

Australia Motorcycle Clothing Study Notes

(“Motorcycle Protective Clothing: Protection from Injury or Just the Weather?”

Liz deRome et. al. May 2011)

The following are Jon's Notes, Observations and Thoughts - readers are ultimately responsible for their own safety.

Practical advice for riders given this study's findings:

- Armor is important. Use quality gear with armor or wear separate armor underneath when not present or inferior clothing material.
 - Armor in gear is excellent for soft tissue injury prevention due to frequent presence of flimsy fabric materials and construction.
 - Armored gloves do make a difference over non-armored and no gloves (obviously).
 - Consider strong well-built separate back armor instead of relying on foam back inserts.
 - Wearing armored motorcycle specific pants should be a priority. At minimum, separate armor should be worn under regular clothing.
 - Motorcycle specific boots might not be absolutely necessary for most riders, meaning less expensive and/or more comfortable boots might be an acceptable risk management choice.
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Some Findings of Interest

- 49% of crashes were multiple vehicle
- 42% of crashes were single vehicle
- 9% of crashes involved kangaroos!
- Only about 1/3 of riders in study wore motorcycle pants, but most wore helmet/gloves/boots

Hospitalization and Injury

- Hospitalization is a key factor when identifying the benefits of gear. Riders were significantly less likely to be hospitalized after crashing in gear, gear with armor even less likely.
 - Even though gear primarily reduces soft tissue injuries, these types of injuries are debilitating and costly.
- If you fall off your motorcycle, you are likely to be injured to some degree. Between lack of gear, gear failure and crash factors, a lot can conspire to hurt you. The goal is to minimize injury, which obviously good gear will do at least to some extent, unless extreme crash event. Motorcycle protective clothing (particularly with armor) reduces risk of injury and hospitalization.

Gear Facts Discussed or Benefits Inferred

- Helmets are the focus of most research, leaving the rest of the body more vulnerable and neglected by the industry and in turn, motorcyclists.
 - Many riders that wear helmets neglect the rest of their bodies, which makes them more vulnerable.
 - Full-Face helmets protect the head much better than open-face or no helmet (surprise surprise) relating to cuts, fractures, sprains and even internal injuries.
- Gear often fails in a crash, it tears apart.
 - ¼ of the gear failed to maintain a protective layer, most often due to material erosion.
- European standards are currently popular worldwide. They address soft tissue protection with sturdy materials and body armor to diffuse force to vulnerable areas of the body.
- Most crashes are low impact, so wearing gear during low impact crashes will reduce injury.
- Cuts or bruises can be expected after a crash, even with quality gear.
- Armored motorcycle pants significantly reduce sprains and internal injuries to lower extremities.
- Boots
 - Type of boot use will have little effect on hospitalization probability.
 - Boots of any kind, non-motorcycle or motorcycle specific, will be better than shoes or sneakers (which offer little protection in a crash).
 - Motorcycle specific boots still may be a “better” choice overall. Benefits of motorcycle specific boots include low flat soles, slip resistant soles, protective panels, easier to put on (ie zippers/flaps), etc. But those looking for a thicker sole for seat height problems or for wearing with regular clothes off the motorcycle, non-specific boots could be an option.
- Back Protection: For reasons the study cannot explain, riders crashing WITH a foam back insert experienced injury twice the rate of those WITHOUT any back protection. Separate back armor produced the lowest injury rate. While it appears that foam inserts increase risk of injury, I cannot endorse removing them and leaving a rider without protection, even though according to this study they would decrease risk significantly.
- Armor use in gear didn't seem to reduce the risk of fracturing, but it's real-world benefit is abrasion protection and soft tissue protection. When fabric materials fail, the armor underneath continues to protect.
- While the researchers DO NOT suggest this, another interesting concept presented briefly in the conclusion was the idea that gear use could lead to crashes. There is no proof or research on the subject, but could wearing (potentially heavy) gear lead to restrictive movement, heat fatigue or discomfort resulting in a crash? Riding in hot weather, I have noticed gear making me uncomfortable, mostly when stopped though.

How the study results can be used

- Worldwide the human and economic costs of motorcyclist injuries is increasing and should be addressed and reduced.
- Quality control of gear is a real necessity.
 - I don't see ubiquitous quality control an easy implementation, given the nature of the textile industry and the individual's rightful ability to choose level of protection.
 - Perhaps gear manufacturers can stress their quality control and standards more directly in marketing, etc. to promote higher quality gear purchases.
- I agree with the study that legislating mandatory use of protective colthing is not a practical solution to decreasing hospitalization and injury.
 - To encourage the use of good riding gear, incentives like lowered or exempt sales tax, rebates, and health insurance premium reductions could be effective.
 - I think these methods could work for increasing helmet use too, especially where legislation has failed. Legislation related to helmets is an effective way to reduce motorcyclist deaths, whether you agree with the helmet laws or not.