



# Bicycle Helmet Safety Institute

A program of the Washington Area Bicyclist Association

4611 Seventh Street South, Arlington, VA 22204-1419

703-486-0100

www.helmets.org

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August 18, 2010

## Helmet Program Toolkit

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January, 2010

## Helmet Program Resources

Dear Educator or Program Planner:

In response to your request, here is information on helmets and helmet promotion campaigns. We include program guides, statistics and other useful information, a CD with manuals, lesson plans and a rodeo guide, and pamphlet masters to photocopy for any non-profit use. The CD has our entire Web site on it, including this Toolkit as the Word file Toolkit.doc, and our pamphlets in Word and .pdf format if you want to print out copies. It also has the WABA Safety Site with info on doing school riding demos.

In addition to our materials we hope the addresses below are useful. Google searches will find most of them on the Internet.

### **US Department of Transportation**

DOT's National Highway Traffic Safety Administration has **free** pamphlets, handbooks, posters and other materials for bicycle safety campaigns. A page is included in this toolkit with descriptions of some of them. Some are available on the Web. Contact Safety Counter-measures Div., NHTSA, Dept. of Transportation, 4700 7th St. SW, Washington, DC 20590-0001. Phone 202-366-5399, Fax 202-493-2062. All of them are on our enclosed Toolkit CD or the NHTSA video CD.

### **Snell Foundation - Snell Safety Education Center**

The Snell Safety Education Center has pamphlets, buttons, posters, videos and other helmet promotion materials for a small donation. Some of their materials are available in Spanish. Contact them at 3628 Madison Ave., STE 11, North Highlands, CA 95660, Phone 916-331-5073, email [info@smf.org](mailto:info@smf.org), Web: [www.smf.org](http://www.smf.org) Ask about what donation they expect for the materials you are requesting.

### **Safe Kids National Campaign**

If you target kids you should contact the National Safe Kids Campaign coalition in your area. They have promotional materials. They also have low cost helmets used by their own programs, and your program can order Bell brand helmets through the same source by calling 800-494-4543, ext. 260. Contact Safe Kids, 1301 Pennsylvania Ave NW, Suite 1000, Washington, D.C. 20004-1707. Phone 202-662-0600, fax 202-393-2072, email: [info@safekids.org](mailto:info@safekids.org), Web: [www.safekids.org](http://www.safekids.org)

### **Harborview Injury Prevention Center**

Harborview has run an active and successful helmet campaign since 1986. Part of their program manual is in this package. Contact Harborview Injury Prevention and Research Center, 325 Ninth Avenue, Box 359960, Seattle, WA 98104, Phone 206-521-1526, Web:

[http://depts.washington.edu/hiprc/about/topics/web/bike\\_prevmat/index.html](http://depts.washington.edu/hiprc/about/topics/web/bike_prevmat/index.html)

### **American Plastics Council**

American Plastics Council has a free poster, printed on plastic. See it at [www.teachingplastics.org](http://www.teachingplastics.org)  
We would not use it because the current one shows kids jumping with bicycles and skates.

### **American Academy of Pediatrics**

AAP's Physicians Resource Guide motivates pediatricians to recommend helmets to parents. Write to AAP, Dept of Publications, P. O. Box 927, Elk Grove Village, IL 60009. Web: <http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/4/1030>

### **American Automobile Association**

The AAA Foundation for Traffic Safety has pamphlets, films, booklets, and videos covering a wide range of bicycle safety subjects, including helmets. They provide some videos and 250 copies of their printed materials **free**. AAA Foundation for Traffic Safety, 1440 New York Ave NW, STE 201, Washington, D.C. 20005. Phone 202-638-5944 email: [bbarksdale@aaafoundation.org](mailto:bbarksdale@aaafoundation.org)

### **State Programs**

North Carolina has an active program. Residents should call 919-733-2804. Florida has a very active program at 850-245-1500. New Hampshire's Dartmouth Center has a program for NH residents at 603-646-7780. Virginia has a Resource Guide available for residents from Heather Sitterding at 804-371-2434. California has lesson plans and other resources. The Texas Bicycle Coalition has materials in both English and Spanish. Google searches will find most of those on the Web, including your state if not one of the above.

### **Consumer Reports Article**

In June of 2009 *Consumer Reports* posted a Web article on kids' bike helmets. Available at libraries or to subscribers on their Web site. It is reviewed later in this package. Their latest on adult helmets was in 2006.

### **Want to help?**

We send this Toolkit free and we want you to know that there is no implied obligation to contribute a cent! We keep the total cost down to about \$4 so we can do that. But we are all volunteers, we do not accept any funding from the helmet industry, and we are on a very small budget. So if you want to support our work and you do not make or sell helmets, you are welcome to send us a small tax-deductible donation. Please make checks out to "Washington Area Bicyclist Association," our parent organization. Whether or not you can donate anything, we are glad you requested these materials and hope they will be useful.

Sincerely yours,

*Randy Swart*

Randy Swart  
Director



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June, 2010

## Helmet Fact Sheet

*Source: National Highway Traffic Safety Administration (NHTSA) and others*

- 716 bicyclists died on US roads in 2008 (698 in 2007, 1,003 in 1975)
- Bicyclist deaths represented 2 per cent of all 2008 traffic fatalities.
- One-seventh of the cyclists killed were between 5 and 15 years old.
- 52,000 bicyclists were injured in traffic in 2007 (Up sharply from 43,000 in 2007. Bicycle crashes and injuries are under-reported, since the majority are not serious enough for emergency room visits.)
- Average age of a bicyclist killed on US roads: 41
- Bicyclists 15 and under killed: 93. Injured: 13,000
- Bicyclists 55 and older killed: 179. Injured 6,000
- Alcohol involvement was reported in 37% of 2008 deaths.
- Nearly one fourth (23%) of the cyclists killed were drunk. (BAC over .08 g.dl)
- Fatal crashes typically were urban (69%) and at intersections (64%).
- The "typical" bicyclist killed on our roads is a sober male over 16 not wearing a helmet riding on a major road between intersections in an urban area on a summer evening when hit by a car.
- A very high percentage of cyclists' brain injuries can be prevented by a helmet, estimated at anywhere from 45 to 88 per cent.
- Direct costs of cyclists' injuries due to not using helmets are estimated at \$81 million each year, rising with the increase in health care costs.
- Indirect costs of cyclists' injuries due to not using helmets are estimated at \$2.3 billion each year.
- Helmet use in the US varies greatly in different areas and different sectors of our society. White collar commuters probably reach 80 per cent, while inner city kids and rural kids would be 10 per cent or less. Overall, our best wild guess is probably no more than 25 per cent. Sommers Point, NJ, where a state helmet law is in effect, found that only 24 of the 359 students who rode to school in one week of the Winter of 2002 wore helmets (6 per cent) until the School District adopted a helmet rule. North Carolina observed 17 per cent statewide before their law went into effect in 2001. Portland observes more than 80% of its commuting cyclists wearing helmets.



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January, 2010

## Where Do I Find Funding?

That's a good question!

First off, we are a small nonprofit, all volunteers, with an annual budget of about \$12,000. It is fully committed, and we don't do grants because there just isn't any funding. We think there is a need for small grants for local helmet promotion programs but we don't have the resources to do it.

Most of the grant programs we have heard about are either part of a large national campaign like the one run by the National Safe Kids Campaign for their local chapters, or are funded locally by the Elks, Kiwanis, JayCees, Chamber of Commerce, a local merchant, a bike club or another local organization.

That means that local service organizations are probably the best place to start looking for funding. On occasion Federal grants have been made available to supply helmets through state health departments. You may be able to approach your own state health department and ask.

If you are intending to distribute free helmets, check our page on the availability of cheap helmets for campaigns. The low cost (starting at about \$5 each) reduces the need to raise money. And helmets are available at some merchants at low prices, with Wal-Mart and Target starting at an everyday price of \$10.

We wish we could be more encouraging. If we find a source of funding for local campaigns we will post it here. If you find one, please email us!

### **Here is a message from one who did:**

I just did a helmet give away in San Diego County. The local Chamber of Commerce was my major funder. Also local merchants gave individually from their businesses. I was able to raise \$850.00 with one presentation. As we finished our event, a representative from an automobile dealership came by and offered to support our next effort. Sometimes one success leads to another. Good Luck



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## Inexpensive Helmets

You can find helmets for your program at a local discount store (Wal-Mart and Target start at \$10) Some bike shops will discount for a campaign. Helmets must meet the CPSC standard by law, assuring impact performance even in cheap models.

**The National Safe Kids Campaign** has arranged with one of their sponsors, Bell Sports, to provide helmets to their local chapters and other non-profits at around \$7.50 each. Contact your local Safe Kids chapter or their national office at 202-662-0600. Or call Kathy Hoffmann at Bell Sports at 800-494-4543 ext 260 (email: [Khoffmann0@cs.com](mailto:Khoffmann0@cs.com)) The mailing address is Bell Sports, Inc., 1924 County Rd, 3000 N Rantoul, IL 61866.

**American Safety ASHP** has helmets for prices ranging from under \$6 to \$35 for BMX models, plus freight of \$1.25 to \$3 per helmet. Some models are Snell B-95 certified. They have a true dual-certified skate-style helmet that meets both the CPSC bicycle helmet standard and ASTM F-1492 skateboard standard for only \$11. We would avoid their Swift 20 model with the pronounced rear overhang that adds nothing to safety and provides a potential snag point in a fall. ASHP has a 40 helmet minimum and a \$25 surcharge for orders under \$500.

**HeadStart Technologies** has a line of Canadian-made EPP helmets selling for \$7 to non-profits. EPP is a multi-impact foam, so you don't have to trash the helmet after every impact. They say the models for the U.S. are all ASTM certified. They also have toddler helmets made for either U.S. or Canadian (CSA standard) specs. The Canadian standard differs considerably from the US standard for toddler helmets, and is probably better. Contact Headstart Technologies, 558 Massey Road, Unit 6, Guelph, ONT N1K-1B4, Canada. tel. 800-423-3409 or 519-836-6646.

**Helmets R Us** has a line of TopGear helmets starting at about \$20.00. They also sell retail to individuals. They have sizing info for retail sales and a How to Fit video for programs that costs \$15.

**J & B Importers** has a line of helmets at about \$7 to \$15. Contact Lisa Humphries, Sales Manager, by email at [lcahn@jbimporters.com](mailto:lcahn@jbimporters.com) or by voice phone at 800-666-0400 x255. J & B is a well-known wholesaler to the bicycle industry of all kinds of bicycle parts and accessories. They established this program to deal with non-profits.

**Prevention Alternatives Inc** has helmets from Vigor Sports at \$6 for 12-vent helmets with black foam and \$8.50 for skate-style models, plus shipping if ordering less than 100 units. Discounts available on large orders. Prevention Alternatives, Inc, PO Box 16, Haslett MI 48840, 517-927-7731.

**ProRider** (Children-N-Safety or CNS) has "economy" bike helmets starting at \$3.65 each, the lowest price we have seen anywhere. They have other models in the five to six dollar range, some certified to Snell B-95, a slightly more demanding standard than CPSC. Their skate-style helmets are certified only to the CPSC bicycle helmet standard, as are most skate-style helmets in this price range. Their BMX (motorcycle-style) helmets are certified only to the CPSC bike helmet standard, and are priced at about \$45 to \$50. Contact ProRider, 18370 Olympic Avenue South, Tukwila, WA 98188, tel. 800-642-3123, fax 425-251-5985, email [info@prorider.com](mailto:info@prorider.com).

**Seven Star Sports** is a Canadian company with ten bicycle helmet models in its program for non-profits. They list all of them as CPSC-certified. The ones labeled as "multi-sport" are not certified to the standards for other sports, so we would regard them as bicycle helmets. Contact Khalid Mirza, Sales Representative, by email to [khalid@sevenstarsports.com](mailto:khalid@sevenstarsports.com) or by voice phone at 905-574-9270 or fax at 905-574-7082.

**Note:** We do not accept support from these companies or any other manufacturer. We have had no business relationship with any of them, so we can not actually recommend any of them. We would recommend normal business caution in dealing with any commercial enterprise, including helmet suppliers.

Most major US helmet manufacturers have *on occasion* donated helmets for a campaign. Usually the request has to hit just right, when they have leftover helmets of a particular model, and it fits with their current marketing strategy. They don't announce those donations because their full-price dealers would be upset and they would be inundated with requests. We don't have any more info than that. We do have a list of manufacturers on our Web page.



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## Some Videos and Films

**Ride Smart.** The best free video we have seen for 8 to 12 year olds. Kids do the preaching. Damaged helmets, egg drop, jello smash, good stuff on fit, brief rules of the road. 9 minutes. **Free** and on the DOT video disk in our Toolkit CD.

**Bike Safe, Bike Smart.** Safe riding video, all kids, diverse cast, wear helmet, fit, extensive rules of the road and riding techniques including night riding tips. Reviews rules at the end. Included on the DOT video disk in our Toolkit CD. 8 min.

**Bicycle Safety.** Hosted by Celine Yeager, filmed in DC cherryblossoms. Covers bike types, helmet and fit, lights, bright clothing, bike check, rules of the road, regulations, hazards. Included on the DOT video disk in our Toolkit CD. 7 min.

**Fitting a Bike Helmet.** Crash scene, bad advice on old standards, but step by step instructions on fit. Included on the DOT video disk in our Toolkit CD.

### **I Will Wear It and Live**

We have not seen it, but designed for the tweens group (8 to 12 years). Footage of the actual rehabilitation of an 11-year-old girl struck by a car while riding her bicycle without a helmet. A series of individual children and tweens make a personal pledge to wear their helmets every time they ride their bikes. 5 minutes. Comes with a leader's discussion guide. \$20 inc. shipping from Linda Schillinger or call 616-242-0360 or send a check payable to "Mary Free Bed Rehabilitation Hospital" to Linda Schillinger, Mary Free Bed Rehabilitation Hospital, 235 Wealthy SE, Grand Rapids, MI 49503.

**How to fit A Bicycle Helmet** Best helmet fitting video for training a parent to fit a child's helmet or for training helmet fitters for a program. An adult shows how to fit children. 7 mins. \$15, checks payable to "Pierce County Safe Kids Coalition." Michelle Nunez Coordinator, Safe Kids Pierce County, Mary Bridge Children's Hospital, Center for Childhood Safety, P.O. Box 5299 M/S 11125-1-CS Tacoma, WA 98415-0299 Phone: 253-403-7911. [michelle.nunez@multicare.org](mailto:michelle.nunez@multicare.org)

**The Perfect Fit** Fine helmet fit video. Racers help kids fit helmets, with mountain bike scenes. Text whizzes by, but the advice is sound. Six min. Teletech Video, 33816 Robles Dr, # 8, Dana Point, CA 92629, 949-388-7780 [lyadao@home.com](mailto:lyadao@home.com) [www.teletechvideo.com](http://www.teletechvideo.com)

**Bike Safety with Bill Nye the Science Guy.** Great video, but expensive. Covers each safety rule briefly, repeating the helmet message throughout. Has kids, cops, a messenger, racers, a melon drop. 16 min. Teacher's Guide. Disney Educational Productions, 105 Terry Drive, STE 120, Newtown, PA 18940-1425 or call 800-295-5010. \$84.

**Bike Helmet – Perfect Fit** Great 6 minute "how to fit a helmet" video. Racers instruct kids on how to fit helmets. Center for Injury Prevention, 5009 Coye Dr, Stevens Point, WI 54481-5078. 800-344-7580 or 715-344-7583 \$10.

**A Kid's Eye View** A fine video for parents to help them understand the mistakes kids make on the street, and the safety rules to teach them. Comes with a pamphlet for follow up. Has most of the elements of the How Kids See Traffic pamphlet, also done by the City of Madison, Wisconsin, as well as some of our own pamphlet on Teaching your Child to Ride a Bicycle. We don't know if Madison is still distributing the video or not.

**There's No One Like You!** A reasonable 9 min. video for middle school. Kids riding, skate stunts, brain model showing how brain injuries occur, how a helmet works, crash stories. Denver Osteopathic Foundation – 303-996-1140. \$30.

**Before the Fall** Why your child should wear a helmet. Well done, heavy. Don Reed, Cherry Capital Cycling Club, 4765 Ludlow Rd. SW, So. Boardman, MI 49680, tel (616) 369-2294 (home).

**Snell: Kidz Vidz** (5 min). Explains Snell's testing to kids up to age 10. Snell Foundation, 3628 Madison Ave, Ste 11, N. Highlands, CA 95660. 916-331-0359. Email: [info@smf.org](mailto:info@smf.org). Web: [www.smf.org](http://www.smf.org)

**CPSC Video Clip** The Consumer Product Safety Commission has done a video clip of their lab testing. We have info on how to download it at <http://www.helmets.org/cpscclip.htm>

**Jello in a Jar** Once the best tweens video, but no longer available unless you can find one somewhere.



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## Public Service Announcements

*Some of these are from Valodi Foster, California Dept. of Health Services*

### **15-Second Spot**

It's a fact. About 800 people, including more than 200 children, are killed annually in bicycle-related crashes nationwide, and about 60 percent of these deaths involve a head injury. The good news: (pause) research indicates that a helmet can reduce the risk of serious brain injury by 48 to 85 percent. Use your head. Use a helmet.

### **15-20 Second Spot**

So you've heard that 60 percent of all bicycle deaths involve a head injury, and now you want to buy a helmet. The problem is, you don't know what kind of helmet to buy or where to buy it. But all helmets sold in the US are required by law to meet an impact performance standard set by the U.S. Consumer Product Safety Commission. So you can buy a helmet that fits you, and buy it in a bike store, department store or discount store--they are all safe. Now you know. So what are you waiting for? Get your helmet today!

### **20 second spot**

Here's a safety question for you: why does Lance Armstrong wear a bike helmet when he races in the Tour de France? Probably because the race organizers require it, but also because he values his brain. If you value your brain you should wear a bike helmet too, even if nobody requires you to. You don't have to be riding in the Tour -- a simple fall can leave you in a vegetative state. It's your brain, and the choice is yours. Wear that helmet every time you ride.

### **20-Second Spot**

Have you ever wondered if you need a helmet when you ride your bike or skate? Well, studies show that if you use a seatbelt in your car, have a smoke detector in your home and look both ways before crossing a street, you certainly do. But if you cut your grass barefoot, play golf in thunderstorms and pinch the grounding pin off of three prong plugs, you might not want to bother. Personal safety is all about your own head, and how much you value it. If you have something to protect, wear a bike helmet when you ride.

### **15-20 Second Spot**

You've bought the helmet for your kids, and now it's time to enjoy the beautiful weather and ride those bikes! But your child won't wear the helmet. So ride with your kids and wear your helmet too! Kids tend to model what their parents do. So if you want your children to practice good bicycle safety, make sure you practice what you teach!

### **10-Second Spot**

So your teen won't wear a bike helmet? Remind him or her that wearing a helmet correctly every time is responsible behavior...the same kind needed to drive the family car at 16.

### **10-Second Spot**

So your child won't wear a bicycle helmet? Remind him or her that wearing a helmet correctly every time is responsible behavior...the same kind needed to earn that new privilege he has been asking for.

### **A Longer Dialogue: "Just in Case"**

Mark: Hey Joe, let's ride our bikes and go get some baseball cards.

Joe: Okay, let me go home to get my bike.

Mark: You don't have to go all the way home, just use my brother's bike. He won't mind.

Joe: Even if I did use your brother's bike, I'd still have to go home and get my helmet.

Mark: (Laughing as he starts to tease Joe) Helmet? Aw c'mon. Those things are for little kids. You can ride a bike just fine. You don't need a helmet. Let's just go.

Joe: Sorry, Mark, can't. What if something weird happens. I'd rather be safe than sorry.

Mark: You make it sound like riding a bike is dangerous.

Joe: A report I had to do for school made me think about it. In (name of state) (xxx amount) of people have been really hurt and that (xxx amount) of people have been killed in bike crashes. Even if you do survive a crash, a serious injury can lead to permanent problems. I know I don't want to end up having my mom helping me every time I have to do simple things, like eating or using the bathroom. I don't know about you, man, but I'd rather wear the helmet just in case.

Mark: Well. . . .okay. . . .you go do what you have to do. When you're ready, come get me in my room.

Joe: In your room? I thought we're riding to the card store? Why don't we meet at the corner like we usually do?

Mark: Because it's gonna take me at least 15 minutes to find my helmet in my closet!!

Joe: (Laughing) Oh, okay. I'll be back in 15 minutes.

Narrator: Use your head. Use a helmet. After all, it's your head.

## **PSAs on the Web**

**The Brain Injury Association of Minnesota** has a PSA on its Web site in .mpg format. ([www.braininjurymn.org](http://www.braininjurymn.org)) It's a big file (9 megs), with sound and picture ready to go. For info on using the .mpg, please use the contact info on the site. The PSA shows a kid riding along a neighborhood street when a bully rides alongside, harassing him about his sissy helmet. As they ride, the bully is not paying attention to where he is going, and suddenly collides with a board sticking out the back of a truck, ending the PSA. It is quite a shock, and most people will never figure out that the bully got hit in the face with the board, and a normal bike helmet would not have protected his face anyway.

**YouTube** has dozens of films on bicycle safety, mostly short. [www.youtube.com](http://www.youtube.com)

## Child Bike Safety Talk

A basic lesson plan

### Introduction

- Bike Safety is more than wearing a helmet
- It's more than just balance
- You need to learn the survival rules!

### What we will cover:

- The four rules to avoid fatal crashes
- Wearing a helmet,
- Bike maintenance for safety
- Teaching your parents how to ride

### The Safety Rules Can Protect You

#### 1. Never ride out into a street without stopping first.

Nearly a third of car-bike crashes involving kids occur when the kid rides a bicycle down a driveway or from a sidewalk into the street and in front of a car. You must learn to stop, look left, look right, look left again and listen to be sure no cars are coming before entering a street. Look left that second time because cars coming from the left are on your side of the street and are closer. You need to practice that: look left, look right and look left again. You see the car, but that does not mean the driver sees you! You must always assume that the driver has not. They may be dialing a cell phone or lighting a cigarette. If there are parked cars, be sure to go to the edge of the street before you begin your left-right-left looks.

#### 2. Obey stop signs.

Nearly a third of the car-bike crashes with kids occur when the kid rides through a stop sign or red light in front of traffic. You must learn to stop, look left, look right, then look left again at all stop signs, stop lights and intersections before crossing. If a car reaches the intersection when you do, wait for the driver to wave to you before going through. Lots of times they just don't see you at all. Do you know the basics about stop signs and stop lights? You need to go to a controlled intersection with your parents and practice crossing safely. When you ride in a group, each rider must stop and make sure it is clear before crossing. (see Rule 4 below) It's a bad intersection, walk your bike. It is the law to obey traffic signals even when no one appears to be coming. And the law about one way streets applies to you. Lots of kids get hit on one way streets going the wrong way because drivers don't expect them to be there.

#### 3. Check behind before swerving, turning or changing lanes.

Nearly a third of the car-bike crashes involving kids occur when a rider turns suddenly into the path of a passing car. You must learn to look behind you, signal and look behind again before swerving, turning or changing lanes. The best place to practice this is in a quiet parking lot or playground. Ride along a straight painted line and practice looking back over your shoulder without swerving off the painted line. You should not ride your bike on a street until you have learned to do that.

#### 4. Never follow another rider without applying the rules.

Many fatalities occur when the first rider violates one of the three rules above and the second one just blindly follows. The accident report will show one of the three rules above caused the crash, but the real reason was following another rider. Running stop signs or red lights, riding out of driveways or zipping across lanes all seem natural to you because you are following the other rider and not thinking about the rules. So this is a hard one to learn. Be extra careful when you are following another rider.

## Lesson Plan - Continued

### Wear a helmet!

#### 1. Why wear a helmet?

- Every year over 800 people die in the U.S. from bicycle crashes. Most of them die from head injuries.
- Many more have their brains scrambled and live for a long time or sometimes for the rest of their lives with something that doesn't work right up there. Brain damage can cause learning disabilities, personality changes and rob you of the ability to think clearly.
- Hospital emergency room studies show that a helmet can prevent between 48 and 85 per cent of that—almost all. So you don't want to be riding a bike without one, even on your block, on the sidewalk or on a bike trail. The fall is from the same height wherever you ride!

#### 2. Make sure it fits

Your helmet needs adjustment to give you all the protection you paid for.

- Make sure the pads touch all around.
- Make sure the straps meet in a V just under your ear.
- Adjust the length of the front and back straps to hold the helmet level on your head, not tilted back.
- Make sure the chin strap is snug but doesn't dig in.

With all of that done your helmet should stay on when you shake your head in any direction or have a friend try to pull the helmet off.

#### 3. Don't wear it on the playground

- A few kids have died from strangulation on monkey bars or other playground equipment when their helmet got caught.
- Take your helmet off when you get off your bike. Don't wear it on the playground or when you are climbing trees.

#### 4. Other gear

- Gloves protect the skin on your hands. Skaters' knee and elbow pads are good protection too.
- Eye protection helps keep bugs and dust out of your eyes.

### Your Bike

- Adjust it to be sure you can reach pedals, bars and brakes comfortably.
- Try the brakes and make sure they are working well.
- Check the tires for air
- Check seat, pedals and handlebars to be sure they are tight.
- Lube the chain if it squeaks. It will break if you don't.

### Riding

- Be careful of where you ride. Traffic is a problem almost everywhere.
- Follow the four rules. Do you remember them?

### Teach your parents well

Lots of parents never got a talk on bike safety. You can teach them about the safety rules. You can also teach them about helmets. They should wear one to be a good example for you.

Bicycle Helmet Safety Institute

# Workshop on Bicycle Helmets

## The Need

- You always need a helmet wherever and whenever you ride.
- You can expect to crash in your next 4,500 miles of riding, or maybe much sooner than that if you are not careful!
- Head injury causes 75% of our 600+ annual deaths from bicycle crashes. Medical research shows that a bicycle helmet can prevent between 48% and 85% of cyclists' head injuries.
- Helmets are required by law in 21 states and over 145 localities, mostly for those under 16.

## The physics of crashing

- Forward speed is not the most important crash force, it's the fall to the pavement. Even a low-speed fall on a bicycle path can scramble your brains.
- Car crashes are the most deadly, and there the closing speed with the car can be important, but at city speeds the fall after the car hits you and the second hit on the pavement can still be the hardest blow.

## The Helmet

- A helmet reduces the peak energy of a sharp impact.
- This requires a layer of stiff foam to cushion the blow by crushing.
- Most bicycle helmets do this with expanded polystyrene (EPS), the familiar picnic cooler foam. Once crushed, EPS does not recover. Another foam, expanded polypropylene (EPP), does recover, but is much less common.
- The helmet must stay on your head even when you hit more than once--usually a car first, and then the road. So it needs a strong strap and an equally strong fastener.
- We used to worry about what standard the helmet met, but all bike helmets sold in the US now have to meet the CPSC standard, so for bicycling that question is settled. For skateboarding it's different. We'll cover that later.
- Pick white or a bright color for visibility to be sure that motorists and other cyclists can see you.
- Common sense tells you to look for a smoothly rounded outer shell, with no sharp snag points. Excessive vents mean less foam contacting your head, which could concentrate force on one point. "Aero" helmets are not noticeably faster for most of us, and in a crash the "tail" could snag or knock the helmet aside. Skinny straps are less comfortable. Rigid visors can snag or shatter in a fall.

## Fitting

- Make sure your helmet fits to get all the protection you are paying for.
- A good fit means level on your head, with the foam pads touching all around.
- Adjust the straps first so that the V on the sides meets just below your ear. Then adjust the chin strap comfortably snug.
- The helmet should not move more than about an inch in any direction, and must not pull off no matter how hard you try.
- You may have to tighten the front straps if the helmet tilts back, or the rear straps if it pushes forward.
- Be prepared to fuss with the straps a while to get things right.
- It's not enough for the helmet to just sit on your head. The straps have to hold it there or it will be gone when the car hits you and you may hit the pavement with a bare head.

## Comfort Requirements

- Coolness, ventilation, fit and sweat control are the most critical comfort needs.
- Air flow over the head determines coolness, and larger front vents provide better air flow.
- If you sweat a lot you may need a brow pad or separate sweatband.
- Weight is not an issue with today's helmets.

## Special Problems

- Pony tail ports are useful for anyone with longer hair. They can improve fit and comfort.
- Bald riders should avoid helmets with big top vents to prevent funny tan lines.
- Some head shapes require extra fiddling with fitting pads and straps.
- Very small heads usually need thick fitting pads.
- Very large heads require one of the extra large helmets out there, including the 8 1/4 Bell Kinghead.
- For a softer landing, seniors should pick a thicker, less dense model without huge vents. That's hard to do when we have no test data.

## When Must I Replace a Helmet?

- Replace any helmet if you crash. Impact crushes some of the foam, although the damage may not be visible. Helmets work so well that you need to examine them for marks or dents to know if you hit.
- Replace the buckle if it cracks or a piece breaks off.
- Even if you don't crash, most manufacturers recommend replacement after three to five years. We think that depends on usage, and helmets given reasonable care are good for longer than that.
- If your helmet is from the 70's, it's time to replace it.
- No one requires you to replace your helmet, so give it some individual thought.

## Bike Helmets for Skating?

- The ASTM standards for biking and inline skating are identical. And CPSC says that bike helmets are fine for inline skating.
- Aggressive skating and skateboard helmets are different. They have their own ASTM standard, designed for multiple hits with lesser impact severity.
- If you are skateboarding and falling every day, a one-hit bike helmet is not very well designed for you. You need either a skateboard helmet certified to ASTM F 1492 or a dual-certified helmet that meets both standards and can be used for biking and skateboarding.
- The words on the box are just ads. They may say skateboard, but some of them lie. The manufacturer knows that you throw the box away.
- Inside the helmet is a sticker that tells you which standard the helmet *really* meets. Look for that sticker. For skateboarding it must say the helmet meets the ASTM F 1492 skateboard helmet standard. A CPSC sticker is fine if you want to throw the helmet away after your first hit. Call that the Ten Minute Helmet.

## Warning! No Helmets on Playgrounds!

- Anyone must remove helmets before climbing on playground equipment or trees, where a helmet can snag and choke them.
- There have been a few choking incidents, some on playgrounds and some in trees.



*Excerpts from*  
**Developing A Children's Bicycle  
Helmet Safety Program**

**A Guide for Local Communities**

*Prepared by Washington State Chapter of the American Academy of Pediatrics and the staff of the Harborview Injury Prevention Center under a contract with the Office of Parent Child Health Service, Washington State Department of Social and Health Services. Harborview Injury Prevention Center, Seattle, Washington, 98104 Jan. 1987-Updated November 1987*

## **Rationale For Children's' Bicycle Helmet Campaign**

More than 800 persons die in the United States every year as a result of bicycle-related trauma. More than two-thirds of these victims are under the age of 15. Over 75% of the bicycle-related deaths involve head trauma. The use of protective helmets has reduced the incidence of serious head injury in sports such as football, baseball and ice hockey. Though controlled studies are yet to be performed, it stands to reason that significant reductions in mortality and morbidity from bicycle trauma would occur were protective helmets more widely worn.

Helmets are now in general use among experienced adult cyclists. They are required in sanctioned races and in outings sponsored by most bicycle clubs. Yet, even though they have by far the highest death and injury rates, surveys in several communities have shown that less than 1% of children wear bicycle helmets. The main reasons are a) parents are not generally aware of the risks of bicycle injuries; b) bicycles are generally viewed as toys; and c) the wearing of a helmet is not perceived as "in" or "cool" by school children.

There are precious few actions in the health field known to reduce the risk of illness or injury. The wearing of a bicycle helmet is one such action that will definitely save lives. This can be brought about in local communities by a thoughtful, vigorous educational campaign.

In 1985, a Bicycle Helmet Safety Campaign was cosponsored by several organizations including the Harborview Injury Prevention Center, Washington State Society of Pediatrics Washington State Division of Health, Washington State Medical Association,, Group Health Cooperative, Cascade Bicycle Club, Emergency Medical Services of the Seattle-King County Health Department, and Mountain Safety Research (a bicycle helmet manufacturer).

The impetus for the project came from nineteen children being admitted either to Harborview Medical Center, or Childrens Hospital and Medical Center with serious head injuries from bicycle trauma in a three month period during 1985. A survey of four pediatric offices in King County by University of Washington medical student, Carla Pharris, showed that less than 1% of children between 8 and 12 owned bicycle helmets. A coalition of sponsors was put together. To be listed as a sponsor an organization had to pledge either a financial or an in-kind contribution to the bicycle helmet campaign.

## **Program Goals**

- Sensitize parents about the need for children 8-12 to wear helmets.
- Increase access to helmet purchase through the use of discount coupons.

## **Program components**

- Press conference to kickoff the program.
- TV PSA (public service announcement) alerting parents to the danger of head injuries caused by bicycle accidents and the need for helmet protection.
- Radio PSA's and interviews encouraging parents to purchase helmets and children to wear them.
- frequent newspaper articles about the problem.
- An attractive brochure describing how to purchase a safe helmet.
- A discount coupon for 10% off helmet purchase at participating stores.
- A phone number to call for more information and to obtain a brochure/coupon.

Program evaluation consisted of monitoring the number of coupons redeemed, attempting to monitor the dealer sales of small-sized helmets and repeating the survey of pediatricians. The following is based on our experience with the Seattle program.

## Planning the Program

Careful planning of a bicycle helmet safety program will avoid problems in implementation and evaluation and increase the chances of its success. The following section poses questions to consider when planning, followed by a discussion of the relevant issues.

### Why implement a children's bicycle helmet safety program?

A primary reason for implementing a program is the high incidence of bicycle related head injuries in your community. National statistics are okay to cite, but statistics on bicycle injuries in your local community are usually more persuasive. It is useful to have some idea of the magnitude of the problem. If possible; collect statistics from emergency rooms, emergency medical services, family practitioners or pediatricians about the prevalence of the problem. Your community may not have statistics on accidents, but may have a great number of children who are riding bikes without helmets. This would be another reason to consider developing a program.

A third factor in deciding whether to develop a program is the existence of supportive community agencies and groups who could help with its planning and implementation. These would include: an organized supportive health care system, physician support, strong emergency medical services, an interested health department, community hospital, PTSA, service organizations, bicycle organizations, schools, and bicycle retailers.

### Who in the community will endorse and support the program?

One of the first steps in planning the program is to identify interested parties and generate their endorsement and support to advance the program. Organizations and groups who might be involved include:

- MDs, medical associations, pediatric societies
- Health departments
- Departments of emergency medical services
- Community hospitals
- Parents groups: Parent Teachers Associations
- Bicycle clubs
- University injury or prevention/health promotion centers
- Bicycle retailers/helmet manufacturers
- Service organizations, such as Kiwanis, Rotary, Lions, YM and YWCA, Boy and Girl Scouts, Red Cross, etc.

## Funding

Funding sources usually require a written proposal or project description. Potential public sources of funding include: state health monies; e.g.; Maternal and Child Health money, health departments and universities. The latter two might provide in-kind support with consultants and staff time if not money. Others who might be interested in supporting the project are insurance companies, P.T.A.s, Foundations, service clubs, and helmet manufacturers. Public relations firms, television and radio stations might be willing to adopt bicycle helmet safety as their public service project and plan and produce the publicity for the project.

In Washington State, the pediatric and family practice societies, along with Group Health Cooperative paid for the brochures that their physicians handed out to their patients. The King-County Health Department printed brochures that were distributed through their clinics. The State Division of Health provided funds for a part-time health educator to coordinate the campaign for four months. The largest expenses were materials to produce the PSA (labor was donated by the production company), and printing brochures for general distribution. These expenses were borne by Mountain Safety Research.

### Who will coordinate the program?

In a program supported by a network or coalition of interested organizations it is important that some person or agency be designated as coordinator and their responsibilities be defined and agreed upon. Coordinators may be volunteer or paid and their responsibilities include monitoring activities and progress, maintaining communication, updating coalition members, making sure things happen and managing data. The Seattle program suffered from lack of a single coordinator during the planning stages, which resulted in some missed opportunities

### Who will the program target?

Will your program focus on: parents, kids (what ages?), health care providers, schools, bike safety programs, bike retailers? Parents are usually in charge of the household money and more likely to buy a helmet than a child would be. What geographic area will your program include: neighborhood, school district, city, or county? Specifically identifying your target audience helps you define goals and objectives and select appropriate methods to reach them. The more specific and focused your program, the easier it will be to reach your goals and observe and measure changes. We targeted the 8-12 group because they had the highest injury rate, lowest helmet

usage rate, and were thought to be more or less under the control of their parents. We did not target adolescents, who also have a high injury rate, because of the difficulties in "reaching" them. Avoid trying to reach everyone.

## What are the goals and objectives?

Goals and objectives help you select program methods and measure success. Goals are global and usually define an ideal state. For example, the ultimate goal of any bicycle helmet safety program is to:

***Increase the use of helmets and reduce head injuries due to bicycle accidents.***

Objectives are more specific and describe how you are going to reach your goals. Objectives are specific, time-limited and measurable. For example, an objective might state: "In six months, 85% of bike safety programs will include a brochure and other helmet information in their programs".

The beauty of the bicycle helmet campaign is being able to ensure that by the taking of a single action, the risks of mortality and morbidity associated with bicycle riding are appreciably reduced. Optimally, the death and injury rates from bicycle trauma in helmeted and unhelmeted cyclists would be assessed. Large numbers of cases would have to be compiled however for such an evaluation, which is impractical for all but the largest of injury surveillance systems. Thus the main objective should be: -to increase helmet use in children

Other objectives, leading to the wearing of helmets by children are:

- to increase awareness or knowledge about need for helmets in preventing serious head injuries and death in children
- to increase number of helmet purchases
- to increase physician/nurse counseling of parents about helmet use
- to increase helmet information in bike safety programs

These objectives may or may not have timelines and percentages attached to them.

When selecting goals and objectives try to be focused and realistic. Avoid being overly ambitious. Conservative goals and objectives have the best chance of being achieved.

## How long should the program run?

The length of a bicycle helmet safety program will depend on its objectives and activities. The City of Madison ran an intense safety campaign for four weeks which resulted in a significant increase in adult helmet use (Berchem, 1986). If you choose to run a short-term program (1-6 months) then you will want to intensify your activities for that period of time. Bicycle helmet safety is best emphasized in spring and summer, during bicycle riding season, April to September. Careful planning will be needed to insure that activities run on time. Short-term programs have the advantage of maintaining interest, but results may not be immediately apparent if your timing is not right.

A long-term program (6 months-2 years) can take advantage of seasonal events around which to plan activities. If you are trying to get a program implemented into the schools or effect change in a large municipal area, it is important to allow the program sufficient time to work.

Regardless of the length of the program, it is important to allow enough time for planning before beginning program activities and to coordinate activities with seasonal events to maximize their impact (for example, school assemblies need to occur during the school year; holiday coupons should come out in November, etc.).

## Selecting Program Methods

### Introduction

Educational methods can be divided into the following categories:

- media campaigns: providing information via the media or in written form
- personal interaction: providing education in person, either on-to-one or in groups
- incentives: reinforcing wearing or purchasing helmets.

Again, the methods used depend on what the program is trying to achieve. The following educational methods are aimed at changing the knowledge or behavior of parents, kids, health care providers, bike retailers, and bike safety educators. Select those methods that will best realize your goals and reach your target population.

## Media Campaigns

Media campaigns provide information, raise awareness and remind people about suggested new behaviors. They may or may not lead to behavior change.

## 1. Brochures

The content of any brochure you develop depends on its target, whether it is for parents, children, or the community. You may want to address a brochure to parents describing the problem and providing information on how and where to purchase a safe helmet, and how to get their kids to wear helmets. Brochures for kids might focus on why it is "cool" to wear helmets. A community-oriented brochure might discuss the problem and what a community can do to overcome it.

Brochures can be distributed to PTA's, health care providers, bike safety programs/bike rodeos, boys and girls clubs, day camps and recreation centers, bike events (bicycle Sundays, races), bike shops, and the schools. Depending on your school system, it may be easier to distribute brochures through the PTA.

Attractive brochures are ideal for distribution in physician offices. They serve almost like a physician's prescription. In Seattle, the highest rate of helmet redemptions came from coupons distributed in the offices of pediatricians.

## 2. Media

Many community agencies can help you coordinate media activities. Public relations firms and television and radio stations may be willing to "adopt" bicycle helmet safety as their public service project or simply donate skills and staff time to your project. Include such organizations in your planning and advisory groups.

Develop a publicity plan coordinating coverage among the various media over the duration of your project. You may want to create a catchy slogan to be used in your campaign like the one used in Madison Wisconsin, "Be A Well Dressed Cyclist--Wear a Helmet" (Berchem, 1986).

**Newspaper coverage** can consist of press releases, discount coupon advertisements, and timely articles throughout the year coinciding with human interest stories (accidents) or seasonal events (summer vacation or Christmas). The most powerful educational message is conveyed by an injury victim. Newspapers are usually delighted to cover almost any type of disaster, and injury victims and their families are usually willing to tell their stories in hopes of helping others. From beginning to end, the campaign should be punctuated with victim stories.

**Press conference** may be used to kickoff the program. Open houses, health fairs, bicycle events may also be used to kickoff the program.

**Radio coverage** can be in the form of PSA.s (public service announcements played at the station's convenience), talk shows, or you can purchase time to better target your audience.

**TV stations** will also play PSA.s (there is one available from Harborview Injury Prevention Center), or you can work with them to develop your own. A station in Missoula developed their own PSA story by inviting kids who wear helmets to come in with their parents and be photographed and interviewed about why they wear helmets.

**Bus posters and billboards** can display your slogan and phone number for additional information. Depending on your area they may be expensive to purchase and difficult to evaluate.

Evaluate the effectiveness of your media by including a follow-up phone number or address and documenting the number of calls or letters generated by different media events. It is also useful to ask people how they heard about the program.

## Personal Interaction

Those methods that provide information, counseling, or other educational opportunities on a one-to-one basis or in groups are included under personal interaction. Unlike media these methods provide opportunities for questions and feedback and are more likely to change behavior.

### 1. Information Phone Line

As was mentioned it is useful to have one phone number to which informational calls can be referred. The phone line is a good way to evaluate interest generated by media events and to answer questions or requests from the community. We used a telephone answering service for physicians to "triage" calls.

### 2. Health Care Provider Education

Health care providers can counsel parents and children about bicycle helmet safety during well-child visits. The bicycle helmet safety program can educate physicians and nurses so that they are aware of the problem and distribute brochures to their practices. See the mention above about distribution of brochures in physician offices.

### 3. PTAs

Providing education for the parent teachers associations allows you to make contact with the important elements of schools, parents and kids. Dedicated parents are themselves a wonderful resource of volunteers to implement bicycle helmet safety programs in their schools and communities. It may be easier to gain access to these parent groups than to the schools.

### 4. School Programs

Group education programs can be conducted in the schools in the form of assemblies, bike rodeos or integrated into PE classes. Again, parent groups are very helpful in accessing the schools.

## 5. Speakers Bureau

A speakers bureau can give presentations as requested by community groups. Develop an outline for a bicycle helmet safety or children's bicycle safety presentation (See Appendix C for sample speakers outline). Identify volunteers and train them to give these presentations. Potential sources of volunteers are local bike clubs, health care providers interested in the issue (Injury Prevention Center staff physicians, pediatricians, emergency room or emergency medical services staff), and involved parents.

## 6. Bike and Safety Events

Many groups and organizations such as day camps, youth groups and recreation centers conduct safety and bicycle safety events for children. Identify these activities in your area and determine if they include bicycle helmet safety. If not, introduce them to the problem and provide resources (brochures, fact sheets, demonstration helmets) so that they can integrate helmet safety into their programs.

## 7. Retail Outlets

Contact local bike shops and other retail outlets about your program. Encourage them to urge anyone purchasing a bike to also consider buying a helmet. Some retailers are willing to sell children's helmets at or below cost as a "lost-leader" as a means of getting adults into their store to make other purchases. Provide the retailers with resources, such as brochures on how to purchase a safe helmet. Bear in mind that most children's bicycles are sold in department, discount, and toy stores instead of bicycle shops. Work on getting these outlets to feature bicycle helmets.

# Incentives

Incentives are rewards or other forms of reinforcement which can be used to encourage helmet purchase and wearing.

## 1. Helmet Purchase

Discount purchase programs such as discount coupons or rebates for helmet purchase are aimed at encouraging parents, relatives, and friends to purchase helmets for kids. Involve as many retailers as you can in a discount program. Retailers are enthusiastic about discount coupons because they bring people into the store who often purchase other items. Coupons can be distributed:

- with each bicycle purchase
- in newspaper ads
- with brochures.
- to coincide with seasonal events such as Christmas, spring and summer vacations.

In a large scale distribution program you may want to color code coupons to evaluate the best source of distribution for coupon redemption.

The campaign worked with a local helmet manufacturer to make a low-cost, approved helmet available to people in two ways. First, the helmet was sold by non-profit groups through a bulk-order process. Second, the helmet was sold by a local mass-merchandise who also carries children's bikes. It was put "on sale" frequently at a reduced price. Although this helmet was not singled out for recommendation by the group - any CPSC-approved helmet that fit is recommended - it was widely available and reasonable in cost, which many parents appreciated.

Another effort to make helmets accessible is through subsidies to low-income families. A health clinic in Seattle has obtained a grant from a civic club to do just that.

Helmet manufacturers now produce low-cost helmets and mass-market bicycle retailers carry helmets too.

## 2. Helmet Use/Wearing

Not only do parents need to buy helmets; children need to wear them. Build incentives for wearing helmets into your program. Provide incentives by:

- starting helmet loaner programs
- raffling off or giving away helmets at events
- recognizing kids who wear helmets with stickers, badges, free coupons, in the media (newspaper photographs, stories), at school recognition programs
- providing parents with "tips" for getting their children to wear helmets.

Information should be given in such a way that helmet wearing is the thing to do, cool, O.K.!

# Evaluating the Program

The evaluation should be planned at the beginning of the program and measurement indicators stated in your objectives; e.g.: "in one year the number of helmet sales on Mercer Island will increase from an average of 100 per month to 900 per month." You will need to collect preprogram information for comparison at the end of the program. Program activities are monitored as the program progresses. We recommend evaluating program outcomes immediately after the program and again after one to two years.

## Possible Outcome Measures

### 1. Increased Awareness

- Number of calls to the information line.
- Random phone survey of bicycle helmet safety knowledge before and after the program.

### 2. Increased Helmet Use

- Observation of helmet users before and after program.
- Random survey of parents or physicians before and after program to determine if increased number of children are wearing helmets.

### 3. Increased Health Provider Counseling

- Survey of health care providers before and after the program.

### 4. Increased Helmet Sales

- Number of coupons redeemed.
- Helmet sales before and after the program.
- Comparative helmet sales data from similar community without program.

### 5. Decreased Bicycle-Related Head Injuries in Children

Data from emergency rooms, primary care centers, pediatricians offices, and emergency medical services before and after the program.

Although this is the ultimate goal of any bicycle helmet safety program, it may not be realistic to expect the program components to result in a significant decrease in head injuries. The data may not even be available for you to determine incidence of bicycle head injuries.

## Summary

We have reviewed the issues to consider and methods to use when implementing a bicycle helmet safety program for children. You will not be able to use all the ideas in this guide, but can adapt them to meet the needs and resources in your community. Whatever program you choose to implement, you will find greater success if you carefully plan your activities based on realistic goals and objectives. No matter how small or large your program you are contributing to the health and safety of the children in your community. You may even save a life.

## Text For Television Psa's (30 seconds)

This year we'll send nearly 400,000 of our children to the hospital. They'll go because of something we've given them to enjoy... (pause) and because of something we haven't given them to protect themselves. (pause) A bicycle without a helmet too often adds up to serious injury.... even death. Never allow your child to ride without approved safety helmets... (pause) or the next time they go for a ride, it may be in an ambulance. Please, use your head, and protect theirs.

# Bicycle Helmet Safety Speakers Outline

## I. Introduce Self

## II. Describe bicycle helmet safety campaign

- A. Groups involved
- B. Summer activities

## III. Ask parents to raise hands (A,B) or answer (C,D):

- A. How many have children who ride bikes?
- B. How many have children who wear helmets when riding their bikes?
- C. Why did they buy their child a helmet?
- D. For parents who have not bought their children helmets what keeps them from doing so?

## IV. Statistics

- A. In 2001, nearly 314,600 children ages 14 and under were treated in hospital emergency rooms for bicycle-related injuries.
- B. Every day, about 1,000 kids end up in hospital emergency rooms with injuries from bikes. Their death rate exceeds accidental poisonings, falls and firearm injuries
- C. 75% of bicycle deaths occur where driveways, alleys and streets intersect
- D. Of 193 children seen for bicycle injuries at Harborview and Children's Hospitals, 82% were children 15 and under. Over one-half were ages 6-10
- E. These children were riding on bike paths, sidewalks, and in parks because in King county only one-third of serious injuries involve cars, unlike other areas
- F. Besides death, head injuries cause permanent brain damage and cost thousands of dollars in medical bills

## V. What you, the parent can do?

- A. Buy your child a helmet. See it as an investment in their future. Helmets cost \$8-\$40, but remember that your child will wear it for 5 years. Unlike shoes children do not grow out of helmets quickly. Most have padding that can be removed as the child's head grows.
- B. Make sure the helmet is CPSC approved. Pass around a demonstration helmet and note: 1. Pads 2. Straps
- C. Require your children to wear it -- see our tips for getting children to wear helmets
- D. Wear one yourself
- E. Remember that your child's bicycle is not a toy It is their first vehicle that needs to follow the rules of the road
- F. Do not buy a bike for your child to grow into. It is harder for him/her to control.
- G. Teach your children how to ride a bike. They do not drive, so do not have the coordination and awareness of rules of the road.
- H. Take a class on bicycle safety yourself so that you are aware of the right information.
- I. Questions?

# US DOT free publications

**These and more DOT materials are available on our CD from the opening menu or on the video DVD.**

The brochures below are all full color .pdf files. They also print out well in black and white for photocopying. Most of them are on our Toolkit CD as .pdf files, from the opening menu or by opening the file nhtsapam4cd.htm. Four videos are on the video DVD included in the Toolkit. You can also find them online on NHTSA's web page at [www.nhtsa.gov/Bicycles](http://www.nhtsa.gov/Bicycles)

## **Bicycle Safety Activity Kit**

Activities for children 4 to 7 and 8 to 11 years old. On the CD open nhtsapam4cd.htm. Includes coloring pages, connect-the-dots, word find, crossword, word scramble and more, with nice color graphics if your printer can handle them. Also on the CD in Spanish with all the materials in Spanish too.

## **Easy Steps to Properly Fit a Bicycle Helmet**

And in Spanish:

### **Consejos y pasos para el uso debido del casco para montar bicicleta**

NHTSA's helmet safety sheet. August 2006. On the Toolkit CD as nhtsafit.pdf and spanishfit.pdf



## **Kids and Bicycle Safety**

And in Spanish

### **Los niños y su seguridad al montar en bicicleta**

Probably best for late elementary to mid-school

kids. Sections on Safe Riding Tips, Rules of the Road and Sidewalk Riding. On the Toolkit CD as nhtsakids.pdf and spanishnhtsakids.pdf



## **7 Smart Routes to Bicycle Safety**

Seven ways to bicycle safely. Includes info on helmets, bike maintenance, riding gear and safe riding practices. (May 2007) Included on our Toolkit CD as nhtsa7.pdf

## **Videos:**

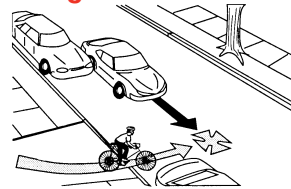
**Ride Smart, It's Time to Start** (for kids)

**Bike Safe, Bike Smart** (for kids)

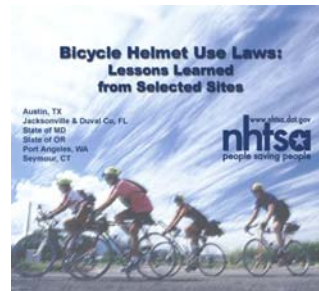
**Bicycle Safety Tips for Adults**  
**Fitting a Bicycle Helmet**

All are on the video DVD in our Toolkit. Or view them online as .wma files on NHTSA's web page at [www.nhtsa.gov/Bicycles](http://www.nhtsa.gov/Bicycles)

## **Prevent Bicycle Crashes: Parents and Caregivers**



How to train child cyclists, including diagrams of common types of crashes. On our Toolkit CD as nhtsacrash.pdf



## **Bicycle Helmet Use Laws: Lessons Learned from Selected Sites** CD, 2004

A study of six helmet laws, including how to get one passed. On the Web or on the Toolkit CD as nhtsalessons.pdf

## **And in addition available on the Web:**

- **Videos and Clips**
- **Back to School Safely**
- **Safe Routes to Schools**
- **Resource Guides**
- **Resource Guide on Laws Related to Pedestrian and Bicycle Safety**
- **Bikeability Checklist**

# Helmet Materials in Spanish

**Latino communities all over the US are lagging behind in bicycle helmet use. Disproportionate numbers of Latinos are being killed and injured in traffic, both on bicycles and while walking. Here are some sources of Spanish program materials. There are links to these programs on our Web page: <http://www.helmets.org/spanish.htm> and a Web search will find many more.**

## US Dept of Transportation

USDOT has two divisions with many materials. NHTSA has brochures in Spanish available for download. See our Web page at [www.helmets.org/spanish.htm](http://www.helmets.org/spanish.htm) for details. In addition, DOT's FHWA supported the development of the Florida materials mentioned below, and have a big list of posters, pamphlets and other materials for Latino audiences. They even have online forms for ordering, and everything is free. Their Web page is at [safety.fhwa.dot.gov/ped\\_bike/materials/ped\\_hisp.htm](http://safety.fhwa.dot.gov/ped_bike/materials/ped_hisp.htm)

## Walk Florida

The Walk Florida Pedestrian Safety Resource Program has two helmet brochures in Spanish. They also have lots of Spanish materials on pedestrian safety. One is by the Brain Injury Association of Florida and the other is by NHTSA. [www.cure.fau.edu/pedcenter/catalog/spanish-creole.htm](http://www.cure.fau.edu/pedcenter/catalog/spanish-creole.htm)

## California Department of Health Services

California has a brochure in Spanish titled !Proteja La Cabeza De Su Nino! that you can download on the Web and print out in full color or in black and white. It's at <http://www.dhs.ca.gov/ps/cdic/epic/bike/documents/BikeHelmetSPAN01.pdf>

## Phoenix Childrens Hospital

There are Spanish language versions of various helmet campaign materials you can purchase from the Phoenix Children's Hospital/Maricopa County Safe Kids campaign. Contact Susan Bookspan, Bicycle Program, Injury Prevention and Research Center Phoenix Children's Hospital, Outpatient Bldg. #225, 1919 E. Thomas Road, Phoenix, AZ 85016. 602-546-1711 [sbookspan@phoenixchildrens.com](mailto:sbookspan@phoenixchildrens.com)

## Snell Memorial Foundation

The Snell Safety Education Center has a full color pamphlet in Spanish. They ask for a small donation (\$2.50 for 50, or \$20 for 500). You can contact them at 916-331-5073 or email [info@smf.org](mailto:info@smf.org), through their Web site at [www.smf.org](http://www.smf.org) or by postal mail to:

Snell Safety Education Center  
3628 Madison Avenue, Suite 11  
North Highlands, CA 95660

## Texas Bicycle Coalition

TBC has the Texas Supercyclist Curriculum with 15 lessons. Their materials are mostly in English and Spanish, and some of them can be downloaded at [http://www.biketexas.org/component/option,com\\_docman/task,cat\\_view/gid,31/](http://www.biketexas.org/component/option,com_docman/task,cat_view/gid,31/)

## Safe Kids

Safe Kids USA has two brochures in .pdf format in Spanish: one is Usa tu cabeza. ¡Ponte el casco! - a tip sheet for parents on helmets. The other is called TODO SOBRE RUEDAS - Actividades an activity sheet to test your wheels knowledge. You can access the English versions as well at their Web site: [www.safekids.org](http://www.safekids.org).

## American Automobile Association

AAA has Bike Basics in Spanish and a helmet safety tip bookmark in English/Spanish. They should be available, usually free, from your local AAA club.

## Videos

**University of California Series:** The Bicycle Zone (Elementary), Pedal Smarts (High School/Middle School), and Getting There By Bike (High School/Adult) All three videos are available in English and Spanish. Each is accompanied with a study guide. Available through Transit Media, 22-D Hollywood Ave, Ho-Ho-Kus, NJ 07423. Telephone: 201-652-1989.

# Promoting Helmets in Poor Neighborhoods

Studies consistently find that free helmets distributed in poor neighborhoods are not used for long, even if the kids have to earn them. The conclusion: anything you promote that is not part of the local culture, and is recognized by the recipients as a one-shot safety program, will not last more than a few days or weeks.

Why?

Parents in some neighborhoods live with challenges and stressors that those in more secure environments can't imagine. Guns may be selling on street corners, and gangs may be attempting to recruit 10 year olds. As one parent remarked "You have to choose your battles." And getting kids to wear helmets in light of more real, immediate concerns is not going to be a high priority.

Even if parents talk to their kids about the importance of wearing a helmet it is ultimately up to kids to determine if they are going to wear them. It is common to see middle class teenagers with helmets on their handlebars. They wear them when they leave home to make their parents happy.

The importance of protecting your brain in a crash is not apparent to many kids or parents. They don't know of anyone head-injured in a bicycle crash, including their own crashes.

To promote change we must look at *their* culture and try to fit wearing helmets into that. If it became a "cool" thing for gangs to do, you might have a very high compliance rate! If star athletes or other community role models endorse helmets, kids may be drawn to helmets because they are cool.

The Cincinnati Children's Hospital has developed a program working through churches. Few people are more respected in the African American community than ministers or in the Latino community than priests. Will their endorsement make a difference?

Even if this route shows promise, change will be slow. Peer pressure is difficult to overcome. Still there are immediate, concrete steps communities can take to help ensure these kids' safety on bikes.

Most bikes in impoverished neighborhoods need repairs and quite a few need extensive work. If you distribute helmets in a poor neighborhood, make sure you take a couple of bike mechanics along. They will have plenty of work to do! Other kids are riding bikes that are too large for them to control. There is a shortage of bikes of any sort in poor neighborhoods so kids will ride whatever is available, regardless if the bike is in poor shape or too big. Some communities have established programs that get good working, properly fitting bikes to kids in needy neighborhoods.

As with any safety program we have to meet the immediate short term needs of a group along with working for the long term changes.

*This page summarizes an article by Steve Meiers, a safety educator in Madison, Wisconsin, and represents his own views. You can contact him at [smeiers@cityofmadison.com](mailto:smeiers@cityofmadison.com) for more information. If you want more information about faith-based injury reduction programs contact Anita Brentley: [Anita.Brentley@cchmc.org](mailto:Anita.Brentley@cchmc.org)*

# Helmets made simple

## What is a bike helmet

A helmet protects your brain when you fall. It has a plastic shell on the outside and foam inside. It has a strap to keep it on when you fly through the air. It only covers your head, and the rest of your body is still exposed. So you still have to be careful.

## How does a helmet work?

The foam crushes when you hit the road. That cushions the blow, and usually saves your brain. The shell makes it skid on the street so your neck does not get jerked. The shell also keeps the foam in one piece. It can split when you hit the car and not be there when you hit the street.

If the strap is not right, your helmet can slip to the side or to the back. Then your bare head hits the road. Ouch. Pavement is very very hard.

## Why wear one?

Being careful and not crashing is the best way. That's better than crashing in a helmet! The helmet only covers your head. So you need to learn the rules of the road. But even the best riders crash. If you hurt your brain it can change you. You may not be able to read this page, or play video games, or talk, or run, or even feed yourself.

Some people do not wear bike helmets. Don't let that stop you. You need one when you ride your bike. They do too, but just don't know it yet.

## How do I pick one?

A magazine called *Consumer Reports* can tell you which helmets are best. But they don't test very many and they don't test every year.

First, make sure the helmet has a sticker inside with the letters CPSC somewhere on it. That means it works. Then find one that fits you. That will keep it on your head while you fly through the air. Work on the straps to get the fit just right.

You don't have to pay a lot for a good helmet. But be sure you like it and will wear it.

## Can I wear it to skate?

Yes if you have inline skates. For skateboard use you will need a different helmet, if you are one of the skateboarders who crash a lot.

## What if I crash?

You will have to buy a new helmet. It is good for only one crash.



# Bicycle Helmet Safety Institute

*A program of the Washington Area Bicyclist Association*

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May, 2006

## Frequently-asked Questions About Bicycle Helmets

### ***1. How does a helmet work?***

When you crash and hit a hard surface, the inner styrofoam part of a helmet crushes, controlling the crash energy and slowing your head's stopping time by about six hundredths of a second to reduce the peak impact to the brain. Thicker foam is better, giving your head more room and more milliseconds to stop. The squishy fitting pads are for comfort, not impact. The impact is so hard and sharp that squishy foam just bottoms out immediately. A smooth plastic skin holds the helmet's foam together as it crushes and helps it skid easily on pavement, rather than jerking your head to a stop. Rounder, smoother helmets are safer, since they skid more easily. The straps keep the helmet on your head even after the first impact with the car. A helmet must fit well and be level on your head for the whole head to remain covered after that first impact. The outside should be a bright color for visibility in traffic. Reflective trim is useful at night to help you be seen, but you still need lights on your bike.

### ***2. What is the Best Helmet to Buy?***

Fit on your individual head is your first concern. You may have to try on several brands to find one that fits your own head well. Pick one that is round and smooth on the outside. Then make sure it has a CPSC standard sticker inside, required by law in the US. Next is wearability: vents and comfort. Select a bright color for visibility, and of course check the price tag. *Consumer Reports* posted helmet articles in 2006 and in June of 2009. They picked some Bell, Giro, Specialized and Schwinn models, but they did not cover most of the other brands. The best impact performers of the ones they tested were not the most expensive models. We think you can do just as well by finding a helmet that fits you well, is round and smooth on the outside, and has a CPSC standard sticker inside.

### ***3. What Helmet Should I Buy for my Child?***

The best child helmets are light and ventilated, with impact protection equal to adult helmets. There are no tiny helmets available because nobody recommends riding with a child under one year old, whose neck structure and brain are just not ready yet. If in doubt, take helmet and child to your pediatrician and ask. Kids don't want to look like geeks, so let them pick their own helmet out, just as you would for an adult. *Consumer Reports* rated some child helmets in their article and recommended the Schwinn Thrasher, Bell Amigo, Bell Trigger and Giro Me2.

### ***4. What is the Coolest Helmet?***

Coolness depends on ventilation, and that depends mostly on the size of the front vents, whatever the ads may say. *Consumer Reports* publishes coolness ratings for a few helmets. But you can look at a helmet's front vents and judge its ventilation. Most riders will not need all the vents in the most expensive models.

### ***5. Where can I get my helmet cheap?***

Wal-Mart and Target stores have helmets meeting the CPSC standard at a regular everyday price of \$10, with better-fitting ones starting at \$15. Local bike shops have major brands for \$35 to \$150. Discounts are available on the Internet. They all have the same CPSC certification. Cheaper helmets are plainer, have smaller vents and may lack a rear stabilizer, but some perform better in impact tests than expensive models with huge vents and less foam. We recommend buying your first helmet at a bike shop, for help with fitting.

## ***6. Is a cheap helmet as good as an expensive one?***

In 2002, 2004 and 2006, *Consumer Reports* rated the most expensive helmets they tested below some of the mid-range or cheaper models. We don't have lab test data on all the helmets in the market. In the US, all of them are required by law to at least meet the CPSC impact standard. If money buys you a better fit and more stability on your head in a hard crash, then the more expensive helmet is worth it. If it just buys you a spiffy-looking, squared-off, poorly-rounded exterior with excessive vents, foam that is too hard trying make up for that, and points to snag, definitely not.

## ***7. Does This Helmet Fit Me as Well as it Should?***

For best protection you want the helmet level and low on your head. So put thin pads in the top. Adjust the side pads or fitting ring so that the helmet touches all the way around at the brim. Then adjust the straps so that the V on the sides meets just below your ear, and the chin strap is just snug against your chin but not too tight. Now shake your head. Then put your palm under the front edge and push up and back. Can you move the helmet more than an inch, exposing your bare forehead? If so, shorten the strap just in front of your ear, and if necessary loosen the rear nape strap behind your ear. The two straps should still meet just below your ear. Now reach back and grab the back edge. Pull up. Can you move the helmet more than an inch? If so, shorten the nape strap. If the front bumps on your glasses, tighten the nape strap. Now your helmet should be level, solid on your head and comfortable. You should forget you are wearing it most of the time, just like a seat belt or a pair of good shoes.

## ***8. How can I prevent "strap creep?"***

Some straps slip through the buckle and loosen after only one ride. We suggest buying a helmet with standard-width straps, not the skinny ones. You can add rubber bands or o-rings to the straps to slide up below the buckle to lock it. After your helmet is adjusted just right, you can sew the strap ends in place.

## ***9. When Should I Replace My Helmet?***

You *must* replace the helmet after any crash where your head hit. The foam part is made for one-time use, and after crushing once it is no longer as protective as it was, even if it still looks intact. Plastic shells can hide the foam damage, leaving only a few scrape marks on the outside as clues. A few helmets made of EPP or another foam do recover. If in doubt, contact the manufacturer for an inspection. If your helmet is more than 10 years old or has a cloth cover, we recommend that you replace it. Many manufacturers recommend replacement every five years, but some of that is just marketing. Deterioration depends on usage, care, and abuse. If you ride thousands of miles every year, five years or even less may be right, but for occasional riders that is probably too soon.

## ***10. Who Has Compulsory Helmet Laws? Do they work?***

Twenty states: Alabama, California, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Louisiana, Maine, Maryland, Massachusetts, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Tennessee and West Virginia, require helmets for some riders, usually under age 16. So do over 143 cities and counties. We have the current list up on our Web server. More than a half of the under-16 population of the U.S. lives in one of those states or cities. Enforcement is rare, and helmet acceptance is probably too low for laws to work well at present in most areas, somewhere between 17% to 41%. Five years after adopting their law, New Jersey reported a 60% reduction in fatalities for the age group covered.

## ***11. What's New in Helmets?***

Prices are reasonable this year except for the high-end models. There are some bright colors, following the car and fashion clothing markets. Models with oversized vents are very cool but have less foam in contact with your head, which could concentrate crash forces. Some have easier strap adjustments and many have rear stabilizers to improve comfort. Many high end designs still have sharper, squarer lines, departing from the rounder, smoother, safer shape. There are helmets made for downhill mountain bike racing with face protection, and some of them now meet the ASTM downhill mountain bike racing standard, F 1952. A few manufacturers produce "multi-sport" helmets, but even most skate-style helmets are just bike helmets. Skateboard helmets mostly meet the CPSC bike helmet standard now, with a few also able to also meet the ASTM F 1492 skateboard standard. Bell has a 2009 True Fit system that reduces the fiddling necessary to make a helmet fit. Helmets are cool, cheap and effective, and this is a good year to be buying one!

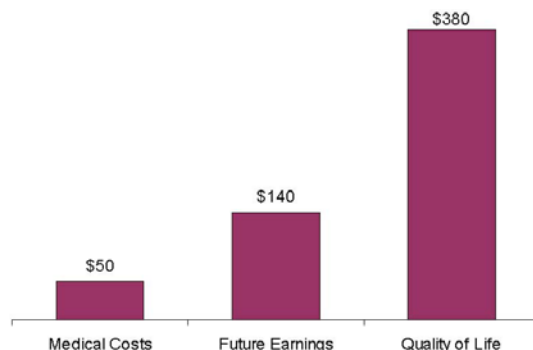
## Children's Safety Network

# BICYCLE HELMETS SAVE MEDICAL COSTS FOR CHILDREN

Annually, 196 children younger than age 15 die from bicycle-related injuries. Approximately 8,900 additional children were hospitalized for bicycle-related injuries, and another 344,000 were treated and released in emergency departments. Bicycle helmets prevent 52 to 60 percent of bike-related head injury deaths (for all ages), as well as an estimated 68 to 85 percent of nonfatal head and scalp injuries, and 65 percent of upper and middle face injuries, even when misuse is considered. Thus, bicycle helmets significantly reduce the total medical costs for bike-related head injuries.

### A. COSTS SAVED

- Every \$10 bike helmet generates \$570 in benefits to society.<sup>1</sup>
- These savings include \$50 in medical costs, \$140 in future earnings and other tangible resources, and \$380 in quality of life costs.
- For each child bicycle helmet law that is passed, it costs \$11 per new user and generates \$570 in benefits to society.

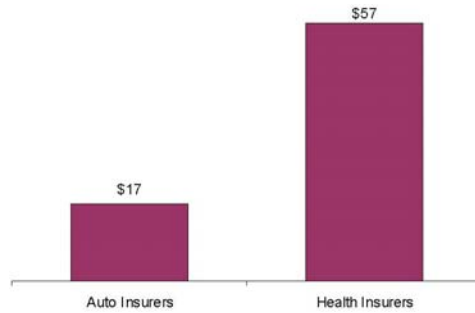


**Figure 1. Every \$10 Bike Helmet for Kids Saves \$570**

- If 85 percent of all child cyclists wore helmets in 1 year, the lifetime medical cost savings would total \$197 to \$256 million.
- It is very expensive to treat a child with a bike-related head injury. These medical costs may sometimes last the child's lifetime. For example, in 1991, bicycle crashes to children ages 4 to 15 caused 52,000 nonfatal head injuries and 93,000 nonfatal face scalp injuries. Lifetime medical payments for these injuries will approach \$394 million.
- 2,200 of the children who sustain these head injuries will suffer permanent disabilities that will affect their ability to work. Universal bicycle helmet use by children aged 4 to 15 would prevent 1,200 to 1,700 of these permanently disabling injuries.
- Every bicycle helmet saves health insurers \$57 and auto insurers \$17.

<sup>1</sup> Although the retail cost of bicycle helmets typically range from \$10 to \$70, nonprofit organizations can buy them in bulk for as little as \$7 and distribute them nearly at cost.

**Figure 2. Insurers' Benefits per Bike Helmet**



- These cost savings estimates may be conservative, as they ignore other significant benefits. For example:
  - Parents will spend less time and money caring for injured children.
  - Lawyers will file fewer lawsuits seeking compensation for child cyclists' injuries.

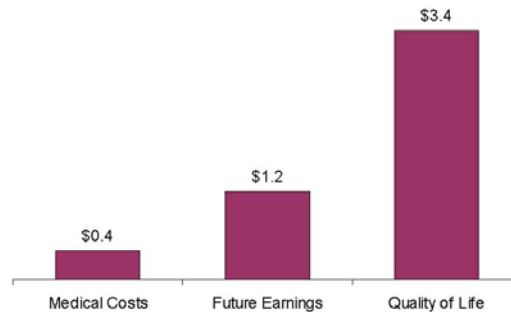
## B. LIVES SAVED AND INJURIES PREVENTED

- Universal bike helmet use by children aged 0 to 14 would prevent 212 to 294 deaths annually.
- Universal bike helmet use by children aged 0 to 14 would prevent 382,000 to 529,000 bicycle-related injuries annually.

## C. BICYCLE HELMET USE

- Helmet use among children aged 14 and younger is approximately 15 percent nationwide.
- Parents report that 85 percent of children who own bicycle helmets wear them. The usage rate does not vary by income.

**Figure 3. Costs of Child Bicycle-related Head Injuries: \$5 Billion per Year (2004 dollars)**



Note: All costs are in 2004 dollars and were computed using the methodology outlined by Miller, Romano, and Spicer [2000]. Numbers may not correspond to totals due to rounding.



**Children's Safety Network Economics and Data Analysis Resource Center**  
(www.edarc.org) Phone: 301-755-2728 E-mail: sheppard@pire.org

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Rev: 10/05



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April, 2005

## **Alert: Playgrounds and Helmets Don't Mix!**

On February 4, 1999 a Pennsylvania child wearing a bicycle helmet died while playing on playground equipment. He was caught between two non-standard overlapping horizontal platforms when his helmet would not fit through the gap that his lower body had already gone through. Pressure on his chest as his lower body dangled prevented him from breathing. The gap was measured by reporter Mark Scolforo of the *York Dispatch* at 8.75 inches. That would not be permitted under the ASTM playground equipment standard, which bans all openings from 3.5 to 9 inches. We are not aware of any similar incidents in the US since this one.

While the equipment was not standard in this case, it is now evident that this problem can happen here. A few earlier incidents in Scandinavia and Canada had been reported, but none had surfaced in the US. We had attributed that to the US playground equipment standard. But we now know that several incidents had been reported where injury did not result. Unlike the Pennsylvania incident, the Canadian and Scandinavian incidents were "hangings" where the child was strangled by the helmet strap. A strong strap is necessary to keep a helmet on the child's head during a crash, and helmets with strong straps have saved tens of thousands of lives, so these incidents must be seen in that perspective. All of the incidents involved boys under the age of six. A European playground equipment standard bans openings between 110 and 230 mm (4.3 to 9.1 inches). The European CEN standard for child helmets now has a weak buckle, called a "green" buckle, but it is optional.

Troxel, formerly a major US manufacturer, reported in 1997 that one of their helmets had snagged on a swing and a child was nearly choked. Troxel added a general warning to their helmet labels to the effect that use in activities other than bicycling could result in a choking hazard.

ASTM, CPSC and other standards organizations in this country considered the Scandinavian evidence but did not take action because no similar incidents had been reported in the US. The assumption was that playground equipment meeting US standards did not have the hazard. In fact, the US standard has restrictions on openings that are almost the same as the Swedish standard, from 3.5 to 9 inches. The National Program for Playground Safety may add a signage requirement on this hazard. CPSC has issued a warning. The ASTM F8.53 Headgear subcommittee discussed this subject in Seattle on May 20, 1999. An option for the short term would appear to be adding a requirement for a warning label to the ASTM Infant Toddler Helmet standard, and perhaps its adult bicycle helmet standard as well. It may also be possible to improve the shape of toddler helmets to avoid snagging. For the longer term, BHSI has suggested developing a "slow release buckle" that would pass the current ASTM standard for severe jerks but would also release after 5 seconds of sustained pull. Manufacturers tell us that the technology for such a buckle does not exist at present. ASTM rejected the European approach using a weak buckle as too likely to release in a crash.

For the present, parents should make sure their children remove their helmets before climbing trees or playing on playground equipment. They should also check playground equipment against the ASTM standard for hazardous configurations, particularly on older or custom-made equipment.

# The New England Journal of Medicine

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## A CASE CONTROL STUDY OF THE EFFECTIVENESS OF BICYCLE SAFETY HELMETS

Robert S. Thompson, M.D., Frederick P. Rivara, M.D., M.P.H., and Diane C. Thompson, M.S.

**Abstract** Bicycling accidents cause many serious injuries and, in the United States, about 1300 deaths per year, mainly from head injuries. Safety Helmets are widely recommended for cyclists, but convincing evidence of their effectiveness is lacking. Over one year we conducted a case-control study in which the case patients were 235 persons with head injuries received while bicycling, who sought emergency care at one of five hospitals. Our control group consisted of 433 persons who received emergency care at the same hospitals for bicycling injuries not involving the head. A second control group consisted of 558 members of a large health maintenance organization who had had bicycling accidents during the previous year.

Seven percent of the case patients were wearing helmets at the time of their head injuries, as compared with

24 percent of the emergency room controls and 23 percent of the second control group. Of the 99 cyclists with serious brain injury only 4 percent wore helmets. In regression analysis to control for age, sex, income, education, cycling experience, and the severity of the accident, we found that riders with helmets had an 85 percent reduction in their risk of head injury (odds ratio, 0.15; 95 percent confidence interval, 0.07 to 0.29) and an 88 percent reduction in their risk of brain injury (odds ratio, 0.12; 95 percent confidence interval, 0.04 to 0.40).

We conclude that bicycle safety helmets are highly effective in preventing head injury. Helmets are particularly important for children, since they suffer the majority of serious head injuries from bicycling accidents (N Engl J Med 1989; 320:1361-7.)

## 1989 Study Proved Bicycle Helmet Effectiveness

*A North Carolina Bicycle Program newsletter article*

A landmark study published in a 1989 issue of the New England Journal of Medicine proved conclusively that bicycle riders who wear helmets can dramatically reduce their risk of head injuries. In this report, "A Case-Control Study of the Effectiveness of Bicycle Safety Helmets," helmet use was shown to reduce head injuries by 85% and brain damage by 88%. Furthermore, the study concluded that people who ride without helmets are seven times more likely to suffer head injuries and eight times more likely to suffer brain damage in a crash than those who wear helmets.

Previous studies had indicated that the most common cause of death and serious disability in bicycle crashes is head injury. In fact, head injuries account for 70 – 80% of bicycle-related deaths, 33% of bicycle riders treated in emergency rooms and 66% of hospital admissions resulting from bicycle crashes. Given that 1300 people die each year in bicycle accidents and over 575,000 receive hospital emergency room treatment, increased helmet use would significantly reduce the number of deaths and serious injuries from bicycle accidents.

Major findings of this new study, based on injuries treated at five hospitals in the Seattle area, revealed the following:

- Children under 15 years of age suffered 61% of the head injuries and 68% of the severe brain injuries. Only 4% of the injured children wore helmets.
- Adults over 25 years of age suffered 26% of the injuries. Only 20% of the injured adults wore helmets.
- While 30% of the injured riders wore helmets, only 7% of them were wearing their helmets at the time of their crash.
- The most common cause of accidents was falls (37%), crashing into stationary objects such as parked cars, bumps and curbs (24%), and bicycle-motor vehicle collisions (23%).
- About 38% of the accidents occurred when the rider was traveling 5 – 15 miles per hour, 32% at less than 5 miles per hour, and 22% at greater than 15 miles per hour.
- Damage to the bicycle occurred in 55% of the accidents.

The researchers noted that while helmets have long been recommended for cyclists, there has been little reliable data to demonstrate their effectiveness in averting injury. "Safety helmets are effective, but they are not being used enough. The time has come for a major campaign to increase their use." They offer the following recommendations:

- Parents and physicians need to be better educated about how important helmets are in preventing head injuries in children.
- Marketing campaigns to counter the negative "nerd factor" associated with helmet use should be undertaken.
- More comfortable helmets must be developed.
- Retailers should tie the sale of a helmet to the sale of a bicycle.

*This article can be reprinted in your organization's newsletter. Please feel free to modify the text to include information on your local helmet campaign or bicycle safety program.. Please send a copy to: NC Bicycle Program, P.O. box 25201, Raleigh, NC 27611.*



# Bicycle Helmet Safety Institute

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October, 2005

## Helmet Standards

### *1. Do standards still matter now that we have a law?*

All helmets sold in the US market must meet the Consumer Product Safety Commission standard for impact and strap strength. Standards are useful to cover things you can't judge for yourself in a store: impact performance and strap performance. A standard sets minimum requirements, but does not tell you which manufacturers exceed the requirements. So the standards sticker in a helmet eliminates inferior helmets rather than identifying the superior ones.

### *2. Whose standard is best?*

- The **CPSC** standard is required by US law for helmets made after 1999. Helmets for promotion programs must have a sticker inside certifying that they meet the CPSC standard.
- **ASTM** is the American Society for Testing and Materials, a voluntary standards-setting organization. Look for an ASTM F 1492 sticker for skateboard helmets.
- The **Snell Memorial Foundation** sets a somewhat higher B-95 standard, but many helmets with a Snell sticker meet only their older B-90 standard, comparable to CPSC. Snell tests helmets independently in their own labs to certify them.
- The old **ANSI** standard has been replaced by ASTM's bike helmet standard, comparable to CPSC.

### *3. What does that mean for my promotion program?*

On our Inexpensive Helmets page you will find helmets that meet the CPSC standard. For more info on brands, check the latest *Consumer Reports* article, reviewed below. Any CPSC helmet meets the legally-mandated U.S. Government standard, the minimum requirement for programs.

### *4. How do they compare?*

Standard	CPSC	ASTM / ANSI	Snell B-90	Snell B-95
Drop Height (flat anvil)	2 meters	2 meters	2 meters	2.2 meters
Drop Height (rounded anvil)	1.2 meters	1.2 meters	1.3 meters +	1.3 meters +
Maximum g's allowed	300 g	300 g	300 g	300 g
Strap Strength jerk	23.5 joules	23.5 joules	20.5 joules	20.5 joules
Rolloff from dummy head	Standard test	Standard test	Standard test	Standard test
Coverage: Adult	Standard	Standard	Standard	Extra
Coverage: Toddler	Extra	Extra	Standard +	Extra
Certification	By law	Mfg. or a lab	Snell	Snell



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January, 2010

## Bicycle Helmets for the 2010 Season

There are new helmets in 2010 that are worth a look if you need a new one. There are more new models appearing with the rounder, smoother profile that we think is best when you crash. But there is still no major advance in impact performance, ventilation or wearability this year that would compel you to replace your current helmet. In 2009 Bell introduced a True Fit system in their inexpensive line that is worth a look for easier fitting. POC and TSG both introduced skate-style helmets with slip-planes, a potential improvement in impact protection for those who wear a skate helmet.

Rounder profile "compact," "city," "urban" or "commuter" models are still growing in number, and almost every manufacturer has at least one in their lineup now. The older elongated styles with long rear points are beginning to look dated for everyday use. We are pleased that the fashion pendulum is swinging, and most of the newer models are fine even if not fully rounded.

The higher priced helmets have big vents, but no verifiable advantage in impact performance. You can pay more than \$200 if you want to, but Target, Wal-Mart, Toys R Us and other discounters have models that meet the same CPSC impact standard at an everyday price of \$10. And for about \$20 to \$30 they have better looking and better fitting models. All three stores have a round, smooth Bell Impulse for about \$25 that is molded in the shell, a high quality construction technique. Our testing shows that the very expensive helmets and the very cheap helmets all have about the same impact protection.

The biggest technical news for this year is the appearance of two helmets that use slip-plane technology. A slip-plane helmet has a second shell or liner that can slide over the inner shell a few millimeters at the moment of impact. This is said to mitigate the rotational force on the head, and in some cases that has been measured. The hope is to reduce rotational injury, now generally accepted as a prime cause of concussions. Both POC and TSG have round, smooth skate-style helmets with this technology built in. No well-vented bicycle helmet on the market has it yet, and it remains unproven in the field.

Ring fit systems, the "one size fits all" solution, have taken over for most of the less expensive models. They work well for some, but not at all for others, who find that they have to tighten the ring uncomfortably to get a stable fit. Some models still use fitting pads instead.

Exotic materials: There are no new radical impact materials for helmet liners this year. Carbon fiber reinforcing is still found only in premium models. There is so little of it used in a bike helmet that the weight saved is minimal except in the heaviest BMX helmets. Louis Garneau removed it entirely from their line for 2010. Manufacturers are searching for ways to use titanium, another glamorous and expensive product that saves very little weight in a helmet. Kevlar is still in a few helmets, mostly in the internal reinforcing.

Strap adjustment fittings--buckles and side pieces--badly need improvement. Most of them slip too easily, resulting in the "strap creep" that is responsible for the loose straps on many riders who initially adjusted their straps carefully. You can check that when you buy just by tugging on the straps.

We have a long report on our Web site with details on almost all of the helmets on the market.



# Bicycle Helmet Safety Institute

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## ***Consumer Reports' Most Recent Helmet Article***

**Summary:** *Consumer Reports* tested kids' bike helmets in 2009. They rated only three above average in impact protection: Bell Trigger, Bell Amigo and Giro Me2. None of the tested helmets flunked. They picked the Schwinn Thrasher as a Best Buy even though it rated only good in impact protection. Most of the rating differences were in ventilation. The ratings are available only on the Web, not in the magazine.

*Consumer Reports* has a Web page on youth and toddler helmets dated June, 2009. The page rates 12 youth models and three toddler helmets.

Although that is a tiny cross-section of the hundreds of models on the market, it represents the only independent lab test data publicly available, so it is a major event in the helmet field. You must be a *Consumer Reports* Web site subscriber to see the ratings on their Web page.

### **Impact Test Results**

Three helmets tested Very Good for impact protection: the Bell Trigger, Bell Amigo and Giro Me2. All of the rest tested Good. There were no Excellents. We tend to focus on the impact tests as CU's biggest contribution to consumer information, and our key criterion for helmet choice, but their Best Buy is the Schwinn Thrasher, that scored only Good.

### **Ventilation**

The Bell Trigger and Schwinn Thrasher rated very good. The Uvex Cartoon rated good. All the rest rated only Fair.

### **Retention Test Results**

Most of the tested models rated Excellent in the rolloff tests that show how easily a helmet with its strap well adjusted can be tipped off of the headform. Only the Hot Wheels Rally Racer and Bell Boomerang were one notch down, rated Very Good. In the lab the helmets are adjusted carefully by experts, and there is no test for loosening over time by "strap creep."

### **Canadian Section**

CR has a separate page with helmets available in Canada. But they are the same helmets, with NA for the ones not available there. This year there is a Louis Garneau model included.

### **What We Missed**

This article is worth a look if you are researching a new kids helmet, although the number of helmets included was small. There were no Bell True Fit models tested, the only major advance in helmet fitting in the past decade. But testing is expensive, and no single lab, including the US Government, can afford to test every helmet on the market. Our own listing of helmets for this season is much more comprehensive, but has no lab test results for impact performance.



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## Mandatory Helmet Laws: A Summary

There is no federal law in the U.S. requiring helmets. States and localities began adopting laws in 1987. Here are the ones we are aware of. The list is probably missing one or more of the local laws.

Jurisdiction	Year	Ages	Jurisdiction	Year	Ages
<b>Alabama</b>			<b>Maine</b>		
State Law	1995	Under 16	State Law	1999	Under 16
Montevallo	1993	All ages	<b>Maryland</b>		
Homewood	1994	All ages	State Law	1995	Under 16
<b>Alaska</b>			Allegheny County	1992	Under 16
Anchorage	2005	Under 16	Howard County	1990	Under 16
Bethel	2004	Under 18	Montgomery County	1991	Under 18
Juneau	2006	Under 18	Sykesville	1995	All ages
Kenai	2004	Under 16	<b>Massachusetts</b>		
Sitka	2005	Under 18	State Passengers/Riders *	1990/94/04	Under 5 / 13 / 17
<b>Arizona</b>			<b>Michigan</b>		
Flagstaff	2010	Under 18	Adrian	1998	Under 15
Pima County	1995	Under 18	E. Grand Rapids	1995	Under 18
Sierra Vista			Farmington Hills *	1999	Under 16
Tucson	1993	Under 18	Kensington Metropark	1998	All ages
Yuma	1997	Under 18	<b>Missouri</b>		
<b>California</b>			St Louis Co. Parks/Unincorp/All	2001/02/08	1 to 16
State: Passengers-1987/Riders *	1987/94/03	Under5/Under18	St. Louis Co Municipalities:		
Bidwell Park, Chico	1991	All ages	Ballwin	2006	Under 17
El Cerrito	1993	All ages	Bel-Ridge	2002	All ages
<b>Connecticut</b>			Bella Villa	2005	Under 17
State Law	1993/7	Under 16	Bellefontaine Neighbors	2005	Under 17
Seymour ( <b>Repealed</b> )	1998	All ages	Berkeley	2000	All ages
<b>Delaware</b>			Black Jack	2008	All ages
State Law	1996	Under 16	Calverton Park	2001	All ages
<b>District of Columbia*</b>	2000	Under 16	Chesterfield	2008	Under 17
<b>Florida</b>			Clayton	2005	Under 17
State Law	1997	Under 16	Creve Coeur	2000	All ages
<b>Georgia</b>			Ellisville	2005	Under 17
State Law	1993	Under 16	Florissant	2003	Under 17
<b>Hawaii</b>			Glendale	2008	All ages
State Law			Grantwood Village	2003	All ages
<b>Illinois</b>			Hanley Hills	2007	Under 17
Barrington	1997	Under 17	Hazelwood	2007	Under 17
Chicago: Messengers only		All ages	Hillsdale		
Cicero	1997	Under 16	Moline Acres	2008	Under 17
Inverness	1999	Under 16	Normandy	2004	Under 17
Libertyville (incentives only)	1997		Northwoods	2003	Under 17
Skokie	2002	Under 16	Norwood Court	2004	Under 17
<b>Kansas</b>			Olivette	2005	All ages
Lawrence*	2004	Under 15	Overland	2005	Under 17
<b>Kentucky</b>			Pagedale	2002	All ages
Louisville: Parks only	2002	Under 18	Riverview	2008	Under 17
Louisville Extreme Park	2002	All ages	Rock Hill	2003	Under 17
<b>Louisiana</b>			St. John	2001	Under 17
State Law	2002	Under 12	Sycamore Hills	2008	All ages
			Town & Country	2002	All ages


Jurisdiction	Year	Ages		Jurisdiction	Year	Ages
Velda City	2006	All ages		Marietta	2004	Under 16
Velda Village Hills	2005	All ages		Orange Village	1992	6 to 15
Vinita Terrace	2001	Under 21		Shaker Heights	1997	All over 5
Webster Groves	2004	Under 17		South Euclid	2000	Under 14
Wellston				Strongsville	1993	Under 12
Wilber Park	2005	Under 17		Waynesville *	2000	Under 17
Wildwood	2005	Under 17		<b>Oklahoma</b>		
Non-St.Louis Co Municipalities:				Norman	2003	Under 18
Columbia *	2003	Under 16		Oklahoma City: city property only	1999	All ages
St. Charles	2006	Under 16		<b>Oregon</b>		
<b>Montana</b>				State Law *	1994	Under 16
Billings	2001	Under 16		<b>Pennsylvania</b>		
<b>Nevada</b>				State Law: Passengers/Riders	1991/95	Under 5/12
Duckwater Indian Reservation	2001	Under 17		<b>Rhode Island</b>		
Reno/Sparks Indian Colony	2002	Under 17		State Law / Age raised	1996/8	Under 9 / 16
<b>New Hampshire</b>				<b>Tennessee</b>		
State Law	2005	Under 16		State Law	1994/00	Under 16
<b>New Jersey</b>				Clarksville	1993	All ages
State Law	1992/05	Under 17		<b>Texas</b>		
<b>New Mexico</b>				Arlington	1997	Under 18
State Law	2007	Under 18		Austin	1996/7	Under 18
Los Alamos County	1995	Under 18		Bedford	1996	Under 16
<b>New York</b>				Benbrook	1996	Under 17
State:Pass./Riders	1989/94/04	Under 5/14/ *		Coppell	1997	Under 15
Eastchester *	2004	Under 19		Dallas	1996	All ages
Erie Co. Parks	1993	All ages		Fort Worth	1996	Under 18
Greenburgh	1994	All ages		Houston	1995	Under 18
Guilderland	1992	Under 14		Southlake	1999	Under 15
Onandaga Co/Syracuse	2001	Under 18		<b>Virginia</b>		
Rockland County	1992	All ages		Albemarle County		Under 15
Suffolk County	2000	ages 14 to 17		Alexandria	1994	Under 15
<b>North Carolina</b>				Amherst County		Under 15
State Law	2001	Under 16		Arlington County	1993	Under 15
Black Mountain	1996	All ages		Blacksburg	1994	Under 15
Boone	1995	All ages		Clarke County		Under 15
Carolina Beach	1994	Under 16		Fairfax County	1993	Under 15
Carrboro	1997	Under 16		Falls Church	1993	Under 15
Cary	2001	Under 16		Floyd County		Under 15
Chapel Hill	1992	Under 16		Front Royal	1996	Under 15
Charlotte *	2002	Under 16		Hampton	1999	Under 15
Cornelius *	2001	Under 16		James City County	1999	Under 15
Greenville	1998	Under 16		Luray		Under 15
Matthews	2001	Under 16		Manassas	1995	Under 15
<b>Ohio</b>				Manassas Park	1997	Under 15
Akron	2001	Under 16		Newport News	1997	Under 15
Beachwood	1990	Under 16		Norfolk	2001	Under 15
Blue Ash	2003	Under 16		Orange County		Under 15
Brecksville *	1998	Under 18		Petersburg	2000	Under 15
Brooklyn	2001	Under 14		Prince William County	1995	Under 15
Centerville	1999	Under 16		Radford	2000	Under 15
Cincinnati *	2004	Under 16		Roanoke	2000	Under 15
Columbus - 2008, but effective 2009	2009	Under 18		Salem	2000	Under 15
Dayton	2004	Under 13		Stafford County		Under 15
East Cleveland	2004	Under 18		Vienna		Under 15
Enon *	2004	Under 16		Virginia Beach	1995	Under 15
Euclid	2001	Under 14		Williamsburg	2001	Under 15
Glendale *	2000	Under 19		Wise		Under 15
Kettering *	2004	Under 16		York County	1994	Under 15
Lakewood	1997	Under 18		<b>Washington State</b>		
Madeira *	2002	Under 17		Aberdeen	2001	All ages

Bainbridge Island	2001	All ages		Puyallup	1994	All ages
Bellevue	2002	All ages		Renton	1999	All ages
Bremerton	2000	All ages		Seatac	1999	All over 1 yr.
Des Moines	1993	All ages		Seattle	2003	All ages
DuPont		All ages		Snohomish city-wide all ages	<b>Repealed</b>	in 2002
Duvall	1993	All ages		Snohomish Skate Park *	2002	All ages
Eatonville	1996	Under 16		Snoqualmie	1996	All ages
Enumclaw	1993	All ages		Spokane *	2004	All ages
Fircrest	1995	All ages		Steilacoom	1995	All ages
Gig Harbor	1996	All ages		Tacoma	1994	All ages
Hunts Point	1993	All ages		University Place	1996	All ages
Island County (recommendation only)	1997			Vancouver	2008	All ages
Kent	1999	All ages		<b>West Virginia</b>		
King County	1993/03	All ages		State Law	1996	Under 15
Lakewood	1996	All ages		Clarksburg	1993	Under 18
Milton *	1997	All ages		Morgantown	1993	All ages
Orting	1997	Under 17		South Charleston	1994	Under 18
Pierce County	1994	All ages		St. Albans	1995	Under 18
Port Angeles	1994	All ages		<b>Wisconsin</b>		
Port Orchard	2004	All ages		Port Washington	1997	Under 17
Poulsbo	1995	Under 18				

\*Covers skaters, scooters, tricycles, unicycles and/or skateboards. **Total State laws: 22** (with DC). **Total Localities: 192**

The 22 states (including DC) and over 198 localities with helmet laws include more than half of the population of the U.S., but most of the laws do not cover adults. Laws have been proposed in at least 20 other states. The National Safe Kids Campaign has a status sheet on helmet laws available at 202-662-0616 or [www.safekids.org](http://www.safekids.org). On our Web site we have the latest version of this list and more materials and links at <http://www.helmets.org/mandator.htm>

## Some Results

The Consumer Product Safety Commission published a study concluding that the presence of a State law increases helmet use by 18.4 per cent. New York State reports that since it introduced its helmet laws, the annual rate of cyclists hospitalized from bicycle-related brain injuries has fallen for the covered group from 464 in 1990 to 209 in 1995. The rate for cyclists not covered for the same years declined much less, from 454 to 382. We can't say exactly what part of the improvement was due to helmet laws, since we have no data on improvements to bicycle facility safety, rider education or total miles ridden in those years. New Jersey reported in July of 1997 that after introducing a helmet law for kids under 14 the bicycle-related fatalities for that group fell by 60%, from 41 in 1987-1991 to 16 in 1992-1997. For riders age 14 and over, the figures were 75 and 71. Florida's Duval County reported an increase in helmet use by all ages from 19% in 1996 to 47% in 1997 after the Florida law was passed. Bicycle deaths fell from five to one, and injuries from 325 to 105. Results were even better in the age group covered by the law. North Carolina found that two years after its law for under-16 kids was adopted there had been no improvement in helmet usage rates for that age group, although there was an increase in helmet use by older riders that lifted the overall state wearing rate from 17% to 24%. The NC numbers are based on actual field counts. A study in *Pediatrics* in 2002 found that the Canadian bicycle-related head injury rate declined 45% in provinces that adopted laws compared with 27% reduction in provinces and territories not adopting laws.

## Notes

A number of the laws above include skaters, skateboarders, scooters and in New Mexico's case, tricycle riders. Austin, Texas and Barrington, Illinois tried all ages laws and reduced them to under 18. Seymour, Connecticut passed a law and then repealed it. An attempt in 1999 to force a referendum on the Farmington Hills, Michigan, law for riders under 16 failed for lack of signatures. Snohomish, WA, repealed its city-wide law to make way for a state law. The Canadian province of British Columbia has made exceptions to their all-ages law for medical exemptions, those with heads larger than size 8 and religious headgear. The City of Oakwood, Ohio, adopted a resolution encouraging helmets. It directs the Safety Department (Police) to develop educational programs for helmet safety. It also provides the authority for officers to "wave over" minor cyclists who are not using helmets. No fines or other deterrents are permissible as this is not an ordinance.

Most bicycle clubs, the US racers' organization (USA Cycling) and the Triathlon Federation require helmets in their events, although they may not support helmet laws. U.S. military regulations require helmets on military facilities. The National Bicycle Dealers Association opposes mandatory helmet laws. *Bicycle Retailer and Industry News* has editorialized against them.

## **International**

In Australia, bicycle helmets are mandatory in all states and territories. Compliance is high but varies by area, with some cities over 90% and rural areas much lower. In the State of Victoria cyclists' head injuries declined 41%. There were 36% fewer child riders on the road immediately after the legislation passed, but perhaps more adult riders. Changes in ridership may or may not have been related to the passage of the laws. No similar effects have ever been documented in the US. Injury reduction was below expectations, but still spectacular. New Zealand's national helmet law took effect in January, 1994. Sweden is reportedly considering a national law. Iceland's mandatory helmet law, covering children under 15, came into effect in October of 1998. The Spanish legislature passed a comprehensive bicycle law in mid-1999 that reportedly included a mandatory helmet provision. In 2003 the International Cyclists Union (UCI) began requiring helmets in professional European races. In 2004 the British Medical Association recommended that the UK adopt a helmet law covering both children and adults.

Canada has provincial and local helmet laws. Ontario's law for riders under 18 took effect in 1995. All-ages laws took effect in British Columbia in 1996, Nova Scotia in 1997 and New Brunswick in 2001. In Quebec, the Montreal suburbs of Cote Saint-Luc and Westmount require the use of bicycle helmets within their boundaries. In 1997 the Cote Saint-Luc law was extended to cover bicyclists and skaters of all ages. Alberta adopted a law for under-18 riders in 2002.

## **Our View**

BHSI supports carefully drawn mandatory helmet laws covering all ages because we believe they are needed to raise awareness that helmets save lives, in the same way that seatbelt and smoke detector laws were used to inform the public. Many riders and parents do not know that they need a helmet, and the laws educate as much as they force compliance, since they are rarely enforced. We also believe that most riders regard helmets as a fashion item rather than as a safety appliance, and like any other fashion this one may wane. We support efforts to improve the safety of the cycling environment to reduce the need for helmets, the primary injury prevention measure for reducing all injuries to cyclists. We do not believe that wearing a helmet causes riders to take additional risks. We believe that in this country promoting helmets will not detract from the effort to improve road safety, and in fact has stimulated those efforts, giving us the most widespread and best-supported campaigns for better road safety for cyclists that we have ever had in our history. Since bikes are vehicles, requiring a bicycle helmet is as reasonable as requiring a helmet on a motorcycle rider or requiring seatbelt usage in cars. We would support medical exemptions based on a doctor's certification or requirements for religious headgear. We are keenly aware that safer cycling requires more riders on the streets, but we do not believe that helmets discourage cycling in the US.

Despite that statement, we have always been a lot more enthusiastic about promoting voluntary use of helmets than promoting laws, and it would appear from the list above that most U.S. states and localities are too. Even seatbelt laws, which have been around for a long time, are mostly secondary offense laws limiting enforcement to occasions when a driver has been stopped for something else. Helmet laws can be useful, but given the problems with enforcing them they will probably not work well in most places until more riders have accepted the need for wearing a helmet. So we favor a stronger push for voluntary usage than for passing new helmet laws, and our promotion campaign materials reflect that attitude.

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