

Road traffic injury mortality

This factsheet presents statistics for deaths caused by road traffic injuries in Aotearoa New Zealand. The first section of the factsheet covers data from the Ministry of Transport's annual road toll statistics (1990–2022). The majority of the remainder of the factsheet focuses on more detailed data from the New Zealand Mortality Collection (2001–2018).



In 2022, there were 377 traffic-related fatalities in New Zealand, up from 318 in 2021.



In 2016–18, mortality rates were highest for males (especially those aged 15–24), Māori, older adults, people living in more deprived areas and those living outside main urban areas.



In terms of deaths per time spent travelling and distance travelled motorcyclists were at a 100-times greater risk of death (respectively) than non-motorcyclists.



The highest mortality rates in 2014–18 occurred in West Coast and Northland districts, followed by Whanganui and Tairāwhiti.

The health impact of road traffic accidents

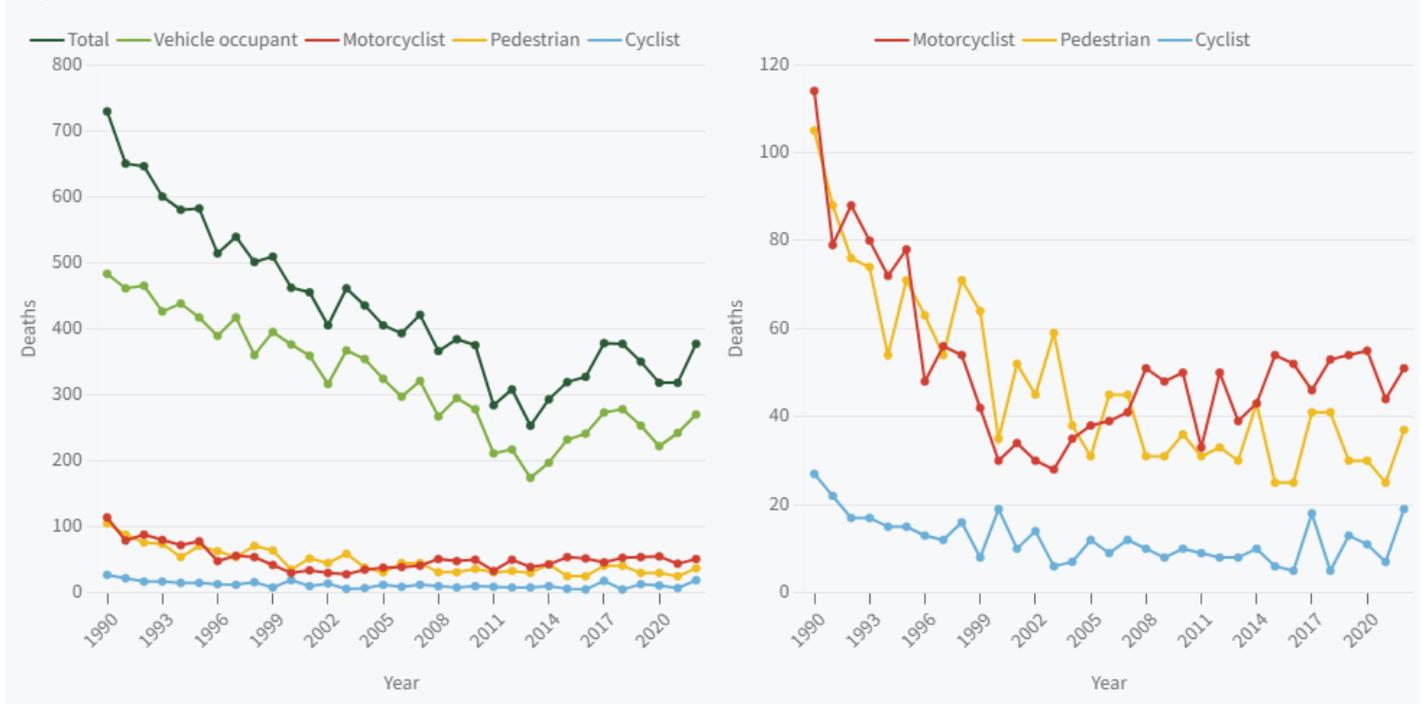
Traffic-related deaths and injuries are the main health impact of road transport in New Zealand (Briggs et al 2016). Traffic injuries affect all types of road users, but pedestrians, cyclists and motorcyclists are particularly vulnerable to more severe injuries from collisions, due to lack of personal protection. By comparison, vehicle occupants are protected by the vehicle body and fitted safety features (such as seatbelts or airbags). Vehicle safety depends in part on age, with newer models having more and better safety features installed. See the '[Age of motor vehicles](#)' factsheet for more information on the age of the vehicle fleet.

The road toll increased in 2022 after decreases during Covid-19 affected years

In 2022, there were 377 road deaths due to traffic injuries (Figures 1a & 1b). Of the 377 deaths, 270 were vehicle occupants (72%), 51 were motorcyclists (14%), 37 were pedestrians (10%) and 19 were cyclists (5%).

The road toll decreased from 1990 (729 deaths) to 2013 (253 deaths) before rising again until 2017. The number of deaths then decreased, particularly during years with Covid-19 restrictions, but 2022 saw a return to the same number of deaths as 2018 (377). Most of the increase since 2013 is due to a rise in the number of vehicle occupant deaths and, to a lesser degree, an increase in motorcyclist fatalities.

Figure 1a & 1b: Annual road toll, by mode of transport, 1990–2022



Source: Annual road toll (Ministry of Transport)

Increases to the road toll have been linked to several major factors. These include an increase in alcohol consumption or being on a learner’s license as a causal factor in crashes, a regional effect associated with increasing crash rates in Auckland (Walton, Jenkins, Thoreau, Kingham & Keall, 2020), and an increase in kilometres travelled by vehicle (Ministry of Transport 2020).

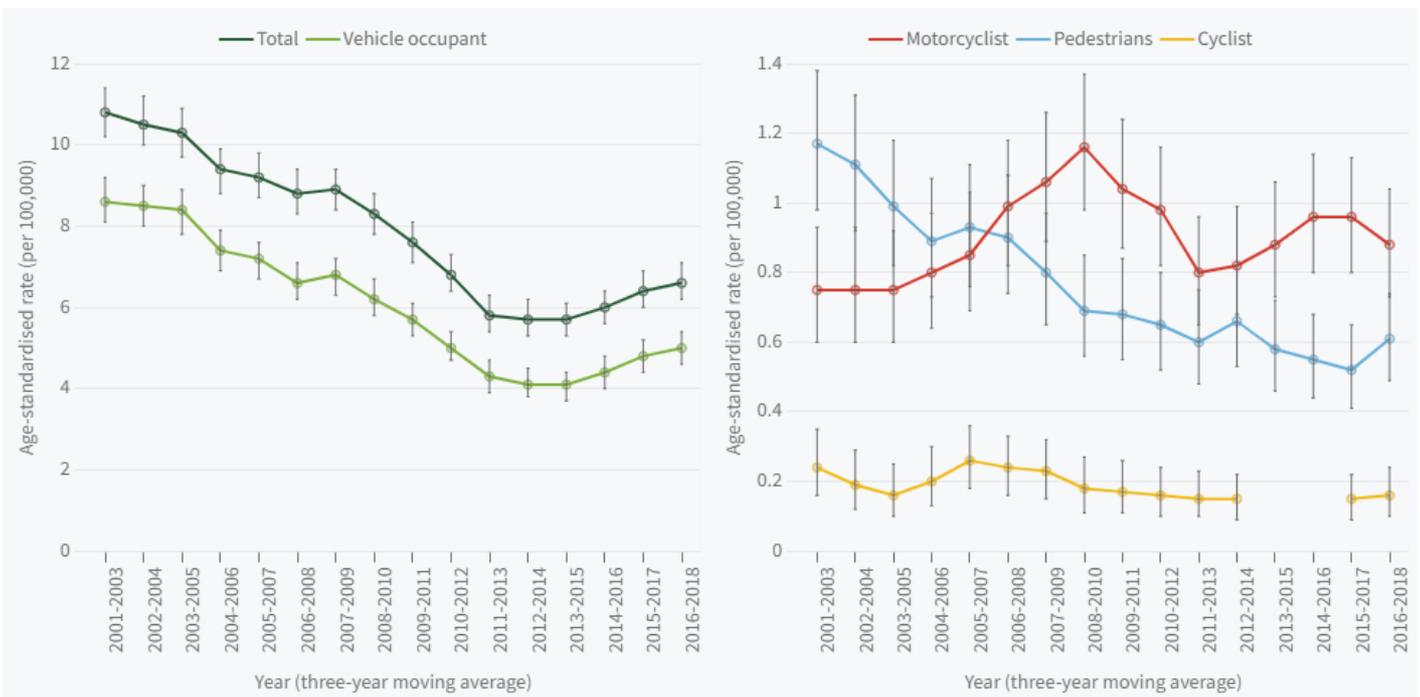
These road toll figures include all deaths, both New Zealand residents and overseas visitors. The rest of this factsheet focuses on mortality rates using data from the New Zealand Mortality Collection. As the denominator for mortality rates is the usually resident population, deaths of overseas residents are excluded from calculations. For the most recently available year of mortality data, 2018, there were 381 road traffic injury deaths, including 27 overseas residents. Information on road traffic injury deaths of overseas residents over time is shown in figure 12.

Total injury mortality rates have increased but remain lower than historical highs

After a period of decreases to 2013–15 mortality rates for total road traffic injuries, largely driven by vehicle occupant injuries, have since increased steadily. This is consistent with recent increases in the road toll (Figures 2a & 2b).

The mortality rate for motorcyclists increased up until 2008–10, before decreasing and then beginning to increase again more recently. In contrast, mortality rates for pedestrian injuries have decreased overall, allowing for some fluctuations. Rates for cyclists are too low to discern a clear trend but have stayed at or below 0.2 per 100,000.

Figure 2a & 2b: Road traffic injury mortality rates, by mode of transport, 2001–03 to 2016–18



Notes: 95% confidence intervals have been presented as error bars. All rates are per 100,000 persons, not per 100,000 users of the relevant mode of transport. The rates for cyclists for 2013-15 and 2014-16 are suppressed due to a low count of deaths (<20).

Source: New Zealand Mortality Collection

Motorcyclists were most at risk of death

Travel by motorcycle represents a very small proportion of the time and distance New Zealanders travel every year but carries a far greater risk of fatal injury than any other mode of transport (Table 1). Compared to non-motorcyclists, the risk was more than 100 times greater.

Table 1 Road traffic injury mortality risk by mode of transport, 2018–21

	Vehicle occupant	Motorcyclist	Pedestrian	Cyclist	All traffic
Million hours travelled	1394.5	2.0	166.7	30.1	1701.0
Million kilometres travelled	53,238.2	83.6	705.1	382.3	59,762.5
Number of deaths	248.8	51.5	31.5	9.0	340.8
Deaths per million hours	0.2	25.5	0.2	0.3	0.2
Deaths per million kilometres	<0.01	0.62	0.04	0.02	0.01

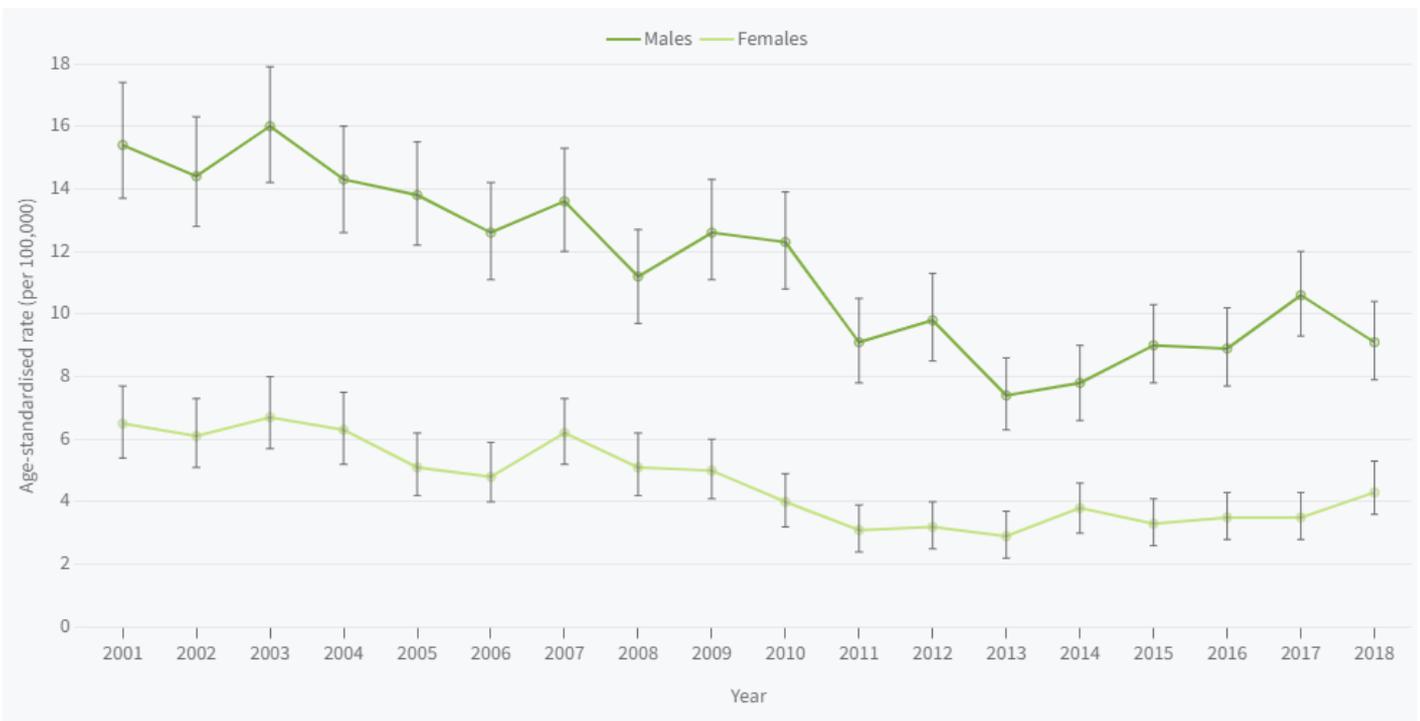
Note: The annual average number of deaths for the four-year period 2018–2021 from the annual Road Toll was calculated based on calendar year (January–December), while the annual average time and distance travelled (from the 2018–2021 Household Travel Survey) was based on the financial year (July–June). These are the intervals for which the data is recorded in each source.

Source: Annual Road Toll (Ministry of Transport, 2023) and New Zealand Household Travel Survey 2018–21 (Ministry of Transport, 2022).

Mortality rates for both sexes have decreased

Despite the small increase in overall road traffic injury mortality rates between 2013 and 2017, rates for both sexes were still lower in 2018 than they were in 2001. The mortality rate for males was consistently higher than the rate for females throughout this period. In 2018, the male mortality rate was more than double the female rate (9.1 deaths per 100,00 vs. 4.3 deaths per 100,000).

Figure 3 Road traffic injury mortality rates, by sex, 2001–2018



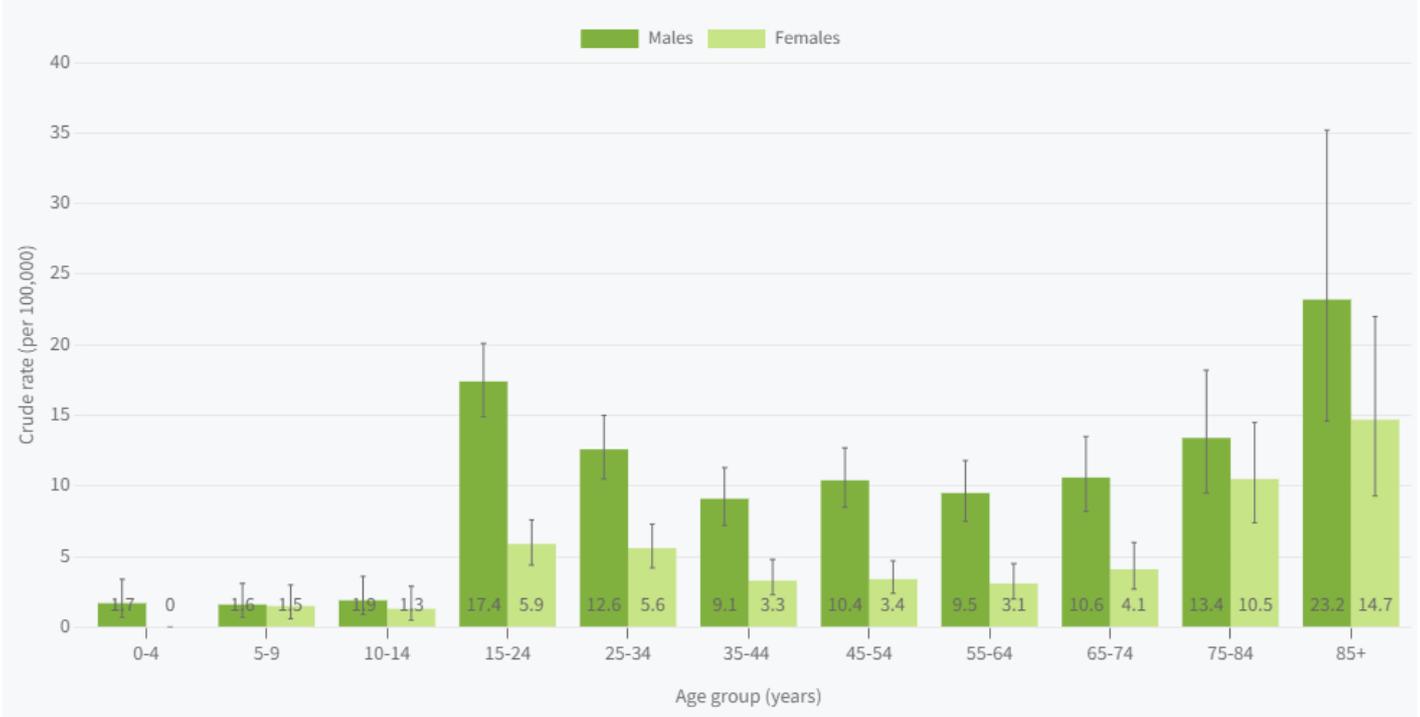
Note: 95% confidence intervals have been presented as error bars.

Source: New Zealand Mortality Collection

The highest mortality rates were among males and older adults

Males aged 15–24 years old and 85 years and over had the highest road traffic injury mortality rates in 2016–18. For all groups between 15–74 years of age, males had substantially higher rates than females (Figure 4).

Figure 4 Road traffic injury mortality rates, by age group and sex, 2016–18



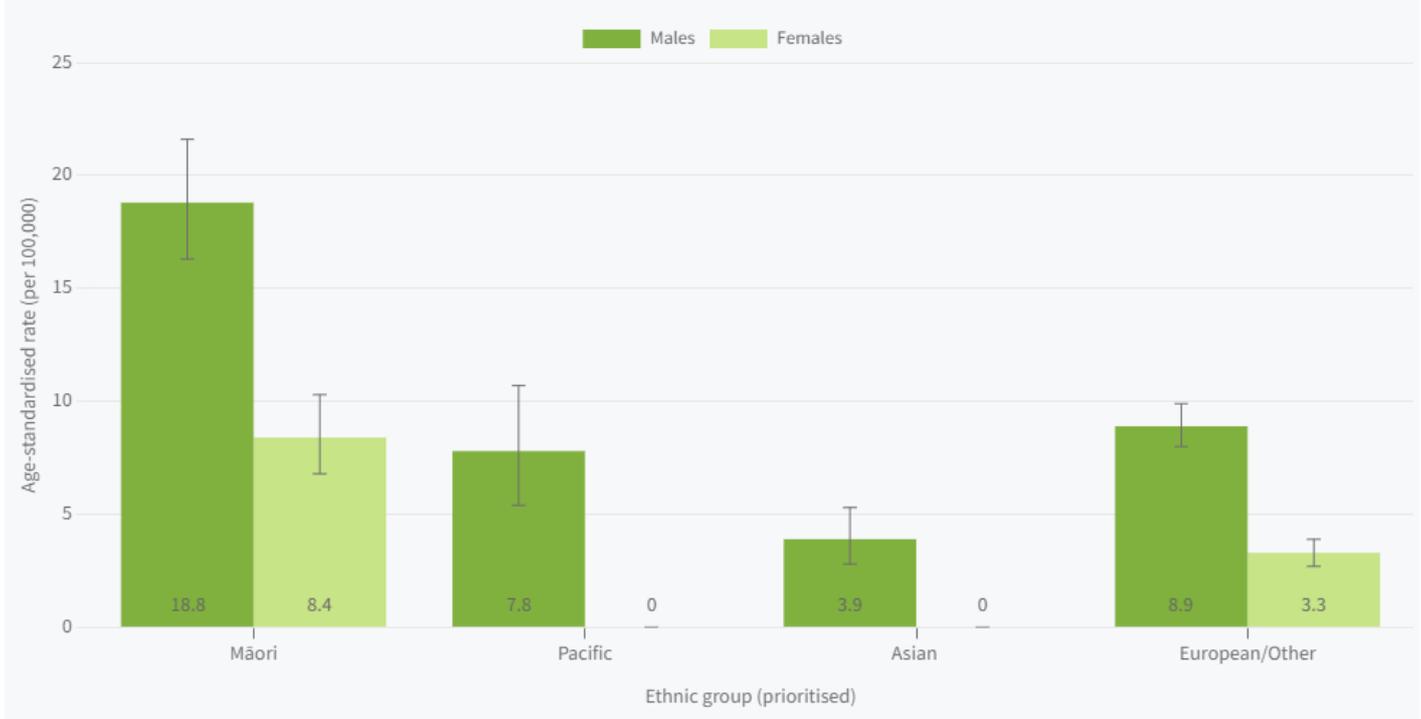
Note: 95% confidence intervals have been presented as error bars. The rate for 0-4 year old girls is suppressed due to a low count of deaths (<5).

Source: New Zealand Mortality Collection

Māori males had higher traffic injury mortality rates

In 2016–18, Māori had the highest mortality rate for traffic injuries of any ethnic group, with the rate for Māori males being especially high (18.8 per 100,000, 95% CI 16.2–21.6). The mortality rate among females was much lower than the rate for males for European/Other and Māori. There were insufficient deaths to calculate rates for females for Asian and Pacific ethnic groups.

Figure 5 Road traffic injury mortality rate, by ethnic group (prioritised), 2016–18



Notes: 95% confidence intervals have been presented as error bars. Rates are suppressed for Pacific and Asian females due to a low count of deaths (<20).

Source: New Zealand Mortality Collection

After a period of decline, the overall mortality rate for Māori increased from 10.1 per 100,000 in 2013–15 to 13.5 per 100,000 in 2016–18 (Figure 6a & 6b). Rates for other ethnic groups over the same period were relatively stable.

Figure 6a & 6b: Road traffic injury mortality rate, by ethnic group (prioritised), 2001–03 to 2016–18



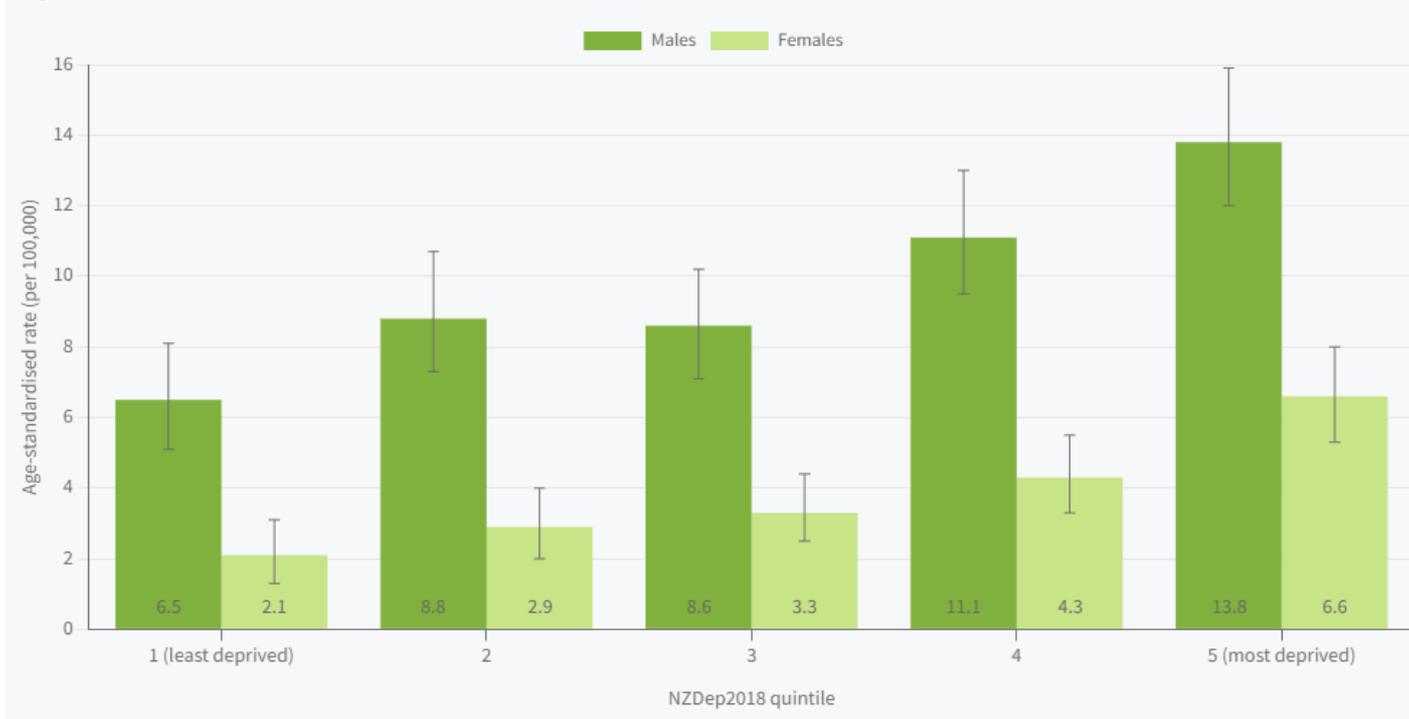
Note: 95% confidence intervals have been presented as error bars.

Source: New Zealand Mortality Collection

People living in more deprived areas had higher mortality rates

Road traffic injury mortality rates in the most socioeconomically deprived areas (NZDep2018 quintile 5) were much higher than those in the least deprived areas (quintile 1) in 2016–18. This was true for both sexes (Figure 7). After standardising for age, people living in the most socioeconomically deprived areas were more than twice as likely to die as the result of a road traffic injury than those in the least deprived areas (rate ratio = 2.4, 95% confidence interval 1.9–3.0).

Figure 7 Road traffic injury mortality rates, by NZDep2018 quintile and sex, 2016–18



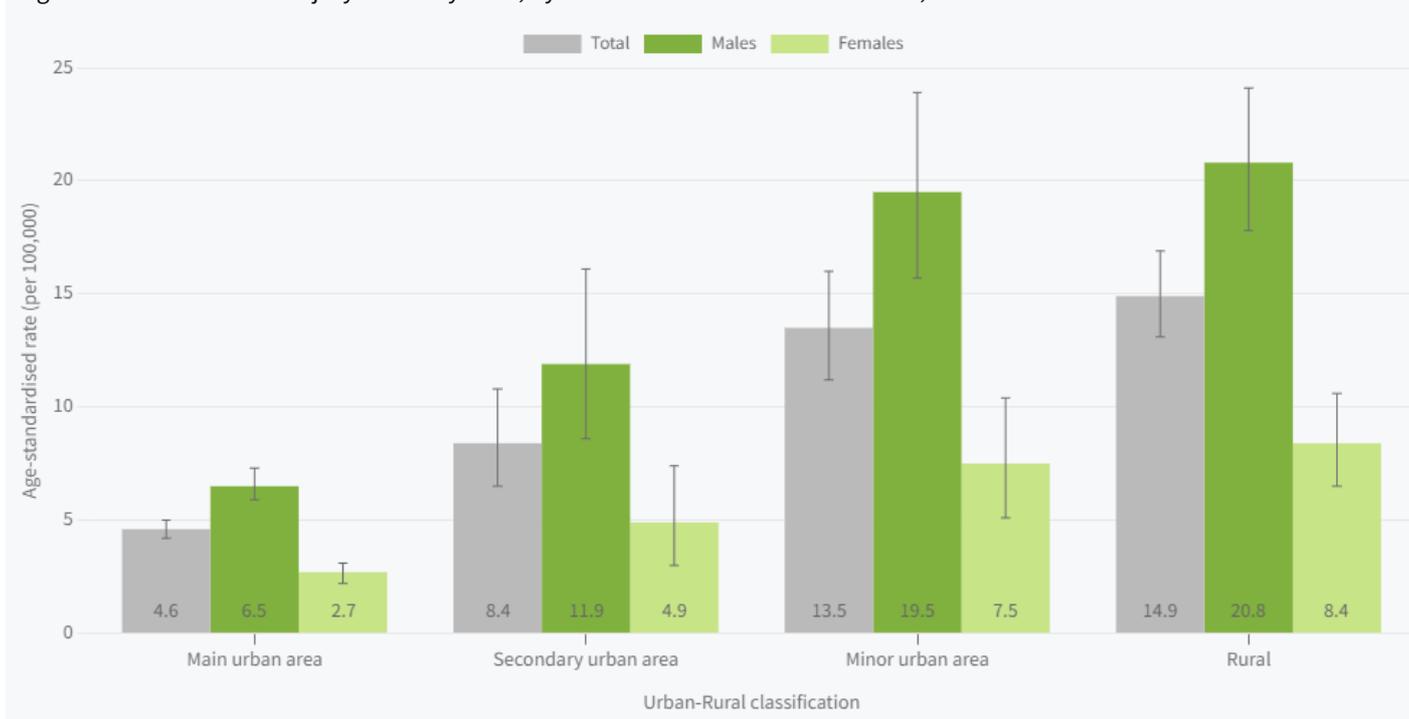
Note: 95% confidence intervals have been presented as error bars.

Source: New Zealand Mortality Collection

People living in main urban areas had lower mortality rates

In 2016–18, people living in rural areas had much higher mortality rates for road traffic injuries than people living in main urban areas (RR=3.4, 95% CI 2.8–3.8). The rate for males was also substantially lower in main and secondary areas than in rural ones (Figure 8).

Figure 8 Road traffic injury mortality rates, by urban-rural classification and sex, 2016–18



Notes: 95% confidence intervals have been presented as error bars. The Statistics New Zealand urban-rural classification for 2013 has been used. Main urban areas are major towns and cities with a population of 30,000 or more. Secondary urban areas are smaller towns with a population of 10,000–29,999 people. Minor urban areas are towns with a population of 1,000–9,999. Rural areas include rural centres, and rural areas outside of these.

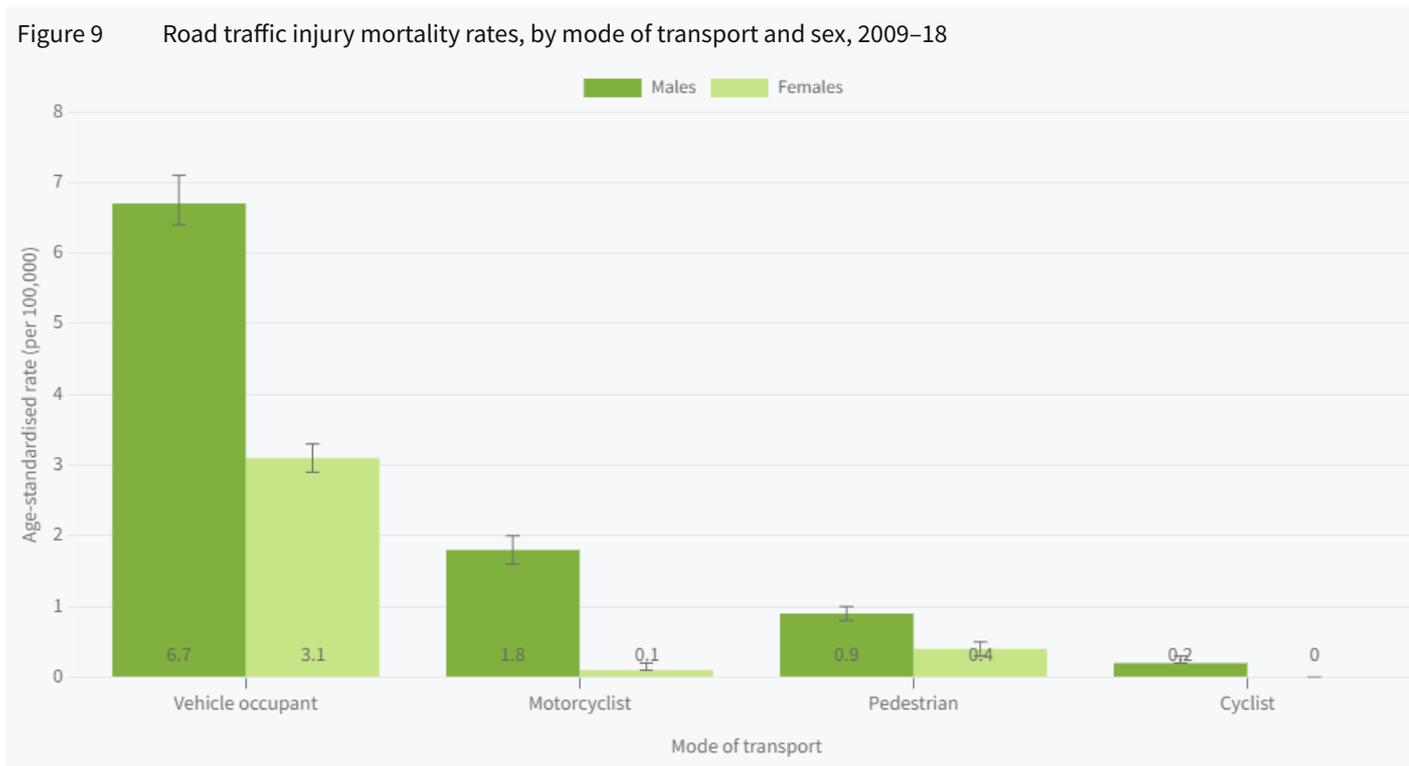
Source: New Zealand Mortality Collection

The highest mortality rates were in Northland and West Coast districts

In 2014–18, the highest road traffic injury mortality rates were in the West Coast and Northland districts (formerly known as District Health Boards), followed by Whanganui and Tairāwhiti. The lowest rates were in the greater Auckland region (Waitematā, Auckland and Counties Manukau districts) and Wellington (Hutt Valley and Capital & Coast districts) region. See [the district version](#) of this factsheet for a graph.

Mortality statistics by road user type

In 2009–18, males had substantially higher mortality rates for all modes of transport compared to females (Figure 9). The contrast was especially strong between male and female motorcyclists.

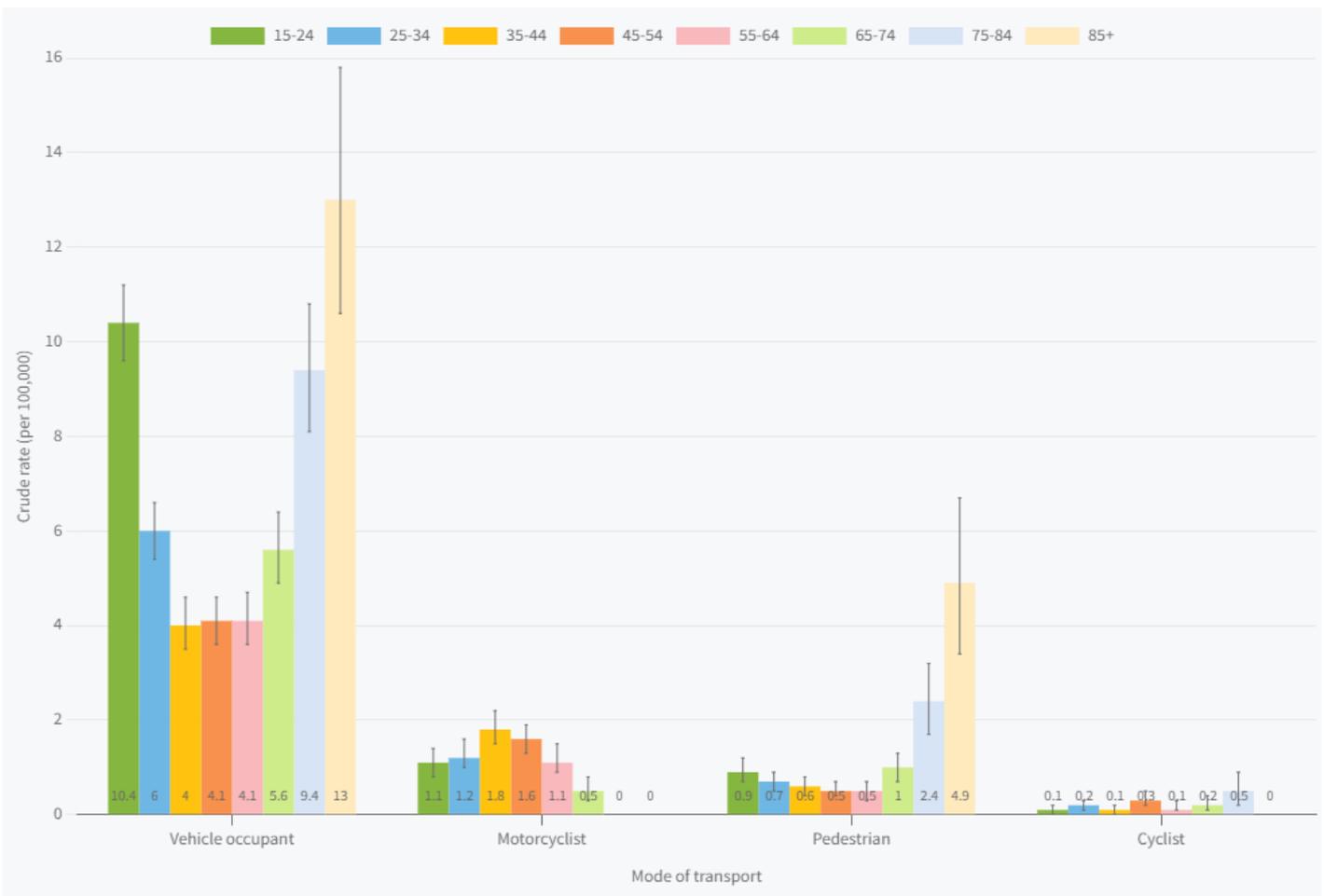


Notes: 95% confidence intervals have been presented as error bars. The rate for female cyclists is suppressed due to a low count of deaths (<20). All rates are per 100,000 persons, not per 100,000 users of the relevant mode of transport.

Source: New Zealand Mortality Collection

Younger adults (15–24 years) and older adults (75+ years) had higher mortality rates for vehicle occupant injury. Mortality rates among pedestrians were also highest in older adults. By contrast, motorcyclists had higher mortality rates in the middle years, with younger and older adults having generally lower rates. Rates for cyclists were too low to distinguish any differences between age groups (Figure 10).

Figure 10 Road traffic injury mortality rates, by mode of transport and age group, 2009–18

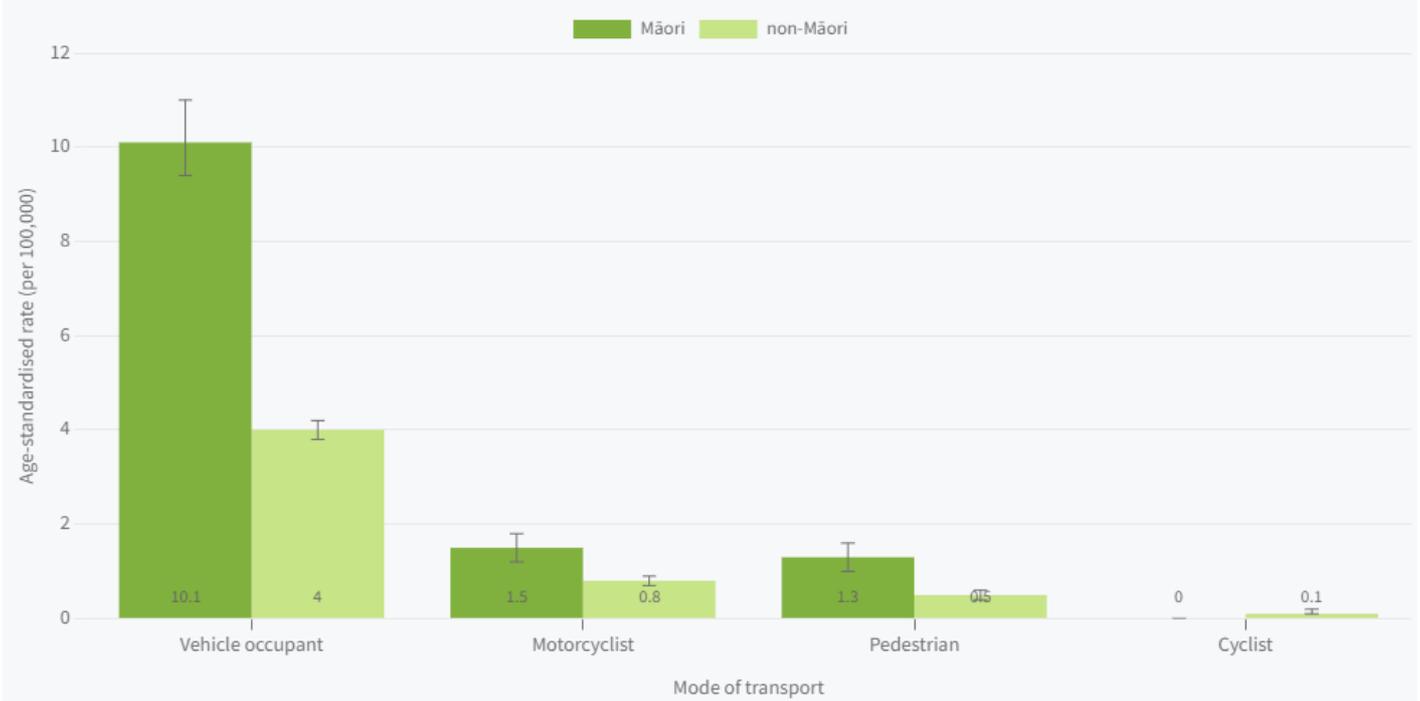


Notes: 95% confidence intervals have been presented as error bars. Rates for motorcyclists aged 75-84 years and 85 years and over, and cyclists 85 years and over were suppressed due to a low count of deaths (<5). All rates are per 100,000 persons, not per 100,000 users of the relevant mode of transport.

Source: New Zealand Mortality Collection

Māori had higher mortality rates than non-Māori for all modes of transport except for cycling (Figure 11). The disparity was particularly strong for the vehicle occupants category, where the Māori rate was more than double the non-Māori rate (rate ratio=2.6, 95% CI 2.3–2.8).

Figure 11 Road traffic injury mortality rates, by mode of transport and Māori/non-Māori ethnicity, 2009–18

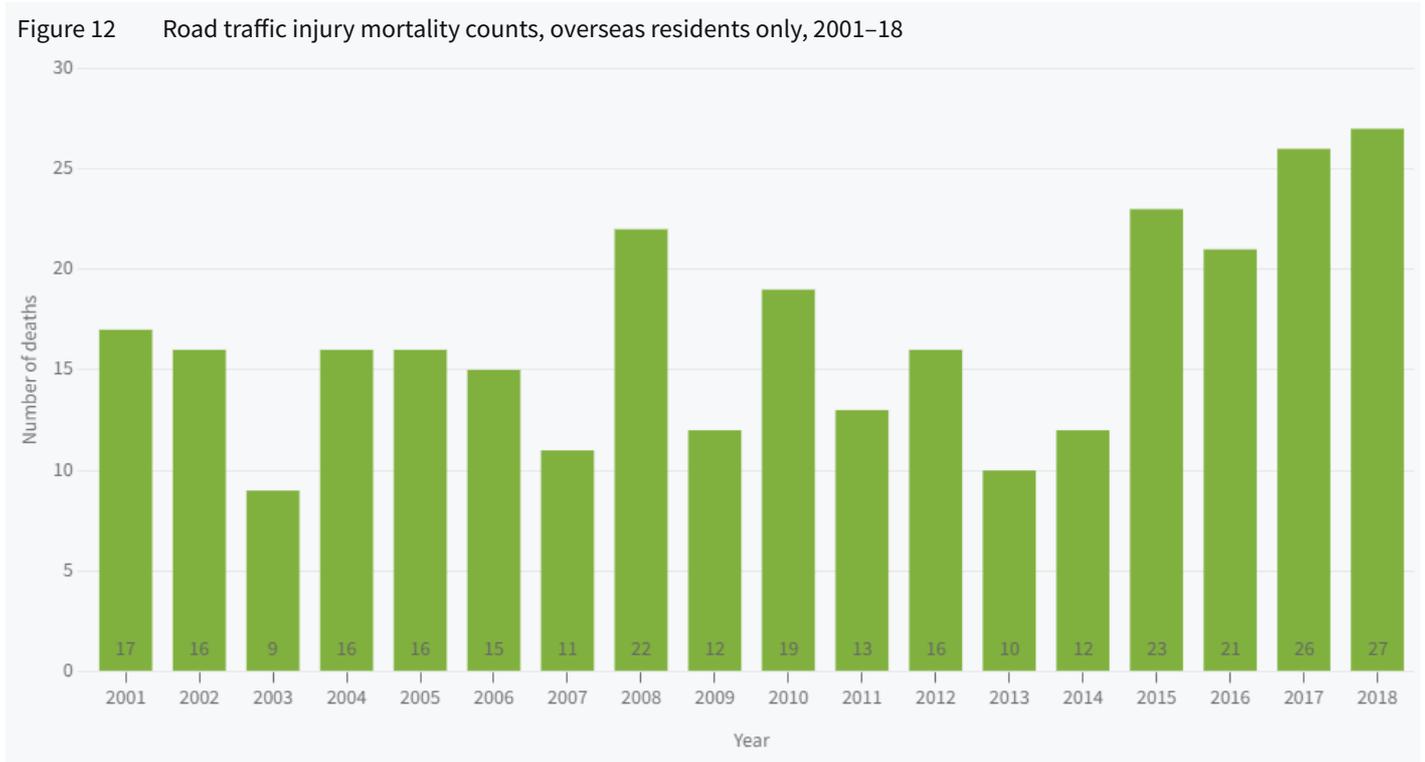


Note: 95% confidence intervals have been presented as error bars. The rate for Māori cyclists was suppressed due to a low count of deaths (<20). All rates are per 100,000 persons, not per 100,000 users of the relevant mode of transport.

Source: New Zealand Mortality Collection

Deaths of overseas residents on New Zealand roads

While overseas residents are excluded from mortality rate calculations, they do make up a part of the total NZ road toll. Figure 12 shows the number of road traffic injury deaths of overseas residents up until the most recent year of mortality col-



Source: New Zealand Mortality Collection

Summary

Rates of road traffic injury deaths show strong inequities with higher rates for Māori, people living in areas with greater socioeconomic deprivation and people in rural areas. In addition, mortality rates for Māori appear to be increasing.

Road traffic injury mortality - *by districts*

This factsheet presents statistics for deaths caused by road traffic injuries in New Zealand by district from the New Zealand Mortality Collection (2001–2018).



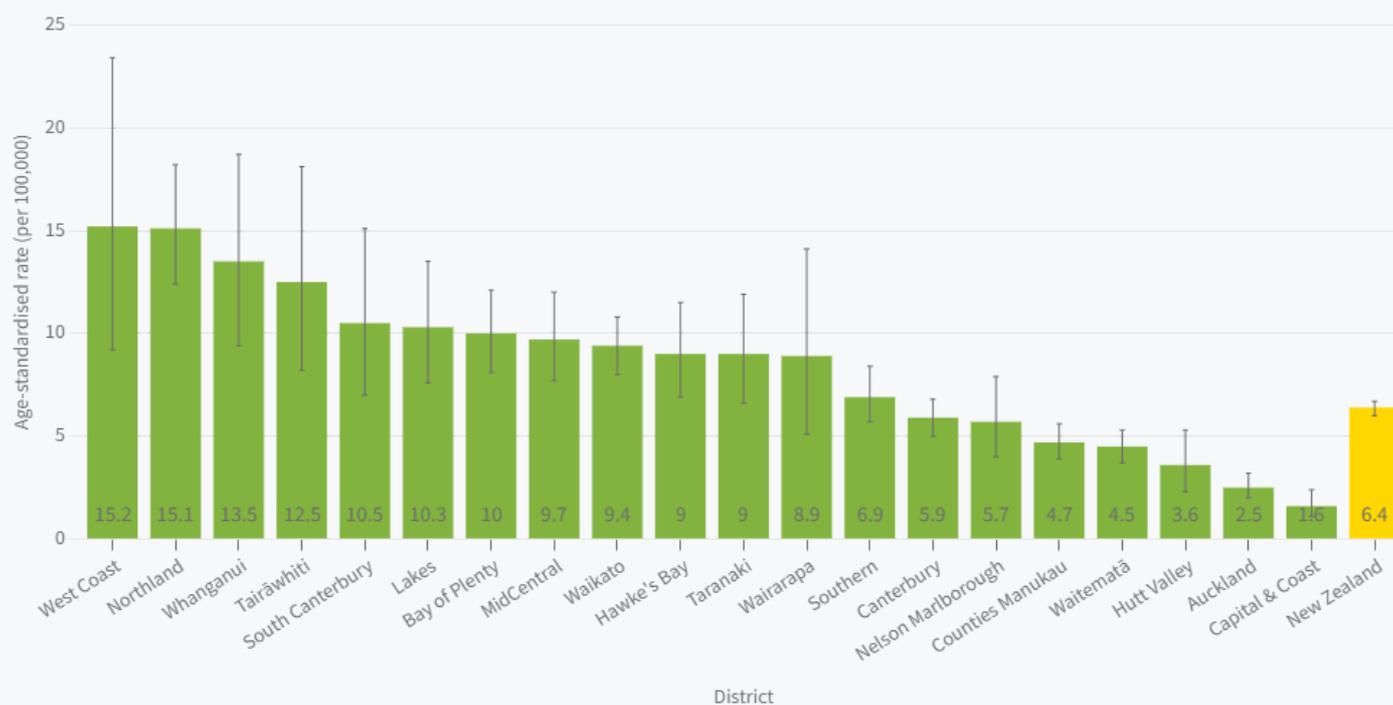
DISTRICT

The highest mortality rates in 2014–18 occurred in West Coast and Northland districts, followed by Whanganui and Tairāwhiti.

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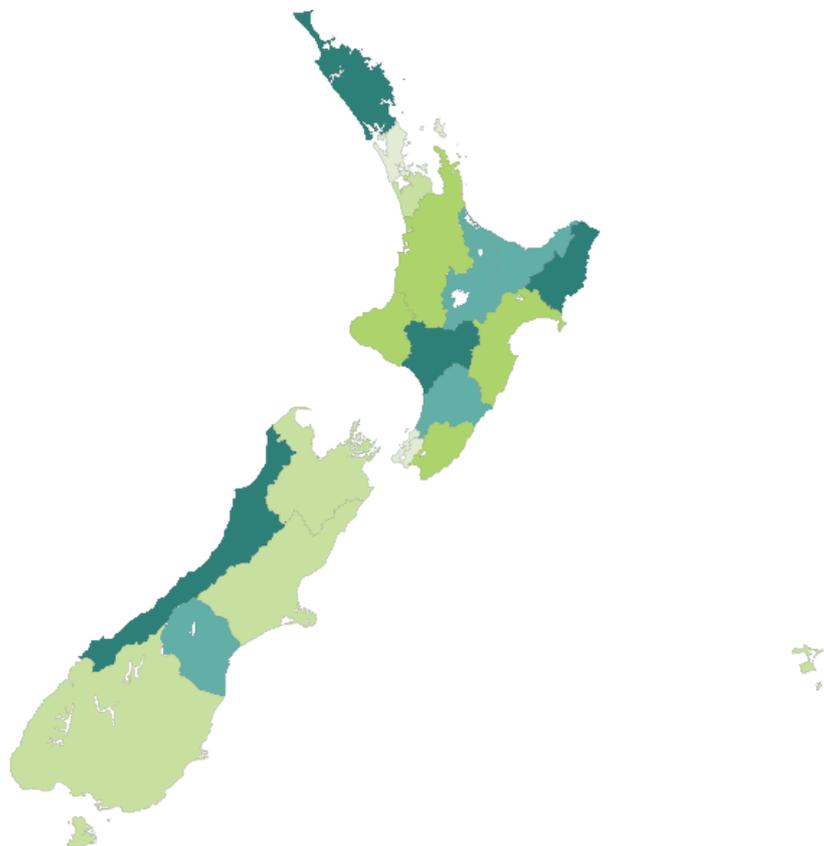
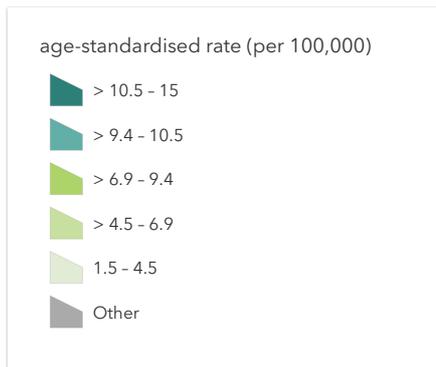
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Figure 1 Road traffic injury mortality rates, by district, 2014–18



Note: 95% confidence intervals have been presented as error bars.

Source: New Zealand Mortality Collection



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Data for this indicator

This factsheet includes two primary sources of data on road transport mortality. The annual road toll statistics (1990–2022) from the Ministry of Transport and more in-depth data from the New Zealand Mortality Collection (2001–2018). Some supporting data is from the New Zealand Household Travel Survey, also produced by the Ministry of Transport.

The following ICD–10AM codes were used to identify relevant cases from the mortality collection:

- Vehicle occupant V30–V79 (.4–.9), V83–V86 (.0–.3)
- Motorcyclist V20–V28 (.3–.9), V29(.4–.9)
- Pedal cyclist V12–V14 (.3–.9), V19(.4–.6)
- Pedestrian V02–V04 (.1,.9), V09.2
- Other: V80(.3–.5), V81.1, V82.1
- Unspecified: V87(.0–.8), V89.2

These ICD codes are consistent with the classification of external cause of injury used by the Centers for Disease Control and Prevention (2002). Age-standardised rates have been presented where possible, to account for the population age structures of different population groups.

For further information about the data, see the [Metadata Sheet](#).

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