

Safe Kids Canada Position Statement on bicycle helmet legislation

Safe Kids Canada supports bicycle helmet legislation as a proven strategy, in conjunction with sustained education and enforcement programs, to prevent head injuries and deaths. We believe legislation should apply to all cyclists, because both adult and children cyclists are at risk for head injury.

Research in Canada shows that legislation is effective by:

- Increasing helmet use
- Reducing head injuries
- *NOT* decreasing the number of people who ride bikes

Current status:

- Six provinces currently have provincial legislation, but only four of these apply to all-ages. In addition, some municipalities have enacted local by-laws requiring cyclists to wear helmets; some of these by-laws cover children only and some cover all-ages cyclists. Municipalities have also introduced all-ages and *all-wheel* helmet by-laws, which requires mandatory helmet usage for cycling, skateboarding, and inline skating and non-motorized scooters.
- The attached chart outlines the status of bike helmet legislation and by-laws across Canada.

Legislation has reduced head injuries and deaths among cyclists:

A Canadian national study by Alison Macpherson and colleagues demonstrates that head injury rates among child and youth cyclists are about 25 per cent lower in provinces with helmet legislation compared to provinces without legislation.¹ The authors are confident that this decline is not the result of reduced cycling because their study compares cyclists with head injuries to cyclists with other injuries. If fewer people were cycling, all kinds of injuries would be expected to decline equally.

Of the many factors examined, including age, gender, socioeconomic status and status of helmet legislation, only the presence of a bicycle helmet law in the child's province was significantly associated with a lower rate of hospitalization for head injury among young cyclists. Over the four year period studied, 687 hospitalizations for head injuries to child cyclists could have been prevented if every province had bicycle helmet legislation. A similar study revealed that for cyclists one to 15 years of age, the average number of deaths decreased by 52 per cent each year, which demonstrates a significant reduction in deaths after legislation, was enacted.²

Legislation encourages helmet use:

A properly fitted helmet helps protect the brain from absorbing the force from a crash or fall, decreasing the risk of serious head injury by as much as 85 per cent.^{3, 4, 5} This means that four out of five head injuries could be prevented if every cyclist wore a

helmet.⁶ Research from provinces with legislation shows that helmet use has increased, in some cases dramatically, since the laws came into effect.

A study in Halifax, Nova Scotia shows that helmet use more than doubled after legislation came into effect in 1997, jumping from 35 per cent to 80 per cent and stabilizing there for at least two years.⁷ In British Columbia, helmet use has nearly doubled overall since legislation was enacted. Observational studies of several thousand cyclists throughout the province showed that helmet use increased from an overall rate of 46 per cent in 1995 (pre-legislation) to 70 per cent in 1999 (three years post-legislation).⁸ Cyclists in the five to 16 year age group achieved one of the biggest increases in helmet use, from 35 per cent in 1995 to 61 per cent in 1999. Most notably, the law in British Columbia has had a positive effect province-wide as helmet use has increased in areas or among age groups where it was lowest prior to the law, including among rural cyclists, older adults and people who only cycle in their own neighbourhoods.

Acknowledging that a vigorous public education campaign and an enhanced school-based bike safety program may have contributed to increased helmet use, the authors are confident that the helmet law itself has been a major factor because the effects of education programs tend to be short-lived.

The impact of legislation on cycling:

It is sometimes argued that requiring people to wear helmets will discourage some cyclists from riding, subsequently losing the important health benefits of this active and 'green' form of transportation.

In Ontario, observations of child cyclists reveal that riding has not declined since helmet legislation began. Cycling activity by children in the Toronto region studied has varied between 1993 and 1999, according to these annual observations, but it does not show a downward trend. In fact, cycling in 1999 was the highest of all the years studied.⁹ In British Columbia, the same research team that studied changes to helmet use is also looking at cycling activity. To date there is no evidence to suggest that the helmet law has discouraged people from cycling. In fact, they report that cycling in general seems to be on the rise, both as recreational activity and as a mode of transportation.¹⁰

Economic burden:

Head injuries represent a significant economic burden to our society. Enormous costs are associated with cycling injuries including hospital-related costs, ongoing costs for rehabilitation, and support services for brain damaged individuals. Each dollar invested in a helmet saves about \$30 dollars in societal costs,¹¹ which also amounts to approximately \$400,000 dollars in medical costs in the first year of a head injury alone.¹²

Enforcement:

The strength of enforcement and the range of practices vary across the country and even within provinces and territories since local enforcement may be the responsibility of municipal police forces as well as provincial forces and the RCMP, depending on the location. Penalties range from warnings to fines and educational opportunities in lieu of fines. In most jurisdictions, parents are responsible for ensuring that children younger than 16 years of age comply with these laws. In general, law enforcement activities have taken an educational rather than a punitive approach, focusing on educating parents and children and using the law as an incentive to encourage the purchase and use of helmets.

All-ages legislation:

National public opinion research in 2010 found that 81 per cent of parents support helmet legislation for both adults and children.

All cyclists, adults as well as children, are at risk of head injury. Legislation that applies only to young cyclists significantly weakens injury prevention efforts by undermining this message. The authors of one study suggest that the success of British Columbia's legislation is due to its inclusive nature. They note that a comprehensive law will naturally have a wider impact and it is "also more likely to be known and understood than one that applies only to a limited population"¹³.

The call for universal helmet legislation is supported by studies that draw attention to the positive association between adult helmet use and child helmet use^{14, 15, 16, 17}. A study in Toronto, Ontario found that children were 100 times more likely to own and use a bicycle helmet if their parents used a bicycle helmet themselves¹⁸.

A 2005 observational study of cyclists in a Toronto district confirms the important role that adults have in modeling health behaviours for children¹⁹. Over a nine year period, observations of child cyclists and their riding companions revealed that while only 41 per cent of children riding with a non-helmeted adult wore a helmet, 95 per cent of children riding with a helmeted adult wore a helmet. The authors concluded, "Bicycle helmet legislation that excludes adults may diminish the opportunity for adults to positively role-model health behaviours for children"²⁰.

Conclusion:

Safe Kids Canada supports the need for every province and territory to enact all-ages helmet legislation, provide safer environments for cyclists, and pursue the development of bike paths and traffic calming measures that are an important means of protecting cyclists from motor vehicle traffic.

Experience worldwide strongly suggests that education programs alone, even if broad and sustained, are effective in bringing helmet use to about 50 per cent of the population at best.^{21, 22} Legislation, in conjunction with ongoing education and

enforcement programs, is necessary to exceed the 50 per cent mark and make helmets part of the cycling culture and social norm of healthy, active and safe living.

Endnotes:

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- ¹ Macpherson et al. Impact of mandatory helmet legislation on bicycle-related head injuries in children: A population- based study. *Pediatrics* 2002; 110 (5)
 - ² David E. Wesson, Derek Stephens, Kelvin Lam, Daria Parsons, Laura Spence and Patricia C. Parkin Trends in Pediatric and Adult Bicycling Deaths Before and After Passage of a Bicycle Helmet Law. *Pediatrics* 2008;122:605-610.
 - ³ Thompson DC, Rivara FP, and Thompson R. Helmets for preventing head and facial injuries in bicyclists (Cochrane Review) In *The Cochrane Library*, Issue 2, 2004. John Wiley & Sons Ltd. Chichester, UK.
 - ⁴ Attwell, R. G., Glase, K. and McFadden, M., 2001. Bicycle helmet efficacy: a meta-analysis. *Accid Anal Prev* 33, 345-352. Thompson, D. C., Rivara, F. P. and Thompson, R., 2000.
 - ⁵ Thomson RS, Rivera FP and Thompson DC. A case-controlled study on the effectiveness of bicycle safety helmets. *New England Journal of Medicine* 1989;320:1361-1367
 - ⁶ Thompson DC, Rivara FP, and Thompson R. Helmets for preventing head and facial injuries in bicyclists (Cochrane Review) In *The Cochrane Library*, Issue 2, 2004. John Wiley & Sons Ltd. Chichester, UK.
 - ⁷ Leblanc J, Beattie, T & Culligan C. Effect of legislation on the use of bicycle helmets. *Canadian Medical Association Journal* 2002. 166(5):592-95.
 - ⁸ Foss R & Beirmess D. Bicycle helmet use in British Columbia: effects of the helmet use law. University of North Carolina Highway Safety Research Center and the Traffic Injury Research Foundation. Ottawa: 2000.
 - ⁹ Macpherson A, Parkin P and To T. Mandatory helmet legislation and children's exposure to cycling. *Injury Prevention* 2001; 7:228-230.
 - ¹⁰ Doug Beirmess, Traffic Injury Research Foundation, personal communication, December 16, 2000.
 - ¹¹ Children's Safety Network 1996 in *The Economic Burden of Unintentional Injury in Ontario*. SMARTRISK. 1999.
 - ¹² ThinkFirst Canada <http://www.thinkfirst.ca/index.aspx>
 - ¹³ Foss R & Beirmess D. Bicycle helmet use in British Columbia: effects of the helmet use law. University of North Carolina Highway Safety Research Center and the Traffic Injury Research Foundation. Ottawa: 2000.
 - ¹⁴ Finnoff JT, Laskowski ER, Altman KL, Diehl NN. Barriers to bicycle helmet use. *Pediatrics* 2001; 108(1): 1-7.
 - ¹⁵ Harborview Injury Prevention and Research Center. 2001. Systematic Review of Childhood Injury Prevention Interventions. <<http://depts.washington.edu/hiprc/childinjury>>.
 - ¹⁶ Parkin P et al. Evaluation of a subsidy program to increase bicycle helmet use by children of low-income families. *Pediatrics* 1995; 96: 283-287.
 - ¹⁷ Hu X, Wesson DE, Parkin PC, Chipman ML, Spence LJ. Current bicycle helmet ownership, use and related factors among school-aged children in metropolitan Toronto. *Canadian Journal of Public Health*. March – April 1994: 121-124.
 - ¹⁸ Hu X, Wesson DE, Parkin PC, Chipman ML, Spence LJ. Current bicycle helmet ownership, use and related factors among school-aged children in metropolitan Toronto. *Canadian Journal of Public Health*. March – April 1994: 121-124.
 - ¹⁹ Khambalia A, Macarthur C & Parkin P. Peer and adult companion helmet use is associated with bicycle helmet use by children. 2005. Manuscript (unpublished).
 - ²⁰ Khambalia A, Macarthur C & Parkin P. Peer and adult companion helmet use is associated with bicycle helmet use by children. 2005. Manuscript (unpublished).
 - ²¹ Svanstrom L, et al. Development of a Swedish bicycle helmet promotion programme -- one decade of experiences. *Health Promotion International* 2002;17(2):161-169.
 - ²² Harborview Injury Prevention and Research Center. 2000. Translating Injury Prevention Research into Action: Proceedings from A Strategic Workshop.