Alcohol, Other Drugs, and Health: Current Evidence

MARCH–APRIL 2009

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Interventions & Assessments

Brief Intervention in the Hospital May Reduce Prescription Drug Misuse

Although psychoactive prescription drug (PD) misuse in the general population has garnered more publicity, problematic use among hospitalized patients is more prevalent. German investigators randomized 126 inpatients with PD abuse or dependence (per DSM-IV criteria) or PD use on more than 60 days in the previous 3 months to receive either a booklet on health behavior (control) or a brief intervention (BI). The BI consisted of 2 counseling sessions based on principles of motivational interviewing and individualized written feedback conducted by psychologists with expertise in clinical treatment and research. Of the sample, 62% were women, the mean age was 55 years, and more than 56% misused opioids. At 3-month follow-up,

- 52% of subjects in the BI group had a clinically significant reduction (25% or more from baseline) in daily PD dosage compared with 30% in the control group ($p<0.02$).
- BI subjects tended toward greater reductions in PD use from baseline than controls (0.42 versus 0.12, respectively; $p=0.08$).
- BI subjects tended to discontinue PD use more than controls (18% versus 9%, respectively; $p=0.17$).

Comments: This study contributes to the scant literature on BI for drug-related disorders. BI among hospitalized patients might reduce PD misuse downstream, but the inclusion of patients who might have appropriately needed daily PD treatment raises concerns about whether BI might have lead to undertreatment of pain and anxiety disorders. Furthermore, this study used well-trained study staff who counseled patients for 30-45 minutes in the hospital and followed-up 4 weeks later with a telephone call. Current funding mechanisms provide limited incentive for hospitals to hire staff for this purpose. It remains unclear whether regular hospital personnel preoccupied with multiple clinical responsibilities for sick inpatients could realize similar results.

Peter D. Friedmann, MD, MPH

Reference: Zahradnik A, Otto C, Crackau B, et al. Randomized controlled trial of a brief intervention for problematic prescription drug use in non-treatment-seeking patients. *Addiction.* 2009;104(1): 109–117.

QT_c Screening When Prescribing Methadone: A Practice Guideline

Methadone reduces morbidity and mortality for patients with opioid dependence, and few similarly efficacious alternative treatments (such as buprenorphine for some patients) are available. Methadone prescriptions from physicians for the treatment of pain are also on the rise. But, in rare cases, methadone may prolong the rate-corrected QT interval (QT_c) and result in torsade de pointes. Due to the recent addition of a black box warning to the label and lack of awareness of the association between methadone and prolonged QT_c among prescribers, an independent expert panel was convened by the federal Center for Substance Abuse Treatment to synthesize evidence and formulate practice

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QT_c Screening When Prescribing Methadone (continued from page 1)

guidelines regarding QT_c screening.

- Data from at least 26 case series, prospective cohort studies, and clinical trials suggest methadone causes prolongation of the QT_c and can result in torsade de pointes. These adverse effects occur after administration of methadone, improve with discontinuation, and reappear upon readministration.
- The effect appears to be more common at higher doses (e.g. >100 mg per day) but can be seen at much lower doses.
- About 2% of patients taking methadone for opioid dependence can be expected to have a prolonged QT_c. The incidence of torsades de pointes is not known.
- The panel recommended that clinicians treating patients with methadone should:
  - inform patients of arrhythmia risk;
  - ask about structural heart disease, arrhythmia, and syncope;
  - measure pretreatment QT_c and conduct repeat measures at 30 days and annually while patients are receiving methadone or more often if the dose is >100 mg a day (or if they have unexplained syncope or seizures);
  - discuss the risks and benefits and increase monitoring if the QT_c interval is >450 ms but <500 ms;
  - consider discontinuation, dose reduction, or elimination of concomitant arrhythmia risks (e.g., medications that cause hypokalemia) if the QT_c interval exceeds 500 ms; and
  - be aware of other medications that could prolong the QT_c or slow elimination of methadone.
- The panel also noted that the guideline may not apply to patients with terminal, intractable cancer pain.

Comments: This guideline recommends important possible changes in the clinical care of patients being treated with methadone. However, as an editorialist points out, the evidence upon which the guideline is based is sparse and limited to methadone risks, with no mention of the benefits or risks of not using methadone. The evidence does not seem to point to a clear course of action, and as such, a practice guideline was likely premature. It also presents challenges for implementation, since addiction treatment and other healthcare are often delivered in separate settings without easy record sharing (to review medication lists, for example). The risk addressed by this guideline is just one of many reasons why addiction treatment must be integrated with other medical care to assure patient safety and high quality care.

Richard Saitz MD, MPH

References: Krantz MJ, Martin J, Stimmel B, et al. QTc interval screening in methadone treatment. *Ann Intern Med.* 2009; 150(6):387–395.

Gourevitch M. First Do No Harm ... Reduction? *Ann Intern Med.* 2009;150(6): 417–418.

Screening, Brief Intervention, and Referral to Treatment: Evaluation of a National Implementation

Evidence has been lacking to support routine screening, brief intervention, and referral to treatment (SBIRT) for illicit drug use in medical practice. The authors of this study sought to evaluate the impact of the Center for Substance Abuse Treatment's 2003 implementation of large-scale SBIRT initiatives in 6 states. Settings were diverse and included trauma centers, emergency departments, primary and specialty care sites, and hospitals. All patients (N=459,599) were

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SBIRT for Illicit Drug Use (continued from page 2)

screened for substance use, 23% of whom screened positive for risky or problematic alcohol or drug use in the prior 30 days. Of these, 52% reported using alcohol, and 55% reported using illicit drugs (categories were not mutually exclusive). Based on the severity of their disorder, 70% of patients who screened positive were recommended for brief intervention (BI), 14% were recommended for brief treatment (BT), and 16% received a referral to specialty treatment (RT). Protocols for each treatment varied across sites. Ten percent of patients who screened positive were randomly selected for reassessment 6 months later.

- Self-reported rates of heavy alcohol use and illicit drug use had decreased by 39% and 68%, respectively.
- Self-reported rates of overall and mental health, employment, housing status, and criminality among persons receiving BT or RT improved significantly.

Comments: These data provide clear evidence of the feasibility of implementing federally funded SBIRT programs across diverse settings and patient populations. Although the decreases observed across all substances are striking, it is unclear to what extent self-reported improvements reflected true changes in patterns of use rather than participants' desire to give the perceived correct answer at follow up. It is also unclear whether the improvements can be attributed to the SBIRT process itself. Because only those participants who screened positive were selected for follow-up, possible increases in drug use among persons not using at baseline were not detected. These findings suggest randomized controlled trials of SBIRT for illicit drug use are needed to further test the efficacy of this promising intervention.

Marc N. Gourevitch, MD, MPH

Reference: Madras BK, Compton WM, Avula D, et al. Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: comparison at intake and 6 months later. *Drug Alcohol Depend.* 2009;99(1–3):280–295.

Can Prazosin Be Used to Treat Alcohol Dependence?

Prazosin, an alpha-1 adrenergic antagonist, may reduce central nervous system adrenergic activity and disrupt alcohol reinforcement and relapse. To assess the potential of prazosin to treat alcohol dependence, researchers randomized 24 persons with alcohol dependence (mean age, 45 years; 79% male, 83% white) to prazosin (target dose, 4 mg in the morning and evening and 8 mg at bedtime) or placebo. Over the 6-week study period, participants attended 5 medical management sessions* and carried a text pager that reminded them 3 times each day to take medications and once each day to call a telephone system for alcohol self-report.

- Among the 24 participants, there was no difference between prazosin and placebo in change from baseline to 6 weeks for drinking days per week and mean drinks per week.
- Among the 20 participants who completed the study, those in the prazosin group reported fewer drinking days per week than the placebo group (3.2 days versus 5.6 days) over the last 3 weeks of the study, but there was no difference between groups in mean drinks per week.
- Among men who completed the study (n=17), those in the prazosin group reported fewer drinking days per week (0.9 days versus 5.7 days) and mean drinks per week (2.6 drinks versus 20.8 drinks) than the placebo group over the last 3 weeks of the study.
- Craving and craving resistance did not differ between the 2 groups.

*Initial session was 30–45 minutes; subsequent sessions were 10 minutes each.

Comments: This small pilot study suggests prazosin may have potential for treating alcohol dependence. The researchers believe the restriction of benefit to the last 3 weeks of the 6-week study was because prazosin was not titrated to full dose until the end of week 2. Larger studies will be needed to fully assess the efficacy of prazosin for treating alcohol dependence.

Kevin L. Kraemer, MD, MSc

Reference: Simpson TL, Saxon AJ, Meredith CW, et al. A pilot trial of the alpha-1 adrenergic antagonist, prazosin, for alcohol dependence. *Alcohol Clin Exp Res.* 2008;32(11):1–9.

Treating Methamphetamine Dependence Reduces Risk for HIV

The use of methamphetamines is associated with injection drug use, increased sexual activity, unprotected sex, and HIV transmission. Behavioral treatments may be effective in reducing methamphetamine use and decreasing HIV risk behaviors among those using illicit drugs. The current study was conducted in 787 methamphetamine-dependent individuals who received 1 of 2 counseling strategies (either 16 weeks of a standardized psychosocial protocol or 8–16 weeks of treatment-as-usual representing 8 diverse treatment approaches). Both approaches focused on drug use, not HIV risk.

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Treating Methamphetamine Dependence Reduces Risk for HIV (continued from page 3)

- The proportion of the sample who injected methamphetamine within the previous 30 days significantly declined from baseline to treatment discharge (14.6% to 5.4%).
- High-risk sexual activity also decreased from baseline to treatment discharge:
  - mean times participants reported having sex without a condom, 14.7 versus 13.2;
  - mean times participants reported having sex without a condom with an injection drug user, 2.3 versus 1.4;
  - mean times participants reported having sex without a condom with a methamphetamine user, 6.5 versus 1.4;
  - mean times participants reported having sex while high, 9.1 versus 4.9.
- There were significant associations between treatment retention and HIV risk outcomes.

Comments: This study demonstrates the benefit of psychosocial counseling for patients with methamphetamine dependence. Treatment was associated with decreased methamphetamine use and decreased risk for HIV infection. The association between treatment retention and reduced HIV risk outcomes supports the implementation of programs that reduce barriers for treatment entry and retention.

David A. Fiellin, MD

Reference: Rawson RA, Gonzales R, Pearce V, et al. Methamphetamine dependence and human immunodeficiency virus risk behavior. *J Subst Abuse Treat.* 2008;35(3): 279–284.

Brief Family Treatment in Primary Care Might Lessen the Burden of Having an Addicted Relative

Addiction adversely affects family members, but it is unknown whether primary care interventions can ameliorate this burden. Investigators in England recruited primary healthcare professionals (PHCPs) from 136 primary care practices cluster-randomized to provide either brief intervention (a self-help manual with an introduction session) or full intervention (a self-help manual and up to 5 face-to-face manual-guided counseling sessions delivered by a PHCP) to 143 family members affected by a relative's alcohol or drug problem. The self-help manual, developed from the counseling manual, helped family members identify sources of stress, enhance coping skills, and increase social support. Participants had perceived their relative to have a substance-use problem for an average of 8.8 years. Eighty-six percent were women (mean age, 45), and few had sought help. The substance-using relative was a husband or male partner for 42% of participants and a child for 36%, with alcohol as the main substance of abuse for 59% and drugs for 36%.

- At 12-week follow-up, family members in both study arms showed significant reductions in stress and improvements in coping skills, with no differences detected between the groups.

Comments: Addiction is a family disorder, and the impact on the well-being of family members should be a concern for primary care clinicians. This study suggests that, when delivered by primary care staff, a brief self-help intervention may help family members as well as a more intensive one. Clearly, brief family treatment in primary care settings merits further study to determine whether delivery from a primary care provider could supplement or replace therapy by a well-trained family or marital therapist.

Peter D. Friedmann, MD, MPH

Reference: Copello A, Templeton L, Orford J, et al. The relative efficacy of two levels of a primary care intervention for family members affected by the addiction problem of a close relative: a randomized trial. *Addiction.* 2009;104(1):49–58.

Is the 3-Item AUDIT-C as Accurate as the Full 10-Item AUDIT in Detecting Unhealthy Alcohol Use?

Although the 10-item Alcohol Use Disorders Identification Test (AUDIT) and its first 3 items, the AUDIT-C (for "consumption"), are recommended screening tests for unhealthy alcohol use, their comparative accuracy is not clear. To address this question, researchers conducted a meta-analysis of published studies that directly compared the AUDIT with the AUDIT-C. Fourteen studies were selected by independent reviewers according to defined inclusion and quality criteria.

- Overall accuracy of the AUDIT and AUDIT-C did not differ in detecting risky drinking,* alcohol use disorders,** and unhealthy alcohol use† among primary care patients.
- Pooled estimates of the positive likelihood ratio (how many times more likely the condition is in someone with a positive versus a negative result) were higher

*defined as alcohol consumption above a recommended level or heavy episodic drinking in the past 12 months.
**defined as harmful drinking, alcohol abuse, or alcohol dependence.
†defined as risky drinking or any alcohol use disorder.

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Accuracy of the AUDIT Compared with the AUDIT-C (continued from page 4)

for the AUDIT than for the AUDIT-C for risky drinking (6.6 versus 3.0), alcohol use disorders (4.0 versus 3.8), and unhealthy alcohol use (4.8 versus 3.9).

- Positive predictive values (the chance someone with a positive test has the condition) for risky drinking over a prevalence range of 5–50% were higher for the AUDIT than for the AUDIT-C. But, both positive and negative predictive values (the chance someone with a negative test doesn't have the condition) for alcohol use disorders and unhealthy alcohol use were similar for the 2 instruments over the same prevalence range.
- Results did not vary by age and gender.

Comments: This well-done meta-analysis indicates the AUDIT and AUDIT-C have similar overall accuracy for detecting unhealthy alcohol use. Interestingly, the area where the AUDIT seemed to have a small advantage was in detecting risky drinking, which is dependent on the 3 consumption questions common to both instruments. Clinicians should be encouraged to use whichever of the 2 instruments they can practically and consistently integrate into their clinical practice. The AUDIT-C has the advantage of being short and potentially cost-saving. The AUDIT has the advantage of inclusion of items on alcohol adverse consequences that can be used as a starting point for further assessment and counseling.

Kevin L. Kraemer, MD, MSc

Reference: Kriston L, Hölzel L, Weiser AK, et al. Meta-analysis: are 3 questions enough to detect unhealthy alcohol use? *Ann Intern Med.* 2008;149(12):879–888.

HEALTH OUTCOMES

Risk of Atrial Fibrillation Rises in Women Consuming 2 or More Drinks per Day

Despite consistent results from studies among men, studies assessing the effect of regular alcohol consumption on the risk of atrial fibrillation among women have provided inconsistent results. Investigators analyzed data from 34,715 women participating in the Women's Health Study to assess the effects of regular alcohol consumption on the risk of atrial fibrillation. Participants were ≥45 years old and had no atrial fibrillation at baseline. Alcohol consumption was assessed via questionnaire at the beginning of the study and at 48 months. Atrial fibrillation was self-reported on yearly questionnaires and subsequently confirmed by medical record review.

- During a median follow-up of 12.4 years, there were 653 new cases of atrial fibrillation:
  - 294 events (1.9 percent) among women consuming no alcohol (n=15,370);
  - 284 events (1.8 percent) among women consuming more than 0 but less than 1 drink per day (n=15,758);
  - 35 events (1.6 percent) among women consuming 1 or more but less than 2 drinks per day (n=2228); and
  - 40 events (2.9 percent) among women consuming 2 or more drinks per day (n=1359).
- The absolute-risk increase among women consuming 2 or more drinks per day was 0.66 events per 1000 person-years.
- After adjusting for age, systolic blood pressure, hypertension, body mass index, smoking, diabetes, hypercholesterolemia, exercise, race/ethnicity, and education, consuming at least 2 alcoholic beverages per day remained significantly associated with increased risk of atrial fibrillation (hazard ratio, 1.60).

Comments: These results demonstrate that alcohol consumption of less than 2 drinks per day is not associated with an increased risk of incident atrial fibrillation among middle-aged women. The results also suggest a threshold effect at about 2 drinks per day.

Julia H. Arnsten, MD

Reference: Conen D, Tedrow UB, Cook NR, et al. Alcohol consumption and risk of incident atrial fibrillation in women. *JAMA.* 2008;300(21):2489–2496.

Moderate Drinkers Are at Lower Risk of Rheumatoid Arthritis

The goal of this study was to determine the association between risk of rheumatoid arthritis (RA) and alcohol consumption in combination with smoking and the HLA-DRB1 shared epitope (SE). Data from 2 independent case-control studies, the Swedish Epidemiological Investigation of Rheumatoid Arthritis (1204 cases and 871 controls) and the Danish Case-Control Study on Rheumatoid Arthritis (444 cases and 533 controls), were used to estimate odds ratios of developing RA based on the amount of alcohol consumed.

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Moderate Drinking and Rheumatoid Arthritis (continued from page 5)

- Alcohol consumption was dose-dependently associated with a reduced risk of RA. Among alcohol consumers, the quarter with the highest consumption (4.9 or more drinks* per week in one study and 12 or more drinks per week in the other) had a decreased risk of RA of 40–50% compared with the half with the lowest consumption.
- For the subset of RA characterized by the presence of antibodies to citrullinated peptide antigens, alcohol consumption reduced the risk most prominently in smokers carrying HLA-DRB1 SE alleles.

Comments: Although the main findings of this study suggest alcohol may protect against RA, some issues are worth commenting on. This was a cross-sectional analysis. The benefits attributed to alcohol were especially prevalent among people with RA who had relatively long disease duration, raising the possibility of reverse causality: i.e., patients developing RA may stop drinking after they get the disease; hence, they could be classified as "nondrinkers." Nevertheless, these results provide additional evidence that RA may occur less frequently among people who drink. It will be important to confirm these findings in prospective studies.

R. Curtis Ellison, MD

*1 drink = 16 g alcohol for both studies.

Reference: Källberg H, Jacobsen S, Bengtsson C, et al. Alcohol consumption is associated with decreased risk of rheumatoid arthritis: results from two Scandinavian case-control studies. *Ann Rheum Dis.* 2009;68(2):222–227.

Heavy Episodic Drinking, Not Average Alcohol Intake, Increases Risk of Stroke

To evaluate the effect of drinking patterns on stroke risk, researchers in Finland conducted a prospective cohort study of 15,965 men and women age 25 to 64 years who participated in a national risk factor survey. Participants had no history of stroke at baseline. The first stroke event during 10 years of follow-up served as the outcome of interest. Heavy episodic drinking was defined as consuming 6 or more drinks of the same alcoholic beverage in men or 4 or more drinks in women in one session. Cox proportional hazards models were adjusted for average alcohol consumption, age, sex, hypertension, smoking, diabetes, body mass index, educational status, study area, study year, and history of myocardial infarction.

- No relationship was seen between average alcohol intake and risk of total stroke (n=249) or ischemic stroke (n=179) during follow up.
- After adjusting for average alcohol consumption, age, and sex, the hazard ratio (HR) for total strokes among persons with heavy episodic drinking was 1.85 (95% CI, 1.35–2.54) compared with persons without heavy episodic drinking. The association was diluted after adjustment for other risk factors (HR, 1.39; 95% CI, 0.99–1.35).
- The HR for ischemic stroke was 1.99 (95% CI, 1.39–2.87) among persons with heavy episodic drinking compared with persons with no heavy episodic drinking. The association remained significant after adjusting for potential confounders (HR, 1.56; 95% CI, 1.06–2.31).
- Heavy episodic drinking had no effect on the risk of hemorrhagic stroke.

Comments: Despite having a large number of persons with heavy alcohol consumption in this study, results showed that average alcohol intake was not related to stroke risk over 10 years of follow-up. On the other hand, heavy episodic drinking was associated with a 40 to 60% higher relative risk of stroke in adjusted analyses compared with persons with no heavy episodic drinking. Only 70 participants experienced hemorrhagic stroke, which had no association with heavy episodic drinking. This analysis supports an increasingly common finding that pattern of drinking may be the most important determinant of health effects from alcohol consumption.

R. Curtis Ellison, MD

Reference: Sundell L, Salomaa V, Vartiainen E, et al. Increased stroke risk is related to a binge drinking habit. *Stroke.* 2008;39(12):3179–3184.

Substance Abuse Linked to Tuberculosis Transmission and Treatment Failure in the United States

Although tuberculosis (TB) prevalence is low in the United States, local outbreaks among people with substance abuse have been reported. Researchers from the Centers for Disease Control and Prevention analyzed records of all reported TB cases in the United States from 1997–2006 to assess the role of substance abuse in the transmission and treatment of TB.

- Of the 153,268 people with TB included in the analysis, 19% overall reported substance abuse (defined by self-reported excessive alcohol use, noninjection drug use, or injection drug use in the year before TB diagnosis). Of the 76,816 US-born TB cases, 29% reported substance abuse.

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Substance Abuse, Tuberculosis Transmission, and Treatment Failure (continued from page 6)

- Prevalence rates were higher for substance abuse than for other risk factors, including recent immigration to the United States, HIV infection, residing in a congregate setting, homelessness, or working at a high-risk occupation (e.g., healthcare, correctional-facility, or migrant worker).
- A TB-positive sputum smear was more common among people with substance abuse, both in persons with HIV infection (odds ratio [OR], 1.2) and without HIV infection (OR, 1.8).
- Treatment failure was more common among people with substance abuse, especially among women (OR, 2.4) but also among men (OR, 1.5).
- People with substance abuse were more likely to be in a county-level genotype cluster (defined as 2 or more patients from the same county with identical TB genotypes) (OR, 2.3).

Comments: Substance abuse is seen in a minority of people in the US with TB. However, people with substance abuse and TB are more likely to be contagious, more likely to fail treatment, and more likely to be involved in a local outbreak. These findings support TB control interventions that focus on people who abuse substances. It is not clear from this study which specific substance or what severity of substance use was most associated with TB transmission—treatment failure or local outbreak.

Alexander Y. Walley, MD, MSc

Reference: Oeltmann JE, Kammerer JS, Pevzner ES, et al. Tuberculosis and substance abuse in the United States, 1997–2006. *Arch Intern Med.* 2009;169(2):189–197.

Untreated Hepatitis C infection is Associated with Decreased Health-Related Quality of Life in Patients Receiving Methadone

The vast majority of patients entering methadone treatment for opioid dependence have hepatitis C virus (HCV) infection. Despite the effectiveness of HCV treatment with pegylated interferon and ribavirin, a minority of patients undergo this treatment. In addition to adverse health consequences (e.g., cirrhosis and hepatocellular cancer), HCV infection is associated with somatic complaints and decreased quality of life (QOL). Investigators sought to determine the impact of untreated HCV infection on health-related QOL among 100 patients receiving methadone maintenance. Primary findings were as follows:

- Health-related QOL scores among patients with untreated HCV infection receiving methadone were significantly lower than scores for the general population and were also lower than scores among patients with untreated HCV who were not receiving methadone.
- The severity of depression among patients was associated with health-related QOL.

Comments: There are a number of benefits of HCV treatment, including decreased risk for cirrhosis and hepatocellular carcinoma. The current study adds poor health-related QOL to the potential adverse impact of HCV infection on patients with opioid dependence receiving methadone. Studies that conduct serial assessments of health-related QOL in patients receiving methadone and HCV treatment are needed. In the meantime, physicians caring for patients receiving methadone should stress the potential improvements to health-related QOL and hepatic outcomes when discussing HCV treatment.

David A. Fiellin, MD

Reference: Batki SL, Canfield KM, Smyth E, et al. Health-related quality of life in methadone maintenance patients with untreated hepatitis C virus infection. *Drug Alcohol Depend.* 2009;101(3):176–182.

Risky Single-Occasion Drinking Appears to Be the Norm for Young Swiss Men

In Western countries, risky single occasion drinking (RSOD)* is an important risk factor for mortality and morbidity among teenagers and young adults. To determine the prevalence of RSOD among Swiss men in this age group, researchers conducted a survey of 19-year-old French-speaking men taking part in a 2-day medical assessment as part of Switzerland's mandatory army recruitment process.

Over 25 weeks, 4116 attended the medical assessment, and 3536 agreed to complete the survey. Past-year alcohol consumption among participants was as follows:

- 7.2% had abstained from alcohol.
- 17.2% reported lower risk drinking (neither RSOD nor weekly risky drinking**).

*consumption of 6 or more drinks per drinking occasion (in this study, 1 drink = 10 g alcohol; the US standard drink =14 g alcohol).

**consumption of >21 drinks per week (15 US standard drinks per week).

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Risky Single-Occasion Drinking in Young Men (continued from page 7)

- 63.4% reported at least 1 day with consumption of ≥10 drinks.
- 75.5% of those who drank alcohol reported RSOD at least once a month.
- 69.3% of the alcohol consumed among the entire sample was consumed during RSOD episodes, and 49.2% was consumed on drinking occasions including ≥10 drinks.
- Steady weekly drinking was infrequent: 17.1% reported drinking >3 days per week in the past year, and 27.6% reported drinking >3 days per week in the past week. Most drinking occurred on weekends (daily average weekend consumption = 7 drinks).

Comments: Risky single-occasion drinking is very common among 19-year-old men in Switzerland, where the legal purchasing age for alcohol is 18 for spirits and 16 for beer and wine. Most of the alcohol was consumed during weekend RSOD episodes, making this population especially at risk for negative consequences on these occasions. Clinicians should counsel young men on RSOD and its consequences.

Nicolas Bertholet, MD, MSc

Reference: Gmel G, Gaume J, Faouzi M, et al. Who drinks most of the total alcohol in young men—risky single occasion drinking as normative behaviour. *Alcohol Alcohol.* 2008;43(6):692–697.

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