



# Hoki ki tō ukaipo, kia rongō i te ihirangaranga

Return to your place of belonging  
and your source of vibration

Connection to place or people provides a source of identity, spiritual nourishment, and emotional healing. Much like the whakataukī “Hokia ki ō maunga kia purea ai koe e ngā hau a Tāwhirimātea” (Return to your mountain to be cleansed by the winds of Tāwhirimātea), this whakataukī acknowledges that when a person is away from home, they can feel a sense of aroha and longing for fulfilment, feeling compelled to return home to nourish the soul. Returning to one’s home can provide healing in times of emotional turmoil.

# 7. Animate mechanical forces



Animate mechanical force injuries are those incurred through being struck, bitten, or otherwise injured by an animal, such as a human being, dog, or insect.

This chapter sets out tamariki hospitalisations for injury from animate mechanical forces for tamariki. Because of the small numbers, this chapter does not include data on fatalities.

In brief

In the years 2017 to 2021, 1,917 tamariki aged 0–14 years were hospitalised for injury from animate mechanical forces.

Between 2012 and 2018, the rates of tamariki hospitalisation generally fluctuated, but they have decreased after 2019 (from 42.2 per 100,000 in 2019 to 37.0 per 100,000 in 2021).

The most common cause of tamariki hospitalisations for animate mechanical force injury for tamariki was due to ‘accidental hit, strike, kick, twist, bite, scratch or trample by another person’ (48%, n=922). ‘Contact with dog’ (36%, n=696) was the second highest cause.

The most common causes of tamariki hospitalisation for animate mechanical force injury varied by age group, as follows:

- For tamariki aged 0 to 4 years the most common cause of hospitalisation was ‘contact with dog’ (18.3 per 100,000).
- For tamariki aged 5 to 9 years there were similar hospitalisation rates from ‘contact with dog’ (16.0 per 100,000) and from ‘accidental hit, strike, kick, twist, bite, scratch or trample by another person’ (15.5 per 100,000)).
- For tamariki aged 10 to 14 years, the most common cause of hospitalisations was ‘accidental hit, strike, kick, twist, bite, scratch or trample by another person’ (rate of 32.2 per 100,000).



Tamariki Māori and Pacific children had the highest rates of hospitalisation for animate mechanical force injury across all of the age groups.

Tamariki living in the most relatively deprived areas of Aotearoa had significantly higher hospitalisation rates from animate mechanical force injury (51.3 per 100,000), compared with tamariki living in the least relatively deprived areas (33.5 per 100,000).

Male tamariki (63%, n=1,206) accounted for a greater proportion of the hospitalisations for animate mechanical force injury than females (37%, n=711), with a hospitalisation rate of 49.2 per 100,000 for males, compared with 30.6 per 100,000 for females.



Trend over time

In the years 2017 to 2021, 1,917 tamariki were hospitalised for injury from animate mechanical forces.

Tamariki hospitalisation rates for injury related to animate mechanical force injury fluctuated between 2012 and 2018, before decreasing between 2019 and 2021 (42.2 per 100,000 to 37.0 per 100,000 respectively).

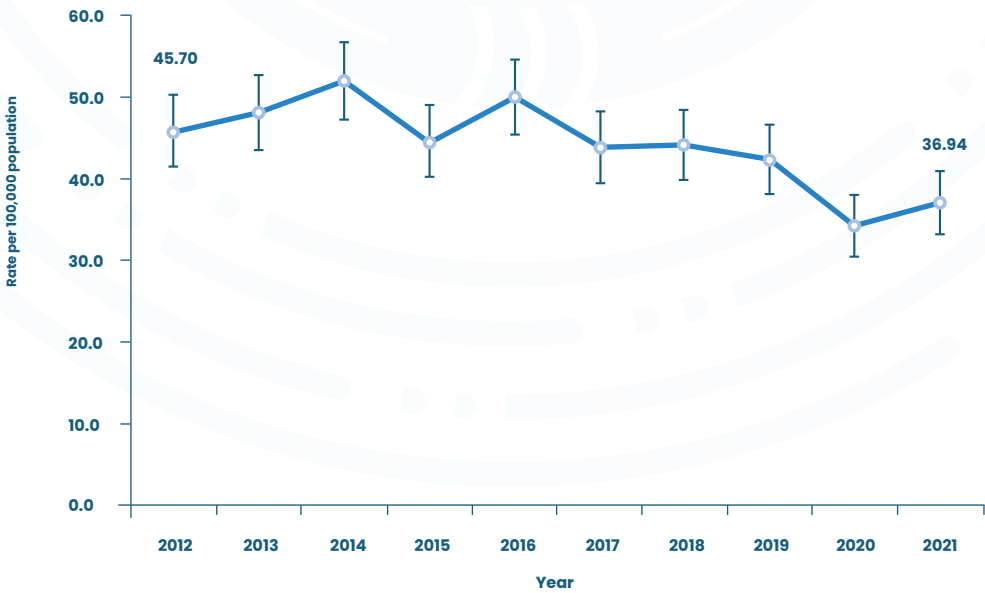
The top three causes of tamariki hospitalisation for injury from animate mechanical forces were due to:

- ‘Accidental hit, strike, kick, twist, bite, scratch or trample by another person’ (48%, n=922)
- ‘Contact with dog’ (36%, n=696)
- Being ‘bitten or stung by nonvenomous insect and other nonvenomous arthropods’ (8%, n=158).

**Figure 50** shows the rates of tamariki hospitalisations for injury from animate mechanical forces, for the years 2012 to 2021.

Additional data on tamariki hospitalisation for injury from animate mechanical forces, in the years 2012 to 2021, are provided in Appendix 2.<sup>143</sup>

Figure 50: Rates of tamariki hospitalisation for injury from animate mechanical forces, over time, 2012–2021



143. Table 53, Appendix 2.

Age Group

In the years 2017 to 2021, 39% (n=738) of all tamariki hospitalisations for injury from animate mechanical forces were in those aged 10 to 14 years, which represented the highest rates of hospitalisation of all the age groups (46.6 per 100,000).

The numbers and rates of hospitalisation for injury from animate mechanical forces for tamariki aged 0 to 4 years and 5 to 9 years were similar to each other (36.5 per 100,000 and 37.5 per 100,000, respectively).

The majority of tamariki hospitalisations in the age group 0 to 4 years were in those aged 1 to 4 years (88%, n=486), compared with 12% (n=68) in those aged less than 1 year.

For tamariki aged 0 to 4 years, the most common cause of hospitalisation for injury from animate mechanical forces was ‘contact with dog’ (18.3 per 100,000), followed by ‘accidental hit, strike, kick, twist, bite, scratch, or trample by another person’ (10.1 per 100,000).

Tamariki aged 5 to 9 years had similar rates of injury from the categories ‘contact with dog’ (16.0 per 100,000) and ‘accidental hit, strike, kick, twist, bite, scratch, or trample by another person’ (15.5 per 100,000).

For tamariki aged 10 to 14 years, the highest hospitalisation rates for injury from animate mechanical forces related to ‘accidental hit, strike, kick, twist, bite, scratch, or trample by another person’ (32.2 per 100,000).

**Table 21** shows tamariki hospitalisations for injury from animate mechanical forces, presented by age group, for the years 2017 to 2021.

**Figure 51** shows the rates of tamariki hospitalisation for injury from animate mechanical forces and the top three contributing causes, presented by age group, for the years 2017 to 2021.

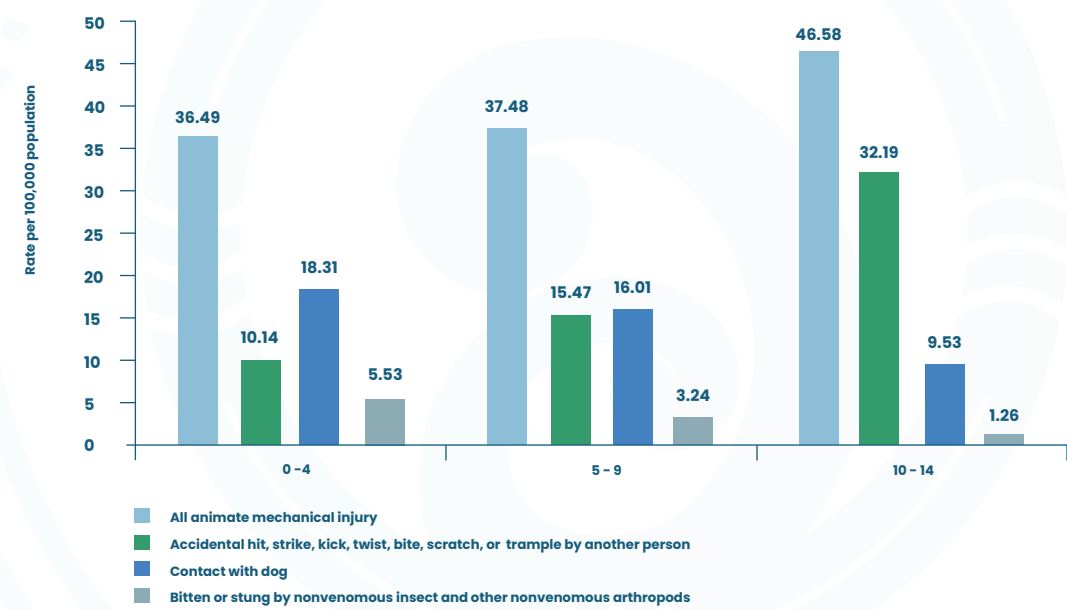
Additional data on tamariki hospitalisations for injury from animate mechanical forces, by age group and top three causes of injury, are provided in Appendix 2.<sup>144</sup>

144. Table 54, Appendix 2.

Table 21: Tamariki hospitalisations for injury from animate mechanical forces, by age-group, 2017–2021

Age Group (Years)	No. of Hospitalisations	%	Rate per 100,000	95% CIs	
0 – 4	554	29.9	36.49	33.51	39.66
5 – 9	625	32.6	37.48	34.60	40.54
10 – 14	738	38.5	46.58	43.28	50.07
Total	1,917	100	40.19	38.41	42.03

Figure 51: Rates of tamariki hospitalisation for injury from animate mechanical forces, by age-group and top causes, 2017–2021





Ethnicity

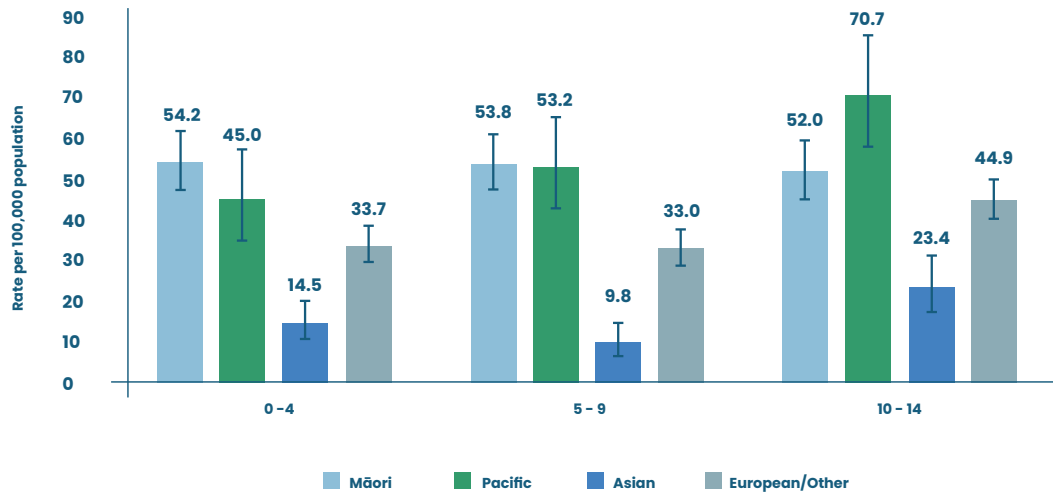
In the years 2017 to 2021, tamariki Māori and Pacific children had the highest rates of hospitalisation for injury from animate mechanical forces across all the age groups, while Asian children had the lowest rates.

Pacific children aged 10 to 14 years had the highest rate of hospitalisation for injury from animate mechanical forces, out of all the age groups (70.7 per 100,00). This was significantly higher than the rate for European/other or Asian children in the same age group.

The hospitalisation rate for injury from animate mechanical forces for tamariki Māori aged 0 to 4 years was significantly higher than the rates for European/other and Asian children in the same age group. Both tamariki Māori (53.8 per 100,000) and Pacific children (53.2 per 100,000) aged 5 to 9 years had significantly higher rates, compared with European/other (33.0 per 100,000) and Asian (9.8 per 100,000) tamariki aged 5 to 9 years.

Figure 52 shows the rates of tamariki hospitalisation for injury from animate mechanical forces, presented by age group and prioritised ethnicity, for the years 2017 to 2021.

Figure 52: Rates of tamariki hospitalisations for injury from animate mechanical forces, by age group and prioritised ethnicity, 2017–2021<sup>145</sup>



145. MELAA is not included in analysis due to small numbers.

Additional points to note from Figure 52:

- In the age group 0 to 4 years, tamariki Māori had the highest rate of hospitalisation for injury from animate mechanical forces (54.2 per 100,000), followed by Pacific children (45.0 per 100,000), European/other children (33.7 per 100,000), and Asian children (14.5 per 100,000). The rate for tamariki Māori aged 0 to 4 years was significantly higher than the rates for European/other and Asian children in the same age group.
- Tamariki Māori (53.8 per 100,000) and Pacific children (53.2 per 100,000) aged 5 to 9 years had significantly higher hospitalisation rates for injury from animate mechanical forces, compared with European/other (33.0 per 100,000) and Asian (9.8 per 100,000) children aged 5 to 9 years.
- In the age group 10 to 14 years, Pacific children had the highest rate of hospitalisation for injury from animate mechanical forces (70.7 per 100,000), followed by tamariki Māori (52.0 per 100,000), European/other children (44.9 per 100,000) and Asian children (23.4 per 100,000). The differences in hospitalisation rates for Pacific children aged 10 to 14 years were statistically significant when compared with the rates for European/other and Asian children of the same age.

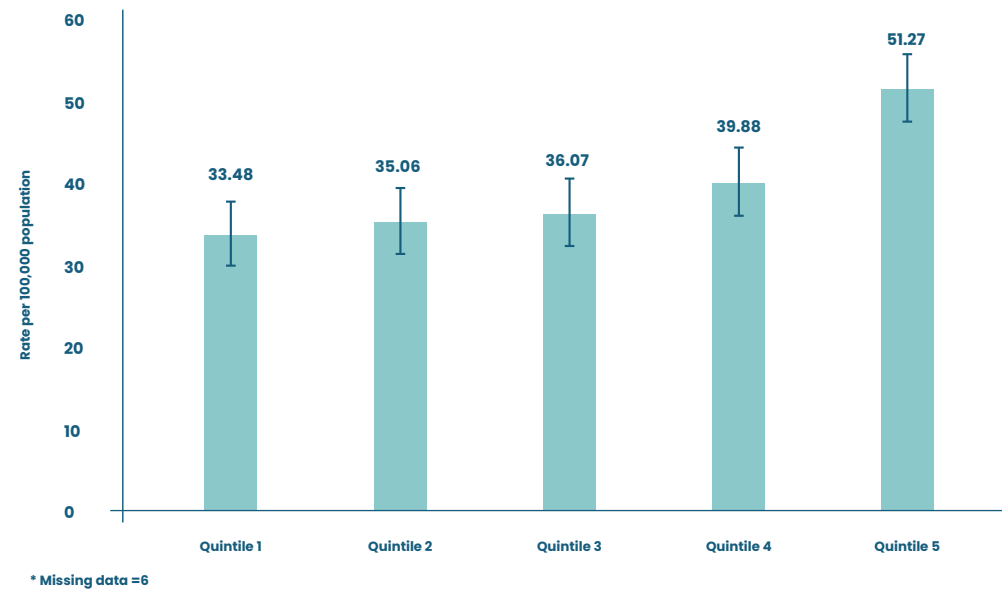


Socio-economic deprivation

In the years 2017 to 2021, tamariki living in the relatively most relatively deprived areas of Aotearoa (NZDep quintile 5) had the highest number and greatest proportion of hospitalisations (33%, n=634) compared with tamariki living in the least relatively deprived areas of Aotearoa (NZDep quintile 1: 16%, n=300).

Figure 53 shows the rates of tamariki hospitalisation for injury from animate mechanical forces, presented by NZDep quintile, for the years 2017 to 2021.

Figure 53: Rates of tamariki hospitalisation for injury from animate mechanical forces, by NZDep quintile, 2017–2021\*



Additional points from Figure 53:

- The rate of hospitalisations for tamariki in living in the most relatively deprived areas of Aotearoa (NZDep quintile 5) was significantly higher (51.3 per 100,000) than that for those tamariki living in the least most relatively deprived areas of Aotearoa (NZDep quintile 1: 33.5 per 100,000).

Gender

In the years 2017 to 2021, male tamariki accounted for a greater proportion of hospitalisations for injury from animate mechanical forces (63%, n=1,206) than female tamariki (37%, n=711) and had a higher rate of hospitalisation for injury from animate mechanical forces (49.2 per 100,000) than that of females (30.6 per 100,000).

Table 22 shows tamariki hospitalisations for injury from animate mechanical forces, presented by gender, for the years 2017 to 2021.

Table 22: Tamariki hospitalisations for injury from animate mechanical forces for tamariki, by gender, 2017–2021

	Number	%	Rate/100,000	95% CIs	
Females	711	37.1	30.64	28.43	32.98
Males	1,206	62.9	49.23	46.49	52.09
Total	1,917	100	40.19	38.41	42.03





Policy implications

Dog-related injury

The harms caused to tamariki by dog-related injury remains unacceptably high in Aotearoa, especially for tamariki aged 0 to 4 years. These harms can extend beyond physical injury to include psychological trauma following a dog attack and the development of post-traumatic stress disorder.

Addressing dog-related injury is a key part of kaupapa Māori focused research jointly led by Ririki Haumaru | Safekids Aotearoa, the Starship Foundation and the University of Auckland, who have published five studies on this topic over three years.<sup>146</sup>

Evidence-based policy recommendations in this section draw on this research, and have two fundamental components:

- Ensure the protection of tamariki is paramount when considering strategies for prevention of dog-related injury.
- Honour Te Tiriti o Waitangi by working in partnership with, and recognising the rangatiratanga of, whānau Māori in the development of strategies for, and research into, prevention of harm to people from dogs.

Improved regulation, implementation, and enforcement

The Dog Control Act 1996 is the main legislation in relation to dogs in Aotearoa and requires the registration of dogs, makes special provisions for ‘dangerous’ or ‘menacing’ dogs, and imposes obligations on dog owners to ensure that dogs do not cause a nuisance or injury. Implementing and enforcing the legislation is largely the responsibility of territorial authorities (City or District Councils). Research suggests that while regional differences in dog-related injury cannot be explained by differences in registered dog populations, there is a correlation between geographical regions with greater rates of injury having more issues with out-of-control dogs.<sup>147</sup> This could be connected to higher numbers of unregistered dogs.<sup>148</sup> This suggests that merely having requirements to register dogs is not enough to ensure the level of safety required to protect tamariki from the risks of dog-related injury.

146. Duncan-Sutherland et al., 2022a, 2022c, 2022d, 2022e.  
147. Duncan-Sutherland et al., 2022a.  
148. Ibid. This article estimated that around 20% of dogs in Aotearoa were unregistered.

As a result, we recommend the following:

- **Remove cost barriers to best practice around dog safety.** This includes offering low- or no- cost dog registration and sterilisation, particularly in areas of relatively high deprivation, and offering subsidies for fencing and gate requirements where the cost would otherwise prevent a dog owner providing appropriate fences and gates.<sup>149</sup>
- **Increase resourcing for greater enforcement of dog-control strategies (sterilisation, registration, fencing, leash, and muzzle use).** A recent survey of territorial authorities suggested that there are substantial variations amongst territorial authorities with some areas only having one or two staff members responsible for animal management services.<sup>150</sup> In addition to better resourcing animal management services, territorial authorities could also explore the introduction of means-tested infringement notices to ensure enforcement is equitable.
- **Legislate and enforce dog-sterilisation.** Controlling the dog population is known to reduce injuries in people, and it is also thought to improve dog welfare by avoiding having large numbers of unwanted dogs. Current policy is that neutering (of male dogs) is only required for dogs categorised as ‘menacing or dangerous’. We recommend that sterilisation (of both male and female dogs) should be mandatory for all dogs, unless owned by a registered breeder.<sup>151</sup>
- **Strengthen and enforce legislated fencing and gate requirements.** Currently, dogs need to be under the direct control of a person or “confined within the land or premises in such a manner that it cannot freely leave the land or premises”.<sup>152</sup> However, the reports from both a study of dog-control legislation showing high numbers of out-of-control dogs, and from caregivers describing incidents with dogs occurring due to strays, dogs escaping or being let out of properties or being walked off-leash,<sup>153</sup> suggest that these requirements are either not strong enough or are not being adequately enforced. Specific fencing regulations should be introduced, including height recommendations based on dog size.
- **Extending leash and muzzle requirements and change the use of the word ‘menacing’.** Current legislation categorises some dog breeds as ‘menacing’. This language risks discriminating against groups of people who have dogs that fall into this category and creating a stigma that discourages owners from taking appropriate safety-precautions. The owners of dogs categorised as ‘menacing’ have additional obligations to ensure the dog is not able to be ‘at large’ in any public space without being muzzled.<sup>154</sup> Our assessment is that muzzle (and leash and fencing) requirements should be extended to apply to all large dogs, based on the higher risk they pose tamariki, and that this would be more effective than regulating a subset of dog breeds.

149. Duncan-Sutherland et al., 2022e.  
150. Duncan-Sutherland et al., 2022a.  
151. Duncan-Sutherland et al., 2022c.  
152. Dog Control Act 1996, s52A(2)(b).  
153. Duncan-Sutherland et al., 2022b.  
154. Dog Control Act 1996, s33E(1)(a).

***We recommend that territorial authorities find better ways to support communities to practise responsible dog ownership***

- Territorial authorities should provide safe and separate off-leash dog areas that are clearly marked as high-risk areas. Access to these must be equitable, which might include providing a greater number of small, fenced off-leash areas (as distinct from large areas within parks or beaches), within easy walking distance of residential areas, and particularly in areas with relatively higher levels of deprivation.
- Teritorial authorities should provide clear regulations for high-risk situations in which a dog owner should be required to use a humane basket-muzzle on their dog. Potential situations could include on public transport and in taxis, visits to veterinarians, walking larger/stronger dogs in public spaces, and when leaving a dog tied up in a public area (such as busy shopping areas, education centres, and sports grounds).
- Education on responsibilities for keeping children safe around dogs and the key message that ‘any dog can bite’ should be directed to dog owners. This could be facilitated through community groups, online information at the time of dog-registration, or during regular veterinarian visits.

***We recommend more consistent reporting of dog bite injuries by health professionals***

Secondary prevention refers to the actions taken following an incident of dog aggression. For secondary prevention strategies to be formally put in place, territorial authorities need to be aware of such incidents. While some are reported by members of the public, health practitioners play an important role. Health practitioners should be required to consider notifying all dog bite injuries to animal management services.<sup>155</sup>

While there is a possibility that notification may deter people from seeking medical attention for themselves or for tamariki or dogs in their care, notification of child-protection issues is standard practice in healthcare and there is good evidence that this strategy reduces injuries.<sup>156</sup>

Territorial authorities should also be empowered to act on notifications of dog-related injury, with a view to ensuring tamariki are not at risk of injury within their home or wider community and to giving more targeted support to geographical areas with higher rates of incidence.

We also note that a number of health professionals are in the privileged position of being invited into whānau homes to provide health and wellbeing services, including midwives and Well Child Tamariki Ora nurses. We recommend that increased support is provided to these workforces so that they can work with whānau on strategies to address risks posed to tamariki by dogs.<sup>157</sup>

***Māori-led programmes***

Te ao Māori-informed approaches to dog control and management are currently under-valued and under-resourced. This should be addressed through investment in Māori-led solutions to dog-related injury prevention that positions dogs in ways that align with mātauranga Māori. This includes recognising the roles that dogs play as mōkai (pets) as well as guardians and companions. Indigenous approaches have had some success overseas<sup>158</sup> and are likely to also work in Aotearoa.

155. Duncan-Sutherland, N., et.al., 2022a.

156. Duncan-Sutherland, N., et.al., 2022a.

157. General guidance to health professionals on responding to and notifying bite injuries is available on the Starship website. <https://starship.org.nz/guidelines/dog-related-injuries-notification-safeguarding-and-bite-management/>

158. Ibid. See also Dhillon, J. et al., 2016.