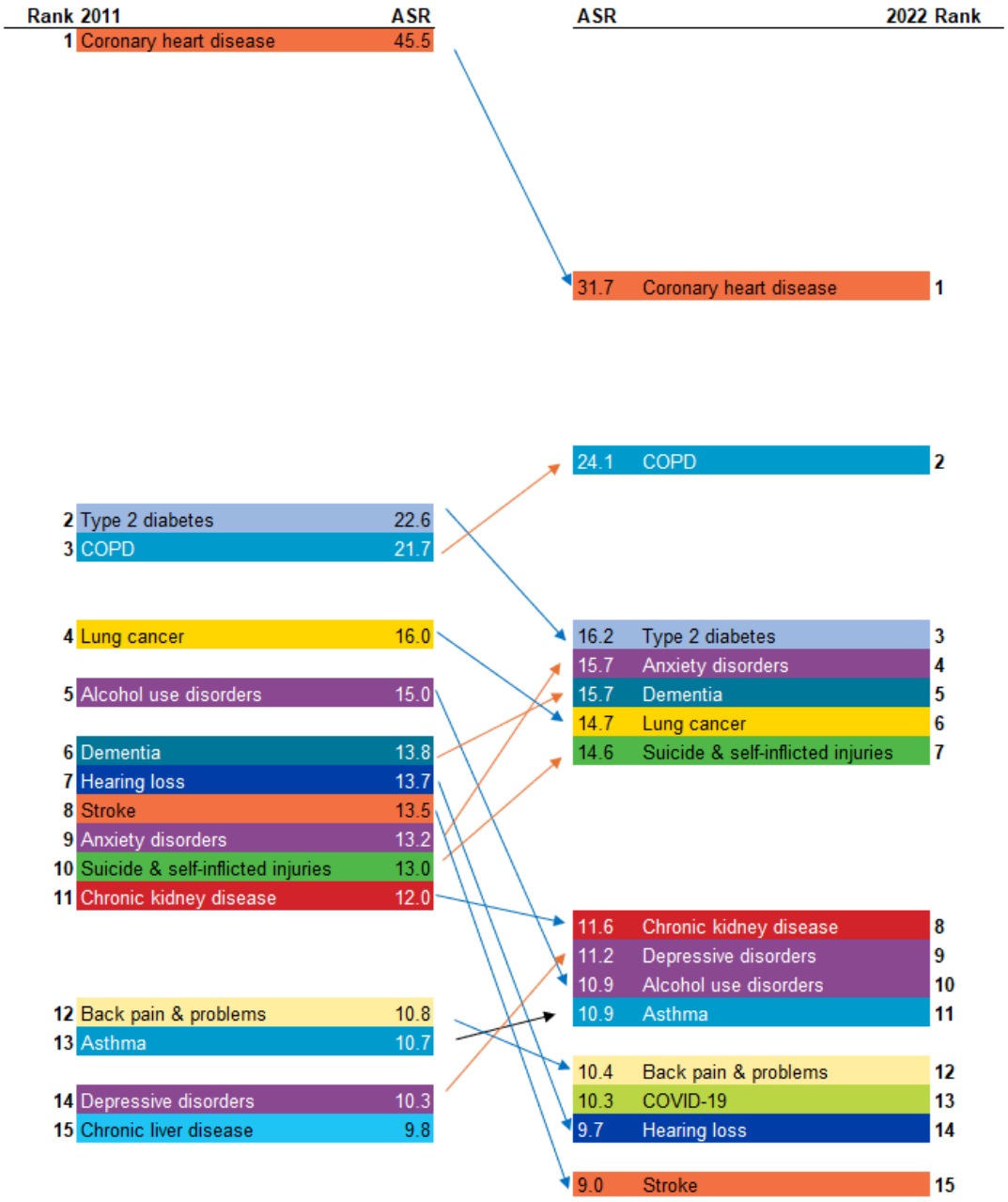
Coronary heart disease was the leading cause of burden among First Nations people in both 2011 and 2022. Although coronary heart disease remained the leading cause of disease burden in 2022, the age-standardised total burden rate fell by 30% between 2011 and 2022 (from 45 to 32 DALY per 1,000 people).

Age-standardised total burden rates also decreased notably for:

- stroke (33% decrease)
- hearing loss (29% decrease)
- type 2 diabetes (28% decrease)
- alcohol use disorders (27% decrease).

To explore the changes in leading specific causes of total, non-fatal and fatal burden over time, see the interactive data visualisation: Dashboard 4: Leading causes of disease burden. This visualisation shows the top 20 contributors to total, fatal and non-fatal burden based on age-standardised rates in 2011, 2018 and 2022 for males, females and persons, and how this has changed over time.

Figure 15: Change in ranking and age-standardised DALY rate (DALY per 1,000 people), leading specific causes of burden, First Nations people, 2011 and 2022



ASR = Age-standardised rate

Notes

1. 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.

2. Causes are presented in descending order, from highest ASR to lowest ASR, with arrows indicating either an increase (orange), decrease (blue) or no change (black) in the ASR over time.

3. Causes ranked in the leading 15 causes in 2011, which are not among the leading 15 causes in 2022 will not have connecting lines and rankings.

4. Cause rankings exclude 'other' residual conditions from each disease group; for example, 'other musculoskeletal conditions'.

5. There were changes in practices of coding deaths due to dementia; therefore, caution is recommended when interpreting changes over time for dementia burden.

6. For information on colours used for each specific cause, see disease group colours for FNBDS 2022 colour legend.

Source: AIHW First Nations Burden of Disease Database

References

AIHW (Australian Institute of Health and Welfare) (2022) *Australia's health 2022: data insights*, AIHW, Australian Government, accessed 15 October 2025. doi:10.25816/ggvz-vr80.

Gap in disease burden

Key findings

- In 2022, after taking into account differences in age structure, First Nations people experienced overall burden (DALY) from disease and injury at 2.1 times the rate of non-Indigenous Australians.
- Dying early caused more of the gap than living with poor health. First Nations people were 2.4 times as likely as non-Indigenous Australians to die early (YLL), and 1.9 times as likely to live with poor health (YLD).
- In all age groups, First Nations people had higher rates of burden than non-Indigenous Australians. The largest relative differences were for people aged between 30 and 54, where DALY rates for First Nations people were between 2.5 and 2.8 times those for non-Indigenous Australians.
- The largest contributors to the gap in disease burden between First Nations people and non-Indigenous Australians (based on age-standardised DALY rate differences) were cardiovascular diseases (contributing 15.1% of the gap), mental health conditions & substance use disorders (15.0%), and injuries (11.7%).
- For non-fatal burden, mental health conditions & substance use disorders, respiratory diseases, and hearing & vision disorders were the largest contributors to the gap between First Nations people and non-Indigenous Australians, together contributing 60% of the total gap in YLD in 2022.
- For fatal burden, cardiovascular diseases, cancer & other neoplasms, and injuries were the leading disease groups contributing to the gap between First Nations people and non-Indigenous Australians, together responsible for more than half (57%) of the total gap in YLL in 2022.
- After removing differences in population size and age structure, the absolute gap in burden (DALY rate difference) between First Nations people and non-Indigenous Australians decreased by 8.8% between 2011 and 2022, from 249 to 227 per 1,000 people. There was a small drop in the relative gap, from a rate ratio of 2.2 in 2011 to 2.1 in 2022.
- Changes in the absolute gap in burden (DALY rate difference) between First Nations people and non-Indigenous were driven by a larger proportional decrease in the rate of total burden for First Nations people (6.3% decrease, from 457 to 429 DALY per 1,000 people) than for non-Indigenous Australians (3.2% decrease, from 208 to 202 per 1,000 people) between 2011 and 2022.
- Over the period 2011 to 2022, the largest decreases in the absolute gap were observed for cardiovascular diseases (decline in the DALY rate difference of 13 per 1,000 people), musculoskeletal conditions (decline of 7.2 DALY per 1,000) and endocrine disorders (decline of 6.8 DALY per 1,000).

- In 2022, 54% of the total burden experienced by First Nations people was considered excess burden (172,639 DALY). More of this excess was from fatal burden (99,033 YLL) compared with non-fatal burden (73,606 YLD).

Measuring the 'gap' in disease burden between First Nations people 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).

Apart from results for specific age groups, First Nations and non-Indigenous rates presented in this section 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 disease groups and specific diseases contributing most to the health gap (measured as the proportion that each disease group or specific disease contributes to the total DALY rate difference).

To explore data on the gap in disease burden between First Nations people and non-Indigenous Australians, see the following data visualisations:

- Dashboards 6a and 6b: Gap in health outcomes. These visualisations present the contribution of disease groups to the gap, by year, age and sex. They also show the DALY rate ratios and rate differences by disease group.

Measuring the gap in disease burden between First Nations people and non-Indigenous Australians

Direct age-standardisation was used to compare rates between First Nations people and non-Indigenous Australians, and to measure the gap in burden between the 2 populations. The direct method was chosen, following a series of sensitivity analyses previously undertaken by the AIHW, which looked at the impact and robustness of using the direct method compared with the indirect method on resulting YLL estimates for First Nations people (see AIHW 2015 for more information). The direct method enables multiple comparisons (for example, disease by sex) and can be used for comparisons over time. A limitation of the direct method is that less reliable estimates can be produced when it is applied to a small number of deaths and prevalent cases (AIHW 2011); this should be kept in mind when interpreting gap results for less common diseases and conditions.

Age-standardised rate differences and rate ratios are used in this report as measures of the gap. Rate differences (calculated as the First Nations rate minus the non-Indigenous rate) provide a measure of the absolute gap between 2 populations, while rate ratios (calculated as the First Nations rate divided by the non-Indigenous rate) are a measure of the relative gap between 2 populations.

For the most accurate estimate of the gap in disease burden between First Nations people and non-Indigenous Australians, comparisons have been made to estimates calculated for the non-Indigenous population. These estimates should not be added together to estimate burden in the total Australian population. Refer to the Australian Burden of Disease Study 2024 for burden of disease estimates for the total Australian population.

How big is the gap in disease burden?

In 2022, after taking into account differences in age structure, First Nations people experienced overall burden from disease and injury at 2.1 times the rate of non-Indigenous Australians. First Nations people experienced non-fatal burden at just under twice the rate of non-Indigenous Australians (YLD rate ratio of 1.9), and fatal burden at 2.4 times the rate for non-Indigenous Australians (Table 1).

Table 1: Age-standardised total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people), rate ratios and rate differences, by Indigenous status and sex, 2022

Burden type and sex	First Nations rate per 1,000	Non-Indigenous rate per 1,000	Rate ratio	Rate difference
Total burden (DALY)				
Males	461.4	219.6	2.1	241.8
Females	398.0	184.9	2.2	213.1
People	428.8	201.6	2.1	227.2
Non-fatal burden (YLD)				
Males	190.6	101.0	1.9	89.7
Females	200.0	108.4	1.8	91.6
People	195.5	104.8	1.9	90.7
Fatal burden (YLL)				
Males	270.8	118.6	2.3	152.2
Females	198.0	76.5	2.6	121.5
People	233.3	96.8	2.4	136.5

Notes

1. Rates were age-standardised to the 2001 Australian Standard population.

2. Rate ratios and rate differences were calculated using unrounded rates and may differ from those calculated using the rounded rates presented in the table.

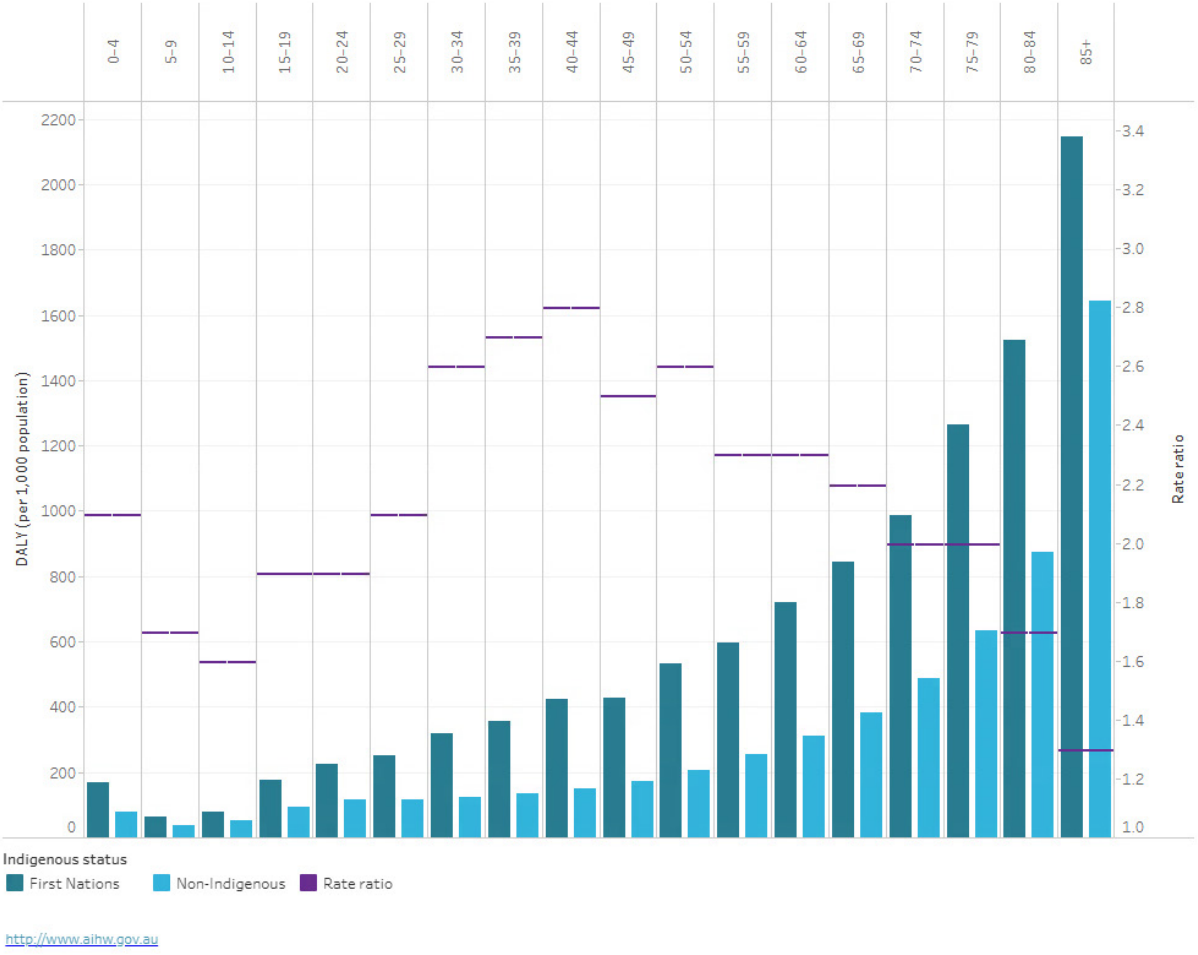
Source: AIHW First Nations Burden of Disease Database

How does the gap vary by age and sex?

The relative gap in total disease burden was slightly larger for First Nations females than males (DALY rate ratios of 2.2 and 2.1, respectively), but the absolute gap was greater for males than females (DALY rate differences of 242 per 1,000 people compared with 213 per 1,000) (Table 1).

In all age groups, First Nations people had higher rates of DALY than non-Indigenous Australians (Figure 1). The largest relative differences were for people aged between 30 and 54, where DALY rates for First Nations people were between 2.5 and 2.8 times those for non-Indigenous Australians.

Figure 1: Age-specific total burden rates (DALY per 1,000 people) and rate ratios, by age group, by Indigenous status, 2022



Source: AIHW First Nations Burden of Disease Database

Which disease groups contributed the most to the gap?

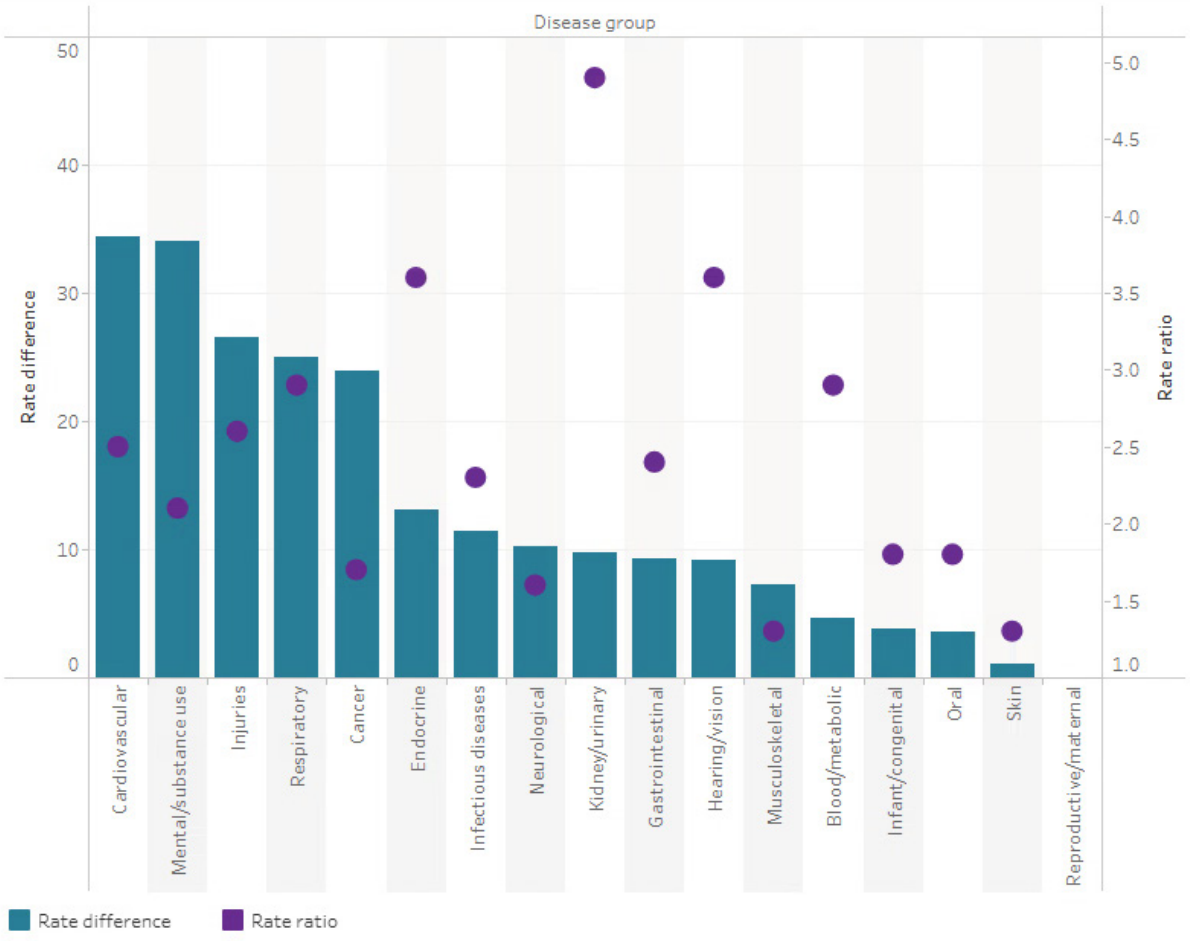
In 2022, across all disease groups, First Nations people experienced a higher rate of burden than non-Indigenous Australians, with the exception of reproductive & maternal conditions, for which rates were similar (ratio of 0.9) (Figure 2). The largest contributors

to the gap in disease burden between First Nations people and non-Indigenous Australians (based on age-standardised DALY rate differences) were:

- cardiovascular diseases (contributing 15.1% of the gap)
- mental health conditions & substance use disorders (15.0%)
- injuries (11.7%)
- respiratory diseases (11.0%)
- cancer & other neoplasms (10.7%) (Figure 3).

These 5 disease groups were responsible for almost two-thirds (63%) of the gap in disease burden between First Nations people and non-Indigenous Australians.

Figure 2: Gap (rate ratio and rate difference) in total burden, by disease group, 2022



Note: 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.
http://www.aihw.gov.au

Source: AIHW First Nations Burden of Disease Database

Disease groups that showed the greatest relative differences (rate ratios) in disease burden between First Nations people and non-Indigenous Australians (based on age-standardised DALY rate ratios) were:

- kidney & urinary diseases – rate ratio of 4.9
- hearing & vision disorders – rate ratio of 3.6
- endocrine disorders (including diabetes) – rate ratio of 3.6 (Figure 2).

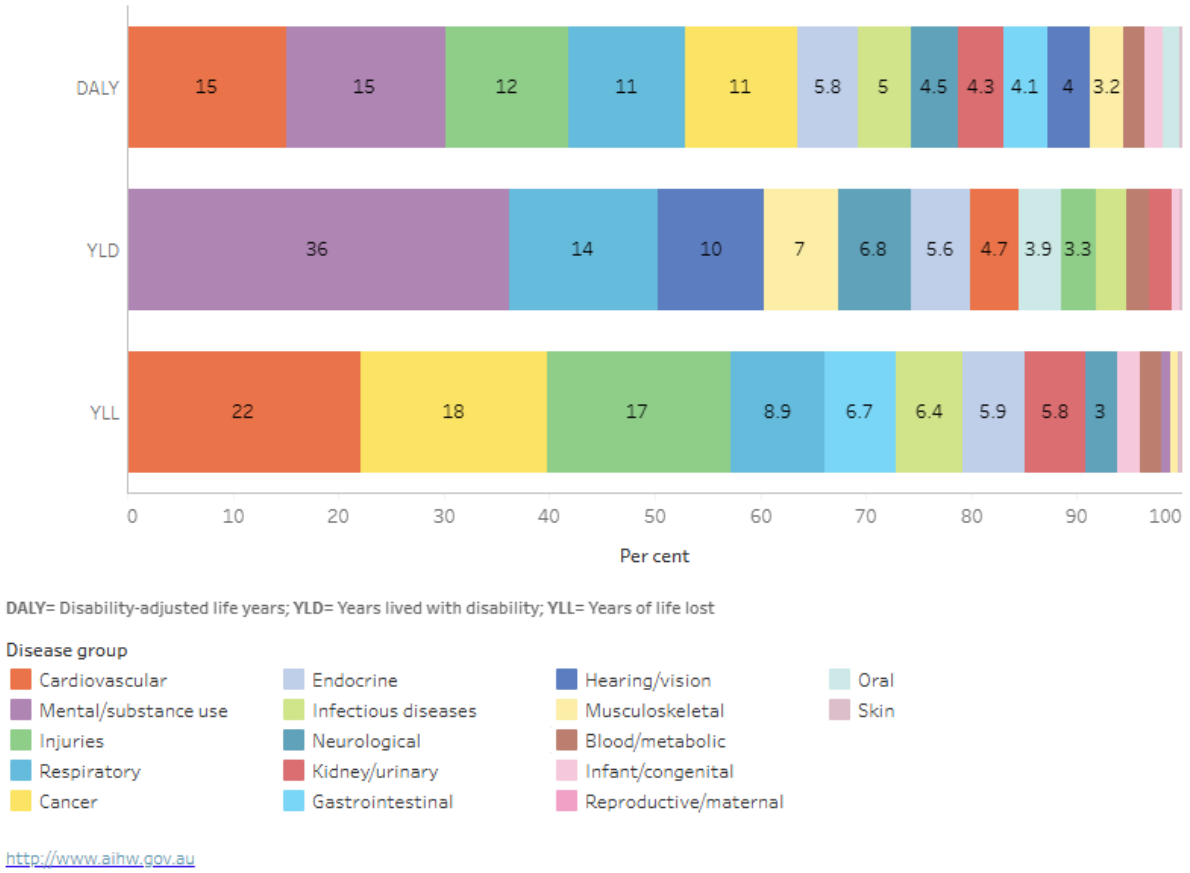
While these rate ratios were much higher than those for mental health conditions & substance use disorders (ratio of 2.1), cardiovascular diseases (2.5) and injuries (2.6), their contribution to the total health gap was lower (5.8% for endocrine disorders, 4.3% for kidney & urinary diseases and 4.0% for hearing & vision disorders).

Disease group contribution to fatal and non-fatal gap

The disease groups contributing most to the gap between First Nations people and non-Indigenous Australians were different for fatal and non-fatal burden (Figure 3). When looking at non-fatal burden, mental health conditions & substance use disorders, respiratory diseases, and hearing & vision disorders were the largest contributors to the gap between First Nations people and non-Indigenous Australians, together contributing 60% of the total gap in YLD in 2022.

In contrast, for fatal burden, cardiovascular diseases, cancer & other neoplasms, and injuries were the leading disease groups contributing to the gap between First Nations people and non-Indigenous Australians, together responsible for more than half (57%) of the total gap in YLL in 2022.

Figure 3: Percentage contribution (% of rate difference) of disease groups to the gap in total (DALY), non-fatal (YLD) and fatal (YLL) burden, 2022



Note: Per cent labels are not shown for disease groups contributing less than 3% of the gap.

Source: AIHW First Nations Burden of Disease Database

Disease group contribution to the gap by sex

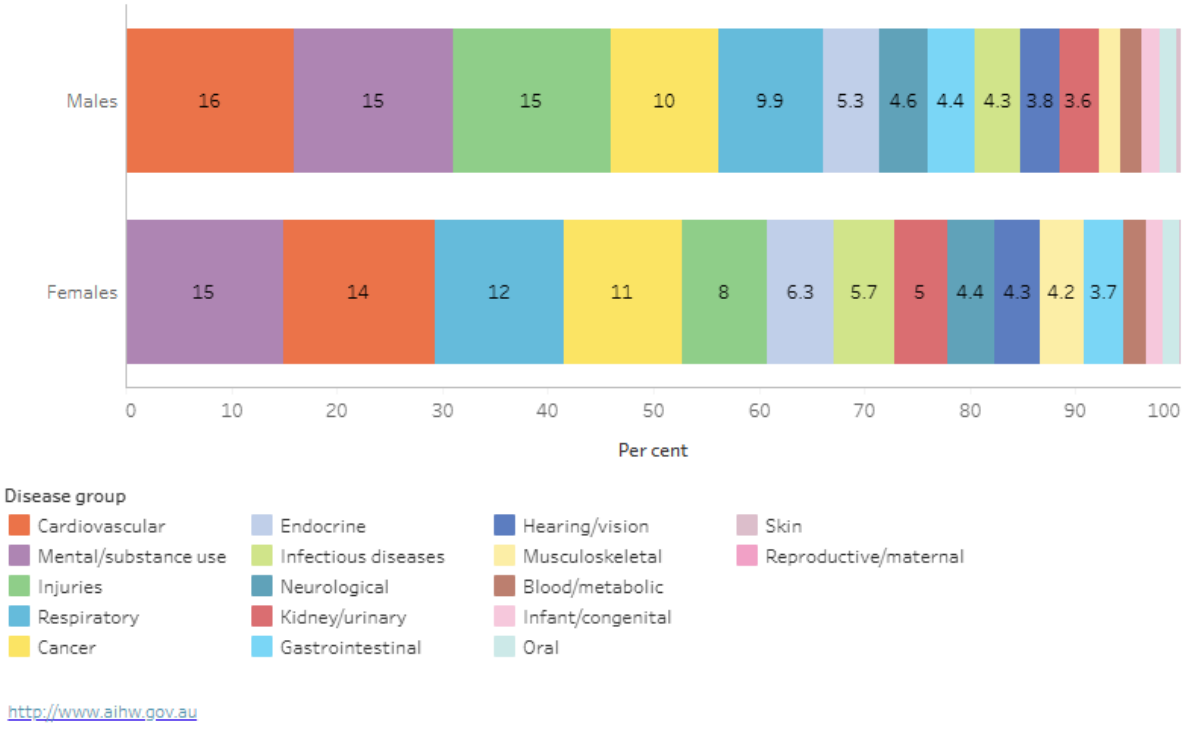
For First Nations males, the largest contributors to the gap in total disease burden were:

- cardiovascular diseases (accounting for 16% of the gap)
- mental health conditions & substance use disorders (15%)
- injuries (15%) (Figure 4).

For First Nations females, the largest contributors to the gap in total disease burden were:

- mental health conditions & substance use disorders (accounting for 15% of the gap)
- cardiovascular diseases (14%)
- respiratory diseases (12%) (Figure 4).

Figure 4: Percentage contribution (% of rate difference) of disease groups to the gap in total disease burden (DALY), by sex, 2022



Note: Per cent labels are not shown for disease groups contributing less than 3% of the gap.

Source: AIHW First Nations Burden of Disease Database

Despite these disease groups being the largest contributors to the gap in total disease burden for males and females, they were not the disease groups with the highest relative differences (rate ratios) in overall disease burden between First Nations people and non-Indigenous Australians.

For First Nations males, the disease groups with the highest relative differences in overall disease burden between First Nations people and non-Indigenous Australians were:

- kidney & urinary diseases (3.7 times the rate of non-Indigenous males)
- hearing & vision disorders (3.4 times)
- blood & metabolic disorders (3.2 times).

For First Nations females, the disease groups with the highest relative differences in overall disease burden between First Nations people and non-Indigenous Australians were:

- kidney & urinary diseases (6.9 times the rate of non-Indigenous females)
- endocrine disorders (including diabetes) (4.3 times)
- hearing & vision disorders (3.8 times).

Contribution to the gap by age

The contribution of different age groups to the overall gap in total disease burden between First Nations people and non-Indigenous Australians varies. One-third of the overall gap (33%) was due to differences in burden among people aged 45–64, with a further quarter (27%) due to differences in burden among people aged 25–44. Differences in burden between First Nations and non-Indigenous children and adolescents aged 5–14 made the smallest contribution to the overall gap (1.7%) (Table 2).

Table 2: Age-specific rates (per 1,000 people), rate differences and contribution to the age-standardised gap, by age group and Indigenous status, 2022

Age group	First Nations rate per 1,000	Non-Indigenous rate per 1,000	Rate difference	Rate ratio	Per cent contribution to the gap
0–4	169.4	79.7	89.7	2.1	2.6
5–14	71.9	44.7	27.2	1.6	1.7
15–24	198.1	105.2	92.9	1.9	5.7
25–44	326.6	131.3	195.3	2.5	27.4
45–64	554.0	234.8	319.2	2.4	32.9
65–74	902.3	431.6	470.7	2.1	14.4
75+	1,502.0	981.5	520.5	1.5	15.3
Total[(a)]	428.8	201.6	227.2	2.1	100.0

(a) Total rates were age-standardised to the 2001 Australian Standard population.

Source: AIHW First Nations Burden of Disease Database

How does disease group contribution to the gap vary across the stages of life?

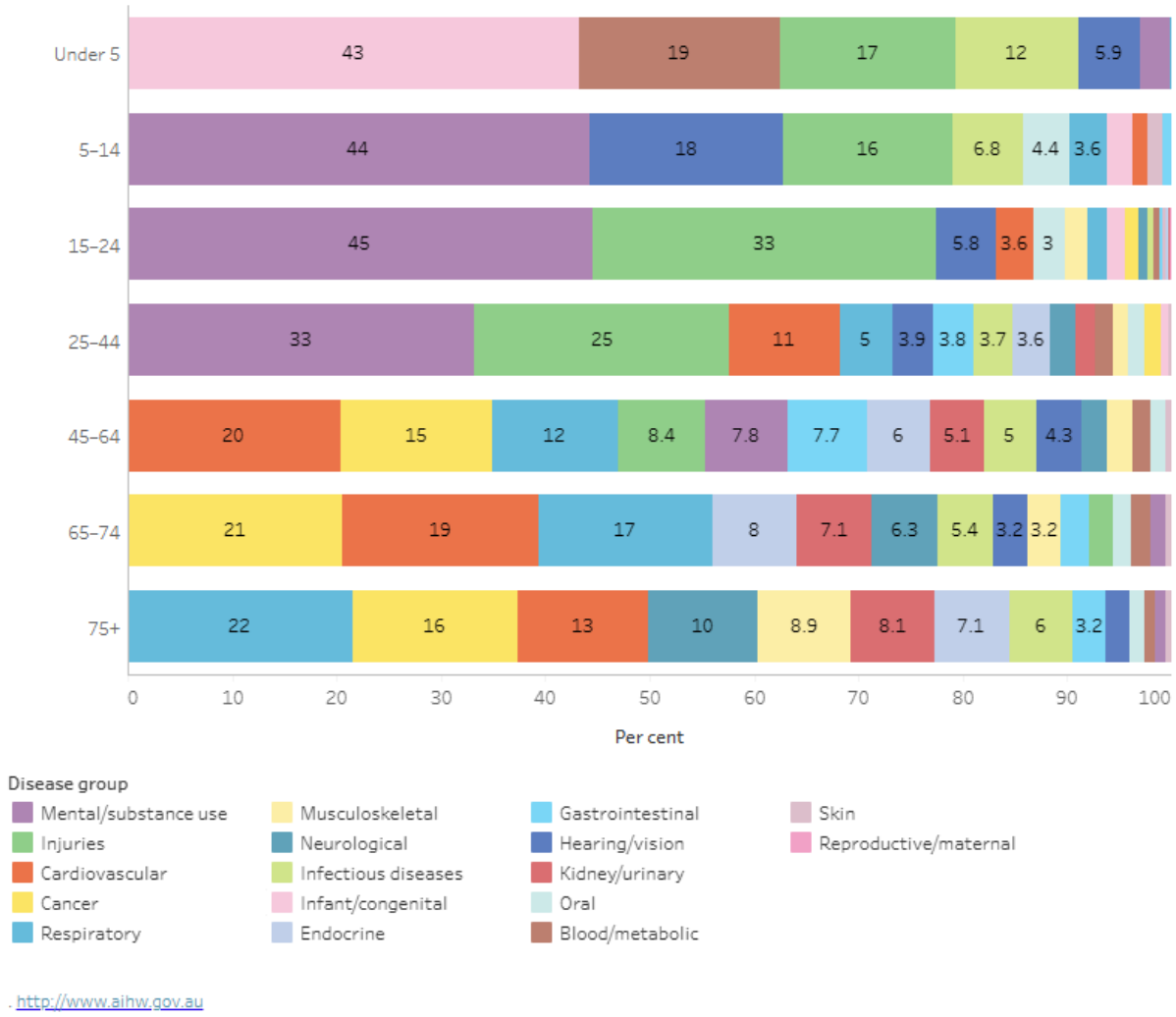
The contribution of different disease groups to the gap in total disease burden between First Nations people and non-Indigenous Australians varies by age (Figure 5).

- For infants and children aged under 5, infant & congenital conditions was the largest disease group contributor to the gap (representing 43% of the gap among children under 5).
- Mental health conditions & substance use disorders was the largest disease group contributor to the gap for children aged 5–14, young people aged 15–24 and adults aged 25–44 (representing 44%, 45% and 33% of the gap in these age groups, respectively).
- Injuries was the second or third largest contributor to the gap in each of the age groups below age 45, representing between 16% and 33% of the gap.
- Cardiovascular diseases was the third largest contributor to the gap in adults aged 25–44 (representing 11% of the gap in this age group) and the leading contributor to the gap in adults aged 45–64 (20% of the gap in this age group).

- Cancer & other neoplasms was the second largest contributor to the gap in adults aged 45–64 and 75 and over (representing 15% and 16% of the gap in each age group, respectively) and the leading contributor to the gap in adults aged 65–74 (21% of the gap in this age group).
- Respiratory diseases was the third largest contributor to the gap in adults aged 45–64 and 65–74, and the leading contributor to the gap in older adults aged 75 and over (representing 22% of the gap in this age group).

For further information on the impact of the burden of disease on First Nations people by age, see Burden across life stages.

Figure 5: Percentage contribution (%) to the health gap (based on DALY rate difference) between First Nations people and non-Indigenous Australians, by age and disease group, 2022



Source: AIHW First Nations Burden of Disease Database

Which specific diseases and injuries contribute most to the gap?

Table 3 presents the top 5 specific causes contributing to the gap in total burden for First Nations males and females in 2022; together they accounted for over about one-third of the gap (33% for males and 31% for females). For information on how specific causes are classified under each disease group see Australian Burden of Disease Study: Methods and supplementary material 2018, Disease specific methods - morbidity.

For males in 2022, the specific causes that were leading contributors to the gap in total burden between First Nations people and non-Indigenous Australians were:

- coronary heart disease (CHD) (accounting for 10% of the gap for males)
- chronic obstructive pulmonary disease (COPD) (7.5% of the gap)
- suicide & self-inflicted injuries (5.6% of the gap).

For females in 2022, the specific causes that were leading contributor to the gap in total burden between First Nations people and non-Indigenous Australians were:

- COPD (accounting for 8.6% of the gap for females)
- CHD (7.6% of the gap)
- Type 2 diabetes (5.9% of the gap).

Table 3: Age-standardised total burden rates (per 1,000 people), rate ratios and rate differences, leading specific diseases contributing to the gap, by Indigenous status and sex, 2022

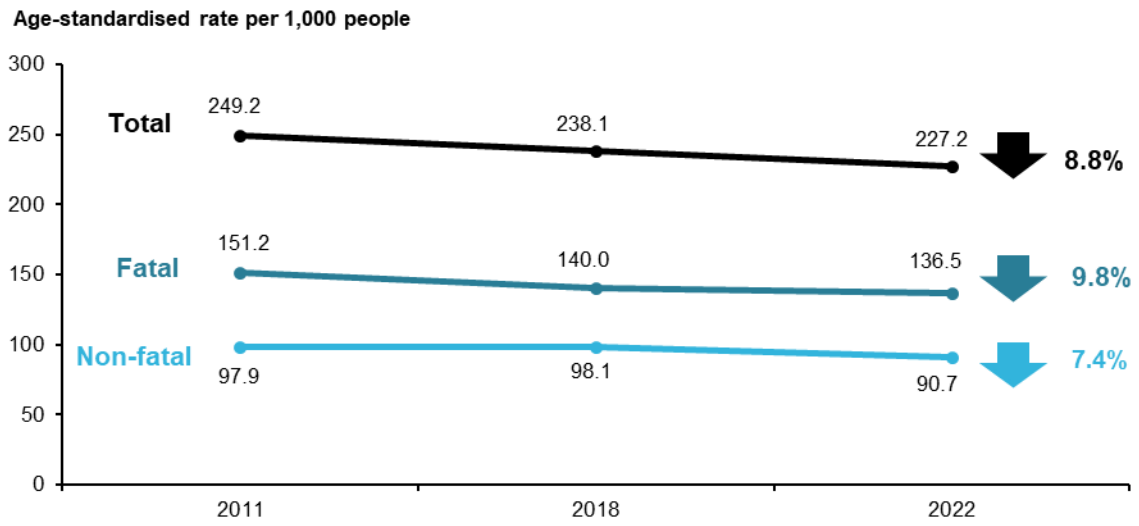
Sex and leading specific diseases	First Nations rate per 1,000	Non-Indigenous rate per 1,000	Rate ratio	Rate difference	Gap contribution (percent)
Males	-	-	-	-	-
Coronary heart disease	41.6	16.3	2.6	25.3	10.5
COPD	24.3	6.1	4.0	18.1	7.5
Suicide & self-inflicted injuries	21.6	8.1	2.7	13.5	5.6
Type 2 diabetes	17.0	5.0	3.4	12.0	5.0
Alcohol use disorders	13.7	3.7	3.7	10.1	4.2
Females	-	-	-	-	-
COPD	24.1	5.8	4.1	18.2	8.6
Coronary heart disease	23.0	6.7	3.4	16.3	7.6
Type 2 diabetes	15.6	3.1	5.0	12.5	5.9
Chronic kidney disease	12.2	1.7	7.1	10.5	4.9
Lung cancer	13.6	4.4	3.1	9.1	4.3

Source: AIHW First Nations Burden of Disease Database

Gap in burden has narrowed over time

After removing differences in population size and age structure, the absolute gap in burden (DALY rate difference) between First Nations people and non-Indigenous Australians decreased by 8.8% between 2011 and 2022, from 249 to 227 per 1,000 people. There was a small drop in the relative gap, from a rate ratio of 2.2 in 2011 to 2.1 in 2022. This was largely driven by a narrowing of the gap for fatal burden, which decreased by 9.8% between 2011 and 2022. The gap in non-fatal burden also decreased during this period, by 7.4% (Figure 6). There was no change in the relative gap for fatal burden (a rate ratio of 2.4 in 2011 and 2022), while there was a slight drop for non-fatal burden (from a rate ratio of 2.0 in 2011 to 1.9 in 2022).

Figure 6: Change between 2011 and 2022 in the gap in age-standardised total (DALY), fatal (YLL), and non-fatal (YLD) burden rate (per 1,000 people) between First Nations people and non-Indigenous Australians



Note: Rates were age-standardised to the 2001 Australian Standard population.

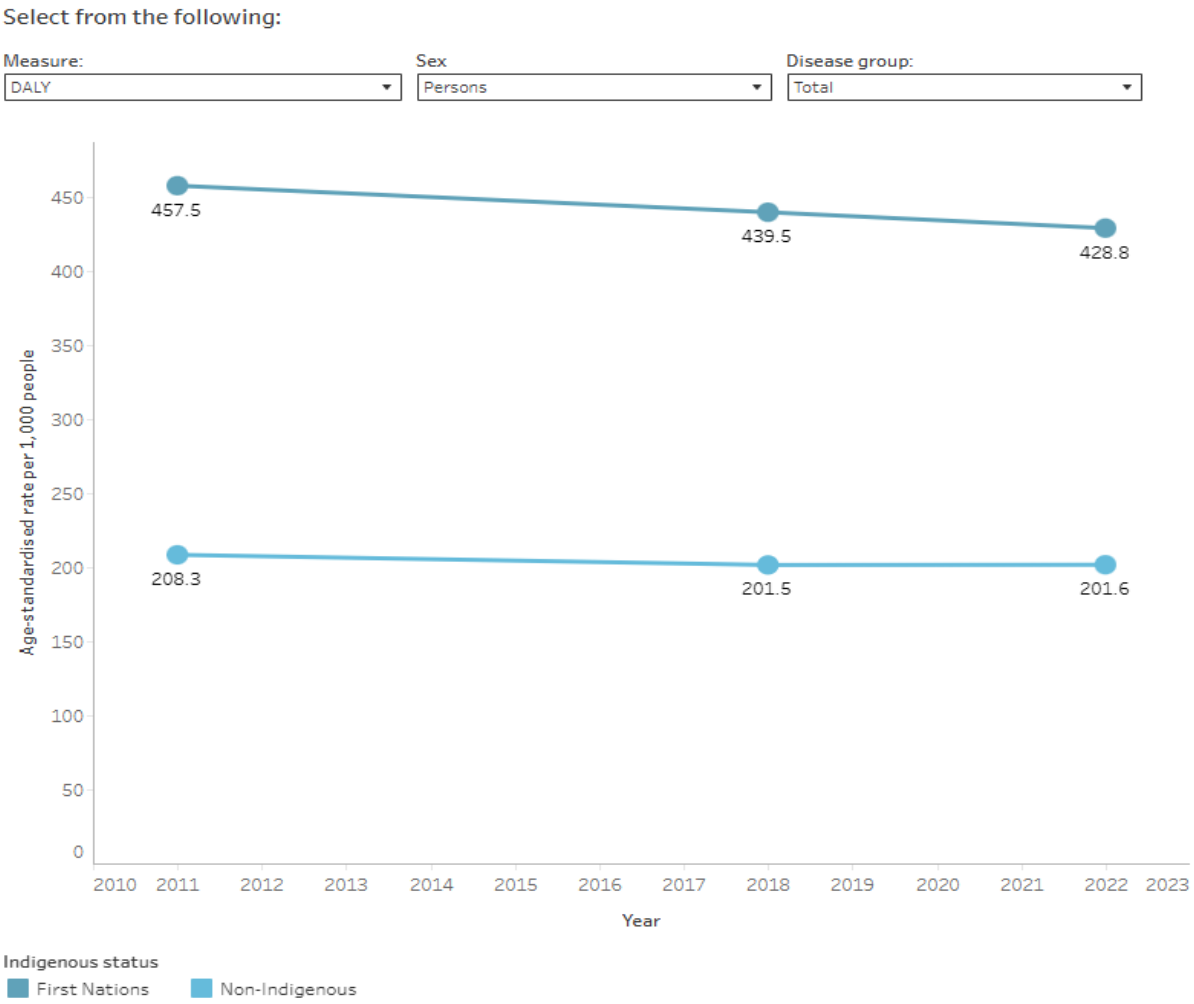
Source: AIHW First Nations Burden of Disease Database

Change in the absolute gap in burden (DALY rate difference) was driven by a larger proportional decrease in the rate of total burden for First Nations people (6.3% decrease, from 457 to 429 DALY per 1,000 people) than for non-Indigenous Australians (3.2% decrease, from 208 to 202 per 1,000 people) between 2011 and 2022 (Figure 7).

For fatal burden, there were similar proportional declines in the age-standardised rate for First Nations people (11% decrease, from 262 to 233 YLL per 1,000 people) and non-Indigenous Australians (12% decrease, from 111 to 97 YLL per 1,000 people) (Figure 7).

For non-fatal burden, there was no substantial change in the age-standardised rate for First Nations people between 2011 and 2022 (0.1% decrease) but the rate for non-Indigenous Australians increased (7.3% increase, from 98 to 105 YLD per 1,000 people) over the same period (Figure 7).

Figure 7: Change between 2011 and 2022 in the age-standardised total (DALY), non-fatal (YLD), and fatal (YLL) burden rate (per 1,000 people), First Nations people and non-Indigenous Australians



Note:

1. Rates were age-standardised to the 2001 Australian Standard population.

2. For the oral disease group, the YLL rate is based on a small number of First Nations deaths so this result should be used with caution.

3. For the hearing & vision disorders disease group there was no fatal burden, and as such the YLL ASR rate is zero.

Source: AIHW First Nations Burden of Disease Database

Changes in the gap by sex

There were greater decreases in the gap in total disease burden, non-fatal burden and fatal burden for males than females between 2011 and 2022: a 12% decrease in the

DALY gap for males compared with a 5.8% decrease for females; an 11% decline in the YLD gap for males compared with a 4.7% decline for females; and a 13% decline in the YLL gap for males compared with an 6.6% decline for females.

Changes in the gap by disease group

Over the period 2011 to 2022, there was a decrease in the gap between First Nations people and non-Indigenous Australians for almost half (8) of the 17 disease groups, as measured by the DALY rate differences.

The largest decreases in the absolute gap were observed for:

- cardiovascular diseases - decline in the DALY rate difference of 13 per 1,000 people, or 27%
- musculoskeletal conditions - decline of 7.2 DALY per 1,000, 50%
- endocrine disorders - decline of 6.8 DALY per 1,000, 34%.

There were also decreases in the relative gap as measured by rate ratios for musculoskeletal conditions (from 1.6 to 1.3) and endocrine disorders (from 4.7 to 3.6). For cardiovascular diseases the rate ratio remained the same, at 2.5.

The largest increases in the absolute gap were observed for:

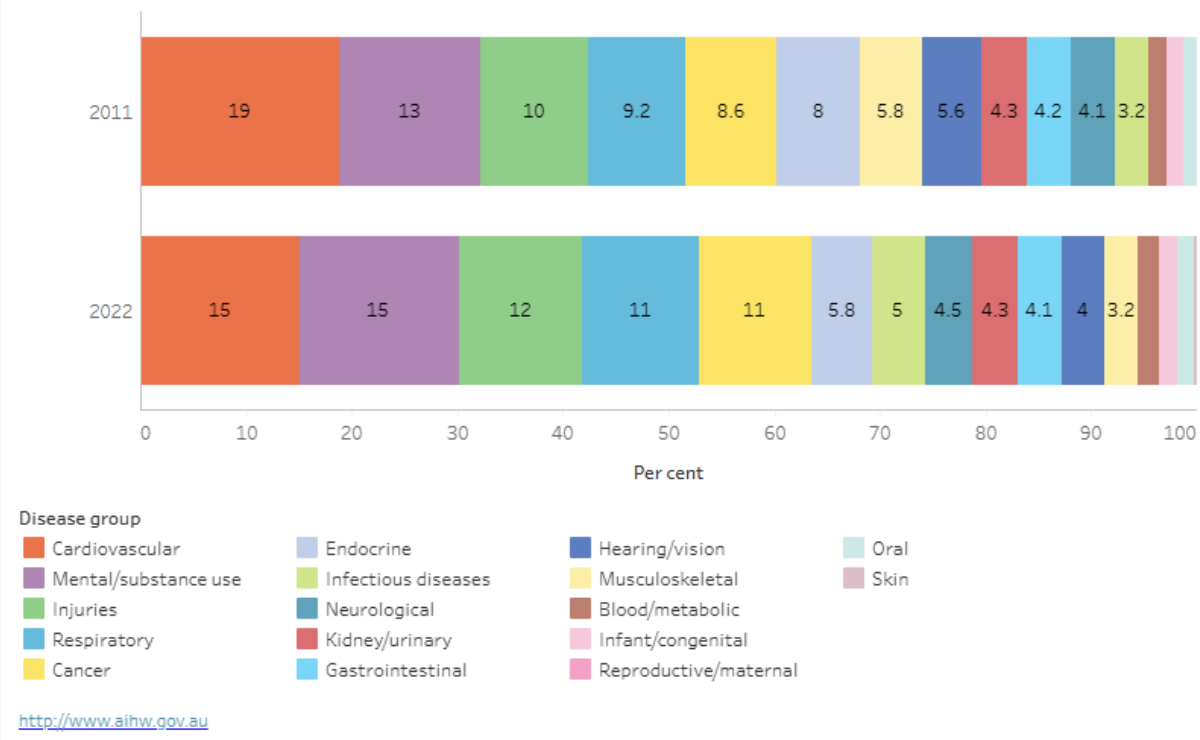
- infectious diseases - increase in the DALY rate difference of 3.4 per 1,000, or 43%
- cancer & other neoplasms - increase of 2.9 DALY per 1,000, 13%
- respiratory diseases - increase of 2.0 DALY per 1,000, 8.7%.

There were also increases in the relative gap for cancer & other neoplasms (from 1.5 to 1.7) and respiratory diseases (from 2.6 to 2.9), but for infectious diseases the rate ratio declined (from 3.2 to 2.3).

Changes in contribution to the gap by disease group

The same 6 disease groups were the greatest contributors to the gap in total burden in both 2011 and 2022, accounting for almost 70% of the gap. Cardiovascular diseases was the leading contributor in both years, though its contribution decreased from 19% to 15%. The contribution of endocrine disorders also decreased slightly. The contributions made by the other 4 disease groups increased (Figure 8).

Figure 8: Percentage contribution (%) of disease groups to the gap in total disease burden between First Nations people and non-Indigenous Australians (based on DALY rate differences), 2011 and 2022



Source: AIHW First Nations Burden of Disease Database

Excess burden

'Excess' burden is an additional measure that can be used to consider the difference in burden experienced between First Nations people and non-Indigenous Australians. Excess burden presented here is the burden that would have been avoided if First Nations people experienced the same rate of burden as non-Indigenous Australians.

Definition and example of how excess burden is calculated

excess burden: The reduction that would occur in overall disease burden if all groups had the same rate of burden as the least burdened group.

For example:

If the rate of burden for a disease was 10 DALY per 1,000 people in population A and 15 DALY per 1,000 people in population B then some of the burden experienced by population B would be considered excess when compared with population A.

If we assume population B consists of 3,000 people, then the disease burden in population B is 45 DALY (15/1,000 x 3,000 = 45 DALY). The excess burden in population B is calculated as the difference between the expected burden if population B experienced the same rate of burden as population A, and the actual burden experienced by population B (45 DALY).

The expected burden for population B is 30 DALY (10/1,000 x 3,000 = 30 DALY) and therefore the excess burden in population B is 15 DALY (45 – 30 = 15 DALY). This can also be described as 33% of the burden in population B is considered to be excess burden (15/45*100 = 33%).

In 2022, 54% of the total burden experienced by First Nations people was considered excess burden (172,639 DALY). More of this excess was from fatal burden (99,033 YLL) compared with non-fatal burden (73,606 YLD). The proportion of the total burden considered to be excess decreased between 2011 and 2022 (from 57% to 54%), driven by a larger reduction in excess non-fatal burden (Table 4).

Table 4: Excess total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations people, 2011, 2018 and 2022

Excess burden type	2011	2018	2022
Total burden (DALY)	-	-	-
DALY	199,800	273,195	317,333
Expected DALY	85,770	117,960	144,694
Excess DALY	114,031	155,235	172,639
Excess DALY %	57.1	56.8	54.4
Non-fatal burden (YLD)	-	-	-
YLD	95,752	136,578	158,944
Expected YLD	47,643	67,661	85,338
Excess YLD	48,109	68,917	73,606
Excess YLD %	50.2	50.5	46.3
Fatal burden (YLL)	-	-	-
YLL	104,048	136,617	158,389
Expected YLL	38,126	50,299	59,357
Excess YLL	65,922	86,318	99,033
Excess YLL %	63.4	63.2	62.5

Source: AIHW First Nations Burden of Disease Database

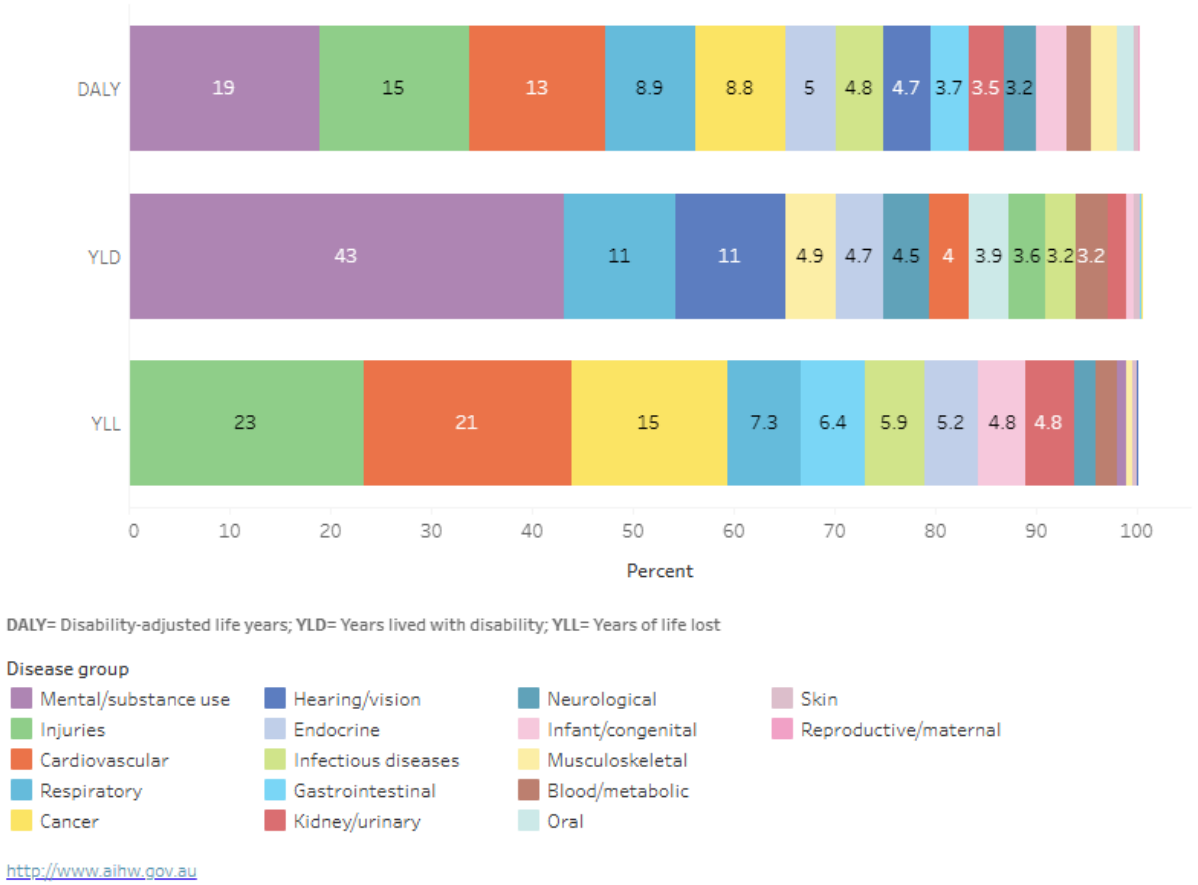
Disease group contribution to excess burden

In 2022, the disease groups that contributed the most excess burden to First Nations people were:

- mental health conditions & substance use disorders (19% of excess DALY, or 32,674 excess DALY)
- injuries (15%, or 25,756 excess DALY)
- cardiovascular diseases (13%, or 23,304 excess DALY) (Figure 9).

The disease groups that contributed the most excess burden varied between fatal (YLL) and non-fatal (YLD) burden, explore Figure 9 for more information.

Figure 9: Percentage contribution (%) of disease groups to excess total (DALY), excess non-fatal (YLD) and excess fatal (YLL) burden, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

Excess burden within disease groups

In 2022, among First Nations people, the amount of burden considered to be excess differed by disease group (Figure 10). Among the disease groups with the highest amounts of total burden (DALY) among First Nations people:

- about half (51%) of the burden due to mental health conditions & substance use disorders was considered to be excess burden (32,674 out of 64,147 DALY)
- almost two-thirds (64%) of the burden due to injuries was excess burden (25,756 out of 40,037 DALY)
- over two-thirds (67%) of the burden due to cardiovascular diseases was excess burden (23,304 out of 34,796 DALY).

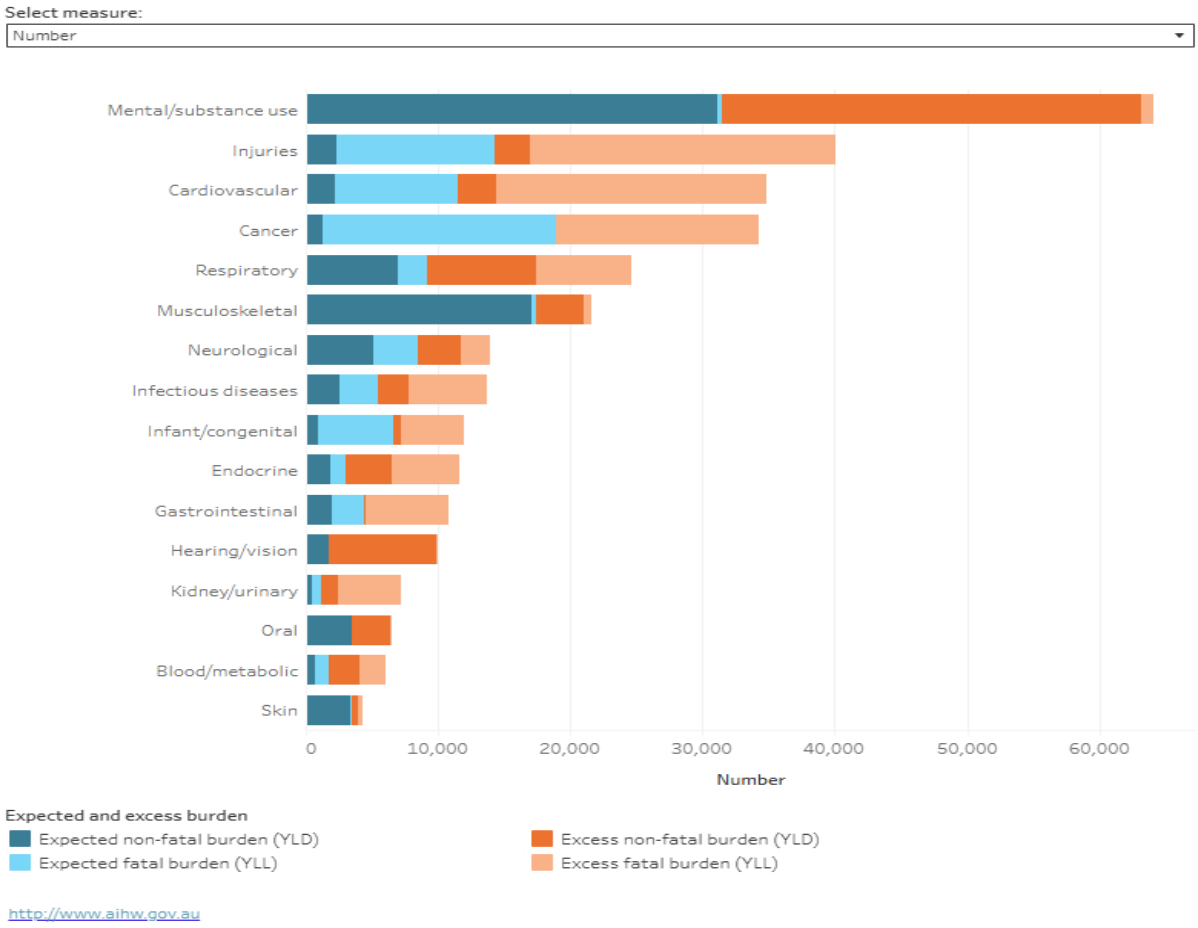
Although not among the leading disease group contributors to total burden (DALY) for First Nations people in 2022, the disease groups with the highest proportional excess burden were:

- kidney & urinary diseases (84% of DALY in this disease group was considered to be excess, 6,021 out of 7,179 DALY)

- hearing & vision disorders (82% excess, 8,076 out of 9,862 DALY)
- endocrine disorders (74% excess, 8,650 out of 11,631 DALY).

These are the same disease groups shown to have the largest disparity in burden in terms of the relative gap between First Nations people and non-Indigenous Australians – see Figure 2 above.

Figure 10: Expected and excess fatal (YLL) and non-fatal (YLD) burden by type of burden and disease group, First Nations people, 2022



Notes:

1. Data for reproductive & maternal conditions not shown as there was no overall excess total (DALY) burden among First Nations people in 2022. This was due to lower rates of total (DALY) and non-fatal (YLD) burden among First Nations people compared with non-Indigenous Australians. Rates of fatal (YLL) burden for reproductive & maternal conditions were higher among First Nations people compared with non-Indigenous Australians, indicating excess fatal (YLL) burden.

2. Due to lower rates of non-fatal (YLD) burden among First Nations people compared with non-Indigenous Australians there was no excess non-fatal (YLD) burden among First Nations people for cancer & other neoplasms.

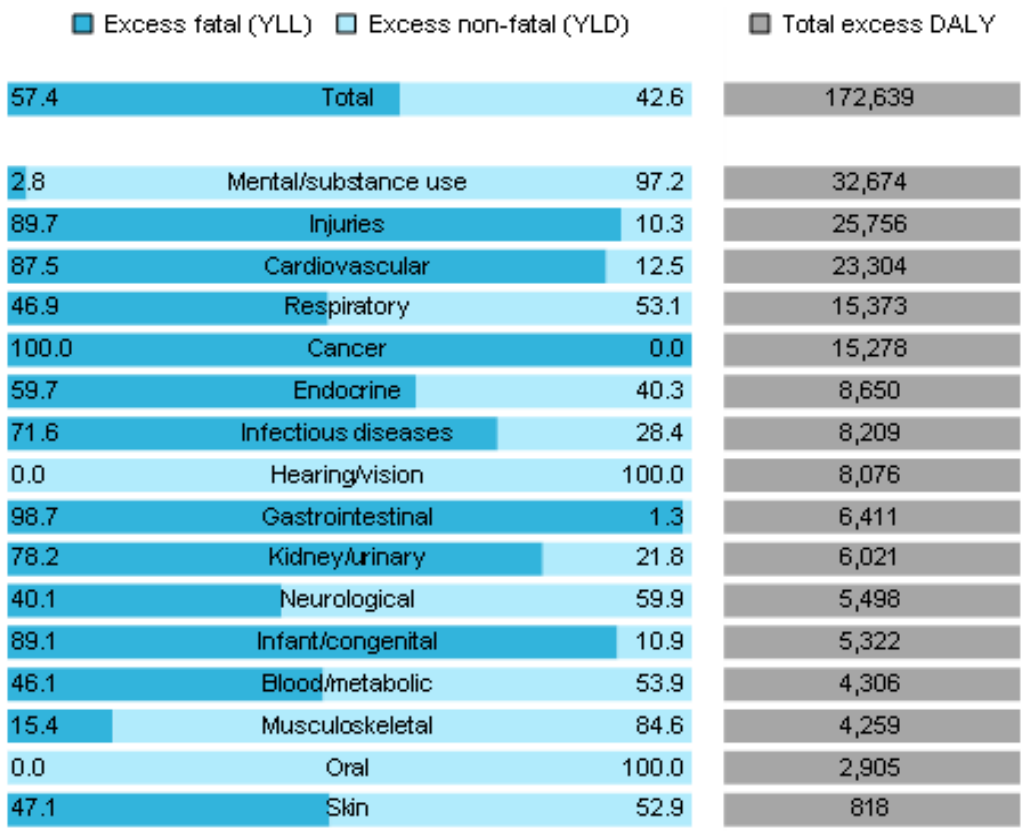
Source: AIHW First Nations Burden of Disease Database

Contribution of fatal and non-fatal burden to excess burden

In 2022, over half of the total excess burden experienced by First Nations people was due to excess fatal burden (57%, 99,033 YLL out of 172,639 DALY) (Figure 11). Among the disease groups with the highest amounts of excess burden:

- almost all the excess total burden from mental health conditions & substance use disorders was non-fatal burden (97%, 31,750 YLD out of 32,674 DALY)
- most of the excess burden from injuries and cardiovascular diseases was fatal burden (90% and 88%, respectively).

Figure 11: Percentage contribution (%) of fatal (YLL) and non-fatal (YLD) to excess total burden (DALY) by disease group, First Nations people, 2022



Note: Data for reproductive & maternal conditions not shown due to small numbers.

Source: AIHW First Nations Burden of Disease Database

Top specific diseases contributing to excess burden

The top 5 specific diseases contributing to excess burden together accounted for over a quarter (28%) of the total excess burden for First Nations people in 2022 (Table 5). The specific diseases that were leading contributors to excess burden were:

- coronary heart disease (accounting for 7.9% of total excess burden, or 13,572 of 172,639 DALY)
- COPD (5.8% of excess burden, 9,983 excess DALY)

- suicide & self-inflicted injuries (5.4% of excess burden, 9,371 excess DALY)
- type 2 diabetes (4.6% of excess burden, 8,024 excess DALY)
- anxiety disorders (4.3% of excess burden, 7,360 excess DALY).

Table 5: Leading 5 specific causes of excess burden (DALY) for First Nations people, 2022

Causes	DALY	Expected DALY	Excess DALY	% of total excess DALY
Coronary heart disease	19,023	5,451	13,572	7.9
COPD	12,776	2,793	9,983	5.8
Suicide & self-inflicted injuries	14,421	5,050	9,371	5.4
Type 2 diabetes	10,198	2,174	8,024	4.6
Anxiety disorders	15,832	8,473	7,360	4.3
Leading 5 specific causes	72,250	23,941	48,309	28.0
All other causes	*245,083*	*120,753*	*124,329*	*72.0*
Total	317,333	144,694	172,639	100.0

Source: AIHW First Nations Burden of Disease Database

Excess burden within individual diseases

In 2022, among First Nations people, the amount of burden considered to be excess differed for individual causes of burden. Causes with the highest proportional excess burden included:

- scabies (100% of DALY considered excess, 264 of 264 DALY)
- protein-energy deficiency (94% considered excess, 1,905 of 2,028 DALY)
- rheumatic heart disease (94% considered excess, 1,351 of 1,438 DALY)
- chronic kidney disease (87% considered excess, 5,887 of 6,783 DALY)
- hearing loss (84% considered excess, 6,740 of 8,029 DALY).

References

AIHW (Australian Institute of Health and Welfare) 2011. Principles on the use of direct age-standardisation in administrative data collections: For measuring the gap between Indigenous and non-Indigenous Australians. Cat. no. CSI 12. Canberra: AIHW.

AIHW 2015. Australian Burden of Disease Study: fatal burden of disease in Aboriginal and Torres Strait Islander people 2010. Cat. no. BOD 2. Canberra: AIHW.

Joint Council on Closing the Gap 2020. National Agreement on Closing the Gap.

Disease groups of interest

This section presents detailed summaries for disease groups of interest for the First Nations population, including changes since 2011. These disease groups include mental health conditions & substance use disorders, injuries, cardiovascular diseases, endocrine disorders, and kidney & urinary diseases. Each of these are disease groups make a substantial or disproportionate contribution to the burden of disease of First Nations people.

Before reading this section it is recommended to first read earlier sections of this report which provide a high level overview of total burden, non-fatal burden and fatal burden in the First Nations population. Information on the quality of estimates is included in Australian Burden of Disease Study: methods and supplementary material 2018.

This section of the report will be updated once data on risk factor attributable burden is available, to include a summary of the cancer & other neoplasms disease group and risk factor attributable burden for each disease group.

To explore data across all disease groups, see the following data visualisations:

- Dashboard 1: Burden of disease in Australia: This visualisation provides total, fatal and non-fatal burden numbers and rates both overall and for each disease group by sex and age
- Dashboard 2: Fatal vs. non-fatal burden: This visualisation shows the distribution of fatal and non-fatal burden by year, sex, age group and disease group.
- Dashboard 3: Comparisons over time: This visualisation presents comparisons of age-standardised and age-specific rates of total, fatal and non-fatal burden by year, sex and disease group.
- Dashboards 6a and 6b: Gap in health outcomes: These visualisations present the contribution of disease groups to the gap, by year, age and sex. They also show the DALY rate ratios and rate differences by disease group.
- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups disaggregated by fatal and non-fatal burden.

Mental health conditions & substance use disorders

Key points

- Mental health conditions & substance use disorders made up 20% (64,147 DALY) of total burden, 40% (62,846 YLD) of non-fatal burden and 0.8% (1,301 YLL) of fatal burden for First Nations people in 2022.
- Mental health conditions & substance use disorders were the leading cause of total and non-fatal burden and the 12th leading cause of fatal burden for First Nations people in 2022.
- The main causes of mental health conditions & substance use disorders burden were anxiety disorders (25% of total burden in this disease group), depressive disorders (17%) and alcohol use disorders (15%).
- Most of the burden for mental health conditions & substance use disorders was non-fatal (98%).
- A slightly larger proportion of the total burden due to mental health conditions & substance use disorders was experienced by First Nations males (52% of DALY) than by First Nations females (48%).
- Between 2011 and 2022, the age-standardised rate of total burden due to mental health conditions & substance use disorders for First Nations people increased by 11%.
- In 2022, the age-standardised rate of burden due to mental health conditions & substance use disorders for First Nations people was 2.1 times the rate for non-Indigenous Australians.

The mental health conditions & substance use disorders disease group encompasses a broad range of conditions including affective disorders (major depressive disorder, dysthymia and bipolar disorder), anxiety disorders, alcohol & drug use disorders, child behavioural & developmental disorders, schizophrenia, and intellectual disability.

This disease group excludes suicidal behaviour, self-harm, drug poisoning and drug overdose (which are included in injuries) and dementia, a condition affecting the nervous system (which is included in neurological conditions). For more information, see Australian Burden of Disease Study: methods and supplementary material 2018.

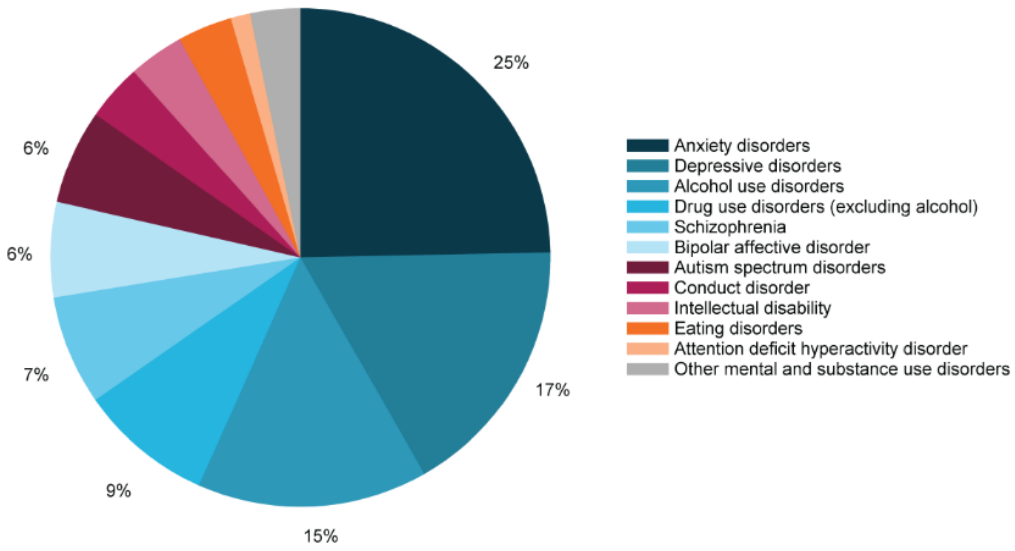
How much burden do mental health conditions and substance use disorders contribute?

Mental health conditions & substance use disorders was the leading cause of total burden and non-fatal burden among First Nations people and the 12th leading cause of fatal burden in 2022.

In 2022, mental health conditions & substance use disorders made up 20% (64,147 DALY) of total burden, 40% (62,846 YLD) of non-fatal burden and 0.8% (1,301 YLL) of fatal burden.

The main causes of burden in this disease group were anxiety disorders (25%), depressive disorders (17%) and alcohol use disorders (15%) (Figure 1).

Figure 1: Contribution of individual causes to mental health conditions & substance use disorders total burden (DALY)



Notes

1. Percentage labels are not shown for disease groups contributing less than 4.5% of burden.

2. Estimates in relation to conduct disorder and autism should be interpreted with caution as they are subject to data quality issues.

3. The residual cause 'Other mental health conditions & substance use disorders' includes delirium, personality disorders and any remaining child disorders such as specific learning disorders, developmental disorders and sleep disorders. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

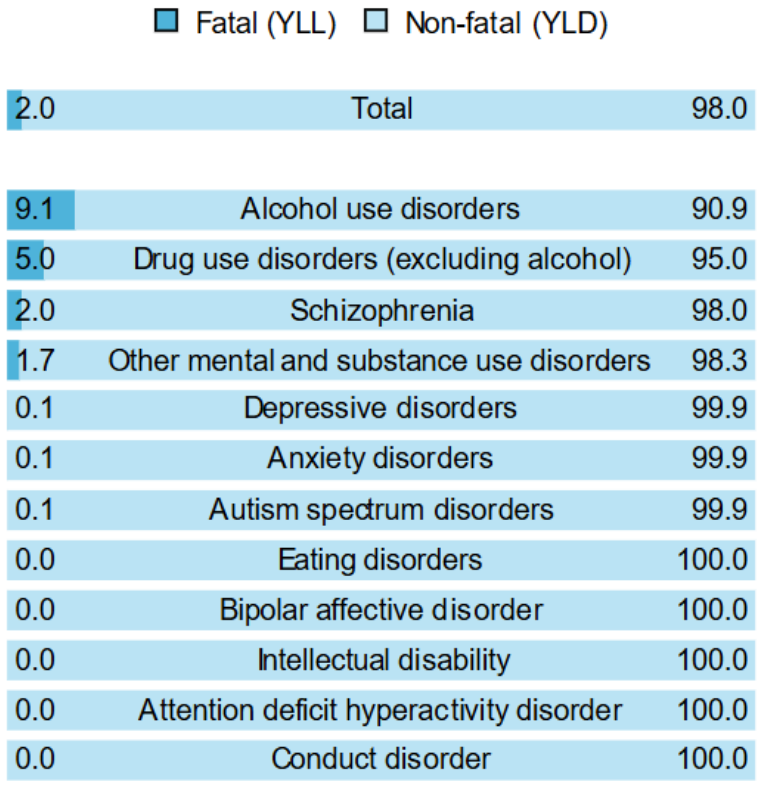
To explore the contribution of total, non-fatal and fatal burden for each disease group, see the interactive data visualisation: Dashboard 1: Burden of disease in Australia.

Most of the burden is non-fatal

Nearly all (98%) of the burden due to mental health conditions & substance use disorders was non-fatal (Figure 2a), the leading causes of which were anxiety disorders (25% of non-fatal burden for mental health conditions & substance use disorders), depressive disorders (17%) and alcohol use disorders (14%).

Only a very small proportion (2.0%) of the burden in this disease group was fatal (Figure 2a), the large majority of which was due to alcohol use disorders (67% of fatal burden for mental health conditions & substance use disorders) and drug use disorders (21%).

Figure 2a: Mental health conditions and substance use disorders burden (DALY), diseases by burden type, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

There were differences in burden due to mental health conditions & substance use disorders between First Nations males and females, with DALY, YLD and YLL rates higher among males than females (Table 1).

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) for mental health conditions and substance use disorders, First Nations people, by sex, 2022

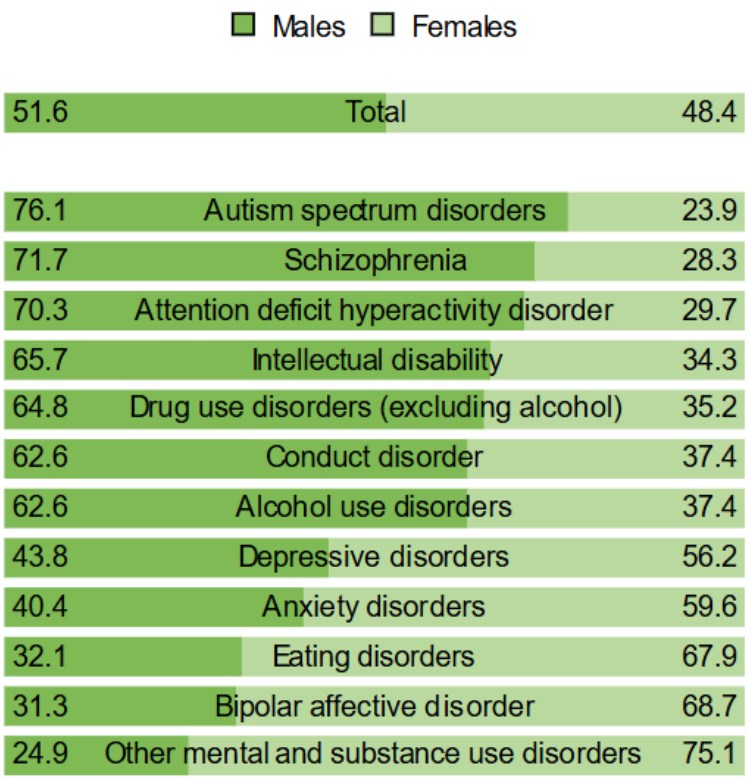
Sex	DALY	YLD	YLL
Males	64.6	62.9	1.7
Females	61.1	60.2	0.9
Persons	62.8	61.6	1.3

Source: AIHW First Nations Burden of Disease Database

Overall, a slightly larger proportion of the total burden due to mental health conditions & substance use disorders was experienced by First Nations males (52% of DALY) than by First Nations females (48%) (Figure 2b).

This proportion differed by the type of mental health condition & substance use disorder. For example, males experienced more of the burden due to autism spectrum disorders, schizophrenia and ADHD, while females experienced more of the burden due to bipolar affective disorder and eating disorders.

Figure 2b: Mental health conditions and substance use disorders burden (DALY), diseases by sex, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

How does burden differ by age?

The number of DALY and age-specific DALY rates due to mental health conditions & substance use disorders were highest among those aged 15–44 and lowest for those aged under 5 and 75 and over. A similar pattern was evident for age-specific YLD rates, while age-specific YLL rates were highest for those aged 45–64 (Table 2).

Table 2: Number of DALY and age-specific DALY, YLD and YLL rates (per 1,000 people) for mental health conditions & substance use disorders, First Nations people, by age group, 2022

Age group	Number of DALY	DALY rate	YLD rate	YLL rate
Under 5	780	7.2	7.2	—
5–14	6,867	30.1	30.1	—
15–24	16,608	88.3	88.0	0.4
25–44	28,669	109.6	108.1	1.5
45–64	9,841	55.4	51.4	4.0
65–74	1,069	26.2	23.7	2.5
75 and over	313	19.1	17.0	2.2
Total	64,147	62.8	61.6	1.3

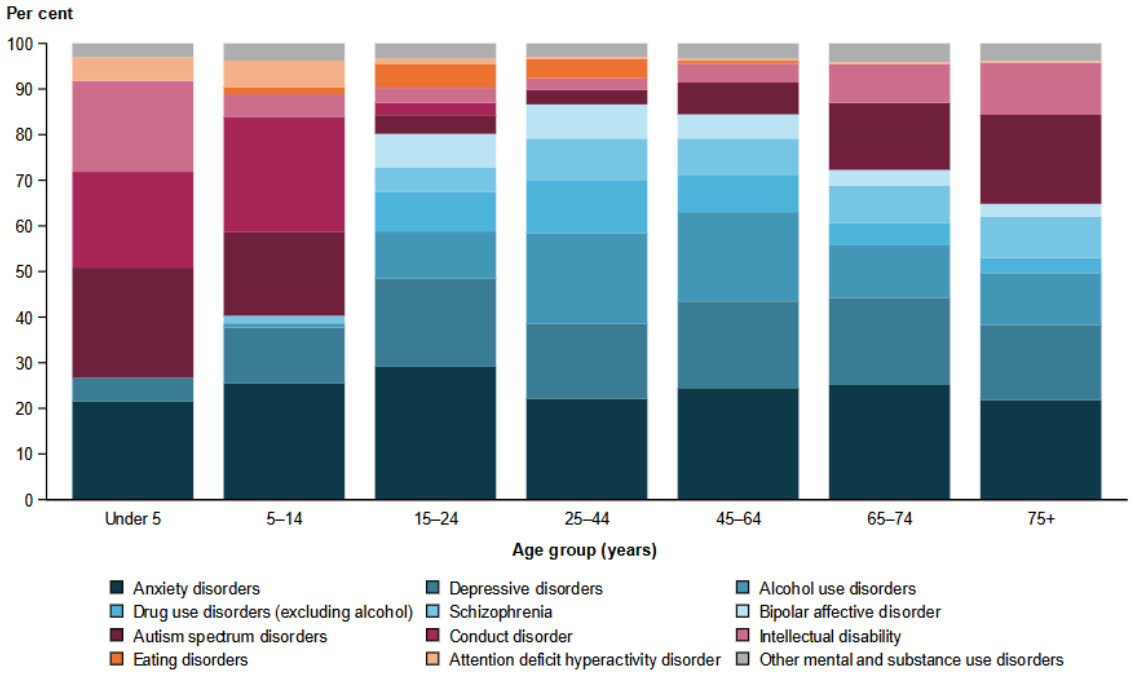
— Zero or rounded to zero

Source: AIHW First Nations Burden of Disease Database

The contribution of individual conditions to mental health conditions & substance use burden varied across the life course (Figure 3):

- For infants and children aged under 5, autism spectrum disorders (24%), anxiety disorders (22%), conduct disorders (21%) and intellectual disability (20%) were the leading causes of the burden, accounting for 87% of total burden in this age group. (Note these proportions are based on a small number of DALY, some of which relate only to children aged 4, and should be interpreted with caution.)
- For children aged 5–14, about half the burden was due to conduct disorder (25%) and anxiety disorders (25%).
- For people aged 15–64, anxiety disorders (25%), depressive disorders (18%) and alcohol use disorders (17%) were the leading causes of burden.
- For those aged 65 and over, anxiety disorders (24%) and depressive disorders (19%) were the leading causes of burden.

Figure 3: Contribution of individual causes to mental health conditions & substance use disorders total burden (DALY), by age group, First Nations people, 2022



Notes

1. The residual cause 'Other mental health conditions & substance use disorders' includes delirium, personality disorders and any remaining child disorders such as specific learning disorders, developmental disorders and sleep disorders. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

2. Estimates for anxiety disorders and conduct disorder in children under 5 relate to children aged 4 years only.

3. First Nations estimates for autism spectrum disorders should be interpreted with caution as they are based on indirect modelling methods that are less reliable than for some other causes.

4. Proportions in the under 5 and 75 and over age groups should be treated with caution, due to underlying small numbers.

Source: AIHW First Nations Burden of Disease Database

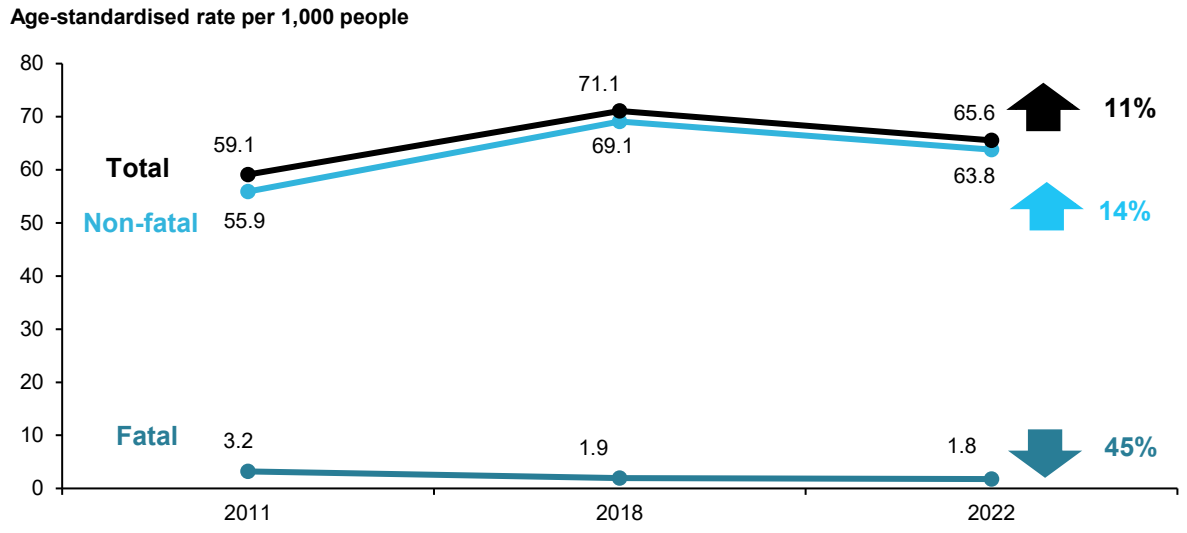
To explore the contribution of fatal and non-fatal burden to the leading causes of the top 5 disease groups see the interactive data visualisation: Dashboard 7: Top disease groups across the stages of life.

How has the burden changed over time?

Between 2011 and 2022, the age-standardised rate of total burden due to mental health conditions & substance use disorders for First Nations people increased from 59 to 66 DALY per 1,000 people, an increase of 11%. This was driven by an increase in the non-

fatal burden (14%). Rates of fatal burden due to mental health conditions & substance use disorders decreased between 2011 and 2022 (from 3.2 to 1.8 YLL per 1,000; decrease of 45%) (Figure 4).

Figure 4: Change between 2011 and 2022 in the age-standardised total (DALY), fatal (YLL), and non-fatal (YLD) burden rate (per 1,000 people), mental health conditions & substance use disorders, First Nations people



Source: AIHW First Nations Burden of Disease Database

For non-Indigenous people the age-standardised rate of total burden due to mental health conditions & substance use disorders increased by 22% between 2011 and 2022 (from 26 to 32 DALY per 1,000 people). This was driven by an increase of 23% in the age-standardised non-fatal burden rate over the same period (from 25 to 31 YLD per 1,000 people). The age-standardised fatal burden rate for non-Indigenous people was less than 1 per 1,000 people in 2011 and 2022 (See Figure 7 in Gap in disease burden section).

To explore the changes over time in the DALY, YLD, and YLL for First Nations people in each disease group, see the interactive data visualisation: Dashboard 3: Comparisons over time.

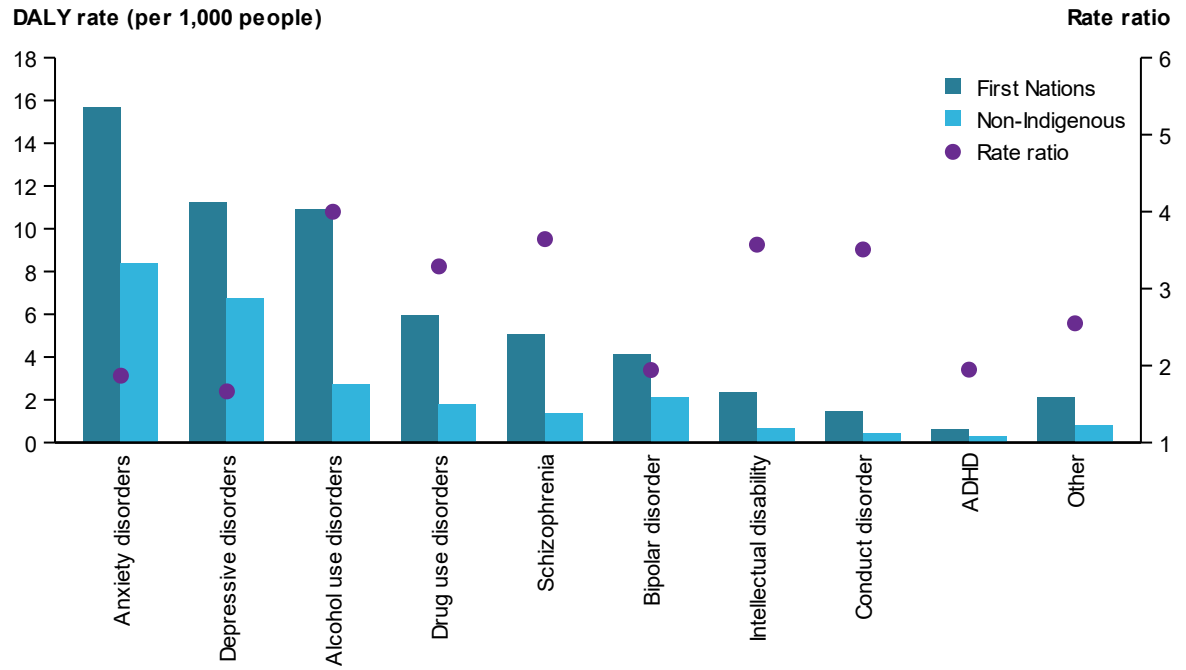
Comparisons with non-Indigenous Australians

In 2022, the age-standardised rate of burden due to mental health conditions & substance use disorders for First Nations people was 2.1 times the rate for non-Indigenous Australians (age-standardised rates of 65.6 and 31.5 DALY per 1,000 people, respectively).

The largest absolute differences in DALY rates between First Nations people and non-Indigenous Australians were observed for alcohol use disorders (rate difference of 8.2 DALY per 1,000 people), anxiety disorders (rate difference of 7.3 DALY per 1,000) and depressive disorders (rate difference of 4.5 DALY per 1,000) (Figure 5).

The largest relative differences in DALY rates between First Nations people and non-Indigenous Australians (based on age-standardised rate ratios) were observed for alcohol use disorders (rate ratio of 3.9), schizophrenia (3.6), intellectual disability (3.5), and conduct disorder (3.5).

Figure 5: Mental health conditions & substance use disorders age-standardised total burden rates (DALY per 1,000 people) and rate ratios, First Nations people and non-Indigenous Australians, by disease, 2022



Notes

1. Data for autism spectrum disorders and eating disorders are not reported due to data quality issues. Estimates for conduct disorder should be interpreted with caution as they are also subject to data quality issues.

2. 'Other' refers to the residual cause 'Other mental health conditions & substance use disorders', which includes delirium, personality disorders and any remaining child disorders such as specific learning disorders, developmental disorders and sleep disorders. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

To explore the gap in disease burden between First Nations people and non-Indigenous Australians, see the interactive data visualisation: Dashboards 6a and 6b: Gap in health outcomes.

Injuries

Key points

- In 2022, injuries accounted for 13% (40,037 DALY) of total burden for First Nations people, 22% (35,085 YLL) of fatal burden and 3.1% (4,951 YLD) of non-fatal burden.
- In 2022, injuries was the second leading cause of total burden among First Nations people, the leading cause of fatal burden and the ninth leading cause of non-fatal burden.
- The leading causes of injury burden for First Nations people were suicide & self-inflicted injuries (36%), poisoning (18%), road traffic injuries (RTI) of motor vehicle occupants (12%) and homicide & violence (8.0%).
- Most injury burden (88%) was due to early death (fatal burden).
- A larger proportion of total burden (DALY) due to injuries was experienced by First Nations males (69%) than by First Nations females (31%).
- Between 2011 and 2022, the age-standardised rate of total burden due to injuries for First Nations people remained relatively stable overall (43 DALY per 1,000 people).
- In 2022, the age-standardised rate of burden due to injuries for First Nations people was 2.6 times the rate for non-Indigenous Australians.

The injuries disease group includes all injuries incurred from trauma. This includes falls, burns, homicide and violence, poisoning (intentional and accidental), road traffic injuries (RTI), suicide and self-inflicted injuries, and drowning. It does not include injuries that result from other health conditions – for example, limb amputations due to diabetes.

The list of injuries and ICD-10 codes used to identify external causes can be found in the Australian Burden of Disease Study: methods and supplementary material 2018.

Non-fatal injuries are restricted to those that are admitted to a hospital and those that present to an emergency department (ED). Injuries presenting only to a general practitioner or allied health professional and those for which no medical care is sought are excluded. It is assumed that they do not incur sufficient health loss to be included in the FNBDS.

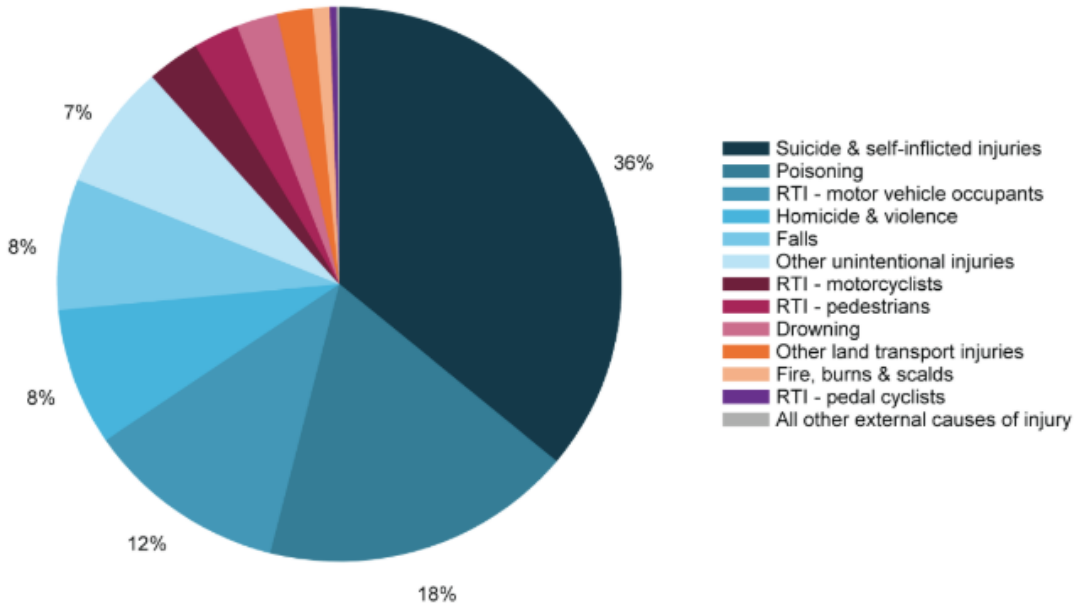
How much burden do injuries contribute?

Overall, injuries was the second leading cause of total burden among First Nations people, the leading cause of fatal burden and the ninth leading cause of non-fatal burden in 2022.

In 2022, injuries accounted for 13% (40,037 DALY) of total burden among First Nations people, 22% (35,085 YLL) of fatal burden and 3.1% (4,951 YLD) of non-fatal burden.

The leading causes of injury burden for First Nations people were suicide & self-inflicted injuries (36%), poisoning (18%), road traffic injuries (RTI) of motor vehicle occupants (12%) and homicide & violence (8.0%) (Figure 1).

Figure 1: Injury total burden (DALY), contribution of external causes of injury, First Nations people, 2022



RTI road traffic injuries

Notes

1. Percentage labels are not shown for disease groups contributing less than 4.5% of burden.

2. The residual cause 'All other external causes of injury' includes all causes included in injuries (external cause) not specifically listed in the figure. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

To explore the contribution of total, non-fatal and fatal burden for each disease group, see the interactive data visualisation: Dashboard 1: Burden of disease in Australia.

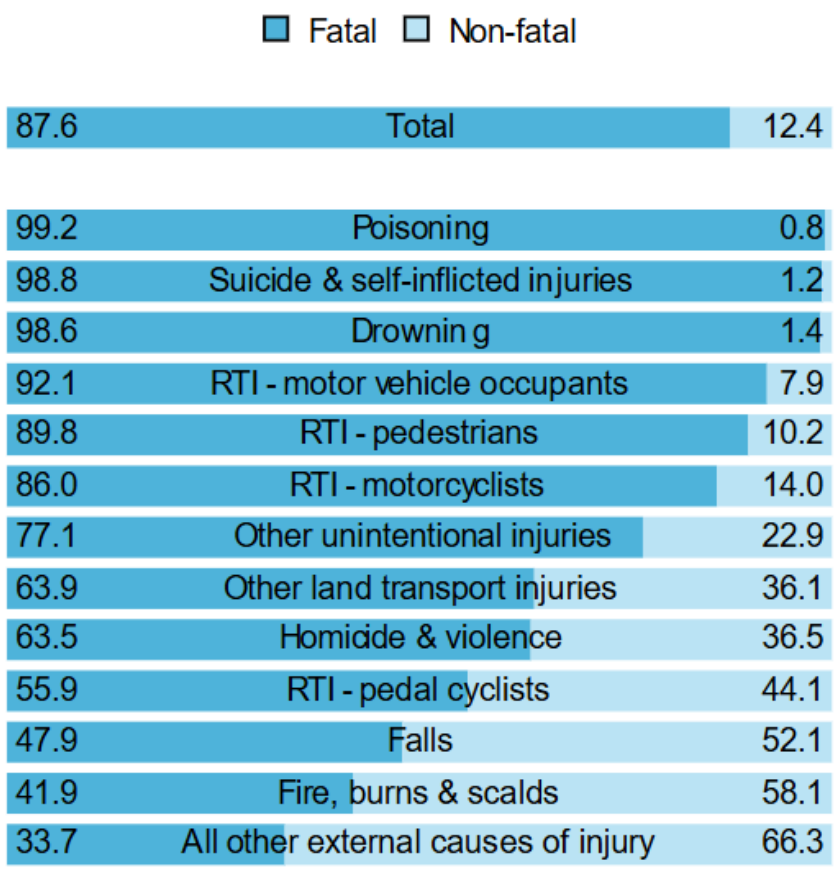
Most of the burden is fatal

Most injury burden (88%) was due to early death (fatal burden) (figure 2a). The main causes of fatal injury burden for First Nations people were suicide & self-inflicted injuries

(41% of the fatal injury burden), poisoning (20%) and RTI of motor vehicle occupants (12%).

The remaining burden (12%) was due to living with the effects of injuries (non-fatal burden) (figure 2a). Falls (32% of the non-fatal injury burden), homicide & violence (24%) and other unintentional injuries (14%) were the leading causes of non-fatal injury burden for First Nations people.

Figure 2a: Injury burden (DALY), by external causes of injury and burden type, First Nations people, 2022



RTI road traffic injuries.

Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

There were differences in burden due to injuries between males and females, with DALY, YLD and YLL rates higher among First Nations males than females (Table 1).

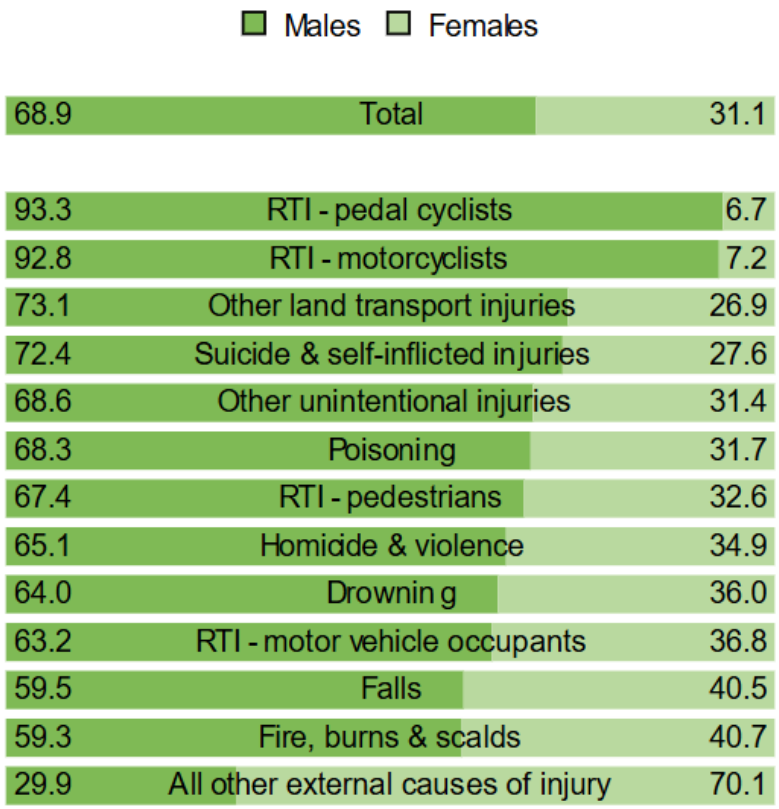
Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) for injuries, First Nations people, by sex, 2022

Sex	DALY	YLD	YLL
Males	53.9	5.9	48.0
Females	24.5	3.8	20.6
Persons	39.2	4.9	34.4

Source: AIHW First Nations Burden of Disease Database

Overall, a larger proportion of total burden (DALY) due to injuries was experienced by First Nations males (69%) than by First Nations females (31%) (Figure 2b). First Nations males experienced a higher proportion of injury burden than First Nations females across all causes, except for the residual group 'all other external causes of injury' (70% females). The largest differences were for RTI of pedal cyclists (93% of burden experienced by males), RTI of motorcyclists (93%), other land transport injuries (73%), and suicide & self-inflicted injuries (72%).

Figure 2b: Injury burden (DALY), by external causes of injury and sex, First Nations people, 2022



RTI road traffic injuries.

Source: AIHW First Nations Burden of Disease Database

How does burden differ by age?

The number of DALY and age-specific DALY rates due to injuries were highest among those aged 15–44. The number of DALY was lowest for those aged 65–74, and 75 and over, while the DALY rate was lowest for those aged 5–14. A similar pattern was evident for age-specific YLL rates, while age-specific rates for YLD were highest for those aged 75 and over and lowest for those aged under 5 (Table 2).

Table 2: Injuries, burden numbers and rates (per 1,000 people), First Nations people, by burden type and age group, 2022

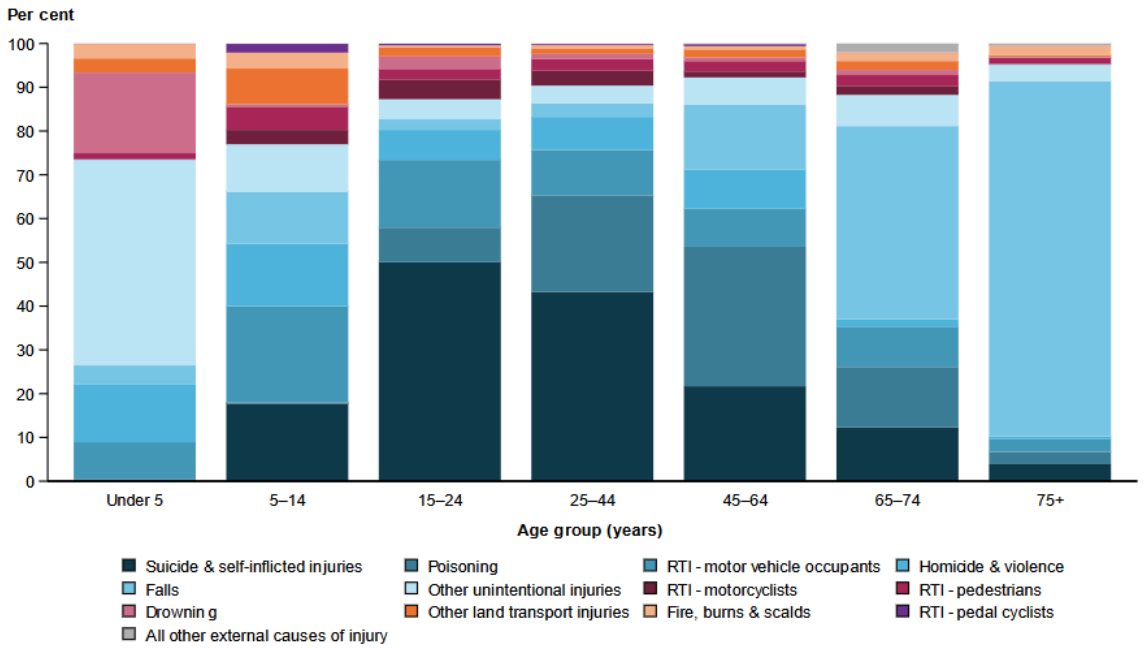
Age group	Number of DALY	DALY rate	YLD rate	YLL rate
Under 5	2,204	20.4	1.7	18.7
5–14	1,798	7.9	2.0	5.9
15–24	9,362	49.8	5.5	44.3
25–44	17,712	67.7	6.9	60.8
45–64	7,433	41.8	6.2	35.7
65–74	982	24.0	5.6	18.4
75 and over	547	33.3	9.0	24.3
Total	40,037	39.2	4.9	34.4

Source: AIHW First Nations Burden of Disease Database

The contribution of individual causes to injury burden varied across the life course (Figure 3):

- For First Nations infants and children aged under 5, other unintentional injuries (47%) was the leading cause of injury burden, followed by drowning (18%).
- For First Nations children aged 5–14, RTI of motor vehicle occupants and suicide & self-inflicted injuries were the 2 leading causes of injury burden (accounting for 22% and 18%, respectively).
- Suicide & self-inflicted injuries accounted for half (50%) of injury burden among First Nations people aged 15–24.
- For adults aged 25–64, suicide & self-inflicted injuries and poisoning were the 2 leading causes of injury burden, together accounting for over half of the injury burden in this age group (37% and 25% respectively).
- For those aged 65 and over, falls (57%) were the leading cause of injury burden.

Figure 3: Injury total burden (DALY), contribution of external causes of injury, First Nations people, 2022



RTI road traffic injuries

Notes

1. The residual cause 'All other external causes of injury' includes all causes included in injuries (external cause) not specifically listed in the figure. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

2. Data for the 75 and over age group should be treated with caution, due to underlying small numbers.

Source: AIHW First Nations Burden of Disease Database

To explore the contribution of fatal and non-fatal burden to the leading causes of the top 5 disease groups see the interactive data visualisation: Dashboard 7: Top disease groups across the stages of life.

How has the burden changed over time?

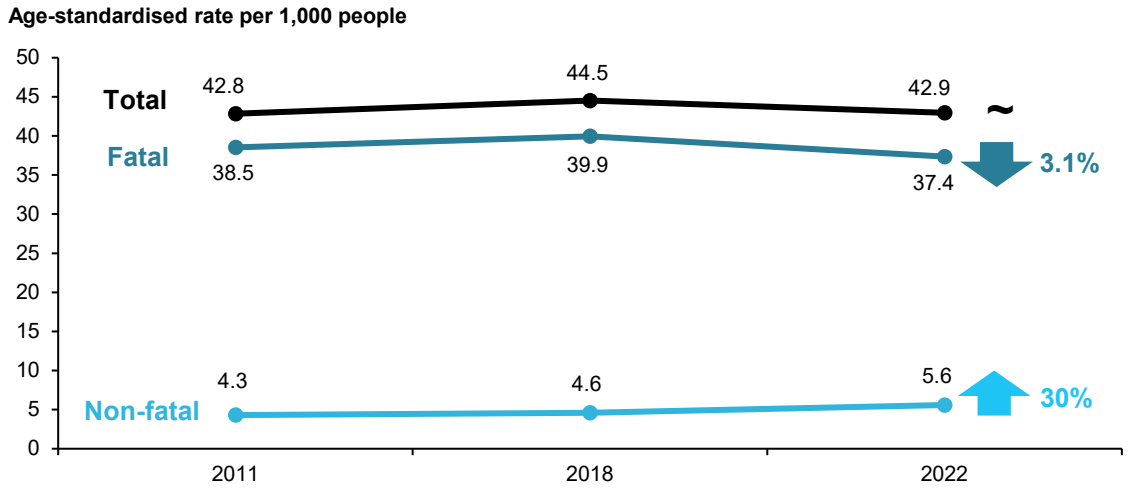
Between 2011 and 2022, the age-standardised rate of total burden due to injuries for First Nations people remained relatively stable overall (43 DALY per 1,000 people) (Figure 4).

Rates of non-fatal burden due to injuries increased (from 4.3 to 5.6 YLD per 1,000; increase of 30%), whereas rates of fatal burden decreased slightly (from 39 to 37 YLL per 1,000; decrease of 3.1%).

Most causes of injury showed a decrease in fatal burden between 2011 and 2022, including for homicide & violence and RTI of motor vehicle injuries (decreases of 2.2 and

2.0 YLL per 1,000 people, respectively; equivalent to decreases of 53% and 33%, respectively).

Figure 4: Change between 2011 and 2022 in the age-standardised total (DALY), fatal (YLL), and non-fatal (YLD) burden rate (per 1,000 people), injuries, First Nations people



Source: AIHW First Nations Burden of Disease Database

For non-Indigenous people, the age-standardised rate of total burden due to injuries declined slightly between 2011 and 2022 (5.9%, from 17 to 16 DALY per 1,000 people). Similar small declines were evident in the age-standardised non-fatal (7.9%, from 2.8 to 2.6 YLD per 1,000 people) and fatal (5.5%, from 15 to 14 YLL per 1,000 people) burden rates over the same period (See Figure 7 in Gap in disease burden section).

To explore the changes over time in the DALY, YLD, and YLL for First Nations people in each disease group, see the interactive data visualisation: Dashboard 3: Comparisons over time.

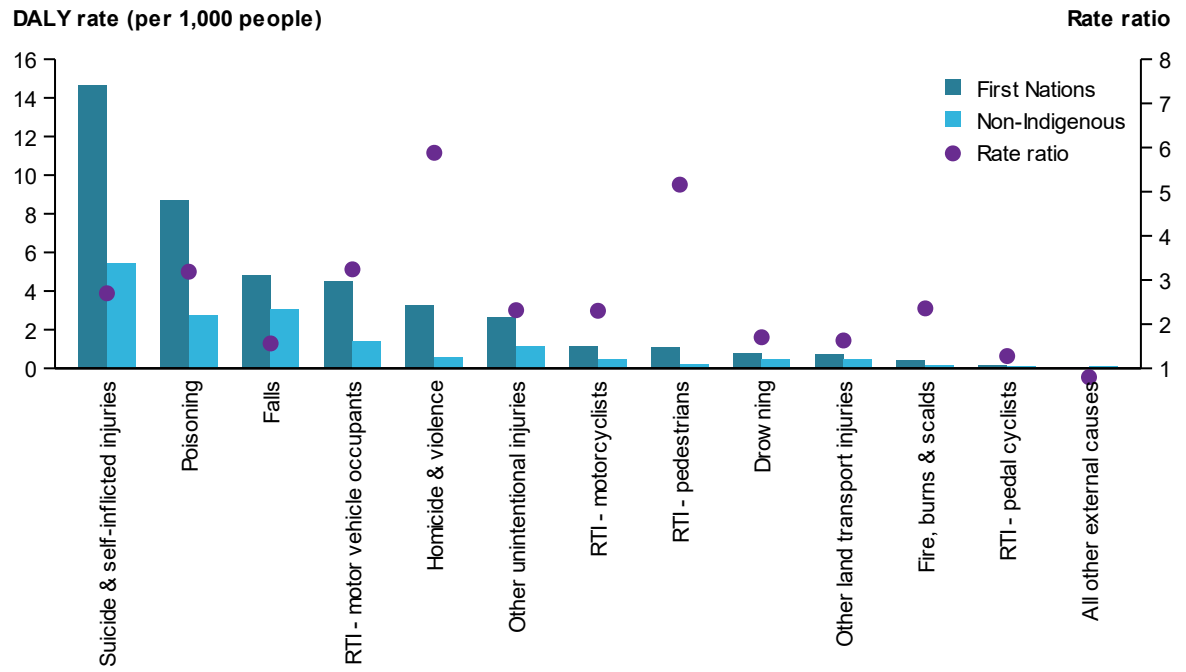
Comparisons with non-Indigenous Australians

In 2022, the age-standardised rate of burden due to injuries for First Nations people was 2.6 times the rate for non-Indigenous Australians (age-standardised rates of 42.9 and 16.3 DALY per 1,000 people, respectively).

The largest absolute differences in DALY rates between First Nations people and non-Indigenous Australians were observed for suicide & self-inflicted injuries (rate difference of 9.2 DALY per 1,000 people), poisoning (rate difference of 6.0 DALY per 1,000) and RTI of motor vehicle occupants (rate difference of 3.1 DALY per 1,000) (Figure 5).

The largest relative differences in DALY rates between First Nations people and non-Indigenous Australians (based on age-standardised rate ratios) were observed for homicide & violence (rate ratio of 5.9), RTI of pedestrians (5.2), RTI of motor vehicle occupants (3.2) and poisoning (3.2).

Figure 5: Injury age-standardised total burden rates (DALY per 1,000 people) and rate ratios, First Nations people and non-Indigenous Australians, 2022



RTI road traffic injuries.

Source: AIHW First Nations Burden of Disease Database

To explore the gap in disease burden between First Nations people and non-Indigenous Australians, see the interactive data visualisation: Dashboards 6a and 6b: Gap in health outcomes.

Cardiovascular diseases

Key points

- Cardiovascular diseases accounted for 11% (34,796 DALY) of total burden, 19% (29,664 YLL) of fatal burden and 3.2% (5,132 YLD) of non-fatal burden for First Nations people in 2022.
- The cardiovascular disease (CVD) group was the third leading cause of total burden and fatal burden and the eighth leading cause of non-fatal burden among First Nations people in 2022.
- Overall, 85% of CVD burden was fatal, the majority of which was due to CHD (56% of fatal burden for CVD) and stroke (15%).
- A larger proportion of burden due to CVD was experienced by First Nations males (58%) than by First Nations females (42%).
- The age-standardised rate of total burden due to CVD for First Nations people decreased by 26% between 2011 and 2022, driven by a decrease of 28% in the rate of fatal burden over the same period.
- In 2022, the age-standardised rate of burden due to CVD for First Nations people was 2.5 times the rate for non-Indigenous Australians.

The cardiovascular disease (CVD) group includes many different conditions affecting the heart and blood vessels. The main underlying cause of the most common diseases in this group is atherosclerosis (hardening of the arteries). It is most serious when it results in reduced or blocked blood supply to the heart as part of coronary heart disease (CHD), or to the brain (causing a stroke).

A note about heart failure

Note that heart failure is not identified separately in this list. Instead, the effects of heart failure are included as a consequence of the various underlying diseases (CHD, rheumatic heart disease, non-rheumatic valvular disease, cardiomyopathy, hypertensive heart disease and inflammatory heart disease). Heart failure has also been included as a potential consequence of congenital heart disease, which is included in the infant & congenital conditions group.

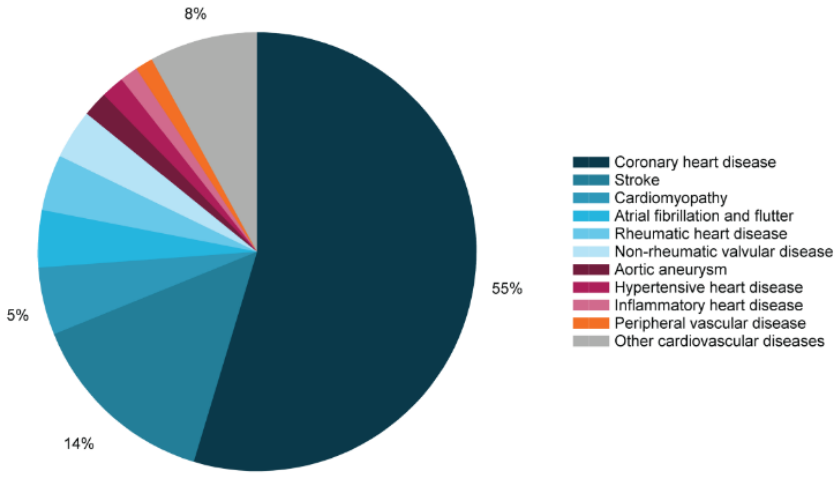
How much burden does CVD contribute?

Overall, CVD was the third leading cause of total burden and fatal burden among First Nations people and the eighth leading cause of non-fatal burden in 2022.

In 2022, CVD accounted for 11% (34,796 DALY) of total burden, 19% (29,664 YLL) of fatal burden and 3.2% (5,132 YLD) of non-fatal burden for First Nations people.

The main causes of CVD burden were CHD (55%) and stroke (14%) (Figure 1).

Figure 1: Contribution of individual causes to CVD total burden (DALY), First Nations people, 2022



Notes

1. Percentage labels are not shown for disease groups contributing less than 4.5% of burden.

2. Rheumatic heart disease includes acute rheumatic fever.

3. The residual cause 'Other cardiovascular diseases' includes diseases such as secondary hypertension, pulmonary heart disease, ventricular fibrillation and flutter, diseases of capillaries and hypotension. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

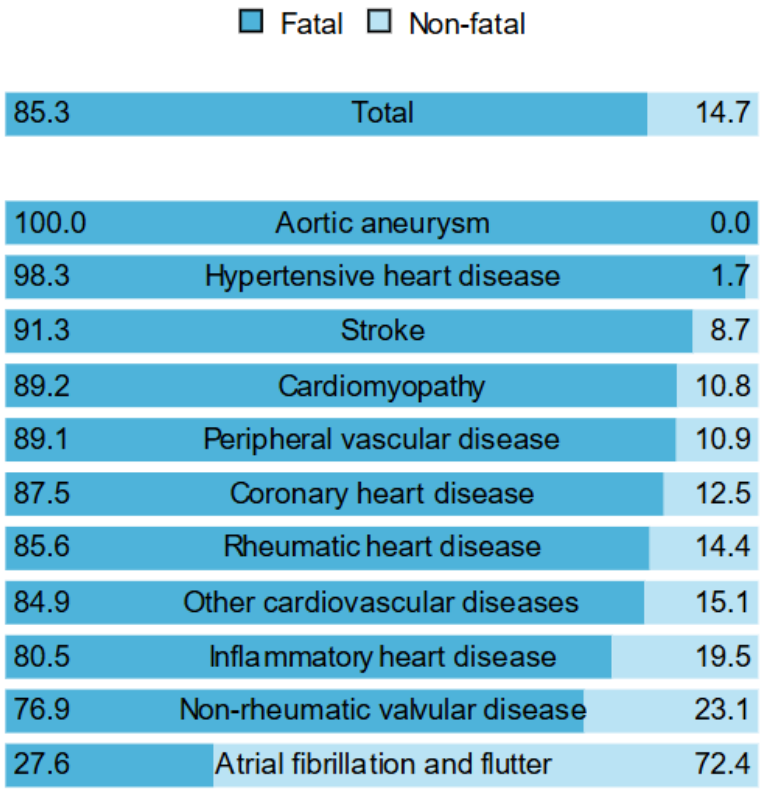
To explore the contribution of total, non-fatal and fatal burden for each disease group, see the interactive data visualisation: Dashboard 1: Burden of disease in Australia.

What are the differences between fatal and non-fatal burden?

Overall, 85% of the CVD burden was fatal (Figure 2a), the majority of which was due to CHD (56% of fatal burden for CVD) and stroke (15%).

The remaining 15% of the CVD burden was non-fatal (Figure 2a), with CHD (46% of non-fatal burden for CVD) and atrial fibrillation and flutter (21%) the main contributors.

Figure 2a: Cardiovascular diseases burden (DALY), diseases by burden type, First Nations people, 2022



Note: Rheumatic heart disease includes acute rheumatic fever.

Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

There were differences in burden due to CVD between males and females, with DALY, YLD and YLL rates higher among First Nations males than females (Table 1).

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) for cardiovascular diseases, First Nations people, by sex, 2022

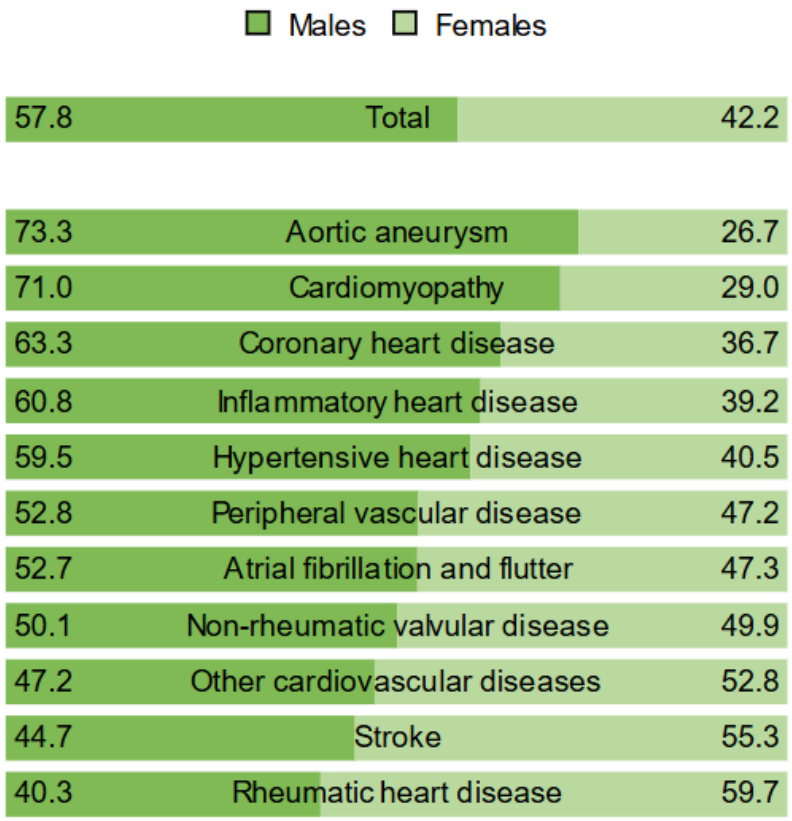
Sex	DALY	YLD	YLL
Males	39.3	5.2	34.1
Females	28.9	4.8	24.0
Persons	34.1	5.0	29.1

Source: AIHW First Nations Burden of Disease Database

A larger proportion of burden due to CVD was experienced by First Nations males (58%) than by First Nations females (42%) (Figure 2b).

This proportion differed by the type of CVD. First Nations males experienced a higher proportion of CVD burden than First Nations females across most causes, except for non-rheumatic valvular disease (50% females), stroke (55%) and rheumatic heart disease (60%).

Figure 2b: Cardiovascular diseases burden (DALY), diseases by sex, First Nations people, 2022



Note: Rheumatic heart disease includes acute rheumatic fever.

Source: AIHW First Nations Burden of Disease Database

How does burden differ by age?

The number of DALY due to CVD were highest among those aged 45–64, while the age-specific DALY rates were highest among those aged 75 and over, and 65–74. The numbers and rates of DALY were lowest for those aged under 25. A similar pattern was evident for age-specific YLL and YLD rates (Table 2).

Table 2: Cardiovascular diseases, burden numbers and rates (per 1,000 people), First Nations people, by burden type and age group, 2022

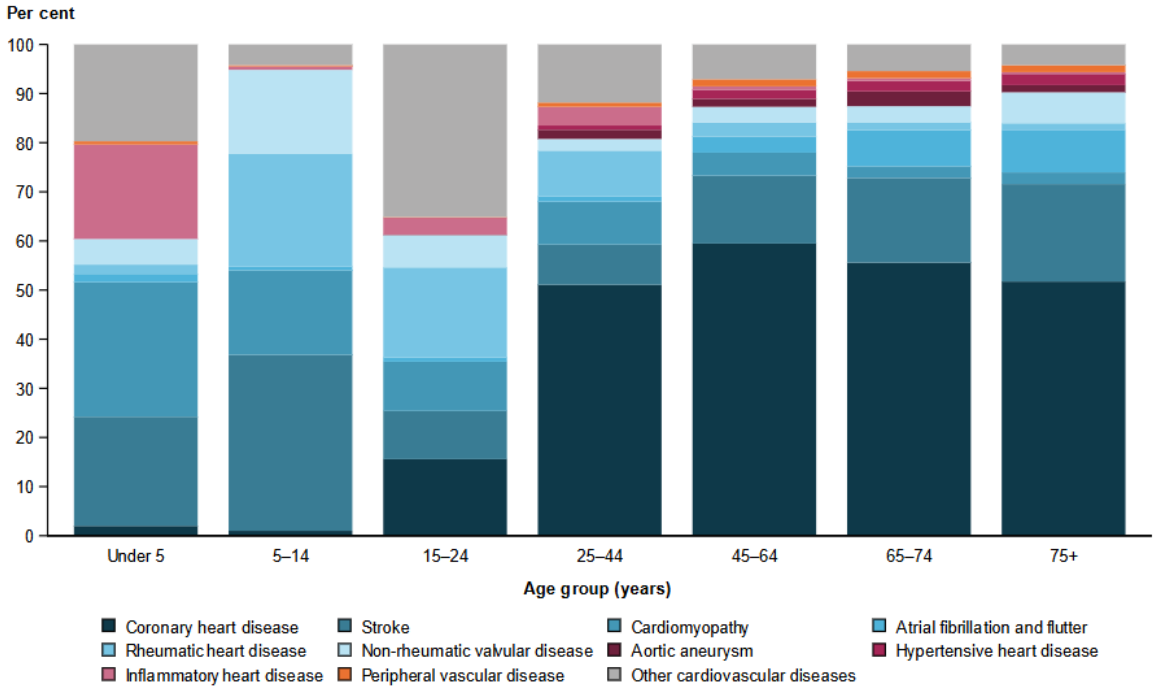
Age group	Number of DALY	DALY rate	YLD rate	YLL rate
Under 5	78	0.7	0.2	0.6
5–14	181	0.8	0.1	0.6
15–24	811	4.3	0.6	3.8
25–44	6,662	25.5	2.6	22.9
45–64	16,184	91.0	13.0	78.0
65–74	6,178	151.3	28.8	122.6
75 and over	4,702	286.9	49.6	237.3
Total	34,796	34.1	5.0	29.1

Source: AIHW First Nations Burden of Disease Database

The contribution of individual diseases to total CVD burden also varied across the life course (Figure 3):

- Among First Nations infants and children aged under 5, cardiomyopathy (27%), stroke (22%), other cardiovascular diseases (20%), and inflammatory heart disease (19%) were the leading causes of CVD burden. (Note that congenital heart disease is included under the Infant & congenital conditions disease group.)
- For First Nations children aged 5–14, stroke and rheumatic heart disease were the leading causes of burden (36% and 23%, respectively).
- Other cardiovascular diseases and rheumatic heart disease were the leading causes of burden (35% and 18%, respectively) among First Nations people aged 15–24.
- CHD accounted for over half the CVD burden in those aged 25 and over (56%).

Figure 3: Contribution of individual causes to CVD total burden (DALY), by age group, First Nations people, 2022



Notes

1. Rheumatic heart disease includes acute rheumatic fever.

2. The residual cause 'Other cardiovascular diseases' includes diseases such as secondary hypertension, pulmonary heart disease, ventricular fibrillation and flutter, diseases of capillaries and hypotension. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

3. Proportions in the under 5, 5–14 and 15–24 age groups should be treated with caution, due to underlying small numbers.

Source: AIHW First Nations Burden of Disease Database

To explore the contribution of fatal and non-fatal burden to the leading causes of the top 5 disease groups see the interactive data visualisation: Dashboard 7: Top disease groups across the stages of life.

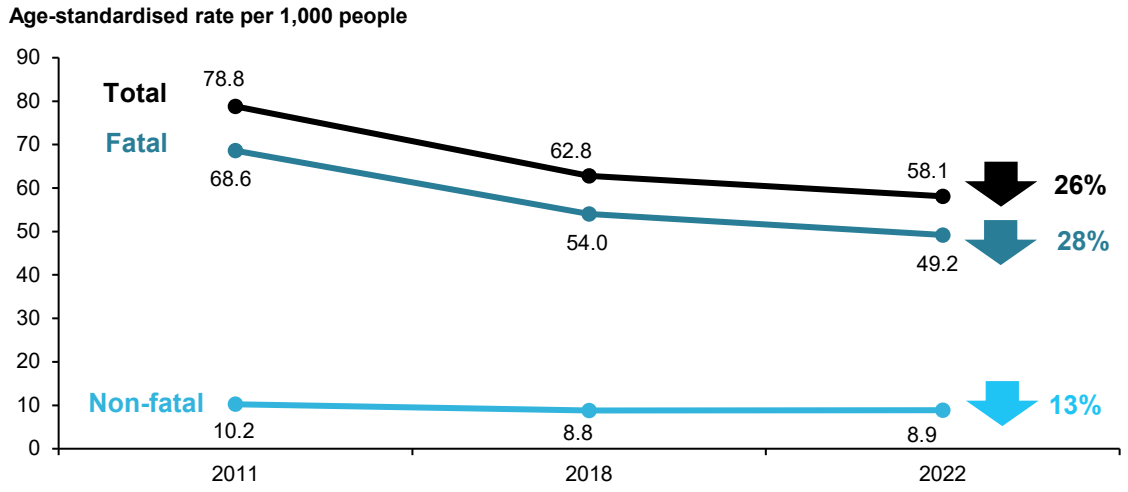
How has the burden changed over time?

Between 2011 and 2022, the age-standardised rate of total burden due to CVD for First Nations people decreased from 79 to 58 DALY per 1,000 people, a decrease of 26% (Figure 3).

This was driven by a decrease in the fatal burden (of 28%), mainly from CHD and stroke (decreases of 13 and 4.2 YLL per 1,000, respectively; equivalent to decreases of 32% and 34%, respectively).

Rates of non-fatal burden due to CVD also decreased between 2011 and 2022 in the First Nations population (from 10 to 8.9 YLD per 1,000; decrease of 13%).

Figure 4: Change between 2011 and 2022 in the age-standardised total (DALY), fatal (YLL), and non-fatal (YLD) burden rate (per 1,000 people), cardiovascular diseases, First Nations people



Source: AIHW First Nations Burden of Disease Database

For non-Indigenous people, the age-standardised rate of total burden due to CVD also declined by 26% between 2011 and 2022 (from 32 to 24 DALY per 1,000 people). Similar declines were evident in the age-standardised non-fatal (16%, from 5.5 to 4.7 YLD per 1,000 people) and fatal (28%, from 26 to 19 YLL per 1,000 people) burden rates over the same period (See Figure 7 in Gap in disease burden section).

To explore the changes over time in the DALY, YLD, and YLL for First Nations people in each disease group, see the interactive data visualisation: Dashboard 3: Comparisons over time.

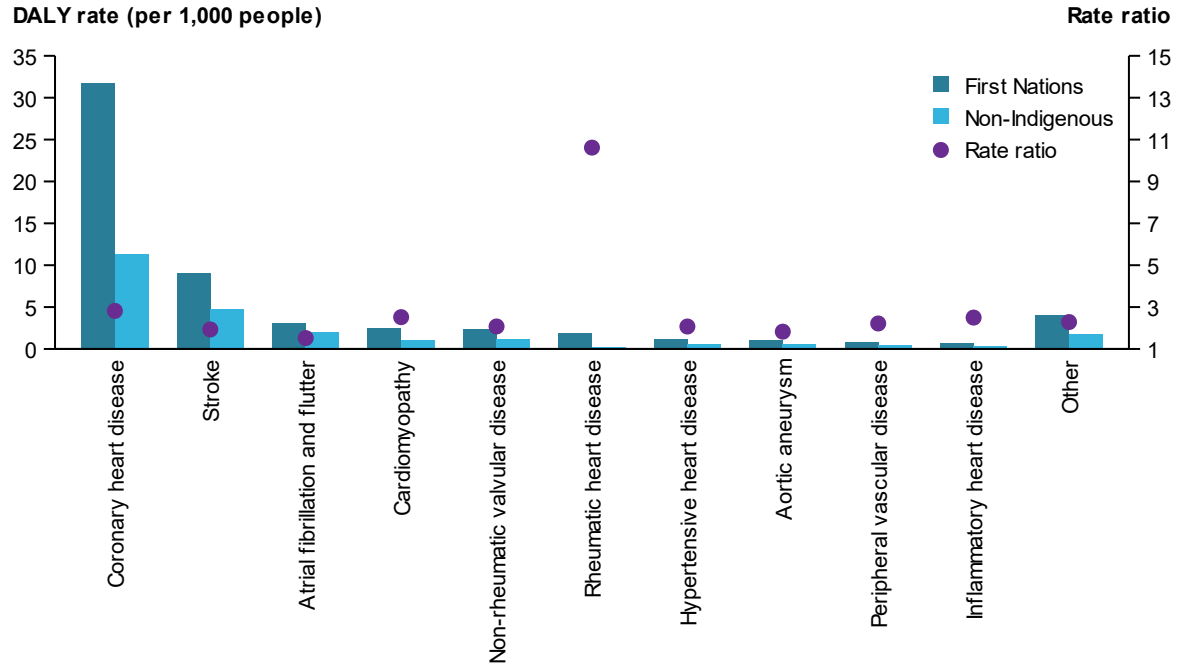
Comparisons with non-Indigenous Australians

In 2022, the age-standardised rate of burden due to CVD for First Nations people was 2.5 times the rate for non-Indigenous Australians (age-standardised rates of 58.1 and 23.7 DALY per 1,000 people, respectively).

The largest absolute differences in DALY rates between First Nations people and non-Indigenous Australians were observed for CHD (rate difference of 20.5 DALY per 1,000 people) and stroke (rate difference of 4.3 DALY per 1,000) (Figure 5).

Rheumatic heart disease (including acute rheumatic fever) had the largest relative difference (based on age-standardised rate ratios) between First Nations people and non-Indigenous Australians with a rate ratio of 10.6, though contributing only 4.1% of DALY for the CVD group overall.

Figure 5: Cardiovascular diseases age-standardised total burden rates (DALY per 1,000 people) and rate ratios, First Nations people and non-Indigenous Australians, by disease, 2022



Notes

1. Rheumatic heart disease includes acute rheumatic fever.

2. 'Other' refers to the residual cause 'Other cardiovascular diseases', which includes diseases such as secondary hypertension, pulmonary heart disease, ventricular fibrillation and flutter, diseases of capillaries and hypotension. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

To explore the gap in disease burden between First Nations people and non-Indigenous Australians, see the interactive data visualisation: Dashboards 6a and 6b: Gap in health outcomes.

Endocrine disorders

Key points

- In 2022, endocrine disorders made up 3.7% (11,631 DALY) of total burden, 3.4% (5,359 YLD) of non-fatal burden and 4.0% (6,272 YLL) of fatal burden among First Nations people.
- Endocrine disorders was the 10th leading cause of total burden, the eighth leading cause for fatal burden and the seventh leading cause of non-fatal burden among First Nations people in 2022.
- The main cause of endocrine burden was type 2 diabetes (88%).
- Endocrine disorders caused more fatal than non-fatal burden (54% to 46%).
- A similar proportion of burden due to endocrine disorders was experienced by First Nations males (49%) and females (51%).
- Between 2011 and 2022, the age-standardised rate of total burden due to endocrine disorders for First Nations people decreased by 28%, driven by a decrease of 42% in fatal burden.
- In 2022, the age-standardised rate of burden due to endocrine disorders for First Nations people was 3.6 times the rate for non-Indigenous Australians.

The endocrine disorders disease group contains only 3 specific diseases: type 1 diabetes mellitus (diabetes), type 2 diabetes and other diabetes. It excludes gestational diabetes (which is included in reproductive & maternal conditions). The residual group of 'other endocrine disorders' includes thyroid disorders and disorders of other endocrine glands. It excludes polycystic ovarian syndrome (which is included in reproductive & maternal conditions).

A note on diabetes as a risk factor

The figures provided here represent the direct impact of endocrine disorders. Diabetes is an important risk factor for other diseases such as coronary heart disease (CHD) and chronic kidney disease (CKD). These indirect impacts from diabetes are not included here, but are instead included in the disease group where the disease effects are more immediate; for these examples, in cardiovascular diseases and kidney & urinary diseases, respectively. An estimate of the impact of diabetes on these other diseases can be seen through considering high blood plasma glucose as a risk factor, which will be included in the report once data on risk factor attributable burden is available.

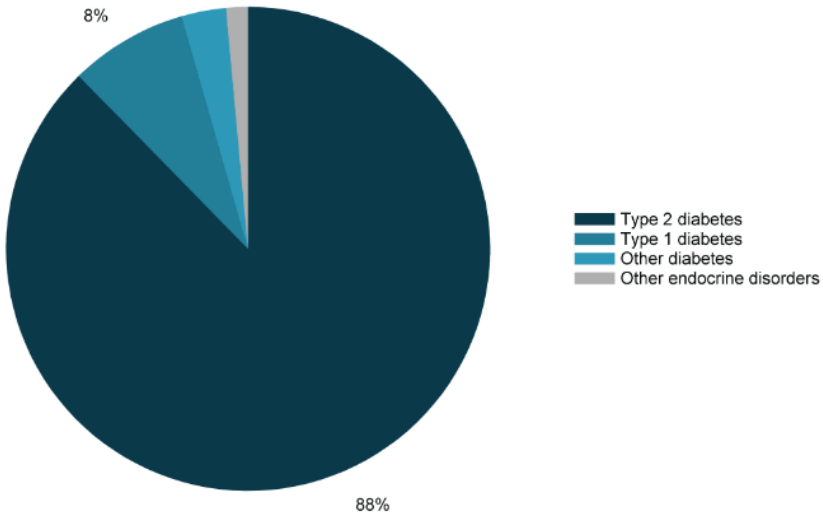
How much burden do endocrine disorders contribute?

Overall, endocrine disorders was the 10th leading cause of total burden, the eighth leading cause for fatal burden and the seventh leading cause of non-fatal burden among First Nations people in 2022.

In 2022, Endocrine disorders made up 3.7% (11,631 DALY) of total burden, 3.4% (5,359 YLD) of non-fatal burden and 4.0% (6,272 YLL) of fatal burden among First Nations people.

The main cause of endocrine burden was type 2 diabetes (88%), with type 1 diabetes contributing a further 7.9% (Figure 1).

Figure 1: Contribution of individual causes to endocrine disorders total burden (DALY), First Nations people, 2022



Notes

1. Percentage labels are not shown for disease groups contributing less than 4.5% of burden.

2. 'Other diabetes' includes diabetes due to other conditions, such as genetic disorders, infections, or pancreatic disease. It does not include gestational diabetes. The residual 'Other endocrine disorders' includes thyroid disorders and disorders of other endocrine glands. It excludes polycystic ovarian syndrome (which is included in reproductive & maternal conditions). See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

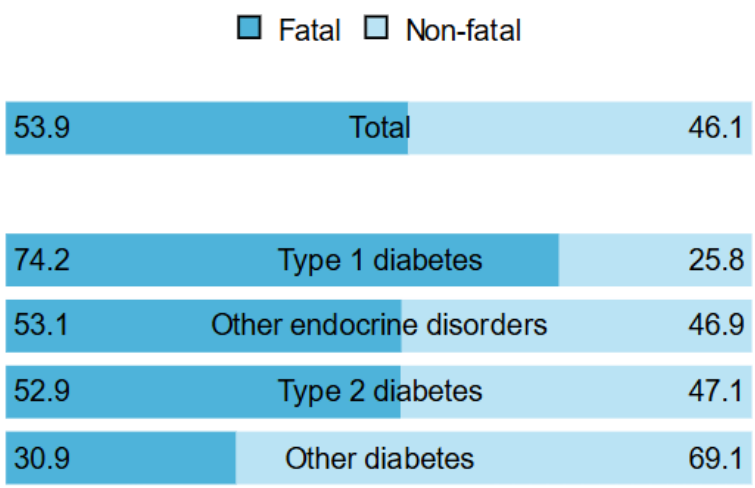
Source: AIHW First Nations Burden of Disease Database

To explore the contribution of total, non-fatal and fatal burden for each disease group, see the interactive data visualisation: Dashboard 1: Burden of disease in Australia.

What are the differences between fatal and non-fatal burden?

Endocrine disorders caused slightly more fatal (54%) than non-fatal burden (46%) (Figure 2a). Type 2 diabetes was the main cause of fatal burden (86%) and non-fatal burden (90%).

Figure 2a: Endocrine disorders burden (DALY), diseases by burden type, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

There were differences in burden due to endocrine disorders between males and females, with DALY and YLD rates slightly higher among First Nations females than males. YLL rates were similar for males and females (Table 1).

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) for endocrine disorders, First Nations people, by sex, 2022

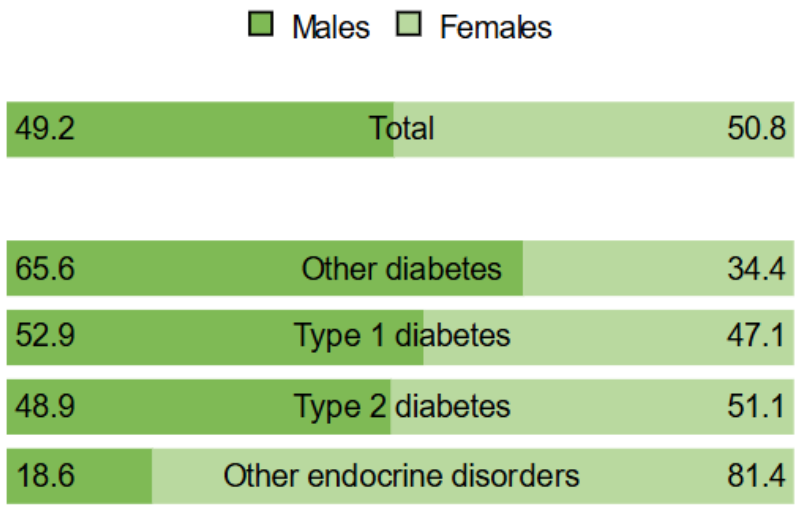
Sex	DALY	YLD	YLL
Males	11.2	5.0	6.2
Females	11.6	5.5	6.1
Persons	11.4	5.3	6.1

Source: AIHW First Nations Burden of Disease Database

A similar proportion of burden due to endocrine disorders was experienced by First Nations males (49%) and females (51%), although the proportion differed by the type of disorder (Figure 2b). A larger proportion of burden was experienced by First Nations

males for other diabetes (66%) and Type 1 diabetes (53%), while First Nations females experienced a higher proportion of the burden due to other endocrine disorders (81%). First Nations males and females experienced similar proportions of the burden from type 2 diabetes (49% and 51%, respectively).

Figure 2b: Endocrine disorders burden (DALY), diseases by sex, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

How does burden differ by age?

The number of DALY due to endocrine disorders was highest among those aged 45–64, while the age-specific DALY rates were highest among those aged 65–74, and 75 and over. The number and rate of DALY were lowest for those aged under 25. A similar pattern was evident for age-specific YLL and YLD rates (Table 2).

Table 2: Endocrine disorders, burden numbers and rates (per 1,000 people), First Nations people, by burden type and age group, 2022

Age group	Number of DALY	DALY rate	YLD rate	YLL rate
Under 25	260	0.5	0.4	0.1
25–44	2,254	8.6	4.8	3.8
45–64	5,761	32.4	14.8	17.6
65–74	2,244	55.0	20.7	34.3
75 and over	1,112	67.8	25.8	42.0
Total	11,631	11.4	5.3	6.1

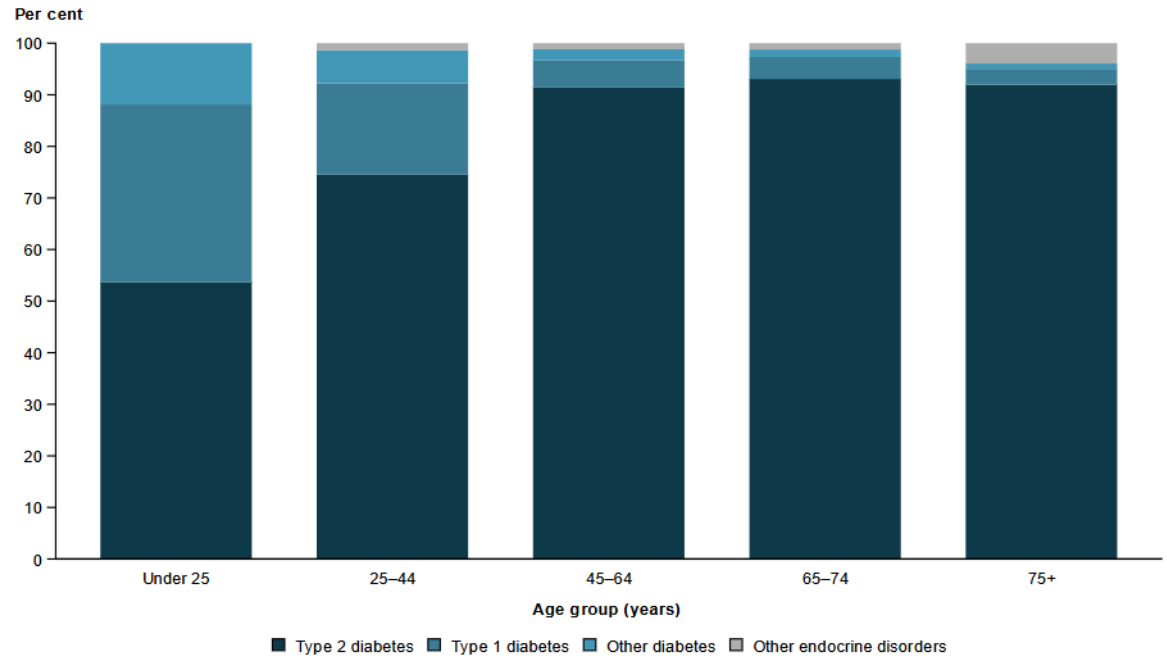
Note: Due to underlying small numbers, the age groups under 5, 5–14 and 15–24 have been combined into an under 25 age group.

Source: AIHW First Nations Burden of Disease Database

Among First Nations people, almost all (98%) endocrine burden occurred in those aged 25 and over, with very little burden present in those aged under 25 (2.2%).

Type 2 diabetes was the leading cause of endocrine burden for First Nations people across all age groups. First Nations people aged under 25 and 25–44 experienced a larger proportion of burden from type 1 diabetes compared with other age groups (Figure 3).

Figure 3: Contribution of individual causes to endocrine disorders total burden (DALY), by age, First Nations people, 2022



Notes

1. 'Other diabetes' includes diabetes due to other conditions, such as genetic disorders, infections, or pancreatic disease. It does not include gestational diabetes. The residual 'Other endocrine disorders' includes thyroid disorders and disorders of other endocrine glands. It excludes polycystic ovarian syndrome (which is included in reproductive & maternal conditions). See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

2. Due to underlying small numbers, the age groups under 5, 5–14 and 15–24 have been combined into an under 25 age group.

Source: AIHW First Nations Burden of Disease Database

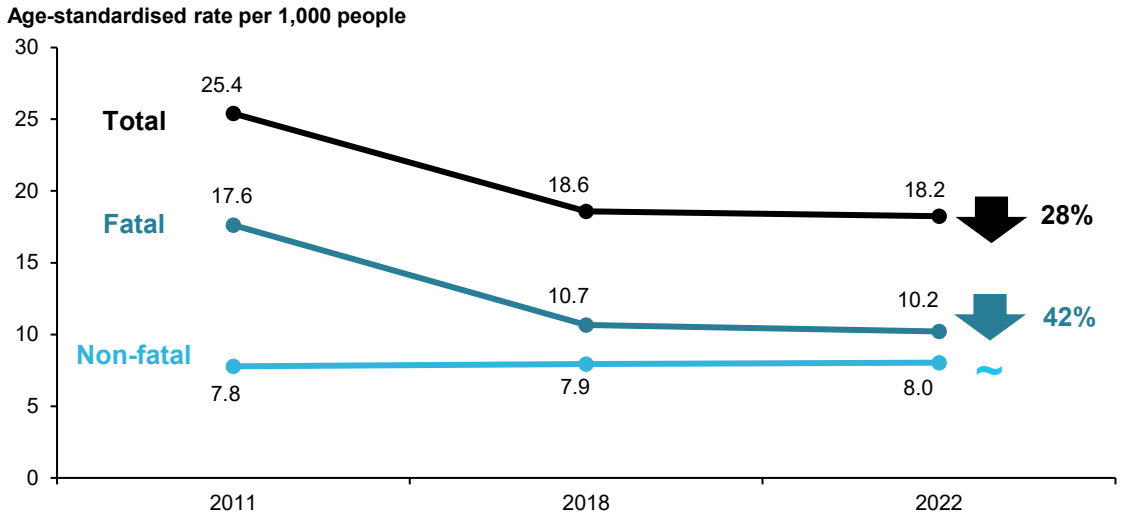
To explore the contribution of fatal and non-fatal burden to the leading causes of the top 5 disease groups see the interactive data visualisation: Dashboard 7: Top disease groups across the stages of life.

How has the burden changed over time?

Between 2011 and 2022, the age-standardised rate of total burden due to endocrine disorders for First Nations people decreased from 25 to 18 DALY per 1,000 people, a decrease of 28% (Figure 4).

This was driven by a decrease in the fatal burden (of 42%), mainly from type 2 diabetes (decrease of 6.5 YLL per 1,000; equivalent to a 42% decrease in YLL). Rates of non-fatal burden due to endocrine disorders remained stable between 2011 and 2022 in the First Nations population (Figure 4).

Figure 4: Change between 2011 and 2022 in the age-standardised total (DALY), fatal (YLL), and non-fatal (YLD) burden rate (per 1,000 people), endocrine disorders, First Nations people



Source: AIHW First Nations Burden of Disease Database

For non-Indigenous people, the age-standardised rate of total burden due to endocrine disorders remained stable between 2011 and 2022 (5.4 and 5.1 DALY per 1,000 people). A similar picture was evident for the age-standardised non-fatal (2.9 YLD per 1,000 people, respectively) and fatal (2.6 and 2.2 YLL per 1,000 people) burden rates over the same period (See Figure 7 in Gap in disease burden section).

To explore the changes over time in the DALY, YLD, and YLL for First Nations people in each disease group, see the interactive data visualisation: Dashboard 3: Comparisons over time.

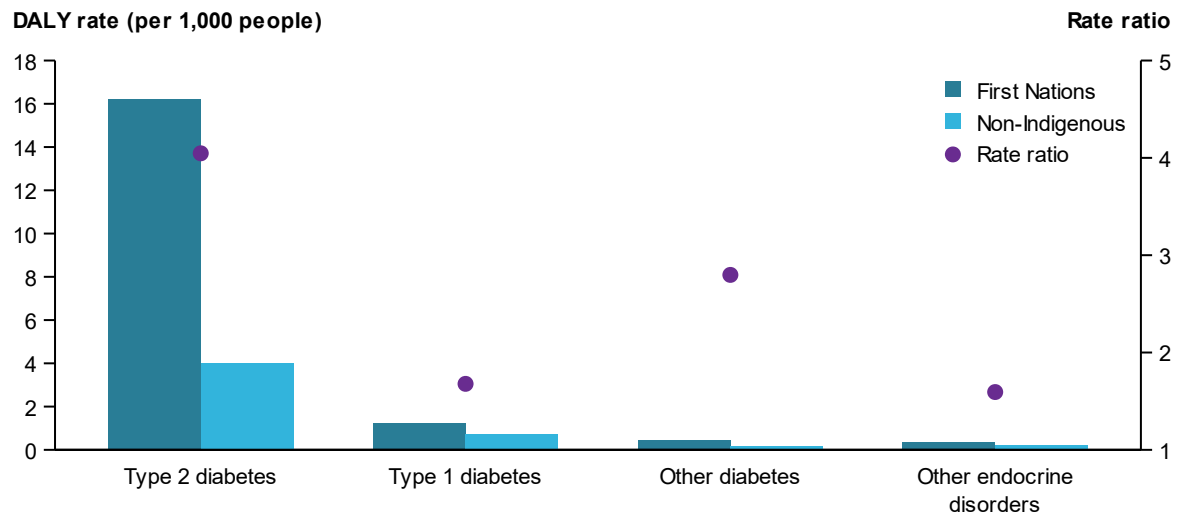
Comparisons with non-Indigenous Australians

In 2022, the age-standardised rate of burden due to endocrine disorders for First Nations people was 3.6 times the rate for non-Indigenous Australians (age-standardised rates of 18.2 and 5.1 DALY per 1,000 people, respectively).

The largest absolute difference in DALY rates between First Nations people and non-Indigenous Australians was observed for type 2 diabetes (rate difference of 12.2 DALY per 1,000 people) (Figure 5).

The largest relative differences in DALY rates between First Nations people and non-Indigenous Australians (based on age-standardised rate ratios) were observed for type 2 diabetes (rate ratio of 4.0) and other diabetes (rate ratio of 2.8).

Figure 5: Endocrine disorders age-standardised total burden rates (DALY per 1,000 people) and rate ratios, First Nations people and non-Indigenous Australians, by disease, 2022



Note: 'Other diabetes' includes diabetes due to other conditions, such as genetic disorders, infections, or pancreatic disease. It does not include gestational diabetes. The residual 'Other endocrine disorders' includes thyroid disorders and disorders of other endocrine glands. It excludes polycystic ovarian syndrome (which is included in reproductive & maternal conditions). See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

To explore the gap in disease burden between First Nations people and non-Indigenous Australians, see the interactive data visualisation: Dashboards 6a and 6b: Gap in health outcomes.

Kidney & urinary diseases

Key points

- In 2022, kidney & urinary diseases accounted 2.3% (7,179 DALY) of total burden, 3.4% (5,436 YLL) of fatal burden and 1.1% (1,743 YLD) of non-fatal burden among First Nations people.
- Kidney & urinary diseases was the 13th leading cause of total burden, the 10th leading cause for fatal burden and the 15th leading cause of non-fatal burden among First Nations people in 2022.
- Chronic kidney disease (CKD) was the largest contributor to burden due to kidney & urinary diseases, accounting for 94% of the total burden.
- Three-quarters (76%) of the burden due to kidney & urinary diseases was fatal burden, the majority of which was due to CKD (96% of fatal burden for kidney & urinary diseases).
- The total burden due to kidney & urinary diseases was higher for First Nations females than males (54% and 46%, respectively).
- The majority (84%) of non-fatal kidney & urinary burden among First Nations people occurred in those aged 45 and over.
- Between 2011 and 2022, the age-standardised rate of total burden due to kidney & urinary diseases for First Nations people decreased by 7.3%.
- In 2022, the age-standardised rate of burden due to kidney & urinary diseases for First Nations people was 4.9 times the rate for non-Indigenous Australians.

The kidney & urinary disease group includes chronic kidney disease (CKD), enlarged prostate, interstitial nephritis, kidney stones and the residual group 'other kidney & urinary diseases'.

It is important to note that the results provided here represent the direct impact of kidney & urinary diseases. CKD, in particular impaired kidney function, is an important risk factor for other diseases, such as coronary heart disease. These indirect impacts are not included here, but are instead included in the disease group where the disease effects are more immediate, for example, in cardiovascular diseases. Indirect effects can be estimated in some cases by considering impaired kidney function as a risk factor for other diseases, which will be presented in a future risk factor release.

About chronic kidney disease

Chronic kidney disease (CKD) is a substantial health problem in First Nations people. CKD among First Nations people is multifactorial, and many of its risk factors are associated with social disadvantage and accelerated lifestyle change (Hoy et al. 2016). First Nations people, particularly those living in remote communities, are at greater risk

of developing CKD, and early kidney damage is common (Chaturvedi et al. 2021). CKD is often associated with low birthweight and reduced kidney functioning through inflammation and infection, and other morbidities such as diabetes and high blood pressure. Levels of CKD among First Nations people are high, with prevalence rates twice those of non-Indigenous Australians (AIHW 2020).

Although end-stage kidney disease—the most severe form of CKD, where a person requires dialysis or a kidney transplant to survive—usually occurs in older age, in First Nations people it occurs more often in middle age (age 50 and under) (AIHW 2020). The need for dialysis, which involves strict treatment protocols and frequent treatment—normally 4–5 hour sessions 3 times per week for in-centre dialysis—has an extensive impact on health, lifestyle and social and emotional wellbeing, especially among First Nations people living in rural and remote areas, who often need to relocate to access treatment (Rix et al. 2014; Scholes-Robertson et al. 2022; ANZDATA 2025).

How much burden do kidney & urinary diseases contribute?

Overall, kidney & urinary diseases was the 13th leading cause of total burden, the 10th leading cause of fatal burden and the 15th leading cause of non-fatal burden among First Nations people in 2022.

In 2022, kidney & urinary diseases accounted 2.3% (7,179 DALY) of total burden, 3.4% (5,436 YLL) of fatal burden and 1.1% (1,743 YLD) of non-fatal burden among First Nations people.

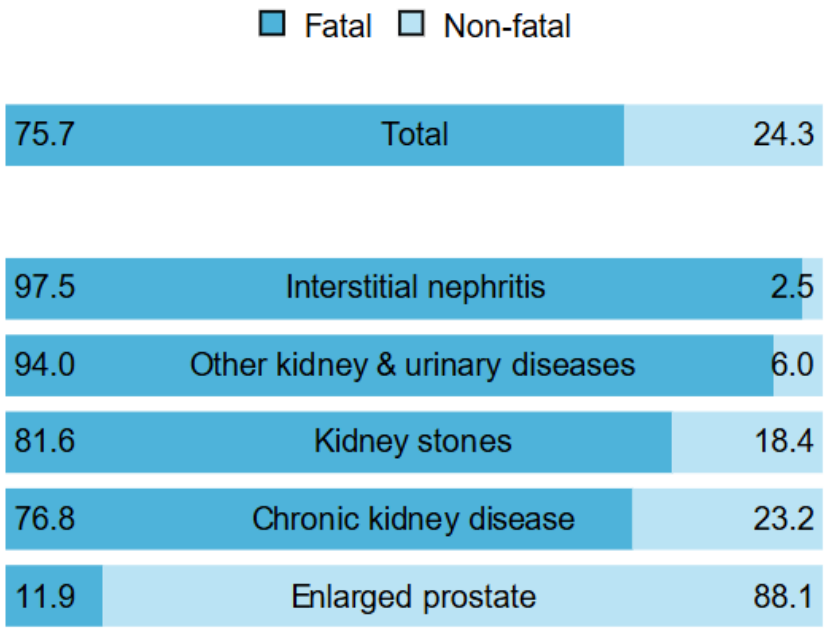
CKD was the largest contributor to burden due to kidney & urinary diseases, accounting for 94% of the total burden.

To explore the contribution of total, non-fatal and fatal burden for each disease group, see the interactive data visualisation: Dashboard 1: Burden of disease in Australia.

What are the differences between fatal and non-fatal burden?

About three-quarters (76%) of burden due to kidney & urinary diseases was fatal burden (Figure 1a), the majority of which was due to CKD (96% of fatal burden for kidney & urinary diseases). Premature death was responsible for the majority of burden across all kidney & urinary diseases, except for enlarged prostate where only 12% of the burden was fatal (Figure 1a).

Figure 1a: Kidney & urinary diseases burden (DALY), diseases by burden type, First Nations people, 2022



Note: The residual cause 'Other kidney & urinary diseases' includes a range of diseases such as cystitis, stress incontinence and acute prostatitis. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

There were differences in burden due to kidney & urinary diseases between males and females, with DALY and YLL rates higher among First Nations females than males. YLD rates were the same for males and females (Table 1).

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) for kidney & urinary diseases, First Nations people, by sex, 2022

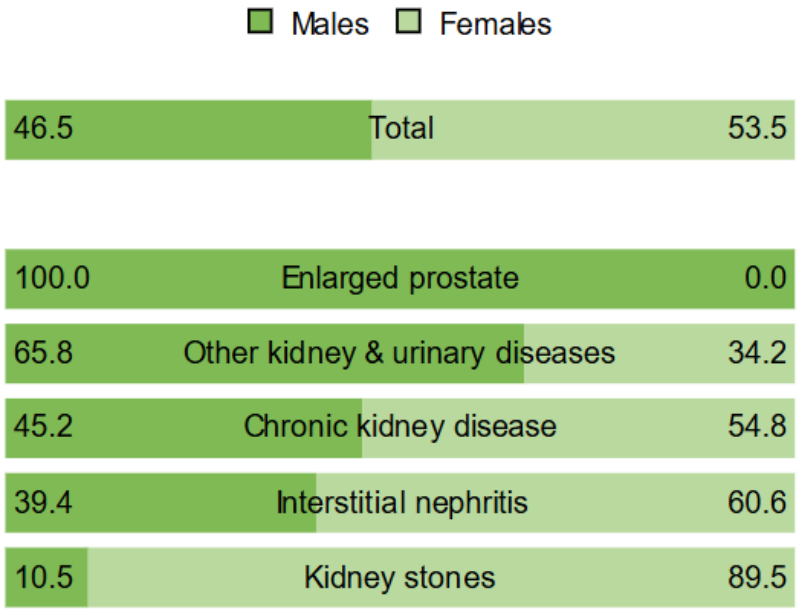
Sex	DALY	YLD	YLL
Males	6.5	1.7	4.8
Females	7.6	1.7	5.8
Persons	7.0	1.7	5.3

Source: AIHW First Nations Burden of Disease Database

Overall, females experienced more of the burden due to kidney & urinary diseases than males (54% and 46%, respectively), but this varied by disease (Figure 1b). First Nations

females experienced a larger proportion of burden due to CKD (55%), interstitial nephritis (61%), and kidney stones (90%), while First Nations males experienced a larger proportion of the burden due to other kidney & urinary diseases (66%) and all of the burden due to enlarged prostate.

Figure 1b: Kidney & urinary diseases burden (DALY), diseases by burden type and sex, First Nations people, 2022



Note: The residual cause 'Other kidney & urinary diseases' includes a range of diseases such as cystitis, stress incontinence and acute prostatitis. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

How does burden differ by age?

The number of DALY due to kidney & urinary diseases was highest among those aged 45–64, while the age-specific DALY rates were highest among those aged 75 and over, and 65–74. The numbers and rates of DALY were lowest for those aged under 25. A similar pattern was evident for age-specific YLL and YLD rates (Table 2).

Table 2: Kidney & urinary diseases, burden numbers and rates (per 1,000 people), First Nations people, by burden type and age group, 2022

Age group	Number of DALY	DALY rate	YLD rate	YLL rate
Under 5	32	0.3	—	0.3
5–14	7	—	—	—
15–24	46	0.2	0.1	0.1
25–44	1,033	3.9	1.0	3.0
45–64	3,268	18.4	5.0	13.4
65–74	1,687	41.3	9.6	31.7
75 and over	1,105	67.4	10.8	56.6
Total	7,179	7.0	1.7	5.3

— Zero or rounded to zero

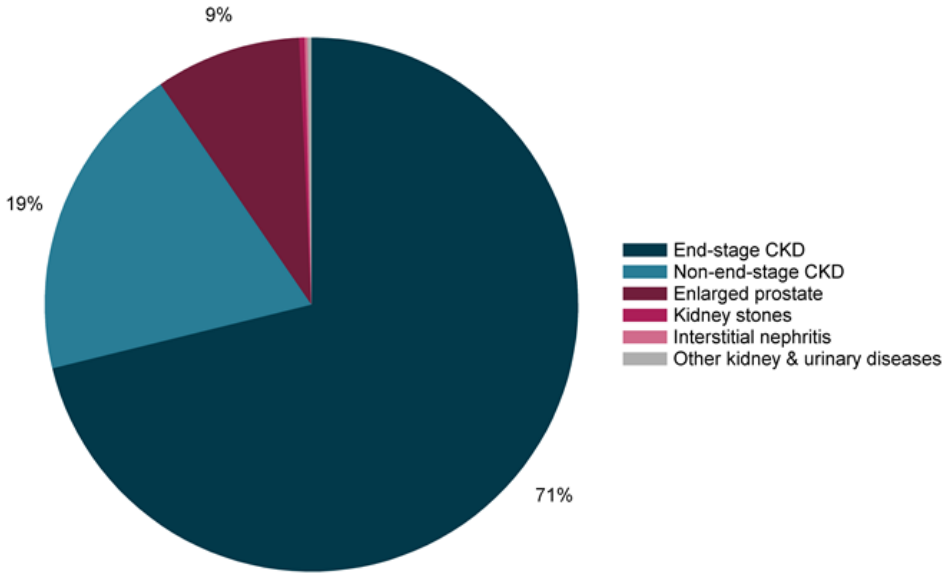
Source: AIHW First Nations Burden of Disease Database

Non-fatal burden

CKD can be split into end-stage and non-end-stage disease. End-stage kidney disease is responsible for most (90%) of the total burden and almost all (96%) of the fatal burden due to kidney & urinary diseases. This section therefore focuses on how the non-fatal burden is distributed by disease and age.

CKD accounted for 90% of the non-fatal burden due to kidney & urinary diseases experienced by First Nations people in 2022. CKD can be split into end-stage and non-end-stage disease, which, respectively, accounted for 71% and 19% of the non-fatal burden due to kidney & urinary diseases (Figure 2).

Figure 2: Contribution of individual causes to kidney & urinary diseases non-fatal burden (YLD), First Nations people, 2022



Notes

1. Percentage labels are not shown for disease groups contributing less than 4.5% of burden.

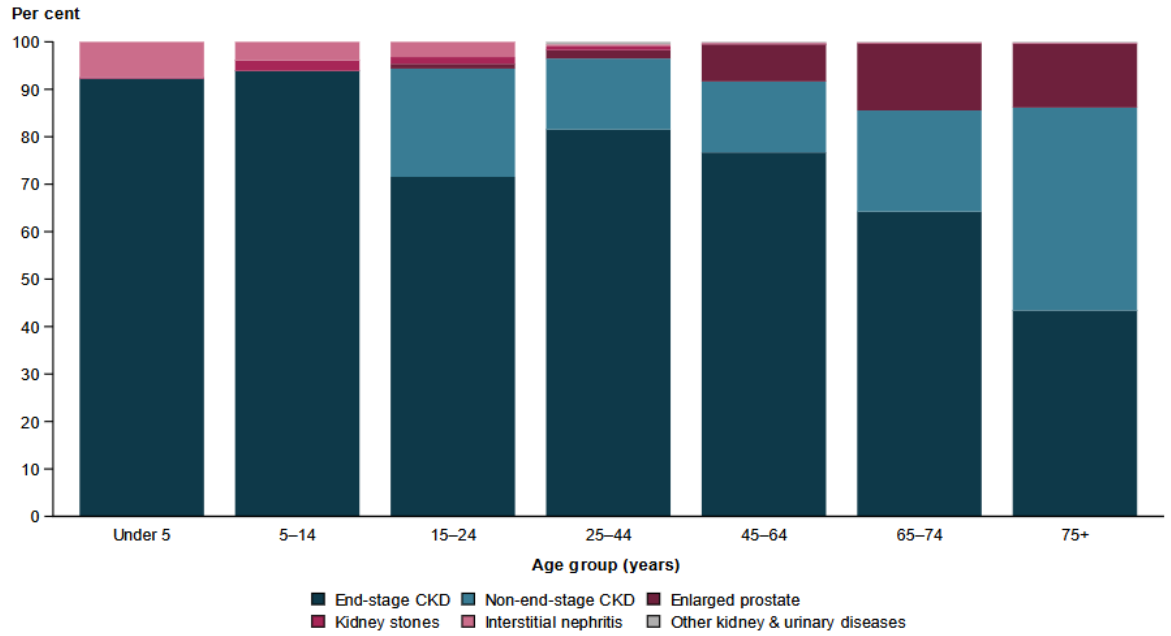
2. The residual cause 'Other kidney & urinary diseases' includes a range of diseases such as cystitis, stress incontinence and acute prostatitis. See the Australian Burden of Disease Study: methods and supplementary material 2018 for a full list of ICD-10 codes.

Source: AIHW First Nations Burden of Disease Database

How does non-fatal burden differ by age?

The majority (84%) of non-fatal kidney & urinary burden among First Nations people occurred in those aged 45 and over. End-stage CKD was the largest cause of non-fatal burden among those aged 45–64, accounting for more than three-quarters (77%) of the non-fatal burden. End-stage CKD was also the largest cause of non-fatal burden for those aged 65 and over, accounting for over half (58%) of the non-fatal burden.

Figure 3: Contribution of individual causes to kidney & urinary diseases non-fatal burden (YLD), by age group, First Nations people, 2022



Notes

1. Proportions in the under 5, 5–14 and 15–24 age groups should be treated with caution, due to underlying small numbers.

2. The residual cause 'Other kidney & urinary diseases' includes a range of diseases such as cystitis, stress incontinence and acute prostatitis.

Source: AIHW First Nations Burden of Disease Database

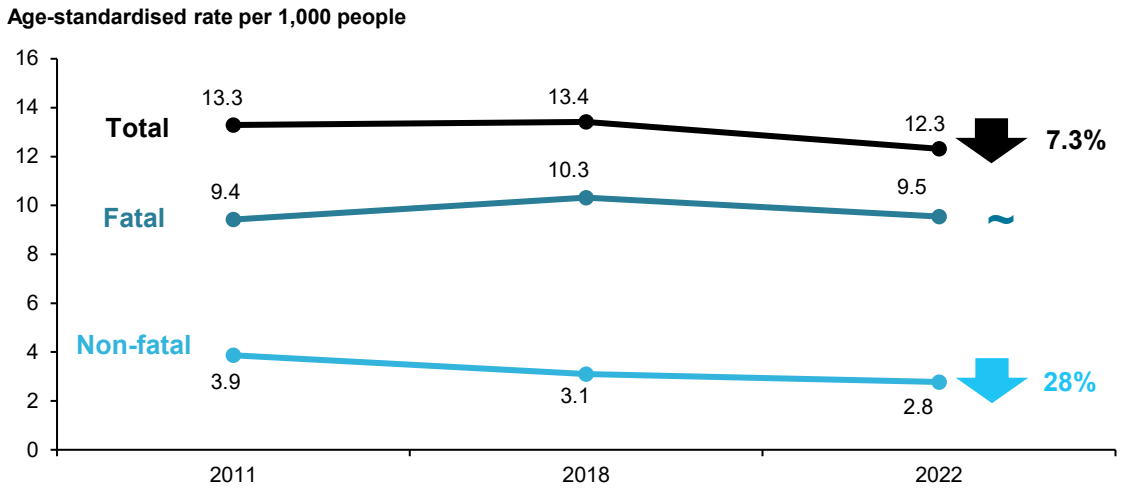
To explore the contribution of fatal and non-fatal burden to the leading causes of the top 5 disease groups see the interactive data visualisation: Dashboard 7: Top disease groups across the stages of life.

How has the burden changed over time?

Between 2011 and 2022, the age-standardised rate of total burden due to kidney & urinary diseases for First Nations people decreased slightly from 13 to 12 DALY per 1,000 people—a reduction of 7.3% (Figure 5).

This was driven by a decrease in the non-fatal burden (a decrease of 1.1 YLD per 1,000). The decrease seen in non-fatal burden was mainly due to a decrease in the burden of CKD (of 0.8 YLD per 1,000).

Figure 4: Change between 2011 and 2022 in the age-standardised total (DALY), fatal (YLL), and non-fatal (YLD) burden rate (per 1,000 people), kidney & urinary diseases, First Nations people



Source: AIHW First Nations Burden of Disease Database

For non-Indigenous people, the age-standardised rate of total burden due to kidney & urinary diseases remained stable between 2011 and 2022 (2.6 and 2.5 DALY per 1,000 people). A similar picture was evident for the age-standardised non-fatal (1.0 and 0.9 YLD per 1,000 people) and fatal (1.6 YLL per 1,000 people, respectively) burden rates over the same period (See Figure 7 in Gap in disease burden section).

To explore the changes over time in the DALY, YLD, and YLL for First Nations people in each disease group, see the interactive data visualisation: Dashboard 3: Comparisons over time.

Comparisons with non-Indigenous Australians

In 2022, the age-standardised rate of burden due to kidney & urinary diseases for First Nations people was 4.9 times the rate for non-Indigenous Australians (age-standardised rates of 12.3 and 2.5 DALY per 1,000 people, respectively) (Table 2).

The largest absolute difference in DALY rates between First Nations people and non-Indigenous Australians was observed for CKD (rate difference of 9.7 DALY per 1,000 people). CKD also accounted for the largest relative difference in age-standardised DALY rates between First Nations people and non-Indigenous Australians (rate ratio of 5.9).

Table 2: Kidney & urinary disorders, age-standardised total burden rates (DALY per 1,000 people), rate ratios and rate differences, First Nations people and non-Indigenous Australians, by disease, 2022

Causes	First Nations rate (DALY per 1,000 people)	Non-Indigenous rate (DALY per 1,000 people)	Rate ratio	Rate difference
Chronic kidney disease	11.6	2.0	5.9	9.7
Interstitial nephritis	0.2	—	4.8	0.1
Kidney stones	0.1	—	2.3	—
Enlarged prostate	0.3	0.4	0.8	-0.1
Other kidney & urinary diseases	0.1	0.1	1.4	—
Total kidney & urinary	12.3	2.5	4.9	9.8

— Zero or rounded to zero

Source: AIHW First Nations Burden of Disease Database

To explore the gap in disease burden between First Nations people and non-Indigenous Australians, see the interactive data visualisation: Dashboards 6a and 6b: Gap in health outcomes.

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ANZDATA (Australia and New Zealand Dialysis and Transplant Registry) 2025 ANZDATA 48th Annual Report 2025 (Data Survey 2024), ANZDATA, accessed 10 February 2026.

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Scholes-Robertson N, Gutman T, Howell M, Craig JC, Chalmers R & Tong A (2022) *Patients' Perspectives on Access to Dialysis and Kidney Transplantation in Rural Communities in Australia*, Kidney International Reports, 7: 591-600, doi:10.1016/j.ekir.2021.11.010

Burden across life stages

This section presents disease burden estimates for seven broad age groups for the First Nations population, including changes since 2011. Before reading this section it is recommended to first read earlier sections of this report which provide a high level overview of total burden, non-fatal burden and fatal burden in the First Nations population. Information on the quality of estimates is included in Australian Burden of Disease Study: methods and supplementary material 2018.

The age group summaries will be updated with data on risk factor attributable burden, when available.

Burden by age

Disease burden is not evenly distributed over the different stages of life. This is partly due to the different diseases that have an impact at different ages, and partly due to the different causes of death and patterns of age at death for First Nations males and females. As the amount of burden varies greatly by age, the same leading causes may have very large differences in burden across age groups. Conversely, causes that are not ranked among the leading causes for some age groups may still be high-burden diseases.

This page outlines the main disease groups and specific causes that caused the most total, non-fatal and fatal burden for First Nations people in 7 broad age groups:

- Infants and young children (aged under 5)
- Children (aged 5–14)
- Adolescents and young adults (aged 15–24)
- Adults aged 25–44
- Adults aged 45–64
- Adults aged 65–74
- Older adults (aged 75 and over)

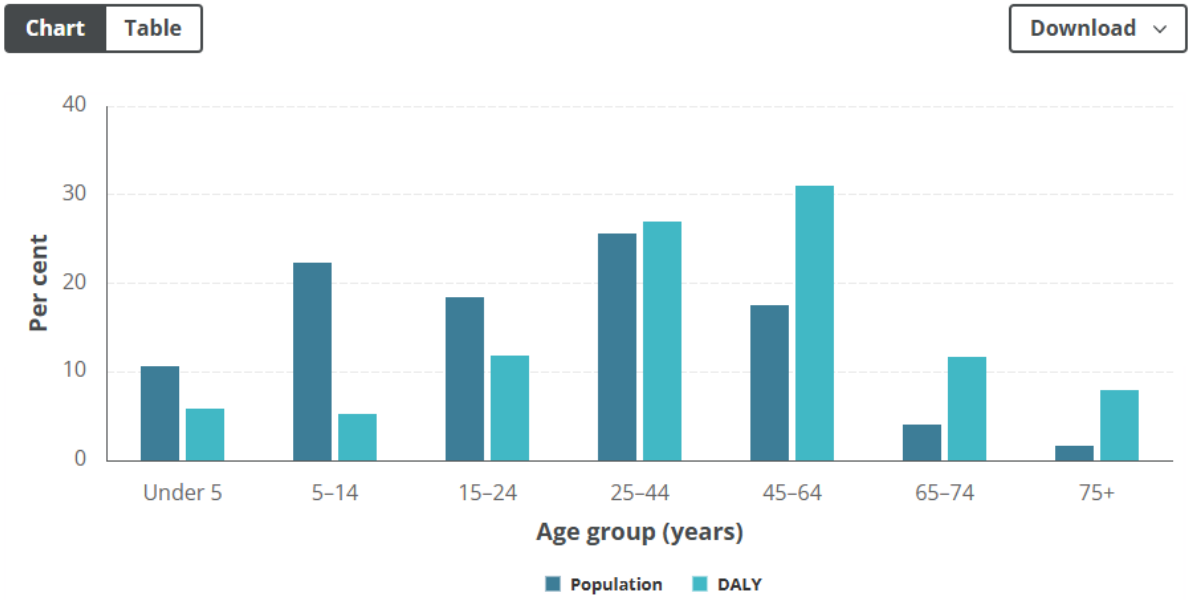
Several measures are used to describe burden in this section of the report, including age-specific rates. See Different type of statistics presented in this report for more information.

Figure 1 compares the proportion of First Nations people in these 7 age groups with the proportion of health loss experienced by each age group in 2022.

- Infants, children and young adults aged under 25 comprised around half (51%, 524,200 people) of the First Nations population but accounted for just under a quarter (23%, 71,965 DALY) of the total burden in 2022.
- Adults aged 25–64 comprised 43% (439,400 people) of the First Nations population and more than half (58%, 183,914 DALY) of the total burden.

- Adults aged 65 and over comprised 5.6% (57,215 people) of the population but accounted for about one-fifth (19%, 61,455 DALY) of the total burden.

Figure 1: Proportion of First Nations population and total burden (DALY), by age group, First Nations people, 2022



Source: AIHW First Nations Burden of Disease Database

To further explore the top disease groups and causes by age group, see the following interactive data visualisations:

- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups disaggregated by fatal and non-fatal burden.
- Dashboard 8: Top specific causes across the stages of life: This visualisation provides the top 5 causes contributing to burden for each age group, by sex.

Infants and young children (aged under 5)

Key findings

- Infants and children aged under 5 accounted for 11% (or 108,192 people) of the First Nations population and 5.8% (18,328 DALY) of the total burden experienced by First Nations people in 2022.
- In 2022, First Nations infants and young children under 5 lost 18,328 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 169 DALY per 1,000 people of this age.
- Among First Nations infants and children under 5 there was substantially more fatal than non-fatal burden – 70% or 12,898 YLL and 30% or 5,430 YLD, respectively.
- Infant & congenital conditions were the main cause of burden among First Nations infants and children under 5.
- Overall, the health of First Nations children under 5 improved over the period 2011 to 2022, with a 15% decline in the age-specific rate of total burden over this period (from 200 to 169 DALY per 1,000 people).
- For infants and children under 5, infant & congenital conditions was the leading disease group contributor to the gap between First Nations people and non-Indigenous Australians (representing 43% of the gap among children under 5).

In 2022, First Nations infants and young children under 5 lost 18,328 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 169 DALY per 1,000 people of this age (Table 1).

Infants and children under 5 accounted for 11% (or 108,192 people) of the First Nations population and 5.8% (18,328 DALY) of the total burden experienced by First Nations people in 2022.

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) among First Nations infants and children under 5, by sex, 2022

Sex	DALY	YLD	YLL
Males	182.9	52.7	130.2
Females	154.9	47.5	107.5
Persons	169.4	50.2	119.2

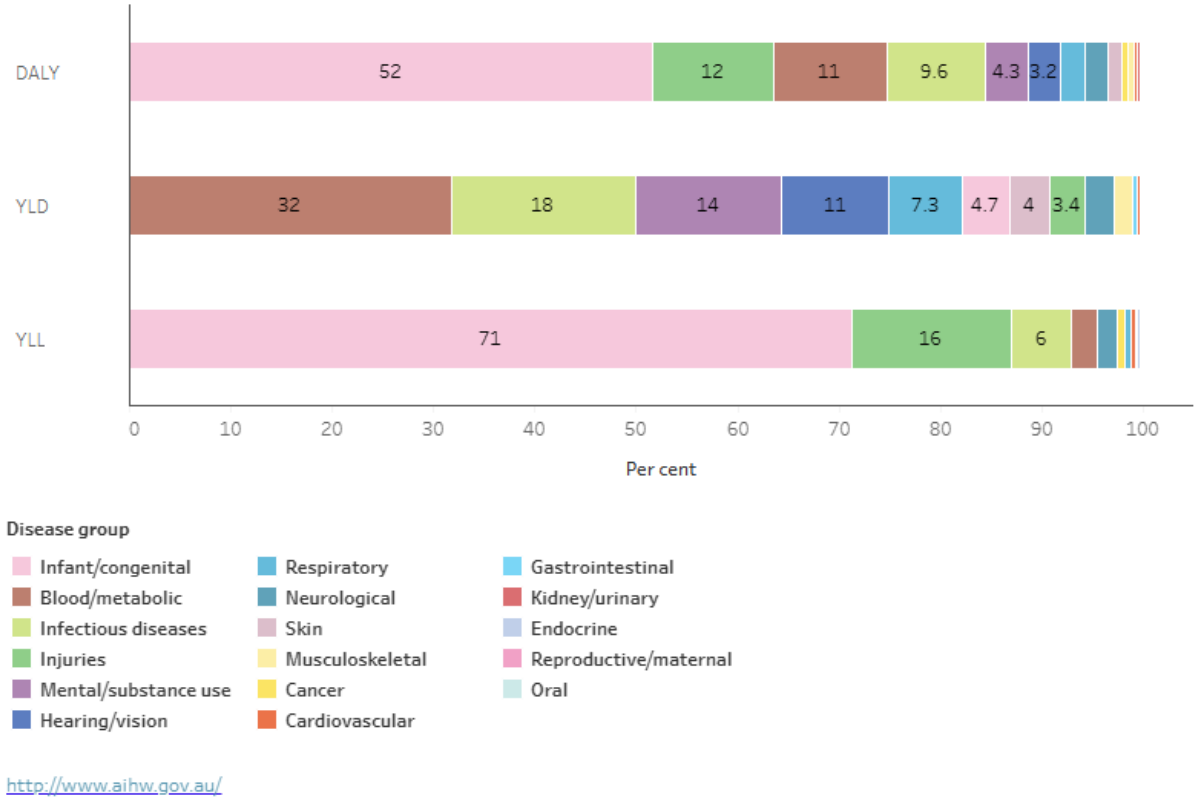
Source: AIHW First Nations Burden of Disease Database

Disease group burden

The leading disease groups that contributed to the total burden in First Nations infants and children under 5 were:

- infant & congenital conditions (52% of total burden, or 9,444 DALY)
- injuries (12%, 2,204 DALY)
- blood & metabolic disorders (11%, 2,056 DALY)
- infectious diseases (9.6%, 1,758 DALY) (Figure 1).

Figure 1: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations infants and children under 5, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

Among First Nations infants and children under 5 there was substantially more fatal than non-fatal burden (70% or 12,898 YLL and 30% or 5,430 YLD respectively) (figures 2 and 5), with each death in this age group contributing up to 90 YLL. Infant & congenital conditions contributed more than two-thirds of the fatal burden in this age group (71%), followed by injuries (16%) (Figure 1).

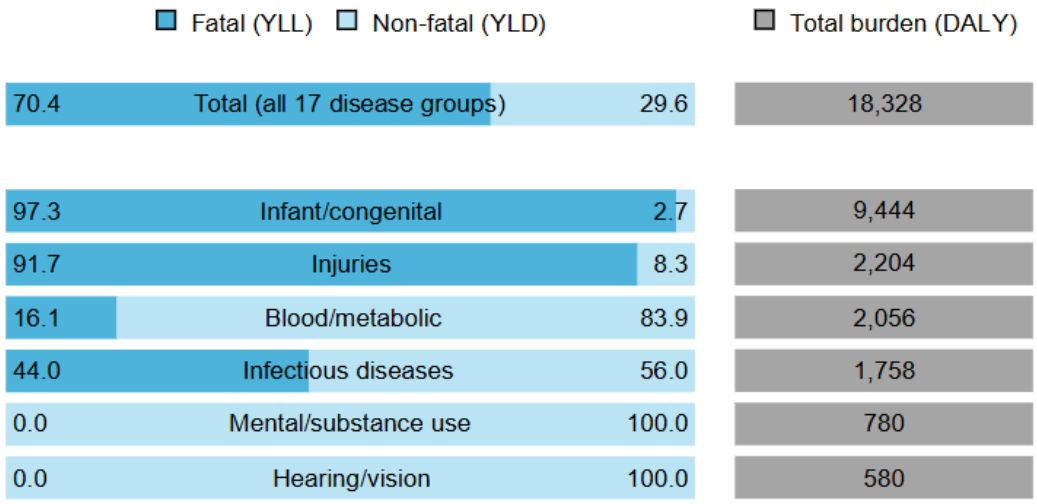
Blood & metabolic disorders and infectious diseases were the leading disease group contributors to non-fatal burden for First Nations children under 5 (accounting for 32%

and 18% of YLD, respectively). Infant & congenital conditions accounted for only 4.7% of non-fatal burden for First Nations children under 5 (Figure 1).

Among First Nations children under 5, the contribution of fatal and non-fatal burden to total burden differed for each disease group (Figure 2). Among the highest burden disease groups:

- The burden from infant & congenital conditions and injuries was almost all fatal.
- The burden from blood & metabolic disorders and infectious diseases was mostly non-fatal.

Figure 2: Fatal (YLL) and non-fatal (YLD) burden as a proportion (%) of total burden (DALY), leading 6 disease groups, First Nations children under 5, 2022



Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

Among First Nations children under 5, males experienced a higher proportion of the total burden (56% compared with 44%), fatal burden (56% compared with 44%) and non-fatal burden (54% compared with 46%) than females.

Infant & congenital conditions was the leading disease group contributor to total and fatal burden for both First Nations males and females in this age group. Blood & metabolic disorders was the leading disease group contributor to non-fatal burden for both males and females (Figure 3).

Figure 3: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations children under 5, 2022

Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

To further explore the top disease groups and causes by age group, see the following interactive data visualisation:

- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups broken down by fatal and non-fatal burden.

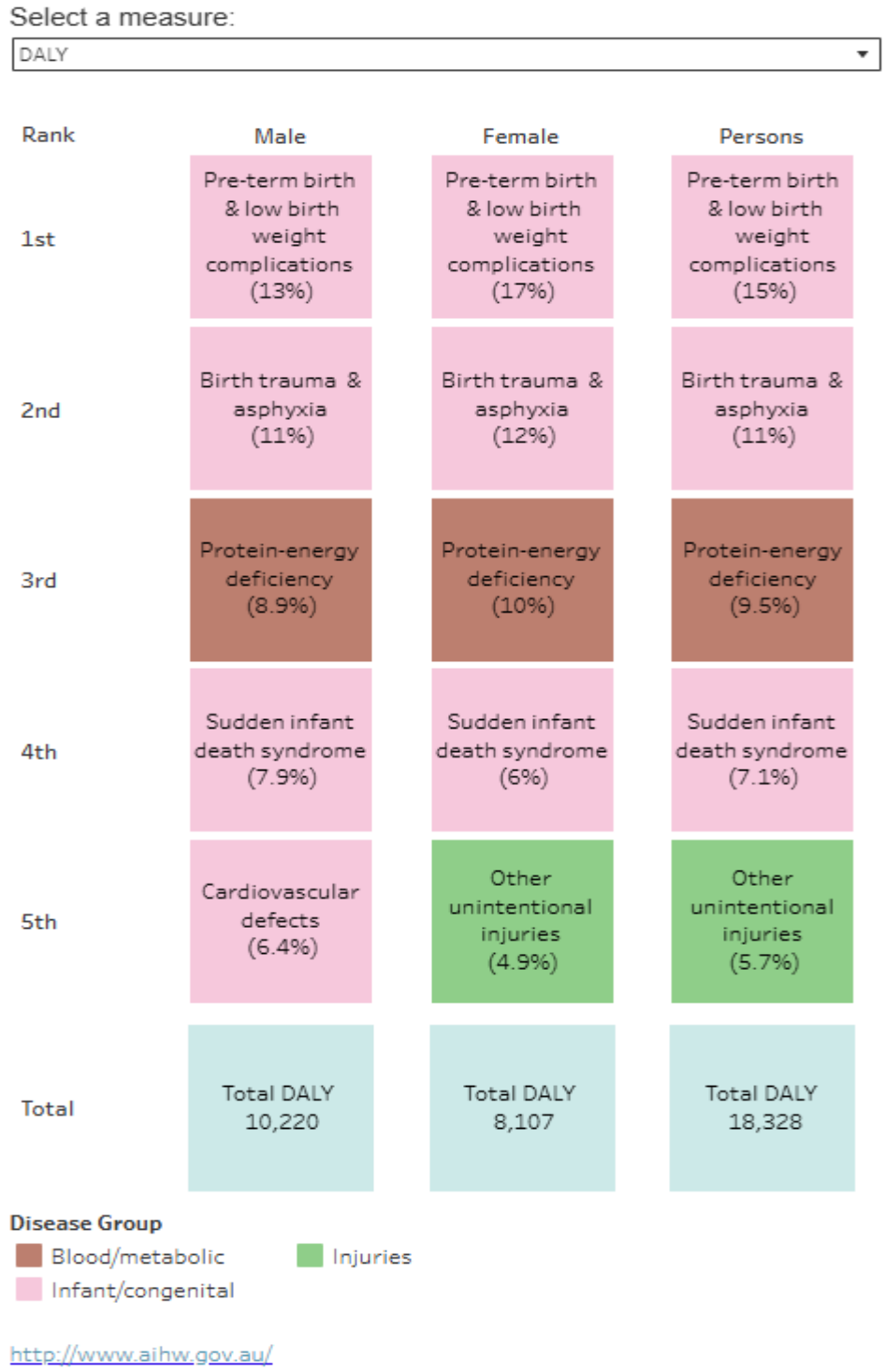
Top specific causes of burden

The 5 leading specific causes of burden accounted for almost half (48%) of the total burden among First Nations children under 5:

- pre-term birth & low birthweight complications (15%, or 2,710 DALY)
- birth trauma & asphyxia (11%, 2,065 DALY)
- protein-energy deficiency (9.5%, 1,739 DALY)
- sudden infant death syndrome (SIDS) (7.1%, 1,297 DALY)
- other unintentional injuries (5.7%, 1,036 DALY).

The leading specific causes of burden for this age group varied by fatal and non-fatal burden, but the overall burden for all three measures was higher in males than females. See Figure 4 for more information.

Figure 4: Top 5 specific causes of total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations children under 5, 2022



Notes:

1. First Nations estimates for autism spectrum disorders should be interpreted with caution as they are based on indirect modelling methods that are less reliable than for some other causes.

2. Estimates for anxiety disorders in children under 5 relate to children aged 4 years only.

Source: AIHW First Nations Burden of Disease Database

To further explore the top specific causes across all stages of life, see the following interactive data visualisation:

- Dashboard 8: Top specific causes across the stages of life: This visualisation provides the top 5 causes contributing to burden for each age group, by sex.

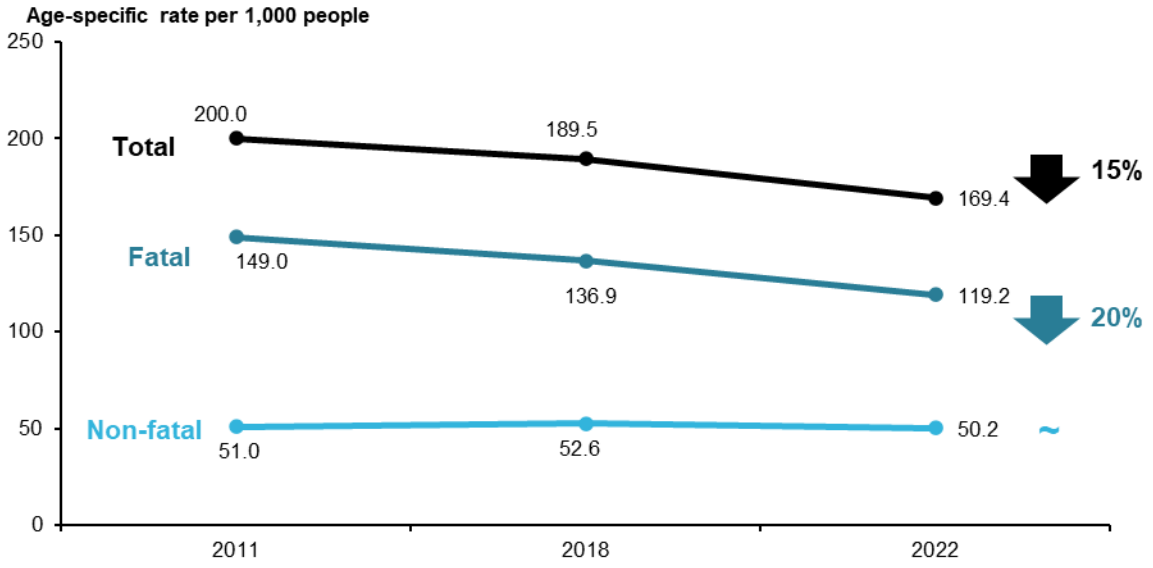
Changes over time

Overall, the health of First Nations children under 5 improved over the period 2011 to 2022 (Figure 5).

There was a 15% decline in the age-specific rate of total burden between 2011 and 2022 (from 200 to 169 DALY per 1,000 people). Most of this decline was observed between 2018 and 2022, with a smaller decline between 2011 and 2018.

The decrease in total burden was driven by a reduction (of 20%) in the rate of fatal burden between 2011 and 2022. Over the same period there was no substantial change in non-fatal burden (Figure 5).

Figure 5: Change between 2011 and 2022 in the age-specific total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people), First Nations children under 5



Source: AIHW First Nations Burden of Disease Database

Changes by disease group

Over the period 2011 to 2022, for First Nations children under 5, among the highest burden disease groups there were decreases in the age-specific total burden rate from:

- infant & congenital conditions – a decrease of 17 DALY per 1,000 people, or 17%
- infectious diseases – a decrease of 5.2 DALY per 1,000, or 24%

An increase in burden was observed for blood & metabolic disorders (increase of 5.8 DALY per 1,000, or 43%).

Changes by specific causes

In both 2011 and 2022, the same 4 diseases were the leading causes of burden among First Nations children under 5, although there were changes in the rankings and age-specific burden rates among these causes (Figure 6).

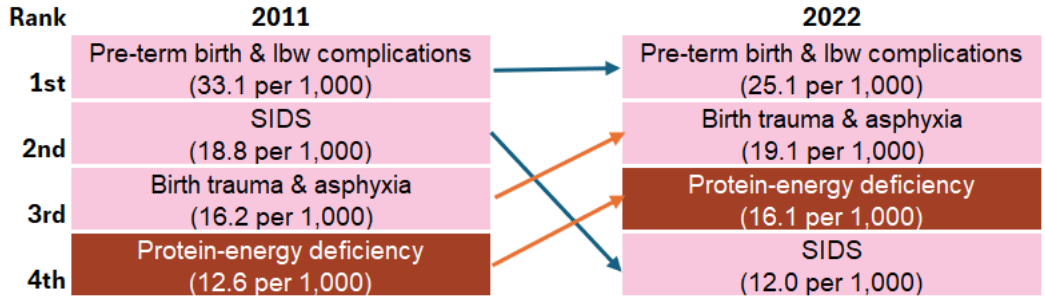
There were decreases in the burden rate for:

- pre-term birth & low birthweight complications (24% decrease in rate), although it was the leading cause of burden in this age group in both 2011 and 2022
- SIDS (36% decrease in rate, and a decrease in ranking)

There were increases in the burden rate and ranking for:

- protein-energy deficiency (28% increase in rate)
- birth trauma & asphyxia (18% increase).

Figure 6: Changes in ranking and age-specific DALY rate (DALY per 1,000 people), leading specific causes of burden, First Nations children under 5, 2011 and 2022



lbw low birthweight; SIDS sudden infant death syndrome.

Notes

1. 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.

2. Causes are presented in descending order, from highest age-specific rate to lowest age-specific rate, with arrows indicating either an increase (orange) or decrease (blue) in the age-specific rate over time.

3. Cause rankings exclude 'other' residual conditions from each disease group; for example, 'other musculoskeletal conditions'.

4. For information on colours used for each specific cause, see disease group colours for FNBDS 2022 colour legend.

Source: AIHW First Nations Burden of Disease Database

How big is the gap in this age group, and what causes it?

First Nations infants and children under 5 experienced disease burden at 2.1 times the rate for non-Indigenous children of this age in 2022 (169 compared with 80 per 1,000 people).

For infants and children under 5, infant & congenital conditions was the leading disease group contributor to the gap (representing 43% of the gap among children under 5). Blood & metabolic disorders, injuries, and infectious diseases were also important contributors to the gap in this age group (representing 19%, 17% and 12% of the gap, respectively) (see Figure 5 in Gap in disease burden section).

Children aged 5–14

Key findings

- Children aged 5–14 accounted for more than a fifth (22% or 227,952 people) of the First Nations population but only 5.2% (16,394 DALY) of the total burden experienced by First Nations people in 2022.
- In 2022, First Nations children aged 5–14 lost 16,394 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 72 DALY per 1,000 people of this age.
- Among First Nations children aged 5–14 there was substantially more non-fatal than fatal burden (84% or 13,690 YLD and 16% or 2,704 YLL, respectively).
- Mental health conditions & substance use disorders was the main cause of burden among First Nations children aged 5–14.
- There was no substantial change in the age-specific rate of total burden between 2011 and 2022 among First Nations people aged 5–14.
- For children aged 5–14, mental health conditions & substance use disorders was the leading disease group contributor to the gap between First Nations people and non-Indigenous Australians (representing 44% of the gap among children aged 5–14).

In 2022, First Nations children aged 5–14 lost 16,394 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 72 DALY per 1,000 people of this age.

Children aged 5–14 accounted for more than a fifth (22% or 227,952 people) of the First Nations population but only 5.2% (16,394 DALY) of the total burden experienced by First Nations people in 2022.

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) among First Nations people aged 5–14, by sex, 2022

Sex	DALY	YLD	YLL
Males	80.5	66.4	14.2
Females	62.8	53.4	9.4
Persons	71.9	60.1	11.9

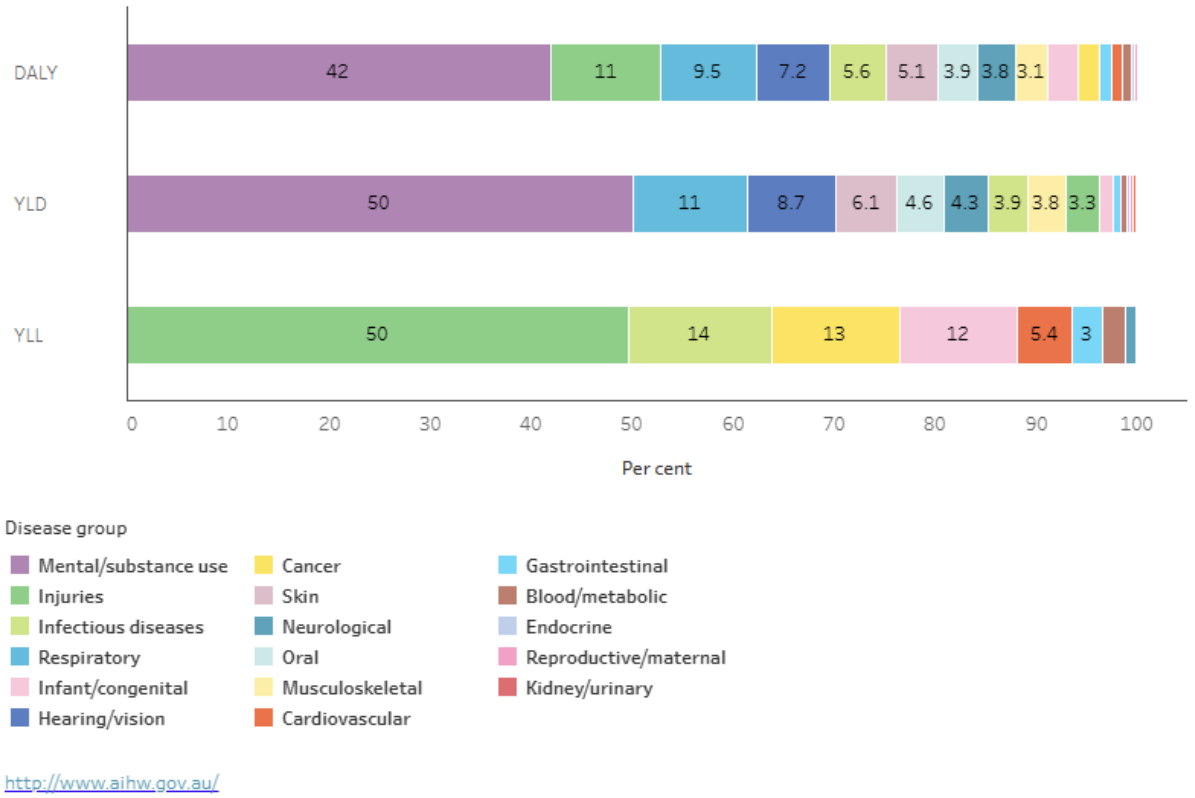
Source: AIHW First Nations Burden of Disease Database

Disease group burden

The leading disease groups that contributed to the total burden in First Nations children aged 5–14 were:

- mental health conditions & substance use disorders (42% of total burden, or 6,867 DALY)
- injuries (11%, 1,798)
- respiratory diseases (9.5%, 1,550) (Figure 1).

Figure 1: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations children aged 5–14, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

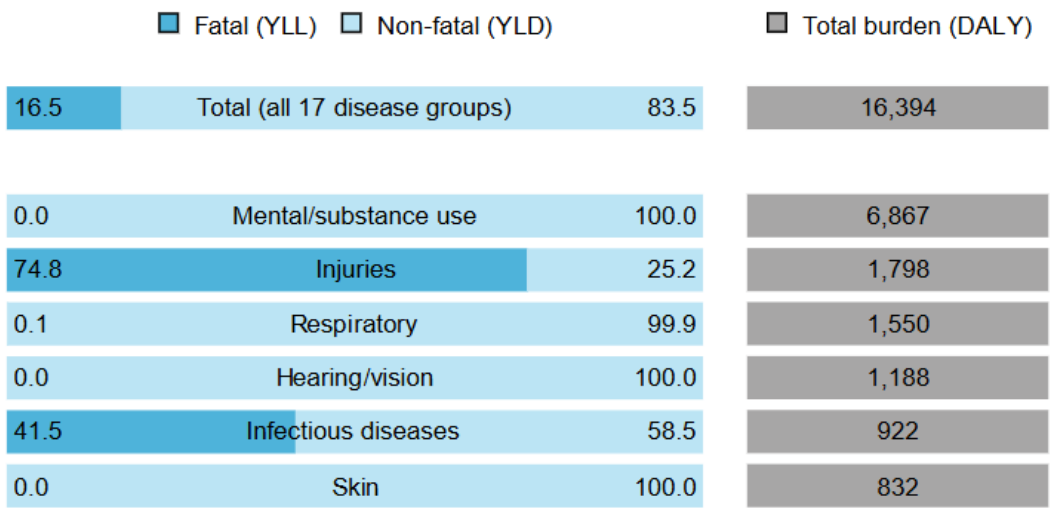
Most of the burden (84% or 13,690 YLD) among First Nations children aged 5–14 was due to living with disease or injury (non-fatal burden) (figures 2 and 5). Mental health conditions & substance use disorders contributed half of the non-fatal burden in this age group (50%), followed by respiratory diseases (11%) and hearing & vision disorders (8.7%) (Figure 1).

The remaining burden (16% or 2,704 YLL) was due to premature death (fatal burden) (figures 2 and 5), with injuries contributing half of the fatal burden in this age group (50%) (Figure 1).

Among First Nations children aged 5–14, the contribution of fatal burden and non-fatal burden to total burden differed for each disease group (Figure 2). Among the highest burden disease groups:

- The burden from mental health conditions & substance use disorders, respiratory diseases, and hearing & vision disorders was almost all non-fatal.
- The burden from injuries was mostly fatal.
- The burden from infectious diseases was mostly non-fatal.

Figure 2: Fatal (YLL) and non-fatal (YLD) burden as a proportion (%) of total burden (DALY), leading 6 disease groups, First Nations children aged 5–14, 2022



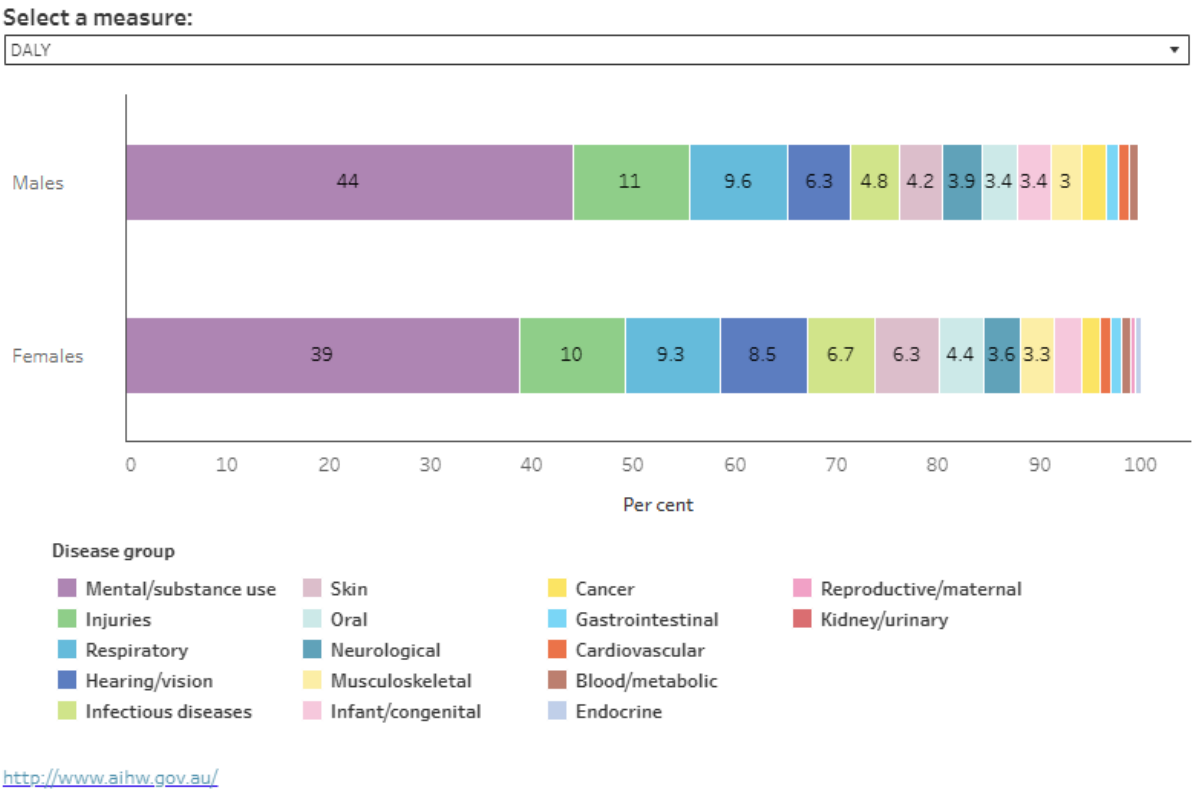
Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

Among First Nations children aged 5–14, males experienced a higher proportion of the total burden (58% compared with 42%), fatal burden (61% compared with 39%) and non-fatal burden (57% compared with 43%) than females.

In this age group, mental health conditions & substance use disorders was the leading disease group contributor to total and non-fatal burden for both First Nations males and females. Injuries was the leading disease group contributor to fatal burden for both males and females, though all fatal burden estimates in this age group were based on a relatively small number of deaths (Figure 3).

Figure 3: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations children aged 5–14, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

To further explore the top disease groups and causes by age group, see the following interactive data visualisation:

- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups broken down by fatal and non-fatal burden.

Top specific causes of burden

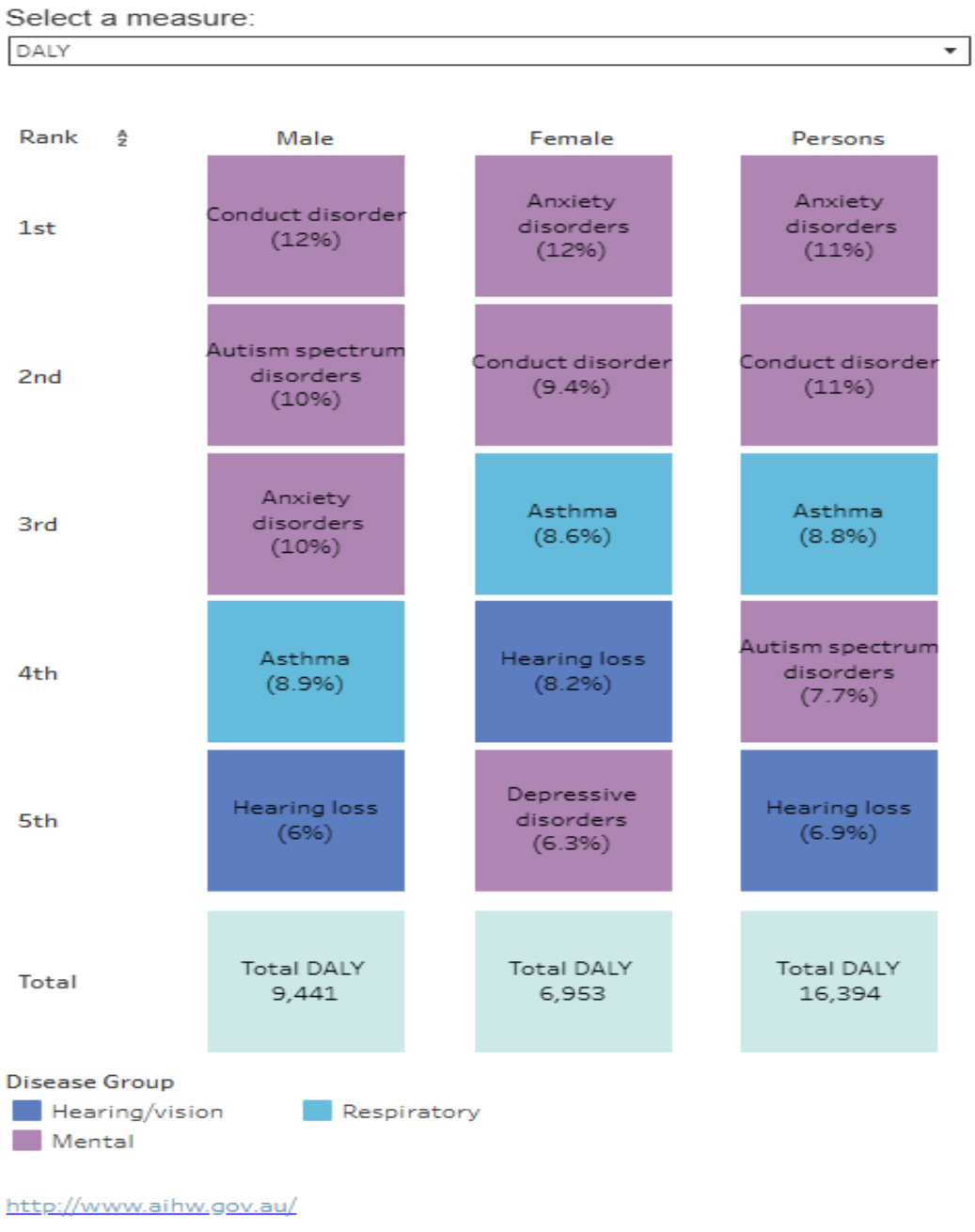
The same 5 causes were the leading contributors to both total burden and non-fatal burden among First Nations children aged 5–14 (Figure 4). These 5 causes accounted for 45% of total burden in this age group:

- anxiety disorders (11%, or 1,747 DALY)
- conduct disorder (11%, 1,739)
- asthma (8.8%, 1,443)
- autism spectrum disorders (7.7%, 1,257)

- hearing loss (6.9%, 1,131).

These were the same 5 leading specific causes of non-fatal burden (YLD) among First Nations people aged 15–24. Three of the five leading specific causes of fatal burden for this age group were injuries (Figure 4).

Figure 4: Top 5 specific causes of total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations children aged 5–14, 2022



* Number of First Nations deaths used in YLL calculations is fewer than 10.

RTI road traffic injuries.

Notes:

1. First Nations estimates for conduct disorder and autism spectrum disorders should be interpreted with caution as they are based on indirect modelling methods that are less reliable than for some other causes.

2. Due to small numbers only the top 2 causes of fatal burden (YLL) for males and females are shown.

Source: AIHW First Nations Burden of Disease Database

To further explore the top specific causes across all stages of life, see the following interactive data visualisation:

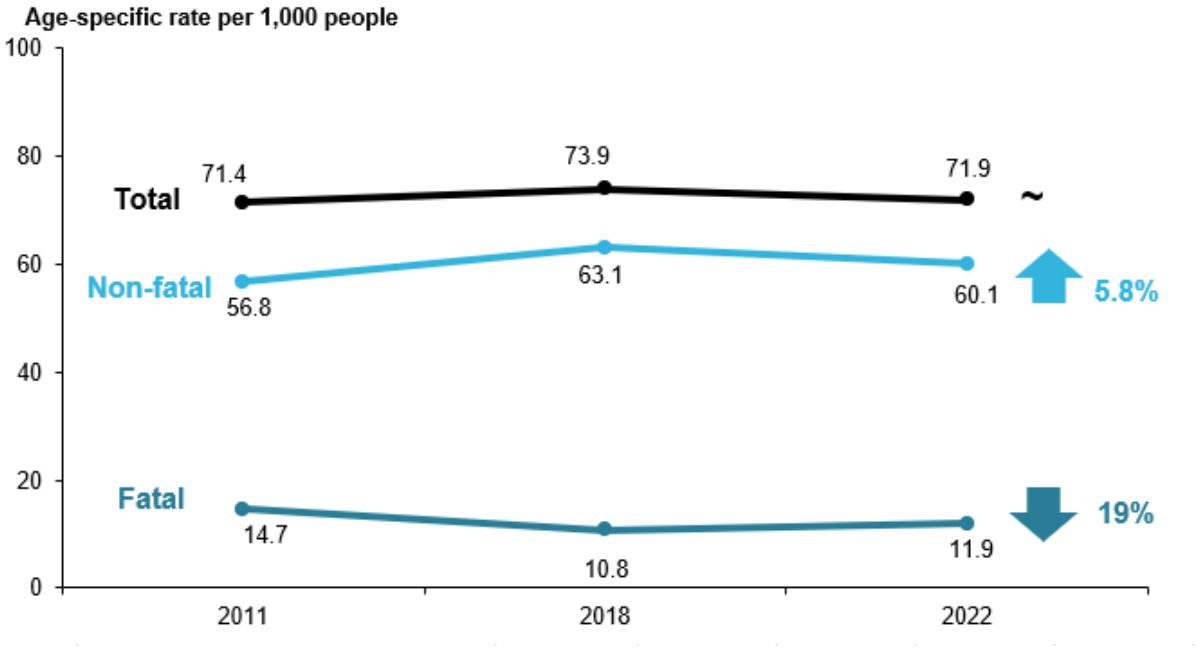
- Dashboard 8: Top specific causes across the stages of life: This visualisation provides the top 5 causes contributing to burden for each age group, by sex.

Changes over time

Overall, there was no substantial change in the health of First Nations children aged 5–14 over the period 2011 to 2022 (Figure 5).

There was no substantial change in the age-specific rate of total burden between 2011 and 2022 among First Nations people aged 5–14. There was a 19% decline in the rate of fatal burden over this period, but this was offset by an 5.8% increase in non-fatal burden (Figure 5).

Figure 5: Change between 2011 and 2022 in the age-specific total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people), First Nations children aged 5–14



Source: AIHW First Nations Burden of Disease Database

Changes by disease group

Over the period 2011 to 2022, among First Nations children aged 5–14, there was a decrease in the age-specific total burden rate from injuries (a decrease of 2.4 DALY per 1,000 people, or 23%).

There were increases in the age-specific total burden rate from:

- mental health conditions & substance use disorders – an increase of 6.3 DALY per 1,000, or 26%

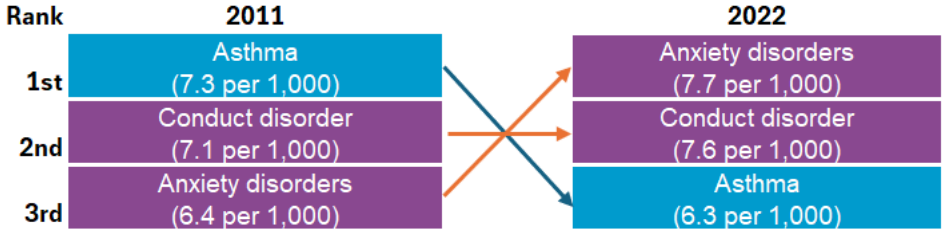
- infectious diseases, where the rate more than doubled (an increase of 2.2 DALY per 1,000), with most of this increase due to the emergence of COVID-19.

Changes by specific causes

In both 2011 and 2022, the same 3 diseases were the leading causes of burden among First Nations children aged 5–14, although there were changes in the rankings and age-specific burden rates among these causes (Figure 6):

- There was a decrease in the rate and ranking for asthma (13% decrease in rate).
- There was an increase in the rate, but the ranking stayed for the same for conduct disorder (7.1% increase in rate). Note, however, that estimates for this cause are based on less reliable methods than for other causes and should be interpreted with caution.
- There was an increase in the rate and ranking for anxiety disorders (21% increase in rate).

Figure 6: Changes in ranking and age-specific DALY rate (DALY per 1,000 people), leading specific causes of burden, First Nations children aged 5–14, 2011 and 2022



Notes

1. First Nations estimates for conduct disorder should be interpreted with caution as they are based on indirect modelling methods that are less reliable than for some other causes.

2. 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.

3. Causes are presented in descending order, from highest age-specific rate to lowest age-specific rate, with arrows indicating either an increase (orange) or decrease (blue) in the age-specific rate over time.

4. Cause rankings exclude 'other' residual conditions from each disease group; for example, 'other musculoskeletal conditions'.

5. For information on colours used for each specific cause, see disease group colours for FNBDS 2022 colour legend.

Source: AIHW First Nations Burden of Disease Database

How big is the gap, and what causes it?

First Nations children aged 5–14 experienced disease burden at 1.6 times the rate for non-Indigenous children of this age in 2022 (72 compared with 45 per 1,000 people).

For children aged 5–14, mental health conditions & substance use disorders was the greatest disease group contributor to the gap (representing 44% of the gap among children aged 5–14). Hearing & vision disorders and injuries were also important contributors to the gap in this age group (representing 18% and 16% of the gap, respectively) (see Figure 5 in Gap in disease burden section).

Adolescents and young adults aged 15–24

Key findings

- First Nations people aged 15–24 accounted for 18% (or 188,208 people) of the First Nations population and 12% (37,243 DALY) of the total burden experienced by First Nations people in 2022.
- In 2022, First Nations people aged 15–24 lost 37,243 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 198 DALY per 1,000 people of this age.
- Among First Nations people aged 15–24 there was substantially more non-fatal than fatal burden (71% or 26,400 YLD and 29% or 10,843 YLL, respectively).
- Mental health conditions & substance use disorders was the main cause of burden among First Nations people aged 15–24.
- There was no substantial change in the age-specific rate of total burden between 2011 and 2022 among First Nations people aged 15–24.
- For people aged 15–24, mental health conditions & substance use disorders and injuries were the leading disease group contributors to the gap between First Nations people and non-Indigenous Australians (representing 45% and 33% of the gap among people aged 15–24, respectively).

In 2022, First Nations people aged 15–24 lost 37,243 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 198 DALY per 1,000 people of this age.

First Nations people aged 15–24 accounted for 18% (or 188,208 people) of the First Nations population and 12% (37,243 DALY) of the total burden (DALY) experienced by First Nations people in 2022.

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) among First Nations people aged 15–24, by sex, 2022

Sex	DALY	YLD	YLL
Males	209.9	132.2	77.8
Females	185.6	149.0	36.6
Persons	198.1	140.4	57.7

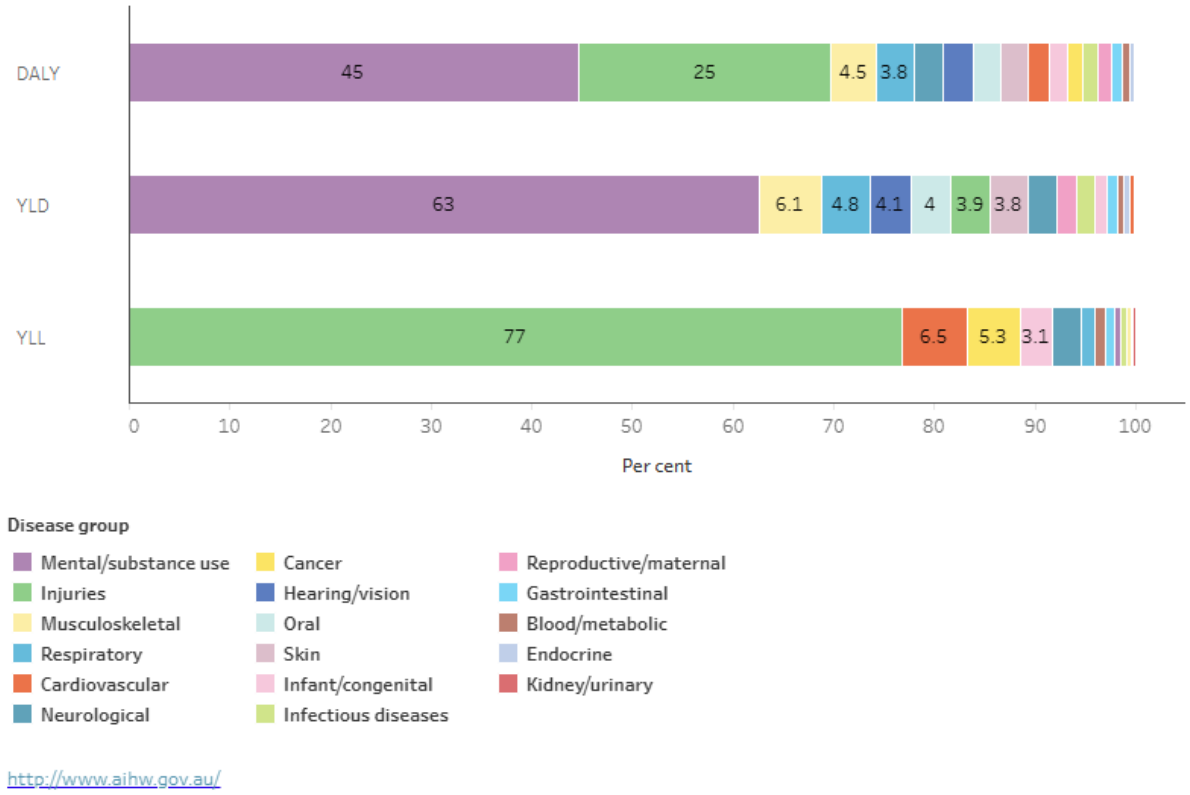
Source: AIHW First Nations Burden of Disease Database

Disease group burden

The leading disease groups that contributed to the total burden in First Nations people aged 15–24 were:

- mental health conditions & substance use disorders (45% of total burden, or 16,608 DALY)
- injuries (25%, 9,362) (Figure 1).

Figure 1: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations people aged 15–24, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

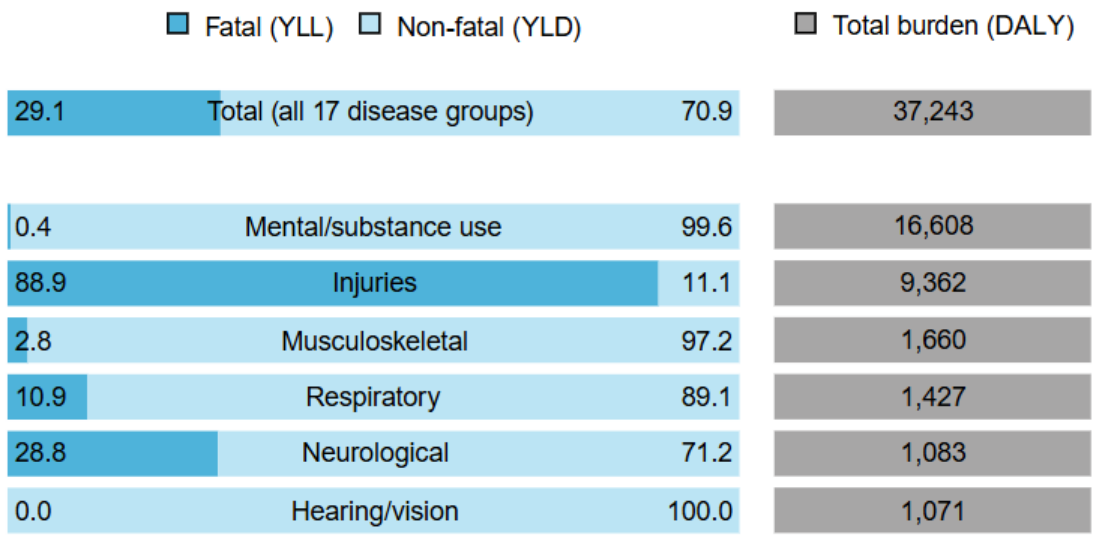
Almost three-quarters of the burden (71% or 26,400) among First Nations people aged 15–24 was due to living with disease or injury (non-fatal burden) (figures 2 and 5). Mental health conditions & substance use disorders contributed nearly two-thirds of the non-fatal burden in this age group (63%), with smaller contributions from musculoskeletal conditions (6.1%) and respiratory diseases (4.8%) (Figure 1).

The remaining burden (29% or 10,843 YLL) was due to premature death (fatal burden) (figures 2 and 5). Injuries contributed over three-quarters of the fatal burden in this age group (77%), followed by cardiovascular diseases (6.5%) (Figure 1).

Among First Nations people aged 15–24, the contribution of fatal burden and non-fatal burden to total burden differed greatly for each disease group (Figure 2). Among the highest burden disease groups:

- The burden from mental health conditions & substance use disorders, musculoskeletal conditions and respiratory diseases was mostly non-fatal.
- The burden from injuries was mostly fatal.

Figure 2: Fatal (YLL) and non-fatal (YLD) burden as a proportion (%) of total burden (DALY), leading 6 disease groups, First Nations people aged 15–24, 2022



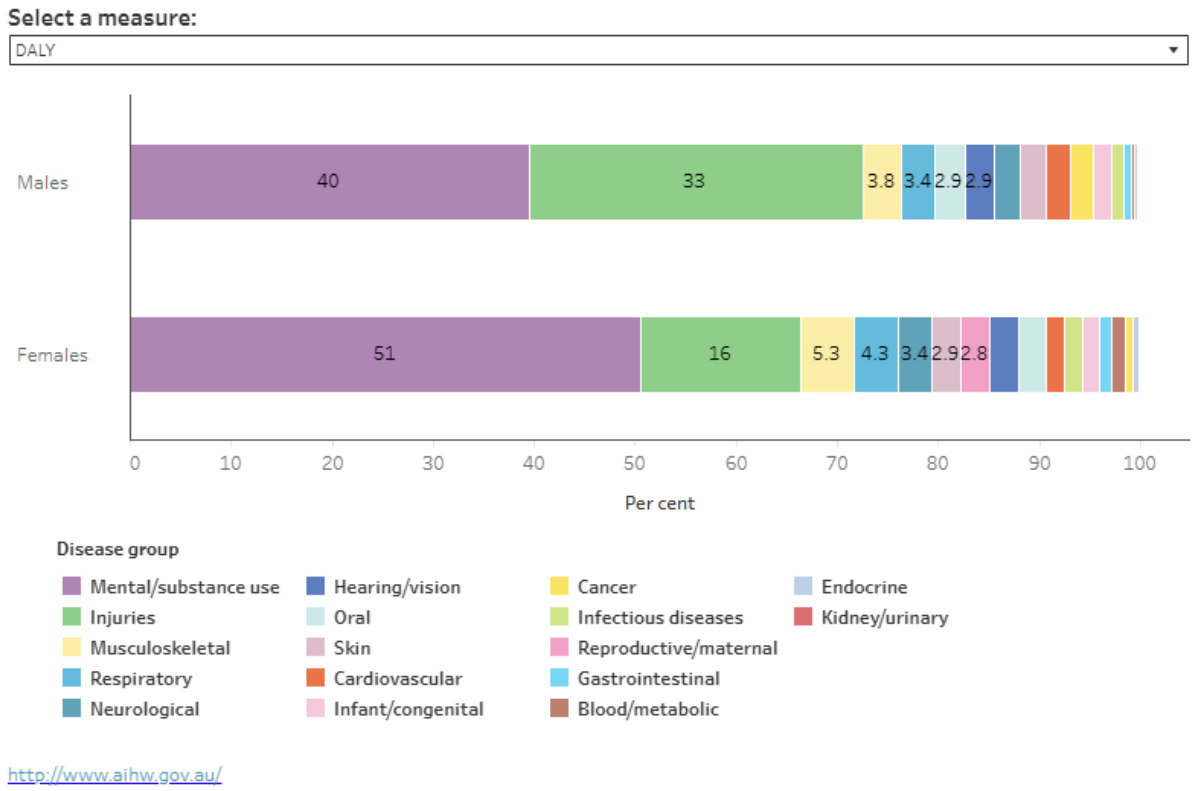
Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

Among First Nations people aged 15–24, males experienced a higher proportion of the total burden (54% compared with 46%) and fatal burden (69% compared with 31%) than females. First Nations females experienced a slightly higher proportion of the non-fatal burden than males (52% compared with 48%).

In this age group, mental health conditions & substance use disorders was the greatest disease group contributor to total and non-fatal burden for both First Nations males and females. Injuries was the leading disease group contributor to fatal burden for both males and females, but was responsible for a slightly higher proportion of the fatal burden in males than in females (79% compared with 71%) (Figure 3).

Figure 3: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations people aged 15–24, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

To further explore the top disease groups and causes by age group, see the following interactive data visualisation:

- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups broken down by fatal and non-fatal burden.

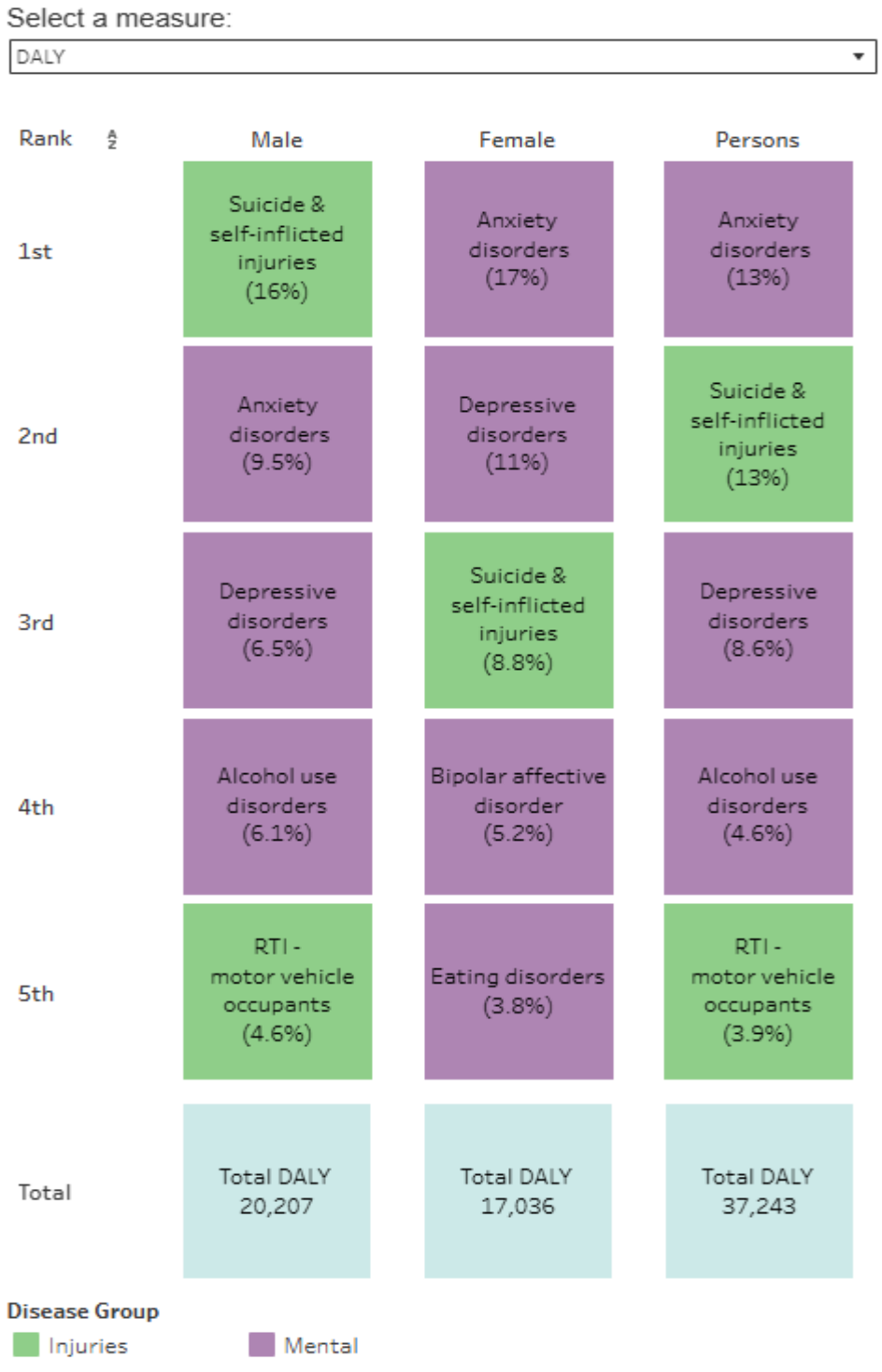
Top specific causes of burden

The 5 leading specific causes of burden accounted for 43% of the total burden among First Nations people aged 15–24 (Figure 4):

- anxiety disorders (13%, or 4,836 DALY)
- suicide & self-inflicted injuries (13%, 4,684)
- depressive disorders (8.6%, 3,208)
- alcohol use disorders (4.6%, 1,723)
- road traffic injuries (motor vehicle occupants) (3.9%, 1,450).

All 5 leading specific causes of non-fatal burden (YLD) among First Nations people aged 15–24 were mental health conditions & substance use disorders, whereas the 5 leading causes of fatal burden (YLL) were all injuries (Figure 4).

Figure 4: Top 5 specific causes of total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations people aged 15–24, 2022



* Number of First Nations deaths used in YLL calculations is fewer than 10.

RTI road traffic injuries.

Source: AIHW First Nations Burden of Disease Database

To further explore the top specific causes across all stages of life, see the following interactive data visualisation:

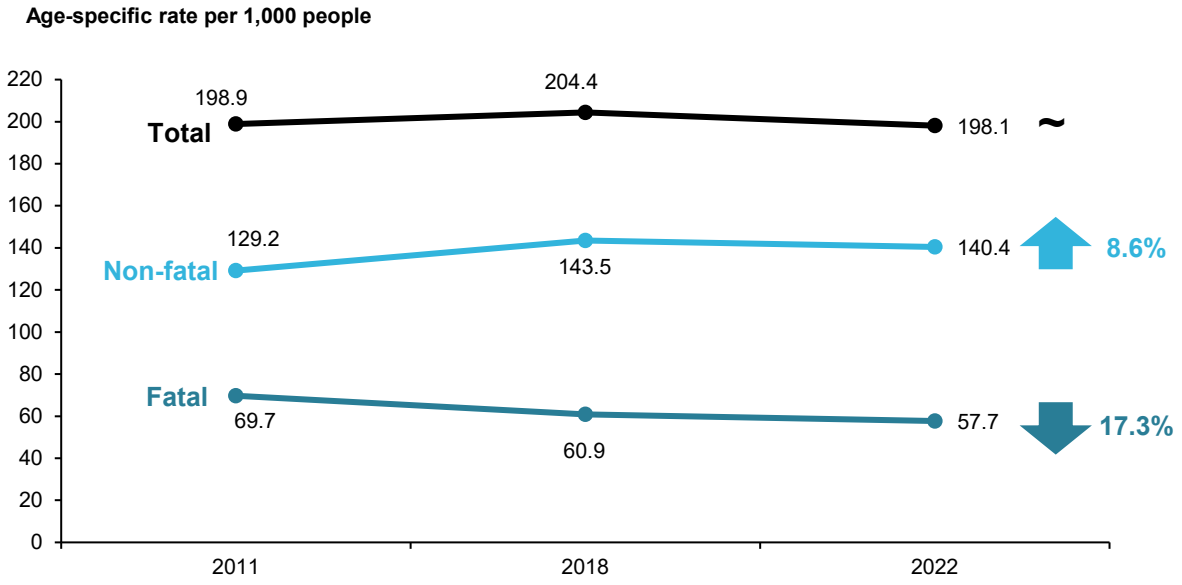
- Dashboard 8: Top specific causes across the stages of life: This visualisation provides the top 5 causes contributing to burden for each age group, by sex.

Changes over time

Overall, there was no substantial change in the health of First Nations people aged 15–24 over the period 2011 to 2022 (Figure 5).

There was no substantial change in the age-specific rate of total burden between 2011 and 2022 among First Nations people aged 15–24. There was a 17% decline in the rate of fatal burden over this period, but this was offset by an 8.6% increase in non-fatal burden (Figure 5).

Figure 5: Change between 2011 and 2022 in the age-specific total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people), First Nations people aged 15–24



Source: AIHW First Nations Burden of Disease Database

Changes by disease group

Over the period 2011 to 2022, among First Nations people aged 15–24, there was a decrease in the age-specific total burden rates from injuries (decrease of 9.7 DALY per 1,000 people, or 16%) and hearing and vision disorders (decrease of 2.3 DALY per 1,000 people, or 29%).

An increase in burden was observed for mental health conditions & substance use disorders (increase of 11 DALY per 1,000 people, 14%).

Changes by specific causes

In both 2011 and 2022, the same 5 diseases were the leading causes of burden among First Nations people aged 15–24, although there were changes in the rankings and age-specific burden rates for each cause (Figure 6).

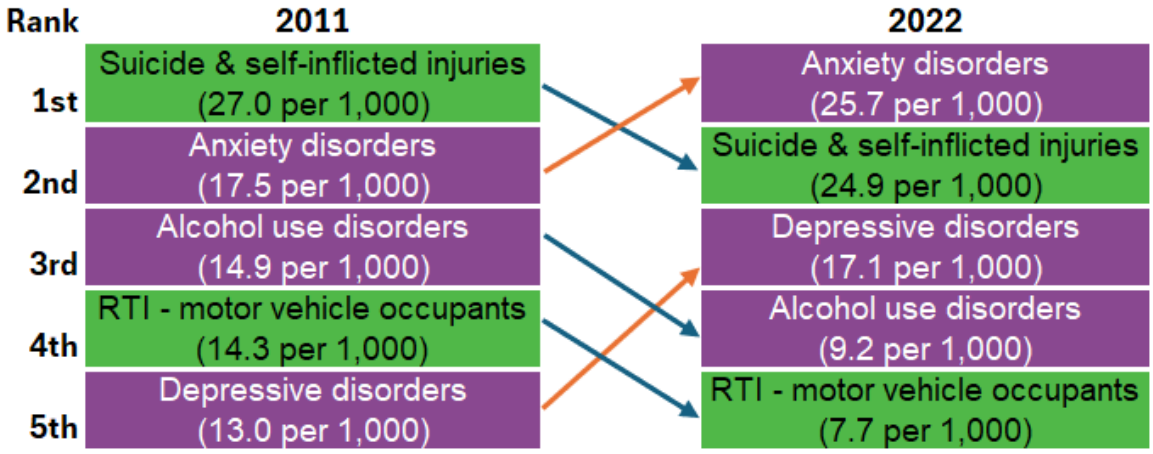
There were decreases in the age-specific burden rate and ranking for:

- road traffic injuries (motor vehicle occupants) (46% decrease)
- alcohol use disorders (39% decrease)
- suicide & self-inflicted injuries (7.7% decrease).

There were increases in the burden rate and ranking for:

- anxiety disorders (47% increase)
- depressive disorders (31% increase).

Figure 6: Changes in ranking and age-specific DALY rate (DALY per 1,000 people), leading specific causes of burden, First Nations people aged 15–24, 2011 and 2022



RTI road traffic injuries.

Notes

1. 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.

2. Causes are presented in descending order, from highest age-specific rate to lowest age-specific rate, with arrows indicating either an increase (orange) or decrease (blue) in the age-specific rate over time.

3. Cause rankings exclude 'other' residual conditions from each disease group; for example, 'other musculoskeletal conditions'.

4. For information on colours used for each specific cause, see disease group colours for FNBDS 2022 colour legend.

Source: AIHW First Nations Burden of Disease Database

How big is the gap, and what causes it?

First Nations people aged 15–24 experienced disease burden at 1.9 times the rate for non-Indigenous people of this age in 2022 (198 compared with 105 per 1,000 people).

For people aged 15–24, mental health conditions & substance use disorders and injuries were the main disease group contributors to the gap (representing 45% and 33% of the gap among people aged 15–24, respectively) (see Figure 5 in Gap in disease burden section).

Adults aged 25–44

Key findings

- Adults aged 25–44 accounted for 26% (or 261,618 people) of the First Nations population and 27% (85,433 DALY) of the total burden experienced by First Nations people in 2022.
- In 2022, First Nations adults aged 25–44 lost 85,433 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 327 DALY per 1,000 people of this age.
- Among First Nations adults aged 25–44 there was more non-fatal than fatal burden (61% or 51,928 YLD and 39% or 33,505 YLL, respectively).
- Mental health conditions & substance use disorders was the main cause of burden among First Nations adults aged 25–44.
- Overall, the health of First Nations adults aged 25–44 improved slightly over the period 2011 to 2022. There was a 3.7% decline in the age-specific rate of total burden between 2011 and 2022 (from 339 to 327 DALY per 1,000 people).
- For adults aged 25–44, mental health conditions & substance use disorders and injuries were the leading disease group contributors to the gap between First Nations people and non-Indigenous Australians (representing 33% and 25% of the gap among adults aged 25–44, respectively).

In 2022, First Nations adults aged 25–44 lost 85,433 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 327 DALY per 1,000 people of this age.

Adults aged 25–44 accounted for 26% (or 261,618 people) of the First Nations population and 27% (85,433 DALY) of the total burden (DALY) experienced by First Nations people in 2022.

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) among First Nations adults aged 25–44, by sex, 2022

Sex	DALY	YLD	YLL
Males	356.0	191.8	164.1
Females	297.2	205.1	92.0
Persons	326.6	198.5	128.1

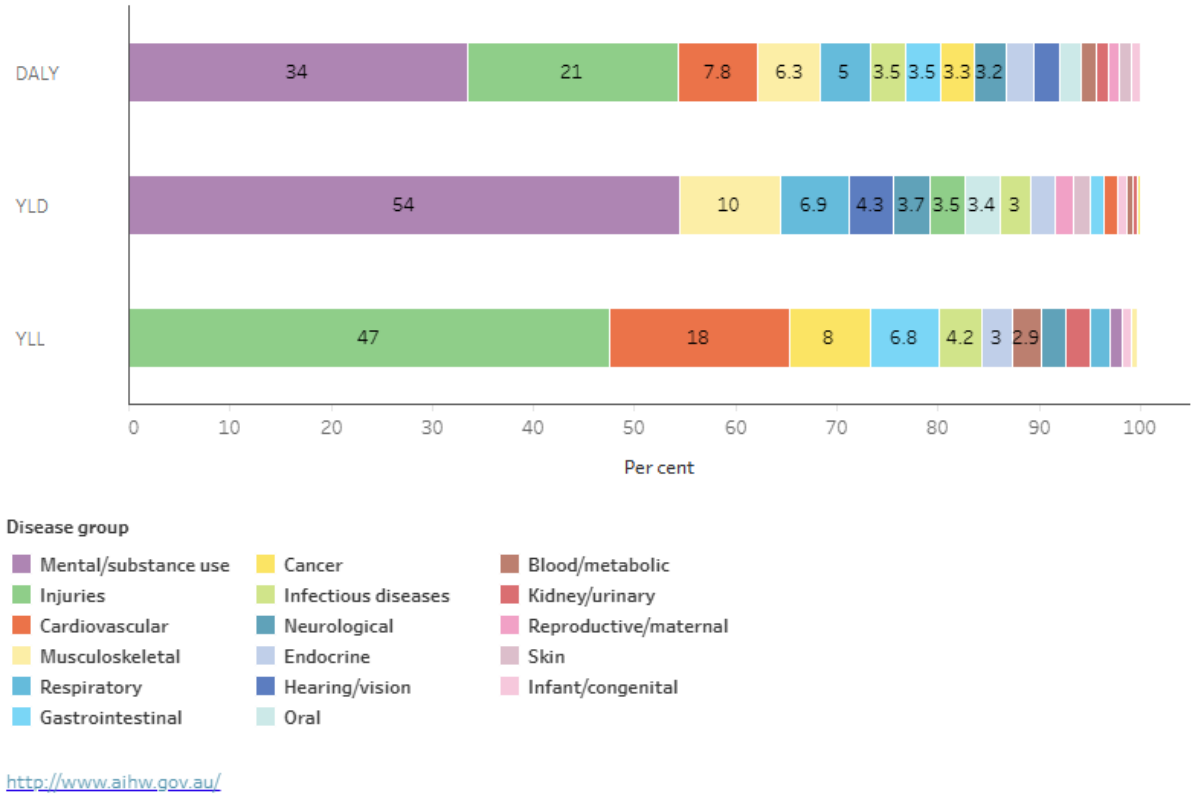
Source: AIHW First Nations Burden of Disease Database

Disease group burden

The leading disease groups that contributed to the total burden in First Nations adults aged 25–44 were:

- mental health conditions & substance use disorders (34% of total burden, or 28,669 DALY)
- injuries (21%, 17,712)
- cardiovascular diseases (7.8%, 6,662)
- musculoskeletal conditions (6.3%, 5,366) (Figure 1).

Figure 1: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations adults aged 25–44, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

Most of the burden (61% or 51,928 YLD) among First Nations adults aged 25–44 was due to living with disease or injury (non-fatal burden) (figures 2 and 5). Mental health conditions & substance use disorders contributed more than half of the non-fatal burden in this age group (54%), followed by musculoskeletal conditions (10%) and respiratory diseases (6.9%) (Figure 1).

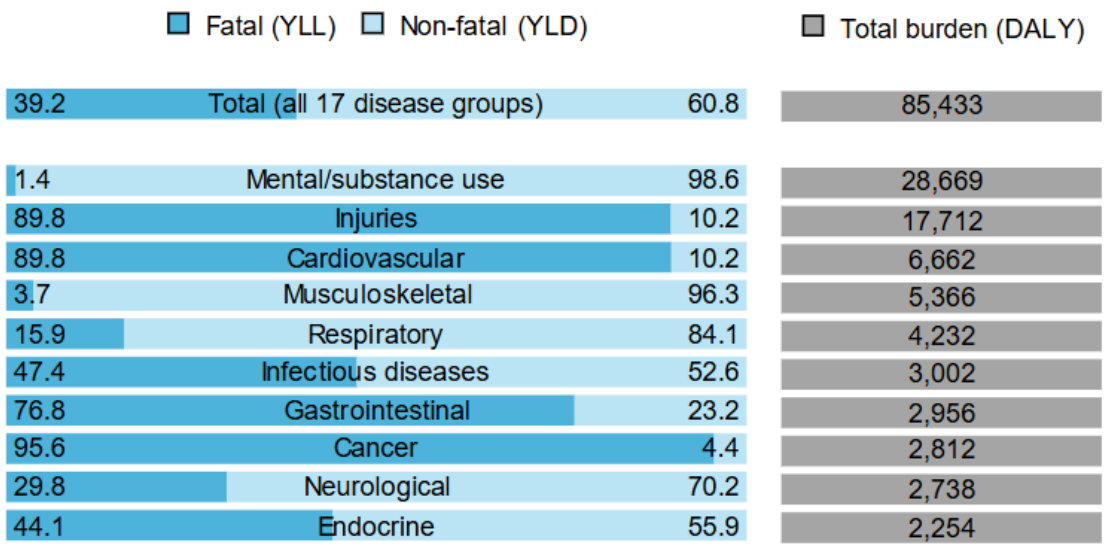
The remaining burden (39% or 33,505 YLL) was due to premature death (fatal burden) (figures 2 and 5), with injuries (47%) and cardiovascular diseases (18%) the main

contributors. Mental health conditions & substance use disorders accounted for only 1.2% of fatal burden for First Nations adults aged 25–44 (Figure 1).

Among First Nations adults aged 25–44, the contribution of fatal burden and non-fatal burden to total burden differed greatly for each disease group (Figure 2). Among the highest burden disease groups:

- The burden from mental health conditions & substance use disorders, musculoskeletal conditions and respiratory diseases was mostly non-fatal.
- The burden from injuries and cardiovascular diseases was mostly fatal.

Figure 2: Fatal (YLL) and non-fatal (YLD) burden as a proportion (%) of total burden (DALY), leading 10 disease groups, First Nations adults aged 25–44, 2022



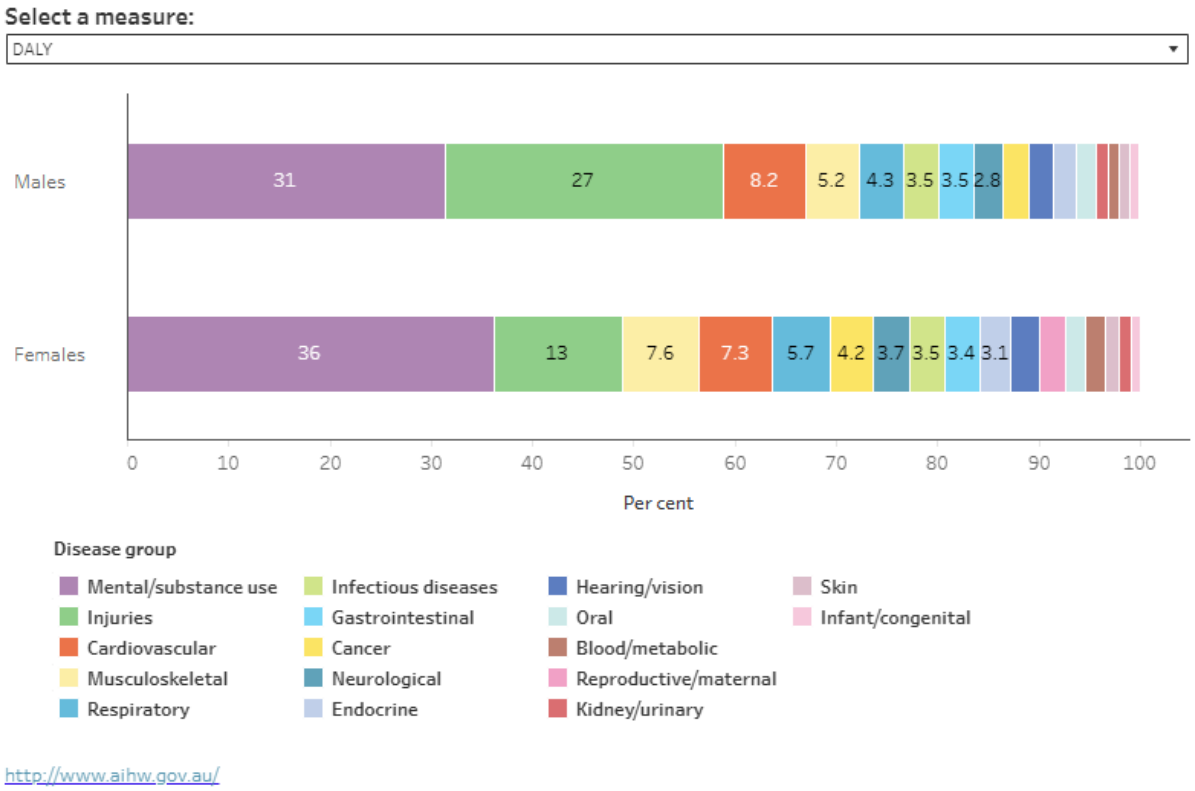
Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

Among First Nations adults aged 25–44, males experienced a higher proportion of the total burden (55% compared with 45%) and fatal burden (64% compared with 36%) than females. First Nations females in this age group experienced a slightly higher proportion of the non-fatal burden than males (52% compared with 48%).

In this age group, mental health conditions & substance use disorders was the leading disease group contributor to total and non-fatal burden for First Nations males and females (Figure 3). Injuries was the leading disease group contributor to fatal burden for males and females, but was responsible for a much higher proportion of the fatal burden in males (54%) than in females (35%) (Figure 3).

Figure 3: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations adults aged 25–44, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

To further explore the top disease groups and causes by age group, see the following interactive data visualisation:

- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups broken down by fatal and non-fatal burden.

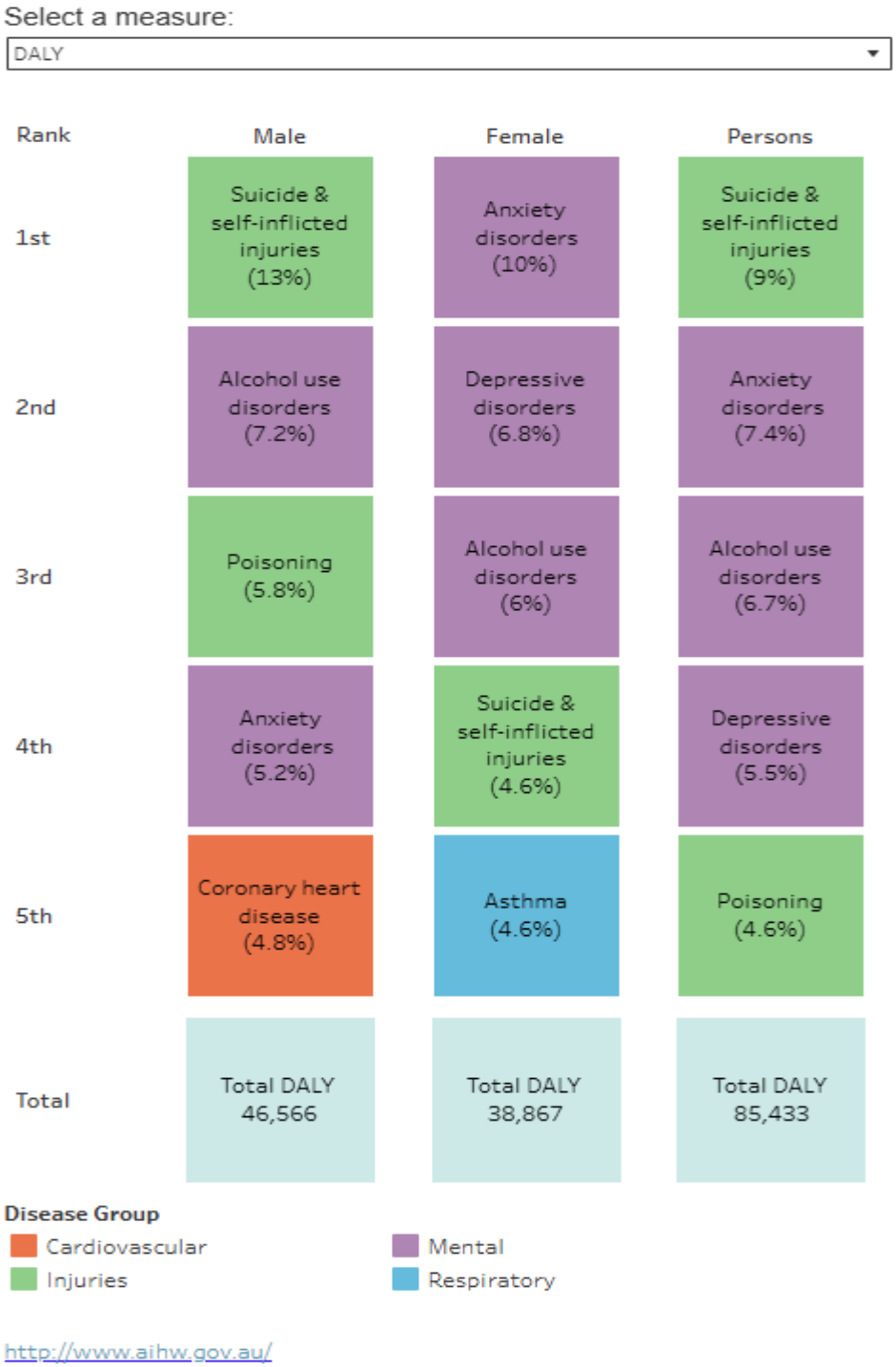
Top specific causes of burden

The 5 leading specific causes of burden accounted for one-third (33%) of the total burden among First Nations adults aged 25–44:

- suicide & self-inflicted injuries (9.0%, or 7,664 DALY)
- anxiety disorders (7.4%, 6,338)
- alcohol use disorders (6.7%, 5,697)
- depressive disorders (5.5%, 4,721)
- poisoning (4.6%, 3,905).

The leading specific causes of burden for this age group varied by sex and type of burden, but the overall burden for DALY and YLL was higher in males than females. See Figure 4 for more information.

Figure 4: Top 5 specific causes of total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations adults aged 25–44, 2022



RTI road traffic injuries.

Source: AIHW First Nations Burden of Disease Database

To further explore the top specific causes across all stages of life, see the following interactive data visualisation:

- Dashboard 8: Top specific causes across the stages of life: This visualisation provides the top 5 causes contributing to burden for each age group, by sex.

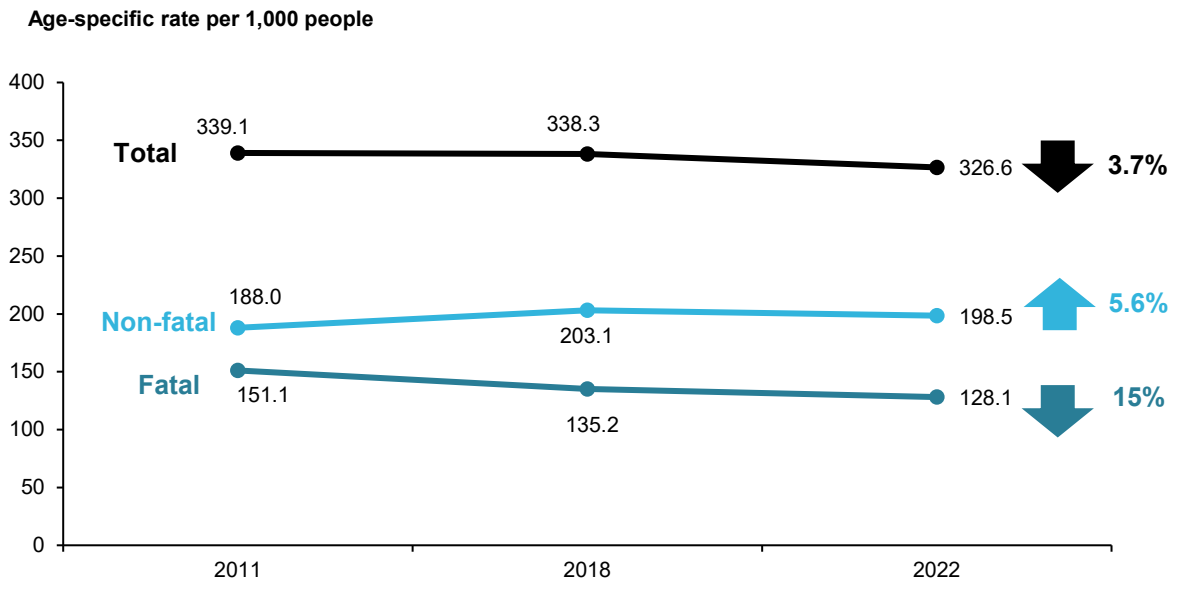
Changes over time

Overall, the health of First Nations adults aged 25–44 improved slightly over the period 2011 to 2022 (Figure 5).

There was a 3.7% decline in the age-specific rate of total burden between 2011 and 2022 (from 339 to 327 DALY per 1,000 people). Most of this decline was observed between 2018 and 2022, while the DALY rate remained relatively stable between 2011 and 2018.

The decrease in total burden was driven by a reduction (of 15%) in the rate of fatal burden between 2011 and 2022, with much of this decrease observed between 2011 and 2018. There was an increase (of 5.6%) in non-fatal burden between 2011 and 2022, with the rate rising between 2011 and 2018 and then decreasing slightly.

Figure 5: Change between 2011 and 2022 in the age-specific total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people), First Nations adults aged 25–44



Source: AIHW First Nations Burden of Disease Database

Changes by disease group

Over the period 2011 to 2022, among First Nations adults aged 25–44, there were decreases in the age-specific total burden rate from:

- cardiovascular diseases – a decrease of 12 DALY per 1,000 people, or 31%
- musculoskeletal conditions – a decrease of 5.0 DALY per 1,000, or 20%
- cancer & other neoplasms – a decrease of 4.6 DALY per 1,000, or 30%.

Increases in burden were observed for mental health conditions & substance use disorders (increase of 12 DALY per 1,000, or 12%) and infectious diseases (increase of 4.6 DALY per 1,000, or 66%). Most of the increase in burden due to infectious diseases was due to the emergence of COVID-19.

Changes by specific causes

In 2011 and 2022, the same 6 diseases were the leading causes of burden among First Nations adults aged 25–44, although there were changes in the rankings and age-specific burden rates for each cause (Figure 6).

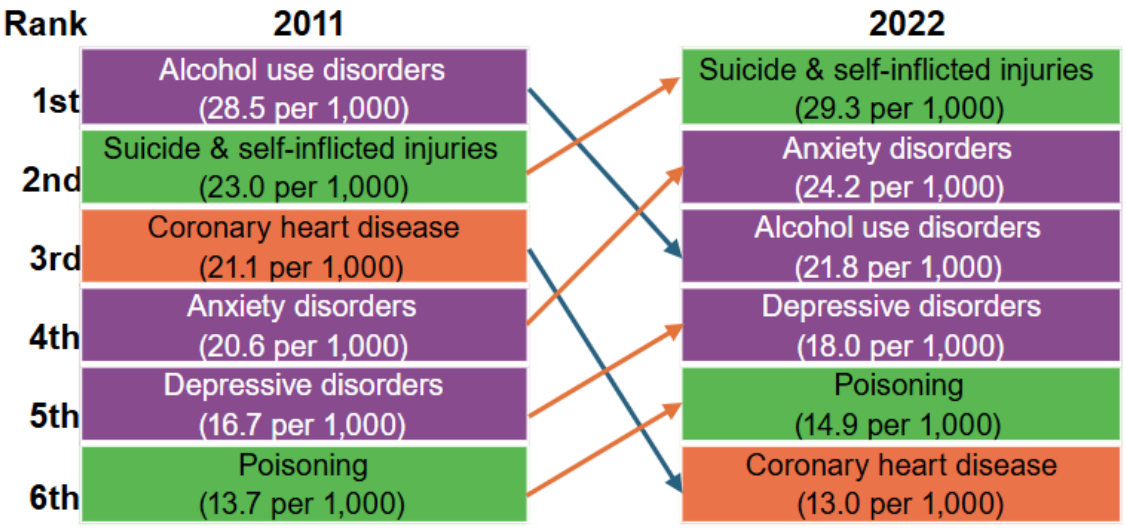
There were decreases in the age-specific burden rate and ranking for:

- coronary heart disease (38% decrease)
- alcohol use disorders (24% decrease).

There were increases in the burden rate and ranking for:

- suicide & self-inflicted injuries (27% increase)
- anxiety disorders (17% increase)
- poisoning (9.1% increase)
- depressive disorders (8.0% increase).

Figure 6: Changes in ranking and age-specific DALY rate (DALY per 1,000 people), leading specific causes of burden, First Nations adults aged 25–44, 2011 and 2022



Notes

1. 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.

2. Causes are presented in descending order, from highest age-specific rate to lowest age-specific rate, with arrows indicating either an increase (orange) or decrease (blue) in the age-specific rate over time.

3. Cause rankings exclude 'other' residual conditions from each disease group; for example, 'other musculoskeletal conditions'.

4. For information on colours used for each specific cause, see disease group colours for FNBDS 2022 colour legend.

Source: AIHW First Nations Burden of Disease Database

How big is the gap, and what causes it?

First Nations adults aged 25–44 experienced disease burden at 2.5 times the rate for non-Indigenous adults of this age in 2022 (327 compared with 131 per 1,000 people).

For adults aged 25–44, mental health conditions & substance use disorders and injuries were the main disease group contributors to the gap (representing 33% and 25% of the gap among adults aged 25–44, respectively). Cardiovascular diseases was also an important contributor to the gap in this age group (representing 11% of the gap) (see Figure 5 in Gap in disease burden section).

Adults aged 45–64

Key findings

- Adults aged 45–64 accounted for 17% (or 177,773 people) of the First Nations population and around one-third (31% or 98,481 DALY) of the total burden experienced by First Nations people in 2022.
- In 2022, First Nations adults aged 45–64 lost 98,481 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 554 DALY per 1,000 people of this age.
- Among First Nations adults aged 45–64 there was more fatal than non-fatal burden (59% or 58,166 YLL and 41% or 40,315 YLD of the total burden, respectively).
- Cancer & other neoplasms and cardiovascular diseases were the main causes of burden among First Nations adults aged 45–64.
- Overall, the health of First Nations adults aged 45–64 improved over the period 2011 to 2022. There was a 7.7% decline in the age-specific rate of total burden between 2011 and 2022 (from 600 to 554 DALY per 1,000 people).
- For adults aged 45–64, cardiovascular diseases was the leading disease group contributor to the gap between First Nations people and non-Indigenous Australians (representing 20% of the gap among adults aged 45–64).

In 2022, First Nations adults aged 45–64 lost 98,481 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 554 DALY per 1,000 people of this age.

Adults aged 45–64 accounted for 17% (or 177,773 people) of the First Nations population and around one-third (31% or 98,481 DALY) of the total burden (DALY) experienced by First Nations people in 2022.

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) among First Nations adults aged 45–64, by sex, 2022

Sex	DALY	YLD	YLL
Males	607.7	219.9	387.8
Females	504.0	233.2	270.8
Persons	554.0	226.8	327.2

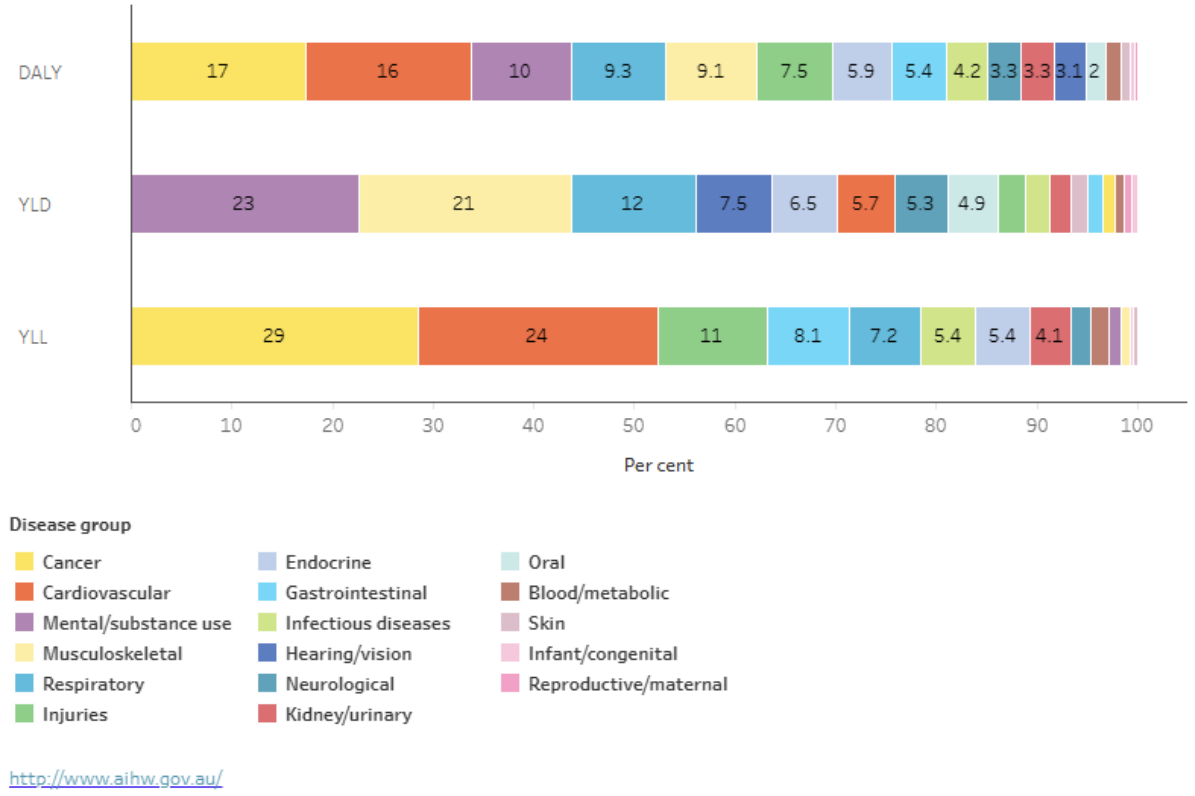
Source: AIHW First Nations Burden of Disease Database

Disease group burden

The leading disease groups that contributed to the total burden in First Nations adults aged 45–64 were:

- cancer & other neoplasms (17% of total burden, or 17,079 DALY)
- cardiovascular diseases (16%, 16,184)
- mental health conditions & substance use disorders (10%, 9,841)
- respiratory diseases (9.3%, 9,139)
- musculoskeletal conditions (9.1%, 8,974) (Figure 1).

Figure 1: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations adults aged 45–64, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

Most of the burden (59% or 58,166 YLL) among First Nations adults aged 45–64 was due to premature death (fatal burden) (figures 2 and 5). Cancer & other neoplasms and cardiovascular diseases together contributed over half of the fatal burden in this age group (29% and 24%, respectively) (Figure 1).

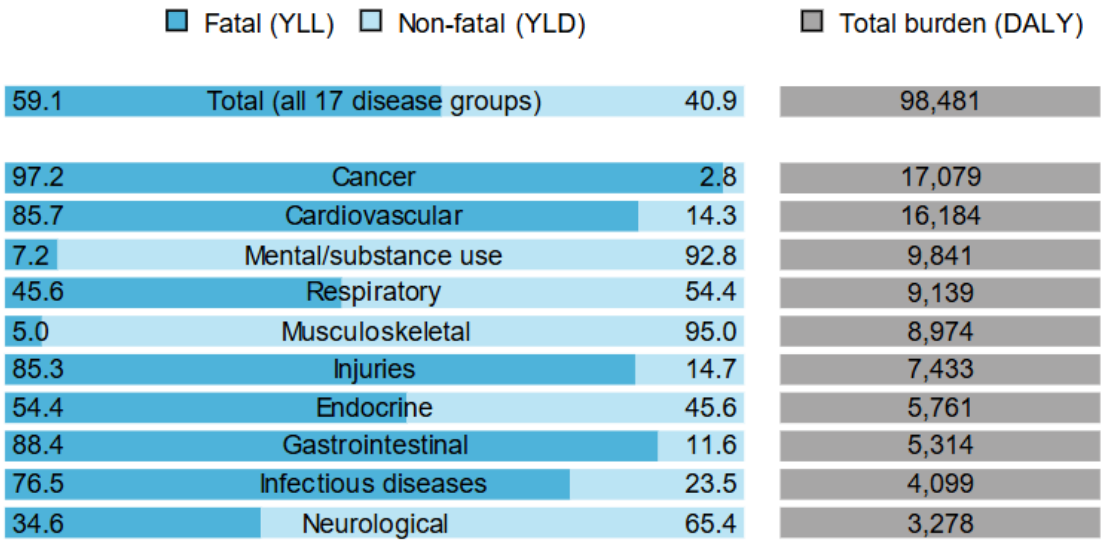
The remaining burden (41% or 40,315 YLD) was due to living with disease or injury (non-fatal burden) (figures 2 and 5). Mental health conditions & substance use disorders

contributed almost a quarter of the non-fatal burden in this age group (23%), followed by musculoskeletal conditions (21%) and respiratory diseases (12%) (Figure 1).

Among First Nations adults aged 45–64, the contribution of fatal burden and non-fatal burden to total burden differed greatly for each disease group (Figure 2). Among the highest burden disease groups:

- The burden from cancer & other neoplasms and cardiovascular diseases was mostly fatal.
- The burden from mental health conditions & substance use disorders and musculoskeletal conditions was mostly non-fatal.
- The burden from respiratory diseases was slightly more non-fatal than fatal.

Figure 2: Fatal (YLL) and non-fatal (YLD) burden as a proportion (%) of total burden (DALY), leading 10 disease groups, First Nations adults aged 45–64, 2022



Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

Among First Nations adults aged 45–64, males experienced a higher proportion of the total burden (53% compared with 47%) and fatal burden (57% compared with 43%) than females. First Nations females in this age group experienced a higher proportion of the non-fatal burden than males (53% compared with 47%).

Cardiovascular diseases and cancer & other neoplasms were the 2 leading contributors to total burden and fatal burden for First Nations males and females in this age group, although their rankings and the amount they contributed varied by sex (Figure 3).

Mental health conditions & substance use disorders and musculoskeletal conditions together accounted for 44% of the non-fatal burden for both First Nations males and females (Figure 3).

Figure 3: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations adults aged 45–64, 2022

Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

To further explore the top disease groups and causes by age group, see the following interactive data visualisation:

- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups broken down by fatal and non-fatal burden.

Top specific causes of burden

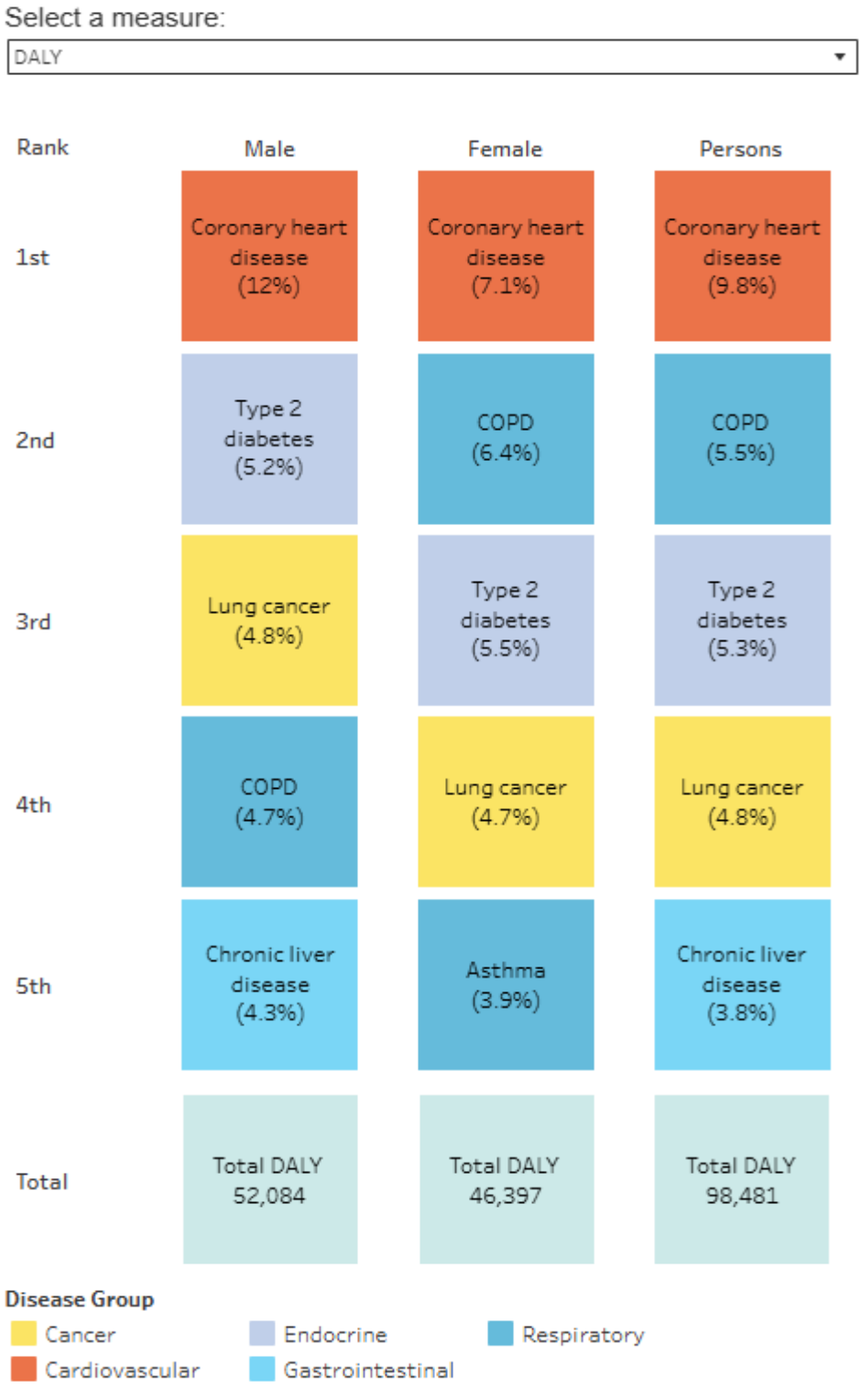
The 5 leading specific causes of burden together accounted for over a quarter (29%) of the total burden among First Nations adults aged 45–64:

- coronary heart disease (9.8%, or 9,624 DALY)
- chronic obstructive pulmonary disease (COPD) (5.5%, 5,421)
- type 2 diabetes (5.4%, 5,266)

- lung cancer (4.8%, 4,686)
- chronic liver disease (3.8%, 3,696)

The leading specific causes of burden for this age group varied by sex and type of burden, but the overall burden for DALY and YLL measures was higher in males than females. See Figure 4 for more information.

Figure 4: Top 5 specific causes of total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations adults aged 45–64, 2022



COPD chronic obstructive pulmonary disease.

Source: AIHW First Nations Burden of Disease Database

To further explore the top specific causes across all stages of life, see the following interactive data visualisation:

- Dashboard 8: Top specific causes across the stages of life: This visualisation provides the top 5 causes contributing to burden for each age group, by sex.

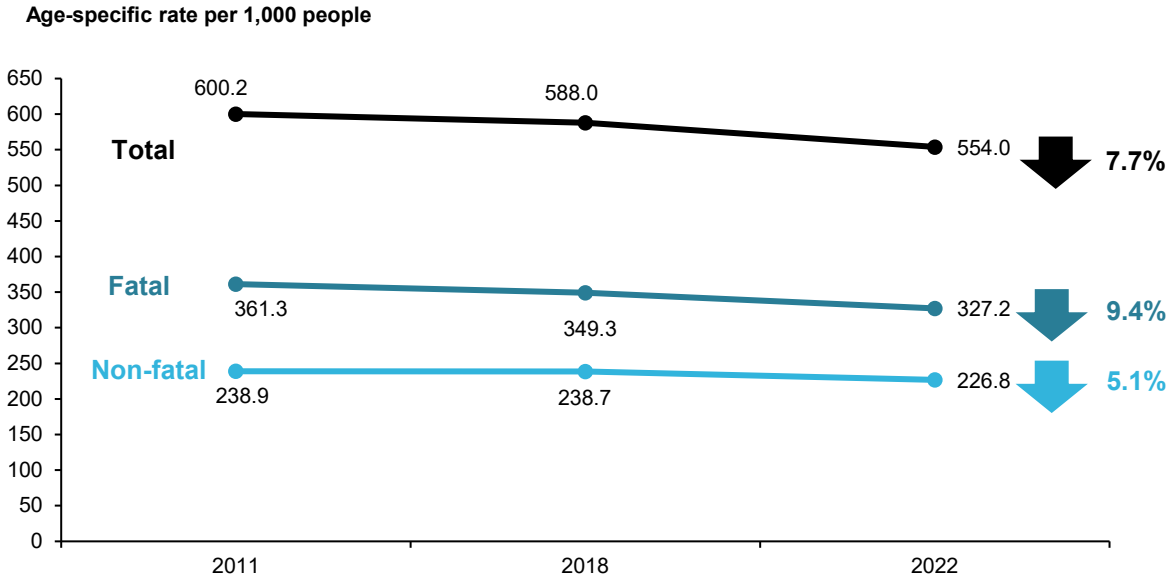
Changes over time

Overall, the health of First Nations adults aged 45–64 improved over the period 2011 to 2022 (Figure 5).

There was a 7.7% decline in the age-specific rate of total burden between 2011 and 2022 (from 600 to 554 DALY per 1,000 people). Most of this decline was observed between 2018 and 2022, while the DALY rate only slightly decreased between 2011 and 2018.

The decrease in total burden was driven by reductions in the rate of both fatal burden (9.4%) and non-fatal burden (5.1%) (Figure 5).

Figure 5: Change between 2011 and 2022 in the age-specific total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people), First Nations adults aged 45–64



Source: AIHW First Nations Burden of Disease Database

Changes by disease group

Over the period 2011 to 2022, among First Nations adults aged 45–64, there were decreases in the age-specific total burden rate from:

- cardiovascular diseases – a decrease of 24 DALY per 1,000 people, or 21%
- endocrine disorders – a decrease of 11 DALY per 1,000, or 25%
- musculoskeletal conditions – a decrease of 8.4 DALY per 1,000, or 14%.

Increases in burden were observed for infectious diseases (increase of 8.5 DALY per 1,000, 58%) and injuries (5.6 DALY per 1,000, or 15%). Most of the increase in burden due to infectious diseases was due to the emergence of COVID-19.

Changes by specific causes

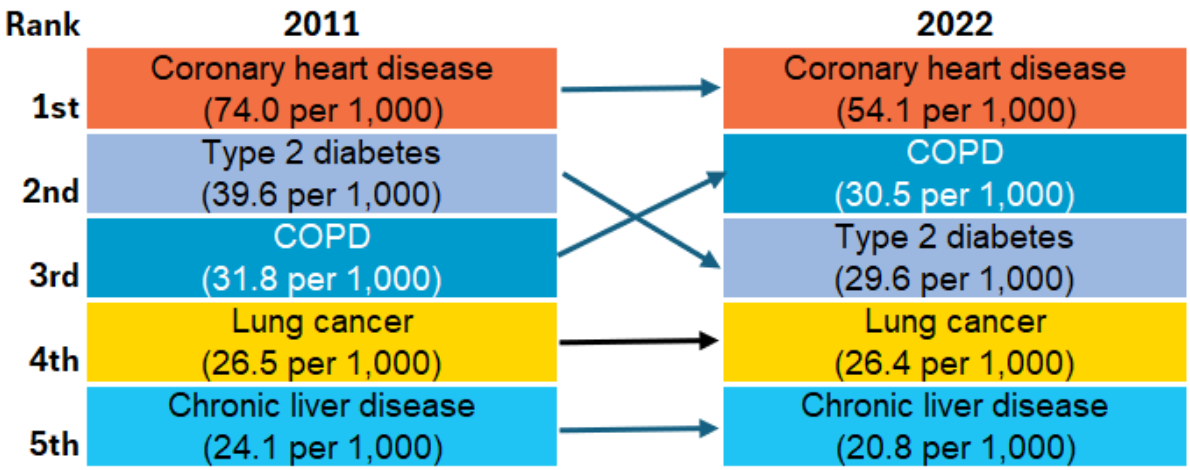
In both 2011 and 2022, the same 5 diseases were the leading causes of burden among First Nations adults aged 45–64, although there were changes in the age-specific burden rates and rankings for some causes (Figure 6).

Although coronary heart disease was the leading cause of burden among First Nations people aged 45–64 in 2011 and 2022, the age-specific burden rate fell by 27% over this period (from 74 to 54 DALY per 1,000 people).

There were also decreases in the age-specific burden rate for:

- type 2 diabetes (25% decrease)
- chronic liver disease (14% decrease)
- COPD (4.0% decrease).

Figure 6: Changes in ranking and age-specific DALY rate (DALY per 1,000 people), leading specific causes of burden, First Nations adults aged 45–64, 2011 and 2022



COPD chronic obstructive pulmonary disease.

Notes

1. 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.

2. Causes are presented in descending order, from highest age-specific rate to lowest age-specific rate, with arrows indicating either an increase (orange), decrease (blue) or no change (black) in the age-specific rate over time.

3. Cause rankings exclude 'other' residual conditions from each disease group; for example, 'other musculoskeletal conditions'.

4. For information on colours used for each specific cause, see disease group colours for FNBDS 2022 colour legend.

Source: AIHW First Nations Burden of Disease Database

How big is the gap, and what causes it?

First Nations adults aged 45–64 experienced disease burden at 2.4 times the rate for non-Indigenous adults of this age in 2022 (554 compared with 235 per 1,000 people).

For adults aged 45–64, cardiovascular diseases was the greatest disease group contributor to the gap (representing 20% of the gap among adults aged 45–64). Cancer & other neoplasms and respiratory diseases were also important contributors to the gap in this age group (representing 15% and 12% of the gap, respectively) (see Figure 5 in Gap in disease burden section).

Adults aged 65–74

Key findings

- Adults aged 65–74 accounted for 4.0% (or 40,824 people) of the First Nations population and 12% (36,836 DALY) of the total burden experienced by First Nations people in 2022.
- In 2022, First Nations adults aged 65–74 lost 36,836 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 902 DALY per 1,000 people of this age.
- Among First Nations adults aged 65–74 there was more fatal than non-fatal burden (65% or 23,944 YLL and 35% or 12,892 YLD, respectively).
- Cancer & other neoplasms and cardiovascular diseases were the main causes of burden among First Nations adults aged 65–74.
- Overall, the health of First Nations adults aged 65–74 improved over the period 2011 to 2022. There was an 11% decline in the age-specific rate of total burden between 2011 and 2022 (from 1,016 to 902 DALY per 1,000 people).
- For adults aged 65–74, cancer & other neoplasms, cardiovascular diseases, and respiratory diseases were the main contributors to the gap between First Nations people and non-Indigenous Australians (representing 20%, 19% and 17% of the gap among adults aged 65–74, respectively).

In 2022, First Nations adults aged 65–74 lost 36,836 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 902 DALY per 1,000 people of this age.

Adults aged 65–74 accounted for 4.0% (or 40,824 people) of the First Nations population and 12% (36,836 DALY) of the total burden experienced by First Nations people in 2022.

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) among First Nations adults aged 65–74, by sex, 2022

Sex	DALY	YLD	YLL
Males	961.5	308.4	653.1
Females	848.9	322.4	526.4
Persons	902.3	315.8	586.5

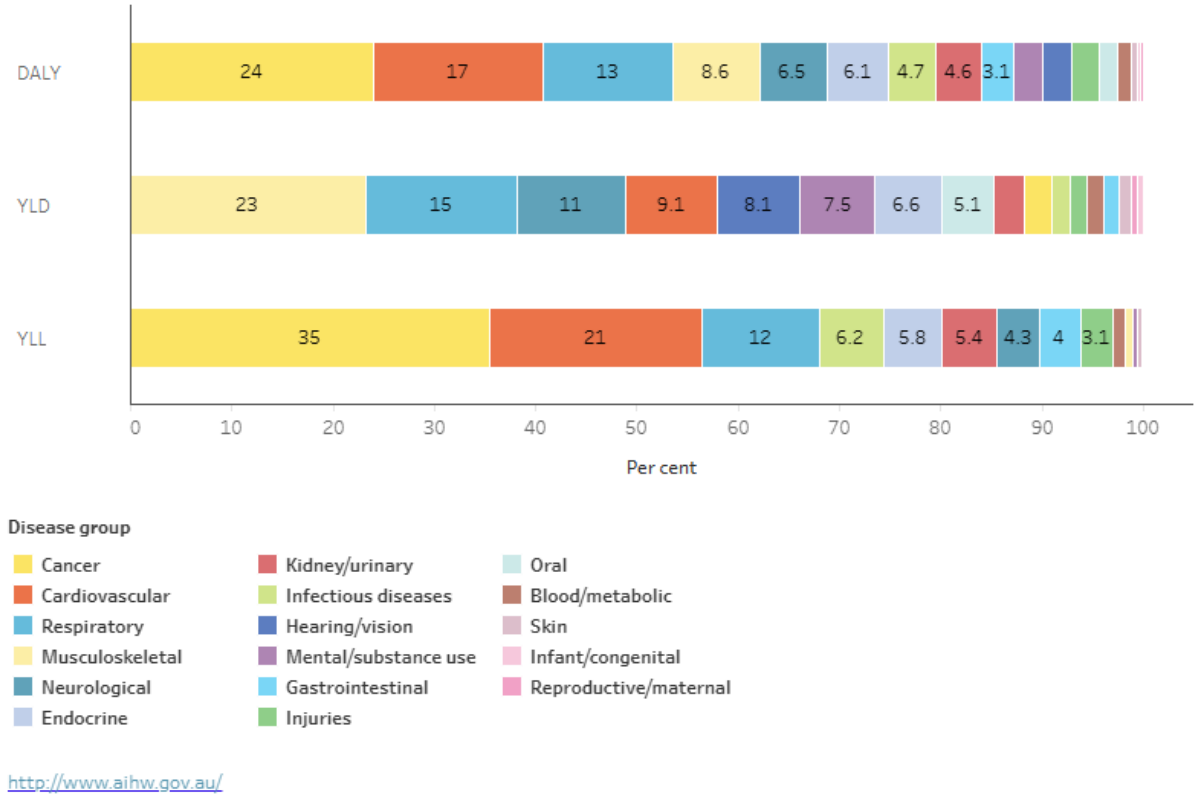
Source: AIHW First Nations Burden of Disease Database

Disease group burden

The leading disease groups that contributed to the total burden in First Nations adults aged 65–74 were:

- cancer & other neoplasms (24% of total burden, or 8,842 DALY)
- cardiovascular diseases (17%, 6,178)
- respiratory diseases (13%, 4,725)
- musculoskeletal conditions (8.6%, 3,176) (Figure 1).

Figure 1: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations adults aged 65–74, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

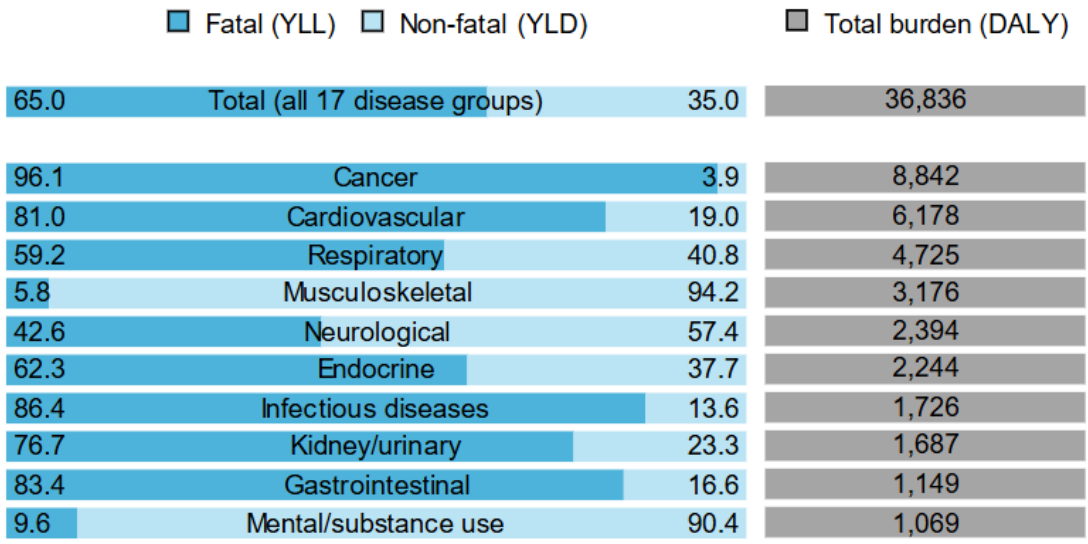
Nearly two-thirds of the burden (65% or 23,944 YLL) among First Nations adults aged 65–74 was due to premature death (fatal burden) (figures 2 and 5). Cancer & other neoplasms contributed more than one-third of the fatal burden in this age group (35%), followed by cardiovascular diseases (21%) and respiratory diseases (12%) (Figure 1).

The remaining burden (35% or 12,892 YLD) was due to living with disease or injury (non-fatal burden) (figures 2 and 5), with musculoskeletal conditions (23%), respiratory diseases (15%) and neurological conditions (11%) the main contributors (Figure 1).

Among First Nations adults aged 65–74, the contribution of fatal burden and non-fatal burden to total burden differed greatly for each disease group (Figure 2). Among the highest burden disease groups:

- The burden from cancer & other neoplasms, cardiovascular diseases and respiratory diseases was mostly fatal.
- The burden from musculoskeletal conditions and neurological conditions was mostly non-fatal.

Figure 2: Fatal (YLL) and non-fatal (YLD) burden as a proportion (%) of total burden (DALY), leading 10 disease groups, First Nations adults aged 65–74, 2022



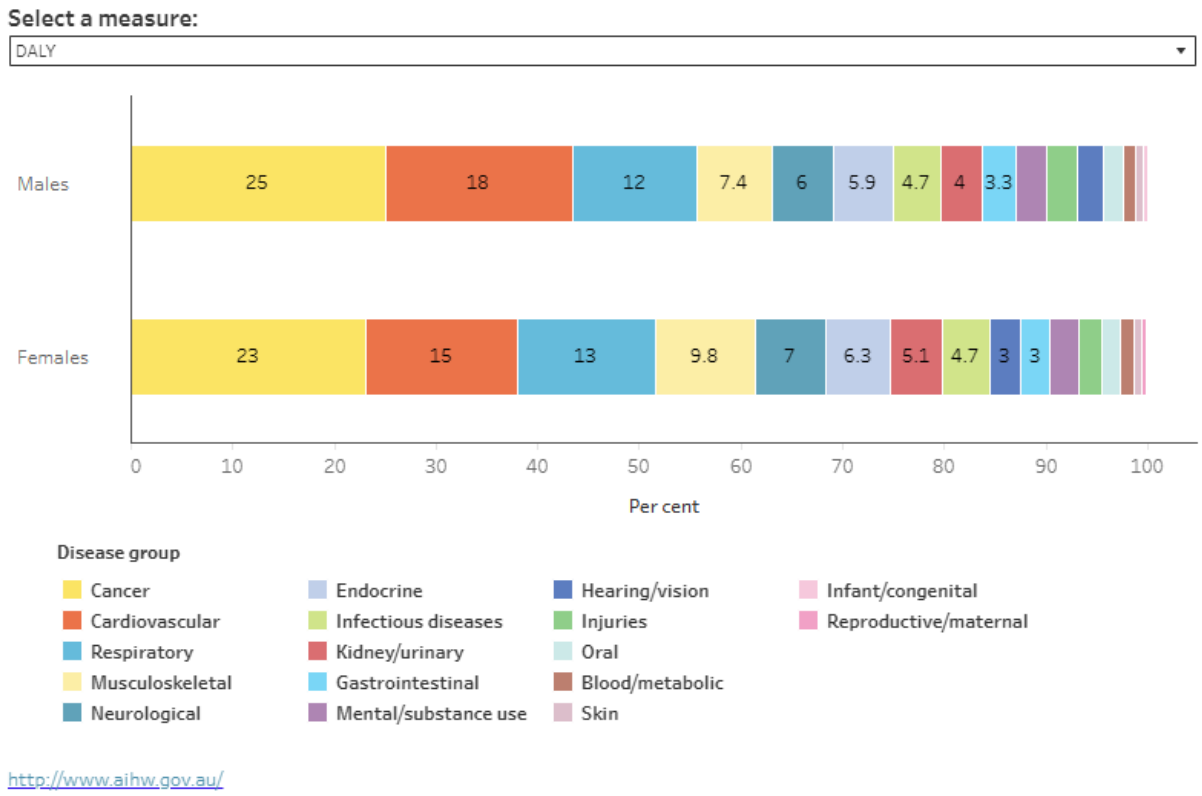
Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

Overall, among First Nations adults aged 65–74, a similar proportion of burden was experienced by males (51%) and females (49%). Males experienced a higher proportion of the fatal burden than females (53% compared with 47%) and females experienced a higher proportion of the non-fatal burden than males (54% compared with 46%).

Cancer & other neoplasms was the leading disease group contributor to total burden and fatal burden for both First Nations males and females in this age group (Figure 3). Musculoskeletal conditions was the leading disease group contributor to non-fatal burden for both males and females (Figure 3).

Figure 3: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations adults aged 65–74, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

To further explore the top disease groups and causes by age group, see the following interactive data visualisation:

- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups broken down by fatal and non-fatal burden.

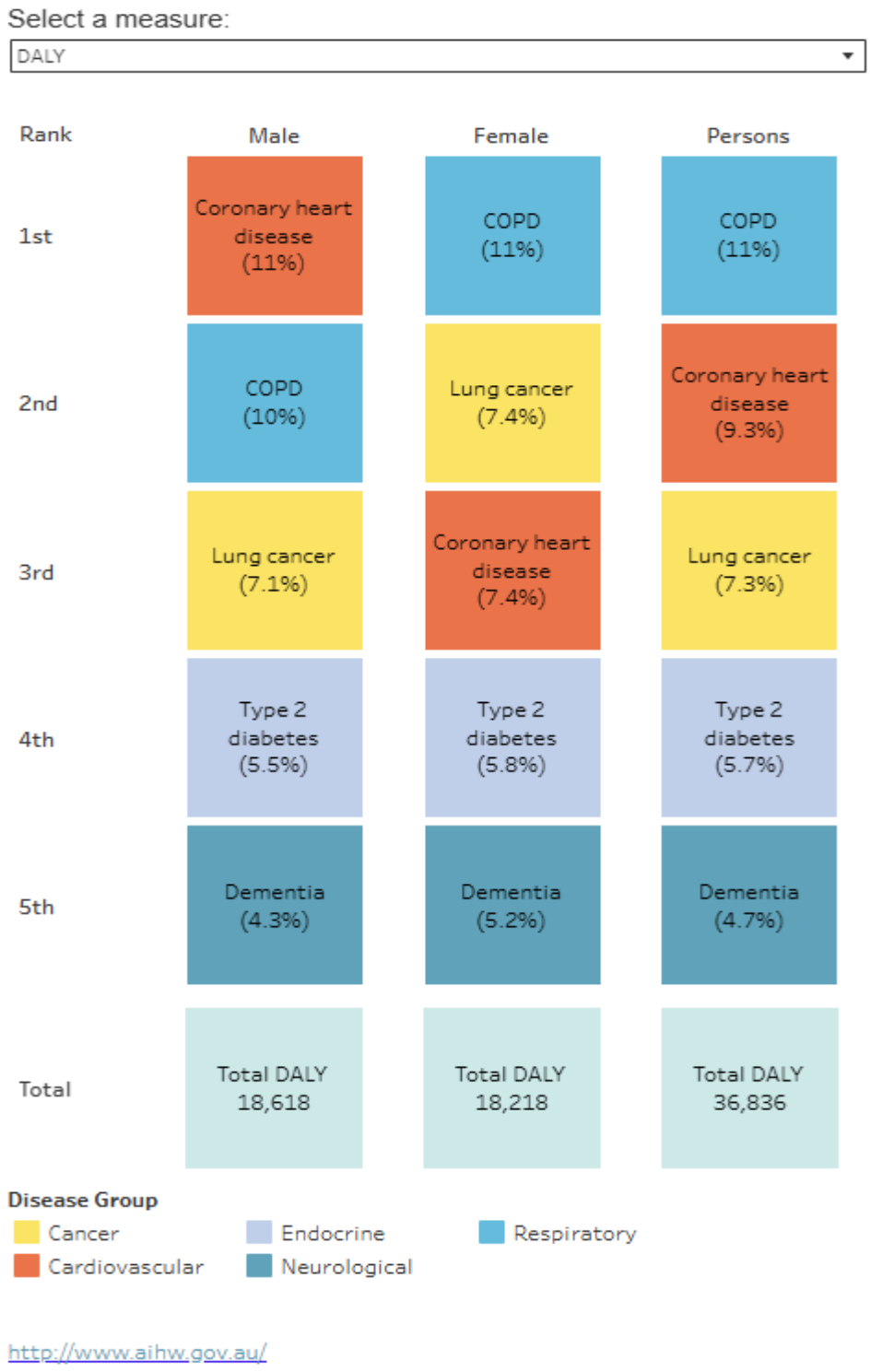
Top specific causes of burden

The 5 leading specific causes of burden accounted for more than one-third (38%) of the total burden among First Nations adults aged 65–74:

- COPD (11%, or 4,023 DALY)
- coronary heart disease (9.3%, 3,434)
- lung cancer (7.3%, 2,684)
- type 2 diabetes (5.7%, 2,089)
- dementia (4.7%, 1,744).

The leading specific causes of burden for this age group varied by sex and type of burden. See Figure 4 for more information.

Figure 4: Top 5 specific causes of total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations adults aged 65–74, 2022



COPD chronic obstructive pulmonary disease.

Source: AIHW First Nations Burden of Disease Database

To further explore the top specific causes across all stages of life, see the following interactive data visualisation:

- Dashboard 8: Top specific causes across the stages of life: This visualisation provides the top 5 causes contributing to burden for each age group, by sex.

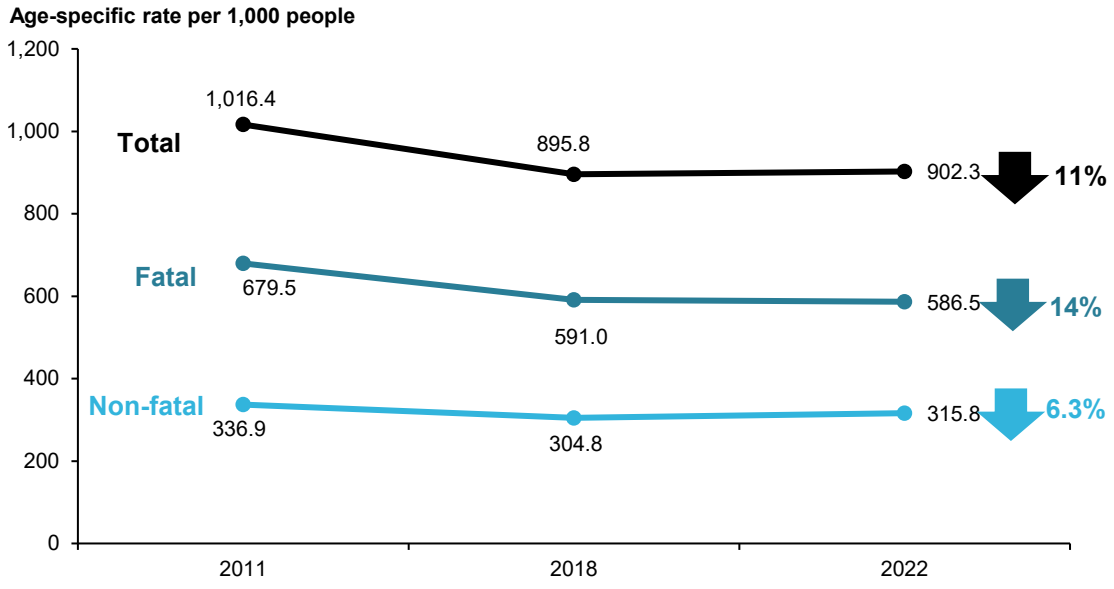
Changes over time

Overall, the health of First Nations adults aged 65–74 improved over the period 2011 to 2022 (Figure 5).

There was an 11% decline in the age-specific rate of total burden between 2011 and 2022 (from 1,016 to 902 DALY per 1,000 people). Most of this decline was observed between 2011 and 2018, while the DALY rate remained relatively stable between 2018 and 2022.

The decrease in total burden was driven by a reduction (of 14%) in the rate of fatal burden between 2011 and 2022, with much of this decrease observed between 2011 and 2018. There was also a decrease (of 6.3%) in non-fatal burden between 2011 and 2022.

Figure 5: Change between 2011 and 2022 in the age-specific total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people), First Nations adults aged 65–74



Source: AIHW First Nations Burden of Disease Database

Changes by disease group

Over the period 2011 to 2022, among First Nations adults aged 65–74, there were decreases in the age-specific total burden rate from:

- cardiovascular diseases – a decrease of 70 DALY per 1,000 people, or 32%
- cancer & other neoplasms – a decrease of 27 DALY per 1,000, or 11%

- musculoskeletal conditions – a decrease of 27 DALY per 1,000, or 26%
- endocrine disorders – a decrease of 27 DALY per 1,000, or 33%.

The largest increase in burden was for infectious diseases, where the rate tripled between 2011 and 2022 (an increase of 28 DALY per 1,000), with most of this increase due to the emergence of COVID-19.

Changes by specific causes

In both 2011 and 2022, the same 6 diseases were the leading causes of burden among First Nations adults aged 65–74, although there were changes in the rankings and age-specific burden rates for each cause (Figure 6).

There were decreases in the age-specific burden rate and ranking for:

- coronary heart disease (37% decrease)
- chronic kidney disease (8.3% decrease).

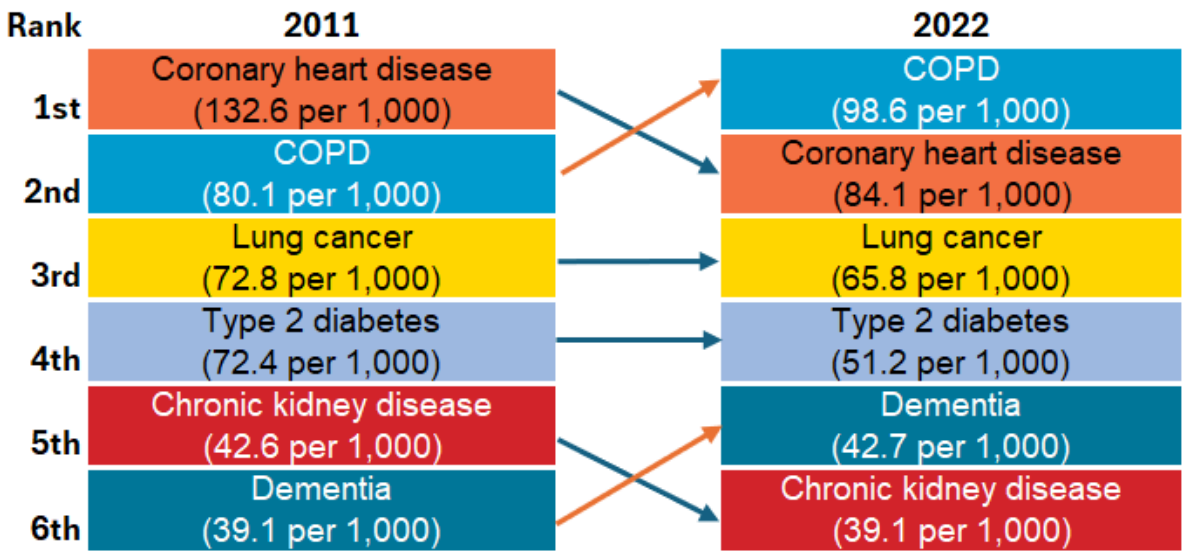
There were decreases in the age-specific burden rate, but the ranking stayed for the same for:

- lung cancer (9.7% decrease)
- type 2 diabetes (29% decrease).

There were increases in the burden rate and ranking for:

- COPD (23% increase)
- dementia (9.2% increase).

Figure 6: Changes in ranking and age-specific DALY rate (DALY per 1,000 people), leading specific causes of burden, First Nations adults aged 65–74, 2011 and 2022



COPD chronic obstructive pulmonary disease.

Notes

1. 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.

2. Causes are presented in descending order, from highest age-specific rate to lowest age-specific rate, with arrows indicating either an increase (orange) or decrease (blue) in the age-specific rate over time.

3. Cause rankings exclude 'other' residual conditions from each disease group; for example, 'other musculoskeletal conditions'.

4. There were changes in practices of coding deaths due to dementia; therefore, caution is recommended when interpreting changes over time for dementia burden.

5. For information on colours used for each specific cause, see disease group colours for FNBDS 2022 colour legend.

Source: AIHW First Nations Burden of Disease Database

How big is the gap, and what causes it?

First Nations adults aged 65–74 experienced disease burden at 2.1 times the rate for non-Indigenous adults of this age in 2022 (902 compared with 432 per 1,000 people).

For adults aged 65–74, cancer & other neoplasms, cardiovascular diseases and respiratory diseases were the main contributors to the gap (representing 21%, 19% and 17% of the gap among adults aged 65–74, respectively) (see Figure 5 in Gap in disease burden section).

Older adults aged 75 and over

Key findings

- Adults aged 75 and over accounted for only 1.6% (or 16,391 people) of the First Nations population but 7.8% (24,619 DALY) of the total burden experienced by First Nations people in 2022.
- In 2022, First Nations adults aged 75 and over lost 24,619 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 1,502 DALY per 1,000 people of this age.
- Among First Nations adults aged 75 and over there was more fatal than non-fatal burden (66% or 16,329 YLL and 34% or 8,290 YLD, respectively).
- Cardiovascular diseases and cancer & other neoplasms were the main causes of burden among First Nations adults aged 75 and over.
- Overall, the health of First Nations adults aged 75 and over improved over the period 2011 to 2022. There was a 3.2% decline in the age-specific rate of total burden between 2011 and 2022 (from 1,552 to 1,502 DALY per 1,000 people).
- For adults aged 75 and over, respiratory diseases was the greatest disease group contributor to the gap between First Nations people and non-Indigenous Australians (representing 22% of the gap among adults aged 75 and over).

In 2022, First Nations adults aged 75 and over lost 24,619 years of healthy life (total burden, DALY) due to premature death or living with disease or injury, or 1,502 DALY per 1,000 people of this age. See Different type of statistics presented in this report for more information about the calculation of age-specific rates.

Adults aged 75 and over accounted for only 1.6% (or 16,391 people) of the First Nations population but 7.8% (24,619 DALY) of the total burden experienced by First Nations people in 2022.

Table 1: Total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people) among First Nations adults aged 75 and over, by sex, 2022

Sex	DALY	YLD	YLL
Males	1,523.5	479.8	1,043.7
Females	1,485.6	525.5	960.1
Persons	1,502.0	505.7	996.2

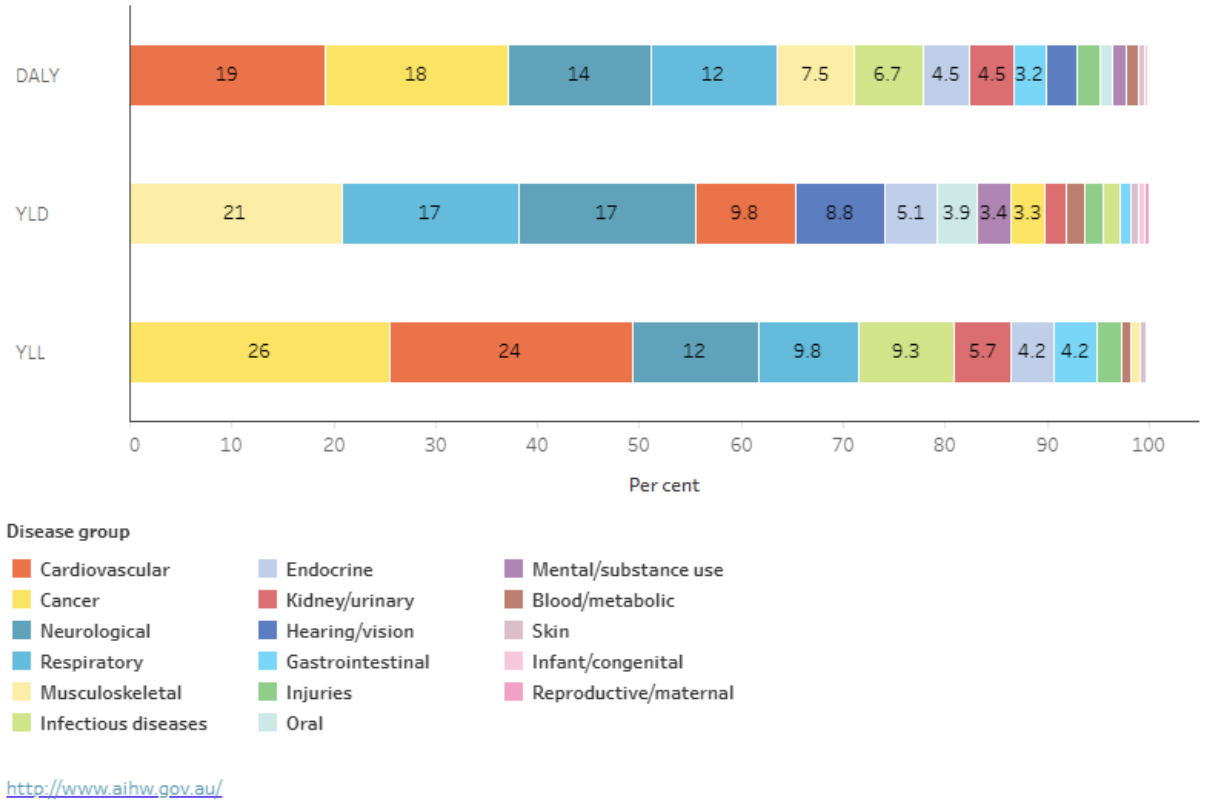
Source: AIHW First Nations Burden of Disease Database

Disease group burden

The leading disease groups that contributed to the total burden in First Nations adults aged 75 and over were:

- cardiovascular diseases (19%, or 4,702 DALY)
- cancer & other neoplasms (18%, 4,440)
- neurological conditions (14%, 3,450)
- respiratory diseases (12%, 3,054) (Figure 1).

Figure 1: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, First Nations adults aged 75 and over, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

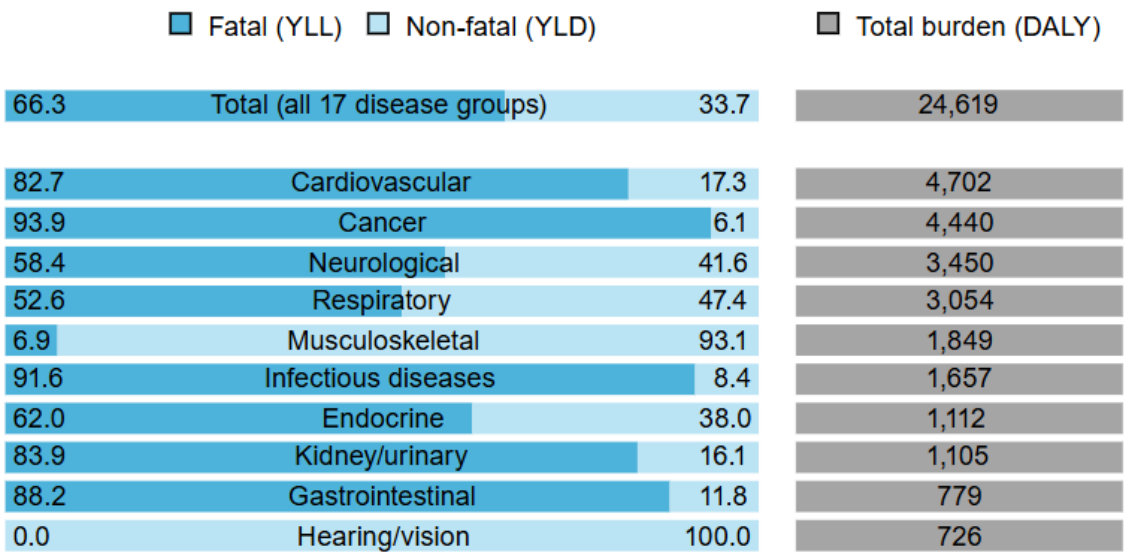
Two-thirds of the burden (66% or 16,329 YLL) among First Nations adults aged 75 and over was due to premature death (fatal burden) (figures 2 and 5). Cancer & other neoplasms (26%), cardiovascular diseases (24%) and neurological conditions (12%) were the main contributors to fatal burden in this age group.

The remaining burden (34% or 8,290 YLD) was due to living with disease or injury (non-fatal burden) (figures 2 and 5), with musculoskeletal conditions (21%), respiratory diseases (17%), and neurological conditions (17%) the main contributors to non-fatal burden in this age group (Figure 1).

Among First Nations adults aged 75 and over the contribution of fatal burden and non-fatal burden to total burden differed greatly for each disease group (Figure 2). Among the highest burden disease groups:

- The burden from cardiovascular diseases, cancer & other neoplasms, and neurological conditions was mostly fatal.
- The burden from musculoskeletal conditions was mostly non-fatal.
- The burden from respiratory diseases was almost evenly split between fatal and non-fatal.

Figure 2: Fatal (YLL) and non-fatal (YLD) burden as a proportion (%) of total burden (DALY), leading 10 disease groups, First Nations adults aged 75 and over, 2022



Source: AIHW First Nations Burden of Disease Database

How does burden differ by sex?

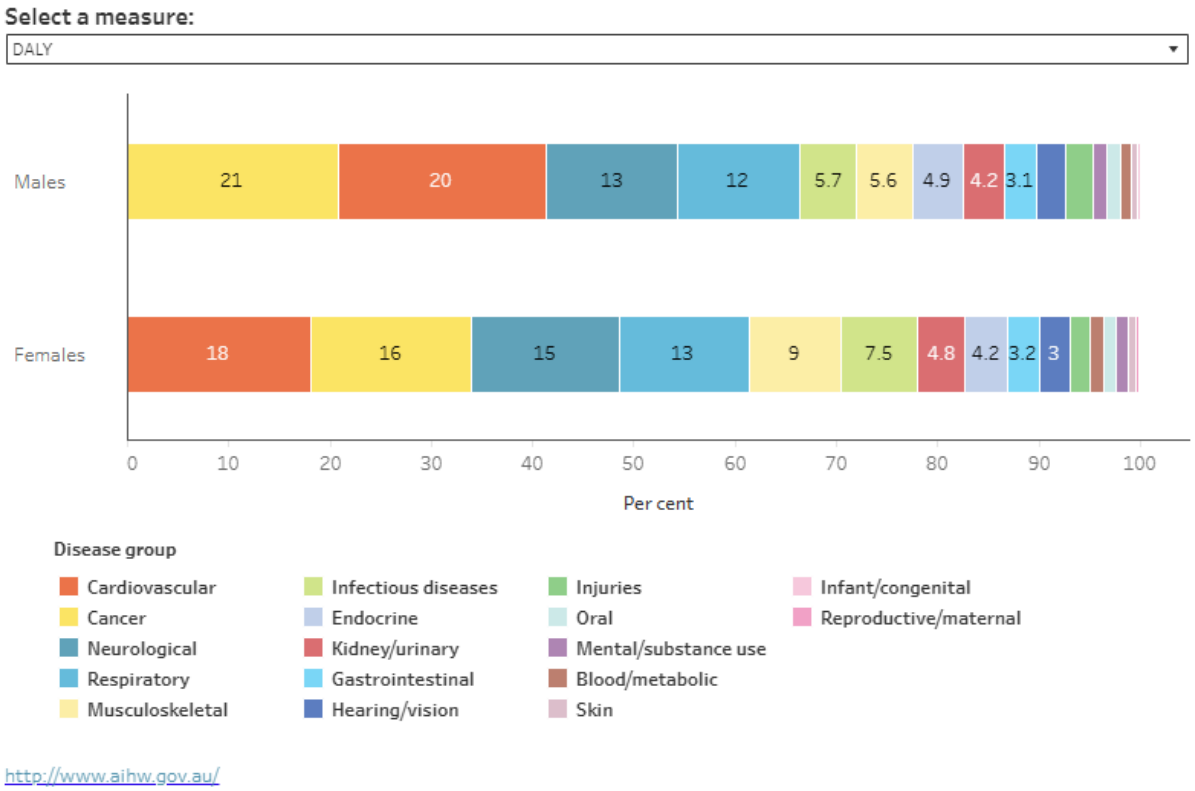
Among First Nations adults aged 75 and over, females experienced a higher proportion of the total burden (56% compared with 44%), non-fatal burden (59% compared with 41%) and fatal burden (55% compared with 45%) than males. These differences may in part be due to there being a considerably greater number of females (57%, or 9,298 people) than males (43%, or 7,093 people) of this age in the population.

Cancer & other neoplasms and cardiovascular diseases were the 2 leading contributors to total burden and fatal burden for both First Nations males and females in this age group, although their rankings and the amount they contributed varied by sex (Figure 3).

Musculoskeletal conditions was the leading disease group contributor to non-fatal burden for First Nations females in this age group, and ranked third for males.

Neurological conditions was the leading contributor for First Nations males, and ranked third for females (Figure 3).

Figure 3: Contribution of disease groups to total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations adults aged 75 and over, 2022



Note: Disease groups that contribute less than 2% of burden may be based on small numbers and should be treated with caution.

Source: AIHW First Nations Burden of Disease Database

To further explore the top disease groups and causes by age group, see the following interactive data visualisation:

- Dashboard 7: Top disease groups across the stages of life: This visualisation shows the top 5 disease groups contributing to burden for each age group and the top specific causes contributing to those disease groups broken down by fatal and non-fatal burden.

Top specific causes of burden

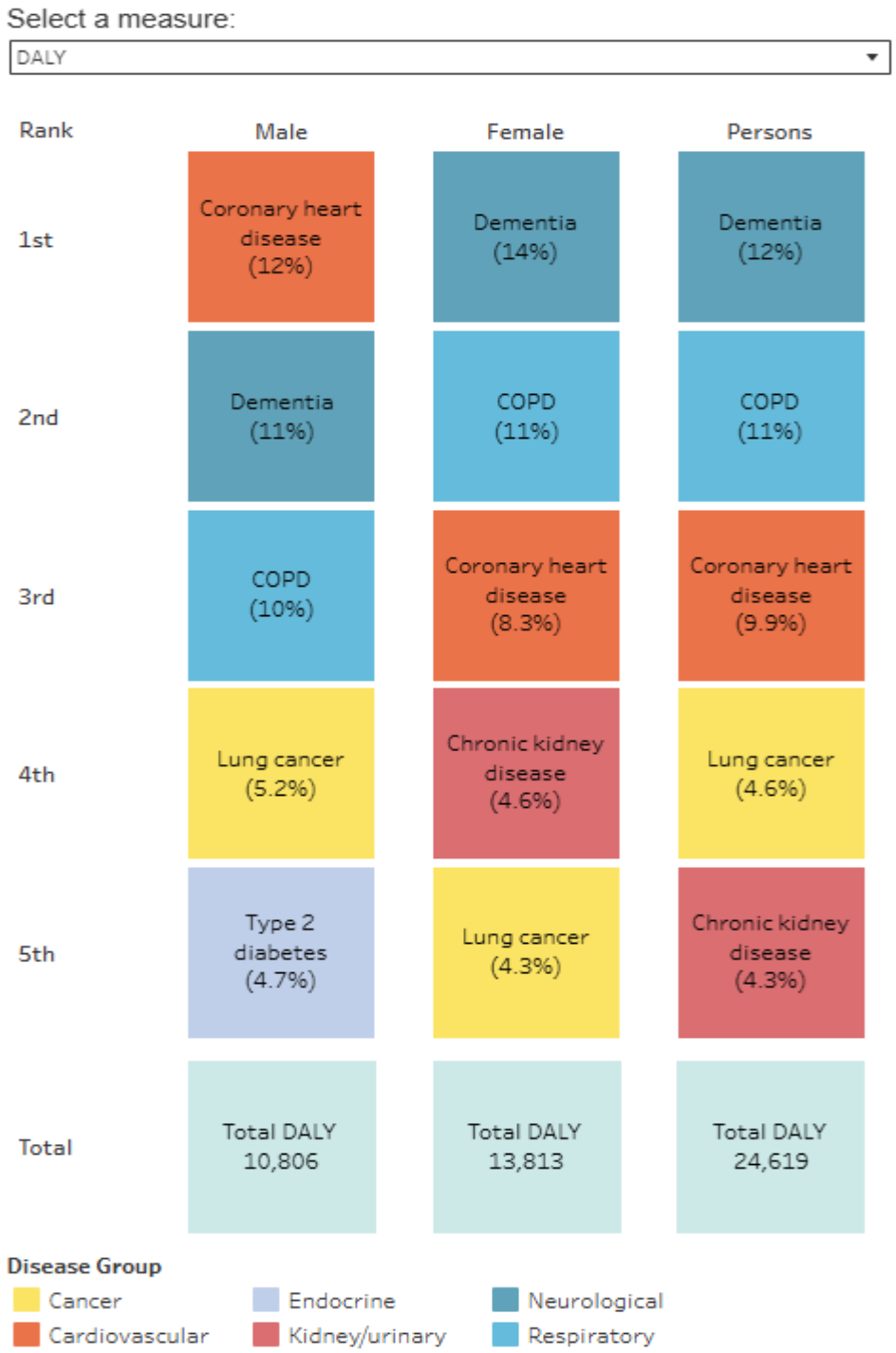
The 5 leading specific causes of burden accounted for 41% of the total burden among First Nations adults aged 75 and over:

- dementia (12%, or 3,044 DALY)
- COPD (11%, 2,643)
- coronary heart disease (9.9%, 2,433)

- lung cancer (4.6%, 1,139)
- chronic kidney disease (4.3%, 1,048)

The leading specific causes of burden for this age group varied by fatal and non-fatal burden, but the overall burden for all three measures was higher in females than males. See Figure 4 for more information.

Figure 4: Top 5 specific causes of total (DALY), non-fatal (YLD) and fatal (YLL) burden, by sex, First Nations adults aged 75 and over, 2022



COPD chronic obstructive pulmonary disease.

Source: AIHW First Nations Burden of Disease Database

To further explore the top specific causes across all stages of life, see the following interactive data visualisation:

- Dashboard 8: Top specific causes across the stages of life: This visualisation provides the top 5 causes contributing to burden for each age group, by sex.

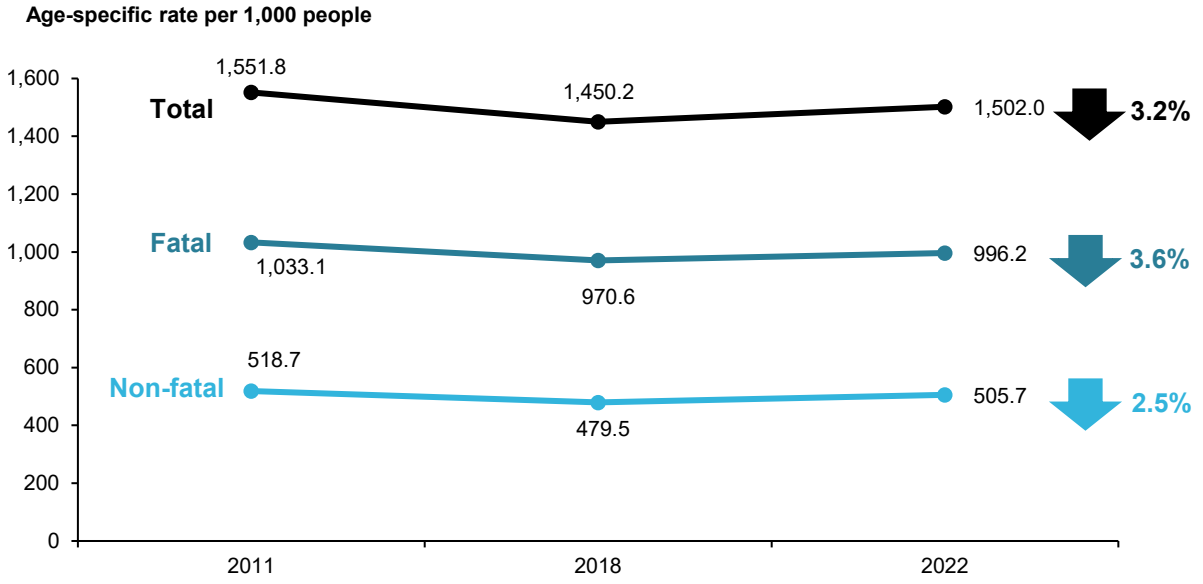
Changes over time

Overall, the health of First Nations adults aged 75 and over improved slightly over the period 2011 to 2022 (Figure 5).

There was a 3.2% decline in the age-specific rate of total burden between 2011 and 2022 (from 1,552 to 1,502 DALY per 1,000 people). Most of this decline was observed between 2011 and 2018, with an increase from 2018 to 2022.

The decrease in total burden was driven by small reductions in the rate of both fatal burden (3.6% decrease) and non-fatal burden (2.5% decrease) between 2011 and 2022.

Figure 5: Change between 2011 and 2022 in the age-specific total (DALY), non-fatal (YLD) and fatal (YLL) burden rates (per 1,000 people), First Nations adults aged 75 and over



Source: AIHW First Nations Burden of Disease Database

Changes by disease group

Over the period 2011 to 2022, among First Nations adults aged 75 and over, there was a decrease in the age-specific total burden rate for cardiovascular diseases (109 DALY per 1,000 people, or 27%).

Increases in the age-specific total burden rates were observed for:

- infectious diseases, where the rate doubled (an increase of 50 DALY per 1,000), with most of this increase due to the emergence of COVID-19
- respiratory diseases (increase of 21 DALY per 1,000, or 13%)

- neurological conditions (increase of 20 DALY per 1,000, or 10%).

Changes by specific causes

In both 2011 and 2022, the leading causes of total burden remained largely the same among First Nations adults aged 75 and over, although there were changes in the rankings and age-specific burden rates for each cause (Figure 6).

There were decreases in the age-specific burden rate and ranking for:

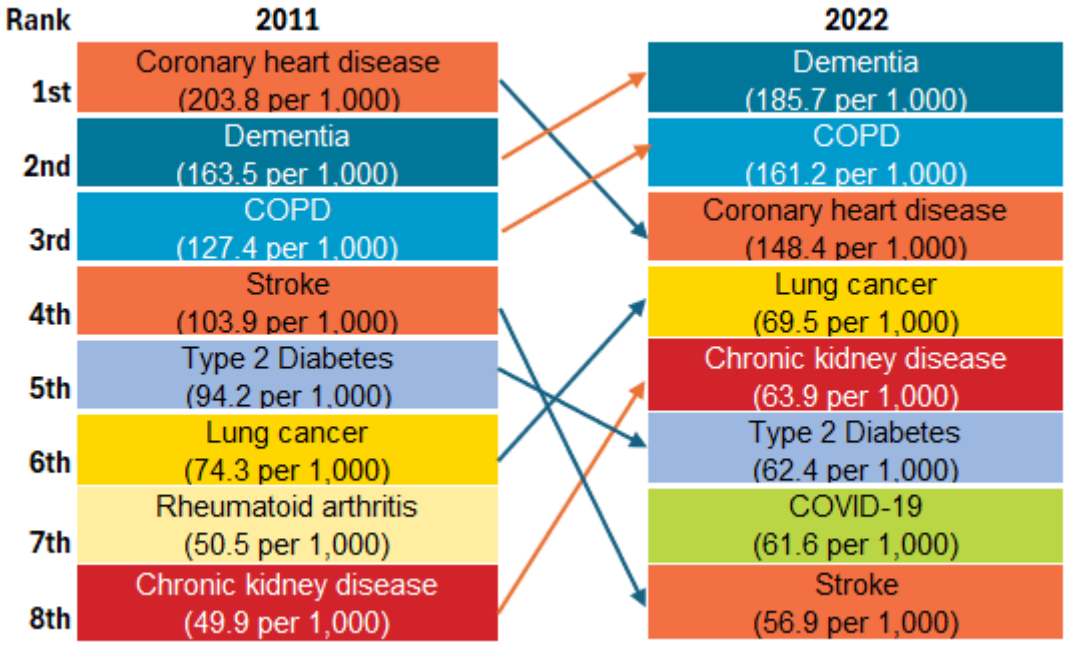
- coronary heart disease (27% decrease)
- stroke (45% decrease)
- type 2 diabetes (34% decrease)

There were increases in the burden rate and ranking for:

- dementia (14% increase)
- COPD (27% increase)
- chronic kidney disease (28% increase)

COVID-19 was the 7th leading cause of burden among First Nations adults aged 75 and over in 2022.

Figure 6: Changes in ranking and age-specific DALY rate (DALY per 1,000 people), leading specific causes of burden, First Nations adults aged 75 and over, 2011 and 2022



COPD chronic obstructive pulmonary disease.

Notes

1. Rheumatoid arthritis was ranked 9th in 2022 with an age-specific rate of 51.7 DALY per 1,000 people.

2. 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.

3. Causes are presented in descending order, from highest age-specific rate to lowest age-specific rate, with arrows indicating either an increase (orange) or decrease (blue) in the age-specific rate over time.

4. Cause rankings exclude 'other' residual conditions from each disease group; for example, 'other musculoskeletal conditions'.

5. There were changes in practices of coding deaths due to dementia; therefore, caution is recommended when interpreting changes over time for dementia burden.

6. For information on colours used for each specific cause, see disease group colours for FNBDS 2022 colour legend.

Source: AIHW First Nations Burden of Disease Database

How big is the gap, and what causes it?

First Nations adults aged 75 and over experienced disease burden at 1.5 times the rate for non-Indigenous adults of this age in 2022 (1,502 compared with 982 per 1,000 people).

For adults aged 75 and over, respiratory diseases was the greatest disease group contributor to the gap (representing 22% of the gap among adults aged 75 and over).

Cancer & other neoplasms, cardiovascular diseases and neurological conditions were also important contributors to the gap (representing 16%, 13% and 10% of the gap among adults aged 75 and over, respectively) in this age group (see Figure 5 in Gap in disease burden section).

Interactive data on disease burden

The following interactive data visualisations allow users to explore the data in more detail and filter/customise the data and figures to meet their information needs.

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 Indigenousbod@aihw.gov.au.

What is included in the First Nations Burden of Disease Study 2022 data visualisations?

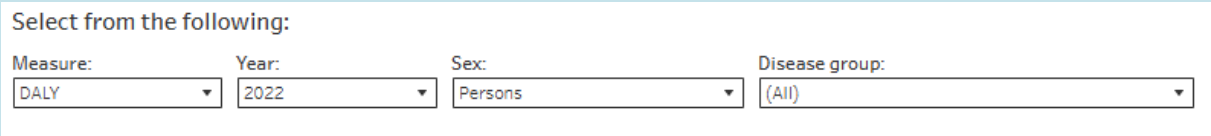
The interactive data visualisations present estimates of total burden (DALY), non-fatal burden (YLD), and fatal burden (YLL) for First Nations people in Australia for 2011, 2018 and 2022.

The following interactive data visualisations are included:

- Overview of disease burden, for all disease groups
- Contributions of fatal vs non-fatal burden to total burden for disease group
- Comparison of disease burden over time for a disease group
- Changes in the ranking of leading causes (specific disease/injury) of disease burden over time by sex
- Summary of disease burden for a specific disease or injury
- Gap in health outcomes
- Top disease groups across the stages of life
- Top specific causes across the stages of life

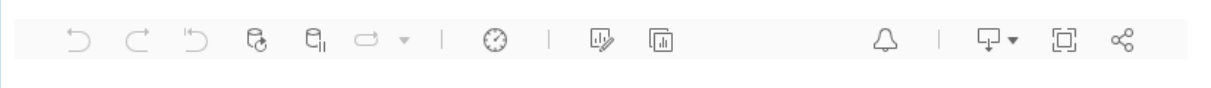
How to navigate the interactive visualisation

Use the drop-down list above each graph to view the data by options including measure of disease burden, year, sex, and disease group.



Hover over the bars, line or coloured tiles on the charts for additional information.

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

Reset = Clears all filters and resets 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)

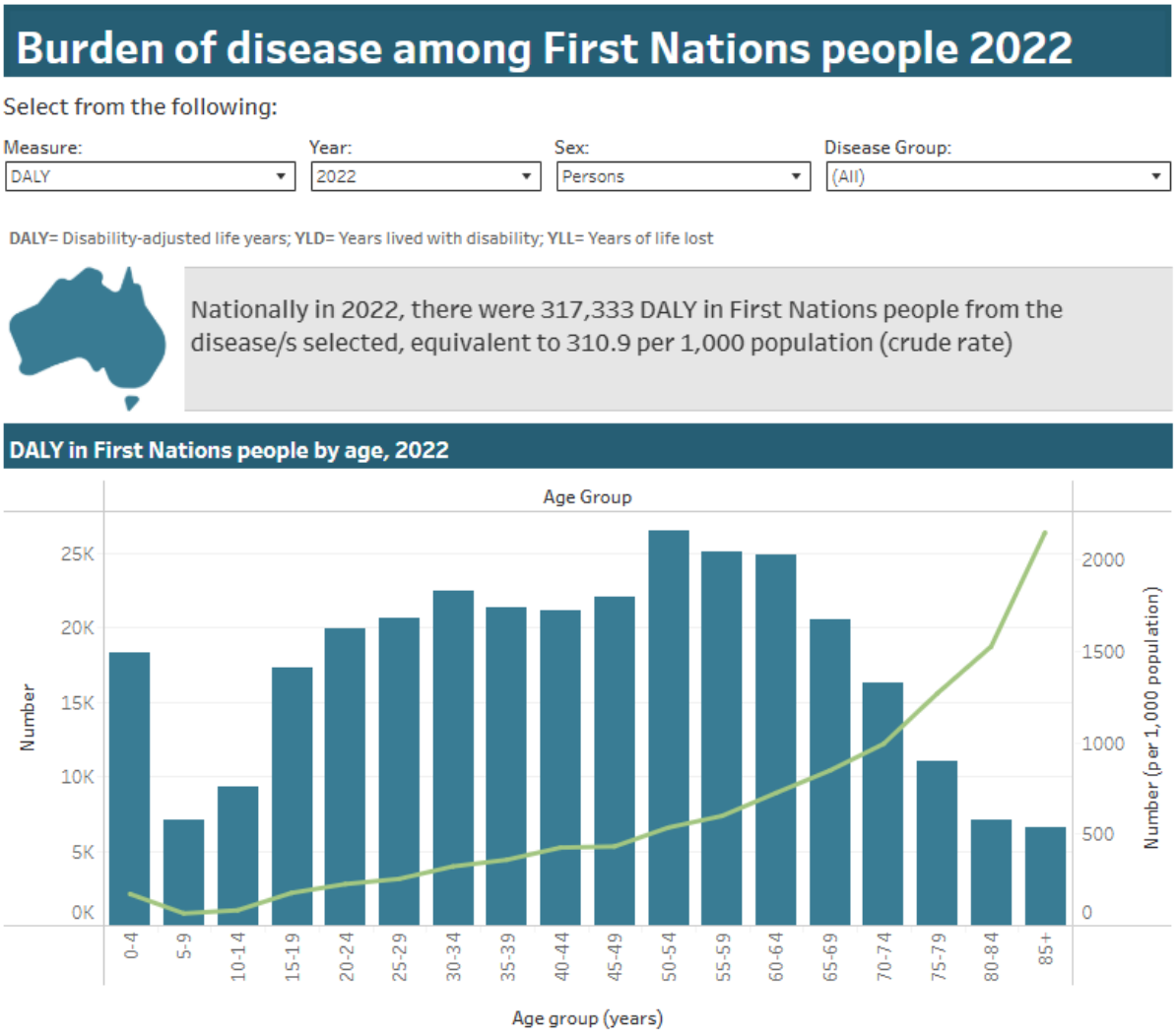
Download = Allows a downloadable file as either an image (PNG), PDF or PowerPoint file. This is a useful way to save snapshots of the data to include in a document or presentation.

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) and fatal burden (YLL) among First Nations people by disease group for the most recent year (2022). Results for 2011 and 2018 are included for comparison.

Dashboard 1: Burden of disease in Australia

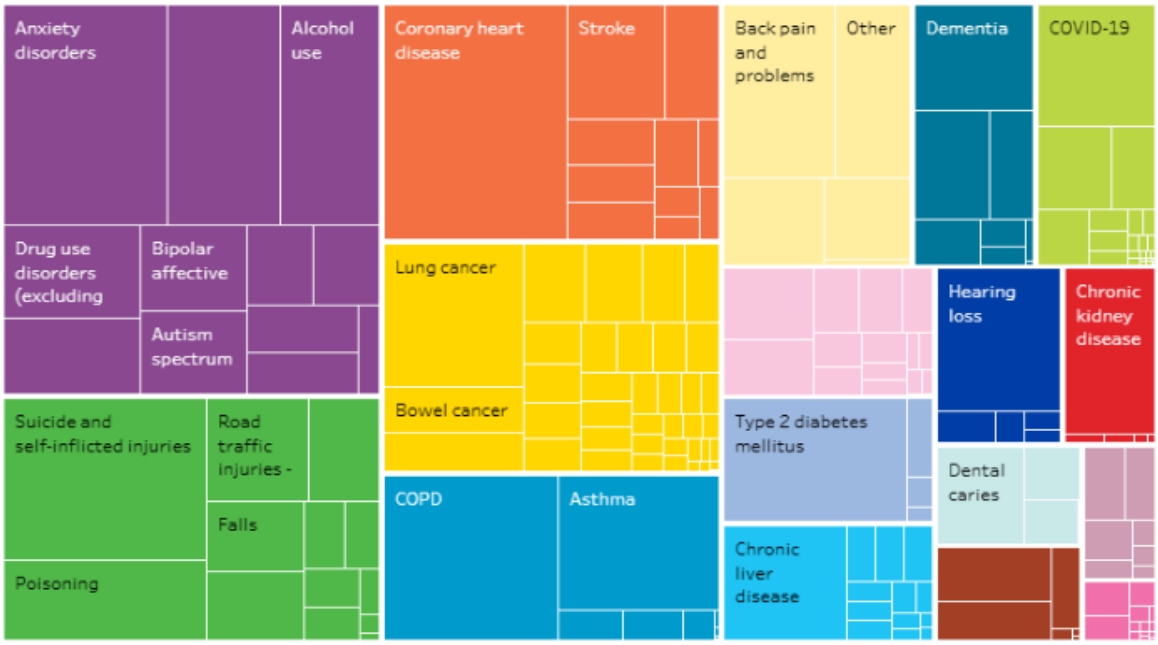


DALY in First Nations people by disease, 2022

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:
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 First Nations Burden of Disease Database. http://www.aihw.gov.au

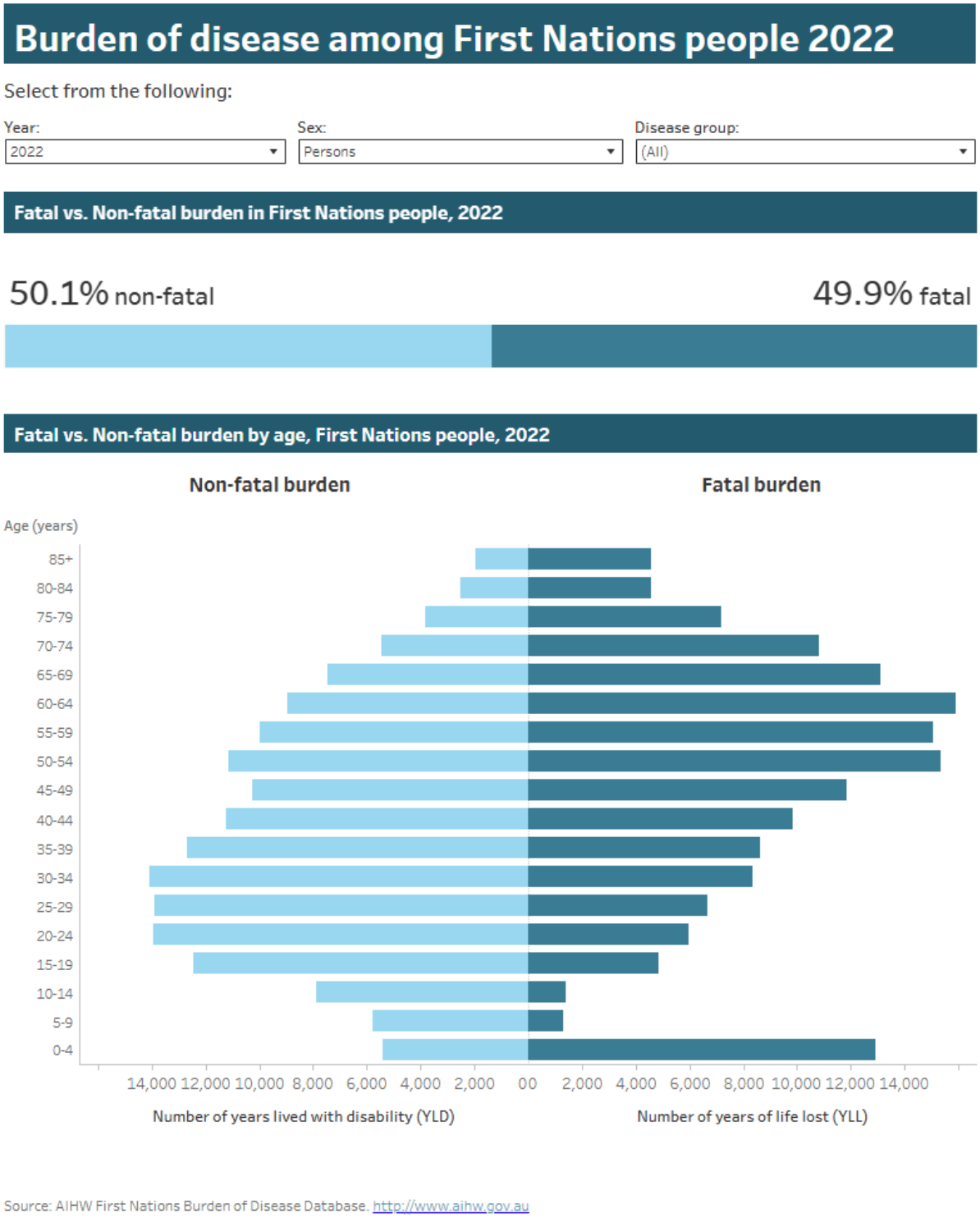
Fatal vs. non-fatal burden

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 First Nations 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 First Nations people for 2011, 2018 and 2022 by sex, age group and disease group.

Dashboard 2: Fatal vs non-fatal burden



Source: AIHW First Nations Burden of Disease Database. http://www.aihw.gov.au

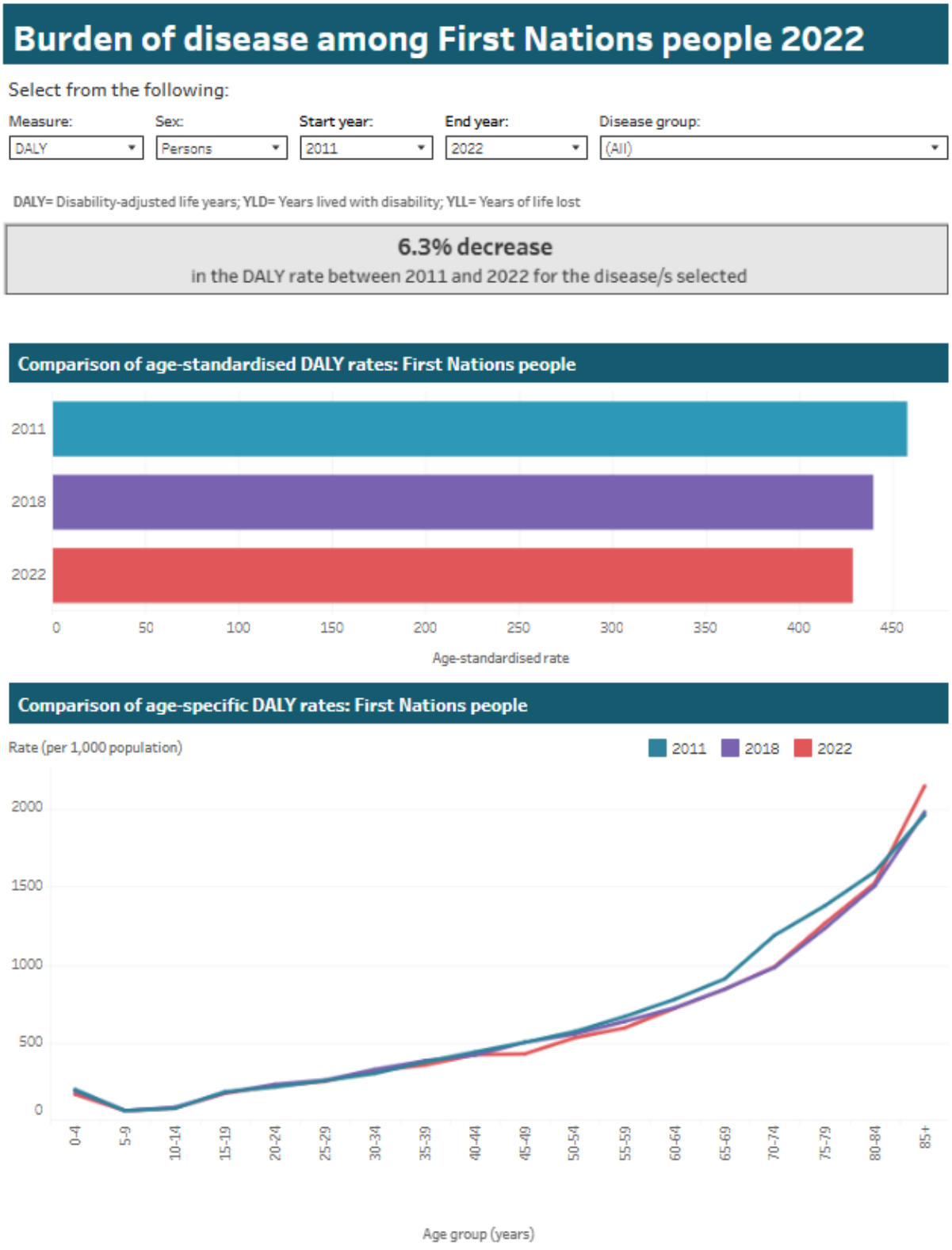
Comparisons over time

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 2011 and 2018 in the FNBDS 2022 cannot be compared with those for 2011 and 2018 from previous Australian studies as methods and data sources may have been updated in the most recent study.

Use the interactive graphs to explore differences in age-standardised and age-specific rates of burden (DALY, YLD or YLL) in Australia for 2011, 2018 and 2022. Estimates are displayed by sex and for disease groups.

Dashboard 3: Comparisons over time



Note: Rates were age-standardised to the 2001 Australian Standard Population and expressed as per 1,000 population.
Source: AIHW First Nations Burden of Disease Database. http://www.aihw.gov.au

Leading causes of disease burden

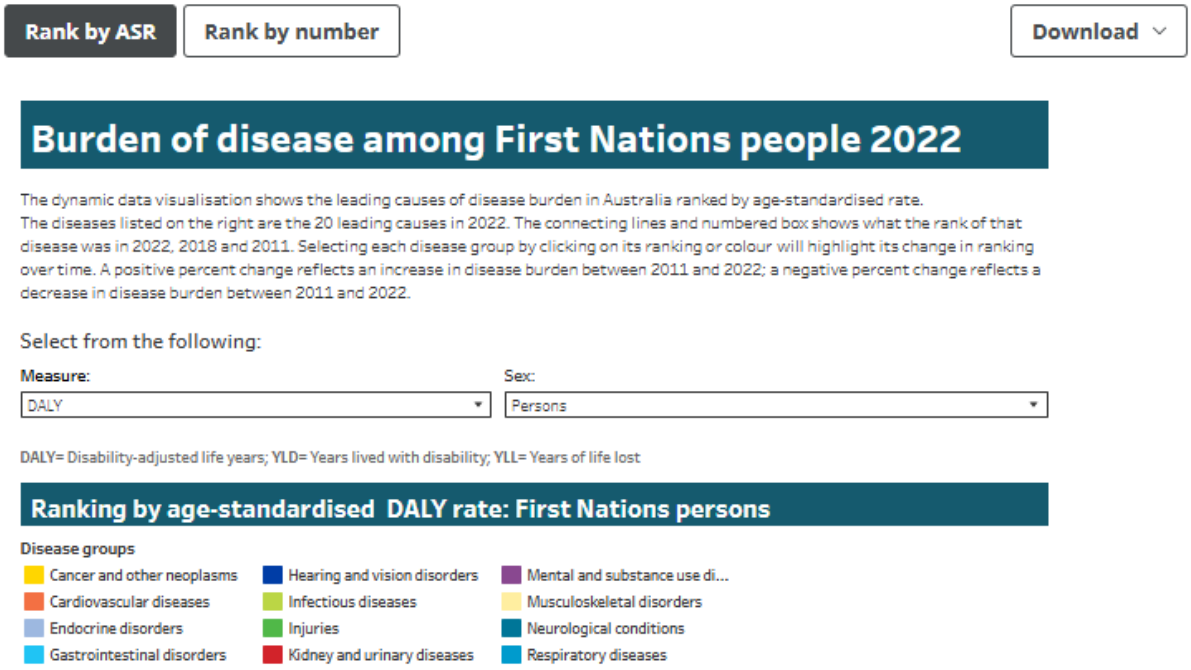
Ranking diseases by burden shows the leading causes of health loss for the First Nations population. Changes in rankings over time may be due to changes in disease prevalence, epidemics or changes to how causes of data is collected, reported or coded.

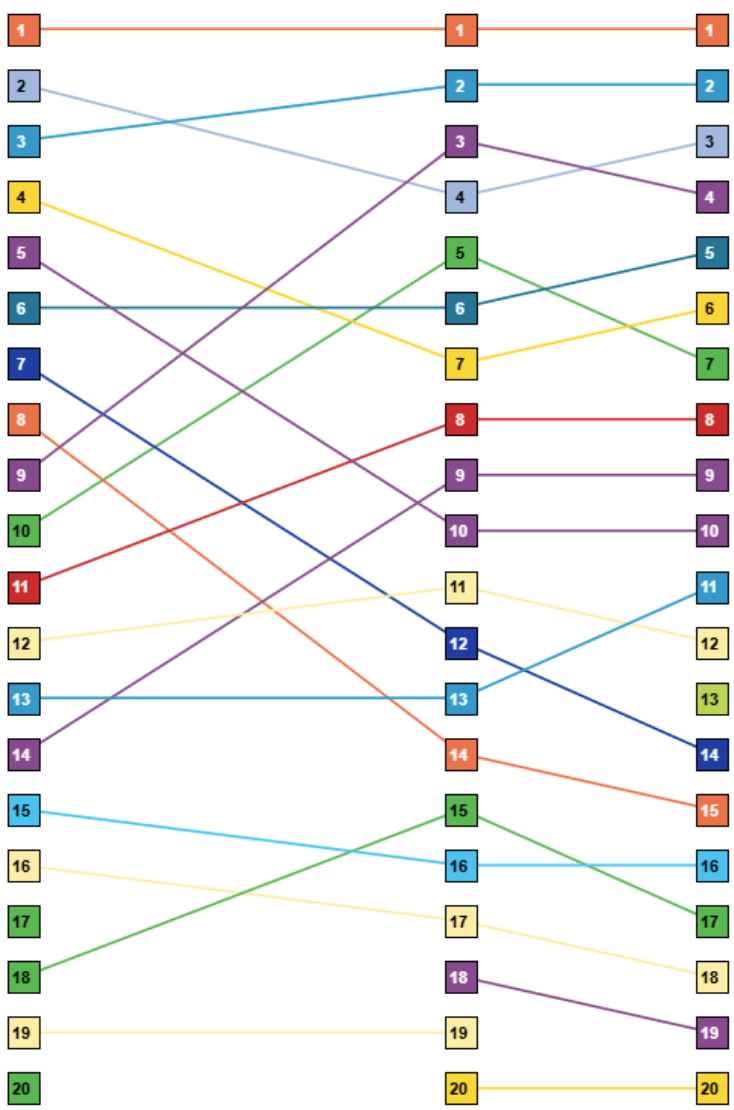
In this interactive graph, leading causes of death and disease burden (YLL, YLD or DALY) can be ranked by the number or by the age-standardised rate (ASR) in the population.

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 fata burden in this data visualisation is based on First Nations Burden of Disease Study 2022 methods and will not be comparable to other reports of leading causes of death due to modelling and cause of death alignment to diseases. Further, estimates for COVID-19 have no ranking in previous years which were prior to the pandemic (2011 and 2018).

Use the 'Rank by ASR' interactive graph to explore the leading 20 causes of disease burden (YLL, YLD or DALY) among First Nations people for 2011, 2018 and 2022, 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.

Dashboard 4: Leading causes of disease burden





Leading disease in 2022	% change since 2011
Coronary heart disease	-30.2
COPD	11.2
Type 2 diabetes mellitus	-28.3
Anxiety disorders	18.7
Dementia	13.5
Lung cancer	-8.2
Suicide and self-inflicted injuries	12.3
Chronic kidney disease	-3.4
Depressive disorders	9.1
Alcohol use disorders	-27.3
Asthma	2.1
Back pain and problems	-4.1
COVID-19	
Hearing loss	-29.1
Stroke	-33.3
Chronic liver disease	-8.6
Poisoning	38.1
Rheumatoid arthritis	-6.9
Drug use disorders (excluding alcohol)	31.0
Bowel cancer	-1.1

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 20 in 2011 which are not ranked in 2018 and 2022 will not have connecting lines and rankings.
Source: AIHW First Nations Burden of Disease Database. http://www.aihw.gov.au

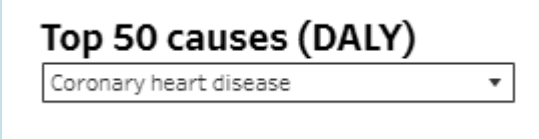
Disease/injury-specific summary

How to use the interactive visualisation

Use the interactive graphs to generate a summary of total burden (DALY) in Australia in 2022 for the top 50 specific diseases or injury by number of DALY among First Nations people.

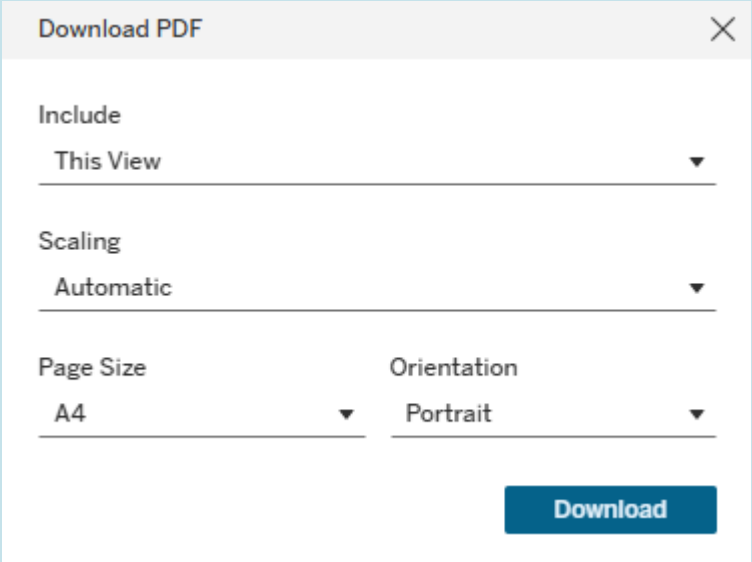
How to use the interactive visualisation

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



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

Select A4 in the Page Size drop-down.



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

Dashboard 5: Disease/injury specific

Burden of disease among First Nations people 2022

Top 50 causes (DALY)

Coronary heart disease

Coronary heart disease (rank 1)

For First Nations persons in Australia in there were:
19,023 DALY, equivalent to 18.6 per 1,000 population

Download PDF

Fatal burden
16,638 YLL,
equivalent to 16.3 per 1,000 population

Non-fatal burden
2,386 YLD,
equivalent to 2.3 per 1,000 population

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

Fatal vs. Non-fatal burden in First Nations persons, 2022

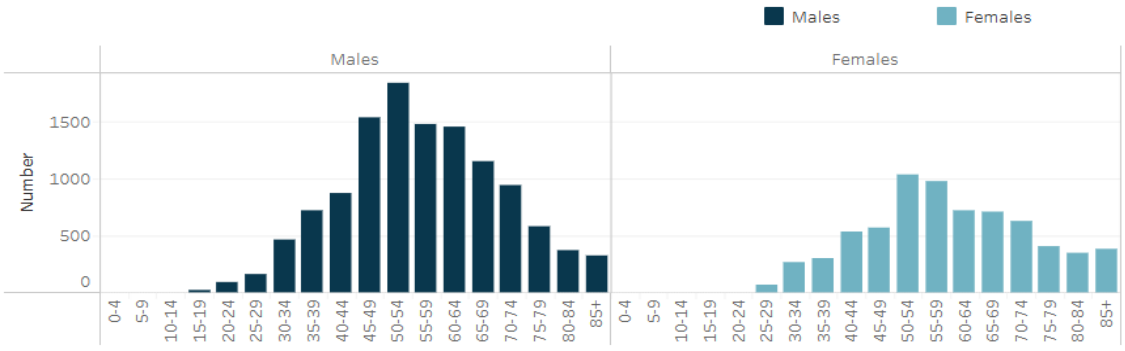
87.5% Fatal

12.5% Non-fatal

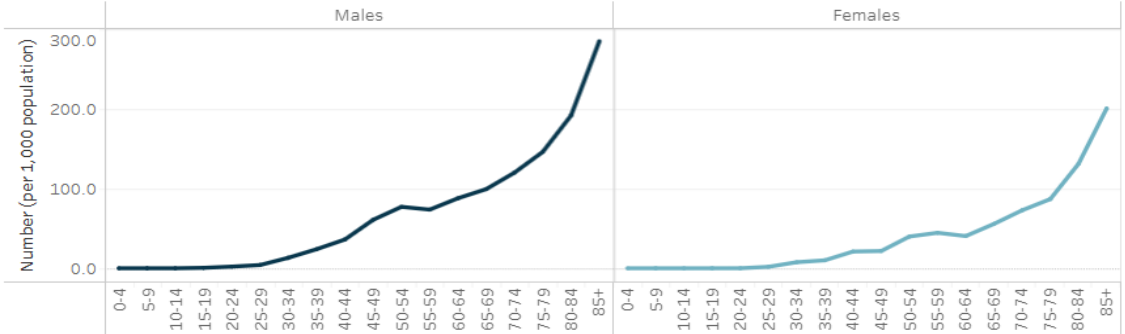
Age-standardised rates (ASRs) over time

	Males			Females		
	2011	2018	2022	2011	2018	2022
DALY ASRs (per 1,000 pop)	62.5	46.5	41.6	30.6	24.5	23.0
YLL ASRs (per 1,000 pop)	56.8	41.9	36.9	26.3	21.1	19.3
YLD ASRs (per 1,000 pop)	5.7	4.6	4.7	4.3	3.5	3.7

Number of DALY, Coronary heart disease, by sex and age, 2022



DALY Coronary heart disease rates by sex and age, 2022



Notes:
1. Rates presented are crude rates unless otherwise stated and are expressed as per 1,000 population.
2. Age-standardised rates were age-standardised to the 2001 Australian Standard Population.
3. Diseases displaying a rate of 0.0 per 1,000 population refer to a rate <0.05 per 1,000 population.
4. Other residual conditions have been excluded from the top 50 causes by DALY.
5. 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 First Nations Burden of Disease Database. http://www.aihw.gov.au

Gap in health outcomes

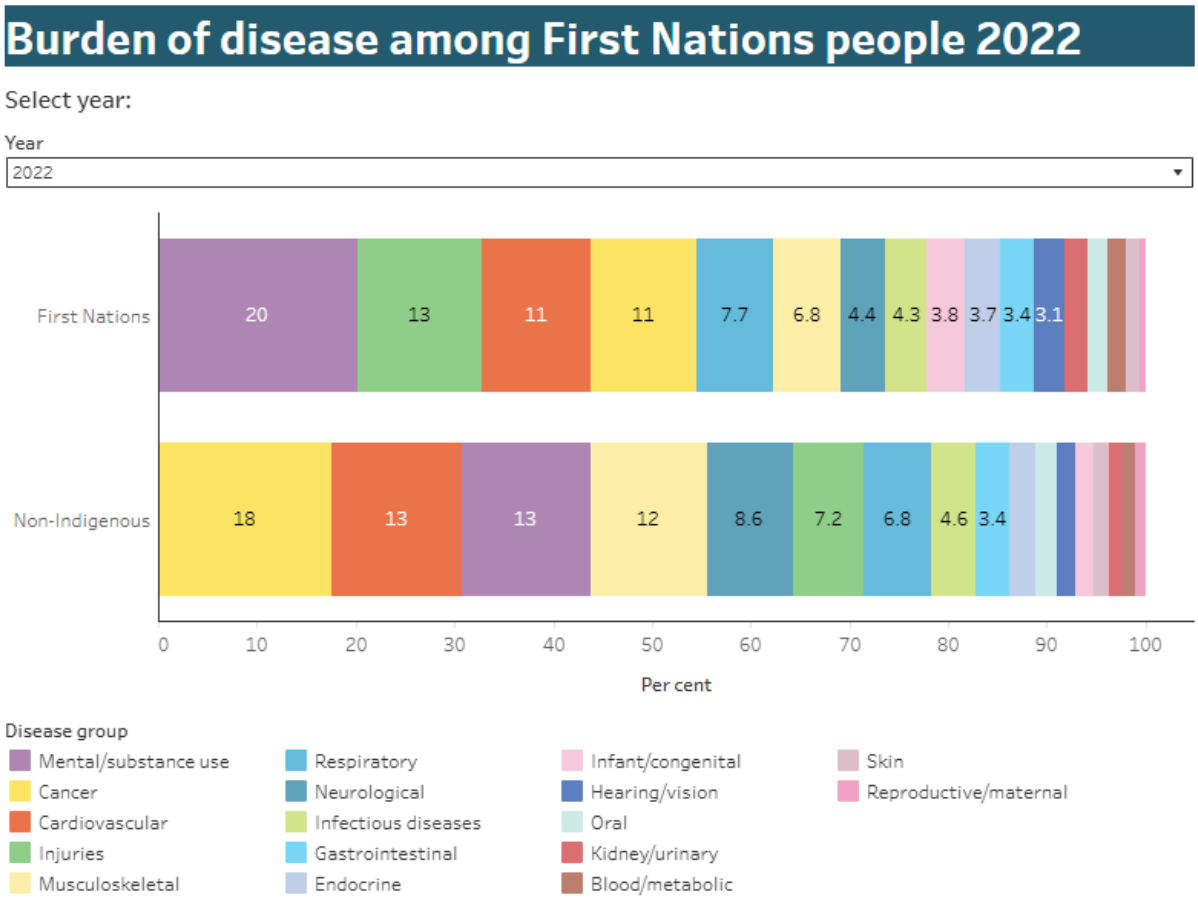
Measuring the 'gap' in disease burden between First Nations people and non-Indigenous Australians is of key interest to current policy makers, as reflected in the National Agreement on Closing the Gap's socioeconomic outcome target to close the gap in life expectancy within a generation (Joint Council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

First Nations 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 First Nations people and non-Indigenous Australians, and by year. Use the interactive graph below to explore data on how much each disease group contributed to total burden in 2022, 2018 and 2011 for First Nations people and non-Indigenous Australians.

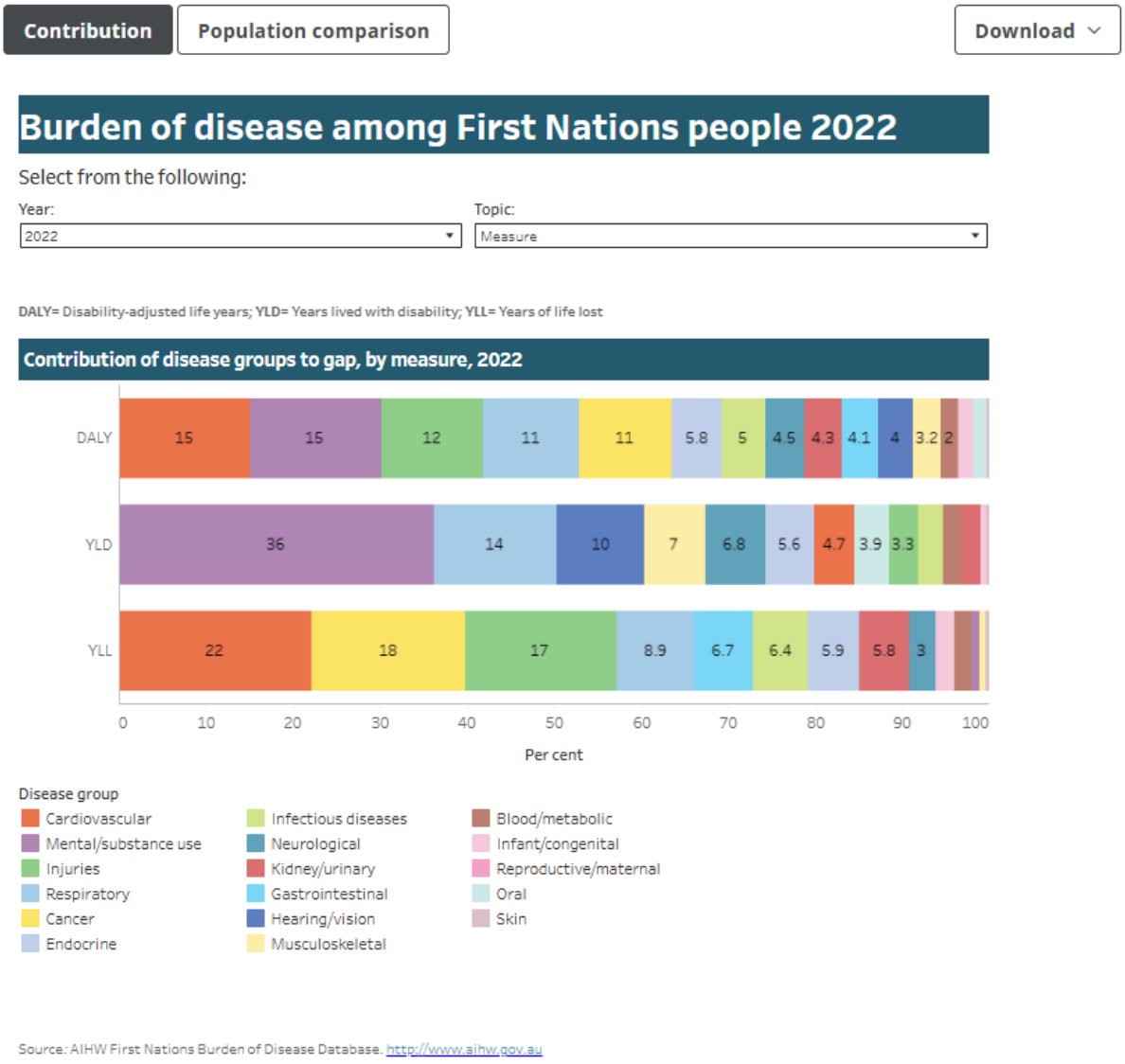
Dashboard 6a: Gap in health outcomes



Source: AIHW First Nations Burden of Disease Database http://www.aihw.gov.au

Use the interactive graph below explore data on the gap in health outcomes between First Nations people and non-Indigenous Australians for 2022, 2018 and 2011. 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).

Dashboard 6b: Gap in health outcomes



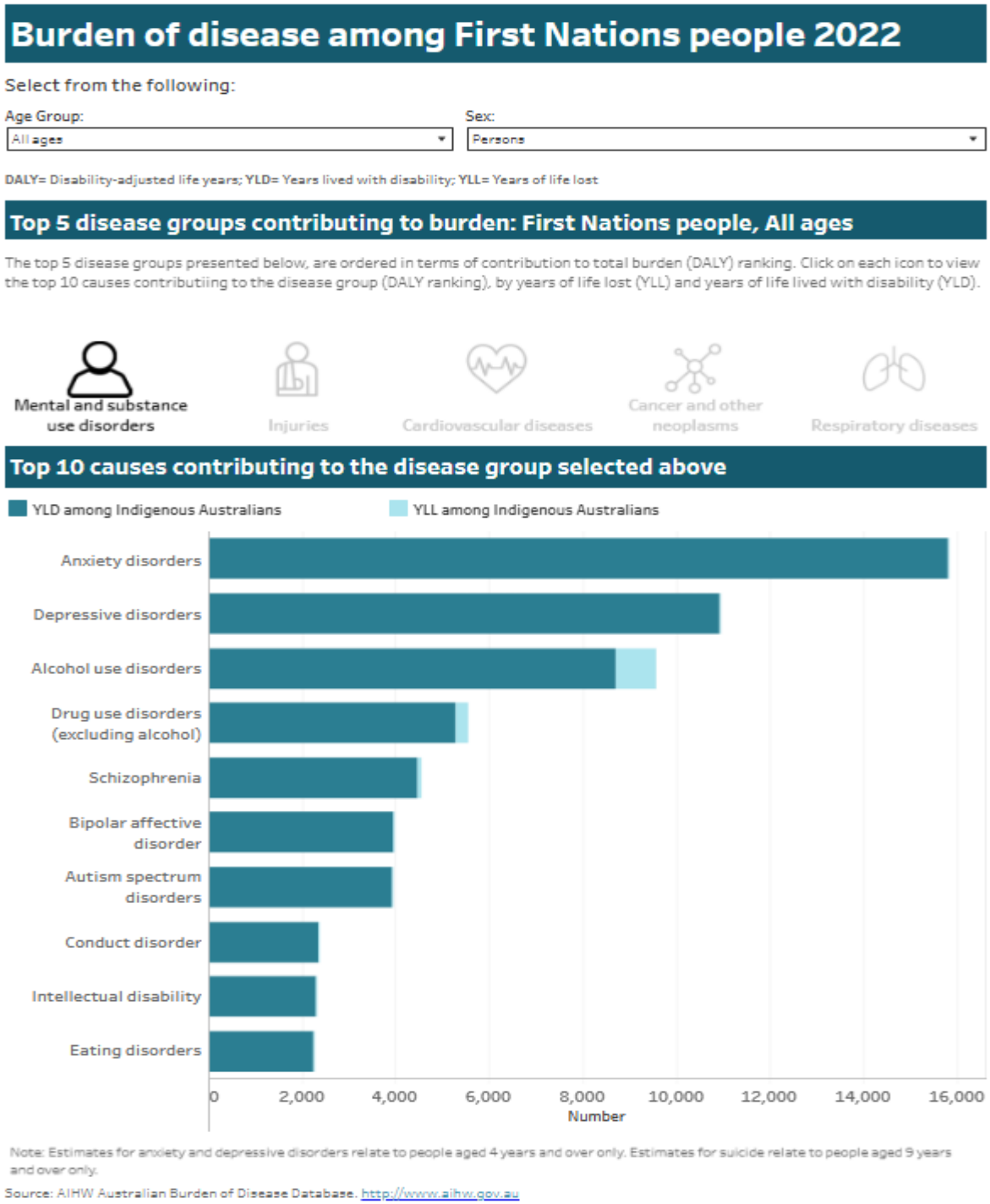
References

Joint Council on Closing the Gap 2020. National Agreement on Closing the Gap.

Top disease groups across the stages of life

Use the interactive graph below to explore the leading causes of disease burden among First Nations people by age group and disease group for 2022.

Dashboard 7: Top disease groups across the stages of life



Top specific causes across the stages of life

Use the interactive graph below to explore the leading causes of disease burden among First Nations people by type of burden, age group and sex for 2022.

Dashboard 8: Top specific causes across the stages of life

Source: AIHW First Nations Burden of Disease Database http://www.aihw.gov.au/

Technical notes

Overarching methods

General methods for estimation of burden of disease can be found in Australian Burden of Disease Study: methods and supplementary material 2018 (AIHW 2021b).

Data sources

Mortality data to calculate 'years of life lost' (fatal burden, YLL) estimates were 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 redistribution of the data based on cause of death was undertaken to fit the burden of disease cause categories. For First Nations YLL estimates, adjustments were made to account for under-identification of First Nations people in mortality records (for more information see Adjusting for Indigenous under-identification).

For 'years lived with disability' (non-fatal burden, 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 First Nations population; and be timely, accurate, reliable and credible.

Why use estimates from the First Nations Burden of Disease Study (FNBDS) 2022 instead of Aboriginal and Torres Strait Islander component of ABDS 2018?

Estimates from the FNBDS 2022 supersede those produced for the Aboriginal and Torres Strait Islander component of ABDS 2018. This First Nations Burden of Disease Study 2022 provides burden of disease estimates best matched to the Australian public health context for the Aboriginal and Torres Strait Islander population for 2022. It also provides estimates for 2011 and 2018, revised using the same methods as for 2022, to enable direct comparisons. The latest year, 2022, 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 of analysis.

Improvements made in the First Nations Burden of Disease Study 2022 include:

- COVID-19 added to the 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 ABDS disease list or new evidence
- recalculation of estimates for 2011 and 2018, to enable comparison with 2022 estimates
- updated reference life table used in calculation of YLL estimates.

Therefore, published estimates from previous Australian studies are not directly comparable with those for the First Nations Burden of Disease Study 2022 due to methodology changes.

Earlier reference years

For YLL, estimates for earlier reference years (2011, 2018) have been revised to incorporate changes in mortality coding under the ABS revisions process. Once a year, the ABS revises mortality information for coroner-certified deaths to improve the accuracy of the coding of these deaths. These revisions do not increase the overall number of deaths in any year but may change the distribution of the causes of death. Further information on the ABS mortality revisions process is available on the ABS website.

For YLD, estimates for earlier reference years were largely revised due to changes in population data.

Updates to estimates for specific mental health conditions

National estimates for 2011 and 2018 were revised for conditions sourced from the National Survey of Mental Health and Wellbeing (NSMHW) (specifically depressive disorders, anxiety disorders, bipolar affective disorder and alcohol use disorder). This was to account for changes in prevalence between the 2007 and 2020–22 surveys at the national level.

For these conditions, the change in national estimates has led to a change in First Nations estimates for 2011 and 2018. Specifically, due to a lack of data on diagnosed prevalence of mental and substance use disorders in the Aboriginal and Torres Strait Islander population, indirect methods are employed to derive prevalence. For these conditions, rate ratios were calculated from linked Queensland Health Admitted Patient Data Collection (QHAPDC) and Consumer Integrated Mental Health Application (CIMHA) data. These rate ratios were then applied to nationally calculated rates to derive First Nations prevalence.

YLD estimates for autism spectrum disorders for 2018 were also updated following a revision to WA Intellectual Disability Exploring Answers (IDEA) data, which has been linked to the National Disability Insurance Scheme (NDIS), resulting in higher ascertainment of individuals with autism spectrum disorders. YLD estimates for 2018 were revised to allow comparisons with 2022 estimates, however, it should be noted that estimates for 2018 and 2022 are not strictly comparable to estimates for 2011 due to this addition of a new ascertainment source in the IDEA.

COVID-19

For the first time, COVID-19 has been included in the First Nations Burden of Disease Study as part of the infectious diseases group. The method used for the estimation of the burden of COVID-19 for First Nations people in 2022 is outlined below.

Estimation of COVID-19 for 2022 fatal burden (YLL)

Methods for calculating fatal burden (expressed as YLL) of COVID-19 used the number of deaths directly due to COVID-19, the ages at which these deaths occurred, and the Global Burden of Disease Study (GBD) standard reference life table.

Definition and coding of COVID-19 deaths

In the International Classification of Diseases 10th revision (ICD-10), COVID-19 deaths are coded in 2 ways:

ICD-10 code U07.1 – 'COVID-19 virus identified' is used when COVID-19 is confirmed by laboratory testing.

ICD-10 code U07.2 – 'COVID-19 virus not identified' is used for suspected or clinical diagnoses of COVID-19 where testing is not completed or inconclusive.

In FNBDS 2022, deaths coded to U07.1 and U07.2 as the underlying cause of death (death directly due to COVID-19) were used to estimate fatal burden. Mortality data were adjusted for First Nations under-identification.

Data sources

COVID-19 deaths for 2022 were sourced from the Nationally Mortality Database.

Non-fatal burden (YLD)

Conceptual model

The conceptual model for COVID-19 is shown in Figure 1, which was the consensus model being used by the European Burden of Disease Network (EBDN) and the Australian Burden of Disease Study (ABDS) to calculate non-fatal burden due to COVID-19 at the time of analysis.

Important components of the YLD model which acquire health loss (Figure 1) include:

Mild/moderate cases: correspond to those not requiring hospitalisation to treat their disease. It is noted that some cases in Australia were hospitalised to maintain strict isolation rather than because of the severity of their disease (particularly at the start of the pandemic).

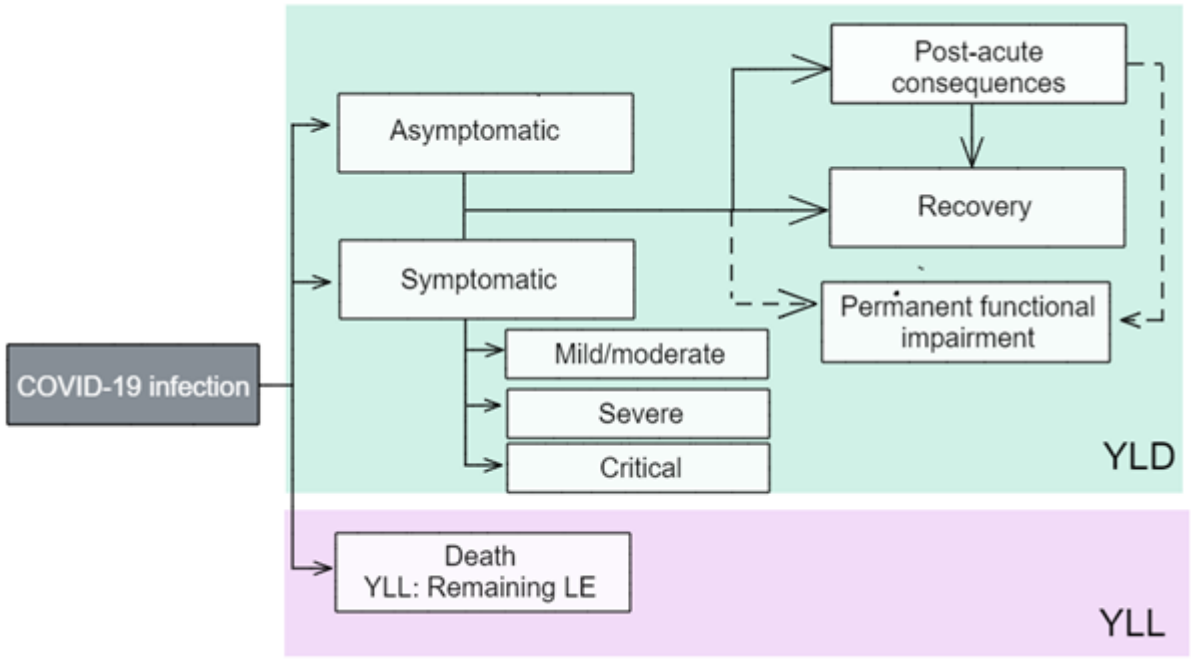
Severe cases: correspond to those hospitalised to treat their disease, but not requiring admission to intensive care units (ICU).

Critical cases: correspond to people who were treated in ICU.

Post-acute consequences: correspond to cases with post COVID-19 condition (also known as 'long COVID').

Permanent functional impairment from COVID-19 was not included in this study due to a lack of evidence. More elapsed time is needed to understand these potential consequences.

Figure 1: Conceptual model for COVID-19 burden of disease analysis



LE = life expectancy; YLD= years lived with disability; YLL= years of life lost.

Source: ABDS2022

Extended description for Figure 1

Figure 1 shows the conceptual model used to estimate the non-fatal and fatal burden due to COVID-19. The diagram is a horizontal flow chart with two sections. The first section represents non-fatal burden. It shows that the non-fatal burden due to COVID-19 includes asymptomatic and symptomatic infections. Burden due to symptomatic infections is further split into 3 levels of severity: mild/moderate, severe and critical. The flow chart also shows that both asymptomatic and symptomatic infections result in either post-acute consequences or recovery, and may also result in permanent functional impairment, however only the burden due to post-acute consequences is currently included in this study. The second section represents fatal burden. It shows that COVID-19 infection could result in death. Age at death and remaining life expectancy is used to determine the number of years of life lost.

Model parameters: disability weights and disease durations

The 'disability weights' reflect the severity of the disease and correspond to a 'health state' which describes the average experience for people at that severity level. Table 1 outlines the disability weights for each health state. The disability weights were drawn from ABDS 2022.

Table 1: Health states and corresponding disability weights for COVID-19 analysis

Health state type	Severity level	Health state	Disability weight
Acute infectious disease	Asymptomatic	Has infection but experiences no symptoms	Nil
Acute infectious disease	Mild/moderate	Has a fever and aches, and feels weak, which causes some difficulty with daily activities	0.051
Acute infectious disease	Severe	Has a high fever and pain, and feels very weak, which causes great difficulty with daily activities	0.133
Acute infectious disease	Critical	Intensive care unit admission	0.655
Chronic infectious disease	Post-acute consequences	Is always tired and easily upset, the person feels pain all over the body and is depressed.	0.219

The duration used for mild/moderate cases was 7 days due to the shorter duration of Omicron infection, which was the dominant variant in Australia in 2022 (Menni et al. 2022). The duration parameters for severe and critical cases were calculated using empirical data on length of stay from the National Hospital Morbidity Database (NHMD). Hospitalisations without an ICU admission were used for severe cases, and those with ICU admission for critical cases. Length of stay for critical cases only included time spent in ICU—their time spent outside of the ICU was counted under the length of stay for severe cases.

The average duration parameter used for post-acute consequences was 5 months (Tindle 2024). This is a broad assumption as data on the full trajectory for people with long COVID are still emerging.

Data sources

Broadly, the numbers of people in each severity category were required. The input data needed to reflect the full coverage of cases, with any under-ascertainment adjusted for with appropriate data, if available. Under-ascertainment for COVID-19 is becoming a

bigger issue as time goes on due to the move from close contact tracing and strict requirements for PCR-based testing, to rapid antigen testing and reliance on self-reporting. Under-ascertainment is discussed further in each severity category.

Asymptomatic cases

An AIHW COVID-19 report (AIHW 2021c) used figures from a meta-analysis (Byambasuren et al. 2020) to estimate the proportion of asymptomatic COVID-19 cases. This showed that 17% of cases were truly asymptomatic (for example, excludes pre-symptomatic cases). However, this review was conducted in 2020 and due to the emergence of newer variants and sub-variants, higher vaccination rates and changes in requirements for COVID-19 testing in 2022, it is likely this proportion is no longer suitable.

As no data on asymptomatic cases were available, it was assumed that the NNDSS only includes symptomatic cases, and the inclusion of asymptomatic cases is minimal in estimates of mild/moderate cases.

Mild/moderate cases

This was calculated as the total number of confirmed cases recorded in the NNDSS. A disability weight of 0.051 was applied to all confirmed cases. Hospitalised cases, including those admitted to ICU, were not excluded from the mild/moderate case count. This is based on the assumption that individuals with severe or critical illness also experience a period of moderate acute infection prior to and after hospitalisation for COVID-19.

Under-ascertainment would be highest in the mild/moderate category. Given the lower severity (and hence lower contribution per case to the disease burden) in this category and challenges with adjusting for under-ascertainment with currently available data, there was not enough information to inform adjustments for under-ascertainment in this study. There are serosurvey studies that measure the prevalence of antibodies to SARS-CoV-2 in the blood donor population (for example, the National Centre for Immunisation Research and Surveillance, the Kirby Institute's Australian COVID-19 Serosurveillance Network serosurveys). However, the blood donor population may not be representative of the general Australian population.

Severe and critical cases

The number of severe cases is the number of First Nations cases admitted to hospital minus those admitted to ICU during 2022, adjusted for First Nations under-identification in hospitalisation data.

Critical cases are the number of First Nations cases admitted to ICU, adjusted for First Nations under-identification in hospitalisation data.

It is assumed that there would be virtually no under-ascertainment among the severe and critical categories as it is unlikely that people who require hospital care would not receive that care in Australia. People admitted would almost certainly have been tested for SARS-CoV-2 if there was any chance they had contracted it.

As there may be people who contracted COVID-19 in hospital (but did not suffer from severe or critical disease), identification of these cases in the data would be useful for burden estimation when more detailed hospitals data become available. However, it is acknowledged that because these cases cannot be identified, it may result in an overestimate of the burden due to severe COVID-19 (though an underestimate of mild/moderate cases). To reduce the extent of over-estimation of severe cases, COVID-19 hospitalisations were identified as those with a principal diagnosis indicating COVID-19, or an additional diagnosis of COVID-19 with a principal diagnosis in the ICD-10-AM chapters 'Certain infectious and parasitic diseases', 'Diseases of the respiratory system', or 'Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified'.

Post-acute consequences

For the FNBDS 2022, a proportion of 4.5% (for those aged 25 years and older) and a proportion of 1.44% (for those aged under 25 years) were used to estimate the number of cases who developed post-acute consequences from their COVID-19 infection. The proportion for those aged 25 years and over was sourced from the study by Antonelli et al. (2022) and was the proportion of Omicron cases who experienced long COVID. This proportion was not used for those aged under 25 years as there is evidence showing the likelihood of getting long COVID in younger age groups is lower (GBD Long COVID Collaborators 2022). The proportion for those aged under 25 years was based on the estimated percentage of people under 25 years living in private households with self-reported long COVID of any duration in the UK. This proportion was based on the UK Coronavirus (COVID-19 Infection Survey) data for the 4-week period ending 3 September 2022 (ONS 2022).

Population data

Changes to the Aboriginal and Torres Strait Islander population

On 24 July 2024, the ABS released *Estimates and projections, Aboriginal and Torres Strait Islander Australians, 2011 to 2031* based on the 2021 Census. The release included detailed backcast population estimates from 2011 to 2020 and projections to 2031.

Between 2016 and 2021, the Census-based Aboriginal and Torres Strait Islander population estimates increased by 25.2%, with less than half (43.5%) of this increase being due to demographic factors (births, deaths and migration). The rest of the increase was due to other (non-demographic) factors (56.5%), including changes in the propensity of people to identify as Indigenous.

The substantial amount of non-demographic change between the 2016 and 2021 Censuses – more than double that seen previously – suggests that identification has changed quite significantly in the past few years. It seems unlikely that such a substantial change would be limited to the Census and not show up in other administrative data sources.

Which population data was used in FNBDS 2022?

As a result of the changes in the Aboriginal and Torres Strait Islander population, all First Nations population-based rates in the FNBDS 2022 were calculated using an **interpolated population series**. The interpolated population series uses the 2011, 2016 and 2021 Census points as anchors and assumes a consistent growth from one Census point to another. Identification change is inherent as part of the Census points. The AIHW projected the interpolated series forward one year to maintain demographic consistency between the interpolated population for historical years (2011, 2018) and the 2022 reference year.

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

The Australian 2001 standard population (published 20 June 2013) was used for all age-standardisation, as per AIHW and ABS standards.

Adjusting for Indigenous under-identification

The National Hospital Morbidity Database (NHMD) and the AIHW's National Mortality Database (NMD) are key data sources used for estimating the burden of disease in the FNBDS 2022. However, hospitalisations and deaths of First Nations people are under-identified to varying degrees across state/territory and remoteness areas as well as over time. The incompleteness of First Nations identification means that hospital separations and deaths recorded as Indigenous are an underestimate of the actual number of hospitalisations and deaths of First Nations people.

The National Health Data Hub (NHDH), formerly the National Integrated Health Services Information (NIHSI) analytical asset, is a major national health data linkage system that brings together hospitalisation data from 1 July 2010 to 30 June 2022, and National Death Index (NDI) records from 1 July 2010 to 31 December 2022, with other data sets including the Medicare Benefits Schedule (MBS), Pharmaceutical Benefits Scheme (PBS), Aged care services data, and the Australian Immunisation Register (AIR) data.

The NHDH hospitalisation data included Admitted patient care data and Emergency Department Care data in public and private hospitals for all states and territories with the exception of Western Australia and the Northern Territory. Note that Non-Admitted Patient episode-level data were not available for FNBDS 2022.

The NHDH was used to derive under-identification adjustment factors for hospitalisation and mortality data for the 2022 reference year in the FNBDS 2022. Adjustment factors for Western Australia derived from the Western Australian Data Linkage System were provided by WA Health, as hospital data for WA are not included in the NHDH.

Hospitalisation adjustment factors by state/territory and remoteness area were calculated by dividing the number of First Nations hospitalisations in the Admitted Patient Data based on the NHDH-enhanced First Nations identification, by the observed

number of First Nations hospitalisations originally recorded in the Admitted Patient Data.

Similarly, 2022 mortality adjustment factors by state/territory and remoteness area were calculated by dividing the number of First Nations deaths in the Mortality Data based on the NHDH-enhanced First Nations identification, by the observed number of First Nations deaths recorded in the National Death Index (NDI). The year 2021 was selected to determine mortality adjustment prior to the introduction of dual-source identification for NSW deaths in 2022. It is assumed that the level of under-identification of First Nations people in mortality data otherwise remained consistent between 2021 and 2022.

Under-identification adjustment factors for 2011 and 2018 were obtained from previous AIHW analyses (AIHW 2013 and 2023).

Note that this method assumes that data for people who are identified as First Nations people in these two data sources are representative of First Nations people who are not identified as such. While this is not necessarily the case, it is the best information available at present.

Hospital presentation ratios

The National Hospital Mortality Database (NHMD) was a key data source for estimating non-fatal burden for some diseases in FNBDS 2022. However, the NHMD provides counts of the number of hospital separations rather than the number of individual patients and to estimate point prevalence, the FNBDS needed data relating to people rather than clinical events.

AIHW analyses of linked hospitalisations and deaths data from the NHDH was used to calculate people–to–hospitalisations ratios for New South Wales, Queensland, Victoria, South Australia, Tasmania and the Australian Capital Territory for selected sequelae. These ratios were then applied to corresponding hospitalisation counts by sex and age from the NHMD to derive a count of people.

Linked hospitals and deaths data from Western Australia were also used by WA Health to calculate people–to–hospitalisations ratios for selected sequelae.

A combination of data from the NHDH and Western Australia was used as the hospital presentation ratios across all states and territories.

Reference life table

The reference life table used in burden of disease methodology to measure years of life lost due to early death is an aspirational goal designed to represent the gold standard of life expectancy (see Data for reference life table). The reference life table is different to the actual life tables for the First Nations and the non-Indigenous populations, with the aspirational life expectancies at all ages being greater than those currently experienced in Australia.

All previous iterations of the ABDS (ABDS 2011 onwards) have used the Global Burden of Disease (GBD) 2010 Standard Reference Life Table (SRLT) (Murray et al. 2012). A more recent GBD life table, the GBD 2021 Theoretical Minimum Risk Reference Life Table (TMRLT), has been used in the FNBDS 2022. The GBD 2021 TMRLT is an internationally recognised and accepted reference table for burden of disease analysis representing the most recent expression of aspirational life expectancies based on lowest worldwide mortality rates.

Compared with the GBD 2010 life table, the GBD 2021 life table increases life expectancy at birth and up to around age 90 by approximately 4 years, and by around 5 years thereafter. Therefore, using the GBD 2021 life table results in an increase in YLL, and a higher proportion of total burden contributed by YLL, compared to previous ABDS results.

To ensure comparability between population groups and over time, the same reference life table was used for First Nations and non-Indigenous fatal burden estimates, all analyses by sex, all subnational analyses, and for all reference years (2011, 2018 and 2022) in the FNBDS 2022.

Indigenous status in New South Wales deaths data

In New South Wales, the method for identifying Indigenous status in deaths data changed in 2022. Prior to 2022, the Indigenous status of deaths registered in NSW was derived from the Death Registration Statement (DRS) only but from 2022 onward, information from the Medical Certificate of Cause of Death (MCCD) was used as a secondary source to help determine the Indigenous status of the deceased. As a result of improved identification of First Nations people, the number of reported First Nations deaths in NSW rose sharply in 2022. To maintain comparability with data from earlier years used in FNBDS, a deaths file where the secondary source method had not been applied was provided by the NSW Register of Births, Deaths and Marriages for use in FNBDS analyses. Under-identification adjustment based on 2021 data was applied as described above.

YLL and YLD data quality

The quality of input estimates in the FNBDS 2022 for earlier reference years (2011 and 2018) are the same as the quality presented in the ABDS 2018. Therefore, refer to Appendix B in the Australian Burden of Disease Study: impact and causes of illness and death in Australia 2018 report (AIHW 2021a) and the Australian Burden of Disease Study: methods and supplementary material 2018 report (AIHW 2021b) for more detail on the quality of the YLD estimates and the data and methods used for the earlier reference years.

COVID-19 was added to the FNBDS 2022 as a new disease. To help users understand the potential sources of uncertainty associated with the estimates, the 2-dimensional index developed for the burden estimates was used for this disease. This index was derived based on:

- the relevance of the underlying epidemiological data
- the methods used to transform that data into a form required by this analysis.

The quality of COVID-19 estimates is discussed below.

COVID-19

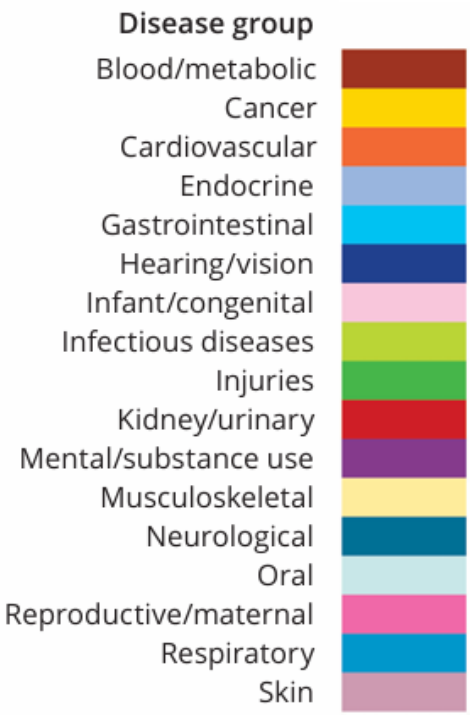
Estimates for acute consequences of COVID-19 are of good quality. Data sources for acute consequences were considered relevant as they were directly observed from the NNDSS and the NHMD, adjusted for First Nations under-identification. However, the estimates for post-acute consequences of COVID-19, which is the biggest contributor to non-fatal burden, were calculated using 2 proportions (one proportion for those aged under 25 years and another for those aged 25 years and over) so substantial modelling was done to estimate burden by sex and 5-year age groups. Therefore, estimates for post-acute consequences of COVID-19 should be interpreted with caution.

Data score = D

Method score = D

Disease group colours

For ease of recognition in FNBDS 2022 published results, each of the 17 disease groups has been allocated a distinct colour. Within figures presented in this report, specific causes also use the same distinct colour as their disease group. These colours are:



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Notes

Data presented in this report are correct as of 17 June 2026. Minor revisions to total (DALY) burden and non-fatal (YLD) burden have been included in the 17 June 2026 update.

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Report editions

BOD 41 First Nations Burden of Disease Study 2022, About - Australian Institute of Health and Welfare [This release]

BOD 32 Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2018, Summary - Australian Institute of Health and Welfare

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Archived content

First Nations Burden of Disease Study 2022 - 26 March 2026

The First Nations Burden of Disease Study 2022 includes estimates for 220 diseases and injuries for the Aboriginal and Torres Strait Islander population. Updates have been made to this report, please use the latest available information.

The *First Nations Burden of Disease Study 2022* report describes the impact of 220 diseases and injuries on the Aboriginal and Torres Strait Islander population in terms of living with illness (non-fatal burden) and premature death (fatal burden). It provides new estimates for the reference year 2022, along with updated and comparable estimates for 2018 and 2011.

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