

# The Six Minute Guide

## Need One? Yes!!

The average careful bike rider may still crash about every 4,500 miles. Head injuries cause 75% of our more than 700 annual bicycle deaths. Research shows that helmets can prevent or reduce most cyclist head injuries. And laws in your area may require helmets.

## How Does a 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 use crushable expanded polystyrene (EPS), the picnic cooler foam. It works well, but when crushed it does not recover. Collapsible plastic liner materials recently appeared and offer promise, claiming to reduce concussion-level energy. The spongy foam pads inside a helmet are for comfort and fit, not for impact protection.

The helmet must stay on your head for more than one impact--usually a car first, and then the road, or several trees on a mountainside. So it needs a strong strap and an equally strong buckle. 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 or try another helmet. The straps hold your helmet on, not the rear stabilizer.

## What Type Do I Need?

Most helmets are made of EPS foam with a thin plastic shell. The shell helps the helmet skid easily on pavement and not jerk your neck. It also holds the foam together after the first impact. Molding foam in the shell can make stronger helmets.



You want a smoothly rounded shell, with no sharp ribs or snag points. Extreme vents reduce the foam contacting your head, so they could concentrate force on one point. Elongated "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 issues--it's up to you!

## Standards

A sticker inside the helmet tells what standards it meets. Helmets in the U.S. must meet the Consumer Product Safety Commission standard and have a CPSC sticker. Fit can not be certified by any standard, so test that on your own head.

## 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 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.

## 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 it and then try hard to tear it off. Check out the vents and sweat control. Helmets sell in bike shops from \$35 up. They are cheaper in discount stores but online buying risks getting a counterfeit. A good shop helps with fitting, important for safety. Lab tests show that the \$15 discount helmet is equally protective if you take the time to fit it carefully. For another \$10 you get easier fitting. Helmets are cheap, so don't wait for sales. Many riders buy helmets after a crash. You can be smarter than that.

## Brands

Consumer Reports rates helmets, and you can check for their recommendations. The Virginia Tech STAR program rates helmets for concussion protection. In 2023 both like the Bell Stratus MIPS, Bontrager Specter WaveCel, Giant Rev Comp MIPS, Giro Register MIPS, Lazer Compact DLX MIPS, Specialized Align II MIPS and the Specialized Chamonix MIPS.

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## 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 22 states and at least 200 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.**
- **Rear stabilizers do not substitute for careful adjustment of helmet straps.**
- **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 to be visible on the road or trail.**
- **Our lab tests showed that the impact performance of cheap helmets equaled that of the most expensive models.**
- **If you have 6 more minutes, read on!**

### Special Problems

Some head shapes require more fiddling with fitting pads and straps. Extra small heads may need thick fitting pads. Extra large heads require an XXL helmet. Ponytail ports can improve fit for those with long hair. Bald riders may want to avoid helmets with big top vents to prevent tan lines. For a softer landing, seniors need a thicker model without huge vents.

### When to Replace a Helmet?

Replace any helmet if you crash. Impact crushes some of the foam, and 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. Lab testing shows that many helmets given reasonable care are good for much longer than that. But if your helmet shell shows wear and cracks, 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 thought.

### Bike Helmets for Skating?

The ASTM standard for biking includes inline skating. But extreme, trick, aggressive skating and skateboard helmets should meet ASTM F1492, tested with multiple hits and lesser impact severity. Those helmets may not handle bicycling impacts. Do not use a skate helmet for bicycling unless it has a CPSC sticker inside!

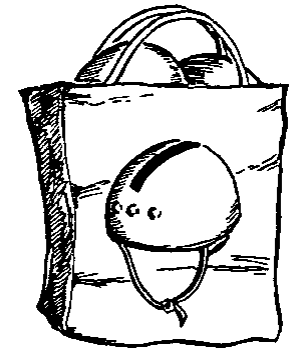
Warning: Children must remove helmets before climbing on playground equipment or trees, where a helmet can snag and choke them.

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# Buyer's Guide to Bicycle Helmets



Bicycle Helmet Safety Institute

*A consumer-funded program*

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