

# Estimating the Contribution of Alcohol to Serious Car Crash Injuries: Implications for Prevention Strategies

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## Biography

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## Abstract

**Background.** Alcohol impairment of drivers is usually considered the most important contributing cause of car crash injuries. Few well-designed epidemiological studies of alcohol-related risk have included nonfatal injuries and adjusted for known major confounders. Therefore the burden of injury attributable to drinking drivers has only been estimated indirectly.

**Methods.** We conducted a population-based case control study in the Auckland region of New Zealand, between April 1998 and July 1999. Cases were 571 car drivers involved in crashes where at least one occupant was admitted to hospital or killed; controls were 588 car drivers recruited on public roads, representative of time spent driving in the region during the study period. Participants completed a structured interview and blood or breath alcohol measurements.

**Results.** Drinking alcohol before driving was strongly associated with injury crashes after controlling for known confounders; self reported drinking of 2 or more 12g alcoholic drinks in the preceding six hours compared with none: OR 7.9 (3.4-18); blood alcohol concentration (BAC) 3-50 mg/100ml compared with <3 mg/100ml: OR 3.2 (95% CI 1.1-10.1); BAC > 50mg/100ml compared with <3 mg/100ml: OR 23 (95% CI 9-56). The proportion of serious car crash injuries attributable to alcohol in this population was approximately 30%. Two-thirds of the alcohol-attributable injury burden involved drivers with a BAC in excess of 150mg/100ml.

**Conclusion.** Most of the burden of alcohol-related crash injury is attributable to drivers with BAC ≤50 mg/100ml or BAC >150 mg/100ml, for whom the reduction of the legal limit to 80 or 50 mg/100ml is irrelevant. These data support strategies focusing on drivers with very high BAC, and educating the public about the increase in risk associated with BAC below the legal limit.

## Full text

The full version of this paper was accepted for publication in the peer-reviewed journal "Epidemiology" on 31 July 2003 and is currently in press. For this reason it is cannot be included in the proceedings but will be freely available in the near future.

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