

# Outpatient Management of Patients with Alcohol Problems

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This paper addresses the clinical presentation of patients with alcohol problems including screening, diagnosis, detoxification, treatment, referral, and longitudinal follow-up. The case-based discussion focuses on the clinical management of a patient whose hazardous drinking progresses to alcohol dependence and requires

coordinated care. Ways in which internists can aid patients with alcohol problems by screening, giving brief advice, and providing appropriate referrals when indicated are discussed.

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## CLINICAL PRESENTATION OF ALCOHOL PROBLEMS

*A 45-year-old secretary comes to see you as a new patient. She is concerned that she might have hypertension because her friend, a nurse, has been checking her blood pressure and has noted several elevated readings. She fills out a new-patient questionnaire and reports that she drinks two to three glasses of wine every day.*

### Could This Patient Have an Alcohol Problem?

It can be easy to miss patients with alcohol problems in clinical practice (1). However, early recognition of and intervention for alcohol problems can prevent or reduce long-term consequences of excessive consumption (2). Alcohol problems occur across a spectrum. The categories and definitions established by federal and international agencies are described in Table 1 (3–5). These criteria classify patients into diagnostic categories on the basis of the amount of alcohol that they consume per day or the alcohol-related social or physical consequences that they experience. For example, patients who regularly exceed the recommended limits for alcohol intake but do not meet criteria for alcohol abuse or dependence exhibit hazardous (5) or at-risk (3) drinking. In contrast, the criteria for alcohol abuse and dependence used by the *Diagnostic and Statistical Manual of Mental Disorders IV* (DSM-IV) (4) and the criteria for harmful drinking used by the World Health Organization are based on the effect of alcohol on social or physical functioning (4, 5).

Population-based estimates for hazardous drinking in the United States range from 4% to 5% among women and 14% to 18% among men (6, 7). Population-based surveys of current drinkers have found rates of 7% to 16% for alcohol abuse or dependence (8, 9). The prevalence of alcohol problems increases in primary care settings, and large screening studies report prevalence rates of 9% to

34% for hazardous drinking (10, 11), 2% to 8% for lifetime alcohol dependence (12–15), and 9% to 36% for a current or lifetime diagnosis of alcohol abuse or dependence (16–21).

### Is “Hazardous Drinking” Really Hazardous?

*The patient reports that she enjoys cooking and usually has a glass of wine while preparing her meal, one with dinner, and an occasional drink on nights when she needs something to help her sleep. She has heard that wine is good for your heart and hopes that it may help her if she does have hypertension.*

A large body of evidence (22–71) suggests that alcohol-related morbidity and mortality increase at doses below those considered diagnostic for alcohol abuse or dependence. Heavy drinking may progress to alcohol abuse and dependence and increase the risk for a variety of health outcomes, including cardiovascular events, stroke, breast cancer, and all-cause mortality events.

Although prospective studies have shown that moderate alcohol consumption (one to two drinks per day) is associated with reduced fatal and nonfatal coronary events in men (22–27) and women (25–31), these benefits are generally lost at higher doses. Heavy alcohol consumption may lead to adverse effects on blood pressure (32–37) and cardiac muscle function (40, 41) and may contribute to arrhythmia (38, 39, 42, 44). Consumption of more than two drinks per day increases the risk for hypertension in men (32–35) and women (34–37), and increased alcohol intake is associated with greater risk for new (42, 43) and recurrent atrial fibrillation (44), as well as fatal arrhythmia (38, 39). In addition, a dose-dependent relationship has been demonstrated between cumulative lifetime consump-

**Table 1. Categories and Definitions for Patterns of Alcohol Use\***

Category	Definition	Organization
Moderate drinking	Men, $\leq 2$ drinks/d Women, $\leq 1$ drink/d Persons $>65$ years of age, $\leq 1$ drink/d	NIAAA
At-risk drinking	Men, $>14$ drinks/wk or $>4$ drinks per occasion Women, $>7$ drinks/wk or $>3$ drinks per occasion	NIAAA
Hazardous drinking	At risk for adverse consequences from alcohol	WHO
Harmful drinking	Alcohol causing physical or psychological harm	WHO
Alcohol abuse	$\geq 1$ of the following events in a year: recurrent use resulting in failure to fulfill major role obligations, recurrent use in hazardous situations, recurrent alcohol-related legal problems (for example, citations for driving under the influence), continued use despite social or interpersonal problems caused or exacerbated by alcohol	APA
Alcohol dependence	$\geq 3$ of the following events in a year: tolerance; increased amounts to achieve effect; diminished effects from same amount; withdrawal; a great deal of time spent obtaining alcohol, using it, or recovering from its effects; important activities given up or reduced because of alcohol; drinking more or longer than intended; persistent desire or unsuccessful efforts to cut down or control alcohol use; continued use despite knowledge of a psychological problem caused or exacerbated by alcohol	APA

\* APA = American Psychiatric Association; NIAAA = National Institute on Alcohol Abuse and Alcoholism; WHO = World Health Organization.

tion of alcohol and increased risk for cardiomyopathy, particularly among women (40).

Consumption of at least three drinks per day is associated with greater risk for hemorrhagic stroke in men (45–48) and women (49). Greater alcohol consumption may also increase risk for ischemic stroke (45, 49, 50). Drinking pattern may modify the relationship between alcohol and stroke risk. For example, one study (51) found that men who reported drinking five or more drinks per occasion had an elevated risk for ischemic stroke (relative risk, 1.6 [95% CI, 1.1 to 2.5]) compared with nondrinkers.

Numerous studies have examined the relationship between alcohol consumption and breast cancer, and many (52–59) but not all (60–63) found that greater alcohol

consumption was associated with increased risk. In a pooled analysis of six studies (59), women consuming three to five drinks per day had an increased relative risk for breast cancer (1.41 [CI, 1.18 to 1.69]) compared with nondrinkers. The relative risk for breast cancer increased by 1.09 (CI, 1.04 to 1.13) for each 10 g/d increase (approximately one drink) in alcohol intake.

Several studies (22, 31, 64–69) have shown that consumption of at least three drinks per day increases risk for all-cause mortality among both men (64–68) and women (22, 31, 69); a U- or J-shaped association was found between alcohol consumption and all-cause mortality. However, these estimates fail to provide important information about cause-specific mortality and mortality rates from various types of cancer (31, 66, 68, 70), liver disease (22, 31, 69), and fatal injuries (31, 66, 70, 71), which increase substantially among persons with greater exposure to alcohol.

## SCREENING FOR ALCOHOL PROBLEMS

*The patient's review of systems is notable for occasional insomnia, and she often awakens at 2:00 a.m. for no reason. Her medical history is significant for allergic rhinitis. She denies problems with her gastrointestinal system or liver. She has no history of psychiatric diagnoses. She reports a 15 pack-year history of tobacco use but has been abstinent for the past 5 years. Her mother has diabetes mellitus, and her father has cirrhosis. On examination, her blood pressure is 145/90 mm Hg and her heart rate is 85 beats/min. Results on the remainder of the examinations, including her abdominal examination, are normal. Test results include normal findings for sodium, potassium, blood urea nitrogen, creatinine, glucose, hematocrit, mean corpuscular volume, aspartate aminotransferase, and alanine aminotransferase; her  $\gamma$ -glutamyltransferase level is 1.75  $\mu\text{kat/L}$  (normal range, 0.18 to 0.85  $\mu\text{kat/L}$ ).*

## What Are Effective Methods for Screening Patients for Alcohol Problems?

Formal screening instruments, such as the CAGE questionnaire, the Alcohol Use Disorders Identification Test (AUDIT), or the Michigan Alcoholism Screening Test (MAST) (72–74), are the most effective methods for screening for alcohol problems in primary care (75) (Table 2). These instruments focus on the social and behavioral aspects of alcohol problems and provide greater accuracy than quantity and frequency questions, laboratory tests, or

**Table 2. Sensitivity and Specificity of Screening Tests for Alcohol Problems in Primary Care\***

Instrument	Cutoff Score	Harmful or Hazardous Drinking		Current Diagnosis of Alcohol Abuse or Dependence	
		Sensitivity	Specificity	Sensitivity	Specificity
←-----%----->					
AUDIT	≥8	57 (11)	96 (11)	66 (11)	86 (11)
		59 (76)	91 (76)	71 (76)	85 (76)
		63 (77)	90 (77)	61 (16)	90 (16)
		97 (74)†	78 (74)†	96 (155)	96 (155)
		95 (74)‡	85 (74)‡		
CAGE	≥2	14 (156)	97 (156)	82 (15)	94 (15)
		49 (11)	75 (11)	77 (11)	79 (11)
		69 (87)	95 (87)	94 (77)	97 (77)
		84 (157)	95 (157)		
SMAST (158)	≥2	68	92	100	85
Aspartate aminotransferase level (86)		12			
Alanine aminotransferase level (86)		28			
Mean corpuscular volume (86)		28			
Carbohydrate-deficient transferrin level		39 (86)	29 (86)		
		69 (87)	81 (87)		

\* AUDIT = Alcohol Use Disorders Identification Test; SMAST = Short Michigan Alcoholism Screening Test. Numbers in parentheses are reference numbers.

† Hazardous use.

‡ Harmful use.

clinical detection (75). Among common screening instruments, AUDIT seems to have the best operating characteristics for identifying patients with hazardous drinking (sensitivity, 57% to 97%; specificity, 78% to 96%) (11, 74, 76, 77). The CAGE questionnaire, which includes four brief questions (Have you ever felt you should Cut down on your drinking? Have people Annoyed you by criticizing your drinking? Have you ever felt bad or Guilty about your drinking? Have you ever taken a drink first thing in the morning [Eye-opener] to steady your nerves or to get rid of a hangover?), performs best among common screening instruments for identifying patients with alcohol abuse and dependence. In primary care settings, CAGE scores of 2 have a sensitivity of 77% to 94% and a specificity of 79% to 97% for a current diagnosis of alcohol abuse or dependence (11, 15, 77). A cutoff of 1 positive CAGE response has a sensitivity of 21% to 71% and a specificity of 84% to 95% (21, 84, 85). When used to screen for a lifetime diagnosis of alcohol abuse or dependence, CAGE scores of 2 have a sensitivity of 21% to 74% and a specificity of 70% to 96% (11, 18–20, 84, 85).

The performance of screening instruments can be affected by patient characteristics (10, 20, 21) and interview style (86). For example, the accuracy of the CAGE questionnaire varies according to ethnicity and sex (20, 21). In one study, the area under the receiver-operating characteristic (ROC) curve, a measure of a test's ability to discrim-

inate between diseased and nondiseased patients, was 0.67 for Mexican-American women, 0.76 for white women, and 0.88 for African-American women (20). Sex also affected the performance of the CAGE questionnaire in this study. Areas under the ROC curve varied from 0.69 for African-American men to 0.88 for African-American women (20). Test performance may also vary according to the way the test is introduced. One study found that the sensitivity of the questionnaire increased when the questions were prefaced by the phrase, "Please tell me about your drinking," rather than by a closed-ended introduction inquiring about quantity and frequency of alcohol consumption (86).

Clinicians commonly ask patients to report the quantity and frequency of alcohol consumption (87). Evidence supports the validity of patient self-report of alcohol consumption (88, 89), but these reports can be influenced by characteristics of the patient, provider, or clinical encounter and may lead to both underreporting and overreporting (88, 89). In particular, clinicians should question the validity of self-report in patients who have recently consumed alcohol (88). Although the quantity and frequency questions efficiently identify patients whose alcohol consumption is above the levels recommended by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) (Table 1), they are not as sensitive as the CAGE questionnaire, AUDIT, or MAST for detecting patients with alcohol abuse and dependence. One study found that a cutoff score

**Table 3. Common Clinical Presentations of Patients with Alcohol Problems**

Problem	Presentations
Behavior	Family, employment, or legal problems; injury due to domestic abuse, accidents, or violence; marital discord; divorce; low academic achievement
Psychiatric	Affective disorders (for example, depression); personality disorders; comorbid substance use disorders, including tobacco abuse
Medical	Hypertension, gastrointestinal symptoms, abnormal liver enzyme levels, macrocytosis, anemia, thrombocytopenia, osteoporosis, menstrual dysfunction, breast cancer, end-stage liver disease

of four drinks per day resulted in a sensitivity of 47% and a specificity of 96% for a diagnosis of alcohol abuse and dependence (91). A separate study found a sensitivity of 20% and a specificity of 97% with a cutoff of 20 drinks per week (85).

Biological markers, such as aspartate aminotransferase, alanine aminotransferase, mean corpuscular volume, and  $\gamma$ -glutamyltransferase, perform poorly as screening methods for alcohol problems in primary care. In one study, the sensitivities of mean corpuscular volume, aspartate aminotransferase, and alanine aminotransferase in men were 28%, 12%, and 28%, respectively (78). Carbohydrate-deficient transferrin, a new serologic marker that reflects recent alcohol ingestion, has a sensitivity of 39% to 69% and a specificity of 29% to 81% for heavy drinking (78, 79).

The NIAAA recommends first using the CAGE questionnaire and then asking quantity and frequency questions of all patients who drink alcohol (22). Clinicians should attempt to comply with this recommendation when clinically indicated. Follow-up to screening should include additional history to assess for specific alcohol problems (Table 1). Implementation of standardized screening practices, such as those used in the Ambulatory Care Quality Improvement Project (AQCUIP) (11), or mental health screens, such as the Primary Care Evaluation of Mental Disorders (PRIME-MD) (92), can successfully increase screening rates.

### What Are Common Clinical Findings in Patients with Alcohol Problems?

A wide variety of behavior-related social problems, psychiatric problems, and medical problems may occur as the result of excessive alcohol use (Table 3). Since patients often exhibit social or psychiatric problems before specific

medical problems develop, internists should be aware of their presenting symptoms to help increase the detection of alcohol problems.

A family history of alcohol abuse or dependence should prompt inquiry; evidence from twin and adoption studies supports the idea that a strong genetic component is associated with risk for alcohol problems. Genetic studies of risk for alcoholism that have focused on the gene for the D2 dopamine receptor have had conflicting results (93, 94). It is clear that along with genetic risk, environmental influences, such as negative life experiences, stress, and interpersonal factors, play a critical role in the development of alcohol problems (95, 96).

Trauma and injury should prompt a physician to investigate for alcohol problems. Alcohol use is a major factor in accidents and injuries, trauma, drowning, assault, and homicide (95–98). Because of this association, attempts have been made to decrease alcohol consumption among patients who use alcohol and have experienced trauma (99, 100).

Alcohol use is also associated with childhood and domestic abuse (101). For example, a history of child abuse is associated with future development of alcohol problems (101), especially in women (102). In addition, violent men are more likely to be heavy drinkers than nonviolent men, and alcohol use is associated with increased trauma severity in female victims (103). These findings have prompted efforts to link alcohol and domestic violence services (104).

Patients with alcohol problems experience higher rates of psychiatric illness than the general population. Data from the Epidemiological Catchment Area Study showed that 37% of persons with an alcohol disorder had a comorbid psychiatric disorder. The estimated lifetime prevalence rate for mental disorders, excluding substance abuse diagnoses, was 23% in the overall population (105). The most common psychiatric diagnoses seen in patients with alcohol problems are affective, anxiety, and personality disorders. The National Comorbidity Study found a 12-month prevalence of 37% for anxiety disorders and 29% for affective disorders in alcohol-dependent patients (106). Similarly, the prevalence of other substance disorders in persons with an alcohol disorder was seven times greater than that of the rest of the population (105). Therefore, patients with alcohol problems should be carefully evaluated for comorbid psychiatric and substance abuse disorders (107).

Medical problems associated with alcohol use have also been identified (108–110). Common problems, such

as hypertension or nonspecific gastrointestinal symptoms, may be caused or exacerbated by alcohol use. Similarly, abnormalities on routine blood work, such as anemia, thrombocytopenia, or elevated liver enzyme levels, should prompt consideration of an alcohol problem.

### TREATMENT OF ALCOHOL PROBLEMS

*You ask your patient the four CAGE questions. She reports that she had previously consumed four to five drinks a day on a regular basis but has made an effort to cut down because she was afraid that she would end up like her father, an alcoholic. She answers no to the other CAGE questions. On further questioning, there is no evidence of alcohol abuse or dependence. You arrange for the patient to return in 1 week to check her blood pressure. You mention that on the basis of her history and laboratory tests, you think that she should consider decreasing her alcohol consumption. When she returns in 1 week, her blood pressure is 150/90 mm Hg, and you elect to initiate therapy with atenolol, 50 mg/d. She returns 1 week later to have her blood pressure assessed by your nurse and returns in 2 months to see you.*

#### What Treatments in Primary Care Are Effective for Hazardous Drinkers?

Brief interventions are short, focused discussions (often less than 15 minutes) that can decrease alcohol consumption in some patients with hazardous drinking (111, 112). These interventions are designed to promote awareness of the negative effects of alcohol and to motivate change. Although the types of interventions that have been studied vary substantially (113), most share a set of core components (Table 4), including feedback about the adverse effects of alcohol, a comparison of the patient's consumption to drinking norms, a pamphlet on alcohol consumption, and drinking limits. Some interventions include a prescription stating, "Cut down on your drinking." Printed patient material is available from the NIAAA by mail or at [www.niaaa.nih.gov](http://www.niaaa.nih.gov).

Two large randomized, controlled trials have demonstrated the effectiveness of brief interventions (111, 112). A large trial conducted in the United Kingdom demonstrated the efficacy of a brief intervention strategy among heavy drinkers (111). The trial, which involved 909 patients randomly assigned to receive a brief intervention or usual care, showed that mean consumption of alcoholic drinks at 12

**Table 4. Components of Effective Interventions for Hazardous Drinkers in Primary Care\***

Feedback on the results of clinical assessment
Comparison to drinking norms
Discussion of the adverse effects of alcohol consumption
Statement of recommended drinking limits
Prescription to "Cut down on your drinking"
Patient education material†
Drinking diary for daily notation of alcohol consumption†
Repeated office sessions and telephone contact to reinforce intervention

\* Adapted from references 107 and 108.

† Available at [www.niaaa.nih.gov](http://www.niaaa.nih.gov).

months decreased in those who received the intervention. Among men, those in the intervention group reduced their weekly intake by 18.2 drinks compared with 8.1 drinks in the control group ( $P < 0.001$ ). Among women, those in the intervention group reduced their weekly intake by 11.5 drinks compared with 6.3 drinks in the control group ( $P < 0.001$ ) (111). Greater decreases in alcohol consumption were noted as the number of intervention sessions increased (111). In Project TrEAT (Trial for Early Alcohol Treatment), 723 problem drinkers in 17 community-based primary care practices in Wisconsin were randomly assigned to receive brief intervention or no intervention (controls) (112). At 12 months, the mean number of drinks per week decreased in the intervention group compared with the control group (19.1 to 11.5 drinks per week vs. 18.9 to 15.5 drinks per week;  $P < 0.05$ ) (112). Similar decreases were seen in the incidence of binge and excessive drinking (112). Although not all trials of brief interventions conducted in primary care have successfully demonstrated decreased alcohol consumption (113), a systematic review and meta-analysis of these treatments in a variety of settings have shown overall decreased consumption (114, 115).

### MANAGEMENT OF ABUSE AND DEPENDENCE

*The patient returns 12 months later, and her blood pressure is under good control. After you question her, however, she reports that she is discouraged because despite her intent, she is back to drinking four to five drinks per day. She states that she doesn't always get as "high" as she used to with this amount and wants to cut down after a recent citation for driving under the influence and complaints from her employer about coming in late.*

### What Are the Criteria for the Diagnosis of Alcohol Abuse and Dependence?

The patient's history reveals legal and potential work-related problems related to alcohol. She may therefore meet criteria for alcohol abuse. The patient's history also suggests alcohol dependence. She reports decreased effects from the same amount of alcohol (tolerance) and expresses a desire to cut down after her citation (persistent desire or unsuccessful attempts to cut down or control use). To establish a diagnosis of alcohol dependence, the clinician has several options. First, formal diagnostic interviews are available, such as the Diagnostic Interview Schedule derived from DSM-IV criteria (116) or the Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS) (117). Second, the clinician may inquire about each of the DSM-IV criteria—for example, by asking, “Have you had a persistent desire to cut down or control your alcohol use over the past 12 months?” A patient who answers “yes” to three or more of the items is alcohol-dependent. Finally, the clinician can refer the patient to a specialist for formal assessment.

### What Is the Procedure for Outpatient Detoxification from Alcohol?

*You discuss your concern and diagnosis with the patient. She agrees that she is having increased complications from alcohol but denies that she is an alcoholic. She is reluctant to seek counseling but agrees to a trial of abstinence for 1 week. She calls your office in 1 week and states that she was not successful in remaining abstinent and is frustrated over her continued alcohol use. She missed a day of work last week because she felt terrible after a long night of drinking. She wants to stop drinking alcohol and agrees to seek additional counseling.*

Detoxification, an important step in the treatment of patients with alcohol dependence, involves managing the alcohol withdrawal syndrome and monitoring abstinence. Recently, outpatient or ambulatory detoxification has been shown to have similar long-term efficacy at less cost than inpatient detoxification (118). Many patients experience mild to moderate symptoms during withdrawal and can undergo detoxification without medications if they receive supportive care and monitoring (119, 120). However, patients with previous alcohol withdrawal seizures, delirium tremens, or moderate to severe withdrawal symptoms should receive benzodiazepines to reduce the risk for adverse events (119). Clinical experience dictates that in-

patient detoxification is indicated for patients who 1) are in moderate to severe withdrawal, 2) have had previous seizures or delirium tremens, 3) are unable to cooperate with daily follow-up, 4) have comorbid psychiatric or medical conditions that require hospitalization, 5) are not able to take medication by mouth, or 6) have unsuccessfully attempted outpatient detoxification (121).

Objective measures, such as the Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar) (122, 123), should be used to monitor the severity of alcohol withdrawal. The CIWA-Ar assesses 10 items (for example, nausea and vomiting, tremor, and diaphoresis) that are summed to create a score. A CIWA-Ar score greater than 15 indicates severe withdrawal, scores of 8 to 15 indicate moderate withdrawal, and a score less than 8 indicates mild withdrawal (119). These scores can be useful in following a patient's clinical course and can help determine the need for medication; however, they should be used with caution in medically ill patients whose symptoms may change because of other pathophysiologic processes.

Benzodiazepines decrease the incidence of seizures and delirium tremens in alcohol withdrawal and should be considered as initial therapy for all patients requiring pharmacologic management (119). Benzodiazepines can be provided using a front-loading, fixed dose or a symptom-triggered regimen (119). Symptom-triggered dosing (based on CIWA-Ar scores) reduces medication dose and duration of inpatient treatment (124); however, no controlled trials of this method have been performed in outpatient detoxification. Outpatient detoxification can be performed by using chlordiazepoxide, 50 mg; oxazepam, 15 to 30 mg (118, 125); diazepam, 10 mg; or lorazepam, 2 mg every 6 hours for the first 24 hours. Doses can be decreased as symptoms resolve. Additional medication can be provided on the basis of symptoms or CIWA-Ar scores. Supportive care for patients undergoing detoxification includes providing treatment for nutritional and electrolyte deficiencies, monitoring withdrawal severity, monitoring abstinence, and providing referrals to alcoholism treatment and self-help meetings.

### RELAPSE PREVENTION

#### What Type of Counseling Is Effective for Patients with Alcohol Dependence?

Patients with alcohol dependence typically require more intensive counseling in alcohol treatment programs

than patients with less severe alcohol problems. Internists should be familiar with these therapies in order to understand and reinforce patients' treatment. The general goal of all counseling programs is to motivate patients to change their substance use behaviors. In addition, standard counseling focuses on teaching coping skills, encouraging new abstinence-oriented social activities, improving interpersonal relationships, and promoting compliance with pharmacotherapy (126).

Three specific psychotherapeutic techniques commonly used by treatment programs are motivational enhancement therapy, 12-step facilitation, and therapy to develop cognitive behavioral coping skills. Motivational enhancement therapy uses motivational interviewing techniques to help patients identify internal sources of motivation to support abstinence (127). Twelve-step facilitation therapy is based on the principles of Alcoholics Anonymous (AA) (128). Therapy for cognitive behavioral coping skills helps patients identify and avoid antecedents to alcohol use and develop strategies to cope with craving.

These three therapies were evaluated in Project MATCH (Matching Alcohol Treatments to Client Heterogeneity), a multicenter randomized, clinical trial with two arms (129). In the aftercare arm, 774 persons were enrolled after inpatient alcohol treatment. In the outpatient-only arm, 952 persons were enrolled on entry into outpatient treatment. Patients in each group were randomly assigned to receive motivational enhancement therapy, 12-step facilitation therapy, or therapy for cognitive behavioral coping skills. Results demonstrated significant improvement from baseline with all three treatments, although no significant differences were observed between treatments (129).

Physicians can expect that the drinking behaviors of many of their patients will improve through involvement with alcohol treatment programs. Twelve-step facilitation therapy is most commonly available in community treatment settings, while therapy to develop cognitive behavioral coping skills and motivational enhancement therapy are beginning to become more common outside of academic and research settings. Physicians can become more familiar with the local availability of these treatments by contacting local or national offices of AA, directors of employee assistance programs, managers of behavioral health programs, or the NIAAA. Physicians can act as advocates for their patients by negotiating appropriate levels and duration of therapy with health maintenance organizations.

### What Is the Role of Alcoholics Anonymous and Other Self-Help Groups in Relapse Prevention?

Self-help groups represent a complementary treatment strategy for patients with alcohol abuse and dependence. Alcoholics Anonymous (130–132) has come to represent this treatment paradigm, although other groups exist. The proportion of adults with dependence symptoms who have sought help from AA has increased from 11% in 1979 to 22% in 1990 (133).

The guiding principles of AA are embodied in its 12 traditions and 12 steps (131). Despite the heterogeneity of the AA experience (134), certain aspects and terms are constant and warrant description for the referring clinician (130). Meetings are the hallmark of AA. Open meetings are available to any interested persons, regardless of whether they have a drinking problem, while closed meetings are only for members or persons interested in achieving abstinence. New AA participants are encouraged to attend "90 meetings in 90 days." Participants frequently attend a home group and have a sponsor who has been sober for at least 1 year and provides support outside of meetings (131). According to a recent AA internal survey, members go to an average of 2.5 meetings a week, 78% of members have a sponsor, and 80% of members have a home group (130).

Although AA is of unquestionable value to many persons, it has been difficult to empirically demonstrate its efficacy (135, 136). For example, randomized clinical trials have not found AA to be superior to alternative treatments (131, 135). A recent meta-analysis of 74 studies shows that while participation in AA is modestly correlated with drinking reduction, the literature is hindered by the fact that AA is rarely evaluated outside the context of formal therapy; in addition, studies rarely use random assignment or contain adequate sample sizes (136). Although AA resists affiliation with researchers (135), results of internal surveys provide some evidence of its efficacy. Approximately 50% of new entrants continue participation at 3 months, and 41% of those who participate for 1 year remain for an additional year (130). The duration of sobriety for AA members in the survey was evenly distributed: Approximately one third of members had been sober for less than 1 year, one third had been sober for 1 to 5 years, and one third had been sober for more than 5 years (130).

Recommended strategies for effective referral to self-help groups include developing a familiarity with a group, reading and stocking the group's literature, providing a

**Table 5. Pharmacotherapy for Alcohol Problems\***

Medication	Action	Dose	Frequency	Indication
Benzodiazepines	GABA inhibitor	Variable	Variable	Alcohol withdrawal
Disulfiram	Acetaldehyde dehydrogenase inhibitor	250 mg to 1 g	Daily	Relapse prevention
Naltrexone	Opioid antagonist	50 mg	Daily	Relapse prevention
Acamprosate	Possible GABA agonist	1.3 to 2 g	Daily	Relapse prevention

\* GABA =  $\gamma$ -aminobutyric acid.

listing of meetings, providing a rationale to the patient for a referral, and following up on the referral (131, 137). Other self-help groups include Women for Sobriety, Secular Organization for Sobriety, and Rational Recovery (138, 139).

**What Is the Role of Pharmacotherapy in Relapse Prevention?**

*The patient returns 4 weeks after detoxification and says that she is abstinent and feels that both her counseling and AA meetings are helpful. She has heard that there are some new medications to help people stay away from alcohol and wonders if she should take them.*

Pharmacologic agents can be a useful adjunct to counseling in preventing relapse in patients with alcohol dependence (Table 5) (140). Two agents, disulfiram and naltrexone, are currently approved by the U.S. Food and Drug Administration for the treatment of alcohol-dependent patients. A third agent, acamprosate, has been studied in Europe and shows promise as an adjunctive therapy (141–144).

Disulfiram inhibits the metabolism of alcohol by irreversibly inhibiting the enzyme acetaldehyde dehydrogenase, leading to a buildup of acetaldehyde and causing headache, flushing, tachycardia, nausea, and vomiting. Despite early claims of success (145, 146), randomized trials have not demonstrated improved outcomes with disulfiram (147, 148). In the largest study (148), 605 men were randomly assigned to receive 250 mg of disulfiram, 1 mg of disulfiram, or placebo. After 1 year, no differences were observed in drinking outcomes among the three groups. In contrast, in a 6-month study of supervised disulfiram (149), treated patients had more abstinent days and consumed fewer units of alcohol than controls (100 days vs. 69 days [ $P = 0.02$ ] and 2572 units vs. 1448 units [ $P = 0.04$ ], respectively). These data suggest that some patients may benefit from disulfiram.

Naltrexone is an opioid antagonist that is thought to

reduce alcohol consumption by decreasing its pleasurable effects. Several studies (150–156) have examined the safety and efficacy of naltrexone in formal alcohol-treatment programs. Two randomized, placebo-controlled trials (150, 151) evaluated naltrexone (50 mg) along with psychotherapy in alcohol-dependent patients. Both 12-week trials showed significant reductions in relapse rates and number of drinking days with naltrexone. In a combined analysis of these trials (152), 54% of naltrexone-treated patients remained abstinent, compared with 31% of placebo recipients. Six-month follow-up of patients enrolled in one trial (153) found that the benefits during the 12 weeks diminished over time, suggesting that a longer course of naltrexone therapy may be necessary.

At least one study (156) has examined the efficacy of naltrexone in combination with brief counseling sessions administered by primary care clinicians in a substance abuse treatment facility. This preliminary study suggests that when used in conjunction with brief interventions, naltrexone could provide benefit to alcohol-dependent patients in primary care settings.

Acamprosate is not currently available in the United States. Ongoing clinical trials and future research should further elucidate the role of pharmacotherapy for alcohol problems in primary care and inform physicians on the most effective use of these medications (123).

**What Is the Role of the Primary Care Physician in the Ongoing Care of Patients with Alcohol Problems?**

*Six months later, the patient comes in for a routine visit and says that except for one drink at a recent holiday party, she has remained abstinent.*

Primary care physicians are uniquely suited to provide comprehensive ongoing care for patients with alcohol problems because they offer a wide variety of preventive and other medical services to keep patients engaged. Given the chronic and relapsing nature of alcohol problems, close ongoing follow-up is essential for both initiating treatment

and supporting patients' efforts to change their drinking behaviors. In fact, in one recent study of primary care patients with alcohol problems, the majority of patients with positive scores on the CAGE questionnaire (63%) were in early or long-term recovery (157). This suggests that relapse prevention may be the major task for primary care physicians caring for such patients.

Counseling skills that help in relapse prevention include building a supportive therapeutic relationship, taking a thorough history, maintaining a nonjudgmental attitude, communicating with empathy, reinforcing positive behavioral change, and working with families (137). Physicians can incorporate formal relapse prevention techniques, such as the identification of triggers to relapse and the use of coping skills to prevent relapse, into their counseling (137). Prompt management of slips and dealing with relapse early are also important tasks for primary care physicians, who may be the first to know when patients are having these problems (137).

Primary care physicians can play a key role in the identification and management of comorbid psychiatric, medical, and social problems. For example, the treatment of comorbid depression may have a major effect on alcohol use. Primary care physicians also frequently have access to family members, who can be effective at early stages in helping to confirm the diagnosis and in developing a treatment plan. Collaboration with addiction specialists can be important in referring patients to treatment and supporting their participation in formal programs. Because patients may be reluctant to accept a referral to an alcohol treatment program, an informed discussion with their primary care physician can help facilitate referral.

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#### Personae

In an effort to bring people to the pages and cover of *Annals*, the editors invite readers to submit photographs of people for publication. We are looking for photographs that catch people in the context of their lives and that capture personality. *Annals* will publish photographs in black and white, and black-and-white submissions are preferred. We will also accept color submissions, but the decision to publish a photograph will be made after the image is converted to black and white. Slides or prints are acceptable. Print sizes should be standard (3" × 5", 4" × 6", 5" × 7", 8" × 10"). Photographers should send two copies of each photograph. We cannot return photographs, regardless of publication. We must receive written permission to publish the photograph from the subject (or subjects) of the photograph or the subject's guardian if he or she is a child. A cover letter assuring no prior publication of the photograph and providing permission from the photographer for *Annals* to publish the image must accompany all submissions. The letter must also contain the photographer's name, academic degrees, institutional affiliation, mailing address, and telephone and fax numbers.

Selected Personae submissions will also appear on the cover of *Annals*. We look forward to receiving your photographs.

*Christine Laine, MD, MPH*  
Senior Deputy Editor