

EVIDENCE-STATEMENT:

ALCOHOL MISUSE (Screening and Counseling)

Why This Chapter is Important for Employers: An Overview

- Alcohol misuse contributes to illnesses and injuries and is the third most common behavior-related cause of death in the United States. Alcohol misuse was associated with 75,000 deaths and 2.3 million years of potential life lost (30 years per premature death) in 2001.¹
- Alcohol misuse results in a variety of adverse health and social outcomes. These include increased risk of unintentional injuries, violence, liver disease, hypertension, certain cancers, and diseases of the central nervous system. Individuals who misuse alcohol are also at increased risk of a variety of adverse reproductive health outcomes.¹⁻⁷
- Alcohol misuse is associated with high costs to employers in the form of increased absenteeism, decreased productivity and lost productivity, and increased employer-sponsored healthcare expenditures. Overall, 15.3% of U.S. workers report using or being impaired by alcohol at work at least one time during the previous year, including 9% of workers who report being hung over at work.⁸ Lost productivity accounted for 73% of the total costs resulting from alcohol misuse in 1998.⁹
- Alcohol misuse is costly for health insurers and society. The cost of alcohol misuse in the United States was estimated to be \$185 billion in 1998.⁹ About \$16 billion of this amount was spent on medical care for alcohol-related complications (not including fetal alcohol syndrome [FAS]), \$7.5 billion was spent on specialty alcohol treatment services, and \$2.9 billion was spent on FAS treatment. The remaining costs (\$134) billion were due to lost productivity.
- Randomized trials demonstrate that brief counseling leads to reduced alcohol consumption among excessive drinkers and to reductions in adverse alcohol-related health outcomes, including excess mortality.¹⁰⁻¹³
- Screening and counseling for alcohol misuse reduces both societal and healthcare costs. Each \$1 invested in screening and brief counseling interventions saves approximately \$4 in healthcare costs.^{12,14}
- Coverage for screening and brief counseling is currently offered by only 20% of employer-sponsored health plans, despite the fact that such services are among the most cost-effective clinical preventive services and have a proven impact on health outcomes.^{10,15}

Clinical Preventive Service Recommendations

U.S. Preventive Services Task Force Recommendation

Evidence Rating: B (Recommended/At Least Fair Evidence)

The U.S. Preventive Services Task Force (USPSTF) recommends screening and behavioral counseling interventions to reduce alcohol misuse by adults, including pregnant women, in primary care settings.¹⁶

The USPSTF found good evidence that screening in primary care settings can accurately identify patients whose levels or patterns of alcohol consumption do not meet criteria for alcohol dependence but place them at risk for increased morbidity or mortality. The USPSTF also found good evidence that brief behavioral counseling interventions with follow-up produce small-to-moderate

reductions in alcohol consumption that are sustained over 6 to 12 month periods or longer.¹⁶

<p>Other Recommended Guidance National Institute on Alcohol Abuse and Alcoholism (NIAAA)</p>	<p>The National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommends incorporating screening for alcohol misuse and counseling into routine medical practice.¹⁷</p>
<p><i>Evidence Rating:</i></p>	<p>Expert Consensus</p>
<p>American Academy of Pediatrics (AAP)</p>	<p>The American Academy of Pediatrics (AAP) encourages clinicians to ask adolescents about their alcohol use and refer adolescents with suspected drinking problems for age-appropriate treatment.¹⁸ It also encourages including substance abuse prevention counseling in routine and episodic office visits.¹⁹</p>
<p><i>Evidence Rating:</i></p>	<p>Expert Consensus (Committee on Substance Abuse)</p>
<p>American Medical Association (AMA)</p>	<p>The American Medical Association (AMA) recommends that primary care physicians establish routine alcohol screening and be trained to conduct brief intervention counseling and motivational interviewing.²⁰</p>
<p><i>Evidence Rating:</i></p>	<p>Expert Consensus (Office of Alcohol, Tobacco and Other Drug Abuse Prevention)</p>
<p>American College of Surgeons (ACS)</p>	<p>The American College of Surgeons (ACS) recommends alcohol screening with brief counseling or referral, as appropriate, for all injured patients.²¹</p>
<p><i>Evidence Rating:</i></p>	<p>Expert Consensus (Committee on Trauma)</p>
<p>American College of Emergency Physicians (ACEP)</p>	<p>The American College of Emergency Physicians (ACEP) recommends that physicians mitigate the consequences of alcohol abuse through screening, brief interventions, and appropriate referral.²²</p>
<p><i>Evidence Rating:</i></p>	<p>Expert Consensus (Board of Directors)</p>
<p>American Society of Addiction Medicine (ASAM)</p>	<p>The American Society of Addiction Medicine (ASAM) recommends routine screening for alcohol misuse in primary care settings, with appropriate counseling and referral.</p>
<p><i>Evidence Rating:</i></p>	<p>Not Specified</p>

<p>Information Sources</p>	<p>The recommendations and supporting information contained in this document came from several sources, including the:</p> <ul style="list-style-type: none"> • Agency for Healthcare Research and Quality (AHRQ) • American Academy of Family Physicians (AAFP) • American Academy of Pediatrics (AAP) • American College of Emergency Physicians (ACEP)
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- American College of Surgeons (ACS)
- American Medical Association (AMA)
- American Society of Addiction Medicine (ASAM)
- Center for Medicare and Medicaid Services (CMS)
- National Business Group on Health
- National Institute on Alcohol Abuse and Alcoholism (NIAAA)
- Peer-reviewed research
- Substance Abuse and Mental Health Services Administration (SAMHSA)
- U.S. Preventive Services Task Force (USPSTF)

The information contained in this document is based on a compilation of research findings. Information presented in this document should be attributed to its referenced source and should not be considered a reflection of the opinions of other organizations cited in the text.

Condition/Disease-Specific Information

Epidemiology of Condition/Disease

The term “alcohol misuse” is used to describe alcohol consumption that puts individuals at increased risk for adverse health and social consequences. The NIAAA defines alcohol misuse (which the Institute calls “at-risk drinking”) as either excessive daily consumption (more than four drinks for men or more than three drinks for women), excessive total consumption (more than 14 drinks per week for men or more than 7 drinks per week for women), or both.¹⁷ Alcohol abuse, which is a subset of alcohol misuse, is defined on the basis of having suffered negative consequences from drinking (e.g., legal problems, job loss, or family problems). Alcohol dependence (i.e., alcoholism) is also a subset of alcohol misuse and is defined on the basis of having suffered negative consequences from drinking and some combination of experiencing withdrawal symptoms, loss of control, or alcohol tolerance. Other types of alcohol misuse include alcohol consumption among high-risk populations (e.g., pregnant women, youth) and drinking prior to or during certain activities (e.g., driving a motor vehicle, operating heavy equipment).

Among adults in the United States, approximately 30% of current drinkers exceed NIAAA’s daily or weekly alcohol consumption limits. Of these excessive drinkers, more than 90% report past-month binge drinking (consuming 5 or more drinks during one or more occasions),²³ approximately 15% abuse alcohol, and approximately 10% are dependent on alcohol.²⁴

Alcohol misuse contributes to illnesses and injuries and is the third most common behavior-related cause of death in the United States. Alcohol misuse was associated with 75,000 deaths and 2.3 million years of potential life lost (30 years per premature death) in 2001.¹ Alcohol misuse is a risk factor for: unintentional injuries (e.g., motor vehicle crashes, falls); violence (e.g.,

homicide, suicide); liver disease; diseases of the central nervous system (e.g., stroke, dementia); hypertension; and various cancers (e.g., breast, neck, stomach, colon, and liver). Alcohol misuse is also associated with a variety of adverse reproductive health outcomes (e.g., unintended pregnancy, sexual assault, sexually transmitted infections), fetal alcohol spectrum disorders (e.g., fetal alcohol syndrome), low birth weight, and sudden infant death syndrome (SIDS). Finally, alcohol misuse often coexists with mental health problems as well as other substance abuse problems.¹⁻⁷

**Condition/Disease
Risk Factors**

There are multiple risk factors for alcohol misuse.² These include environmental and regulatory factors such as the price and availability of alcohol, marketing exposure, and the provision of alcohol in public facilities. Social factors include familial country of origin, peer group norms, religious affiliation, and other socio-cultural factors. Intrinsic (internal or personal) risk factors for alcohol misuse include personality characteristics and genetic factors.

Value of Prevention

**Economic Burden of
Condition/Disease**

The direct and indirect costs of alcohol misuse in the United States were estimated to at \$185 billion in 1998.⁹ About \$16 billion of this amount was spent directly on medical care for alcohol-related complications (excluding FAS), \$7.5 billion was spent on specialty alcohol treatment services, and \$2.9 billion was spent on the treatment of FAS. The remaining costs (73% of all costs) were due to lost productivity and costs incurred by law enforcement agencies and the criminal justice system.⁹

**Workplace Burden of
Condition/Disease**

Lost productivity due to alcohol-related deaths and disabilities impose a greater economic burden than do healthcare costs. Lost productivity is due to 1) absenteeism and 2) to poor job performance among those who come to work drunk, hungover, or who drink on the job. Over 15% of workers in the United States report drinking on the job or being hungover at work at least once during the previous year.⁸

**Economic Benefit of
Preventive
Intervention**

The economic benefits of screening and treatment of alcohol misuse are measured in terms of savings from future reductions in medical costs and future reductions in productivity losses. These costs are considerable. For example, in 1998, the estimated cost of the medical consequences of alcohol misuse was \$18 billion, lost future earnings due to premature deaths from alcohol-related causes totaled \$36.5 billion, lost earnings due to alcohol-related illness totaled \$86.4 billion, lost earnings due to FAS totaled \$1.3 billion, and lost earnings due to alcohol-related crimes and lost productivity of incarcerated persons totaled \$10 billion.⁹

**Estimated Cost of
Preventive
Intervention**

Implementing screening and brief counseling programs for alcohol misuse is relatively inexpensive compared with other clinical preventive services. Costs depend on the number of sessions, the mode of delivery (in office or by telephone), and the type of provider that delivers the counseling.

Screening for alcohol misuse using standard questions is a brief clinical activity

that is not typically reimbursable. Approximately 10% of patients in primary care settings can be expected to screen positive for alcohol misuse and accept brief counseling. In 2004, the private-sector cost of alcohol misuse counseling averaged \$22 per session when counseling was provided in a separate visit and a preventive service code was used; approximately 95% of paid claims fell within the range of \$0 to \$81.²⁵ Brief counseling bundled in a primary care visit would cost less.

Estimated Cost of Treatment

The vast majority of people with alcohol misuse are not alcohol dependent. For those who are alcohol dependent, referral for specialty treatment might be appropriate. Costs of treatment for alcohol dependence are beyond the scope of this document, but treatment is generally cost-saving.

Cost-Effectiveness and/or Cost-Benefit Analysis of Preventive Intervention

In economic evaluation studies of screening and counseling for alcohol misuse, outcomes are commonly converted from natural units (e.g., reduced hospitalizations) to dollars to enable direct comparison of benefits and costs. Several cost-benefit analyses of screening and brief counseling have been conducted, all of which demonstrated cost-savings. One of these studies, the Trial for Early Alcohol Treatment (Project TrEAT), was a randomized clinical trial of screening and brief counseling conducted in 64 primary care clinics in Wisconsin; study participants had non-dependent alcohol misuse. Over the study's 48-month follow-up period, each \$1.00 invested in the intervention saved \$4.30 by reducing future health care costs.¹² Another study assessed the cost-effectiveness of alcohol screening and counseling for injured patients treated in U.S. emergency department settings or admitted to the hospital. The cost analysis, which was restricted to medical costs, identified \$3.81 in savings for each \$1 spent on the intervention.¹⁴

Treatment of alcohol dependence also saves money when downstream medical care costs associated with non-treatment are considered. For example, a 14-year longitudinal follow-up study found that healthcare costs for alcoholics who underwent treatment declined substantially over time, while costs rose among untreated alcoholics.²⁶ After adjusting for the pre-treatment status of the two groups, those whose alcoholism had been treated experienced a 25% decline in medical care costs compared to those whose alcoholism had not been treated.

Preventive Intervention Information

Preventive Intervention: Purpose of Screening and Counseling

The purpose of screening and counseling for alcohol misuse is to identify patients who drink excessively and to assist them in reducing their consumption to safer levels. Screening and counseling can also identify patients with more severe alcohol problems who may require intensive substance abuse treatment. However, most individuals with positive screening results do not meet the criteria for alcohol dependence and are thus eligible for brief counseling interventions that can be delivered in primary care settings and by telephone.

Benefits and Risks of Intervention

Most recommended screening instruments reliably identify alcohol misuse. A majority of these instruments have a sensitivity of 70% to 90% for detecting alcohol dependence, and single-question screens can detect milder forms of alcohol misuse with similar sensitivity levels. In primary care settings, 10% to 25% of patients screen positive for alcohol misuse, depending on the setting and patient population.^{16,27-28}

Brief counseling with appropriate follow-up results in moderate reductions (approximately 13% to 34%) in alcohol consumption lasting 6 to 12 months or longer.^{16,29} Studies also show that the extent of reductions in alcohol-related health problems may exceed the extent of reductions in alcohol consumption itself. For example, one randomized study that assessed long-term effects (48-month follow-up) of screening and brief counseling found that the intervention group had 20% fewer emergency department visits, 33% fewer nonfatal injuries, 37% fewer hospitalizations, 46% fewer arrests, and 50% fewer motor vehicle crashes than the controls.¹² These reductions exceeded the reductions experienced by these participants in alcohol consumption; the intervention group experienced a 20% reduction in binge drinking episodes, a 10% reduction in drinks per week, and a 4% increase in reporting no binge drinking episodes relative to controls. A meta-analysis found that counseling interventions also reduced mortality.¹³

The USPSTF identified two theoretical harms from regular screening and counseling for alcohol misuse: those who drink moderate amounts of alcohol might abstain from drinking alcohol altogether, thus losing any of the potential health benefits of light or moderate drinking, and those who abuse alcohol or are dependent on alcohol might under-treat their condition by drinking moderately rather than quitting. However, the USPSTF found no data showing that screening and counseling for alcohol misuse are likely to produce either of these theoretical harms. Furthermore, it should be noted that no randomized trial has demonstrated that moderate alcohol consumption reduces mortality of any type.

Although the benefits of screening for alcohol misuse (including early identification of misuse and treatment with behavioral counseling) outweigh the potential harms associated with screening,¹⁶ fewer than half of patients in primary care settings are screened for alcohol misuse,³⁰ making it one of the least commonly performed of the clinical preventive services recommended by the USPSTF.³¹ In the absence of screening, clinicians cannot reliably identify patients with alcohol misuse.³²

Initiation, Cessation, and Interval Screening

The USPSTF recommends that screening begin in adulthood (i.e., at age 18).

The USPSTF found insufficient evidence to recommend for or against screening in younger populations. However, alcohol misuse is frequent among adolescents, has severe consequences in this population, and is an important predictor of adult alcohol misuse. The AAP encourages clinicians to ask adolescents about their alcohol use and refer adolescents with suspected drinking problems for age-appropriate treatment.¹⁸

Alcohol misuse among all women of childbearing age, whether pregnant or not, should be appropriately assessed, counseled, and treated. Furthermore, women of childbearing age should be advised to use an effective form of contraception until alcohol intake can be reduced or eliminated because pregnancy is often not recognized until a woman has been pregnant for at least a month (particularly among women who have unintended pregnancies) and fetal damage can occur during the pre-recognition period.³³ Finally, pregnant women should be screened

Counseling	<p>for alcohol use and should be advised to refrain from drinking alcohol altogether during their pregnancies.³⁴</p> <p>The optimal frequency of screening is unknown. The NIAAA recommends annual screening, with more frequent screening and counseling for high-risk individuals such as those with a history of previous alcohol misuse.¹⁷</p> <p>Those who screen positive on an alcohol screen should be counseled as medically indicated. Eight (8) counseling sessions are covered per calendar year.</p>
Intervention Process	<p>The NIAAA and USPSTF recommend that clinicians use the screening strategy most appropriate to their own patient population, clinical practice style, or general setting. Examples of effective screening tools include:</p> <ul style="list-style-type: none"> • Single-question screens, which address alcohol consumption that exceeds recommended daily limits. The question typically asks patients to identify the last occasion, if any, when they consumed five or more drinks (or four or more drinks for a woman). Drinking at such levels within a specified time period (e.g., three months) constitutes a positive screening result. Single-question screens are recommended by the NIAAA because of their high sensitivity for detecting both severe and less severe forms of alcohol misuse, and because having fewer questions streamlines the screening process, thereby improving its acceptability in busy practices.^{17,35-37} • The Alcohol Use Disorders Identification Test (AUDIT), which is a 10-item questionnaire that is designed to detect alcohol misuse by asking about frequency, quantity, and consequences of drinking. The AUDIT is sensitive and specific for detecting all forms of alcohol misuse. The first three questions (referred to as the AUDIT-C) comprise a validated screening approach that is less time consuming than the full AUDIT; it too has a high sensitivity for detecting all forms of alcohol misuse. The third AUDIT question can also be used as a single-question screen, although it uses a threshold of 6 or more drinks that is slightly higher than the threshold used by some other single-question screens.^{28,36,38-39} • The CAGE (feeling the need to Cut down, Annoyed by criticism, Guilty about drinking, and need for Eye opener in the morning), which is a four-item risk assessment instrument. The CAGE is reasonably sensitive and specific for detecting alcohol abuse and dependence. However, it is relatively insensitive for detecting less severe forms of alcohol misuse.^{28,36,39} <p>Clinicians should provide counseling interventions for patients who meet the criteria for alcohol misuse (i.e., patients who drink in excess of NIAAA guidelines). The USPSTF identifies three levels of counseling intervention, differentiated by level of intensity, for these patients. Multi-contact counseling is more effective than single-contact counseling interventions, but providers should tailor counseling intensity to address individual patient needs. Intensity is determined by the duration of the initial contact and whether any follow-up occurs. “Very brief” interventions last up to 5 minutes and have no follow-up. “Brief” counseling interventions last 15 minutes and have no follow-up. “Multi-</p>

contact” interventions include one initial session lasting at least 15 minutes and several follow-up contacts.¹⁶

Effective counseling for alcohol misuse in the primary care setting includes feedback, advice, goal setting, and follow-up. Alcohol misuse counseling should follow the counseling framework known as the “5 As”¹⁷:

- Providers should **assess** the degree of a patient’s drinking, including any problems caused by alcohol and whether the person is alcohol dependent or not.
- Providers should **advise** patients to reduce their alcohol consumption to safer levels or to abstain altogether from drinking.
- Providers should **agree** with patients on their goals for reducing alcohol consumption.
- Providers should **assist** patients in acquiring personal motivation, self-help skills, or outside resources necessary to achieve behavior change.
- Finally, providers should **arrange** for patients to receive appropriate follow-up support services and counseling, depending on the nature of their alcohol misuse.

Interventions for those with alcohol dependence are more intense and time consuming. Addiction treatment was not discussed in the USPSTF document.¹⁶

Treatment
Information

Counseling interventions for non-dependent alcohol misuse are described above. A detailed description of treatment for alcohol dependence is beyond the scope of this chapter but such treatment is accepted medical practice. The benefits of alcohol dependence treatment include a 50% reduction in alcohol consumption compared with those who do not undergo treatment.

Health benefits should include provisions for diagnostic follow-up and treatment services.

Strength of Evidence for the Clinical Preventive Service

The level of evidence supporting the recommendations contained in this chapter is described below.

Evidence-Based Research:

U.S. Preventive Services Task Force (USPSTF)

Strength of Evidence: B (Recommended/ At Least Fair Evidence)

- The USPSTF found good evidence to support screening and behavioral counseling interventions to reduce alcohol misuse by adults, including pregnant women, in primary care settings.¹⁶

Recommended Guidance:

National Institute on Alcohol Abuse and Alcoholism (NIAAA)

Strength of Evidence: Expert Recommendation

- The NIAAA recommends incorporating screening for alcohol misuse and counseling into routine medical practice.¹⁷

American Academy of Pediatrics (AAP)

Strength of Evidence: Expert Consensus (Committee on Substance Abuse)

- The AAP encourages clinicians to ask adolescents about their alcohol use and refer adolescents with suspected drinking problems for age-appropriate treatment.¹⁸ It also encourages including substance abuse prevention in routine and episodic office visits.¹⁹

American Medical Association (AMA)

Strength of Evidence: Expert Consensus (Office of Alcohol, Tobacco, and Other Drug Abuse Prevention)

- The AMA recommends that primary care physicians establish routine alcohol screening and be trained to conduct brief intervention counseling and motivational interviewing.²⁰

American College of Surgeons (ACS)

Strength of Evidence: Expert Consensus (Committee on Trauma)

- The ACS recommends alcohol screening with brief counseling or referral, as appropriate, for all injured patients.²¹

American College of Emergency Physicians (ACEP)

Strength of Evidence: Expert Consensus (Board of Directors)

- The ACEP recommends that physicians mitigate the consequences of alcohol abuse through screening, brief interventions, and appropriate referral.²²

American Society of Addiction Medicine (ASAM)

Strength of Evidence: Not Specified

- The ASAM recommends routine screening for alcohol misuse in primary care settings, with appropriate counseling and referral.

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