



Evaluation and Management of Alcohol use Disorder among Older Adults

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Abstract

Purpose of Review The prevalence of alcohol use disorder (AUD) among older adults in the United States is rising, but remains underdiagnosed, underreported, and inadequately managed. This review highlights the medical, social, and cultural factors of AUD in older adults and provides guidelines for its screening, evaluation, and management.

Recent Findings The COVID-19 pandemic has created additional challenges and barriers to care, as older adults may have disproportionate worsening of anxiety, depression, and substance use resulting from increased isolation related to physical distancing and shelter-in-place guidelines.

Summary All older adults should be routinely screened for AUD with standardized screening tools. If a patient's screening results are positive, a clinician should conduct a brief assessment, which may be supplemented by laboratory tests. Most older adults at risk for alcohol misuse do not need specialized SUD treatment, but most can benefit from Screening, Brief Intervention, and Referral to Treatment (SBIRT) to prevent substance misuse before it occurs. Medications for the treatment of AUD in older adults include naltrexone, acamprosate, disulfiram, gabapentin and topiramate. Psychosocial treatments, including mutual help groups, are equally important.

Keywords Geriatrics · Alcohol use disorder · Older adults · Substance use disorders

Introduction

The prevalence of substance use disorders (SUD) among older adults is rising in the United States and alcohol is the most commonly used substance in this population. The 2019 National Survey on Drug Use and Health (NSDUH) found that approximately 5.6 million (10.7%) adults aged 65 years and older engaged in past-month binge alcohol use, and an estimated 1.5 million (2.8%) engaged in past-month heavy alcohol use [1]. In the 2012–2013 Wave of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC III), 2.3% of adults aged 65 years and older met criteria for Alcohol Use Disorder (AUD) within the past 12 months, and 13.4% met criteria during their lifetime [2].

The increase in SUD among older adults is driven in part by the aging Baby Boomer population, who have higher rates of earlier life substance use and increased later life prevalence compared to previous geriatric cohorts. Proposed theories for the higher numbers of SUD among Baby Boomers include: (a) higher population numbers relative to previous cohorts; (b) increased life expectancy which allows older adults to use substances for longer; (c) generational attitudes including desire for personal gratification and greater acceptance of drug use; (d) greater exposure to drugs and higher rates of use when younger [3, 4].

Older adults are not a homogenous group, however, and their presentations may vary based on medical comorbidities, lifestyle factors, and duration and severity of substance use. Additionally, they may have a range of opinions and attitudes towards substance use; thus, an age and culturally sensitive and individualized approach can improve treatment outcomes [3]. Chronological age may not reliably predict health status. Some adults over 65 years of age may have better physical health status than their similarly aged peers. On the other hand, chronic alcohol use contributes to increased morbidity, exacerbation of existing health conditions, and neurotoxic and

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neuropathological changes [5]. Despite this growing problem, AUD in later life is often underdiagnosed, underreported, or overlooked, and consequently is often not managed [4•]. Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria are geared towards younger adults and may not appropriately screen and diagnose older adults. Social and occupational impairments due to alcohol use may go unnoticed or unreported for older adults who are retired, live alone, or are socially isolated [4•]. DSM criteria highlight increasing use and efforts to cut back on use. However, many older adults continue with problematic drinking at the same level as they have for years and may have problematic use without efforts to cut back and at lower levels of use compared to younger adults [6]. Additionally, AUD in older adults can mimic other diagnoses which are common in later life, such as cognitive impairment or depression. Ageist beliefs among patients, family members and providers pose additional barriers to diagnosis and treatment. Older adults may minimize their substance use to healthcare providers. Family members may believe that SUDs in late life do not exist or do not need treatment, and consequently overlook substance use among older adults. Finally, healthcare providers may refrain from asking about substance use due to fear of offending older adults or may focus more on their reports of physical complaints [7].

The COVID-19 pandemic has created additional challenges for older adults, who are especially vulnerable to the detrimental effects of isolation, and may have disproportionate worsening of anxiety, depression, and substance use triggered by physical distancing and shelter-in-place guidelines [8•]. In a self-report survey of 1982 American adults, 34% reported binge drinking during the COVID-19 pandemic. For every week spent at home, there was a 1.21 greater odds of binge drinking (95% CI: 1.08–1.35), and binge drinkers with previous or current depression had greater increase in alcohol consumption compared to those without depression (AOR 1.80, 95% CI: 1.15–2.81) [9]. A study of 3358 middle-aged British adults found that the prevalence of high-risk drinking increased from 19.4% between 2016 and 2018 (when the cohort was aged 46–48 years) to 24.6% in May 2020 (aged 50 years) and the prevalence of drinking ≥ 4 times a week doubled from 12.5% to 26% during this period [10]. This increase was not moderated by gender, marital status, education level, or presence of a chronic illness. Barriers to SUD care during COVID-19 include the closure of treatment facilities, focus of emergency departments on COVID-19 patients, physical distancing and shelter in place orders affecting mental health, and threats to income and resources of individuals with SUDs [11]. Older adults are especially vulnerable to the physical and mental health challenges and barriers to SUD care imposed by the intersection of the COVID pandemic and the SUD epidemic.

Evaluation for Alcohol Use Disorder in Older Adults

Alcohol affects older adults differently than younger adults due to age-related physical changes including decreased lean body mass and total body water, decreased liver metabolism, and increased blood-brain barrier permeability and neuronal sensitivity to alcohol [1]. Consequently, older adults have higher blood alcohol concentrations and increased impairment compared to younger adults with equal levels of consumption. Older adults are more likely to be taking multiple medications which increases their risk for drug-drug interaction and falls. Finally, continued alcohol use in late life increases the risk of falls, cognitive impairment, heart disease, hypertension, and hepatitis [12, 13]. Despite these risks, older adults are less likely than younger adults to be screened and assessed for substance misuse [1].

Screening

The Substance Abuse and Mental Health Service Administration (SAMHSA) Treatment Improvement Protocol (TIP) consensus panel recommends that all older adults be screened for alcohol, tobacco, prescription drug, and illicit drug use at least annually [14•]. Establishing a thorough history of substance use can help providers identify possible substance misuse or concerns and provide an opportunity for education and prevention for older adults with low or absent substance use. Screening can lead to earlier treatment and improved health [12].

The U.S. Preventive Services Task Force (USPSTF) recommends screening older adults for alcohol misuse and brief counseling for those who misuse alcohol [15]. A variety of validated screening tools are available (Table 1). A systematic review of 9 studies that included 6353 patients found that the Alcohol Use Disorders Identification Test (AUDIT) was useful for screening for hazardous alcohol use in patients older than 60 years, and that the CAGE questionnaire was helpful in screening for alcohol dependence [16].

CAGE

The CAGE (Cut down, Annoyed, Guilty, Eye opener) Questionnaire is a 4-item questionnaire that asks about lifetime alcohol use. A positive response to any of the 4 questions is concerning for alcohol misuse [17]. Although the CAGE questionnaire is quick and frequently used, it is not as reliable in detecting problematic use in older adults because it does not probe for binge drinking, which is a highly prevalent form of alcohol misuse in older adults.

Table 1 Screening Tools for Alcohol Use Disorder in Older Adults

Screening Tool	Current or Lifetime Use	Score Range	Score Indicating Need for Comprehensive Evaluation	Self- or Provider-Administered
CAGE ¹	Lifetime	0–4	≥1	Provider
AUDIT ²	Past year	0–40	≥5	Provider
AUDIT-C ³	Past year	0–12	Women: >3 Men: >4	Provider
SAMI ⁴	Past few months	0–5	>1	Self
SMASST-G ⁵	Lifetime	0–10	≥2	Self

¹ CAGE = Cut down, Annoyed, Guilt, Eye-Opener [17]

² AUDIT = Alcohol Use Disorders Identification Test [21]

³ AUDIT-C = Alcohol Use Disorders Identification Test-Consumption [22]

⁴ SAMI = Senior Alcohol Misuse Indicator [20]

⁵ SMASST-G = The Short Michigan Alcoholism Screening Test-Geriatric Version [24]

AUDIT and AUDIT-C

The Alcohol Use Disorders Identification Test (AUDIT) was developed to screen for heavy alcohol use [18]. It has been shown to have reliability in AUD screening and can identify alcohol misuse in adults aged 65 and older [19, 20]. The cutoff score indicating hazardous and harmful alcohol use for the AUDIT is 8; however, for older adults, a score of 5 indicates a need for further assessment [21]. The AUDIT-C is a shorter version of the AUDIT containing only three questions [22].

SAMI

Senior Alcohol Misuse Indicator (SAMI) is a five-item questionnaire which includes a checklist of symptoms and open-ended questions about alcohol use [20]. A score ≥ 1 suggests alcohol misuse in older adults [23].

SMASST-G

The Short Michigan Alcoholism Screening Test-Geriatric Version (SMASST-G) is the first brief alcohol screening tool developed for older adults [24]. A positive response to two or more items suggests potential alcohol misuse [1].

Assessment

If a patient's screening results are positive, a clinician should conduct a brief assessment, including asking about the frequency and severity of alcohol use, the type and frequency of problems due to use, and physical and mental factors impacted by alcohol use. A complete substance use assessment includes full mental health, medical, family, vocational, social, sexual, financial, legal, substance use, and SUD treatment histories. A health history and physical exam should be

conducted to identify common co-occurring conditions such as sleep disturbances and chronic pain that may be suggestive of substance misuse. The history and physical exam can be supplemented by basic metabolic tests, liver function and electrolyte tests, urine toxicology screens, breath alcohol testing, and laboratory tests such as gamma-glutamyltransferase (GGT), carbohydrate-deficient transferrin (CDT) and ethyl glucuronide (ETG) to quantify recent or underreported alcohol use. A physical health assessment and laboratory workup can identify medical problems related to substance use that may need treatment, as well as identify comorbidities such as liver disease and potential drug-drug interactions that can determine choice of treatment.

Management of Alcohol use Disorder in Older Adults

Most older adults at risk for alcohol misuse do not need specialized SUD treatment. However, most can benefit from Screening, Brief Intervention, and Referral to Treatment (SBIRT) to prevent substance misuse before it occurs. SBIRT approaches include screening for possible alcohol misuse and level of risk, offering a brief outpatient intervention to help patients understand the need to change their alcohol misuse, and referrals to SUD treatment programs for patients who need more specialized assessment or intervention. Healthcare providers can easily incorporate SBIRT into standard practices. Current research shows that brief interventions can reduce alcohol consumption and substance misuse among older adults [25, 26].

Brief alcohol interventions (BAIs) consist of one or more time-limited conversations with patients to help reduce unhealthy alcohol use. The goal is to implement harm reduction rather than promoting abstinence only. Implementing psychoeducation can include discussing the National Institute on Alcohol Abuse and Alcoholism's recommended

daily drinking limits (i.e., adults age 65 and older should not consume more than seven drinks in a week and more than three drinks on a given day) [27]. Other psychoeducation can include discussion of medical consequences of alcohol use such as cognitive impairment, increased risk of falls, and liver dysfunction/disease. Motivational interviewing techniques are commonly used in BAIs and can be administered not only by a physician, but also other members of the treatment team such as nurses, social workers, and psychologists. Historically, BAIs have often been delivered as part of the SBIRT model, and thus are seen commonly in the primary care setting [28].

Treatment planning should involve shared decision making to choose the level of care that is the least intensive but will still address the patient's needs. Depending on the patient's needs and treatment goals, treatment may be able to be provided in a primary care or general mental health setting; alternately, referral to specialty treatment may be indicated. An individualized assessment will help determine what level of care is indicated. Factors shown to improve patient outcomes include shared decision making with the patient and incorporation of the older adult in treatment programs where other members are of similar age and functional status [29–31]. Treatment planning for the older adult should also include consideration of age-related factors such as cognition, hearing impairment, or any other physical or functional decline [14•]. If cognitive impairment is present, the extent of the patient's impairment will need to be assessed and treatment planning may need to involve family members or legal guardians [32, 33].

If the patient requires detoxification, the optimal setting for safe withdrawal will need to be considered (i.e., outpatient or inpatient). If the patient does not have access to addiction-specific treatment and does not require medically supervised withdrawal, the patient may be a candidate for outpatient detoxification in the general health care setting [14•]. However, outpatient detoxification is less commonly employed in older adults given medical comorbidities. Inpatient detoxification is recommended if the patient requires medically supervised withdrawal which includes routine monitoring of vitals and withdrawal symptoms using the Clinical Institute Withdrawal Assessment of Alcohol Scale-Revised (CIWA-Ar) and administration of medications such as benzodiazepines [34]. Of note, older adults are at higher risk of developing delirium, having protracted withdrawal, and having worsening medical conditions as compared to their younger counterparts [35]. Acute inpatient treatment may be limited to medically supervised withdrawal followed by a step-down level of care to an intensive outpatient program (IOP), residential recovery-oriented rehabilitation program, or outpatient clinic [14•, 34].

Other co-occurring psychiatric illness can often be seen in conjunction with alcohol use disorder. When active, untreated symptoms of a co-occurring psychiatric illness are present,

treatment of the underlying psychiatric illness should also be addressed; successful addiction treatment is more likely if these conditions are stabilized [14•]. Consultation with geriatric and/or addiction psychiatry specialists is recommended for older adults with co-morbid AUD and psychiatric illness.

Once the patient has completed any necessary steps for medical stabilization including outpatient or inpatient detoxification and has been able to consistently abstain from alcohol use, they may need ongoing assistance with recovery management support. Patients that are more likely to need ongoing recovery support may include patients with co-occurring medical conditions or psychiatric disorders and individuals with limited social support [36].

Figure 1 depicts a recommended algorithm for the screening and treatment of alcohol use disorders among older adults.

Maintenance Treatment for Alcohol Use Disorders: Pharmacologic Interventions

The SAMHSA consensus panel recommends using medications to treat alcohol use disorder in older adults when necessary. Situations that may necessitate medications include patients in whom psychosocial interventions have not been successful and/or who continue to struggle with cravings and return to alcohol use. Factors to consider when prescribing for older adults include evaluating for potentially harmful drug-drug interactions, using lower doses of medications, ensuring medication adherence, and ensuring recovery supports [14•]. Currently there are three medications with FDA indication to treat alcohol use disorder which include naltrexone, acamprosate, and disulfiram. Two additional medications with off label use for alcohol use disorder are gabapentin and topiramate [37]. None of these medications are specifically contraindicated for use in older adults, but caution should be exercised when using these pharmacologic agents in this population (Table 2).

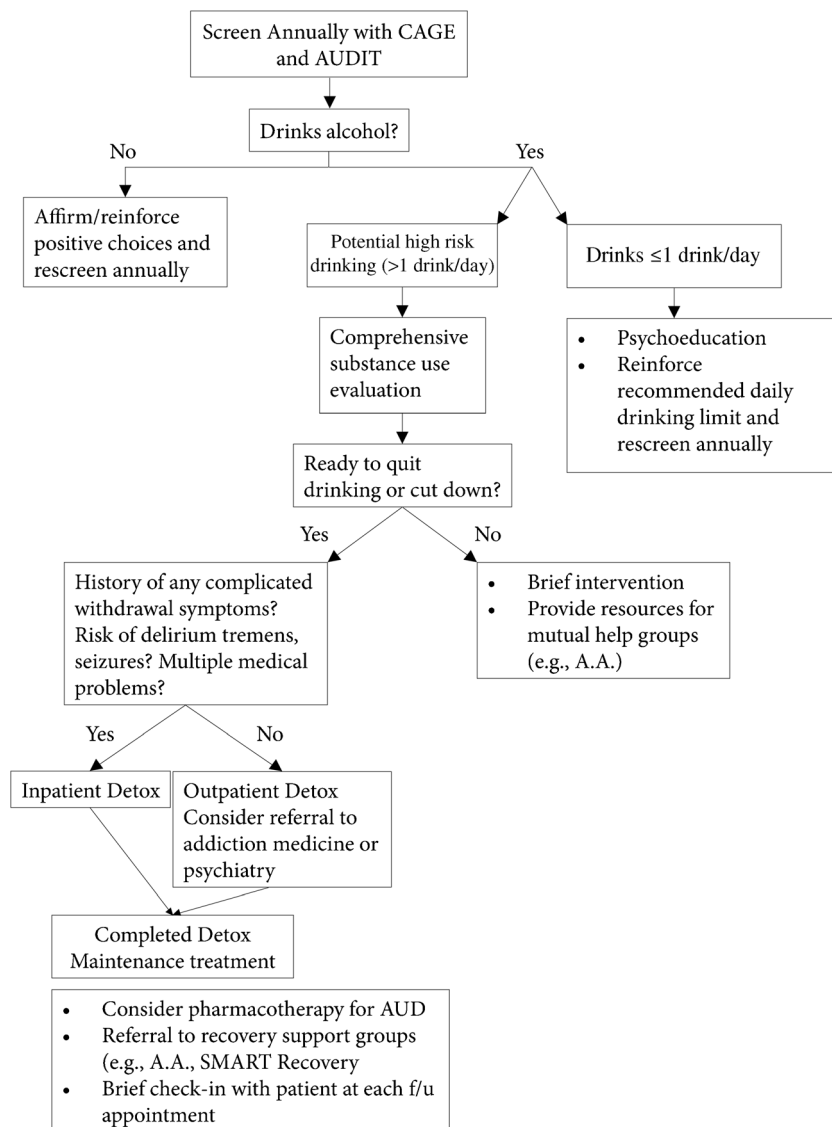
Naltrexone

Naltrexone is an opiate receptor blocker that reduces cravings for alcohol and decreases the rate of return to heavy drinking. There have been some studies that suggest naltrexone is tolerable in adults ages 50 and older, but widespread data about tolerability in older populations are lacking [38]. Patients who are on or require prescription opioids for pain relief are not good candidates for naltrexone as naltrexone may cause significant opioid withdrawal symptoms [14•].

Disulfiram

Disulfiram works by inhibiting aldehyde dehydrogenase which triggers an acute physical reaction to alcohol. This

Fig.1 Screening and treatment algorithm for alcohol use in older adults



reaction includes tachycardia, flushing, nausea, chest pain, dizziness, and blood pressure changes [39, 40]. The physical reaction of disulfiram and alcohol can be harmful in older adults which makes it less recommended in the geriatric population [41, 42]. Furthermore, use of disulfiram requires patients adhering to strict medication protocols and monitoring of compliance [43]. Disulfiram should be used with caution in older adults due to higher rates of medical comorbidities, but as always, the decision to initiate depends on the overall risk/benefit ratio.

Acamprosate

Acamprosate can support abstinence by reducing cravings and the pleasurable effects associated with alcohol [1, 44]. It can also help lessen symptoms related to abstinence such

as insomnia and anxiety [39]. It is the preferred agent in patients with hepatic impairment [45]. There is limited research on acamprosate use specifically in older adults, but kidney function should be taken into consideration before starting this medication. Given that older adults are at higher risk of renal impairment, baseline renal function and frequent monitoring of renal function should accompany treatment with acamprosate [14•].

Gabapentin

Gabapentin is FDA-approved for post-herpetic neuralgia and adjunctive therapy for focal (partial) seizures. This medication can be used off-label for alcohol use disorder, as studies have found it to help with mild alcohol withdrawal syndrome and neuropathic pain [46, 47].

Table 2 Medications for the Maintenance Treatment of Alcohol Use Disorder (AUD)

Medication	Acamprosate	Disulfiram	Naltrexone	Gabapentin	Topiramate
FDA Approval for AUD? Indications and clinical pearls	Yes For maintenance of abstinence from alcohol for patients who have completed detoxification and are abstinent from alcohol before beginning acamprosate Preferred in patients with hepatic impairment	Yes For highly motivated patients who have completed detoxification Cravings are not reduced with disulfiram	Yes Reduces alcohol cravings; can reduce the number of drinks that a daily drinker consumes Monthly injectable formulation may be helpful for compliance	No Off label use: Moderate to severe alcohol use disorder May be helpful in mild alcohol withdrawal syndrome or patients with neuropathic pain	No Off label use: Alcohol use disorder
Mechanism of action	Promotes balance between the excitatory and inhibitory neurotransmitters, glutamate and GABA	Disrupts the metabolism of alcohol by inhibiting enzyme aldehyde dehydrogenase causing an unpleasant physical reaction when combined with alcohol	Blocks opiate receptors that are involved in the rewarding effects of drinking and craving for alcohol	Calcium channel blocker and γ -aminobutyric acid (GABA) modulator	Antagonizes excitatory neurotransmitters (glutamate) and decreases dopamine release in reward pathway
Dosing Note: For older patients, recommended to start low and go slow with dosing, but can titrate based on response and tolerability	666 mg PO TID 333 mg PO TID (for patients with renal impairment)	Start 125 mg PO daily (must be abstinent from alcohol >12 h), increase to 250 mg daily after several days Maintenance usually 250–500 mg daily	50 mg PO daily OR 380 mg IM (gluteal) q4 weeks Do not initiate therapy until patient is opioid-free for at least 7–10 days (by urinalysis).	Start 300 mg PO daily and increase dose in increments of 300 mg every 1–2 days up to a target dose of 600 mg three times a day	Start 25 mg PO daily and increase dose by 25 mg weekly Poor tolerability seen in patients on doses greater than 100 mg/day
Common side effects	Diarrhea (dose related, transient), weakness, peripheral edema, insomnia, anxiety	Skin eruptions (e.g., acne, allergic dermatitis), drowsiness, fatigue, impotence, headache, metallic taste	Headache, nausea, somnolence, vomiting	Drowsiness, fatigue, dizziness, stomach upset, dry mouth	Dose-related sedative effects (dizziness, drowsiness, fatigue) Stomach upset, decreased appetite, anorexia, weight reduction, increased anxiety, paresthesias
Contraindications and older adult considerations	Because of elevated risk of diminished renal function in people aged ≥ 65 , baseline and frequent renal function tests (q3–6 months) are important in this population	Contraindicated in severe myocardial disease or coronary occlusion, psychoses, and in those with high levels of impulsivity, suicidality, and hypersensitivity to disulfiram or to other thiazam derivatives Risk of hepatic toxicity in otherwise healthy adults Counsel patient that any alcohol ingestion can result in reaction (e.g., cough syrups, mouthwash)	Do not use in patients with hepatitis or other liver dysfunction	Do not use in chronic kidney disease May cause respiratory depression in older adults Increased risk of falls due to somnolence Can exacerbate myasthenia gravis	Extended-release formulation contraindicated with recent alcohol use (6 h prior or after dose) and patients with metabolic acidosis with concomitant metformin use Risk of weight loss and short and long-term cognitive impairment (even at low doses, i.e., ≤ 100 mg/day) makes it not a first line treatment for AUD in older adults

Topiramate

Topiramate is an anticonvulsant that has FDA indications for migraine prevention and seizures. It can be used off label in alcohol use disorder for cravings and withdrawal symptoms. Topiramate is associated with cognitive impairment and weight reduction. Weight loss is not usually a desired effect in older patients, which makes topiramate less than ideal as a first-line treatment for alcohol use disorder. Short- and long-term cognitive dysfunction can be seen even at low doses [48, 49].

Maintenance Treatment for Alcohol Use Disorders: Non-pharmacologic Interventions

Non-pharmacologic interventions for AUD are also important to consider. These may include continuing care interventions such as brief telephone counseling or telephone recovery check-ups done by either the provider or other clinic staff. With the patient's permission, keeping in contact with caregiver(s) can be an invaluable resource as caregivers are often first to notice "red flags" indicating return to use and can offer important details about the patient's recovery [14•].

Connecting patients to social support is also key to recovery from alcohol use disorder. Older adults have better long-term outcomes when their social supports promote abstinence [50, 51]. Sources of social support include family and friends, religious or spiritual groups, and mutual-help groups. Mutual-help programs can include more structured programs such as Alcoholics Anonymous (AA) which help connect patients to a network of peers to whom they can relate [14•]. For patients seeking an alternative to AA, Self-Management and Recovery Training (SMART) differs from AA in that it is run by trained volunteers and is based on principles of cognitive behavioral therapy (CBT) and motivational interviewing (MI). Some of the CBT and MI skills include building and keeping up motivation, coping with urges, managing thoughts, feelings, and behaviors, and living a balanced life [14•]. During the COVID-19 pandemic, mutual-help groups are more likely to be occurring through "virtual" platforms such as video or telephone which can be an advantage for patients needing to physically distance or if transportation is a barrier. However, some older adults may lack the necessary technology.

Conclusion

Substance use disorders are increasing among older adults, with alcohol being the most commonly used. It is imperative that healthcare providers appropriately screen, evaluate, and treat AUD given that older adults are more susceptible to medical and neurological complications and significant

functional decline related to the long-term consequences of alcohol use. There is not a "one size fits all" treatment plan for AUD in older adults, but pharmacologic and non-pharmacologic interventions can be implemented.

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