

# Buzz kills: No amount of alcohol safe to drive

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In the United States, the blood-alcohol limit may be 0.08 percent, but no amount of alcohol seems to be safe for driving, according to a University of California, San Diego sociologist. A study led by David Phillips and published in the journal *Addiction* finds that blood-alcohol levels well below the U.S. legal limit are associated with incapacitating injury and death.

Phillips, with coauthor Kimberly M. Brewer, also of UC San Diego, examined official data from the Fatality Analysis Reporting System (FARS). This dataset includes information on all persons in the U.S. who were involved in fatal car accidents – 1,495,667 people in the years 1994 to 2008. The researchers used FARS because it is nationally comprehensive, covering all U.S. counties, all days of the week and all times of day, and, perhaps most important, reports on blood-alcohol content in increments of 0.01.

All the accidents included in FARS are, by definition, severe. But the authors looked at different levels of accident severity by examining the ratio of severe injuries to minor ones.

"Accidents are 36.6 percent more severe even when [alcohol](#) was barely detectable in a driver's blood," Phillips said. Even with a BAC of 0.01, Phillips and Brewer write, there are 4.33 serious injuries for every non-serious injury versus 3.17 for sober drivers.

There are at least three mechanisms that help to explain this finding, Phillips said: "Compared with sober drivers, buzzed drivers are more

likely to speed, more likely to be improperly seat-belted and more likely to drive the striking vehicle, all of which are associated with greater severity."

There also seems to be a strong "dose-response" relationship between all these factors, the authors write: The greater the blood-alcohol content, the greater the average speed of the driver and the greater the severity of the accident, for example.

The findings persist even when such potentially confounding variables as inattention and fatigue are excluded from the analysis.

In general, accident severity is significantly higher on weekends, between 8 p.m. and 4 a.m. and in the summer months, June through August. But when the researchers standardized for day of the week, for time of day and for month, the relationship between BAC and more dangerous car accidents also persisted.

"Up till now, BAC limits have been determined not only by rational considerations and by empirical findings but also by political and cultural factors," Phillips said, citing as evidence that the U.S. national standard of 0.08 is relatively recent and that BAC limits vary greatly by country. In Germany, the limit is 0.05; in Japan, 0.03; and in Sweden, 0.02.

"We hope that our study might influence not only U.S. legislators, but also foreign legislators, in providing empirical evidence for lowering the legal BAC even more," Phillips said. "Doing so is very likely to reduce incapacitating injuries and to save lives."

Provided by University of California - San Diego

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