

The Six Minute Guide

Need One? Yes!!

The average experienced, careful bike rider crashes about every 4,500 miles. Head injuries cause 75% of our 800+ annual bicycle deaths. Medical research shows that a bike helmet can prevent 85% of cyclists' head injuries. And helmets may be required by law in your area.

How Does a Bicycle Helmet Work?

A helmet reduces the peak energy of a sharp impact. This requires a layer of stiff foam to cushion the blow. Most bicycle helmets do this with crushable expanded polystyrene (EPS), the white picnic cooler foam. EPS works well, but when crushed it does not recover. A similar foam called expanded polypropylene (EPP) does recover, but is much less common. Another foam called EPU (expanded polyurethane) is used in Taiwan. It has a uniform cell structure and crushes without rebound, but is heavier than EPS and its manufacturing process is not environmentally friendly. Other foams are beginning to appear that may offer promise. The spongy foam pads inside a helmet are for comfort and fit, not for impact protection.

The helmet must stay on your head even when you hit more than once--usually a car first, and then the road, or several trees on a mountainside. So it needs a strong strap and an equally strong fastener. The helmet should sit level on your head and cover as much as possible. Above all, with the strap fastened you should not be able to get the helmet off your head by any combination of pulling or twisting. If it comes off or slips enough to leave large areas of your head unprotected, adjust the straps again or try another helmet. Keep the strap comfortably snug when riding.

What Type Do I Need?

Most helmets are made of EPS foam with a thin plastic outer shell. The shell helps the helmet skid easily on rough pavement to avoid jerking your neck. The shell also holds the EPS together after the first impact. Some excellent helmets are made by molding EPS in the shell rather than glueing on the shell later.



Beware of gimmicks. You want a smoothly rounded outer shell, with no sharp ribs or snag points. Excessive vents mean less foam contacting your head, which could concentrate force on one point. "Aero" helmets are not noticeably faster, and in a crash the "tail" could snag or knock the helmet aside. Skinny straps are less comfortable. Dark helmets are hard for motorists to see. Rigid visors can snag or shatter in a fall. Helmet standards do not address these problems--it's up to you!

Standards

A sticker inside the helmet tells what standard it meets. Helmets made for U.S. sale after 1999 must meet the US Consumer Product Safety Commission standard, so look for a CPSC sticker. ASTM's standard is comparable. Snell's B-95 and N-94 standards are tougher but seldom used. The weak ANSI Z90.4 standard is dead. Fit is not certified by any standard, so test that on your own head. Visors are not tested for shattering or snagging in a fall, so you are on your own there.

Comfort

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. Most current helmets have adequate cooling for most riders. Sweat control can require a brow pad or separate sweatband. A snug fit with no pressure points ensures comfort and correct position on the head when you crash. Weight is not an issue with today's helmets.

Special Problems

Some head shapes require more fiddling with fitting pads and straps. Extra small heads may need thick fitting pads. Extra large heads up to 8 1/4, may require the huge Bell Kinghead. Ponytail ports can improve fit for those with long hair. Bald riders avoid helmets with big top vents to prevent funny tan lines. For a softer landing, seniors should pick a thicker, less dense model without huge vents.

How to Buy

When you pick up a helmet, look first for a CPSC sticker inside and a smooth shell with a bright color outside. Put it on, adjust the pads and straps or the one-size-fits-all head ring, and then try hard to tear it off. Look for vents and sweat control. Helmets sell in bike shops or by mail order from \$25-up, or in discount stores for as little as \$10. A good shop helps with fitting, and fit is important for safety. A discount helmet can be equally protective if you take the time to fit it carefully. Helmets are cheap now, so don't wait for a sale. Many of us bought our helmets after a crash. You can be smarter than that.

The Two Minute Summary

- **You always need a helmet wherever you ride. You can expect to crash in your next 4,500 miles of riding, or maybe much sooner than that!**
- **Even a low-speed fall on a bicycle path can scramble your brains.**
- **Laws in at least 20 states and 89 localities require helmets.**
- **Make sure your helmet fits to get all the protection you are paying for. A good fit means level on your head, touching all around, comfortably snug but not tight.**
- **Standards are no longer a big issue, but check inside for the CPSC sticker.**
- **Common sense tells you to avoid a helmet with snag points sticking out, tiny vents, excessive vents, an extreme "aero" shape, dark colors, thin straps, overly fussy adjustments or a rigid visor that could shatter or snag in a fall.**
- **Pick white or a bright color for visibility to be sure that motorists and other cyclists can see you.**
- **Consumer Reports published an article in their July, 2002 issue with ratings for a limited number of helmets.**

If you have 6 more minutes, read on!

When to 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. Most manufacturers recommend replacement after five years. We think that depends on usage, and most helmets given reasonable care are good for longer than that. But if your helmet is from the 70's, it's time to replace it. Replace the buckle if it cracks or a piece breaks off. 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. But extreme, trick, aggressive skating and skateboard helmets have their own ASTM standard, designed for multiple hits with lesser impact severity. **Do not use a skate helmet for bicycling unless it has a CPSC bicycle helmet standard sticker inside!**

Consumer Reports Article

Consumer Reports published a helmet article in July 2002 rating a limited number of helmets. The Trek Vapor and Specialized Air Wave Mega youth helmet were rated Best Buys. You can read the article at your local library or purchase it at www.consumer.org.

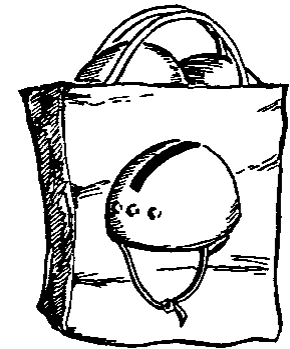
Warning: Children must remove helmets before climbing on playground equipment or trees, where a helmet can snag and choke them.

Bicycle Helmet Safety Institute
4611 Seventh Street South
Arlington, VA 22204-1419 USA
(703) 486-0100 info@helmets.org
www.helmets.org



We are volunteers, all funded by consumers like you.
©BHSI, 2003. OK to reproduce for non-profit use.

A Consumer's Guide to Bicycle Helmets



Bicycle Helmet Safety Institute

A consumer-funded program of the
Washington Area Bicyclist Association

www.helmets.org
