



<http://www.GearUpProject.org>

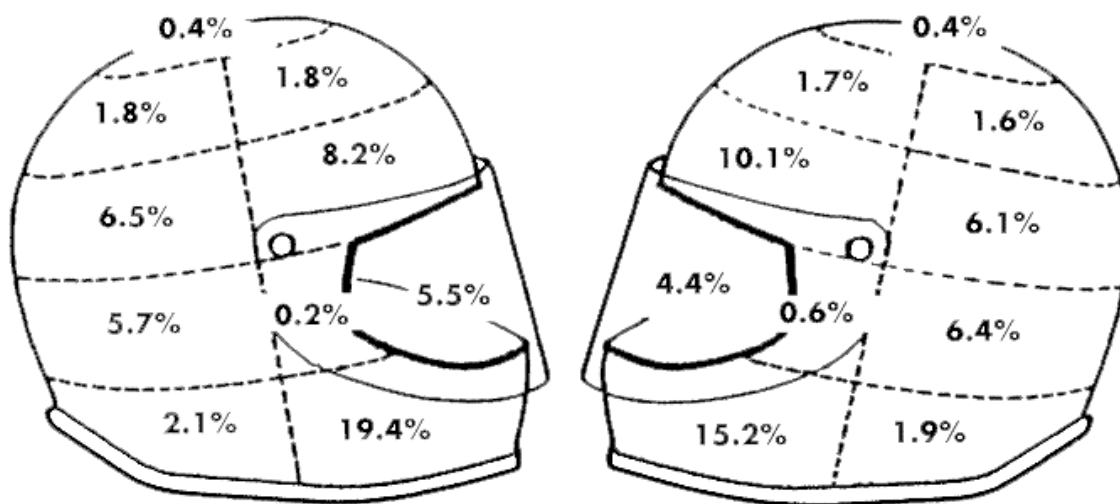
Some simple reasons why everyone need to Gear Up all the time.

From the Hurt Report:

- Most motorcycle accidents involve a short trip associated with shopping, errands, friends, entertainment or recreation, and the accident is likely to happen in a very short time close to the trip origin.
- Conspicuity of the motorcycle is a critical factor in the multiple vehicle accidents, and accident involvement is significantly reduced by the use of motorcycle headlamps (on in daylight) and the wearing of high visibility yellow, orange or bright red jackets.
- Seventy-three percent of the accident-involved motorcycle riders used no eye protection, and it is likely that the wind on the unprotected eyes contributed in impairment of vision which delayed hazard detection.
- The most deadly injuries to the accident victims were injuries to the chest and head.
- The use of the safety helmet is the single critical factor in the prevention of reduction of head injury; the safety helmet which complies with [DOT Certification] is a significantly effective injury countermeasure.
- Safety helmet use caused no attenuation of critical traffic sounds, no limitation of precrash visual field, and no fatigue or loss of attention; no element of accident causation was related to helmet use.
- Helmeted riders and passengers showed significantly lower head and neck injury for all types of injury, at all levels of injury severity.
- The increased coverage of the full facial coverage helmet increases protection, and significantly reduces face injuries.
- There is not liability for neck injury by wearing a safety helmet; helmeted riders had less neck injuries than unhelmeted riders. Only four minor injuries were attributable to helmet use, and in each case the helmet prevented possible critical or fatal head injury.
- Sixty percent of the motorcyclists were not wearing safety helmets at the time of the accident. Of this group, 26% said they did not wear helmets because they were uncomfortable and inconvenient, and 53% simply had no expectation of accident involvement.
- The median pre-crash speed was 29.8 mph, and the median crash speed was 21.5 mph, and the one-in-a-thousand crash speed is approximately 86 mph.

That last point is pretty important. Think of all the horrible accident stories you've heard or read. The median speed was *less than 30 mph!* So everything from a 50cc scooter to a 1200cc adventure bike is capable of getting in to one of these. Many people, especially scooterists, think wearing gear doesn't look cool, but how cool will they look with skin grafts over half their body, or when their bike falls traps their foot under it and grinds their toes off? Plus, it's simply not true. There are tons of manufacturers who make excellent looking gear in a huge range of styles.

Many people also think a half or three-quarter helmet is going to keep their heads safe, but when you check out the impact zones in the following graphic you can see that they've got about 35% chance of landing on their jaw. Everyone I know thinks that having a pretty working jaw is a good thing.



Some tips on what to look for when buying gear

Helmets:

- DOT certification. Better yet, Snell and ECE 22.05 certification. It's still hard to find ECE certified helmets in the US.
- Always try a helmet on before buying. Helmets come with different inner shapes just like heads do. Some manufacturer's helmets simply aren't going to be the right shape for your head, and as with shoes, sizing varies slightly from manufacturer to manufacturer.
- Find a brand that's got good reviews when it comes to handling fogging. Fogging up is a huge issue which can be alleviated by products like "Cat Crap" but it's best to start off with a helmet that's more resistant to fogging.
- Consider adding retroreflective tape to any helmet. You can get 3M Scotchlite tape for a few dollars at any auto-parts store.
- In 2004 a study found that riders who wear white helmets have a 24 percent lower accident rate than riders who wear black helmets. Since then scorpion has come out with a high-viz neon yellow helmet, which has been shown to be one of the most visible colors. Until other manufacturers start making high-viz helmets we're recommending this helmet to anyone with a head that fits well in Scorpion helmets.

Garment Materials:

When it comes to Jacket and Pant materials your three best choices are Cordura/Dynatech, Kevlar, and SuperFabric. Cordura (like all cloth) comes in various Deniers which has a variety of related definitions which essentially mean how dense the fabric is. The higher the number the better. I've seen garments with denier's of 2000. Denim Jeans and 70 denier nylon require 4.5 pounds of force to tear. That's nothing. If you're lucky that'll last 5 feet of scraping. 620 denier takes 35 pounds which still doesn't sound like a lot to me when you crash at highway speed. 1000 denier is 110 pounds which is getting better and is about the same as really good, racing leather which will last for about 80 to 100 feet of sliding down the road, but it's still not much when you compare it to good kevlar which requires over 1,200 pounds to tear and SuperFabric which claims to have 14 times the abrasion resistance of Kevlar. There aren't many manufacturers that offer Kevlar, and right now RevIt is about the only company using SuperFabric which has microscopic pieces of ceramic embedded in it.

The same study that found that riders were 24% less likely to be in an accident with a white helmet also found that riders wearing any reflective or fluorescent clothing had a 37% lower risk ... than other riders. Look for Retroreflective strips in pants and jackets and buy high-viz colors, or a high-viz vest whenever possible.

Jackets:

- Never buy a jacket that doesn't have CE Certified back, shoulder and elbow armor.
- Many manufacturers use a thin foam pad on the back instead of CE certified armor and try to claim that this offers some sort of useful protection. Next to your brain there is no part of your body more important than the spine. Do not risk it to some cheap uncertified pad.
- A waist length jacket is likely to slide up during an accident unless it is attached to your pants. Frequently this means buying pants and jacket from the same manufacturer. You're better off with a three-quarter length jacket.
- Sealable ventilation: It's important to have a jacket that can keep you cool on those 80+ days. Similarly, it's important that when the temperature drops unexpectedly you're not going to freeze. Look for jackets with removable liners and lots of ventilation that can be easily sealed off.

Pants:

- CE Certified armor in the knees.
- Adjustable knee pads. Some people's knees are closer to their hips, relatively, than others. You'll want to be able to adjust the height of those knee pads.
- CE Certified armor in the hips. Unfortunately, this is not offered by many manufacturers. Many pants include no padding at all, some include significant but non-certified padding. Do the best you can here. Don't buy pants with nothing there.
- If you commute to work make sure the pants can be easily pulled on and off over your typical work pants.

Gloves:

- Always try gloves on in the store. It's not just about getting the right size, but also making sure that it's still easy to grip your hand around the throttle, and that it doesn't make it harder to quickly reach for the brake.
- Cold hands have slower reaction times. If you're going to be riding in cool weather, or heavy rains, be sure to get yourself some winter gloves too.
- Many gloves come with Kevlar, and Carbon fiber protection over the knuckles. The more protection you can get the better.

Boots:

- Motorcycle boots are a lot like ski boots. You want to keep your ankle from twisting, prevent the heel, ankle bones, and toes from damage upon impact, and have a material that will survive being dragged across the road. The things you want that a ski-boot doesn't offer are the ability to more-easily bend your ankle vertically (for shifting), nice grippy bottoms, and the ability to walk like a human. Some boots will also provide you with good shin protection, because the armor in your pants probably doesn't extend down terribly far below the knees.
- Laces can get caught in motorcycle chains, or foot pegs and have caused innumerable accidents. Some boots offer ways to tuck laces away safely or a Velcro flap to cover them.
- Many have armor in the right places but most of the time it isn't CE rated so you'll just have to use your best judgment. When choosing a boot don't forget about waterproofing.
- Get boots that you'll be comfortable walking around in when you get wherever you're going on those short trips. Otherwise you'll be likely to skip wearing them.

Links

- WebBikeWorld's excellent Helmet FAQ
<http://www.webbikeworld.com/motorcycle-helmets/motorcycle-helmet-faq.htm>
- ECE 22.05 Motorcycle Helmet Standard
<http://www.webbikeworld.com/motorcycle-helmets/ece-22-05.htm>
- So you want to ride a motorcycle... and not die
<http://weblog.masukomi.org/2008/04/05/so-you-want-to-ride-a-motorcycle-and-not-die>
- Motorcycle rider conspicuity and crash related injury: case-control study
<http://www.bmj.com/cgi/content/abstract/328/7444/857>
- The Gear Up! Project
<http://www.GearUpProject.org>

The Gear Up! Project works when smart people like you spread the word about the importance of good motorcycle gear. **THANK YOU for helping to keep our fellow riders safe.** If you think you can help improve this document please do. We'd love to hear your feedback: gearup@gearupproject.org