



Safe Kids Canada

Fact and Myths about Helmet Legislation

Myth: Helmet laws should not apply to adults.

Helmet legislation that pertains to all ages is absolutely necessary because both adult and children cyclists are at risk for head injury. Practicing safe cycling behaviour, including wearing a bike helmet, is not something adults outgrow.

Research demonstrates the important influence of adult role models on children's helmet wearing behaviour. Children are more likely to wear a bike helmet if their adult riding companions wear helmets. In one study, 95 per cent of children wore a helmet when riding with an adult wearing a helmet, while only 40 per cent of children wore a helmet when riding with an adult who was not wearing a helmet.¹

In addition, bike helmet legislation that applies to all ages eliminates the additional enforcement challenge of determining a cyclist's age without stopping them. All-ages bike helmet legislation would remove this obstacle to viable enforcement.

Myth: Introducing and enforcing helmet legislation wastes time and money that could be put toward more important road safety initiatives.

Improving road safety must target all at-risk groups, including cyclists, pedestrians and motor vehicle drivers and occupants. Although it is important to invest time and money in reducing motor vehicle collisions and protecting motor vehicle occupants, increasing helmet usage amongst cyclists is vital. Wearing a helmet is a simple and cost effective approach to reducing head injuries among cyclists, and should not be overlooked.

Head injuries are the leading cause of severe injury to children on bicycles.² Many individuals with severe head injuries continue to live with enormous injury costs, which are borne largely by society. Investing resources in creating and enforcing helmet legislation to increase bike helmet use has significant cost-saving potential. It has been estimated that for every one dollar spent on bike helmets, 30 dollars in injury costs are prevented.³ This amounts to approximately \$400,000 in medical costs in the first year of head injury alone.

Research strongly suggests that, at best, education programs alone are effective in bringing bike helmet use to *only* about 50 per cent of the population.^{4&5} Legislation, along with ongoing education and enforcement is necessary to

exceed the 50 per cent mark and make bike helmet use an accepted social norm.⁶

Myth: Helmet laws are just another attempt to restrict lifestyle choices and regulate the private lives of individuals.

Our society accepts many laws that offer protection to individuals even though they require us to relinquish some measure of freedom. For instance, 90 per cent of Canadians now use seat belts which suggest that most individuals are willing to comply with this law even if it restricts their freedom to some degree.⁷ Similar to seat belt laws, helmet laws are introduced to protect people from preventable injuries and keep individuals safe so they can carry out daily activities that they enjoy.

Some critics argue that bike helmet laws will discourage people from cycling.⁸ There is no evidence to support this claim. In fact, a study in Toronto found that, following the introduction of bike helmet legislation for children, average cycling levels for children were actually higher than the year prior to legislation.⁹

A systematic review of the effectiveness of bike helmet legislation to increase helmet use found that after the law was introduced, bike helmet use increased.¹⁰ These studies demonstrate the positive effect of legislation in garnering helmet compliance. A recent study in Alberta found that after helmet legislation was introduced for those under age 18, helmet use increased by almost four times in this age group. In contrast, those over age 18, who were not affected by the introduction of the helmet law, did not significantly increase their helmet use.¹¹

Currently, there is not a strong body of evidence to demonstrate that cycling decreases when helmet laws are introduced. However, it is commonly known that those who suffer serious head injuries can face long term consequences and even permanent disability that may prevent them from participating in many healthy active forms of recreation. Research indicates that up to eight per cent of people discontinue a recreational activity because of a preventable injury.¹²

Myth: The effectiveness of helmets and helmet laws in reducing head injuries is questionable.

Research illustrates that a properly fitted bike helmet helps protect the head by absorbing the force from a crash or a fall, and decreases the risk of a serious head injury by as much as 85 per cent and brain injury by 88 per cent.^{13, 14 & 15} Systematic reviews have proved the effectiveness of bike helmets at reducing head injuries and the effectiveness of helmet legislation in increasing helmet use. Systematic reviews are widely regarded by researchers as reliable evidence-based assessments of health care practices.

A cross-Canada study has demonstrated 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. Of the many factors examined in the study, only the presence of a bike 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, it was determined that 687 hospitalizations for head injuries to child cyclists could have been prevented if every province and territory had bike helmet legislation in place.¹⁶

Myth: Wearing helmets may give cyclists a false sense of security which may encourage them to take more risks.

Some critics assert that cyclists who wear helmets may feel more protected, resulting in greater risk-taking behaviour, with a subsequent increase in bicycle related injuries. If this theory is correct we might expect to see greater rates of injury overall after the introduction of bike helmet legislation, with the assumption that an increased number of helmet-wearing cyclists are taking more risks. However, current evidence contradicts this theory. Studies in several countries have revealed that after bike helmet legislation is introduced, head injury rates to cyclists have declined.¹⁷

These studies indicate that riders who wear helmets do not take greater risks than those who do not wear bike helmets. There is no credible scientific data to support the "risk compensation" theory. In fact, recent case-control research found that the use of protective equipment (various types) did not result in reports of greater risk-taking behaviour in the sample of children aged eight to 18 in this study.¹⁸

Endnotes

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³ Miller T, Levy D, "Cost outcome analysis in injury prevention and control eighty four recent estimates for the United States" *Medical Care* 2000, 38(6): 562-587

⁴ Svanstrom L, Welander G, Ekman R, Schlep L. Development of a Swedish helmet promotion programme – one decade of experiences. *Health Promotion International* 2002; 17 (2): 161-169.

⁵ Harborview Injury Prevention and Research Center. Systematic Review of Childhood Injury Prevention Interventions. 2001. (Cited July, 2006) <www.depts.washington.edu/hiprc/childinjury>

⁶ Safe Kids Canada. *Child & Youth Unintentional Injury: 1994-2003 10 Years in Review*. 2006.

⁷ Canadian Council of Motor Transport Administrators. *Road Safety Vision 2010: Making Canada's Roads the Safest in the World*. 2002 Annual Report.

⁸ Robinson DL. Head Injuries and Bicycle Helmet Laws. *Accident Analysis and Prevention* 1996; 28(4): 463-475.

⁹ Macpherson AK, Parkin PC, To TM. Mandatory helmet legislation and children's exposure to cycling. *Injury Prevention* 2001; 7: 228-230.

¹⁰ Karkhaneh M, Kalenga J-C, Hagel BE, Rowe BH. Effectiveness of bicycle helmet legislation to increase helmet use: a systematic review. *Injury Prevention* 2006; 12: 76-82.

¹¹ Hagel BE, Rizkallah JW, Lamy A, Belton KL, Jhangri GS, Cherry N, Rowe BH. Bicycle helmet prevalence two years after the introduction of mandatory use legislation for under 18 year olds in Alberta, Canada. *Injury Prevention* 2006; 12: 262-265.

¹² Hagel BE. Alberta Children's Hospital, Calgary Health Region, presented at the Lydia Catherine McCutcheon Lecture 2006 "The reasons for and against helmet use in recreational activities: what to tell your patients and their parents." Toronto, November 2006.

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¹⁴ Attwell RG, Glase K, McFadden M. Bicycle helmet efficacy: a meta-analysis. *Accident Analysis and Prevention* 2001; 33: 345-352.

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¹⁶ Macpherson AK, To TM, Macarthur C, Chipman ML, Wright JG, Parkin PC. Impact of mandatory helmet legislation on bicycle-related head injuries in children: a population-based study. *Pediatrics* 2002; 110(5).

¹⁷ Macpherson A, Spinks A, "Bicycle helmet legislation for the uptake of helmet use and prevention of head injuries" *The Cochrane Database of Systematic Reviews* 2008;3.

¹⁸ Pless IB, Magdalinos H, Hagel B. Risk-Compensation Behavior in Children: Myth or Reality? *Archives of Pediatrics and Adolescent Medicine* 2006; 160(6): 610-614.