Alcohol and Health: Current Evidence

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ALCOHOL AND HEALTH OUTCOMES

Does Alcohol Consumption Increase the Risk of Atrial Fibrillation or Flutter?

Data on the association between alcohol consumption and atrial fibrillation or flutter are inconsistent. To address this issue, Danish researchers measured baseline alcohol consumption in 47,949 subjects aged 50–64 years and prospectively identified incident atrial fibrillation or flutter (374 male cases and 182 females cases) over a mean follow-up of 6 years.

- In analyses adjusted for potential confounders, alcohol consumption was significantly associated with the hazard of atrial fibrillation or flutter among men. The hazard ratio (HR) increased significantly beginning at 20 g of alcohol (just under 2 drinks) per day (HR 1.4 compared with the lowest quintile of consumption).
- Increased hazards of atrial fibrillation or flutter associated with alcohol consumption were not statistically significant among women (HR 1.1 for the highest quintile of consumption).
- The type of beverage and the frequency of consumption did not affect risk.

Comments: This large, prospective study suggests that alcohol consumption—even as little as 2 drinks per day—is associated with an increased risk of atrial fibrillation or flutter in men but not in women. The study is limited by reliance on a single baseline assessment of alcohol use, inability to link specific binge behaviors to atrial fibrillation or flutter (e.g., "holiday heart"), and a relatively small number of events in women.

Kevin L. Kraemer, MD, MSc

Reference: Frost L, et al. Alcohol and risk of atrial fibrillation or flutter: a cohort study. *Arch Int Med.* 2004;164(18):1993–1998.

Recent Drinking Doubles the Risk of Injury

The established relationship between recent drinking and acute injury may be due to potential confounding factors, such as usual alcohol consumption patterns, risk-taking behavior, and other substance use. To quantify better the effect of acute alcohol use on risk of injury, researchers performed a case-control study of 488 injured cases in an Australian emergency department and 488 matched community controls.

- In analyses controlling only for demographic factors and activity, location, and companions at the time of injury, consuming any alcohol in the 6 hours prior to presentation significantly increased the risk of injury (odds ratio, OR, 2.1) compared with consuming no alcohol in the past 24 hours.
- After controlling for usual alcohol consumption pattern, risk taking (sensation seeking and risk perception), and drug use (use of prescription and over-the-counter medications and/or illicit substances 6–24 hours prior to injury), recent consumption still significantly increased risk (OR 3.7).

Comments: By adjusting for usual alcohol consumption, risk taking, and other drug use, this study bolsters the clinical observation that alcohol's immediate intoxicating effects, and not these other factors, explain the strong association between drinking and acute injury.

Peter Friedmann, MD, MPH

Reference: Watt K, et al. Risk of injury from acute alcohol consumption and the influence of confounders. *Addiction.* 2004;99 (10):1262–1273.

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Alcohol and Metabolic Syndrome

To examine the association between alcohol consumption and metabolic syndrome (a cluster of risk factors for cardiovascular disease and diabetes, including obesity, hypertension, hyperglycemia, hypertriglyceridemia, and low high-density lipoprotein cholesterol), researchers evaluated 4510 white participants of a population-based study of coronary heart disease (CHD). Of these participants (some who were chosen randomly and others selected due to their higher risk of CHD), 1393 had metabolic syndrome (defined as having at least 3 of the 5 above risk factors).

In analyses adjusted for potential confounders (e.g., demographics, smoking, physical activity, diabetes mellitus, coronary heart disease, diet),

- people who consumed >2.6 g of alcohol per day were significantly less likely than those who never drank to have metabolic syndrome (odds ratio, OR, 0.6 for intake of 2.6 g–12 g of alcohol—up to 1 standard drink—per day; OR 0.6 for 12.1 g–24 g; and OR 0.7 for >24 g);
- odds of metabolic syndrome were generally lower in women than in men, and in those who drank wine only, beer only, or >1 beverage type than in those who drank spirits only.

Comments: This study supports the findings from several other recent reports that have shown an inverse association between moderate alcohol consumption (generally regardless of beverage type) and metabolic syndrome and its component risk factors. Moderate drinkers may well have a lower risk of many of the antecedents of heart disease and diabetes.

Richard Saitz, MD, MPH

Reference: Djoussé L, et al. Alcohol consumption and metabolic syndrome: does the type of beverage matter? *Obes Res.* 2004;12(9):1375–1385.

Insomnia and Alcohol Dependence

Several studies suggest a high prevalence of sleep disturbance among patients with alcohol dependence in addiction treatment settings. Patients in these settings may not represent the population of people with alcoholism at large, many of whom do not seek alcohol treatment. To examine the association between sleep disturbance and alcohol dependence in the general population, researchers studied prospectively collected data from a population-based sample of adults who were followed for a median of 13 years (n=1920). Findings from analyses adjusted for potential confounders (e.g., age, sex, history of psychiatric and drug use disorders) include the following:

- Those with both current and past dependence at follow-up were significantly more likely than those without dependence to report ever experiencing insomnia for at least 2 weeks (odds ratio 2.6), but not hypersomnia for at least 2 weeks, or more-than-usual sleep disturbance caused by worry over the past few weeks.
- Sleep disturbances did not significantly differ between those with past alcohol dependence in remission and those without dependence.

Comments: In the general population, people with alcohol dependence are more likely to report insomnia. Clinicians should consider this association when assessing insomnia and when counseling patients with alcohol dependence.

Joseph Conigliaro, MD, MPH

Reference: Crum RM, et al. Association of sleep disturbance with chronicity and remission of alcohol dependence: data from a population-based prospective study. *Alcohol Clin Exp Res.* 2004;28(10):1533–1540.

Less Atherosclerosis Progression in Women with Coronary Artery Disease Who Drink

To assess the association between alcohol intake and the progression of coronary atherosclerosis, researchers examined data from 93 Swedish women (aged 65 or younger) who had been hospitalized with acute myocardial infarction or unstable angina pectoris, underwent quantitative coronary angiography, and had repeat angiography 2–5 years later. Results from analyses adjusted for potential confounders (i.e., age, smoking, body-mass index, education, physical activity, index cardiac event, menopausal status, diabetes, and history of dyslipidemia) include the following:

- The adjusted-mean coronary luminal diameter (averaged over the arterial distribution) significantly decreased among abstainers and those who drank >0 g–5 g of alcohol per day (0.14 mm decrease in both groups).
- The luminal diameter did not change significantly among those who drank >5 g per day (0.05 mm increase).
- Results did not significantly differ by beverage type.

Comments: This is a relatively small study, but one of few using repeat angiograms to evaluate the progression of coronary atherosclerosis in women. The investigators meticulously evaluated these angiograms, looking at multiple areas along 10 different segments of the coronary arteries. Taken in conjunction with other recent research showing an association between moderate alcohol intake and decreased restenosis of stents, this study supports a protective effect of light drinking against atherosclerosis progression in patients who already have evidence of severe coronary artery disease.

R. Curtis Ellison, MD

Reference: Janszky I, et al. Alcohol consumption and coronary atherosclerosis progression: the Stockholm Female Coronary Risk Angiographic Study. *Atherosclerosis.* 2004;176 (2):311–319.

Alcohol and Coronary Heart Disease: Differences Between Whites and Blacks

To evaluate the relationship between alcohol consumption and the incidence of coronary heart disease (CHD) in whites and blacks, researchers examined data from 14,506 men and women (5% of whom experienced a CHD event at some point during an average follow-up of 10 years). Findings from analyses adjusted for age, smoking, body mass index, low density lipoprotein cholesterol, waist:hip ratio, education, income, and physical activity include the following:

- Among white men, the incidence of CHD decreased significantly with each additional 13 g of alcohol (approximately 1 drink) consumed per day (hazard ratio, HR, 0.9, compared with never drinking). Among black men, the incidence increased (HR 1.1), though increases were not linear across categories of consumption.
- Among white women, risk decreased with consumption of <1 drink on average per week (HR 0.5), 1 g–69 g per week (HR 0.6, borderline significance) and >=70 g of alcohol per week (HR 0.5). The number of black women was too small to determine risk.
- In analyses adjusted for additional potential confounders (high density lipoprotein cholesterol level, systolic blood pressure, and antihypertensive medication use), consumption affected risk significantly only among white women who drank <1 drink per week on average (HR 0.5).

Comments: This study found that moderate alcohol consumption lowered risk of CHD in whites, but increased risk in black men. Because of relatively small numbers of black subjects and an inconsistent pattern of increases in risk with increasing alcohol consumption, these results cannot be considered definitive without replication. Further, even if additional studies find differences by race, the reasons for such differences must be determined.

R. Curtis Ellison, MD

Reference: Fuchs FD, et al. Association between alcoholic beverage consumption and incidence of coronary heart disease in whites and blacks: the Atherosclerosis Risk in Communities Study. *Am J Epidemiol.* 2004;160(5):466–474.

INTERVENTIONS

Referral Is Effective for Reducing Alcohol Misuse

Questions remain about the applicability of brief intervention among various populations, including emergency department (ED) patients. Researchers in London studied whether a referral from an ED-physician for brief counseling could reduce alcohol misuse. ED physicians screened patients they thought were drinking excessively and/or had a possible alcohol-related condition. Patients with excessive drinking (>8 units* of alcohol for men and >6 units for women in any 1 session at least once per week) were randomized to receive either (1) health information and a referral (an appointment card) to see an alcohol worker after discharge (287 patients) or (2) health information only (312 patients).

- At the 12-month follow-up, patients assigned to the referral group were drinking less per drinking day (means 13 units versus 16 units, p=0.04) and per week (means 57 units versus 71 units, p=0.09). They also had fewer emergency department visits (means 1.2 versus 1.7, p=0.05).
- Weekly consumption did not differ between referred patients who actually attended the 30-minute session with the alcohol worker (only 29% of those referred) and referred patients who did not attend.

Comments: This study has several limitations. Over one-third of subjects were lost to follow-up, and alcohol consequences were not assessed. However, given its few exclusions and intervention by clinicians (not researchers), its findings are broadly applicable. The referral from a physician—and not the counseling session to which patients were referred—was associated with less drinking. The referral itself probably led patients to believe their drinking was excessive.

Richard Saitz, MD, MPH

Reference: Crawford MJ, et al. Screening and referral for brief intervention of alcohol-misusing patients in an emergency department: a pragmatic randomized controlled trial. *Lancet.* 2004;364(9442):1334–1339.

*A unit of alcohol is slightly smaller than a standard drink in the United States.

Brief Intervention Is Efficacious for Young Adults

Although brief intervention can decrease alcohol consumption in adults, questions about its effectiveness in different populations remain. Researchers analyzed data from a subgroup of 226 young adults (aged 18–30 years) who were participating in a larger randomized trial of brief intervention in primary care. These young adults, all of whom were drinking risky amounts, received either usual care or a brief intervention consisting of 2 physician-led counseling sessions (lasting 10–15 minutes each) followed by 2 nurse telephone contacts.

- At the 12-month follow-up, patients in the intervention group were drinking significantly less. They consumed fewer drinks in the past week (means 9 drinks versus 15 drinks) and had fewer episodes of binge drinking in the past month (means 3 episodes versus 5 episodes). Also, a smaller proportion of the intervention group (17% versus 35%) consumed >=3 drinks per day in the past week.
- At the 4-year follow-up, significantly fewer intervention patients had emergency department visits (48% versus 63%) and motor vehicle events, such as operating under the influence or crashes with and without fatalities (55% versus 67%).

Comments: This study extends the findings of many prior reports of brief intervention for risky drinking in adults. Like older adults, younger adults can benefit from brief intervention. Given the findings of this study, data on the efficacy of brief intervention remain limited only for adolescents and younger children. For everyone else, brief intervention for non-dependent risky drinking should be standard practice in primary care settings.

Richard Saitz, MD, MPH

Reference: Grossberg PM, et al. Brief physician advice for high-risk drinking among young adults. *Ann Fam Med.* 2004;2(5):474–480.

An Alcohol Screening Website Attracts Hazardous Drinkers

AlcoholScreening.org is a widely promoted, anonymous, and free online service that offers visitors a self-screening of their drinking behaviors, individualized feedback, and, when appropriate, information about treatment. In a study evaluating the use of the site, researchers found the following:

- In a 14-month span, the site recorded over 66,000 visitors. Nearly 40,000 visitors over age 18 completed the screening about their own drinking habits.
- Almost all visitors who completed the screening (90%) were drinking hazardous amounts (determined by the Alcohol Use Disorders Identification Test, AUDIT, and 2 additional quantity and frequency questions; defined as >14 standard drinks per week or >4 drinks per occasion for men, and >7 drinks per week or >3 drinks per occasion for women).
- Most (65%) had possible alcohol abuse or dependence (AUDIT score of >=8).
- Similar proportions of men and women were drinking hazardous amounts.
- After receiving their results, 19% chose the "Learn More" or "Get Help" options on the site. Visitors with more severe alcohol problems were more likely to choose these options.

Comments: A highly promoted website offering alcohol screening and feedback reported many visits, especially by those drinking hazardous amounts or with possible alcohol abuse or dependence. Further, nearly one-fifth of visitors with alcohol use problems sought more information or help from the site. The success of AlcoholScreening.org suggests that such websites are an efficient and perhaps relatively inexpensive means (at least compared with individual health provider interviews) for targeting hazardous drinkers.

Joseph Conigliaro, MD, MPH

Reference: Saitz R, et al. Web-based screening and brief intervention for the spectrum of alcohol problems. *Prev Med*. 2004;39(5):969–975.

Cost-Effectiveness of Current and Optimal Treatment for Alcohol Use Disorders

Although cost-effectiveness methodology can help determine the efficiency of health care interventions and inform resource allocation decisions, it is rarely applied to the study of alcohol use disorders. Researchers used Australian survey data and simulation models to estimate the cost-effectiveness (dollars needed to avert a year lived with disability, YLD) of treating harmful alcohol use and alcohol dependence under certain conditions: current treatment and current coverage (the proportion of cases who actually received treatment); optimal treatment (assumes patients received evidence-based care only) and current coverage; or optimal treatment and optimal coverage (assumes 70% of cases received treatment for harmful alcohol use and 30% for alcohol dependence).

	Burden of Alcohol Use (YLDs) Averted	Estimated Average Cost of Treating Harmful Alcohol Use per YLD Averted *	Estimated Average Cost of Treating Alcohol Dependence per YLD Averted*
Current treatment and coverage	2%	$72,038	$72,993
Optimal treatment and current coverage	5%	$6,593	$42,817
Optimal treatment and optimal coverage	11%	$10,250	$39,886

*For purposes of this summary, 1997 Australian dollars were converted to 1997 US dollars using historical exchange rates.

Comments: This study found that optimal evidence-based treatment for alcohol use disorders, compared with current treatment, is efficient (i.e., lower cost to avoid a YLD) at both current and optimal coverage levels. In defining cost-effectiveness, researchers used the perspective of the payer and only considered direct treatment costs. Because alcohol problems affect the whole of society and not just the individual drinker, an analysis from the societal perspective could show greater effectiveness (e.g., more YLDs averted) and perhaps even greater cost savings.

Kevin L. Kraemer, MD, MSc

Reference: Andrews G, et al. Utilising survey data to inform public policy: comparison of the cost-effectiveness of treatment of ten mental disorders. *Br J Psychiatry*. 2004;184(6):526–533.

SPECIAL POPULATIONS

Prevalence of Alcohol Dependence Without Symptoms of Alcohol Abuse

Alcohol dependence and alcohol abuse are distinct, yet related, syndromes. Behavioral and physiological symptoms are the hallmarks of alcohol dependence, whereas social, legal, occupational, interpersonal, and health consequences in the absence of dependence define alcohol abuse. Since physicians often rely on the presence of abuse-related consequences to identify problem drinking, they may miss cases of alcohol dependence among those without these consequences. To help inform physicians about the prevalence of alcohol dependence without abuse, researchers analyzed a nationally representative survey of 42,392 American adults.

- One-third of respondents (29% of men and 46% of women) with current alcohol dependence did not experience any symptoms of alcohol abuse.
- Among women, current dependence without abuse was most common in Asians (59%) and Hispanics (55%). Among men, it was most common in African Americans (43%) and Hispanics (40%).

Comments: This study suggests that restricting clinical assessment to questions about alcohol abuse symptoms (such as problems with health, work or school, trauma, or driving while intoxicated) may miss a substantial proportion of individuals with alcohol dependence. This method of assessment appears particularly inadequate for women and minorities. Findings from this study underscore that just asking "Have you ever had a problem from your drinking?" is not enough.

Peter Friedmann, MD, MPH

Reference: Hasin DS, et al. The co-occurrence of DSM-IV alcohol abuse in DSM-IV alcohol dependence: results of the National Epidemiologic Survey on Alcohol and Related Conditions on heterogeneity that differ by population subgroup. *Arch Gen Psychiat.* 2004;61(9):891–896.

Youth Alcohol Use and Suicide

To explore the influence of substance use on suicidal behaviors, researchers analyzed interview data about childhood mental health from a community sample of 1458 youths (aged 9–17 years) and their parents/guardians.

- Forty-nine (3%) of the youth reported at least 1 suicide attempt during their lifetimes.
- In analyses controlling for sociodemographic factors, psychiatric disorders, and suicidal ideation, the following were significantly associated with suicide attempts: smoking at least 1 cigarette per day in the past 6 months (odds ratio, OR, 3.0, compared with not smoking in the past year); alcohol abuse/dependence (OR 9.3, compared with not drinking >=6 times in the past year); and drug use in the past year (OR 4.6, compared with no drug use in the past year).
- In analyses that also adjusted for other substance use and abuse (e.g., infrequent smoking, drug use, drug dependence), smoking at least 1 cigarette per day or having alcohol abuse/dependence, compared with not using any substance, significantly increased odds of suicide attempts (OR 5.0 and 25.2, respectively). Alcohol use alone was not significantly associated with suicide attempt.

Comments: Although it lacked a large, nationally representative sample, this study confirms the association between frequent smoking, alcohol use disorders, and suicide attempts in youths. Clinicians should address suicidal behaviors among their young patients with alcohol use disorders, and heavy drinking among those with suicidal behaviors.

Richard Saitz, MD, MPH
Rosanne Guerriero, MPH

Reference: Wu P, et al. Substance use, suicidal ideation and attempts in children and adolescents. *Suicide Life Threat Behav.* 2004;34(4):408–420.

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