

## Introduction

At the American Medical Association – Medical Student Section (AMA-MSS) Annual 2009 meeting, Resolution 33, titled “Promoting the Universal Use of Bicycle Helmets” was passed. The resolution, entitled “Prohibiting Text Messaging While Driving” read as follows:

**RESOLVED, That our AMA-MSS encourage chapters to take advantage of current funding sources for community service initiatives to promote bicycle helmet use and to conduct events in their communities on safety education for all ages.**

## Bicycling Injury and Helmet Use

Cycling injuries are an issue that affects both developing and developed nations. Even in a highly motorized country like the US, 5% of children are on bicycles daily, let alone bicycle commuters and cycling enthusiasts, which bring the total of US cyclists to 67 million. While cycling may be popular, the use of helmets is less so.

Globally, the use of helmets is low. Studies in the US and in Europe suggest that helmet use can be as low as 14% (UK) and only as high as 42% (US). Fatalities from cycling injury are most commonly associated with head injury and helmets have been shown to decrease morbidity and mortality for injuries sustained while cycling.

In the US, nearly 900 individuals die from injuries and half a million are treated in emergency departments. Of these, a preponderance are the result of head and facial injuries. These injuries are often serious and require admission and/or surgery.

A rigorous meta-analysis found that wearing a helmet reduced the risk of TBI by at least two-thirds. Furthermore, injuries to the mid and upper face were reduced, while lower facial injuries were not. Helmet use is an effective public health intervention. While legislation has been shown to impact helmet usage, many areas have not passed nor have plans to pass bicycle helmet legislation.

## Increasing the Use of Helmets through Interventions

Meta analysis has examined non-legislative efforts and found them promising. The strongest intervention was the provision of free or subsidized helmets within communities. In the US and high-income countries, there is a social gradient in helmet ownership and usage, suggesting that there is an economic disincentive for helmet use among low-income. Furthermore, low-income communities were less likely to increase helmet usage while high-income communities were more likely to increase helmet usage. Providing helmets has been shown to reduce the social gradient.

Beyond economic programs, education has also shown to be effective. Children and young-adults are the most amenable to educational programs, statistically more likely to increase their helmet usage. Interestingly, community based programs had a slightly higher success than school based programs.

While community interventions were promising, the highest impact among helmet usage was seen in conjunction with subsidized or free helmets for participants.

## Increasing the Use of Helmets through Legislation

Opponents of legislation argue that strict laws may prevent cycling activity and be counter-productive to the nation’s obesity epidemic. While a review of US data shows that legislation did increase helmet usage and decrease morbidity and mortality, no studies have assessed legislative impact on the number of cyclists. While data is sparse for cycling helmet legislation, there is data for motorcycle helmet legislation. In districts that revoke motorbike helmet laws, injuries can rise up to 40% in that jurisdiction, suggesting that legislation is an effective intervention.

## What Consumers Need to Know

Purchasing a helmet can be difficult. Consumers are presented with many choices, some of which are not appropriate for cycling. The following guidelines are provided by the Bicycle Helmet Safety Institute:

1. Make sure the helmet meets CPSC bicycle helmet standards.
2. Ensure the helmet fits appropriately
3. The helmet has a rounded, smooth exterior with no major snag points in back.

## Sources

1. Macpherson A, Spinks A. Bicycle helmet legislation for the uptake of helmet use and prevention of head injuries. *Cochrane Database of Systematic Reviews*. 2008(3). Available at: [http://www.thecochranelibrary.com/userfiles/ccoch/file/Safety\\_on\\_the\\_road/CD005401.pdf](http://www.thecochranelibrary.com/userfiles/ccoch/file/Safety_on_the_road/CD005401.pdf)
2. Anon. Macpherson A, Spinks A. Bicycle helmet legislation for the uptake of helmet use. Available at: <http://www2.cochrane.org/reviews/en/ab005401.html>.
3. Anon. Helmets for preventing head and facial injuries in bicyclists. *Cochrane Database of Systematic Reviews*. 1999(4). Available at: <http://www2.cochrane.org/reviews/en/ab001855.html>.
4. Royal S, Kendrick D, Coleman T. Promoting bicycle helmet wearing by children using non-legislative interventions: systematic review and meta-analysis. *Injury Prevention*. 2007;13(3):162-167. Available at: <http://injuryprevention.bmj.com/content/13/3/162.abstract>.