



*A*dolescents



ADOLESCENTS

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BINGE DRINKING AMONG JEWISH AND NON-JEWISH COLLEGE STUDENTS

- *Americans who frequently attend religious services have lower rates of alcohol use and misuse.*
- *The same relationship has not been found among Jewish Americans.*
- *Heavy drinking and alcoholism are less common among Jews than Christians.*

In the United States, religious commitment, as measured by service attendance, has an inverse relationship with alcohol consumption and alcohol problems. In other words, individuals who frequently attend religious services tend to have lower rates of alcohol use and misuse. The same association has not, however, been consistently found among Jewish Americans. A study in the December issue of *Alcoholism: Clinical and Experimental Research (ACER)* examines the relationship between religious variables and binge drinking among Jewish and non-Jewish college students. It also examines the association between binge drinking and genetic, cultural and religious variables in the Jewish sample alone.

“Binge drinking is a growing focus in the alcohol research literature, especially among college students,” said Susan E. Luczak, assistant project scientist in the department of psychiatry at the University of California, San Diego and first author of the study. “It has been related to many negative social, academic, and physical problems. Other measures of problems, such as abuse and dependence symptoms, are also important, but less prevalent in college samples.”

Luczak added that even though researchers have traditionally found a strong association between “religious service attendance” and fewer alcohol problems among Christians, heavy drinking and alcoholism are less common among Jews. “There is something about being Jewish that seems to protect people from heavy drinking and drinking problems,” she said. Perhaps this ‘protection’ is rooted in cultural differences, she noted, or perhaps ‘religious service attendance’ may have different meanings across religious groups.

Researchers examined two groups: 132 (68 female, 64 male) Jewish and 147 (72 female, 75 male) non-Jewish White college students. Participants reported their alcohol consumption for the previous 90 days and provided information about their religious affiliation and the number of religious services attended in the previous year. Study subjects also had blood drawn for genotyping at the alcohol dehydrogenase (ADH2) locus, one of several genes that encode the major enzymes involved in alcohol metabolism, and which has been associated with protection from alcoholism. Jewish study participants completed the Jewish Identity Scale, developed and published by researcher Itai Zak in *Psychological Reports* in 1973. The scale measures the degree to which being Jewish plays a part in one’s life, the importance of belonging to the Jewish community, and the closeness one feels to Jews in the world.

“This study has three key findings,” said Luczak. “First, religious service attendance is associated with lower rates of binge drinking in non-Jewish college students, but not in Jewish college students. This is consistent with previous research. Second, being religiously

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BINGE DRINKING AMONG JEWISH AND NON-JEWISH COLLEGE STUDENTS

Jewish, as compared with secularly Jewish, relates to lower rates of binge drinking, but Jewish cultural identification does not. Third, in the combined sample of Jewish and non-Jewish students, those who possessed the ADH2*2 genetic variation were approximately half as likely to binge drink as those who did not possess the variation.”

Luczak said, that for the Jewish sample alone, these findings suggest that religious, and not just cultural, Jewish affiliation is related to lower levels of alcohol consumption. Although this may seem to contradict earlier findings of a weak relationship between religious commitment and lower rates of alcohol use and misuse among Jews, Stephen Maisto, professor and director of clinical training in the department of psychology at Syracuse University, believes that the answer may lie in the design of a fundamental measure – defining religious commitment by service attendance.

“Perhaps it would have been more useful to define types of services attended and their meaning to the participants, rather than just a count of the number of services attended,” he said. The ‘religious affiliation’ variable, which summarizes a complex set of practices and beliefs regarding the Jewish religion, he noted, may have tapped into religious practices that affect overall life-styles, including alcohol consumption. “Future research definitely needs to conduct more studies that can address the mechanisms underlying drinking pattern differences according to religious affiliation,” he said. “The correlation between the two is established. The task now is to achieve a better empirical understanding of the association.”

Luczak said the study’s genetic findings are related to previous reports that found a relationship between ADH2*2 and less frequent drinking among Jews, and lower rates of alcohol dependence in Asians and non-Jewish whites. She said, “The current study examined binge drinking, which is more related to drinking problems, and is a different measure than alcohol dependence. Although these findings may not add to the literature on alcohol dependence, they do provide evidence that ADH2*2 also relates to a measure of heavy alcohol use in a combined sample of Jewish and non-Jewish whites.”

Luczak and her colleagues will continue to examine drinking behavior in Jewish and non-Jewish college students. “We are also examining the role of culture, religion and genetic variations in these and other ethnic groups including Koreans and Chinese,” she said.



Article is based on the following published research:

Luczak, S.E., Shea, S.H.,
Carr, L.G.,
T.-K. Li, Wall, T.L.
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Binge drinking in
Jewish and non-Jewish
White college students.
*Alcoholism: Clinical
and Experimental
Research*,
26(12), 1773-1778.

BINGE DRINKING: A DANGEROUS RITE OF PASSAGE

- *Adolescence is a time when many begin experimenting with alcohol.*
- *Some adolescents binge drink, that is, drink heavily during a short period of time.*
- *Adolescent brains may be particularly vulnerable to the neurotoxic effects of alcohol.*
- *Binge drinking during adolescence may have long-term disruptive consequences for memory.*

Adolescence is often a time of fashion consciousness, learning how to drive a car and exploring the limits of parental patience and endurance. Adolescence is also a time when most people begin drinking, often drink the most, and for some, experiment with binge drinking. A study in the August issue of *Alcoholism: Clinical and Experimental Research (ACER)* explores the long-term neurobehavioral consequences of binge drinking during adolescence.

Binge drinking can be loosely defined as an intense bout of drinking during a single session, such as a single evening. For males, that can mean five or more drinks in one sitting; for females, it can be four or more drinks. Several studies have found that a significant percentage of teenagers report regular bouts of drinking in which high blood alcohol levels are attained. Furthermore, when the above definitions are used, recent data from the Harvard School of Public Health College Alcohol Study indicates that roughly 45 percent of all college students binge drink. According to Aaron M. White, research associate in the department of psychiatry at Duke University Medical Center and first author of the *ACER* study, roughly 23 percent of all college students are frequent binge drinkers, meaning that they binge three or more times in a two-week period.

White and his co-authors used rodents to test for the effects of binge-pattern drinking. “We were particularly interested in knowing whether these treatments produced different effects in younger rats than in older rats,” he said.

After a regimen essentially comparable to multiple instances of binge drinking in humans, both adolescents and adults were tested for anxiety and learning. Following the initial alcohol exposure phase, no effects were found. However, when a later, moderate dose of alcohol was given to all of the rats, those that had previously received the adolescent alcohol exposure showed the greatest disruption of working memory. These results suggest that binge-pattern exposure to alcohol during adolescence does something to the adolescent brain that leads it to respond differently – more sensitively – to alcohol in the future.

“We believe that the adolescent brain is more vulnerable to the neurotoxic effects of alcohol than the adult brain,” White explained, “and this could account for the findings of our study. Alcohol impairs activity at a receptor called the NMDA receptor. These receptors are highly concentrated in the hippocampus, a brain region critically involved in learning and memory. During withdrawal from alcohol, NMDA receptors can become overly active, which can make the brain more vulnerable to cell death. We are currently investigating whether adolescent

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brains exhibit greater withdrawal-induced hyperactivity at NMDA receptors than adults, and if such hyperactivity leads to greater cell death in adolescent than adult subjects.”

“The implications of this study,” said David L. McKinzie, senior biologist at Lilly Research Laboratories and adjunct assistant professor at the Indiana University School of Medicine, “are that teenagers who drink heavily may be especially susceptible to the neurobehavioral effects of alcohol than adults with similar drinking experiences. Of special concern is the possibility that the effects of early chronic alcohol drinking may have long-lasting consequences, both as a general insult to the brain as well as changing the individual’s later reactivity to alcohol.”

Although White cautioned against generalizing from a small sample of rats to the entire human population, he noted that the findings are consistent with previous research on alcohol abuse during adolescence. McKinzie concurred.

“The few animal studies to date have consistently suggested that developing brains are especially sensitive to the toxic effects of alcohol,” said McKinzie. “This type of study is particularly important because a large percentage of adolescents consume alcohol. Unfortunately, relatively little is known about the long-term consequences of chronic alcohol drinking in adolescent individuals. If this age group is indeed found to be especially vulnerable to alcohol and its long-term effects, as this study suggests, we may need to concentrate our efforts on preventive strategies.”



**Article is based
on the following
published research:**

White, A.M., Ghia, A.J.,
Levin, E.D.,
& Swartzwelder, H.S.
(August 2000).

Binge pattern ethanol
exposure in adolescent
and adult rats:
Differential impact
on subsequent
responsiveness
to ethanol.

*Alcoholism: Clinical
and Experimental
Research,*
24(8), 1251-1256.



COLLEGE STUDENTS MAY BE DRINKING MORE ALCOHOL THAN EVEN THEY REALIZE

- *Most of what is known about alcohol consumption by college students comes from self-reports.*
- *New research shows that college students overestimate what is meant by “standard” drink sizes.*
- *These findings suggest that students drink significantly more than they report.*

Most of what is known about alcohol consumption by college students comes from survey data. Yet much of what is known about college drinking may be underestimated, according to findings published in the November issue of *Alcoholism: Clinical and Experimental Research (ACER)*. An examination of college students’ ability to define “standard drinks” suggests that college students drink significantly more than they think they do.

“For some reason, we’ve all just sort of assumed that we can take students’ responses on surveys at face value,” said Aaron M. White, assistant research professor in the department of psychiatry at Duke University Medical Center and first author of the study. “[We’ve believed] that if they say they had three drinks, then they really had three drinks. This study suggests that it’s just not that simple. Students tend to have pretty liberal views about what constitutes a single drink. In fact, if a student tells us they had three drinks, there’s a good chance it was more like five or six. This is a big difference, particularly if we’re trying to figure out how many students qualify as ‘binge drinkers’ based on their self-reported drinking habits.”

White and his colleagues asked 106 undergraduate students (54 males, 52 females) to complete a 12-item survey. The survey was designed to gather basic information about students’ current drinking habits and three tasks relating to drink size. The tasks involved free-pouring according to each subject’s estimation of a standard drink size: 1) beer, 2) a shot of hard liquor and 3) alcohol for a mixed drink into cups of different sizes. The student-poured volumes were then compared to volumes of standard drinks used in the Harvard School of Public Health College Alcohol Study survey(s).

For every cup size in each of the three tasks, students overestimated how much fluid they would need for a standard drink size. “Regardless of which type of drink we asked students to pour,” said White, “they almost always poured too much. When asked to pour a standard size beer into a 32-ounce cup, some students filled the cup to the top! For these students, each of their drinks actually equaled 2.5 standard drinks.”

Furthermore, in all three pouring tasks, the magnitude of the discrepancy increased with cup size. “These findings suggest that students drink more than they think,” said White, “which means that survey data probably underestimate actual drinking levels on college campuses. This is obviously not good news, neither for those of us who use surveys in our research, nor for those of us trying to deal with alcohol misuse on college campuses. The scale of the problem could be bigger than we thought.”

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COLLEGE STUDENTS MAY BE DRINKING MORE ALCOHOL THAN EVEN THEY REALIZE

“The fact that many students probably consume more alcohol than their survey responses suggest could help explain some of our previous findings about the consequences of drinking,” added Courtney Kraus, second author for the study. “We’ve observed that a surprisingly high percentage of college students experience alcohol-induced memory blackouts, more than might be expected based on their self-reported consumption. The high incidence of blackouts makes more sense if students are actually drinking more than they think.”

“We need to repeat this study with a larger random sample of students,” said Ralph Hingson, professor of social and behavioral sciences and associate dean for research at the Boston University School of Public Health. “When they’re collecting information about drinks in these surveys, they ought to provide more information about what a ‘standard’ drink really is. In addition, we ought to study if alcohol-related problems are associated with miscalculation of the amount of alcohol that it takes to make a standard drink. For example, are the people who underestimate the amount of alcohol in a standard drink the ones who are more likely to be dependent, who drive after drinking, ride with drinking drivers, or engage in other alcohol-related behaviors that pose risks to themselves and others?”

“We somehow need to teach students, health educators, administrators, and anyone else involved in dealing with college-drinking issues how to accurately define a drink,” added White. “Until then, we have to be cautious about the conclusions that we draw from survey data, and about the levels of consumption that we promote to college students as ‘safe’ or ‘normal.’ Telling a student that his or her peers typically drink three or four drinks when they go out could do some damage if that kid defines a drink as a 10-ounce cup of booze with a splash of Coke.”


White also suggested a new kind of beverage labeling. “When someone picks up a box of cookies or a bag of potato chips,” he said, “one of the first things they often do is look for information about serving sizes, calories, etc. Doesn’t it make sense that these labels, or at least a rudimentary form of them, should be placed on drinks that contain alcohol? Otherwise, how is a person to know how many standard servings of alcohol are present?”

White spoke of an Australian government initiative requiring information about serving sizes on all alcoholic beverages. “By doing this, the government can now have meaningful dialogue with the populace about healthy and unhealthy drinking levels, and can measure alcohol consumption more accurately. Why the beverage industry does not voluntarily place this information on their products [in the U.S.] is beyond me. My guess is that the public would really appreciate it.”

Article is based on the following published research:

White, A.M., Kraus, C.L., McCracken, L.A., Swartzwelder, H.S. (November 2003). Do college students drink more than they think? Use of a free-pour paradigm to determine how college students define standard drinks. *Alcoholism: Clinical and Experimental Research*, 27(11), 1750-1757.





ADOLESCENTS WITH ALCOHOL PROBLEMS: REDEFINING THE BASICS

- *The Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV) is widely used to define alcohol abuse and dependence.*
- *Yet little is known about the validity of DSM-IV criteria for alcohol use disorder (AUD) diagnoses when applied to adolescents.*
- *Researchers applied a statistical method called latent class analysis (LCA) to DSM-IV AUD criteria. They found that “milder” and “more severe” categories derived from LCA provided better coverage of symptomatic adolescents than DSM-IV alcohol abuse and dependence categories.*

For some nosologists – people interested in the classification of diseases – the *Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV)* lies somewhere between serving as a valuable diagnostic tool and one in need of revision. Of special concern is the validity of *DSM-IV* alcohol use disorder (AUD) diagnoses when applied to adolescents. A study in the December issue of *Alcoholism: Clinical and Experimental Research (ACER)* uses an advanced quantitative technique called latent class analysis (LCA) to examine the utility of new ways of classifying adolescent alcohol problems.

“There is controversy regarding the use of *DSM-IV* criteria with adolescents,” said Tammy Chung, assistant professor of psychiatry at the University of Pittsburgh Medical Center and lead author of the study. “For example, existing criteria include symptoms that are not commonly experienced by adolescent problem drinkers, which limits their utility when applied to this age group. Symptoms such as alcohol withdrawal and alcohol-related legal problems typically occur only after years of heavy drinking. Conversely, other *DSM-IV*-defined symptoms, such as alcohol tolerance, generally tend to have a high prevalence in adolescent drinkers, and do not clearly distinguish between adolescents with and without drinking problems. In certain cases, individuals may have alcohol-related symptoms, but fail to meet *DSM-IV* AUD criteria for a diagnosis. We need to remember that these criteria were developed for use with adults, and little is known about their validity when applied to adolescents. Although a few papers have addressed this topic cross-sectionally, this study is among the first to address this issue in adolescents using longitudinal data.”

“There are all kinds of problems with *DSM-IV* when applied to adolescents,” agreed James Langenbucher, associate professor at the Center of Alcohol Studies at Rutgers University. “One of these is that the way in which we diagnose alcohol and drug problems, and even gambling problems and eating disorders, is based on the prototype of a middle-aged White man, probably a patient in a Veterans Affairs hospital during the 1960s to 1970s. This prototype gave us all the ideas that have filtered down and been codified. No one had in mind a 17-year old Latino kid in Philadelphia when deciding what were the essential characteristics of alcohol and drug abuse disorders.”

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The first *DSM* was published by the American Psychiatric Association in 1952. Diagnostic criteria for alcohol and other drug problems were added in 1980 (*DSM-III*). In general, there are three *DSM-IV* categories of substance-use disorders: no diagnosis, abuse, and dependence. Alcohol abuse and dependence are defined by mutually exclusive criterion sets. Alcohol abuse is diagnosed by meeting at least one of four symptoms representing recurrent hazardous use and negative psychosocial consequences resulting from drinking. Alcohol dependence requires meeting three of seven symptoms within a 12-month period, precludes a diagnosis of abuse, and includes symptoms related to physical dependence, impaired control over drinking behavior, and increased salience of alcohol consumption.

For the Chung study, researchers used LCA to identify subgroups of adolescents who share a common pattern, profile of symptoms or other characteristics. They then used the subgroups' symptom profiles to refine the *DSM-IV* criteria used to diagnose AUDs. "We were able to develop severity-based categories of adolescents with milder and more severe alcohol-related problems," said Chung. "The milder and more severe categories derived in this study provided better coverage of symptomatic individuals than *DSM-IV* alcohol abuse and dependence categories, suggesting that some reorganization of *DSM-IV* AUD criteria may improve the identification of individuals who may benefit from treatment. In addition, longitudinal data indicated an overall decrease in the severity of adolescents' alcohol-related problems one year after substance abuse treatment."

"Another important finding," said Langenbucher, "is that case severity in this data seems to be carried by the number, not the type, of symptom. It's the overall number of symptoms that best accounts for the severity of the case. This argues for a dimensional system that relates abuse to dependence, perhaps not different categories, but different ranges on the severity continuum."

Chung said, "These results suggest that a proportion of symptomatic adolescents who may benefit from intervention, may not meet criteria for a *DSM-IV* AUD diagnosis, and thus may not be eligible for third-party reimbursement for substance abuse treatment. As our own findings confirmed, treated adolescents tended to show reductions in alcohol-related problems one year after substance abuse treatment, a finding that does not support the notion of an inevitable progression to more severe problems."

"What we want to eventually do," said Langenbucher, "is develop *DSM-V*. That version should be out toward the close of this decade. We want improved diagnostic rules for all kinds of psychiatric diagnoses including major depression, schizophrenia and also substance-use disorders."

Article is based on the following published research:

Chung, T., & Martin, C.S. (December 2001). Classification and course of alcohol problems among adolescents in addiction treatment. *Alcoholism: Clinical and Experimental Research*, 25(12), 1734-1742.





IMPULSIVENESS, AGGRESSION, ALCOHOL AND ADOLESCENTS

- *Adolescents with alcohol problems often manifest impulsive, aggressive and antisocial behaviors.*
- *One type of adult alcoholism (Type II) is likewise characterized by antisocial behavior, and may be linked to a decrease in function of the neurotransmitter serotonin.*
- *A recent study has found that adolescents with both alcohol and antisocial problems show an increase in serotonin function.*
- *Serotonin dysregulation, rather than high or low levels, may be key to high-risk behaviors.*

Alcohol use disorders are nearly as common among older adolescents as among adults. Adolescents who abuse alcohol or are dependent on alcohol often manifest impulsive, aggressive, and antisocial behaviors. A study in the November issue of *Alcoholism: Clinical and Experimental Research (ACER)* examines the possibility that variations in brain chemistry can set the stage for risk-taking behaviors. More specifically, it studies the role that dysregulation of central serotonergic function may play in impulsiveness, aggression and conduct disorders in older adolescents (between 16 and 21 years of age) with alcohol problems.

“Impulsive and aggressive personality traits, as well as impulsive-aggressive behavior,” explained Paul Soloff, professor of psychiatry at the University of Pittsburgh School of Medicine and lead author of the study, “are temperamental traits that lead to socially disinhibited behavior, also called ‘behavior undercontrol.’ Kids with behavior undercontrol are more likely to develop alcohol use disorders than non-impulsive-aggressive kids.”

One type of adult alcoholism, referred to as Type II, is defined by antisocial behavior, including many expressions of behavior undercontrol, as well as early onset (before age 25), and male predominance. (This is in contrast to Type I alcoholism, which is found in both males and females, occurs later in life and is not associated with antisocial traits.) Research suggests that there is a biologic (and possibly hereditary) basis for the temperament of impulsivity that is related to dysregulation of the neurotransmitter serotonin in the parts of the brain that inhibit impulses. Studies of adults with alcohol use disorders have found evidence of decreased serotonin function, especially those with Type II alcoholism (identified by antisocial behavior). Similarly, studies of impulsive-aggressive individuals, independent of alcohol use disorders, have found diminished serotonin function.

“We looked at adolescents who already had developed alcohol use disorders to see if they had higher levels of impulsivity and aggressivity than healthy control subjects, and to also see if they had lower central serotonergic function,” said Soloff. “We measured central serotonin function by giving them a single dose of a medicine called fenfluramine, which releases serotonin in the brain, and then looked for effects of that release in the blood.”

Serotonin itself cannot be measured in the blood. However, serotonin release in the brain causes a rise in the hormones prolactin and cortisol in the blood. “The changes in prolactin and cortisol provided an index of serotonin responsiveness,” he continued.

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“In adults with alcohol use disorders,” said Duncan Clark, director of the Pittsburgh Adolescent Alcohol Research Center, “the serotonin system is relatively insensitive or unresponsive to stimulation. In this study, the serotonin responsivity results were somewhat different than would be expected from studies of adults.”

Neither Soloff nor Clark were surprised that older adolescents with alcohol use disorders had more impulsivity and aggressivity than control subjects. The boys tended to be more aggressive in general than the girls, but both had equally high levels of impulsivity. Furthermore, overall the two groups (alcohol users and control subjects) did not significantly differ on their prolactin or cortisol responses. This suggests that not all youth with significant alcohol use disorders early in life have a dysregulation of serotonin metabolism. However, the most extreme subjects – nine boys with both alcohol use disorders and the most antisocial traits (which were diagnosed as conduct disorder) – had a significant elevation in cortisol response, which correlated with measures of aggressivity.

“These findings may be interpreted to show that the serotonin system was more responsive in these subjects,” said Clark. “[This may reflect] an earlier stage of neurobiological development. Increased responsiveness of the serotonin system in adolescence may be followed by decreased responsiveness in adulthood. However, the level of responsiveness may not be as important as the ability of the brain to regulate the response to stimulation. While not in the same direction as with adults, these results are still consistent with the idea that individuals with these high-risk behaviors have serotonin dysregulation.”

Soloff plans to further study the serotonin system using positron emission tomography (PET) neuroimaging, where metabolic changes can be “visualized.” He believes this research will ultimately reveal more about where in the brain impulsivity is controlled, how serotonin is regulated in these individuals, and whether this dysregulation can be remedied.

Clark noted, “We need to know more about the development of the serotonin system from childhood through adolescence and into adulthood. New brain imaging techniques may allow us to study brain chemistry directly rather than relying on measurement of effects of brain chemistry on blood chemistry. Through an understanding of the brain and behavior, better approaches to identifying children at risk, better prevention programs and more effective treatment interventions may be developed.”



**Article is based
on the following
published research:**

Soloff, P.H., Lynch, K.G.,
& Moss, H.B.
(November 2000).
Serotonin, impulsivity,
and alcohol use
disorders in the older
adolescent:
A psychological study.
*Alcoholism: Clinical
and Experimental
Research*,
24(10), 1609-1619.

A LCOHOL, AUTOMOBILES AND YOUTH

- *Underage drinking and driving continue to cause significant numbers of injury and death.*
- *Riding with drinking drivers may be even more dangerous for adolescents than drinking and driving.*
- *New findings indicate that drinking and driving, and riding with drinking drivers, may be particularly problematic among Latino youth.*

Although the message of “don’t drink and drive” has been a common refrain for the past two decades, much less attention has been given to the risks of riding with a drinking driver. A study in the August issue of *Alcoholism: Clinical and Experimental Research (ACER)* examines ethnic differences among adolescents who engage in driving after drinking (DD) and riding with drinking drivers (RWDD). Findings indicate there is a distinct need to direct prevention efforts toward Latino youth.

“Adolescent alcohol use, driving after drinking, and riding with drinking drivers are significant public health problems,” said Samantha Walker, associate research scientist at the Prevention Research Center and corresponding author for the study. “Consequences can include automobile crashes, physical injury and possible death.”

In 2000, according to the National Highway Traffic Safety Administration (NHTSA), 21 percent of young drivers who were killed in crashes were intoxicated with blood alcohol concentrations of 0.10 g/dl or greater. Among those drivers who had been drinking, three percent were involved in property damage-only crashes, five percent were involved in crashes resulting in injury, and 22 percent were involved in crashes resulting in fatality. RWDD is a less-recognized practice than DD, yet may be even more dangerous for adolescents.

“The percentage of adolescents riding with drinking drivers is frighteningly high, with approximately half of all youth reporting such experiences in the past 12 months,” said Brenda A. Miller, a senior scientist at the Prevention Research Center. “This study clarifies that a greater proportion of our adolescents are at risk for injury or death due to riding with drinking drivers as compared to driving under the influence.”

Researchers used random-digit dialing procedures to recruit 1,534 15- to 20-year-olds (839 females, 695 males) living in California to participate in a telephone survey. Latinos, African Americans and Asian Americans were oversampled to allow cross-group comparisons.

“Our findings indicate that DD and RWDD may be particular problems for Latinos,” said Walker. “That is, Latino youth appear more at risk for these behaviors than are other youth at similar levels of alcohol consumption.” The study found low prevalence rates of DD and RWDD among Asian American youth, which may indicate the presence of protective factors – whether social or environmental – at work within the Asian American community.

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“These results suggest that some ground work needs to be done to better understand why Latino youth are more vulnerable to these risks and whether our prevention message needs to be presented in a different manner that would be better heard by Latino youth,” said Miller. “We need to be cautious, however, about concluding that all Latino youth are more susceptible because the findings do not support this conclusion. Only when we account for drinking behaviors and driving practices do we see an increased risk for Latino youth.”

Miller added that although many parents likely already know that children who drink frequently are at higher risk for either DD or RWDD, they may not know that risky driving and the number of days driven are also related to an increased risk for DD or RWDD.

“Risky driving is probably part of a constellation of high-risk behaviors,” said Miller. “The total number of days driven may be related to control or ownership of a car that provides the means to engage in drinking and driving more readily. We know that parents who monitor their children are less likely to have children who engage in alcohol or drug use. However, monitoring teenagers’ behavior is increasingly more complex, especially when the access and availability of vehicles adds to freedom and independence from parental controls.”

Walker said that future research will explore some of these complexities, specifically, “clarifying the relationships among drinking patterns, driving practices, social and environmental influences such as drinking locations, and DD and RWDD, particularly among Latino youth.”

Miller suggested that future studies also explore strategies to help adolescents avoid those situations in which drinking and driving occur, especially scenarios in which they are passengers riding with a drinking driver.

“For many adolescents, the automatic loss of their license or a zero-tolerance policy of any alcohol use while driving provide a powerful external control over DD behavior,” said Miller. “However, the issue of RWDD is not so easily addressed. Our prevention strategies should make it easier for adolescents to negotiate difficult social situations that may emerge in their lives, such as what to do when a friend that drove you to a party has too much to drink. Particularly important is the need to provide constructive strategies rather than messages that simply admonish against such behavior. And ultimately, providing adolescents with an ability to handle these difficult social problems will provide them, hopefully, with the strengths they need to negotiate other social problems in their lives.”



Article is based on the following published research:

Walker, S., Treno, A.J., Grube, J.W., Light, J.M. (August 2003).

Ethnic differences in driving after drinking and riding with drinking drivers among adolescents.

Alcoholism: Clinical and Experimental Research, 27(8), 1299-1305.

TEENAGERS, DRINKING AND DRIVING: A QUICK TRIP TO THE GRAVE

- *Motor vehicle crashes are the leading cause of death for 15- to 20-year-old youth in the U.S.*
- *More than one quarter of the drivers killed in crashes had been drinking.*
- *One alcohol-prevention curriculum was found to significantly reduce first-year serious traffic offenses.*
- *The curriculum seemed to be particularly effective for kids who drank very little.*

Motor vehicle crashes are the leading cause of death for 15- to 20-year-old youth in the United States, according to mortality data from the National Center for Health Statistics. More than one quarter of the drivers killed in crashes had been drinking. While all school-based alcohol prevention programs strive to minimize alcohol use and/or misuse, little is known about the actual effects of these programs, particularly on students' driving. A study in the March issue of *Alcoholism: Clinical and Experimental Research (ACER)* examines the effects of a high school-based alcohol misuse prevention program on participants' subsequent driving behaviors.

"A law setting a minimum drinking age of 21 years exists in all the states," explained Jean T. Shope, senior research scientist with the Transportation Research Institute at the University of Michigan and lead author of the study. "Although it has reduced underage drinking and driving fatalities, we still have a problem."

In 1999, according to the National Highway Traffic Safety Administration, 3,561 drivers 15 to 20 years old were killed – and an additional 362,000 injured – in traffic crashes. Of those young drivers fatally injured, 29 percent had been drinking. Although driving after drinking is potentially deadly under any circumstances, it is particularly dangerous when teenagers do it.

"It's important to look at the context of this behavior," said James Hedlund, a consultant in traffic safety for Highway Safety North. "Not only is their drinking illegal, because the minimum drinking age in the United States is 21 years of age, but so too is their driving after drinking. Every state has a zero-tolerance law." Under these laws, teenage drivers detected with a blood alcohol concentration of 0.02 grams per deciliter or above will lose their driver's licenses. "So driving after drinking is doubly illegal," he said.

"There are two overall methods to change someone's behavior: enforcement and education," added Hedlund. "Legal interventions have been evaluated best, because they go into place at one given time, all over a state. But a high school prevention program doesn't work that way. It's usually put into place in one high school, often for a short period of time, and it's very difficult to measure its effects. One of the really good things about Shope's study is that she finds effects in long-term traffic offense data."

Shope's research is a follow-up to the Alcohol Misuse Prevention Study, in which five hour's worth of alcohol-education sessions were given to 10th grade Michigan students during each of the 1988-1989 and 1989-1990 school years. For this study, Shope and her colleagues examined

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T EENAGERS, DRINKING AND DRIVING: A QUICK TRIP TO THE GRAVE

students' driving histories for roughly seven years following licensure, which typically occurs during or shortly after 10th grade. The study had three main findings.

"They found that the curriculum reduced serious traffic offenses, both alcohol-related and other offenses as well, by about 20 percent in the first year these kids were licensed to drive," said Hedlund. "Second, the effect disappeared after the first year of driving. Third, the effect in the first year was strongest in two particular groups of students: those who didn't drink very much, and those who had parents who didn't seem to disapprove much of teen drinking."

"I think it's important that the prevention program seemed to work best among the group that had not yet started to drink," Shope said. "This is a typical finding in prevention. To get to them at the right time makes all the difference. It's just like trying to prevent smoking; you need to stop them before the age of 13. We already know that drinking increases very much during high school. If you're going to do prevention, you have to get in there before the behavior starts, otherwise you're doing treatment or harm reduction, not prevention."

"This is one of the few studies I know that looks at an educational program and actually finds some bottom-line results of observable behavior," said Hedlund. "It gives some scientific data that say you really can teach high school kids something. I'm saying that only somewhat facetiously. This is a very difficult group to try to educate, especially in ways that are socially responsible, when a lot of these kids are looking for ways to be socially irresponsible. So it's good news that this study gives us some indication that education about socially acceptable behaviors may indeed make a bottom-line difference. The results aren't conclusive, but they are very promising."

"There really needs to be more follow-up or long-term evaluation of prevention programs," Shope said. "We also need longer-term intervention or teaching. Why would a five-hour program in 10th grade, with no revisiting of the topic ... why would that have much of an effect? Sometimes these school programs are just a drop in the bucket when there's a lot of other stuff going on in a young person's life. You can't really expect a whole lot of change from a tiny little effort. One more thing, while schools may be very convenient places to reach groups of young people, many of these programs would work much better if the same message were also being delivered from the home, family, community, youth organizations and the media. Prevention can be somewhat 'swimming up stream' when it's not really being reinforced anywhere else."



Article is based on the following published research:

Shope, J.T., Elliott, M.R.,
Raghunathan, T.E.,
& Waller, P.F.
(March 2001).

Long-term follow-up
of a high school alcohol
misuse prevention
program's effect on
students' subsequent
driving.

*Alcoholism: Clinical
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25(3), 403-410.



T RACKING THE LONG-TERM FUNCTIONING OF ADOLESCENTS WITH ALCOHOL PROBLEMS

- *Standard treatment may not be enough for some adolescents with alcohol problems.*
- *A significant proportion of adolescents continue to drink and/or use other drugs, have poor relations with family and friends, and experience academic problems following treatment.*

Standard treatment may not be enough for some adolescents with alcohol problems, say researchers. While many adolescents reduce their alcohol use and have fewer related problems following treatment, a significant proportion continue to drink and/or use other drugs, have poor relations with family and friends and experience academic problems. Scientists say that long-term studies of treated adolescents are essential for determining what impact treatment can have and what factors may change the severity of alcohol problems over time.

These findings, gathered from four studies of adolescents who were followed for one to eight years after treatment, were presented at a symposium during the joint 2002 Research Society on Alcoholism/International Society for Biomedical Research on Alcoholism meeting. Symposium proceedings can be found in the February issue of *Alcoholism: Clinical and Experimental Research (ACER)*.

“We know very little about the impact that adolescent problem drinking has on academic achievement, relations with family and friends and employment through young adulthood,” said Tammy Chung, assistant professor of psychiatry at the University of Pittsburgh Medical Center and co-organizer of the symposium. “Longer-term studies can help us to understand how certain developmental milestones, such as full-time employment and independent living, affect the course of alcohol problems that begin in adolescence. Longer-term studies can also tell us which adolescents are most likely to continue or return to problem drinking and how treatment can be improved to more effectively meet their specific needs.”

Findings presented at the symposium included:

- Treatment works for many teens. At least half of the adolescents studied showed reductions in alcohol use and problems following treatment, with concurrent improvements in psychosocial functioning.
- Treatment needs can change. The severity and frequency of alcohol problems among treated youth can fluctuate over the long term.

“Researchers have identified multiple pathways of change in alcohol use and problems,” said Chung. “About half of the treated adolescents maintained low levels of alcohol use and problems through young adulthood, while some treated adolescents experienced continuing alcohol problems.”

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T RACKING THE LONG-TERM FUNCTIONING OF ADOLESCENTS WITH ALCOHOL PROBLEMS

- Use of other drugs following treatment is associated with greater alcohol use and related problems.

“Adolescents who drank and used other drugs such as marijuana after treatment,” said Chung, “generally had poorer outcomes in the areas of family relations and academic achievement. These poorer outcomes appeared to last through young adulthood.”

- Researchers and clinicians need to consider the impact of developmental milestones on the course of adolescent-onset substance use disorders.

“We need to know more about the impact of certain developmental milestones – full-time employment, obtaining a driver’s license, independent living – on the course of alcohol problems in treated youth,” said Chung. “This will allow us to improve the timing, such as the addition of booster sessions and content of interventions for youth.”

- The value of pretreatment characteristics, such as a family history of alcoholism, may become more evident as young people transition into adult roles.

“The bottom line,” said Chung, “is that alcohol problems that begin in youth do not necessarily have a chronic course. If we can identify the risk factors associated with alcohol problems that continue into young adulthood among treated youth, we can improve the effectiveness of their treatment.”



**Article is based
on the following
published research:**

Chung, T., Martin, C.S.,
Grella, C.E.,
Winters, K.C.,
Abrantes, A.M.,
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(February 2003).
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