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# Alcohol, Other Drugs, and Health: Current Evidence

SEPTEMBER–OCTOBER 2009

## INTERVENTIONS & ASSESSMENTS

### Heroin to Treat Opioid Dependence: A Randomized Trial

Although methadone maintenance is effective for opioid dependence, many people drop out of treatment or continue to use illicit drugs. In a Canadian study, 251 people with opioid dependence, 2 previous treatment episodes, and long-term opioid use (mostly heroin) were randomized to receive either oral methadone (n=111) or injectable heroin (diacetylmorphine, up to 3 injections daily) (n=115) for 1 year. The remaining 25 subjects were randomized to receive injectable hydromorphone to facilitate validation of self-reported heroin use by urine tests. All subjects received counseling and psychosocial services.

- Illegal heroin use decreased more in the heroin group than in the methadone group (from 27 days per month at baseline to 5 and 12 days per month, respectively).
- Retention in treatment was better in the heroin group than in the methadone group (88% versus 54%) as was the proportion of subjects with a 20% or greater reduction in illegal activities or drug use (67% versus 48%). The heroin group also had better social, employment, and psychiatric outcomes.
- The heroin group experienced 24 adverse events, including 11 overdoses and 7 seizures. The methadone group had none.
- Hydromorphone recipients could not tell whether they were taking hydro-

morphone or heroin, and outcomes were similar to those in the heroin group.

*Comments:* Although these results are similar to those from European studies, heroin treatment is unlikely to be widely disseminated soon. As an editorialist points out, the limitations in using heroin as a treatment are historical, political, and cultural rather than primarily clinical. Medical concerns exist too. The adverse events attributable to heroin were not insignificant in this study, and the long-term effects on physical and mental health of a frequently injected short-acting opioid may not be as favorable as those achieved with more constant methadone levels. Nonetheless, in this trial, heroin did show greater efficacy than methadone on multiple important outcomes for people with prior treatment failures. From a pure health perspective, should regulations change, heroin clearly could have a role in treating some patients with this devastating chronic illness.

Richard Saitz MD, MPH

*References:* Oviedo-Joekes E, Brissette S, Marsh DC, et al. Diacetylmorphine versus methadone for the treatment of opioid addiction. *N Engl J Med.* 2009;361(8):777–786.

Berridge V. Heroin prescription and history [comment]. *N Engl J Med.* 2009;361(8):820–821.

### Meta-analysis Confirms Methadone Maintenance Reduces Illicit Opioid Use and Improves Treatment Retention in Patients with Opioid Dependence

Methadone maintenance therapy (MMT) is the most widely used opioid agonist treatment for opioid dependence in the world. To determine the effectiveness of

MMT compared with no treatment or treatments not including agonist treatment in patients with opioid dependence,

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## Methadone Maintenance Reduces Opioid Use (continued from page 1)

Cochrane Collaborative researchers conducted a systematic review of clinical controlled trials conducted between 1969 and 2008. Eleven randomized controlled trials including 1969 patients in 5 different countries were identified. Outcome measures included treatment retention, mortality, opiate-positive drug test results, self-reported heroin use, and criminal activity. Study control groups included patients who received a double-blind placebo, those who received methadone for detoxification only, those who received counseling only, those wait-listed for treatment, or those who received no treatment. The mean dose of methadone among patients in the MMT group was 60 mg or higher in most studies.

- Methadone maintenance significantly increased retention in treatment (relative risk [RR], 4.44), decreased morphine-positive drug tests (RR, 0.66), and decreased self-reported heroin use (no pooled effect estimate due to heterogeneity).

- Pooled estimates of mortality risk and criminal activity were reduced (RR=0.48 and 0.39, respectively), but these changes were not statistically significant.

*Comments:* There is strong clinical trial evidence that, among opioid-dependent patients, MMT increases treatment retention and reduces heroin use compared with placebo, detoxification, drug-free counseling, and wait-list controls. Other beneficial outcomes from MMT, such as reduced mortality, reduced criminal activity, reduced HIV seroconversion, reduced HIV risk behaviors, and improved birth outcomes, are supported by observational evidence.

Alexander Y. Walley, MD, MSc

*Reference:* Mattick RP, Breen C, Kimber J, et al. Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. *Cochrane Database Syst Rev.* 2009(3): CD002209.

## Methadone Maintenance Therapy Decreases Arrests

Previous observational reports of methadone maintenance therapy (MMT) suggest that MMT reduces criminal activity. Treatment with methadone often includes medication and counseling; interim methadone (IM) provides medication alone in an effort to reduce costs. In this clinical trial, investigators randomized patients awaiting entry into a comprehensive MMT program to receive either IM (n=198) or to a waiting list (n=119). Interim methadone, providing no counseling, was offered for up to 120 days. After controlling for potential confounders, investigators compared retention in treatment among patients in both groups at 6 and 12 months.

- Patients assigned to IM had significantly fewer arrests at 6 months compared with waiting list patients (mean, 0.20 versus 0.34).
- There was no difference in arrest severity between groups at 6 or 12 months; however, there were significantly fewer arrests at 6 and 12 months among pa-

tients in continuous treatment compared with patients not in continuous treatment (mean, 0.14 versus 0.29 at 6 months and 0.18 versus 0.40 at 12 months, respectively).

- More patients in the IM group were retained in treatment compared with waiting list patients (65% versus 25%).

*Comments:* In this randomized clinical trial, patients in the IM arm had fewer arrests and were more likely to be retained in treatment compared with waiting list patients. The policy implication of this study is important in that IM may provide additional benefits (i.e., reduction in criminal activity and retention in treatment) beyond the morbidity and mortality benefits conferred by comprehensive MMT.

Hillary Kunins, MD, MPH, MS

*Reference:* Schwartz RP, Jaffe JH, O'Grady KE, et al. Interim methadone treatment: impact on arrests. *Drug Alcohol Depend.* 2009;103(3):148-154.

## Impaired Memory in Subjects Receiving Opioid Agonist Treatment Who Also Abuse Benzodiazepines

Some studies have found impaired memory among subjects receiving opioid agonist treatment (OAT), but this may be partly due to baseline differences between subjects or the effects of other drugs, particularly benzodiazepines. This study tested memory function among Finnish subjects receiving methadone (n=13) or sublingual buprenorphine (n=15) who had concurrent benzodiazepine abuse or dependence and compared them with 15 healthy controls. Memory tests were conducted within 1–2 months of initiating OAT (T1) and repeated 6–9 months later (T2). Comparisons were adjusted for years of education and verbal IQ. Subjects on methadone received a mean daily dose of 73 mg at T1 and 126 mg at T2; those treated with buprenorphine received a mean daily dose of 17 mg at T1 and 23 mg at T2. All subjects receiving OAT also reported abusing a mean diazepam-equivalent dose of 25 mg daily at T1 and T2.

- Subjects in the OAT group performed significantly worse than controls on all memory tests except those related to memory consolidation.
- There was no significant difference in test results between subjects treated with methadone or buprenorphine.
- There was no significant difference in test results between T1 and T2.

*Comments:* Prior evidence is clear that benzodiazepines impair memory, but the data on OAT are mixed, and studies have been limited by the fact that many of those included were abusing other substances. These results suggest that people who receive OAT and abuse benzodiazepines have worse memory than healthy people who do not take those medications. But, as with previous studies, it does not sort out how much impairment is due to medications or other causes. It is reassuring that increases in OAT dose over time were not associated with increased memory impairment. These results also suggest that buprenorphine does not offer an advantage over methadone in terms of memory effects, but differences may have been negated by the effect of the benzodiazepines. It should be noted that about one-third of OAT subjects were cannabis users, which may also have affected test performance.

Darius A. Rastegar, MD

*Reference:* Rapeli P, Fabritius C, Kalska H, et al. Memory function in opioid-dependent patients treated with methadone or buprenorphine along with benzodiazepine: longitudinal change in comparison to healthy individuals. *Subst Abuse Treat Prev Policy.* 2009;4:6.

## Impact of Buprenorphine Inquiries and Treatment on an Urban Community Health Center

Although the number of persons receiving buprenorphine treatment is increasing, treatment availability lags behind need. This may be due, in part, to practitioners' concern regarding their ability to provide access to large volumes of patients. An additional concern for community health centers may be that patients will come from unusually great distances, possibly disturbing their community-oriented milieu. In an observational study conducted from 2006–2008, researchers recorded all patient inquiries about, as well as all initiations of, buprenorphine treatment at a community health center in the Bronx, NY. The health center, its 6 participating physicians, and 1 participating pharmacist conducted community outreach during the study period to generate referrals.

- Of the 324 persons who made inquiries about buprenorphine treatment, 180 (56%) initiated treatment. This proportion did not change significantly over time.
- Eighty percent of persons making inquiries resided within 3 miles of the health center.
- Common referral sources included community-based organizations (32%), the community health

center and its affiliated medical center (21%), the media, i.e., internet, print, and telephone hotlines (21%), family or friends (13%), drug treatment programs (8%), and other health-care facilities (4%).

*Comments:* These data suggest that the volume of inquiries and new initiations of buprenorphine treatment in an urban community health center are manageable both for the center and its participating physicians. Such data may allay concerns of similar sites that they will be unable to provide access to the volume of new patients if they offer buprenorphine treatment. These findings are limited, however, by the lack of data comparing the characteristics of inquirers and initiators, by the lack of comparison of the clinic population as a whole to the subset receiving buprenorphine treatment, and by the lack of data indicating what proportion of the total clinic volume the 180 new patients receiving buprenorphine represented.

Marc N. Gourevitch, MD, MPH

*Reference:* Cunningham CO, Giovanniello A, Sacajiu G, et al. Inquiries about and initiation of buprenorphine treatment in an inner-city clinic. *Subst Abuse.* 2009;30(3):261–262.

## Improving Entry into Post-detoxification Treatment

Although inpatient detoxification for substance use disorders improves outcomes in the short term, long-term outcomes are poor. A substantial minority of patients don't complete detoxification, and those that do rarely enroll in post-detoxification treatment. This study describes outcomes for the Intensive Treatment Unit (ITU), a brief inpatient detoxification program that includes linking patients with treatment. Staffed by an attending psychiatrist and a team of nurses, length of stay ranges from 3–4 days and includes pharmacotherapy and group therapy run by the nursing staff. Most patients are admitted for heroin, cocaine, or alcohol detoxification. Strategies to increase attendance in aftercare programs include involving the patients in their own discharge planning, escort to post-detoxification programs for the initial visit, and provision of transportation. Follow-up of 134 ITU patients was conducted at 1 month. Seventy-eight percent of patients were male, 73% were African American, 95% were unemployed, and 61% were homeless.

- Of the 123 patients discharged with a post-detoxification treatment plan, 83% entered treatment. Successful entry was more likely with long-term residential facilities (99%) and recovery houses (96%) compared with outpatient programs (55%).

*Comments:* The brief inpatient detoxification program described in this study demonstrated a high rate of aftercare enrollment. Interpretation of these results is limited by the study's descriptive nature and lack of a comparison group. Also, the findings may apply uniquely to a low socioeconomic status group in an inpatient unit. Despite these limitations, the study suggests that linkage to treatment can be achieved after detoxification, even in a challenging population.

Jeanette M. Tetrault, MD

*Reference:* Carroll CP, Triplett PT, Mondimore FM. The Intensive Treatment Unit: A brief inpatient detoxification facility demonstrating good postdetoxification treatment entry. *J Subst Abuse Treat.* 2009;37(2):111–119.

## Injectable Risperidone for the Treatment of Methamphetamine Dependence

Methamphetamine (MA) abuse affects 25 million people in the United States. No pharmacologic options currently exist to treat MA abuse, and behavioral interventions tend to have high rates of relapse. This open label trial sought to determine the effectiveness of long-acting injectable risperidone on MA use in patients meeting criteria for MA dependence (N=34). Those subjects who tolerated an initial 7-day trial of oral risperidone (n=22) were then started on injectable risperidone (25 mg every other week for 8 weeks). Subjects were assessed weekly during the trial and at 12 weeks after study completion. Each received at least 1 injection. The majority of participants were male (86%) and white (86%). Mean period of methamphetamine use among subjects was 12.2 years ( $\pm 8.6$  years).

- Mean MA use per week decreased from 4.1 to 1.0 days ( $p < 0.001$ ). No adverse events were reported.
- In the subgroup of patients in whom craving was assessed (n=15), visual analog scale of craving measures

decreased significantly between baseline and study completion.

- Verbal memory scores improved at week 4, but the improvement was not maintained at week 8. No other differences in neurocognitive test scores were found.

*Comments:* Although methamphetamine use decreased in participants who received injectable risperidone, this study is limited by its small sample size, high rate of attrition, and open label design. Roughly 25 percent of patients did not tolerate oral risperidone and thus did not receive the injectable form, and only 17% of patients completed the 12-week follow-up. As such, results should be interpreted with caution.

Jeanette M. Tetrault, MD

*Reference:* Meredith CW, Jaffe C, Cherrier M, et al. Open Trial of Injectable Risperidone for Methamphetamine Dependence. *J Addict Med.* 2009;3(2):55–65.

## HEALTH OUTCOMES

### AUDIT-C Scores Greater than 7 Predict Fracture Risk

In this study, researchers surveyed US Veterans Administration (VA) patients by mail to determine whether their score on the AUDIT-C\* was associated with subsequent fractures. Responses (N=32,622) ranged from 0–4 on each of the 3 AUDIT-C questions and were grouped in the following

ranges: 0, 1–3, 4–5, 6–7, 8–9, and >9. Fracture data were abstracted from VA and Medicare records. Analyses of osteoporotic (i.e., hip, rib, wrist, vertebrae) versus non-osteoporotic fractures were also conducted. The majority of respondents was male (96%) and white (76%).

\*Alcohol Use Disorders Identification Test—Consumption.

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## AUDIT-C Scores and Risk of Fractures (continued from page 4)

- After adjusting for age, education, race, and comorbidities (including smoking status), participants with AUDIT-C scores of 8–9 and >9 had a greater fracture risk (adjusted hazard ratio [HR], 1.37 and 1.79, respectively) than participants with scores of 1–3.
- Participants with AUDIT-C scores >9 had an increased risk of osteoporotic fracture compared with participants with scores of 1–3 (HR, 2.34).
- Participants with AUDIT-C scores of 6–7, 8–9, and >9 had an increased risk of nonosteoporotic fractures compared with participants with scores of 1–3 (HR, 1.42, 1.52, and 1.52, respectively).

*Comments:* Validated and efficient screening tools are needed for primary care physicians to assess risk for and counsel patients about alcohol use sequelae. This new evidence of an association between AUDIT-C score and osteoporotic and other fractures provides additional support for the routine integration of alcohol screening into primary care. These findings warrant replication in face-to-face screening among a diverse primary care population.

Hillary Kunins, MD, MPH, MS

*Reference:* Harris AH, Bryson CL, Sun H, et al. Alcohol screening scores predict risk of subsequent fractures. *Subst Use Misuse*. 2009;44(8):1055–1069.

## Does Heavy Alcohol Use Increase Risk of Prostate Cancer?

To assess the effect of alcohol use on prostate cancer risk, researchers analyzed data from 10,920 men participating in the Prostate Cancer Prevention Trial. Participants age 55 years or older and without prostate cancer were randomized to receive either finasteride or placebo and followed for 7 years. Baseline questionnaire data on quantity, frequency, and type of alcohol consumed were used to calculate average grams of ethanol per day. At baseline, 79% of subjects reported no drinking, 12% reported consumption of 0.1–14.9 g alcohol per day, 6% reported consumption of 15–49.9 g per day, and 2.4% reported consumption of ≥50 g per day.

- Prostate cancer was diagnosed in 2129 men (19.5%) during follow-up. Of these, 67% had low-grade cancer (Gleason score, 2–6), 26.5% had high-grade cancer (Gleason score, 7–10), and 6.5% had cancer of unknown grade.
- Compared with no alcohol use, heavy use (≥50 g per day) was associated with a significantly increased risk of total, low-grade, and high-grade prostate cancer in the finasteride group (relative risk [RR]=1.89, 2.01,

and 2.15, respectively) and with a nonsignificant increased risk of high-grade cancer in the placebo group (RR=1.67). Lower levels of alcohol use were not associated with increased prostate cancer risk.

- Heavy beer and wine use were associated with increased prostate cancer risk, but liquor was not.

*Comments:* This interesting study suggests that heavy alcohol use may increase prostate cancer risk and may also prevent a beneficial effect of finasteride on that risk. It should be noted that the threshold for increased risk in this study (50 g per day) is equal to about 4 standard drinks per day and, therefore, well above published hazardous drinking thresholds for men. Still, these results may be useful to clinicians when counseling their patients about lower-risk alcohol use and/or prostate cancer prevention.

Kevin L. Kraemer, MD, MSc

*Reference:* Gong Z, Kristal AR, Schenk JM, et al. Alcohol consumption, finasteride, and prostate cancer risk. *Cancer*. 2009;115(16):3661–3669.

## Alcohol Consumption Limits Associated with Alcohol Problems in Older Adults

Guidelines from the National Institute on Alcohol Abuse and Alcoholism recommend no more than 4 alcoholic drinks in a day or 14 drinks per week for men under age 65 and no more than 3 drinks in a day or 7 drinks per week for women and persons over age 65. This community-based cohort study examined the association between drinking and alcohol problems\* among 719 adult drinkers aged 55 to 65 years at baseline and followed for 20 years.

- Sixty-five percent of men and 49% of women con-

sumed ≥2 drinks per day or ≥7 drinks per week at baseline. Twenty years later, these proportions declined to 49% of men and 27% of women. Of these, 22% of men and 8% of women experienced drinking problems.

- At baseline,
  - at a cut-off point of ≥2 drinks per day or ≥7 drinks per week, 34% of men and 21% of women had drinking problems; below those limits, 4% of men and 2% of women had drinking problems.

\*Meeting 2 or more DSM-IV criteria for alcohol abuse.

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## Consumption Limits and Alcohol Problems in Older Adults (continued from page 5)

- at a cut-off point of  $\geq 3$  drinks per day or  $\geq 14$  drinks per week, 41% of men and 27% of women had drinking problems; below those limits, 6% of men and women had drinking problems.
- At 20-year follow-up,
  - at a cut-off point of  $\geq 2$  drinks per day or  $\geq 7$  drinks per week, 22% of men and 8% of women had drinking problems; below those limits, only 2% of men and no women had drinking problems.
  - at a cut-off point of  $\geq 3$  drinks per day or  $\geq 14$  drinks per week, 70% of men and 15% of women had drinking problems; below those limits, only 3% of men and 1% of women had drinking problems.

*Comments:* A substantial proportion of older adults drink above recommended limits. These findings suggest that older adults drinking below conservative drinking limits (no more than 2 drinks in a day or 7 drinks per week) are unlikely to have alcohol problems, but that drinking above those limits is only modestly predictive of alcohol problems. Clinicians should routinely assess for drinking-related consequences among the substantial proportion of older adults who consume above these limits.

Peter D. Friedmann, MD, MPH

*Reference:* Moos RH, Schutte KK, Brennan PL, et al. Older adults' alcohol consumption and late-life drinking problems: a 20-year perspective. *Addiction*. 2009;104(8):1293–1302.

## Greater Alcohol Intake Increases the Risk for Hypertension, but Perhaps Not for Consumers of Red Wine

This prospective study among university graduates in Spain sought to assess whether an association exists between alcohol consumption (including beverage preference), days of consumption per week, and the risk of hypertension. Investigators followed 9963 men and women who did not have hypertension at baseline. Self-reported and validated data on diet and hypertension diagnoses were collected during a median (interquartile range) follow-up period of 4.2 (2.5–6.1) years. Five hundred fifty-four incident cases of hypertension were identified over a total of 43,562 person-years.

- The hazard ratio (HR) for hypertension was 1.28 among subjects who consumed alcohol  $\geq 5$  days per week compared with abstainers (95% confidence interval [CI], 0.97–1.7). Of these, those averaging  $\geq 1$  drink per day\* had an HR of 1.45 compared with abstainers (95% CI, 1.06–2.00).
- The increased risk for hypertension was seen in beer or spirits drinkers only. Those consuming  $>0.5$  drinks of beer or spirits per day (average consumption in this category, 16 g per day) was 1.53 compared with ab-

stainers (95% CI, 1.18–1.99). In contrast, there was a nonsignificant inverse association between red wine intake and the risk of hypertension.

*Comments:* Previous studies have shown that increasing alcohol consumption is associated with an increased risk for hypertension. In this study of a Mediterranean population, only consumption of beer or spirits, not wine, increased this risk. However, the authors did not adjust for baseline blood pressure (the strongest factor in predicting future hypertension), nor can a "threshold" level of drinking associated with increased hypertension risk be ascertained from the data presented. Although few of the findings were statistically significant, the results are consistent with other research: higher levels of alcohol intake increase blood pressure, but such an increase may not be present for consumers of red wine.

R. Curtis Ellison, MD

*Reference:* Núñez-Córdoba JM, Martínez-González MA, Bes-Rastrollo M, et al. Alcohol consumption and the incidence of hypertension in a Mediterranean cohort: the SUN study. *Rev Esp Cardiol*. 2009;62(6):633–641.

\*Standard drink = 13.7 g of alcohol in this study.

## Moderate Alcohol Intake Is Associated with Better Endothelial Function

Endothelial dysfunction, often assessed as flow-mediated dilation (FMD) of the brachial artery, contributes to atherosclerosis and cardiovascular disease (CVD). Investigators in the population-based Northern Manhattan Study performed a cross-sectional analysis of lifetime alcohol intake and its association with FMD using high-resolution B-mode ultrasound images among 884 stroke-free participants. Mean age of subjects was 66.8 years; 57% were women, 67% were Hispanic, 17% were black, and 15% were white.

- Mean brachial FMD was 5.7% with a median of 5.5%.
  - Compared with nondrinkers, those defined as moderate drinkers ( $>1$  drink per month to 2 drinks per day) had higher values for FMD. In multivariable analyses adjusting for CVD risk factors including sex, race-ethnicity, body mass index, diabetes mellitus, coronary artery disease, Framingham risk score, and medication use, there was a positive relationship between moder-
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## Moderate Alcohol Intake Improves Endothelial Function (continued from page 6)

ate alcohol consumption and FMD above the median value (adjusted odds ratio, 1.8).

- No beneficial effect on FMD was seen for those who drank >2 drinks per day.

*Comments:* Indirect measurement of endothelial function is a very useful technique for assessing risk of CVD. In this large cross-sectional analysis, alcohol intake of up to 2 drinks per day, versus not drinking, was associated with

better indices of endothelial function. These findings may point to an important mechanism by which moderate drinking lowers the risk of CVD.

R. Curtis Ellison, MD

*Reference:* Suzuki K, Elkind MS, Boden-Albala B, et al. Moderate alcohol consumption is associated with better endothelial function: a cross sectional study. *BMC Cardiovasc Disord.* 2009;9:8.

## More than Half of All Deaths in Russia among People Aged 15–54 Years Are Attributable to Alcohol

Both mortality rates and overall alcohol consumption have fluctuated sharply in Russia over the past 2 decades. In this case-control study, researchers analyzed death records of 48,557 men and women from 3 Russian cities who died between 1990–2001 to determine the effect of alcohol consumption on cause-specific mortality. Family members provided information on each subject's alcohol consumption. Drinking categories were defined as <250 ml vodka per week, 250 to <500 ml per week, 500 ml to <1500 ml per week, and ≥1500 ml per week. Cases were defined a priori as those subjects who died from causes substantially related to alcohol or tobacco use. Controls were those who died from other causes.

- Alcohol was associated with 52% of deaths at ages 15–54 and 18% of deaths at ages 55–74.
- Compared with men who drank <250 ml of vodka or its equivalent per week, the relative risks (RRs)\* of death in men who drank ≥1500 ml per week were as follows:
  - accidents, 5.9;
  - alcohol poisoning, 21.7;
  - acute ischemic heart disease other than myocardial infarction, 3.0;
  - upper aerodigestive tract cancer, 3.5;
  - liver cancer, 2.1;
  - tuberculosis, 4.1;

\*Only RRs >2 are reported here.

- pneumonia, 3.3;
- liver disease, 6.2;
- pancreatic disease, 6.7; and
- ill-specified conditions, 7.7.

- Trends in risks were significant for these causes across drinking categories.
- Except for liver cancer, relative risks were even higher among women, with significant trends for all these causes except upper aerodigestive tract and liver cancer.
- These causes were the main source of recent fluctuations in overall mortality in Russia.

*Comments:* Assuming a causal relationship and generalizability of these results, this study demonstrates how damaging alcohol can be in a heavy-drinking population, notably for young adults and by increasing the risk of violent death. Although researchers applied adequate methodology (i.e., blinding families to the study objectives and embedding questions about the subjects within questions about other family members), differential bias in exposure classification could be present. Nevertheless, these results indicate a large association between alcohol and mortality in Russia.

Nicolas Bertholet, MD, MPH

*Reference:* Zaridze D, Brennan P, Boreham J, et al. Alcohol and cause-specific mortality in Russia: a retrospective case-control study of 48,557 adult deaths. *Lancet.* 2009;373(9682):2201–2214.

## Action toward Change Predicts Reduced Alcohol Consumption among Unhealthy Drinkers, but Recognition of the Problem Does Not

Counseling patients regarding substance use includes an assessment of their readiness to change, which involves both recognition of the problem and either taking action or making a commitment to change. In this prospective cohort study, the authors analyzed data from 267 hospitalized patients with unhealthy drinking recruited for a randomized controlled trial of a brief intervention to determine

the association between readiness to change and subsequent alcohol use. Seventy-eight percent of subjects met criteria for alcohol dependence. Readiness to change was measured by 3 methods: visual analog scale (VAS) and Perception of Problem (PP) and Taking Action (TA) scores from the Stages of Change Readiness and Treatment Eager (continued on page 8)

**Action toward Change and Alcohol Consumption** (continued from page 7)

ness Scale (SOCRATES). The primary outcome, assessed at 3 months, was average number of drinks per day in the past 30 days. Multivariable analysis was used to adjust for other factors.

- Those in the highest tertile of VAS-measured readiness drank significantly less than those in the lowest tertile.
- Those with PP scores in the 3rd quartile drank significantly more than those in the lowest quartile. Patients in the second and highest quartiles also drank more, but the difference was not significant.
- Those with TA scores in the highest quartile drank significantly less than those in the lowest quartile.

*Comments:* This study shows that readiness to change (in particular, taking

action) is associated with improved outcomes among unhealthy drinkers, while recognition of the problem is associated with poorer outcomes and likely reflects the severity of the problem. Although the study included all patients with unhealthy drinking, the majority were alcohol dependent; thus, the results may not be applicable to nondependent unhealthy drinkers. These findings suggest that, when counseling patients, clinicians should focus on their commitment to making concrete behavioral changes rather than their perception of the problem.

Darius A. Rastegar, MD

*Reference:* Bertholet N, Cheng DM, Palfai TP, et al. Does readiness to change predict subsequent alcohol consumption in medical inpatients with unhealthy alcohol use? *Addict Behav.* 2009;34(8):636–640.

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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  
Annals of Internal Medicine  
Archives of General Psychiatry  
Archives of Internal Medicine  
British Medical Journal  
Drug & Alcohol Dependence  
Epidemiology  
European Addiction Research  
European Journal of Public Health  
European Psychiatry  
Journal of Addiction Medicine  
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](http://www.aodhealth.org)).

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