

New Zealand: Changing patterns of bicycle injuries

During the period, 1982-86, a childhood injury surveillance system was operated at the Whakatane Hospital Emergency Department in the Eastern Bay of Plenty in New Zealand.

Some of these surveillance data were published in a detailed report on bicycle injuries. In that report, an average of 82 child pedal bicycle injuries were recorded per year, with a total of 4 deaths in five years, an average of less than one death (0.8) per year. All four deaths were due to head injuries. About one-quarter of the injuries were in children under 8 years old. Bicycle helmets were not in general use at the time.

In 1994, bicycle helmets were made compulsory, with a \$150.00 instant fine in effect for non-compliance. Also, from 1998 to 2002, the Eastern Bay of Plenty Child Injury Prevention Trust held a campaign focused on discouraging children less than 9 years of age to commute to school on bicycle as a way to reduce the number of crashes with motor vehicles. Simon Moyes, who is with the Department of General Practice and Primary Health at the School of Population Health at the University of Auckland, compared bicycle injury rates at these two different points of time.

Table 1:
Mean bicycle injuries in children during 1982-86 and 1998-2005 study periods

Period	Total	Admitted	Fractures	Head Inj.	Admit HI	Deaths
1982-86	83 (597)	13 (94)	16 (115)	34 (245)	10 (72)	0.8
1998-2005	121 (890)	17 (128)	32 (234)	32 (238)	6 (47)	0
Inc. in rate	293	35	199	-7	-25	-
P-value	<0.01	0.43	0.02	0.87	0.34	0.37
(mean number of incidents/yr, rates (in paren.) per 100,000 based on census data)						

The average number of injuries per year increased significantly during the two periods. A disproportionate of this increase was for fractures. However, the number of head injuries is similar. Hospital admissions have increased from 13 per year to 17 but the number of head injury admissions decreased. During this period, the annual average number of children injured in collisions with motor vehicles decreased from 10 to 4.3 per year (72 to 32/100,000).

Although these data, collected years apart, may not be completely compatible, and the numbers are very small, there appears to be an increase in the number of injuries. Two things about child cyclists changed during the 20 years – bicycle helmet legislation and behaviour. Various campaigns were introduced in the 1980s and 1990s to promote helmet use, and there was a campaign to discourage children from riding on major roads if they were under 9 years old.

Conclusion: The campaign to stop younger children cycling to school likely contributed to the reduction of motor vehicle collision figures. Similarly the drop in the proportion of children with serious head injuries is likely attributable to cycle helmets.

Moyes SA. *Changing pattern of child bicycle injury in the Bay of Plenty, New Zealand. J Paediatr Child Health* 2007;42(6):468-8.

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info@whohelmets.org

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