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Alcohol, Other Drugs, and Health: Current Evidence

JANUARY-FEBRUARY 2010

INTERVENTIONS & ASSESSMENTS

“Substance Abuser” versus “Having a Substance Use Disorder”: Our Words May Matter

Stigma associated with substance use disorders can be a barrier to seeking treatment and may be influenced by the way clinicians describe individuals who have them. In this study, researchers developed a vignette describing a man in a court-ordered abstinence program who relapses on both alcohol and drugs. He is described as “a substance abuser” in one version and as “having a substance use disorder” in the other. The researchers randomly distributed the 2 versions of the vignette to 728 mental-health professionals attending two conferences. After reading the vignette, participants were asked to complete a questionnaire with 3 subscales: social threat, victim-treatment, and perpetrator-punishment. The response rate was 71%. Mean age of participants was 51 years; 81% were white, 63% were female, 65% had a doctoral degree, and 35% had a professional focus on substance use disorders.

- Participants exposed to the “substance abuser” term were more likely than those exposed to the “having a substance use disorder” term to agree with perpetrator-punishment subscale items such as, “His problem is caused

by a reckless lifestyle”; “He should be given some kind of a jail sentence to serve as a wake-up call”; and “His problem is caused by poor choices that he made” ($p=0.02$; effect size, 0.20).

- The 2 groups did not differ in responses to the social-threat and victim-treatment subscales.

Comments: Although the researchers conclude that the term “substance abuser” elicits more stigmatizing judgments of personal culpability and need for punishment than the other term, these results should be viewed with caution due to the small effect size and absence of differences in the other subscales. That said, there is likely no benefit from use of the term “abuser,” and it may quite possibly inflict harm. We should keep this in mind when we speak with patients, trainees, and each other about individuals with substance use disorders.

Kevin L. Kraemer, MD, MSc

Reference: Kelly JF, Westerhoff CM. Does it matter how we refer to individuals with substance-related conditions? A randomized study of two commonly used terms. *Int J Drug Policy*. December 14, 2009 [e-pub ahead of print].

A Stepped-Care Approach to Unhealthy Alcohol Use in Primary Care

Most studies of alcohol brief intervention exclude patients with alcohol dependence. Yet screening identifies the entire spectrum of patients with unhealthy use, from consumption that risks health consequences through dependence. In a pilot randomized trial of stepped care, investigators in Wales enrolled male patients in 6 general practices who scored ≥ 8 on the Alcohol Use Disorders Identification Test, including those

with dependence. The control group ($n=58$) received 5 minutes of advice from a practice nurse and a self-help booklet. The intervention group ($n=54$) received a 40-minute counseling session with a trained practice nurse and an offer for a repeat session 28 days later. Those who continued to drink too much at 28 days received 4 additional 50-minute motivational enhance-
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Stepped Care for Unhealthy Alcohol Use (continued from page 1)

enhancement counseling sessions, and those who continued to drink too much after these sessions were referred to specialized community treatment.

- Both groups decreased drinking. Total alcohol consumed and mean drinks per drinking day decreased more in the intervention group, but the differences were not statistically significant.
- The intervention group scored higher on readiness to change, consistent with the action stage.
- Health, social, criminal-justice, and accident-related costs decreased in the intervention group and increased in the control group.

Comments: The small size of this study precludes drawing any definitive conclusions from the results. Nonetheless, these findings suggest that stepped care has the potential to address excessive alcohol use in primary-care settings by tailoring care to patient needs across the spectrum of unhealthy use. A larger study will be able to determine the true efficacy of the approach.

Richard Saitz MD, MPH

Reference: Drummond C, Coulton S, James D, et al. Effectiveness and cost-effectiveness of a stepped care intervention for alcohol use disorders in primary care: pilot study. *Br J Psychiatry*. 2009;195(5):448–456.

Internet-based Intervention Reduces Alcohol Use

Patients with unhealthy alcohol use often do not seek formal treatment, and alcohol interventions are in limited use in nonspecialty medical settings. In this study, Canadian researchers randomized 185 general-population survey respondents who scored ≥ 4 on the 3 consumption items from the Alcohol Use Disorders Identification Test (AUDIT-C) to gain access to [CheckYourDrinking.net](#), a Web-based alcohol intervention ($n=92$), or to no intervention ($n=93$). The site guides participants through a brief assessment and provides normative feedback comparing participant drinking to age-, sex-, and country-matched peers as well as a personalized summary of any alcohol problems. The mean age of participants in this study was 40 years. Fifty-three percent were men, and 63% were employed.

- The 6-month follow-up rate was 93%.
- Among participants with AUDIT scores of ≥ 11 at baseline (suggesting heavier drinking), consumption decreased by 6 drinks per week on average among those in the intervention group at 6 months ($p<0.05$), while no significant reduction was seen among controls.
- No reductions in drinking were seen among participants in either group

who had AUDIT scores of 4 to 10 at baseline.*

- Analyses included the one-third of subjects who were randomized to the intervention group but never accessed the Web site.

*An AUDIT score of ≥ 8 is often considered a cutoff for unhealthy alcohol use.

Comments: This study adds to growing evidence that personalized, Web-based alcohol assessment and feedback can reduce alcohol use. Given that the sample was population-based, it is clinically notable that the intervention was most effective among heavier drinkers at an order of magnitude similar to that of face-to-face brief counseling in medical settings. Furthermore, the intervention was truly referral-only, since intent-to-treat analyses included those who did not visit the site. Referral to [CheckYourDrinking.net](#) or similar Web sites appears to be a reasonable option for patients with unhealthy alcohol use.

Peter D. Friedmann, MD, MPH

Reference: Cunningham JA, Wild TC, Cordingley J, et al. A randomized controlled trial of an internet-based intervention for alcohol abusers. *Addiction*. 2009;104(12):2023–2032.

Brief Intervention in the Emergency Department Shows Promise for Reducing Marijuana Use in Young Adults

Despite recent enthusiasm for brief intervention (BI) to reduce illicit drug use, supporting evidence is limited. In this randomized controlled trial, investigators examined the efficacy of BI to reduce marijuana use among 14–21 year olds in an urban emergency department. Eligible participants included those reporting either >2 episodes of marijuana use in the past 30 days or risk behaviors associated with marijuana use (e.g., driving while high or having unprotected sex). Patients reporting at-risk alcohol use were excluded. Interventions were delivered by peer educators and lasted 20–30 minutes. Twelve-month outcomes included abstinence, changes in pattern of use, and reduction of marijuana-related consequences and risk behaviors. Of 210 patients randomized, 71% completed 12-month follow-up. Sensitivity analyses were performed to address differential loss to follow-up.

- Twenty-one of 47 patients in the intervention group (45%) and 12 of 55 patients in the control group (22%) were abstinent at 12 months ($p=0.01$). Abstinence

rates were not statistically significant following sensitivity analysis that included patients lost to follow-up who were assumed to be nonabstinent ($p=0.053$).

- Controlling for baseline marijuana use, patients in the intervention group smoked marijuana on fewer days than controls (OR=0.39).
- There were no differences in risk behaviors between groups.

Comments: These preliminary findings demonstrate that BI may have promise in reducing marijuana use. A larger study evaluating BI for marijuana is indicated. In addition, studies of efficient screening instruments for episodic illicit drug use, in conjunction with BI, are needed.

Hillary Kunins, MD, MPH, MS

Reference: Bernstein E, Edwards E, Dorfman D, et al. Screening and brief intervention to reduce marijuana use among youth and young adults in a pediatric emergency department. *Acad Emerg Med.* 2009;16(11):1174–1185.

Sustained-Release Dexamphetamine Maintenance for Methamphetamine Dependence

Methamphetamine use disorders are common, but medication-assisted treatment options are lacking. This randomized double-blind placebo-controlled trial tested the efficacy of flexible daily dosing of sustained-release dexamphetamine versus placebo for 12 weeks among 49 methamphetamine-dependent subjects. No take-home doses were given. All subjects received 4 sessions of cognitive behavioral therapy.

- Subjects in the dexamphetamine group had significantly better treatment retention than those in the placebo group (86 versus 49 days) ($p=0.014$).
- Significant reductions in self-reported days of methamphetamine use were seen in both groups; however, the trend was greater in the dexamphetamine group (68 days down to 8 days) compared with the placebo group (71 days down to 13 days) ($p=0.086$).

- No serious side-effects were reported.

Comments: The most effective pharmacotherapies for addictive disorders currently available are for nicotine, opioid, and alcohol dependence. This study suggests that maintenance therapy with dexamphetamine might be a useful tool in the management of methamphetamine dependence as well. In light of the ravages of methamphetamine use disorders worldwide and the challenges of treating them, this modality would be a welcome addition to the clinical armamentarium.

Peter D. Friedmann, MD, MPH

Reference: Longo M, Wickes W, Smout M, et al. Randomized controlled trial of dexamphetamine maintenance for the treatment of methamphetamine dependence. *Addiction.* 2010;105(1):146–154.

Emergency-Department Screening, Brief Intervention, and Referral to Treatment Is Associated with Reduced Health-Care Costs

Screening and brief intervention has been shown to reduce alcohol and illicit drug use, but less is known about its effect on health-care costs. This study analyzed health-care costs of Medicaid patients who participated in a screening, brief intervention, and referral to treatment (SBIRT) program in 9 hospital emergency departments (EDs). Patients age 18–64 who screened positive for a drug or alcohol problem based on AUDIT* and DAST-10† scores ($n=1557$) were

compared with an equal number of propensity-matched controls. Interventions were delivered by trained substance abuse counselors. Fifty-seven percent of intervention patients received brief intervention only; the remaining 43% were referred for further treatment.

- The SBIRT program was associated with a \$366 per-member, per-month reduction in health-care costs as well as a significant reduction in hospital inpatient

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*Alcohol Use Disorders Identification Test.

†Drug Abuse Screening Test.

Emergency Department SBIRT and Health-Care Costs (continued from page 3)

days in the year after the intervention.

- Cost decreases were greater for those who received brief intervention only and had no chemical dependence treatment in the year prior to or following the ED visit as well as for those treated for injury during the ED visit.

Comments: This study suggests that SBIRT in emergency-care settings can reduce health-care costs. It remains to be seen whether the effect is sustained beyond a year. While it appears that having substance abuse counselors in the ED

saves money for the health-care system as a whole, incentives will be needed to encourage hospitals to invest in their services or to have existing staff deliver the intervention.

Darius A. Rastegar, MD

Reference: Estee S, Wickizer T, He L, et al. Evaluation of the Washington state screening, brief intervention, and referral to treatment project: cost outcomes for Medicaid patients screened in hospital emergency departments. *Med Care.* 2010;48(1):18–24.

The Greater the Score, the Greater the Risk? Alcohol Screening Scores and the Probability of Dependence

Although the US Preventive Services Task Force recommends screening and brief intervention to reduce at-risk drinking, no practical approach exists to identify which patients who screen positive for at-risk drinking meet criteria for alcohol dependence, which usually requires more specialized treatment. This cross-sectional study sought to identify risk zones in alcohol screening scores to estimate the probability of alcohol dependence using 5 common screening tools.* Analyses were based on secondary data from a prospective validation study of alcohol screening tests that included 392 men and 927 women recruited from primary-care practice. A diagnosis of alcohol dependence was established via assessment with the Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS). Stratum-specific likelihood ratios were calculated to empirically identify and evaluate score ranges on the screening tests.

- Twelve percent of men and 6% of women met DSM-IV criteria for past-year alcohol dependence.

*The Alcohol Use Disorders Identification Test (AUDIT), a validated 10-item screening questionnaire, scored 0–40; the AUDIT-C, comprised of the 3 consumption items from the AUDIT, scored 0–12; 1 single-item screening question regarding the frequency of drinking ≥ 6 drinks per occasion, scored 0–4; 1 single-item screening question asking how many days in the past month the patient drank ≥ 5 drinks, scored 0–30; and the CAGE, a validated 4-item screening questionnaire asking about alcohol-related events occurring in the patient's lifetime, scored 0–4.

- AUDIT scores of 15–40 in men and 13–40 in women were associated with an 87% and 94% probability of past-year alcohol dependence, respectively.
- AUDIT-C scores of 10–12 were associated with a 75% probability of past-year alcohol dependence in men and an 88% probability in women.
- The second highest risk zone on both the AUDIT and AUDIT-C conferred a 40–50% probability of past-year alcohol dependence in both men and women.
- Risk zones for the single-item screening tests and the CAGE were not useful for identifying alcohol dependence.

Comments: Although this study was strengthened by a large sample size, there were relatively small numbers of men and women in the highest screening-test risk zones. Despite this limitation, results suggest that patients who score in the highest risk zone on the AUDIT and AUDIT-C may benefit from more immediate assessment for alcohol dependence and, if needed, referral.

Jeanette M. Tetrault, MD

Reference: Rubinsky AD, Kivlahan DR, Volk RJ, et al. Estimating risk of alcohol dependence using alcohol screening scores. *Drug Alcohol Depend.* 2010;108(2):29–36.

Web-based Alcohol Screening and Brief Intervention Reduces Drinking among College Students

Web-based interventions may have the potential to reduce unhealthy alcohol use in college students. In this study, researchers randomized 2435 Australian undergraduates who scored positive for hazardous drinking* to 10 minutes of Web-based assessment and personalized feedback or to a control condition (screening only). Blinded assessment of alcohol consumption and adverse outcomes was done at 1 and 6 months post-randomization.

- Compared with controls, students receiving the inter-

vention reported fewer drinking days (6 versus 7 days at 1 month; 7 versus 8 days at 6 months) and fewer drinks per week (8 versus 10 drinks at 1 month; 9 versus 11 drinks at 6 months).

- Compared with controls, students receiving the intervention reported significantly less heavy drinking[†] (15% versus 22% at 1 month; 19% versus 25% at 6 months).

[†]Defined as >14 standard (10-g ethanol) drinks per week in women and >28 drinks per week in men.

*A score of ≥ 8 on the Alcohol Use Disorders Identification Test.

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Web-based Screening and Brief Intervention for College Students (continued from page 4)

- No differences in heavy episodic drinking were seen between groups, nor did they differ in number of adverse personal, social, sexual, legal, or academic consequences at 1 and 6 months.

Comments: This study suggests that a brief Web-based intervention can produce beneficial changes in drinking for up to 6 months among college students who report hazardous drinking. Although the effects were modest, the potential

societal benefits are large because of the capability of such interventions to reach large populations at a reasonable cost.

Kevin L. Kraemer, MD, MSc

Reference: Kypri K, Hallett J, Howat P, et al. Randomized controlled trial of proactive web-based alcohol screening and brief intervention for university students. *Arch Intern Med.* 2009;169(16):1508–1514.

Transcutaneous Electric Acupoint Stimulation (TEAS) for Opioid Detoxification

Studies of transcutaneous electric acupoint stimulation (TEAS), an alternative form of acupuncture, in the treatment of opioid withdrawal have yielded variable results. This randomized, single-blind, pilot study sought to determine whether TEAS, included as an adjunctive treatment to inpatient opioid detoxification with buprenorphine-naloxone, increased abstinence in the 2 weeks following discharge. Forty-eight patients completed treatment, which consisted of 30 minutes of TEAS or sham treatment 3 times daily for 4 days in addition to tapered doses of buprenorphine-naloxone (total average of 31 mg tapered over 3–4 days). Follow-up data were available for 73% of patients.

- Patients in the TEAS group reported less opioid use (29% versus 60%, respectively; $p=0.04$) or any drug use (35% versus 77%, respectively; $p=0.02$) than patients in the sham group at 2 weeks post-discharge. Self-report data was corroborated with urine toxicology.

- Patients in the sham group relapsed sooner than patients in the TEAS group [hazard ratio (HR), 2.65; 95% CI, 1.004–6.995].
- Patients in the TEAS group reported less pain ($p=0.01$) and more improvements in physical health ($p=0.01$).

Comments: Despite methodologic limitations including small sample size, single-blinding, short treatment duration, and brief follow-up period, these results suggest that adjunctive treatment with TEAS during inpatient opioid detoxification may improve short-term outcomes in opioid-dependent patients and deserves further study.

Jeanette M. Tetrault, MD

Reference: Meade CS, Lukas SE, McDonald LJ, et al. A randomized trial of transcutaneous electric acupoint stimulation as adjunctive treatment for opioid detoxification. *J Subst Abuse Treat.* 2010;38(1):12–21.

Home Visits: A Cost-effective Option for the Treatment of Alcohol Dependence

Home visits may improve care, quality of life, and treatment adherence in some patients. Researchers from Brazil compared the cost-effectiveness of outpatient treatment (OT) with OT plus home visits (HV) among 120 people with alcohol dependence as part of a randomized controlled trial. Both groups received 20 group motivational interviewing sessions in 3 months. At the beginning of treatment, patients in the intervention group received 4 HV geared toward improving adherence. Patients who dropped out were considered nonabstinent.

- Dropouts were more common in the OT group (38% versus 15%).
- Fifty-eight percent of patients in the HV group were abstinent at 3 months compared with 43% in the OT group ($p=0.10$).
- Compared with OT, the additional total cost of home visits (including medical, productivity, and other costs) to achieve one additional abstinent patient was US \$1,852.

- In sensitivity analyses biased against HV, HV cost \$2,334 per additional abstinent patient compared with OT.

Comments: Economic analyses are crucial when resources are scarce. These results indicate that HV may be cost-effective when treating alcohol dependence; however, more efficacy studies are needed before reaching this conclusion. Findings are limited by a high drop-out rate, short follow-up period, small sample size, and absence of a statistically significant difference between groups in the proportion of abstinent patients at the end of treatment. Nevertheless, the findings provide important information regarding the potential of HV to enhance treatment retention and compliance.

Nicolas Bertholet, MD, MSc

Reference: Moraes E, Campos GM, Figlie NB, et al. Cost-effectiveness of home visits in the outpatient treatment of patients with alcohol dependence. *Eur Addict Res.* 2010;16(2):69–77.

HEALTH OUTCOMES

High-Risk Drinking Is Associated with Lower Self-Rated Physical and Mental Health among Older Americans

Recent studies have questioned whether older adults who exceed recommended drinking limits experience adverse health consequences. Researchers analyzed data in a sub-sample of 4646 men and women age ≥ 60 who reported current drinking on the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). Using latent class analysis and results of the Alcohol Use Disorder and Associated Disabilities Interview Schedule (DSM-IV version), they divided the cohort into 3 consumption categories: low-risk (89%), moderate-risk (10%), and high-risk (1%). Multivariable analysis was used to determine the association between consumption category, demographic factors, and self-rated health.

- Compared with participants in the low-risk consumption category, those in the moderate- and high-risk categories tended to be younger and were more likely to be male, to have less than a high school education, and to be the child of an alcoholic.
- Current smoking rates were 17% in the low-risk category and 37% and 54% in the moderate- and high-risk categories, respectively.

- High-risk drinking was associated with poorer self-rated physical and mental health. Moderate-risk drinking was not.
- Only 7% of participants in the high-risk category reported receiving alcohol treatment services in the past year.

Comments: This study provides important data on the prevalence of unhealthy alcohol use among older Americans who drink. Although it is not surprising that high-risk drinking was associated with poorer self-rated physical and mental health, it is interesting that moderate-risk drinking was not. The fact that few participants in the high-risk consumption category had received treatment suggests that more needs to be done to identify and intervene with such patients.

Darius A. Rastegar, MD

Reference: Sacco P, Bucholz KK, Spitznagel EL. Alcohol use among older adults in the National Epidemiologic Survey on Alcohol and Related Conditions: a latent class analysis. *J Stud Alcohol Drugs.* 2009;70(6):829–838.

Abstinence Is More Common among Patients Who Use Heroin or Crack Cocaine Alone Compared with Those Who Use Both

Crack cocaine use can be difficult to treat and is a common comorbid condition among heroin-dependent individuals. Since 2007, the National Health Service in England has tracked past-month drug use among patients with heroin and/or crack-cocaine dependence admitted to treatment. Patients report heroin and/or crack cocaine use at admission, every 6 months, and at discharge. Researchers reviewed self-reported drug use among 14,656 such patients to determine whether heroin and crack-cocaine use decreased during treatment and to assess whether use of both drugs at admission was associated with lower abstinence. The mean time from admission to review was 19 weeks.

- People who used only heroin reduced their average use from 23 of 28 days at admission to 7 of 28 days at review. Forty-two percent achieved abstinence.
- People who used only crack cocaine reduced their average use from 13 of 28 days at admission to 5 of 28 days at review. Fifty-seven percent achieved abstinence.
- People who used both heroin and crack cocaine reduced

their heroin use from 23 of 28 days at admission to 9 of 28 days at review, and their cocaine use from 13 of 28 days at admission to 5 of 28 days at review. Thirty-three percent achieved abstinence from heroin, and 51% achieved abstinence from cocaine.

Comments: This large cohort study demonstrated substantial in-treatment reductions in both heroin and crack-cocaine use within 6 months of entering treatment. Abstinence rates were higher among people using either heroin or crack cocaine alone. Although people with both heroin and crack-cocaine use also benefit from treatment, these results indicate they are less likely to achieve abstinence and may require additional treatment.

Alexander Y. Walley, MD, MSc

Reference: Marsden J, Eastwood B, Bradbury C, et al. Effectiveness of community treatments for heroin and crack cocaine addiction in England: a prospective, in-treatment cohort study. *Lancet.* 2009;374(9697):1262–1270.

Is Sleep-Disordered Breathing a Major Cause of Sleep Disturbances in Methadone-Maintained Patients?

More than 75% of opioid-dependent patients receiving methadone report sleep problems. In this cross-sectional investigation, researchers sought to determine the prevalence of sleep-disordered breathing (SDB), including central and ob-

structive sleep apnea (CSA and OSA, respectively), in methadone-maintained patients who report sleep disturbances and also examined the association between SDB,

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Sleep-Disordered Breathing in Methadone Patients (continued from page 6)

sleep-complaint severity, methadone dose, and illicit substance use. Eligible participants (N=71) had subjective sleep complaints as defined by a validated measure. Patients with psychotic or bipolar disorders, recent trazodone use, unstable housing, chronic medical illness, or <3 months of stable methadone dose were excluded. Sleep and respirations were measured via portable polysomnography.

- Thirty participants (42%) had SDB; of these, 20 met criteria for OSA, 5 for CSA, and 5 for both OSA and CSA.
- Sleep disturbances included decreased sleep efficiency, decreased REM sleep, and increased stage-2 sleep. These did not differ among participants with and without SDB.
- Neither OSA nor CSA was associated with severity of sleep complaints.
- CSA was not associated with methadone dose or benzodiazepine use.

- Patients with SDB had received methadone for a significantly longer period of time than those without.

Comments: Although SDB was common in this sample of methadone-maintained patients with sleep disturbances, the majority did not have SDB. Other factors must be sought to explain and guide treatment for sleep disturbances in such patients. Since medical illness was an exclusion from this sample, SDB rates observed herein may under-represent actual rates of SDB among a broader sample of methadone-maintained patients.

Hillary Kunins, MD, MPH, MS

Reference: Sharkey KM, Kurth ME, Anderson BJ, et al. Obstructive sleep apnea is more common than central sleep apnea in methadone maintenance patients with subjective sleep complaints. *Drug Alcohol Depend.* 2010;108(1–2):77–83.

Does Heavy Drinking Increase the Risk of Lung Cancer among Smokers?

To assess the relationship between alcohol consumption, smoking, and lung cancer risk, investigators analyzed data from Italy's population-based Environment and Genetics in Lung Cancer Etiology (EAGLE) case-control study. Between 2002 and 2005, 2100 patients with primary lung cancer were randomly selected from 13 Northern Italian hospitals and frequency-matched on sex, area of residence, and age with 2120 controls. Lifetime alcohol consumption and tobacco smoking were compared in 1855 patients and 2065 controls via personal interview and self-administered questionnaire.

- Overall, nondrinkers [odds ratio (OR), 1.42] and very heavy drinkers (≥ 60 g per day; OR, 1.44) had a significantly higher risk of lung cancer compared with very light drinkers (0.1–4.9 g per day).
- The alcohol effect was modified by smoking behavior, with no excess risk being observed in never smokers.

- Among ever smokers (the majority of patients), the highest ORs were seen among nondrinkers (OR, 1.55) and those consuming ≥ 60 g per day (OR, 1.40), with very light drinkers used as the referent group.

Comments: Among never smokers, these authors found no effect of alcohol consumption on the risk of lung cancer in stratified analyses. Based on some of the analyses, the authors concluded that heavy alcohol consumption was a risk factor for the development of lung cancer, although they also stated that residual confounding by tobacco smoking could not be ruled out.

R. Curtis Ellison, MD

Reference: Bagnardi V, Randi G, Lubin J, et al. Alcohol consumption and lung cancer risk in the Environment and Genetics in Lung Cancer Etiology (EAGLE) study. *Am J Epidemiol.* 2010;171(1):36–44.

Alcohol, Stroke, and Functional Outcomes after Stroke

To better understand the relationship between alcohol consumption and functional outcomes from stroke, Boston researchers evaluated data from a subgroup of 21,860 male participants in the prospective Physicians' Health Study. The sample included only those men who reported no history of stroke or transient ischemic attack (TIA) at baseline. Alcohol consumption fell into 5 categories: <1 drink per week, 1 drink per week, 2–4 drinks per week, 5–6 drinks per week, or ≥ 1 drink per day. Possible functional outcomes included TIA and modified Rankin Scale* (mRS)

*Scale used to assess degree of disability or dependence in daily activities following a stroke. Scores range from 0 (no symptoms) to 6 (death).

scores of 0–1, 2–3, or 4–6. Multinomial logistic regression was used to evaluate the relationship between alcohol consumption and functional outcomes.

- Over a mean follow-up period of 21.6 years, 766 TIAs and 1393 strokes (1157 ischemic, 222 hemorrhagic, and 14 of unknown type) occurred.
 - Men who consumed 1 drink per week had the lowest risk for stroke when using men who consumed <1 drink per week as the reference category [relative risk (RR) for TIA, 0.96; RR for total stroke, 0.80 (p=0.03)].
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Alcohol and Functional Outcomes Post-Stroke (continued from page 7)

- For functional outcomes after total stroke, the RR of having a more severe mRS score of 4–6 was 0.60 among men who consumed 1 drink per week compared with men who consumed <1 drink per week who did not experience a TIA or stroke. This finding was similar for both ischemic and hemorrhagic stroke.
- Higher alcohol consumption showed no association with functional outcome after stroke.

the authors suggest, any protective effects of moderate drinking against stroke may be less important as the population ages, at which time other risk factors (e.g., hypertension, atherosclerosis) may have stronger effects. Only scores in the most severe functional outcome category (mRS scores of 4–6) were lower among patients who consumed 1 drink per week compared with those who consumed <1 drink per week. The investigators did not adjust for changes in alcohol intake over time.

R. Curtis Ellison, MD

Comments: Contrary to an earlier report from this cohort, the risk of stroke did not decrease among consumers of alcohol except among those who consumed 1 drink per week. As

Reference: Rist PM, Berger K, Buring JE, et al. Alcohol consumption and functional outcome after stroke in men. *Stroke*. 2010;41(1):141–146.

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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.aodhealth.org).

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