

Impairment due to intake of carisoprodol.

Bramness JG; Skurtveit S; Morland J. *Drug and Alcohol Dependence* 74(3): 311-318, 2004. (31 refs.)

Background: Carisoprodol is a centrally acting muscle relaxant commonly used for lower back pain. It is a drug of abuse and has been detected among impaired drivers. Carisoprodol's active metabolite meprobamate is thought to act through the GABAA receptor complex and produces a well-known impairing effect. It is unclear whether therapeutic intake of carisoprodol leads to impairment, and the effect of supratherapeutic doses has not been investigated. Possible impairment could further be a product of the parent drug and/or the metabolite meprobamate. The present study aimed to investigate if carisoprodol had an impairing effect by itself. Methods: From the database at the Norwegian Institute of Public Health, Division for Forensic Toxicology and Drug Abuse 62 cases containing carisoprodol and meprobamate as only drugs were identified. These cases constituted our material. Results: Impaired drivers (73%) had higher blood carisoprodol concentration than not impaired drivers (27%), but no difference in blood meprobamate concentration was found for all the drivers viewed together. Amongst occasional users of carisoprodol, however, there was difference in blood meprobamate concentration between not impaired and impaired drivers. The risk of being judged impaired rose with increasing blood carisoprodol concentration, but not with increasing blood meprobamate concentration. The clinical effects of carisoprodol as measured by the clinical test for impairment (CTI) resembled those of benzodiazepines with some important differences such as tachycardia, involuntary movements, hand tremor and horizontal gaze nystagmus, which may be specific carisoprodol effects. Conclusion: Carisoprodol probably has an impairing effect by itself, at least at blood concentration levels above which can be seen after therapeutic intake of the drug. Copyright 2004, Elsevier Science Ireland Ltd.

Raising the bar: Can increased statutory penalties deter drink-drivers?

Briscoe S. *Accident Analysis and Prevention* 36(5): 919-929, 2004. (35 refs.)

The rate of road accidents per 100,000 vehicles registered was examined before and after the statutory penalties for drink-driving offences were doubled in New South Wales (NSW), Australia. Interrupted time-

series analyses found significant increases in three non-fatal accident series after the implementation of the new penalties. The observed increase in the rate of single-vehicle night-time accidents, the accident category most likely to be alcohol-related, was not expected and runs contrary to the anticipated deterrent effect of the new laws. The failure of this policy to have an impact on aggregate-level road accident rates is discussed. Copyright 2004, Pergamon-Elsevier Science Ltd.

Influences during adolescence on perceptions and behaviour related to alcohol use and unsafe driving as young adults.

Gulliver P; Begg D. *Accident Analysis and Prevention* 36(5): 773-781, 2004. (28 refs.)

Objective: To investigate whether aggression, parent and peer influences, and previous traffic-related experiences at ages 15 and 18 impacted on (a) differences between the perceived safe and estimated legal alcohol consumption limit, and (b) driving while impaired (DWI) behaviour at age 21. Method: The study population was a birth cohort involved in a longitudinal investigation of health and development. At the ages of 15 and 18, study members completed questionnaires assessing parent and peer attachment, experience travelling with an alcohol impaired adult or youth, aggression, and previous crash experience. At age 21, study members were questioned about how much alcohol they perceived they could drink and still drive safely, and whether they had driven after 'perhaps consuming too much alcohol'. For each participant their legal alcohol consumption limit was estimated using their height and weight. Path analysis was used to determine whether variables measured at ages 15 and 18 predicted differences between the perceived safe and estimated legal alcohol consumption limit and driving while impaired, both measured at age 21. Results: Insufficient females drove while impaired at age 21, who also had complete data on all other variables, to conduct path analysis for this outcome. For males, aggression at ages 15 and 18, travelling with an impaired youth at age 18, and previous crash experience at age 18 predicted DWI behaviour at age 21. Only aggression at age 15 predicted the difference between perceived safe and estimated legal alcohol consumption limit for the males. For females, aggression at ages 15 and 18, and travelling with an impaired adult at age 15 predicted the difference between perceived safe and estimated legal

alcohol consumption limit. Conclusion: The results show that aggressive behaviours and adult and/or youth modelling of drink driving behaviours in mid- to late-adolescence are related to differences between perceived safe and estimated legal alcohol consumption limit for both genders and driving while impaired for males. Copyright 2004, Pergamon-Elsevier Science Ltd.

Driving behavior of alcohol, cannabis, and cocaine abuse treatment clients and population controls.

Macdonald S; DeSouza A; Mann R; Chipman M. *American Journal of Drug and Alcohol Abuse* 30(2): 429-444, 2004. (20 refs.)

Background/Introduction: A paucity of research exists on driving after use of cannabis or cocaine among clients in substance abuse treatment and changes in this behavior after treatment. Objectives: The objectives of this research are to compare treatment clients and population controls before and after treatment in terms of: 1) amount of driving; 2) alcohol, cannabis, and cocaine consumption; 3) driving after use of alcohol, cannabis, and cocaine; and 4) driving infractions. Method: Telephone interviews were conducted with a sample of 110 clients who received treatment in 1995 for a primary problem of alcohol (n = 44), cannabis (n = 37), or cocaine (n = 29) abuse. A random sample of 104 drivers from the general population, frequency matched by age and sex was also interviewed. Participants were asked to describe their driving habits and driving infractions before and after 1995. Results: Both treatment and control groups reported about the same amount of driving. The treatment group reported significantly more consumption of alcohol, cannabis, and cocaine than did the control group before treatment. Significant declines in use for each substance were found for the treatment group after treatment, but use for the control group remained stable over the two time periods. Similarly significant declines in driving after use of alcohol, cannabis, and cocaine were found for the treatment group but the control group remained stable. Finally driving infractions, including speeding tickets, collisions, and license suspensions, significantly declined for the treatment group but not the control group. Discussion: The results confirm that before treatment, the treatment subjects drove more frequently after consuming alcohol, cannabis, or cocaine than the control group. Declines in substance use and driving after treatment were accompanied by reductions in some types of driving infractions. Differences between groups, and over time in terms of driving while under the influence of psychoactive substances better explain the results than differences between groups in impulsivity/risk-taking or sleep problems. Copyright 2004, Marcel Dekker Inc.

Collisions and traffic violations of alcohol, cannabis and cocaine abuse clients before and after treatment.

Macdonald S; Mann RE; Chipman M; Anglin-Bodrug K. *Accident Analysis and Prevention* 36(5): 795-800, 2004. (27 refs.)

Prior research has shown that those with alcohol problems have significantly elevated rates of traffic events (i.e. traffic violations and collisions) than licensed drivers from the general population and that treatment is associated with reductions in alcohol-related collisions. However, very little research exists on traffic events and the impact of treatment for cannabis or cocaine clients. The objectives of this research are: (1) to determine whether clients in treatment for a primary problem of alcohol, cannabis or cocaine have significantly elevated rates of traffic events than a matched control group of licensed drivers; and (2) to assess whether a significant reduction in traffic events occurs after treatment for each client group compared to a control group. Driver records of patients admitted to substance abuse treatment in 1994 for a primary problem of alcohol (17 = 117), cannabis (11 = 80) or cocaine (11 = 169) were accessed from the Ministry of Transportation for Ontario, Canada. A comparison Group of 504 licensed drivers frequency matched by age, sex and place of residence, was also randomly selected. Data was collapsed into two 6-year time periods: 1988-1993 (i.e. before treatment) and 1995-2000 (i.e. after treatment). Six repeated measures analysis of variance tests were conducted where traffic violations and collisions of three treatment groups (i.e. alcohol, cannabis or cocaine) and a control group were compared before and after treatment. All three treatment groups had significantly more traffic violations than the control group and no significant interactions between time period and group membership were found. For collisions, there was a significant interaction between the alcohol and control groups and between the cocaine and control groups. The average number of collisions for the alcohol and cocaine groups decreased after completing treatment, whereas the number for the control group was stable over the same time periods. Neither the interaction term nor the between Group effect was significant in the comparison of the cannabis and control groups. When rates of collisions were calculated based on the period that each driver had a valid license, the interaction term was still significant for the comparison of the alcohol and control groups but not for the cocaine and control groups. The results contribute to existing literature by demonstrating that cocaine and cannabis clients have a higher risk of traffic violations than matched controls and that reductions in collision risk was found after treatment for the alcohol and cocaine groups. More research is needed to better understand the reasons for

the higher risk of traffic events and to determine reasons for declines. Copyright 2004, Pergamon-Elsevier Science Ltd.

Changes in alcohol involvement, cognitions and drinking and driving behavior for youth after they obtain a driver's license.

McCarthy DM; Brown SA. *Journal of Studies on Alcohol* 65(3): 289-296, 2004. (25 refs.)

Objective: This study tested whether obtaining a driver's license was associated with increases in alcohol and other drug involvement and changes in alcohol-related cognitions for youth, and whether drinking and driving behavior increased with driving experience. Method: Confidential, anonymous surveys were conducted at two time points (fall, spring) with students at four high schools in San Diego county (N = 2 865, 51% female). Data were collected on alcohol, cigarette and marijuana use, license status, alcohol use by peers, attitudes towards drinking, and driving, and drinking and driving behaviors. Results: Nondrivers (60%), new drivers (obtained a license between Time 1 and Time 2) and experienced drivers (26%) were compared on study variables at both time points and over time. Initially obtaining a driver's license was associated with increased frequency of substance use. Results were not significant for quantity of alcohol use, frequency of heavy drinking or perceived alcohol use norms. Attitudes towards drinking and driving reflected an increase in the perceived dangerousness of this behavior for new drivers. Drinking and driving behavior during the last 30 days increased with increased driving experience. Conclusions: The results indicate a number of changes in substance involvement after obtaining a driver's license. However, initially this transition may also indicate a period of protection against drinking and driving. These results may have implications for the target and content of drinking and driving interventions. Copyright 2004, Alcohol Research Documentation Inc.

Cost savings from a sustained compulsory breath testing and media campaign in New Zealand.

Miller T; Blewden M; Zhang JF. *Accident Analysis and Prevention* 36(5): 783-794, 2004. (33 refs.)

This paper evaluates three approaches to compulsory breath testing (CBT) where all drivers stopped are tested: (1) intensive, moderate-profile CBT (plus zero alcohol tolerance for drivers underage 20, which was implemented simultaneously, remains in effect, and unavoidably is commingled with CBT in the effectiveness estimates); (2) CBT plus an enhanced media campaign; and (3) shifting to aggressively visible booze buses, which also streamlined drunk-driver processing, plus enhanced community campaigns against

drunk-driving. Approaches 1 and 2 were implemented throughout New Zealand (NZ) in 1993 and 1995. Booze buses and community programs were added for about one-third of the country in late 1996. ARIMA time series models estimated the impact on serious and fatal injury crashes between 10 p.m. and 3 a.m., a proxy for alcohol-related crashes. A benefit-cost analysis assessed return on investment. Cost savings were analyzed from four perspectives: societal, governmental, drunk-drivers', and people other than drunk-drivers (external cost). CBT plus zero tolerance reduced expected night-time crashes by 22.1% and enhanced media by 13.9%. Booze buses yielded a further 27.4% reduction where implemented. The pro-rain and associated crash reduction persisted until at least 2001 (the most recent data available). Estimated societal benefit-cost ratios were 14 for CBT, 19 for CBT plus enhanced media, and 26 for the comprehensive package. Government saved more than it spent on the program, especially with booze buses. Aggressive CBT plus zero alcohol tolerance for youth, media blitzes, and booze buses proved dramatically effective. Together, these four interventions halved late night serious and fatal injury crashes. Sustained effort seems to be critical. Better outcomes may be achieved with staged, increasingly visible and inescapable checkpoints than with an "ideal" initial program. It appears CBT is best implemented in conjunction with broader community-centered efforts to reduce drunk-driving. Copyright 2004, Pergamon-Elsevier Science Ltd.

Access denied: The relationship between alcohol prohibition and driving under the influence.

Powers EL; Wilson JK. *Sociological Inquiry* 74(3): 318-337, 2004. (30 refs.)

Alcohol prohibition continues to be a policy pursued by more than 10 percent of the counties in the United States. However, many questions exist about the effectiveness of prohibition policies for controlling social maladies such as accidents and fatal injuries related to driving under the influence (DUI). In this research, a situational crime prevention framework is used to evaluate the hypothetical relationship between countywide alcohol prohibition and incidents of DUI. We focus specifically on county-level comparisons of DUI arrests in Arkansas where slightly more than half of the counties are "dry" (sale of alcohol to the general public is prohibited). Utilizing police reports of DUI arrests we examine whether the dry county distinction is indeed associated with fewer DUI arrests than found in wet counties. Findings indicate that the dry county distinction does not result in significantly lower rates of DUI arrest when law enforcement variables are considered. These findings are analyzed and implications

for future research are discussed. Copyright 2004, Blackwell Publishing Ltd.

Drinking and driving in university students: An international study of 23 countries.

Steptoe A; Wardle J; Bages N; Sallis JF; Sanabria-Ferrand PA; Sanchez M. *Psychology & Health* 19(4): 527-540, 2004. (28 refs.)

Alcohol-impaired driving is a major problem in many countries. We assessed drinking and driving and associated attitudes and legislative practices in 8282 male and 10 816 female students at universities in 23 countries. The age-adjusted prevalence of drinking and driving was 20% in men, and 7% in women. There was wide variation between countries, with the highest levels in men and women from the USA and men from South American and Mediterranean countries. Rates correlated significantly with national surveys of drinking and driving, and with national road traffic accident death rates. Drinking and driving was more prevalent in country samples in which the legal blood alcohol threshold was higher. Attitudes to drinking and driving and other aspects of hazardous driving were strongly associated with drinking and driving both within and between countries. A multi-level approach involving changes in blood alcohol laws and efforts to shift the attitudes of individuals who drink and drive is suggested by the current results. Copyright 2004, Taylor & Francis Ltd

Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-involved crashes - A systematic review. (review).

Task Force Community Preventive; Elder RW; Shults RA; Sleet DA; Nichols JL; Thompson RS; Rajab W. *American Journal of Preventive Medicine* 27(1): 57-65, 2004. (45 refs.)

A systematic review of the effectiveness of mass media campaigns for reducing alcohol-impaired driving (AID) and alcohol-related crashes was conducted for the Guide to Community Preventive Services (Community Guide). In eight studies that met quality criteria for inclusion in the review, the median decrease in alcohol-related crashes resulting from the campaigns was 13% (interquartile range: 6% to 14%). Economic analyses of campaign effects indicated that the societal benefits were greater than the costs. The mass media campaigns reviewed were generally carefully planned, well executed, attained adequate audience exposure, and were implemented in conjunction with other ongoing prevention activities, such as high visibility enforcement.

According to Community Guide rules of evidence, there is strong evidence that, under these conditions, mass media campaigns are effective in reducing AID and alcohol-related crashes. Copyright 2004, Elsevier Science.

The prevention paradox, traffic safety, and driving-while-intoxicated treatment.

Woodall WG; Kunitz SJ; Zhao HW; Wheeler DR; Westerberg V; Davis J. *American Journal of Preventive Medicine* 27(2): 106-111, 2004. (9 refs.)

Background: In San Juan County, New Mexico, a 28-day jail/treatment program for first-time driving-while-intoxicated (DWI) offenders was established in 1994 to reduce both DWI recidivism and alcohol-related crashes. This paper assesses the impact of the program on both outcomes. Methods: The data are composed of driving records of all people arrested for DWI in San Juan County from August 1994 through December 2001. Subsequent re-arrests and crashes were analyzed to compare people who had been sentenced to the jail/treatment program and those who had not. Kaplan-Meier survival curves and Cox proportional hazards regression analyses were used. Covariates included age, gender, blood alcohol content (BAC), number of prior arrests, and ethnicity (Native American, non-Hispanic white, and Hispanic). Results: Re-arrest rates were significantly lower for the treatment than the nontreatment group. Each of the three major ethnic groups showed similar effects. This was not observed for subsequent alcohol-related crashes, possibly as a result of insufficient numbers. BAC and number of previous arrests were, however, significant risk factors for subsequent crashes. Finally, although BAC and previous arrests were important risk factors for subsequent crashes, the vast majority of subsequent alcohol-related crashes occurred among people in the intermediate risk ranges. Conclusions: The jail/treatment program is effective in reducing the probability of DWI re-arrests. The evidence with respect to crashes is equivocal. That most crashes occur to people in the intermediate risk range exemplifies the prevention paradox, and means that the courts, which deal most severely with high-risk individuals, cannot be expected to have a major impact on alcohol-related crashes. Copyright 2004, Elsevier Science.

.
..