

# **Non-Helmeted Motorcyclists: A Burden to Society? A Study Using the National Trauma Data Bank**

## **Abstract**

**Published in:** Journal of Trauma-Injury Infection & Critical Care: November 2004 - Volume 57 - Issue 5 - pp 944-949

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### **Introduction:**

Helmet laws remain controversial. Opponents believe negative findings are a result of biased statistical analyses that fail to account for the impact of alcohol and drugs. In this study, we evaluated the effect that helmet use had upon injury severity, outcome controlling for alcohol or drug use, resource utilization, and financial burden using the National Trauma Data Bank (NTDB).

### **Methods:**

Two groups of patients, helmeted and non-helmeted motorcyclists, were identified using the NTDB over an 8-year period. Group differences were compared using nonparametric Wilcoxon tests for continuous variables and Fisher's exact test for dichotomous outcomes. To evaluate the effect that alcohol or drug use had on mortality, logistic regression models were created.

### **Results:**

A total of 9,769 patients were identified by the NTDB of which 6756 (69.2%) were helmeted and 3013 (30.8%) were non-helmeted. Helmet use was associated with lower injury severity, mortality, and resource utilization. Non-helmeted motorcyclists accrued greater hospital charges and were significantly less likely to have health insurance. When controlling for alcohol or drug use, mortality continued to be significantly associated with non-helmet use.

### **Conclusion:**

Non-helmeted motorcyclists have worse outcomes than their helmeted counterparts independent of the use of alcohol or drugs. Furthermore, they monopolize more hospital resources, incur higher hospital charges, and as non-helmeted motorcyclists frequently do not have insurance, reimbursement in this group of patients is poor. Thus, the burden of caring for these patients is transmitted to society as a whole.