

### **An evaluation of the implementation of ignition interlock in California.**

DeYoung DJ. *Journal of Safety Research* 33(4): 473-482, 2002. (6 refs.)

**Problem:** This study evaluates the degree to which courts have implemented California's ignition interlock program, and surveys judges and district/city attorneys to identify barriers to implementing a successful interlock program. **Method:** There are three parts to the evaluation. In the first, a sample of drivers arrested for driving on a driving under the influence (DUI)-suspended driver license was examined to calculate the rate at which courts order interlocks for DUT-suspended drivers, as required by California law. The second part of the study used Department of Motor Vehicle (DMV) records to count the statewide rate of court-ignition interlock device (IID) orders across time and jurisdictions. The final part surveyed judges, district/city attorneys, and offenders installing an interlock to obtain information about their use of interlock, barriers to implementing an interlock program, and the effectiveness of the devices in preventing drinking and driving. **Results:** It was found that conviction rates for driving while suspended are low; that judges order interlocks for only a fraction of the convicted driving-while-suspended (DWS) offenders who should receive such an order; and that the majority of offenders who are ordered by the court to install an ignition interlock in their vehicle do not do so. **Impact on Industry:** Any successful interlock program will need to find a way to balance the inability of many offenders to pay for the devices, with the need for the industry to remain economically viable. Copyright 2002, National Safety Council and Pergamon Press.

### **Association between state level drinking and driving countermeasures and self reported alcohol impaired driving.**

Shults RA; Sleet DA; Elder RW; Ryan GW; Sehgal M. *Injury Prevention* 8(2): 106-110, 2002. (24 refs.)

This study examined the association between a defined set of interventions to reduce driving under the influence of alcohol (DUI), measured at the state level, and individuals' self reported drinking and driving behavior. It was hypothesized that residents from states with weaker DUI countermeasures would be more likely to drive while impaired by alcohol. In 1999, alcohol-related motor vehicle crashes in the United States claimed 15,786 lives and injured more than 300,000 persons. Mothers Against Drunk Driving's (MADD's) Rating the States 2000 survey, which graded states on their DUI countermeasures from 1996-1999, was used as an index of each state's comprehensive DUI prevention activities. The 1997 Behavioral Risk Factor Surveillance System (BRFSS) survey provided information on alcohol impaired driving

from residents of each state. The association between the MADD state grades and alcohol impaired driving was assessed using multiple logistic regression. Of the 64,162 BRFSS respondents who reported drinking any alcohol during the past month, 2.1 percent of women and 5.8 percent of men reported at least one episode of alcohol impaired driving in the past 30 days. Respondents living in states with a MADD grade of "D" were 60 percent more likely to report alcohol impaired driving than those from states with a MADD grade of "A" (odds ratio 1.6, 95 percent confidence interval 1.3-2.1). These findings indicate that stronger state level DUI countermeasures are associated with lower rates of self reported alcohol impaired driving. Copyright 2002, BMJ Publishing Group.

### **Children in fatal crashes: Driver blood alcohol concentration and demographics of child passengers and their drivers.**

Voas RB; Fisher DA; Tippetts AS. *Addiction* 97(11): 1439-1448, 2002. (13 refs.)

**Aims** This study examines whether differences in two risk factors for crash-related injury for children-riding with a drinking driver and failure to use restraints-are related to various driver characteristics such as age, gender, ethnicity and drinking. **Design, participants, measurements** Data on driver blood alcohol concentration (BAC), use of restraints and certain demographics were drawn from the Fatality Analysis Reporting System. Ethnicity data came from the Multiple Cause of Death File and socioeconomic information from the US Census. The use of restraints by child passengers and the drinking of alcohol by adult drivers are examined as a function of age, gender and membership of five racial/ethnic groups: White American, Black American, Native American, Asian/Pacific Islander American and Hispanic American. This study covers 160 770 drivers and 12 266 children younger than 16 years killed in motor vehicle crashes from January 1 1990 to December 31 1996. **Findings:** As might be expected, analyses of fatally injured drivers showed that, compared with men, women were more likely to be accompanied by children at the time of their crash, but those children were more likely to be restrained than if traveling with men. Drivers who had been drinking at the time of their crash were less likely to be transporting children and those children were less likely to be restrained. Analyses of killed children indicated that some ethnic groups, compared with White drivers, were more likely to be BAC-positive and children were less likely to be restrained. **Conclusions:** These findings underscore the continuing need to understand cultural factors in traffic safety and develop and disseminate culturally appropriate education programs. Copyright 2002, Society for the Study of Addiction to Alcohol and Other Drugs.

### **Early effects of Ontario's administrative driver's licence suspension law on driver fatalities with a BAC greater than 80 mg percent.**

Mann RE; Smart RG; Stoduto G; Beirness D; Lamble R; Vingilis ER. *Canadian Journal of Public Health* 93(3): 176-180, 2002. (30 refs.)

On November 29, 1996, Ontario introduced an Administrative Driver's License Suspension (ADLS) law, which required that anyone charged with driving with a blood alcohol concentration (BAC) over the legal limit of 80 mg percent or failing to provide a breath sample would have their license suspended for a period of 90 days at the time the charge was laid. This study evaluates the early effects of Ontario's ADLS law on alcohol-involved driver fatalities. Interrupted time series analysis with ARIMA (auto-regressive integrated moving average) modeling was applied to the monthly proportion of drivers killed in Ontario with a BAC over 80 mg percent for the period January 1, 1988 to December 31, 1997. The results of the study indicated a significant intervention effect with ADLS being associated with an estimated reduction of 17.3 percent in the proportion of fatally injured drivers who were over the legal limit. It is concluded that these data provide an early indication that the law resulted in some success in reducing alcohol-related driver fatalities. Copyright 2002, Canadian Public Health Association.

### **Implicit cognition, sensation seeking, marijuana use and driving behavior among drug offenders.**

Ames SL; Zogg JB; Stacy AW. *Personality and Individual Differences* 33(7): 1055-1072, 2002. (53 refs.)

This research addresses the relative contributions of cognitive and personality constructs in drug use motivation and problem behaviors associated with use. The purpose of this study was to investigate the relationships among four factors: Sensation seeking, memory association, marijuana use, and driving under the influence (DUI) in a high-risk population. Gender was also analyzed for its potentially confounding effects. Participants were 166 first- and second-time drug offenders ranging in age from 18 to 50 who were enrolled in a drug diversion education/counseling program in southern California. Results showed that memory association independently predicted marijuana use and mediated the predictive effects of sensation seeking on marijuana use. Memory association, but not sensation seeking, also had a significant indirect effect on DUI, mediated through marijuana use. These findings have important implications for the development of prediction models of drug use and DUI for high-risk populations. Copyright 2002, Pergamon Press.

### **Modulation of the effects of alcohol on driving-related psychomotor skills by chronic exposure to cannabis.**

Wright KA; Terry P. *Psychopharmacology* 160(2): 213-219, 2002. (45 refs.)

Rationale: Many previous studies have reported that alcohol and cannabis produce additive psychomotor effects in acute combination, but few have explicitly tested whether chronic exposure to cannabis, in the absence of

acute administration, alters the effects of alcohol on psychomotor performance. Objectives: To test whether long-term cannabis use modulates the effects of alcohol on psychomotor skills and self-reported mood and sensation. Methods: Regular cannabis users (minimum: daily use for at least 3 years) and infrequent users (maximum: once-monthly use for at most 3 years) were matched for sex, age, alcohol intake and other drug use (14 participants in each group). Participants received alcohol (females 0.35 g/kg; males 0.45 g/kg) and placebo drinks. By urinalysis, only regular users tested positive for metabolites of Delta(9)-tetrahydrocannabinol; breath alcohol levels were similar between groups. Participants were tested on a computerised tracking task that has been used to screen drugs for adverse effects on driving. The task involved tracking a moving target on a computer screen while simultaneously responding to occasional presentations of stimuli in the periphery of the screen. Results: Tracking accuracy was similar for both groups after placebo, but alcohol caused a significant deterioration in performance among infrequent cannabis users relative to regular users. These changes were mirrored by significant changes in self-reported scores for dizziness, measured by visual analogue scales. Alcohol slowed reaction times, but not differentially between groups. Conclusions: For psychomotor skills relevant to driving, chronic cannabis use (in the absence of acute administration) does not potentiate the effects of alcohol. In fact, the superior tracking accuracy of regular users relative to infrequent users after alcohol, and their lower scores for dizziness, suggest that chronic cannabis use may instead confer cross-tolerance to specific effects of alcohol on behaviour. Copyright 2002, Springer-Verlag.

### **Separate and combined effects of marijuana and alcohol on mood, equilibrium and simulated driving.**

Liguori A; Gatto CP; Jarrett DB. *Psychopharmacology* 163(3-4): 399-405, 2002. (31 refs.)

Rationale: Marijuana and alcohol, when used separately and in combination, contribute to automobile accidents and failed sobriety tests of standing balance. However, the extent to which the drugs have additive effects on both of these measures is unknown. Objectives: This study was designed to compare directly the separate and combined effects of marijuana and alcohol on simulated emergency braking and dynamic posturography. Methods: Twelve healthy subjects who regularly used both marijuana and alcohol completed nine test sessions in a counterbalanced within-subject design. Subjects drank a beverage (0, 0.25, or 0.5 g/kg alcohol) then smoked a cigarette (0, 1.75, or 3.33% THC). Testing began 2 min after smoking and was conducted within the ascending limb of the blood alcohol curve. Results: The 0.5 g/kg alcohol dose significantly increased brake latency without affecting body sway. In contrast, the 3.3% THC dose increased body sway but did not affect brake latency. There were no additive drug effects on mood or behavior. Conclusions: Although field sobriety tests are often used to determine driving impairment, these results suggest that impaired balance following marijuana use may not coincide with slowed reaction time.

Conversely, braking impairment from low doses of alcohol may not be revealed by tests of balance. Copyright 2002, Springer-Verlag.

### **Screening for impaired driving risk among college students.**

Schumacher JE; Usdan S; Mcnamara C; Bellis JM. *College Student Journal* 36(2): 180-187, 2002. (9 refs.)

The Impaired Driving Screening (IDS), a 12-item, self-administered questionnaire developed to identify college students at risk for impaired driving was tested on 782 undergraduates. Thirty-five percent used alcohol, 8.6 percent binge drank, 27.5 percent recently drove after drinking, and 32.7 percent rode with an impaired driver. The IDS classified 57.9 percent of students as low risk, 26.2 percent as moderate risk, and 15.9 percent as high risk for continued impaired driving and negative consequences. High risk students used alcohol 12.5 days, drove after drinking 10.5 times, and drove with an impaired driver 6.8 times in the past month. They drove after drinking 10 times more and rode with an impaired driver twice as much as students at moderate risk. High risk students were more likely to be male, Caucasian, and binge drink than other students. The Impaired Driving Assessment (IDA), a timeline follow-back interview, was used to validate the IDS and is discussed as a useful prevention tool. Copyright 2002, Project Innovation, Inc.

### **The use of oral fluid and sweat wipes for the detection of drugs of abuse in drivers.**

Samyn N; De Boeck G; Verstraete AG. *Journal of Forensic Sciences* 47(6): 1380-1387, 2002. (23 refs.)

Blood, urine, oral fluid (by spitting or with a Salivette (R)), and sweat samples (by wiping the forehead with a fleece moistened with isopropanol) were obtained from 180 drivers who failed the field sobriety tests at police roadblocks. With quantitative GC-MS, the positive predictive value of oral fluid was 98, 92, and 90%, for amphetamines, cocaine, and cannabis respectively. The prevalence of opiate positives was low. The Proposed SAMHSA cut-off values for oral fluid testing at the workplace, proved their usefulness in this study. The positive predictive value of sweat wipe analysis with GC-MS was over 90% for cocaine and amphetamines and 80% for cannabis. The accuracy of Drugwipe((R)) was assessed by comparing the electronic read-out values obtained on-site after wiping the tongue and the forehead, with the corresponding GC-MS results in plasma, oral fluid, and sweat. The accuracy was always less than 90% except for the amphetamine-group in sweat. Copyright 2002, American Society for Testing and Materials.

### **Alcohol Ignition Interlocks: Magic bullet or poison pill?**

Neugebauer GT. *Pittsburgh Journal of Technology Law and Policy* 2(Spring):2, 2002. (207 refs.)

Summary: The alcohol ignition interlock prevents a driver from operating a vehicle unless her breath sample has an alcohol level below a preset limit. ... Today, over forty

states, including Pennsylvania, can require drivers convicted of multiple DUI offenses to install an ignition interlock device as a condition for restoration of driving privileges. ... In this case, the appellant did not directly challenge Ohio's interlock statute, since her offense, driving with a suspended license, was not alcohol related. ... The defendant in Pottawattamie County had one DUI conviction and two suspended license convictions; consequently, the department of transportation revoked his license under the habitual offender statute and ruled him ineligible for the interlock program. ... More recently, in *Meanor v. State*, a convicted DUI driver called upon Maryland's highest court to determine whether Maryland's new interlock program changed the advice that police must give a driver who refuses to take a blood alcohol test. How is it that not a single state's ignition interlock program has been successfully challenged? Perhaps it is simply because challenging the statute would do more harm to the recidivist DUI driver than good. While over forty states have adopted interlock measures, how firm is the constitutional footing of these statutes? Even if such laws are appropriate for repeat offenders, what about a universal, national interlock program? Could an interlock in every vehicle have unforeseen consequences? Interlocks might be an effective means to curb drunk driving, perhaps even the most effective, but are there any unforeseen liability and privacy issues to consider? This comment examines some of the legal issues associated with alcohol ignition interlocks. It looks at interlocks from the perspective of both the DUI offender as well as the non-offender. Part I of this comment introduces interlock technology. Part II examines interlock statutes and how the courts have interpreted and applied them. Since interlock statutes are the progeny of state law, the focus is mainly on state courts. Part III evaluates possible constitutional challenges to interlock statutes. Part IV looks at the consequences of requiring this device in all vehicles, like airbags and seat belts. It also suggests legislative guidelines should Congress see fit to implement such a measure. Copyright 2002, The Pennsylvania Technology Law and Policy Foundation, Inc.

### **Binge drinking among US adults.**

Naimi TS; Brewer RD; Mokdad A; Denny C; Serdula MK; Marks JS. *Journal of the American Medical Association* 289(1): 70-75, 2003. (53 refs.)

Context: Binge drinking (consuming greater than or equal to 5 alcoholic drinks on 1 occasion) generally results in acute impairment and has numerous adverse health consequences. Reports indicate that binge drinking may be increasing in the United States. Objectives: To quantify episodes of binge drinking among US adults in 1993-2001, to characterize adults who engage in binge drinking, and to describe state and regional differences in binge drinking. Design, Setting, and Participants: The Behavioral Risk Factor Surveillance System, a random-digit telephone survey of adults aged 18 years or older that is conducted annually in all states. The sample size ranged from 102263 in 1993 to 212 510 in 2001. Main Outcome Measures Binge-drinking prevalence, episodes, and episodes per person per year. Results: Between 1993 and 2001, the total

number of binge-drinking episodes among US adults increased from approximately 1.2 billion to 1.5 billion; during this time, binge-drinking episodes per person per year increased by 17% (from 6.3 to 7.4, P for trend = .03). Between 1995 and 2001, binge-drinking episodes per person per year increased by 35% (P for trend = .005). Men accounted for 81% of binge-drinking episodes in the study years. Although rates of binge-drinking episodes were highest among those aged 18 to 25 years, 69% of binge-drinking episodes during the study period occurred among those aged 26 years or older. Overall, 47% of binge-drinking episodes occurred among otherwise moderate (i.e., non-heavy) drinkers, and 73% of all binge drinkers were moderate drinkers. Binge drinkers were 14 times more likely to drive while impaired by alcohol compared with non-binge drinkers. There were substantial state and regional differences in per capita binge-drinking episodes. Conclusions: Binge drinking is common among most strata of US adults, including among those aged 26 years or older. Per capita binge-drinking episodes have increased, particularly since 1995. Binge drinking is strongly associated with alcohol-impaired driving. Effective interventions to prevent the mortality and morbidity associated with binge drinking should be widely adopted, including screening patients for alcohol abuse in accordance with national guidelines. Copyright 2003, American Medical Association.

**National Highway Traffic Safety Administration. Youth Fatal Crash and Alcohol Facts 2000.** Washington DC: National Highway Traffic Safety Administration, 2002

This report presents statistical data from 1982 to 2000 on alcohol-related motor vehicle crashes involving persons 15 to 20 years old. The data are in four categories: (1) youth fatalities, defined as youths who died in alcohol-related motor vehicle crashes, whether as driver, passenger, or non-occupant (pedestrian or bicyclist); (2) young drivers involved in fatal crashes, defined as 15-20-year-old drivers involved in a crash that resulted in a fatality (the driver, another youth, a child, or an adult); (3) young drivers killed, defined as 15-20-year-old drivers who died in a motor vehicle crash; and (4) youth fatalities by involvement of young drivers, defined as youths who were killed in a motor vehicle crash in which a young person was driving (the fatality could have been the driver, a passenger, or a nonoccupant who also was 15-20 years old). The data in these four categories are derived from estimates of the National Highway Traffic Safety Administration and are segmented by alcohol involvement. A fatality is called alcohol-related if a driver or nonoccupant had measurable blood alcohol. Alcohol involvement is further delineated to indicate whether the blood alcohol concentration (BAC) was 0.01-0.09 percent or 0.10 percent or higher. As of Jun-1998 all states and the District of Columbia have set BAC limits for drivers under age 21 at 0.02 percent or lower. There are a total of 28 tables. Public Domain.