



MotoCAP and the science of a motorcycle crash

Motorcycle crashes are a major cost to society with a \$111.6 million paid out by ACC on road trauma related to motorcycles in Aotearoa New Zealand in the 2021 calendar year. For every motorcyclist fatality there are approximately 30 riders seriously injured and 74 with lesser injuries. Motorcycle protective gear has been shown to reduce injury severity in a crash however high failure rates of garments and low usage of motorcycle PPE in warmer weather increase the injury severity. The type of crash will influence how a person's clothing and body interacts with a road during a crash. MotoGP is an effective way to evaluate crash types as airbag jackets worn by riders show energy involved, duration of the crash and the distance slid by the rider and this can be matched with video footage for additional information. The learnings from MotoGP can be translated to the real world where not all road surfaces are equal in their effect on a rider during a crash. Chip seal is 4.5 times more abrasive than asphalt. The differences in road surfaces is important as the European standard is developed around asphalt and is not a true indicator of protection when riding on New Zealand roads where chip seal is the predominant road surface. MotoCAP has been designed for New Zealand and Australian roads and is the best advice for riders looking to purchase new gear. The abrasion, seam strength, impact energy absorption and breathability tests have been selected and scientifically evaluated to provide the right advice to a New Zealand rider. MotoCAP provides independent advice to riders so that they can select riding gear to decrease their injury risk in a crash and maximise thermal comfort in a hot environment.