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Alcohol and Health: Current Evidence

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ALCOHOL AND HEALTH OUTCOMES

Risky Drinking Associated with Psychiatric Disorders

The association between risky drinking and medical consequences, such as hypertension, is well known. Less is known, however, about the relationship between risky drinking and psychiatric disorders. To explore this relationship, researchers assessed average alcohol consumption and psychiatric diagnoses in a population-based sample of 4074 German adults. Analyses were cross-sectional and adjusted for age, sex, and unemployment.

or abstainers—had a psychiatric disorder.

Comments: Psychiatric disease often co-occurs with alcohol use disorders. According to this study's findings, it may also co-occur with risky drinking. Further research should confirm these results by examining samples from other countries and by using longitudinal designs.

Richard Saitz, MD, MPH

- Risky drinkers (i.e., those without abuse or dependence who consumed risky amounts*) were significantly more likely than moderate drinkers or abstainers to have an affective disorder (odds ratio [OR] 1.9), an anxiety disorder (OR 1.5), or a somatoform disorder (OR 1.6).
- Thirty-seven percent of risky drinkers—compared with 28% of moderate drinkers

* >20 g of alcohol (about 1–2 drinks) a day for women, 30 g (2–3 drinks) for men

Reference: Bott K, et al. Psychiatric disorders among at-risk consumers of alcohol in the general population. *J Stud Alcohol*. 2005;66:246–253.

Alcohol Use Decreases the Risk of Renal Dysfunction in Healthy Men

Using data from the Physicians' Health Study, researchers assessed whether alcohol use can affect the risk of renal dysfunction. They examined baseline alcohol intake and renal function (creatinine levels and glomerular filtration rates [GFR]) in 11,023 initially healthy men and re-measured renal function 14 years later. Analyses were adjusted for potential confounders (e.g., age, body mass index, smoking, diabetes mellitus, hypertension, cardiovascular disease).

per week had lower odds of reduced GFR (odds ratios 1.01 for 2–4 drinks, 0.77 for 5–6 drinks, and 0.75 for ≥7 drinks; *P* for trend=0.001).

Comments: Over 14 years, the risk of renal dysfunction in initially healthy men decreased in a graded manner with increasing alcohol consumption. These findings raise the intriguing possibility, which requires further study, that moderate alcohol use may protect the kidneys through the same possible mechanisms as it protects the cardiovascular system. Importantly, this research does not change the current lower-risk drinking recommendation of no more than 2 drinks per day on average for men.

R. Curtis Ellison, MD
Kevin L. Kraemer, MD, MSc

- At baseline, 75% of subjects consumed <7 drinks per week.
- At follow-up, 4% had elevated creatinine (≥1.5 mg/dL) and 12% had reduced GFR (≤55 mL/min).
- Subjects who drank ≥5 drinks per week at baseline had lower odds of elevated creatinine than did those who drank less (odds ratios 1.0 for 2–4 drinks, 0.88 for 5–6 drinks, and 0.75 for ≥7 drinks; *P* for trend=0.03).
- Similarly, subjects who drank ≥5 drinks

Reference: Schaeffner ES, et al. Alcohol consumption and the risk of renal dysfunction in apparently healthy men. *Arch Intern Med*. 2005;165:1048–1053.

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Risk Factors for Fetal Alcohol Syndrome

Identifying maternal risk factors associated with fetal alcohol syndrome (FAS) can help inform prevention efforts. Using a population-based sample in the Western Cape Province of South Africa (an area with extremely high FAS rates), researchers compared mothers of first graders born with FAS (cases; n=53) with mothers of first graders without FAS (controls; n=116).

- Cases were significantly more likely than controls to live in a rural area during their index pregnancy, work on a farm, have a greater number of children, and have a lower income and educational attainment. They were significantly less likely to be married while pregnant and to participate in religious activities.
- Cases drank for more years (13 versus 4) and had greater current use (13 versus 1 drink per week; binge drinking* among 70% versus 6%).
- During pregnancy, over 85% of cases consumed the same or more than their current levels. Over 84% of controls drank less than their current levels.

- Immediate family members of cases drank significantly more than did the immediate family of controls (e.g., 63 drinks per month for fathers of cases versus 32 drinks for fathers of controls).
- Cases were also more likely to have smoked during pregnancy (e.g., 76% versus 27% during the third trimester).

Comments: This study confirms that the range of maternal risk factors associated with FAS is broad. Clearly, maternal alcohol consumption is the key risk factor for FAS; how other factors increase risk is less clear. Nonetheless, clinicians should consider and address all of these factors during prenatal assessments.

Joseph Conigliaro, MD, MPH

* ≥3 drinks on ≥1 days in the past week

Reference: May PA, et al. Maternal risk factors for fetal alcohol syndrome in the Western Cape Province of South Africa: a population-based study. *Am J Public Health*. 2005;95:1190–1199.

The Link Between Alcohol and Body Weight

Results from studies on alcohol intake and body weight are inconsistent. To help clarify the association between alcohol use and waist-to-hip ratio (WHR) and body mass index (BMI), researchers in France analyzed data from 2323 adults, aged 35–60, who had participated in a study of antioxidant supplementation. Analyses were adjusted for age, smoking, physical activity, education, and calorie intake.

- Overall, the relationship between total alcohol consumption and WHR was J-shaped*; those consuming 0–12 g (equal to 1 standard drink or less) per day had a lower ratio than did those who drank more or abstained. The J-shaped relationship was also seen for total alcohol consumption and BMI, but in men only.
- The J-shaped curves were due primarily to wine intake. Those who consumed 0–100 g (up to 8 glasses) of wine per day had a lower WHR than did those who drank more wine or no wine. The J-shaped relationship was also seen for wine intake and BMI, but in men only.
- Spirits consumption increased WHR and BMI in a linear fashion for both men and

women. Beer consumption did not significantly affect WHR or BMI.

Comments: This study showed a J-shaped association between measures of obesity and alcohol—primarily wine—intake. Whether the favorable effects of wine were due to polyphenols or to inadequate control of confounding (e.g., lifestyle of wine drinkers versus beer drinkers) is unclear. Therefore, recommending drinking to prevent obesity would be premature. However, gaining a better understanding of how alcohol consumption relates to obesity—an increasingly prevalent health problem—is very important.

R. Curtis Ellison, MD
Richard Saitz, MD, MPH

*Researchers determined that the curve was J-shaped by conclusions drawn from regression equations.

Reference: Lukasiewicz E, et al. Alcohol intake in relation to body mass index and waist-to-hip ratio: the importance of type of alcoholic beverage. *Public Health Nutr*. 2005;8(3):315–320.

Alcohol's Benefits in Patients with Essential Tremor

Several studies have indicated that alcohol can suppress essential tremor (ET). To examine whether it may also improve gait, researchers assessed the walking patterns of 16 patients with ET and 11 age-matched controls without ET before and 30-minutes after each subject consumed a small dose of alcohol. Measurements included the number of missteps (taking steps outside specified boundaries marked on a treadmill), ataxia score (a ratio measuring the regularity of walking strides), and tremor score (a rating of tremor severity in patients with ET). Subjects did not have a history of alcohol abuse, and patients with ET were not being treated with medication.

- After consuming alcohol, patients with ET had significantly improved tremor scores and ataxia scores. Their number of missteps also significantly decreased (from 8.8 to 5.6).

- Controls had a slight worsening of ataxia scores and an increased number of missteps (from 0.4 to 0.7), though both of these results were nonsignificant.

Comments: This study confirms previous findings indicating that alcohol use can improve tremor in patients with ET. Further, it showed that drinking may also improve gait in these patients. While the results of this study apply only to patients with essential tremor, they raise the possibility that alcohol might also benefit those with other movement disorders.

R. Curtis Ellison, MD

Reference: Klebe S, et al. Influence of alcohol on gait in patients with essential tremor. *Neurology*. 2005;65:96–101.

INTERVENTIONS

Impaired Control Scale Predicts Outcome of Alcohol Moderation

Current guidelines for brief alcohol intervention recommend that physicians advise abstinence for patients with alcohol dependence. However, some patients with dependence are able to moderate their drinking.

To examine whether certain measures can identify patients who may or may not drink moderate amounts without consequences, researchers analyzed data from 154 subjects in Britain and Australia who had participated in a randomized trial of a moderation-oriented treatment for alcohol problems. They compared the performances of the Impaired Control Scale (ICS, which measures the degree of impaired control over drinking) with the widely used Severity of Alcohol Dependence Questionnaire (SADQ) to predict the outcomes of abstinence or drinking without self-reported problems.

- Over 6–8 months of follow-up, 5% of subjects became abstinent and 13% drank but reported no problems.
- The ICS correctly classified 62% of successful* cases (subjects reporting abstinence or drinking without problems)

and 68% of unsuccessful cases. The SADQ correctly classified 75% of successful cases but only 17% of unsuccessful cases.

Comments: This study suggests that the ICS performs better than the SADQ at identifying patients who may not benefit from moderation-oriented treatment. If validated in future studies, the Impaired Control Scale might prove useful to help determine whether moderation is an appropriate goal for certain problem drinkers; however, its ability to predict outcomes with a great deal of certainty is unlikely.

Peter Friedmann, MD, MPH

*Less severe impairment over drinking, as determined by the ICS, and less severe alcohol dependence, as determined by the SADQ, were associated with success.

Reference: Heather N, et al. Level of impaired control predicts outcome of moderation-oriented treatment for alcohol problems. *Addiction*. 2005;100:945–952.

Massage Therapy as an Adjunct to Alcohol Detoxification?

Massage therapy can lower anxiety, blood pressure, and heart rate. It has also been used as an adjunct to smoking cessation therapies to reduce nicotine withdrawal symptoms. To examine whether massage therapy may reduce symptoms of alcohol withdrawal, researchers conducted a randomized controlled trial of 50 patients with alcohol dependence who were undergoing detoxification with diazepam.

They compared patients who, for 15 minutes on 4 consecutive days, either received a seated massage (back, shoulder, neck, and head) or rested on their beds. At the beginning and end of each massage/rest session, researchers measured subjects' withdrawal symptoms (with the Alcohol Withdrawal Scale [AWS]), pulse rates, and respirations.

(continued on page 4)

Massage Therapy as an Adjunct to Alcohol Detoxification? (continued from page 3)

- The massage group had reduced AWS scores after each of the 4 daily sessions; the control group had reduced scores only on 2 days (and increased scores on the other days). Reductions were significantly greater in the massage group on day 1 only.
- The massage group also had significantly greater reductions in pulse rate (on 3 of 4 days) and in respiration (day 4 only).
- The dose of diazepam used during detoxification did not differ between the groups.

Comments: One limitation in the article reporting these findings is the lack of specificity about the medication regimen during

detoxification. Nonetheless, this study illustrates the potential benefit of a nonpharmacologic adjunct to treatment for alcohol withdrawal. Larger studies should examine whether massage and other alternative therapies can decrease medication requirements without increasing complications (e.g., seizures, delirium) and help increase referrals to alcoholism treatment.

Joseph Conigliaro, MD, MPH

Reference: Reader M, et al. Massage therapy improves the management of alcohol withdrawal syndrome. *J Altern Complement Medicine*. 2005;11:311–313.

SPECIAL POPULATIONS

Alcohol as Analgesic: Older Drinkers Numb the Pain

Many older adults suffer from pain and a significant proportion have unhealthy alcohol use. To examine the relationship between pain and alcohol problems among the elderly, researchers studied 401 community-dwelling older adults (aged 62–72 years) at baseline and 3 years later.

- At baseline, a greater proportion of problem drinkers* than nonproblem drinkers reported moderate to very severe pain (about 43% versus 30%) and functional impairment from pain (about 33% versus 18%).
- A greater proportion of problem drinkers used alcohol to manage pain (about 38% versus 14%). These proportions were higher among those with moderate to very severe pain (about 58% versus 21%).
- Baseline use of alcohol to manage pain predicted more chronic health problems and injuries in men and more drinking problems in women at the 3-year follow-up, particularly among those with more alcohol problems at baseline.

Comments: Older adults, especially those with drinking problems, often use alcohol to manage pain. Besides the immediate dangers of mixing alcohol with nonsteroidal and opioid analgesics, using alcohol to manage pain increases the risk of poor health in the future. This study suggests that clinicians need to ask patients with problem drinking about pain and ask patients with pain about alcohol use; counsel both groups about the risks of using alcohol as an analgesic; and help them find safer, more effective methods of pain relief.

Peter Friedmann, MD, MPH

* ≥ 1 drinking problems as determined by the Drinking Problems Index questionnaire

Reference: Brennan PL, et al. Pain and use of alcohol to manage pain: prevalence and 3-year outcomes among older problem and non-problem drinkers. *Addiction*. 2005;100:777–786.

Do People Drink Less Alcohol as They Age?

Most cross-sectional population surveys indicate that alcohol consumption decreases with age. Whether this decreased consumption is actually due to aging—rather than cohort effects (shared characteristics among people born around the same time) or period effects (factors that impact everyone during a certain period)—is unknown. To address this question, a researcher reviewed population surveys in Scotland, The Netherlands, and the United States.

- Abstinence rates increased with age, supporting an aging effect (e.g., as adults age, they are more likely than others to abstain). However, rates of lifetime abstinence also increased, suggesting a cohort effect (e.g., greater proportion

of older birth cohorts with lifetime abstinence), particularly in women.

- Mean alcohol consumption decreased with age. However, within each age group, consumption generally increased across time, suggesting a possible period effect. There was some evidence for a cohort effect in women.
- Heavy drinking* rates also decreased with age but generally increased within each age group, except for in the United States.

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*Defined variably across the 3 countries; in the United States, ≥ 14 drinks per week or ≥ 2 drinks per day

Do People Drink Less Alcohol as They Age? (continued from page 4)

Comments: The cross-sectional nature and methodological heterogeneity of studies reviewed in this paper made it difficult for the researcher to answer her question: “is reduced drinking with age normal?” Because the relative importance of aging, cohort, and period effects is uncertain, we cannot confidently predict whether the baby boom and younger generations will maintain their current levels of drinking in the future. Despite this uncertainty and the prevalence of alcohol use in the eld-

erly, healthcare providers should remain alert to potential alcohol problems and consequences in their older patients.
Kevin L. Kraemer, MD, MSc

Reference: Gilhooly MLM. Reduced drinking with age: Is it normal? *Addiction Research and Theory*. 2005;13:267–280.

Alcohol Use and Unsafe Sex by People with HIV

Unsafe sex by people infected with HIV poses a grave public health risk. To examine whether alcohol use increases the likelihood of unsafe sex in people with HIV, investigators interviewed 262 patients from 2 HIV clinics. Alcohol consumption measures assessed use in the past 6 months and included drinking days, drinks per drinking day, binge drinking,* and hazardous drinking.**

- In the past 6 months, 63% of patients had been sexually active, 38% had unprotected sex (i.e., no condom), and 21% had multiple sex partners.
- All alcohol consumption measures were significantly associated with the likelihood of having any sex (odds ratios ranging from 1.5 to 2.9) and of having unprotected sex (odds ratios ranging from 1.4 to 2.7).
- One-third of hazardous drinkers—compared with 9% of nonhazardous drinkers—were having both unprotected sex and sex with multiple partners.
- Heroin and cocaine use did not significantly affect the likelihood of having any or unprotected sex.

Comments: This study demonstrates a clear association between alcohol use and unsafe sex in patients infected with HIV. As the authors note, determining the basis of this association (e.g., risk-taking personality, lowered sexual inhibitions due to alcohol) requires longitudinal studies that demonstrate the temporal relationship between the two behaviors. Nevertheless, these findings support the case for assessing alcohol use among all patients with HIV.

Jeffrey Samet, MD, MA, MPH

* ≥ 5 drinks per day for men, ≥ 3 drinks per day for women

** ≥ 1 binge episode, or > 14 drinks per week for men and > 7 drinks per week for women

Reference: Stein M, et al. Alcohol use and sexual risk behavior among human immunodeficiency virus-positive persons. *Alcohol Clin Exp Res*. 2005;29(5):837–843.

Ethnicity, Gender, and Clustered Risk Behaviors in Adolescents

In addition to alcohol use, a number of other risk behaviors (e.g., drug use, fighting) are common among adolescents and can cause substantial health consequences. To examine possible interrelationships between these risk behaviors (e.g., co-occurrence), researchers analyzed data from a population-based national sample of 3183 African American and European American adolescents who had been surveyed annually for 4 years until age 18.

Using “latent class models” to characterize health risk behaviors, researchers found several patterns:

- Two-percent of the sample had all risk behaviors (marijuana use, early sexual initiation, alcohol use, smoking, fighting, and truancy) while 27% had none.
- African American men were more likely—while African American women were less likely—than others to be in the risk group with the highest prevalence of all risk be-

haviors (18% of African American men, 11% of European American men, 9% of European American women, and 5% of African American women).

- African Americans were very likely to be in a risk group with a higher prevalence of early sexual initiation and a lower prevalence of substance use. The opposite was true for European Americans.

Comments: This study suggests that risk behaviors often cluster together in adolescents, and that specific patterns may differ by ethnicity. When one risk behavior is identified, clinicians should be open to finding and addressing other risk behaviors.

Richard Saitz, MD, MPH

Reference: Weden MM, et al. Gender and ethnic differences in the co-occurrence of adolescent risk behaviors. *Ethnicity and Health*. 2005;10(3):213–234.

JOURNAL ALERT

National Institute Reviews Alcohol Screening and Brief Intervention

In two full issues of *Alcohol Research and Health*—a journal published by the National Institute on Alcohol Abuse and Alcoholism—experts review many aspects of screening and brief intervention for unhealthy alcohol use.

- The first issue reviews screening in general healthcare, screening test characteristics, National Alcohol Screening Day, biomarkers for alcohol use (including use during pregnancy), and factors that facilitate implementation of brief intervention.
- The second issue covers screening and brief intervention in a variety of settings, including primary care practices, emergency departments, prenatal settings, the criminal justice system, and

colleges. It also summarizes the legal barriers to screening in emergency departments and trauma centers.

Comments: Although these reviews are not systematic, they do cover a range of topics relevant to identifying and addressing unhealthy alcohol use outside of specialty alcoholism treatment settings.

Richard Saitz, MD, MPH

References: *Alcohol Research and Health. Screening and Brief Intervention, Part I: An Overview.* 2004/2005;28(1); *Alcohol Research and Health. Screening and Brief Intervention, Part II: A Focus on Specific Settings.* 2004/2005;29(2).

Issue of Journal *Alcohol* Focuses on Cancer Risk

The journal *Alcohol* dedicated a recent issue (volume 35) to the link between alcohol consumption and cancer. The issue reviewed the epidemiology of alcohol-associated cancer, the relationship between alcohol and specific cancers, and the potential mechanisms through which alcohol may increase cancer risk.

Some key findings include the following:

- Up to 80% of cancers of the oral cavity and pharynx, esophagus, and larynx are attributable to alcohol use.
- Light-to-moderate alcohol use has been linked to colorectal and breast cancers; heavier consumption is associated with an increased risk of cancers of the liver, ovary, breast, colon, rectum, stomach, and pancreas.
- Alcohol may increase cancer risk through various possible mechanisms including (but not limited to) by producing acetaldehyde (a weak mutagen and carcinogen); altering estrogen metabolism and response, and inactivating the

tumor suppressor gene BRCA1 (breast cancer); inducing oxidative damage; decreasing S-adenosylmethionine (SAME) levels (liver cancer); interfering with the metabolism of retinoids, which substantially affect cellular growth and differentiation; and/or impeding metabolism of folate, which may prevent alcohol-related cancers.

Comments: Clinicians and patients seem to pay more attention to the possible benefits of moderate drinking and well-known consequences of heavier drinking than to alcohol-related cancer risks. This issue of *Alcohol* will hopefully raise awareness of the effects of alcohol use on a wide range of cancers.

Rosanne Guerriero, MPH
Richard Saitz, MD, MPH

Reference: *Alcohol.* 2005;35(3).

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The major journals regularly reviewed for the newsletter include the following:

Addiction
Addictive Behaviors
AIDS
Alcohol
Alcohol & Alcoholism
Alcoholism: Clinical & Experimental Research
American Journal of Drug & Alcohol Abuse
American Journal of Epidemiology
American Journal of Medicine
American Journal of Preventive Medicine
American Journal of Psychiatry
American Journal of Public Health
American Journal on Addictions
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Archives of Internal Medicine
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Drug & Alcohol Dependence
Epidemiology
Journal of Addictive Diseases
Journal of AIDS
Journal of Behavioral Health Services & Research
Journal of General Internal Medicine
Journal of Studies on Alcohol
Journal of Substance Abuse Treatment
Journal of the American Medical Association
Lancet
New England Journal of Medicine
Preventive Medicine
Psychiatric Services
Substance Abuse
Substance Use & Misuse
Many others periodically reviewed (see www.alcoholandhealth.org)

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