Screening, Counseling, and Pharmacotherapy for Unhealthy Alcohol Use in Primary Care Settings

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Objectives

1. Describe unhealthy alcohol use
   - Define alcohol use disorder (AUD)
2. Understand the burden of unhealthy alcohol use
3. Review an evidence-based, practical approach for
   - Screening for unhealthy alcohol use
   - Providing appropriate interventions, with focus on
     - Behavioral counseling for risky drinking in primary care
     - Medications for AUD in outpatient settings
4. Incorporate cases that cover common clinical scenarios

Unhealthy Alcohol Use

- Why this topic?
- Saw a great need
- Underutilized service
- Effective interventions
- Addressing a top cause of preventable morbidity and mortality
- Challenging, interesting topic
- Many research, QI, and teaching opportunities

Unhealthy Alcohol Use

Risky Drinking
- Consumption of alcohol above the recommended limits

Alcohol Use Disorder
- Difficulty controlling one's drinking
- Preoccupation with alcohol
- Continued use despite adverse consequences
- Drinking more to get the same effect
- Withdrawal upon cutting back or stopping alcohol use

Case #1

- 35-year-old male with a history of asthma coming in for annual preventive health visit
- Otherwise healthy
- No medications other than inhalers
- Reports drinking 2 bourbon drinks each night on Thursday, Friday, Saturday, and Sunday
- Is that too much?

How Much is "Too Much"?

Older US guidelines, recommended limits

Men < 65	All women; men 65+
≤4 drinks/day and ≤14 drinks/week	≤3 drinks/day and ≤7 drinks/week

How Much is "Too Much"?

- However, health risks increase at very low levels of consumption
- 2020-2025 Dietary Guidelines for Americans state that adults of legal drinking age can choose not to drink or to drink in moderation by limiting intake to
  - Men: 2 drinks or less in a day
  - Women: 1 drink or less in a day
  - Drinking less is better for health than drinking more

Low levels of consumption can be problematic

Certain health conditions   Certain medications   Pregnancy

What is a standard drink?

Beer or Wine Cooler	Malt Liquor or Microbrews	Table Wine	80-Proof Spirits (Hard Liquor)
12 oz. 5% alcohol	8-9 oz. 7% alcohol	5 oz. 12% alcohol	1.5 oz. 40% alcohol

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How many drinks is this Long Island Iced Tea?

Case #1, revisited

- 35-year-old man with a history of asthma coming in for annual preventive health visit
- Reports drinking 2 bourbon drinks each night on Thursday, Friday, Saturday, and Sunday
- Is that too much?
  - We need some more information about those drinks
  - If each is a standard drink (1.5 ounces of 80 proof liquor), then it's within the US dietary guidelines
  - We should have him complete a standardized screening questionnaire to better assess

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Case #2

- 56-year-old with history of hypertension, heart failure, and DVT
- Medications: Lisinopril, metoprolol, furosemide, warfarin
- They don't currently drink any alcohol, but they heard that it might be good for their cardiovascular health and ask if they should start having a glass of wine each night with dinner
- What is your advice?

Who Should be Advised Not to Drink Any Alcohol?

- Pregnant or might be pregnant
- Taking medications that interact with alcohol
- Have certain medical conditions
- Under 21 (minimum legal drinking age in US)
- Recovering from AUD or unable to control the amount
- Planning to drive a vehicle or operate machinery
- People who don't currently drink any alcohol and are considering whether they should start

Common medications that can interact with alcohol

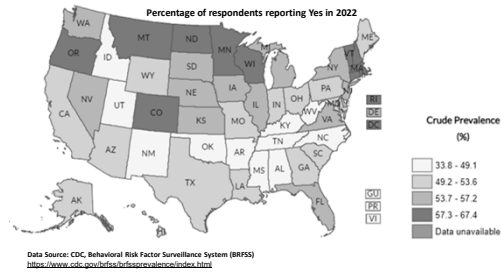| Indication	Examples	Possible reactions with alcohol
Allergies	Antihistamines (e.g., Diphenhydramine, Loratadine)	Drowsiness, dizziness, increased risk for overdose
Anxiety	Benzodiazepines (e.g., Lorazepam)	Drowsiness, dizziness, increased risk for overdose; slowed or difficulty breathing; impaired motor control
Arthritis	NSAIDS (e.g., Naproxen) and COX-2 inhibitors (Celecoxib)	Ulcers, stomach bleeding, liver damage
Blot clots	Warfarin	Occasional drinking: internal bleeding. Heavier drinking: bleeding or opposite effect (blood clots, strokes, heart attacks)
Depression	Antidepressants (e.g., Citalopram, Amitriptyline, Fluoxetine)	Drowsiness, dizziness, increased risk for overdose; increased feelings of depression or hopelessness

Common medications that can interact with alcohol

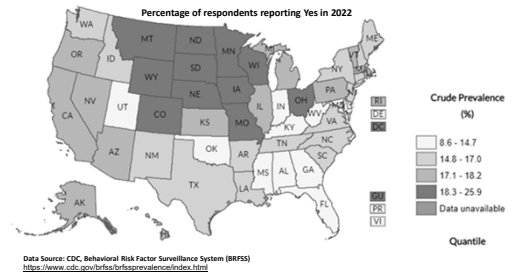| Indication	Examples	Possible reactions with alcohol
GERD, Heartburn, indigestion	H2 blockers (e.g., cimetidine)	Rapid heartbeat, increased alcohol effect
High blood pressure	ACE inhibitors (e.g., Lisinopril, Quinapril)	Drowsiness, fainting, dizziness; arrhythmia
High cholesterol	Statins (e.g., Atorvastatin)	Liver damage
Infection	Metronidazole	Rapid heartbeat, sudden changes in blood pressure; stomach pain or upset; vomiting, headache
Pain, fever, inflammation	NSAIDS (e.g., ibuprofen), Acetaminophen	Stomach upset, bleeding and ulcers; liver damage
Sleep problems / Insomnia	Zolpidem, Eszopicline	Drowsiness, sleepiness, dizziness, increased risk for overdose; slowed or difficulty breathing; impaired motor control

Prevalence of Unhealthy Alcohol Use

- 20-30% of US adult population
- Most of those do not have AUD

Adults who have had at least one drink of alcohol within the past 30 days

Percentage of respondents reporting Yes in 2022

Crude Prevalence (%)
- 33.8 - 49.1
- 49.2 - 53.6
- 53.7 - 57.2
- 57.3 - 67.4
- Data unavailable

Data Source: CDC, Behavioral Risk Factor Surveillance System (BRFSS)
https://www.cdc.gov/brfss/brfssprevalence/index.html

Binge drinkers (males having 5 or more drinks on one occasion, females having 4 or more drinks on one occasion)

Percentage of respondents reporting Yes in 2022

Crude Prevalence (%)
- 8.6 - 14.7
- 14.8 - 17.0
- 17.1 - 18.2
- 18.3 - 25.9
- Data unavailable

Quantile

Data Source: CDC, Behavioral Risk Factor Surveillance System (BRFSS)
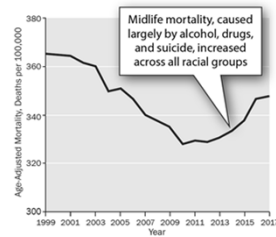https://www.cdc.gov/brfss/brfssprevalence/index.html

Third leading cause of preventable deaths

- Around 100,000 deaths per year in the US
  - About 10,000 of those attributable to drunk driving
- 3rd for a relatively long time (after tobacco smoking and obesity)

Major contributor to the recent decline in U.S. life expectancy

Age-adjusted all-cause mortality rates, US Adults aged 25-64 years

Midlife mortality, caused largely by alcohol, drugs, and suicide, increased across all racial groups

4/10/2024

Health Problems Associated with High Average Alcohol Consumption and Heavy Per-occasion Use

- Cancers (oral cavity, esophagus, larynx, colon, rectum, liver, and breast)
- Gastrointestinal problems, e.g., liver cirrhosis, pancreatitis, gastritis, ulcers
- Cardiovascular problems, e.g., heart disease, hypertension, cardiomyopathy, stroke
- Mental health problems: e.g., depression, suicide, anxiety, cognitive impairment
- Preterm birth complications, fetal alcohol syndrome
- Injuries and violence
- Mortality

Case #2, revisited

- 56-year-old with hx hypertension, heart failure, and DVT
- Medications: Lisinopril, metoprolol, furosemide, warfarin
- What is your advice?
  - Do not start drinking alcohol
  - There are some significant potential harmful interactions between alcohol and the medications they're taking
  - The best scientific evidence indicates that there are no cardiovascular health benefits
  - In fact, the risk for health problems increases at low levels of consumption

Screening for Unhealthy Alcohol Use in Primary Care Settings

USPSTF Recommendation for Adults

Population	Recommendation	Grade (What's This?)
Adults 18 years or older, including pregnant women	The USPSTF recommends screening for unhealthy alcohol use in primary care settings in adults 18 years or older, including pregnant women, and providing persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce unhealthy alcohol use.	B

Slide 25

Annals of Internal Medicine | REVIEW

Behavioral Counseling After Screening for Alcohol Misuse in Primary Care: A Systematic Review and Meta-analysis for the U.S. Preventive Services Task Force

Daniel E. Jonas, MD, MPH; James C. Garbutt, MD; Halle R. Amick, MSPH; Janice M. Brown, PhD; Kimberly A. Brownley, PhD; Carol L. Council, MSPH; Anthony J. Viera, MD, MPH; Tania M. Wilkins, MS; Cody J. Schwartz, MPH; Emily M. Richmond, MPH; John Yeatts, MPH; Tammeka Swinson Evans, MOP; Sally D. Wood, BA; and Russell P. Harris, MD, MPH

Clinical Review & Education

JAMA | US Preventive Services Task Force | EVIDENCE REPORT

Screening and Behavioral Counseling Interventions to Reduce Unhealthy Alcohol Use in Adolescents and Adults
Updated Evidence Report and Systematic Review for the US Preventive Services Task Force

Elizabeth A. O'Connor, PhD; Leslie A. Perdue, MPH; Caitlyn A. Senger, MPH; Megan Rushkin, MPH; Carrie D. Patnode, PhD, MPH; Sarah I. Bean; Daniel E. Jonas, MD, MPH

Jonas, Garbutt, Amick, et al. Ann Intern Med. 2012 Nov 6;157(9):645-54.
O'Connor, Perdue, Senger, Rushkin, Patnode, Bean, Jonas JAMA. 2018;320(18):1910-1928.

Slide: Workflow

Workflow

Slide: AUDIT-C
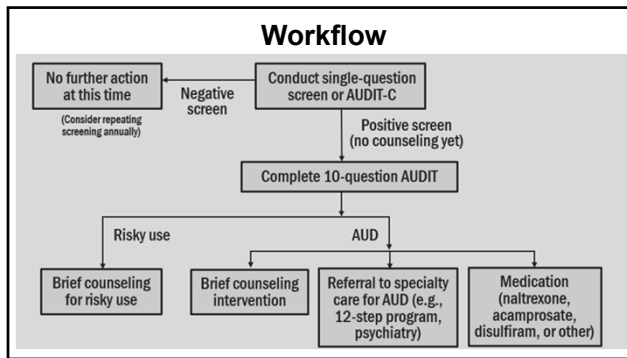
AUDIT-C

Alcohol Use Disorders Identification Test-Concise

How often do you have a drink containing alcohol?

Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week

How many drinks containing alcohol do you have on a typical day when you are drinking?

1 or 2	3 or 4	5 or 6	7 to 9	10 or more

How often do you have five or more drinks on one occasion?

Never	Less than monthly	Monthly	Weekly	Daily or almost daily

Slide: AUDIT-C

AUDIT-C

AUDIT-C	
How often do you have a drink containing alcohol?	4
How many standard drinks containing alcohol do you have on a typical day?	1
How often do you have 5 or more drinks on one occasion?	2
AUDIT-C Score	

- Scores of ≥4 (men) or ≥3 (women) are considered positive

AUDIT
Alcohol Use Disorders Identification Test

Alcohol Use Disorders Identification Test	
How often do you have a drink containing alcohol?	4
How many standard drinks containing alcohol do you have on a typical day?	1
How often do you have 5 or more drinks on one occasion?	2
How often during the last year have you found that you were not able to stop drinking once you had started?	
How often during the last year have you failed to do what was normally expected from you because of drinking	
How often during the last year have you been unable to remember what happened the night before because you had been	
How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of	
How often during the last year have you had a feeing of guilt or remorse after drinking?	
Have you or someone else been injured as a result of your drinking?	
Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?	
Audit Total Score	

Brief Counseling in Primary Care

Case #3

- 48-year-old seeing you for annual preventive health visit
- Completed the AUDIT-C and their score was 7
- What should happen next?

AUDIT Scoring and Screening-Related Assessment

Men	Women	Review the score from the AUDIT. Use the scale below to help determine disorder vs. risky behavior
<6	<4	Alcohol use disorder unlikely. Proceed with counseling for risky drinking.
6-14	4-12	Review questions 4-6: If score <2, proceed with counseling for risky drinking. If score ≥2, alcohol use disorder likely. Consider referral.
≥15	≥13	Alcohol use disorder likely. Consider referral.

How often during the last year have you:

4. — found that you were not able to stop drinking once you had started?

5. — failed to do what was normally expected from you because of drinking?

6. — needed a first drink in the morning to get yourself going after a heavy drinking session?

Workflow

No further action at this time (Consider repeating screening annually) ← Negative screen ← Conduct single-question screen or AUDIT-C

Positive screen (no counseling yet) → Complete 10-question AUDIT

Risky use → Brief counseling for risky use

AUD → Brief counseling intervention | Referral to specialty care for AUD (e.g., 12-step program, psychiatry) | Medication (naltrexone, acamprosate, disulfiram, or other)

Interventions for Unhealthy Alcohol Use

Risky Drinking
- Counseling in primary care

Alcohol Use Disorder
- Some common treatments
  - Cognitive behavioral therapy
  - Motivational enhancement therapy
  - 12-step programs (e.g., Alcoholics Anonymous)
  - Pharmacotherapy

How Effective Is Counseling?

Summary of Meta-analysis Results, Primary Drinking Outcomes for Key Question 4a

Outcome (Effect Measure)	No. of Studies (No. of Effects Analyzed)	No. Participants Analyzed	Pooled Effect (95% CI)	I^2, %
Drinks/wk, Between-Group Difference in Change From Baseline (Weighted Mean Difference)				
Adults	15 (18)	7662	−2.51 (−3.81 to −1.21)	70
% Exceeding Recommended Drinking Limits (OR)				
Adults	10 (11)	4964	0.56 (0.49 to 0.65)	14
% With Heavy Use episodes (OR)				
Adults	6 (7)	3683	0.65 (0.53 to 0.81)	44

NNT 7.2 (95% CI, 6.2-11.5) to get 1 adult under recommended limits

Table adapted from following source: O'Connor, Perdue, Senger, Rushkin, Patnode, Bean, Jonas. JAMA. 2018;320(18):1910-1928.

The 5 A's

Counseling in Primary Care

1. **Assess** current drinking behaviors
2. **Advise** on alcohol use
3. **Assist** in exploring reasons for change
4. **Agree** on options for risk reduction
5. **Arrange** follow up

A PROVIDER GUIDE FOR
Addressing Unhealthy Alcohol Use

The 5 A's Approach to Reducing Alcohol Use
- **Assess** current drinking behaviors
- **Advise** on alcohol use
- **Assist** in exploring reasons for change
- **Agree** on options for risk reduction
- **Arrange** follow up

Motivational Interviewing Techniques

▪ Ask permission	▪ Show respect for the patient's autonomy before starting a conversation or sharing information
▪ Ask open-ended questions	▪ If the patient does most of the talking, the clinician learns more about what matters to the patient
▪ Make affirmations	▪ Statements of appreciation or understanding build rapport and support the patient in change
▪ Use reflections	▪ Rephrasing statements encourages personal exploration & fuller understanding of motivations
▪ Use summarizing	▪ Enhances mutual understanding of the conversation; spotlights gaps between current situation & future goals

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The 5 A's

1. **Assess**
   current drinking behaviors
2. **Advise**
   on alcohol use

The 5 A's

3. Assist
in exploring reasons for change

How important is it to you to change the amount of alcohol you drink?

0 1 2 3 4 5 6 7 8 9 10
Not at all   Very

Why didn't you rate yourself LOWER? (Why is it important?)

Why didn't you rate yourself HIGHER? (What doubts do you have?)

So, what I heard you say...

How confident are you that you could change the amount of alcohol you drink?

0 1 2 3 4 5 6 7 8 9 10
Not at all   Very

Why didn't you rate yourself LOWER? (Why is it important?)

Why didn't you rate yourself HIGHER? (What doubts do you have?)

So, what I heard you say...

The 5 A's

4. Agree
on options for risk reduction

- Be ready to:
  - affirm that change can be difficult
  - offer to discuss it again in the future
  - offer options that have helped others
  - a drinking diary can help track consumption and goals

Asking Permission
to talk about ways to reduce drinking

The 5 A's

5. Arrange
follow up

At follow-up, if the patient met their goals

- reinforce and support changes
- encourage the patient to return if unable to maintain the agreed-upon changes
- make a note to revisit the topic annually

The 5 A's

5. Arrange
follow up

If the patient <u>has not</u> met their goals

Be ready to
- acknowledge that change is difficult
- support positive change and address barriers
- review goals, plans, and strategies, and renegotiate new goals
- assess for other health conditions

Medications for Alcohol Use Disorder in Primary Care Settings

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Case #4

- 40-year-old with history of peptic ulcer disease
- Completed the AUDIT-C and score was 9, full AUDIT score was 23
- You diagnose AUD; patient is not surprised
- They reveal that they started seeing a counselor 4 months ago for CBT for "drinking and relationship problems"; minimal to no change in alcohol use so far
- Should you consider starting pharmacotherapy?

DSM-5: Alcohol Use Disorder

1. Alcohol is often taken in larger amounts or over a longer period than was intended
2. Persistent desire or unsuccessful efforts to cut down or control alcohol use
3. Great deal of time spent in activities necessary to obtain, use, or recover from its effects
4. Craving, or a strong desire or urge to use alcohol
5. Recurrent use resulting in failure to fulfill major role obligations at work, school, or home
6. Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol
7. Important social, occupational, or recreational activities are given up or reduced because of use
8. Recurrent alcohol use in situations in which it is physically hazardous
9. Use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol
10. Tolerance, as defined by either of the following:
    a. Need for markedly increased amounts of alcohol to achieve intoxication or desired effect
    b. Markedly diminished effect with continued use of the same amount of alcohol
11. Withdrawal, as manifested by characteristic withdrawal syndrome, which can be relieved or avoided with alcohol (or a closely related substance, such as a benzodiazepine)

Must have ≥2 criteria for AUD; Severity: 2-3 mild, 4-5 moderate, ≥6 severe

What's newer?
- Craving
- Removed criteria related to legal issues
- Severity categories

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Interventions for Unhealthy Alcohol Use

Risky Drinking
- Counseling in primary care

Alcohol Use Disorder
- Some common treatments
  - Cognitive behavioral therapy
  - Motivational enhancement therapy
  - 12-step programs (e.g., Alcoholics Anonymous)
  - Pharmacotherapy

Original Investigation

Pharmacotherapy for Adults With Alcohol Use Disorders in Outpatient Settings
A Systematic Review and Meta-analysis

Daniel E. Jonas, MD, MPH; Halle R. Amick, MSPH; Cynthia Feltner, MD, MPH; Georgiy Bobashev, PhD; Kathleen Thomas, PhD; Mimi M. Kim, PhD; Ellen Shanahan, MA; C. Elizabeth Gass, MPH; Cassandra J. Rowe, BA; James C. Garbutt, MD

> 2014 meta-analysis
> Acamprosate k=27 RCTs, N=7,519 participants
> Naltrexone k=53 RCTs, N=9,140 participants

JAMA | Original Investigation

Pharmacotherapy for Alcohol Use Disorder
A Systematic Review and Meta-Analysis

Melissa McPheeters, PhD, MPH; Elizabeth A. O'Connor, PhD; Sean Riley, MSc, MA; Sara M; Christiane Voisin, MSLS; Kaitlin Kuznacic, PharmD; Cory P. Coffey, PharmD; Mark D. Edlund; Georgiy Bobashev, PhD; Daniel E. Jonas, MD, MPH

> 2023 update
> 118 clinical trials
> N=20,976 participants

Jonas DE, Amick HR, Feltner C, et al. Pharmacotherapy for adults with alcohol use disorders in outpatient settings: a systematic review and meta-analysis. JAMA 2014; 311(18):1889-1900.
Jonas DE, Amick HR, Feltner C, et al. Pharmacotherapy for Adults with Alcohol-Use Disorders in Outpatient Settings. Comparative Effectiveness Review No. 134. AHRQ publication 14-EHC029-EF. Agency for Healthcare Research and Quality; May 2014.
McPheeters, O'Connor, Riley, et al. Pharmacotherapy for alcohol use disorder: a systematic review and meta-analysis. JAMA. 2023;330(17):1653-1665.

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Tweet

- Naltrexone and acamprosate are effective for preventing lapse (return to drinking) and for reducing consumption for people with alcohol use disorders

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FDA-approved medications

Medication	Mechanism	Dosing
Acamprosate	Thought to modulate hyperactive glutamatergic NMDA receptors	666 mg 3 times per day
Disulfiram	Inhibits ALDH2, causing accumulation of acetaldehyde during alcohol consumption, which produces a variety of adverse effects such as nausea, dizziness, flushing, and changes in heart rate and blood pressure	250 to 500 mg per day
Naltrexone	Opioid antagonist; competitively binds to opioid receptors and blocks the effects of endogenous opioids such as β-endorphin	Oral: 50 to 100 mg per day IM injection: 380 mg per month

Applicability

- Most trials enrolled patients after detoxification or required a period of sobriety (at least 3 days)
- Participants with alcohol dependence (DSM-IV)
  - Raises questions about whether we should consider the meds for mild AUD
- Studies typically included psychosocial co-interventions
  - Effect sizes reflect the added benefits of medications beyond those of psychosocial interventions and placebo

Evidence from placebo-controlled trials

Medication	Outcome	# studies	Total N	Effect size (95% CI)	NNT (95% CI)
Acamprosate	Return to any drinking	20	6380	RR, 0.88 (0.83, 0.93)	11 (1, 32)
	Return to heavy drinking	7	2496	RR, 0.99 (0.94, 1.05)	NA
	% drinking days	14	4916	WMD, -8.3 (-12.2, -4.4)	NA
	% heavy drinking days	2	123	WMD, -3.4 (-6.4, 5.9)	NA
Naltrexone, 50mg/d, oral	Return to any drinking	16	2347	RR, 0.93 (0.87, 0.99)	18 (4, 32)
	Return to heavy drinking	23	3170	RR, 0.81 (0.72, 0.90)	11 (5, 41)
	% drinking days	15	1992	WMD, -5.1 (-7.2, -3.0)	NA
	% heavy drinking days	7	624	WMD, -4.3 (-7.6, -0.9)	NA

McPheeters, O'Connor, Riley, et al. Pharmacotherapy for alcohol use disorder: a systematic review and meta-analysis. JAMA. 2023;330(17):1653-1665.

Contraindications

- Naltrexone
  - Acute hepatitis or liver failure (precautions for other hepatic disease)
  - Currently using opioids or with anticipated need for opioids
- Acamprosate
  - Severe renal impairment (requires dose adjustments for moderate renal impairment)

Common Adverse Effects

- Naltrexone
  - Dizziness
  - Nausea
  - Vomiting
- Acamprosate
  - Diarrhea

Selecting a Medication

- Head-to-head trials have not consistently established superiority of acamprosate or naltrexone
- Reasons to favor oral naltrexone, unless there is a contraindication
  - Administration frequency
    - Oral naltrexone is once daily
    - Acamprosate is typically two 333mg tablets 3x daily (6 pills/day)
  - Cost (although both relatively low cost, available generic)

Off-label

- Topiramate
  - % Drinking days: WMD, -7.2% (-14.3% to -0.1%), 8 trials, N=1080
  - % Heavy drinking days: WMD, −6.2% (−10.9% to −1.4%), 9 trials, N=1210
  - Drinks per drinking day: WMD, −2.0 (−3.1 to −1.0), 7 trials, N=922

Key Points

- Unhealthy alcohol use is very common and is a leading cause of preventable deaths
- Screening typically best done with brief initial screen (e.g., AUDIT-C) followed by the AUDIT (10 questions) for those with a positive screen
- Brief motivational interviewing can help patients reduce drinking and their risk of health problems from alcohol
- Naltrexone and acamprosate are effective for preventing a return to drinking and for reducing consumption for people with AUD

References

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3. Barclay C, Viswanathan M, Ratner S, Tompkins J, **Jonas DE**. Implementing evidence-based screening and counseling for unhealthy alcohol use with Epic-based electronic health record tools. Jt Comm J Qual Patient Saf. 2019 Aug;45(8):566-574.
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