

Q: What is the best questionnaire to screen for alcohol use disorder in an office practice?

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A: Popular questionnaires to screen for alcohol misuse include the CAGE, the TWEAK, and the short form of the Alcohol Use Disorder Identification Test (AUDIT-C). Any of these is recommended. The important thing is to be proactive about screening for this very common and underrecognized problem.

■ A COMMON PROBLEM, NOT OFTEN ADMITTED

Alcohol use disorder, which ranges from hazardous drinking to binge drinking and alcohol dependence, is more common than admitted and often goes undiagnosed. Its personal, societal, and economic consequences cannot be overemphasized. Alcohol use is responsible for 85,000 deaths each year in the United States, and it is linked to substantial medical and psychiatric consequences and injuries, especially motor vehicle accidents. The estimated annual cost of problems attributed to alcohol use is over \$185 billion.¹

About three in 10 US adults drink at levels that increase their risk for alcohol-related consequences, and about one in four adults currently abuses alcohol or is dependent on it.² In 2009, 6.8% of the US population age 12 and above reported heavy drinking, with highest rates in those ages 21 to 29.³ The rate of alcohol use was higher in men than in women, but about 10% of pregnant women ages 15 to 44 reported current alcohol use.³

The prevalence of alcohol use disorder ranges from 2% to 29% in a typical ambulatory primary care medical practice.⁴ And only one-third of people with alcohol use disorder are diagnosed.

Studies and experience have shown that problem drinkers tend to not seek help until they have advanced dependence, often with associated medical and sociolegal complications. It is also well established that the earlier the diagnosis is made and appropriate intervention is offered, the better the prognosis.

■ WHAT IS THE GOAL OF SCREENING?

The goals of screening for alcohol use disorder are to estimate the patient's risk level, to identify those at risk because they exceed defined limits, and to identify those with evidence of an active problem, ie, with adverse consequences related to their drinking. This screening paves the way for further assessment, definitive diagnosis, and a treatment plan.

The US Preventive Services Task Force recommends screening and behavioral counseling interventions (such as a brief intervention) in the primary care setting to reduce alcohol misuse by adults, including pregnant women.⁵ In addition, most primary care patients who screen positive for heavy drinking or alcohol use disorder show motivation and readiness to change, and those with the most severe symptoms tend to be the most ready.⁶

■ THE IDEAL QUESTIONNAIRE: SENSITIVE, SPECIFIC, AND SHORT

The ideal alcohol screening questionnaire for a busy practice should be brief and highly sensitive and specific for identifying the spectrum

Screening for alcohol misuse requires a concerted, proactive approach

of alcohol misuse. Also, it should be easy to recall so it can be part of routine face-to-face discussion with the patient during an office visit.

Further, it should include questions that focus on the consequences of drinking as well as on quantity and frequency. It should also take into account factors such as the patient's age, sex, race or ethnicity, and pregnancy status, as these can influence the effectiveness of the screening method.

Problems with focusing on quantity alone

"Risky use" is defined (in a non-alcohol-dependent person or one with no alcohol-related consequences) as more than seven standard drinks per week or more than three per occasion for women, and more than 14 standard drinks per week or more than four per occasion for men.²

A standard drink in the United States contains about 12 to 14 g of ethanol: a 12-oz can or bottle of beer, a 5-oz glass of wine, or about 1.5 oz of 80-proof liquor.²

The common single-item screening test asks, "How many times in the past year have you had more than four drinks (for women) or five drinks (for men) in a day?" This is recommended by the National Institute on Alcohol Abuse and Alcoholism for brief screening in primary care. However, a positive answer (ie, one or more times in the past year) has a sensitivity of only 82% and a specificity of only 79% for detecting unhealthy alcohol use, and an even lower specificity (67%) for detecting current alcohol use disorder.⁷

The CAGE questionnaire

The four-item CAGE questionnaire⁸ focuses on the consequences of drinking:

- **C:** Have you felt the need to **cut down** on your drinking?
- **A:** Have you ever felt **annoyed** by someone criticizing your drinking?
- **G:** Have you ever felt bad or **guilty** about your drinking?
- **E:** Have you ever had an **eye-opener**—a drink the first thing in the morning to steady your nerves?

A yes to one or more of the questions denotes a need for further assessment.

The CAGE questionnaire is simple, non-

threatening, brief, and easy to remember. A yes answer to two or more items has a sensitivity of 75% to 95% and a specificity of 84% to 97% for alcohol dependence.⁹ However, CAGE is less sensitive for identifying non-alcohol-dependent at-risk drinkers. The patient's sex and ethnicity have also been found to affect its performance somewhat, with some studies showing a sensitivity as low as 50% in adult white women and as low as 40% in at-risk groups ages 60 and over.

The TWEAK questionnaire

The TWEAK is a modification of the CAGE and includes a question about tolerance; it has a sensitivity of 87% for harmful drinking and 84% for dependence, especially in trauma-related cases.⁹ It has also been found to be better than the CAGE for screening pregnant patients.

- **Tolerance:** How many drinks can you hold without falling asleep or passing out? (2 points if six drinks or more)
- **Worried:** Have friends or relatives worried about your drinking? (2 points if yes)
- **Eye-opener:** Do you sometimes take a drink in the morning when you first get up? (1 point if yes)
- **Amnesia:** Have friends or relatives told you about things you said or did while drinking that you could not remember? (1 point if yes)
- **Cut down:** Do you sometimes feel the need to cut down on your drinking? (1 point if yes)

An answer of ≥ 6 to the first question or a total score of 3 or more denotes a problem with alcohol use and a need for further assessment.¹⁰

The AUDIT-C

The AUDIT-C, a shorter form of the 10-item AUDIT developed by the World Health Organization, uses only the first three questions of the full-length AUDIT. The three-item AUDIT-C has a sensitivity ranging from 85% in Hispanic women to 95% in white men.^{9,11} The questions center on the quantity and frequency of alcohol use:

- How often do you have a drink containing alcohol? Answer choices: never; monthly or less often; 2 to 4 times a month; 2 to 3 times a week; 4 or more times a week.

Problem drinkers do not tend to seek help until they have advanced dependence

- How many standard drinks containing alcohol do you have on a typical day when you are drinking? Answer choices: one or two; three or four; five or six; seven to nine; 10 or more.
- How often do you have six or more drinks on one occasion? Answer choices: never, less than monthly; monthly; weekly; daily or almost.

Scoring is 0 for never, and 1, 2, 3, or 4 for the subsequent answer choices in each question.

The cut-off score for the AUDIT-C is usually a total of 3 points for women and 4 for men: ie, a score of 3 or higher for women and a score of 4 or higher for men indicate alcohol use disorder and the need for further assessment.

The AUDIT questionnaire has been found not only to have a high sensitivity (83%) and specificity (90%) for identifying alcohol dependence, but also to be more sensitive than the CAGE questionnaire (85% vs 75%) for identifying harmful drinking, hazardous drinking, and at-risk drinking. (Note: The full version of AUDIT performed similarly to the three-item AUDIT-C for detecting heavy drinking and active abuse or dependence.¹²) Furthermore, it has performed well as a screening test in many multinational trials of alcohol brief intervention. The questions about quantity of alcohol consumed may be even more suitable for adolescents and young adults, who tend to fall into the harmful-hazardous drinking category rather than the dependent category. In some studies, patients tended to reveal less

with the CAGE questionnaire when it was preceded by direct and close-ended questions about the quantity and frequency of alcohol use, thus reducing its sensitivity.¹³

The AUDIT and TWEAK questionnaires showed greater sensitivity in both men and women than the CAGE questionnaire and were equally sensitive in African Americans.¹⁴

■ HOW TO FIT ALCOHOL SCREENING INTO AN OFFICE VISIT

A practical way to fit alcohol screening into an office visit is to include a questionnaire in the assessment papers completed by the patient while in the waiting room. In other settings, these questions may be asked by trained nursing staff as part of the initial assessment, ie, while obtaining the patient's weight and vital statistics. This can be briefly reviewed by the physician during the face-to-face history and physical examination.

A concerted effort is needed to proactively screen for alcohol use. A combination of questions about the effect, the quantity, and the frequency of alcohol use is the best way to screen for the many different aspects of alcohol use disorder—many of which can be managed in the primary care setting through brief interventions without referral to a specialist.

When screening for alcohol misuse, it is also important to consider factors such as age, sex, race or ethnicity, pregnancy, and history of recent trauma or surgery.

Screening should focus on both quantity and consequences of drinking

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