



Alcohol and Older Drivers' Crashes

Background

Researchers have examined the effects of alcohol consumption on older adults' functioning, and some have addressed alcohol's effects on older drivers' crash risk. Generally, the findings have shown that alcohol is less likely to be a factor in crashes for older, as compared to younger, drivers. The present research focused on filling some gaps in the research by addressing these questions:

- What proportion of older drivers admitted to hospitals for treatment of crash injuries has a positive (.020 grams per deciliter or higher) blood alcohol concentration (BAC)?
- What is the average BAC among those with positive BACs?
- Is the number of previous crashes similar among older drivers with and without positive BACs?
- Is the ratio of at-fault to not-at-fault older drivers similar between drivers with and without positive BACs?

Method

The study examined BACs of people admitted to trauma centers in Oregon over 11 years and focused on:

1. Ascertaining the prevalence of alcohol in crash-involved older drivers;
2. Comparing the driving records and crash culpability of older drivers with and without elevated BACs; and
3. Comparing BAC levels of older drivers who were in traffic crashes to other reference groups:
 - younger crash-involved drivers, and
 - older patients admitted for fall-related injuries.

Data Set

The study sample included 83,841 people 18 and older treated by a trauma unit in Oregon and recorded in the Oregon Trauma Registry for the years 2000 through 2010. Patients 65 and older comprised 15,900 (19%) of this total.

Procedure

Researchers identified patients 65 and older from the Trauma Registry and documented the circumstance of each patient's injury (e.g., driver in a crash, a fall), and their BACs (if recorded). They analyzed data for 660 drivers 65 and older that included:

- A total of 442 drivers with recorded BACs who were injured in crashes in Oregon, and
- A random sample of 218 drivers 65 and older whose BACs were not recorded.

The Oregon Department of Motor Vehicles (DMV) provided the driver records and copies of the police crash reports for the crashes that led to their Trauma Registry entries.

Results

BACs

Table 1 displays the percentage of people 65 and older who sustained injuries, either as drivers in crashes or from falls, who had positive BACs. The data showed that the older drivers were somewhat less likely to have positive BACs than were those treated for fall-related injuries.

Table 1. Age 65 and Older % Alcohol Positive by Circumstance of Injury

Injury Circumstance	Alcohol Positive	Total Group <i>n</i>
Driver in Crash	10.1%	1,392
Fall	13.3%	4,135
Total	12.5%	5,527

Table 2 shows the average BACs for drivers and people injured in falls who were 65 and older who had positive BACs. The groups' mean BACs were similar. The drivers' mean BAC was higher than that for the 18- to 20-year-old drivers in the study (who could not legally drink), but lower than those for drivers in the middle age groups. Most of the drivers over 65 who tested positive

for alcohol had BACs above .16. Older patients injured in falls showed similar distributions. The distribution of BACs for the study sample was similar to that found for data drawn from the Fatality Analysis Reporting System (FARS) for Oregon and the United States as a whole.

Table 2. Age 65 and Older Mean BACs for Alcohol-Positive Patients by Injury Circumstance

Injury Circumstance	<i>n</i>	<i>Mean</i>
Driver in a crash	141	.185
Fall	551	.193
Total	692	.191

Driving record

Researchers compared the driving records of people 65 and older with positive BACs, people whose tests showed negative (.000 – .019) BACs, and those with no BACs reported in the Trauma Registry. They found that 62.1% of the group with positive BACs had at least 1 conviction compared to only 36.8% of those tested with negative BACs and 36.6% of the group that had no BACs reported. Analysis of data for those older drivers with BACs reported showed drivers at BACs of .120 and higher each had a much higher likelihood of having a conviction on their records than those at lower BACs.

Records documented a similar pattern for license suspensions: 53% of the Positive BAC group had at least 1 suspension on their records compared to 26.4% of the group with negative BACs and 20.7% of those with no BACs reported. Of drivers with positive BACs, a higher BAC was associated with a greater likelihood of having at least 1 recorded suspension.

Crash responsibility

An analyst coded crash responsibility based on the police crash reports without reference to the drivers' BACs. The researcher judged 96% of the drivers with positive BACs as responsible for their crashes compared to 78% of the drivers with negative BACs and 74% of drivers with no BACs reported.

Discussion

Approximately 10% of the drivers 65 and older injured in crashes whose records documented BACs tested positive. This was well below the rates observed for drivers in the younger age groups in this study. Among those who tested positive, BACs in excess of the illegal *per se* limit were common; most had BACs above .160. These findings were consistent with data for drivers involved in fatal crashes from FARS for Oregon and for the United States as a whole.

Results also showed older drivers with positive BACs at the time of their crashes had notably worse driving records than their crash-involved counterparts with negative BACs. While this is not surprising, it supports the notion that alcohol should be considered as a potential factor in older drivers' crashes.

Crash responsibility determinations showed that older drivers with positive BACs were more likely to be deemed responsible for the crash than were their counterparts with negative BACs. These findings highlight effects of alcohol that extend beyond the effects of aging alone.

Overall, the study found that the drivers 65 and older were less likely than their younger counterparts to test positive for alcohol after crashes that required treatment at a trauma center. However, when older drivers tested positive, their BACs were generally high, well above the illegal *per se* limit for driving. Moreover, the strong relationship between older drivers' BAC and poor prior driving records and high crash responsibility highlight the need to consider alcohol as a factors in older drivers' crashes, and to focus more attention on countermeasures for drinking and driving among those 65 and older.

How to Order

Download *BAC and Crash Responsibility of Injured Older Drivers: An Analysis of Trauma Center Data* (29 pages), prepared by Dunlap and Associates, from www.nhtsa.gov.



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