

Safe Kids Canada

Fact and Myths about Helmet Legislation

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Myth: Helmet laws should not apply to adults

Helmet legislation that pertains to all ages is absolutely necessary because all cyclists – adults and children – are at risk for head injury. In 2002, a national survey commissioned by Safe Kids Canada found that 79 per cent of parents support helmet legislation for both adults and children.¹ Practicing safe cycling behaviour – including wearing a bike helmet – is not something individuals should outgrow in adulthood.

Research shows the important influence of adult role models on children's helmet wearing behaviour. Children are more likely to wear a bike helmet if their riding companions wear helmets. In one study, researchers observed that children were nine times more likely to wear a bike helmet when they rode with adults who were also wearing a helmet.²

In addition, bike helmet legislation that covers all ages is easier to enforce and be understood. For instance, it is often difficult for police officers to determine cyclists' ages without stopping them. All-ages bike helmet legislation would remove this obstacle to 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 groups at risk including cyclists, pedestrians and motor vehicle drivers and occupants. Although it is important to invest time and money into reducing motor vehicle crashes and protecting motor vehicle occupants, getting cyclists to wear helmets is equally important. Wearing a helmet is a simple and cost effective way to help reduce head injuries among cyclists.

Head injuries are the leading cause of severe injury to children on bicycles.³ Many individuals, even with severe head injuries, do not die; those that live have enormous injury costs which are borne largely by society. Investing resources in creating and enforcing helmet legislation to increase bike helmet use has great cost-saving potential. It has been estimated that for every 1 dollar spent on bike helmets, 29 dollars in injury costs are prevented.⁴

¹ Safe Kids Canada. National Bike Helmet Survey, 2002.

² Hu X, Wesson D, Parkin P, Chipman M, Spence LJ. Current bicycle helmet ownership, use and related factors among school-aged children in metropolitan Toronto. March – April 1994 Canadian Journal of Public Health; 85 (2): 121-124.

³ Thompson DC, Rivara FP, Thomson R. Helmets for preventing head and facial injuries in cyclists. Cochrane Review. The Cochrane Library. 2001; 4:1-37.

⁴ Children's Safety Network. Childhood injury: costs & prevention facts. Landover (MD) Children's Safety Network: Economics and Insurance Resource Center, 1996.

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.^{5&6} Legislation, along with ongoing education and enforcement is necessary to break the 50 per cent barrier and make bike helmet use an accepted social norm.⁷

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

Our society accepts many other laws that offer protection to individuals even though they require us to give up some amount of freedom. For instance, 90 per cent of Canadians now use seat belts⁸, which suggests that most are willing to follow this law to protect themselves in the vehicle even if it restricts their freedom to some degree. Like seat belt laws, helmet laws are introduced to keep individuals safe so they can carry out daily activities they enjoy with less risk for injury.

Some critics argue that bike helmet laws will discourage people from cycling.⁹ It is important to consider that even if critics of helmet legislation were correct in their claim that helmet legislation does result in a decrease in cycling, there is no evidence that those who have given up cycling have not taken up another form of another form of healthy exercise.

A study in Toronto found that in the year following the introduction of bike helmet legislation for children, average cycling levels for children were actually higher than the year before legislation was introduced.¹⁰

At this point there is not a strong body of evidence that shows that cycling decreases when helmet laws are introduced. However, it is commonly known that those who suffer serious head injuries must often cope with long term consequences and even permanent disability that may prevent them from participating in many healthy active forms of recreation. For instance, research indicate that up to 8 per cent of people discontinue a recreational activity because of an injury.¹¹

⁵ 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.

⁶ Harborview Injury Prevention and Research Center. Systematic Review of Childhood Injury Prevention Interventions. 2001. (Cited July, 2006) <www.depts.washington.edu/hiprc/childinjury>

⁷ Safe Kids Canada. *Child & Youth Unintentional Injury: 1994-2003 10 Years in Review*. 2006.

⁸ Canadian Council of Motor Transport Administrators. *Road Safety Vision 2010: Making Canada's Roads the Safest in the World*. 2002 Annual Report.

⁹ Robinson DL. Head Injuries and Bicycle Helmet Laws. *Accident Analysis and Prevention* 1996; 28(4): 463-475.

¹⁰ Macpherson AK, Parkin PC, To TM. Mandatory helmet legislation and children's exposure to cycling. *Injury Prevention* 2001; 7: 228-230.

¹¹ 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.

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

Research shows 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.^{12, 13 & 14} 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 systematic review of the effectiveness of bike helmet legislation to increase helmet use found that after the law was introduced bike helmet use increased.¹⁵ These studies show the positive effect of legislation in getting cyclists to wear helmets and emphasizes the need for more long term research on the subject. 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.¹⁶

A cross-Canada study 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.¹⁷

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

Some critics argue that cyclists who wear helmets will feel more protected, and this will encourage them to take greater risks, which could result in an increase in bicycle injuries. If this theory is true we might expect to see greater rates of injury overall after bike helmet legislation is introduced because a greater number of cyclists would be wearing helmets and, according to this theory, would be taking more risks. There is; however, evidence

¹² Thompson DC, Rivara FP, Thomson R. Helmets for preventing head and facial injuries in cyclists. *Cochrane Review*. The Cochrane Library. 2001; 4:1-37.

¹³ Attwell RG, Glase K, McFadden M. Bicycle helmet efficacy: a meta-analysis. *Accident Analysis and Prevention* 2001; 33: 345-352.

¹⁴ Thompson RS, Rivara FP, Thompson DC. A Case-Control Study of the Effectiveness of Bicycle Safety Helmets. *New England Journal of Medicine* 1989; 320(21).

¹⁵ 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.

¹⁶ 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.

¹⁷ 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).

that contradicts this theory. Studies in several countries have shown that after bike helmet legislation is introduced, head injury rates to cyclists decline.¹⁸ Also, one study, which adjusted for circumstances in the crash, such as whether the cyclist hit a motor vehicle, the speed the cyclist was traveling, the damage done to the bike, and the type of surface hit, were not different for those wearing a bike helmet than those who were not.¹⁹ Thus, even under extreme crash conditions, helmets have been shown to be effective at reducing head injury risk.

These studies suggest 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 this “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 8 to 18 in this study.²⁰

¹⁸ Macpherson AK, Macarthur C. Bicycle Helmet Legislation: Evidence for Effectiveness. *Canadian Medical Association Journal* 2002. 166: 472

¹⁹ Thompson DC, Rivara FP, Thompson RS. Effectiveness of bicycle safety helmets in preventing head injuries: a case control study. *JAMA* 1996. 276(24): 1968-1973.

²⁰ 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.