



NMI Punch List

This punch list includes items that demonstrate our incomplete understanding of the danger of motorcycling. These items are for civil servants, government agencies, and the general public to consider when evaluating motorcycling and motorcyclists.

1. Motorcycles are involved in crashes much more frequently than other motor vehicles, per Vehicle Miles Traveled (VMT).
2. In fatal crashes involving motorcycles, the motorcycle is almost always the striking vehicle.
3. When being operated legally and responsibly, including all lights meeting government code compliance, motorcycles are sufficiently and clearly conspicuous for other drivers to see.
4. In almost all fatal motorcycle crashes, the motorcycle operators had sufficient knowledge and skills to control the machine.
5. Motorcycle operators have similar crash rates to each other, per VMT, independent of skill level and experience. This supports the theory that the root cause of (two-wheeled) motorcycle crashes lies in the vehicle, not in the human motorcycle operator.
6. Motorcyclists are highly susceptible to fatal injuries when the crash involves a sudden impact rather than a slide.

Suggestions to test and scientifically disprove the above claims:

1. Count the number of crashes that involve motorcycles and motorcycle miles traveled; count the number of crashes that involve any vehicle and vehicle miles traveled. If the number of crashes per mile for motorcycles is less than 1.5 times that of vehicle crashes per vehicle miles traveled, then the statement would be disproved. Currently, motorcycles crash 27 times more often than all vehicles, per mile.
2. a. Investigate statistically significant numbers of randomly chosen fatal motorcycle crashes and determine whether the motorcycle or the other vehicle was the striking vehicle in the crash. If greater than 50% of the time the other vehicle was the striking vehicle, this would disprove the claim. Currently, less than 4% of fatal motorcycle crashes involve another vehicle striking the motorcycle.
b. Calculate the percentage of motorcycle crashes that only involve a motorcycle (single-vehicle crash). If this percentage was very small, then motorcycles could not be the striking vehicle in almost all motorcycle crashes. Currently, over 40% of fatal motorcycle crashes are single vehicle crashes.

3. Calculate the percentage of motorcycle crashes that involve the other vehicle striking or crashing into the motorcycle. If this percentage is high, this would disprove the claim. Currently, less than 4% of fatal motorcycle crashes involve another vehicle striking the motorcycle.
4. Investigate fatal motorcycle crash-involved motorcycle operators. If the majority did not have a motorcycle endorsement on their license, then the claim would be disproved. Currently, about 90% of fatal crash-involved motorcycle operators have or had a motorcycle endorsement. This includes licenses that are suspended (not valid) but carry the endorsement.
 5. a. Investigate fatal crash-involved motorcycle operator's experience and skill levels. View records and interview family and friends. If most of the crash-involved motorcycle operators were inexperienced or did not have motorcycle endorsements on their license, then this claim would be disproved. Currently, almost all fatal crash-involved motorcycle operators were experienced and had a motorcycle endorsement on their license.
 - b. Conduct a matched pair study comparing different groups of motorcycle operators. If this resulted in significantly different results between the matched pairs, then this claim would be disproved. A matched pair study was completed between trained and untrained motorcycle operators and it revealed no significant differences in crash rates of the two groups.
6. a. Run a series of tests similar to car crash tests but use motorcycles. Use properly outfitted test dummies crashing into a fixed object. Determine the highest speed where a properly outfitted motorcyclist test dummy would not likely experience a fatal injury. If this speed is greater than typical traffic speeds, then the claim would be disproved. Currently, the speed where fatal injury is likely to occur is so low for motorcyclists, these types of tests do not receive funding.
 - b. Calculate the percentage of fatal motorcycle crashes that involve a sudden impact. Then, calculate the percentage of (not fatal) injury motorcycle crashes that involve a sudden impact. If the percentages are nearly equal, the claim is disproved.

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