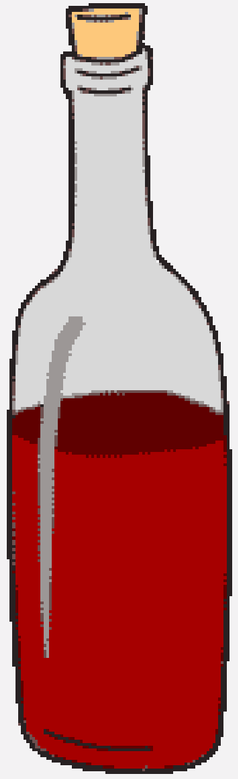
ALCOHOL USE DISORDER



Immersion Training in Addiction Programs 2025
April 29, 2025

Alyssa Peterkin, MD
Assistant Professor of Medicine

Learning Objectives

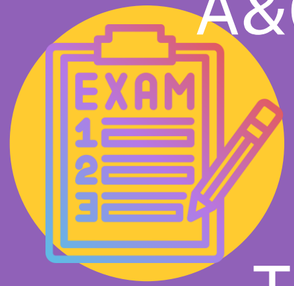
1. Describe the management of alcohol withdrawal
2. Create a patient centered alcohol use disorder treatment plan
3. Utilize FDA approved treatments for alcohol use disorder and off label alternatives

August presents with dizziness, chest discomfort and headache requesting management of alcohol withdrawal symptoms.

Additional Case Info

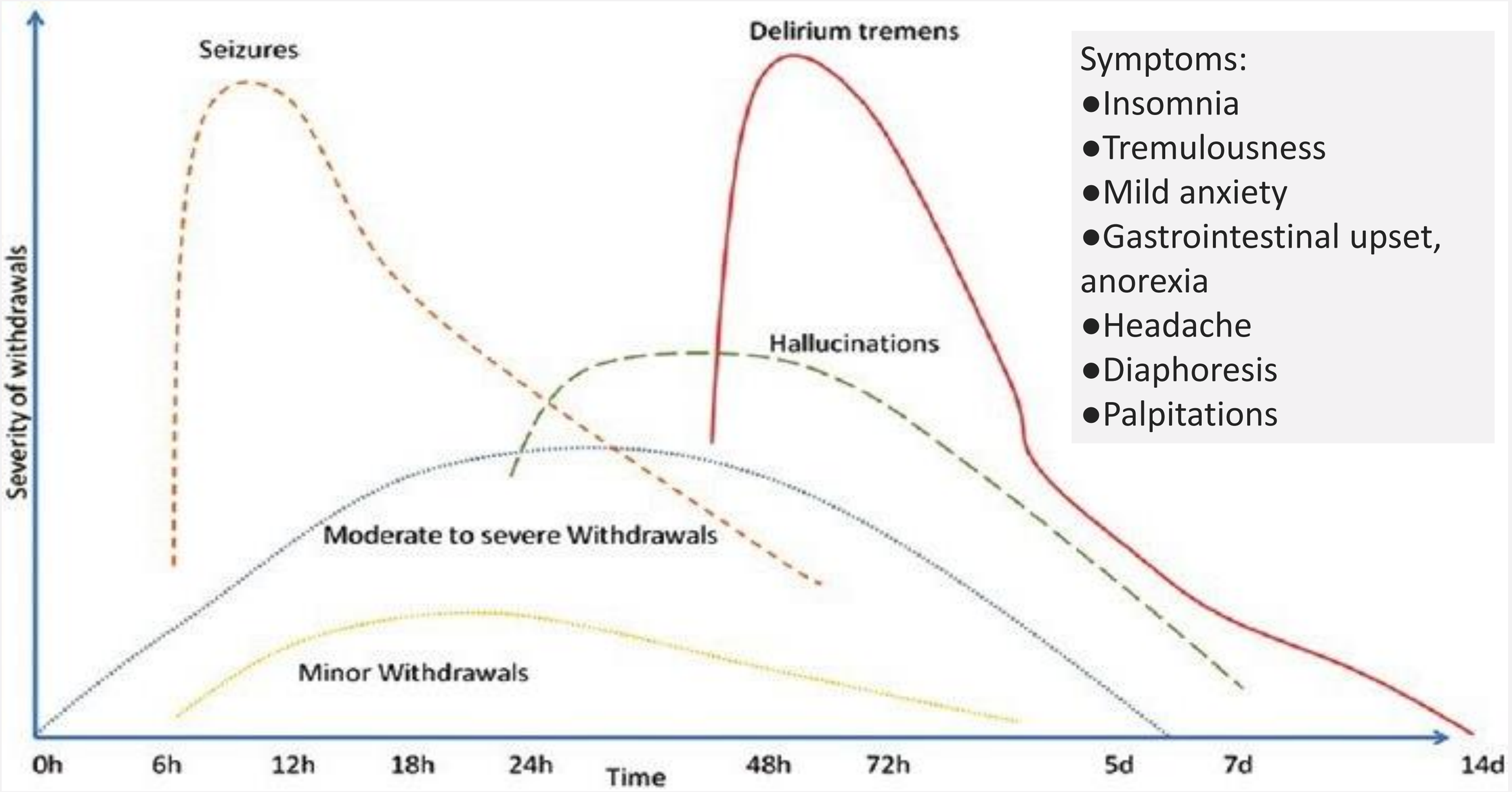
T 98, RR 18, HR 73 (regular), BP 118/73
CIWA: 12

- Lives alone
- 31 years old
- Identifies as an African American woman
- Alcohol use has increased in the last year
- Currently drinking 1.75L vodka daily, last drink 4 hours ago
- Gastric Bypass 1 year ago
- Anxiety



A&O x 3. Speech is fluent.
Anxious
Gait steady
b/l hand tremor
Tongue fasciculations
Skin: not diaphoretic

Alcohol Withdrawal Syndrome

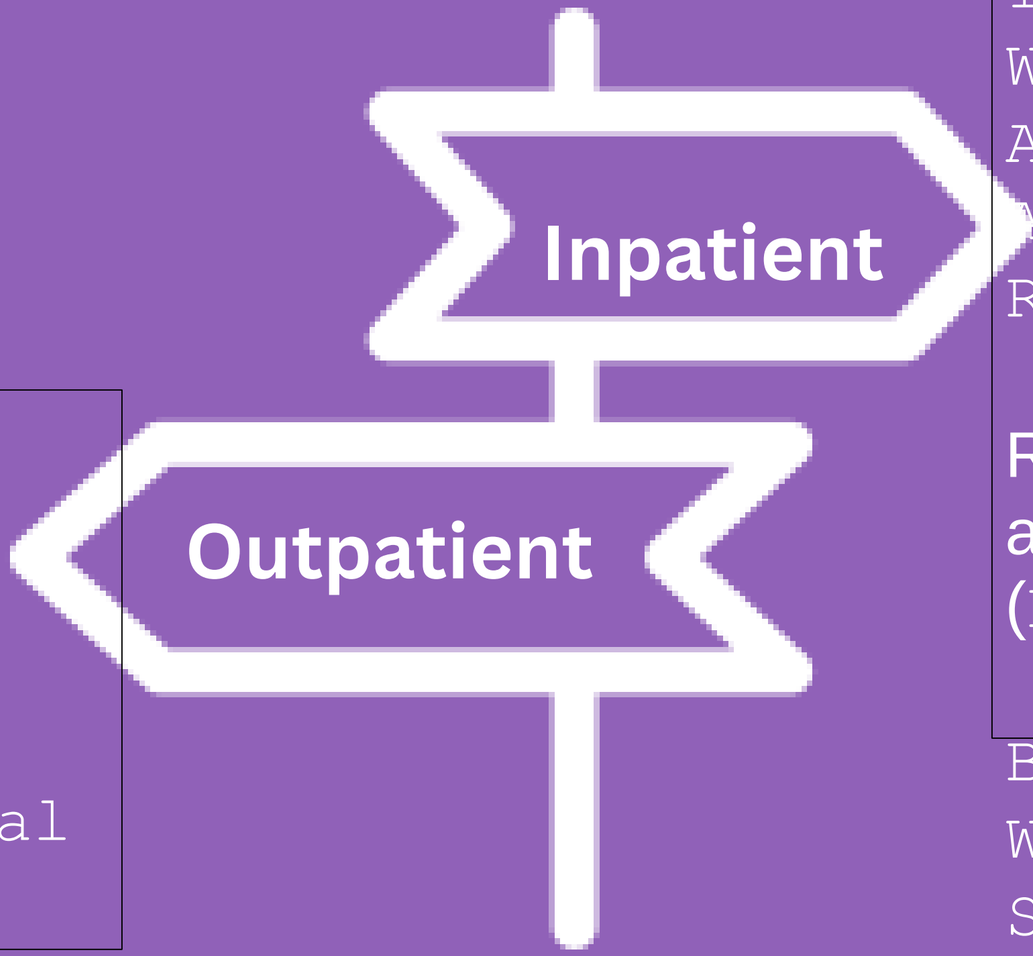


Symptoms:

- Insomnia
- Tremulousness
- Mild anxiety
- Gastrointestinal upset, anorexia
- Headache
- Diaphoresis
- Palpitations

Haber NL, Guidelines for the Treatment of AlcoholProblems. Ch. 5. Sydney, NSW: Ageing DoHa; 2009.

Severity Assessment Tools



The Clinical Institute Withdrawal Assessment Alcohol Scale Revised (CIWA)

Short Alcohol Withdrawal Scale (SAWS)

The Clinical Institute Withdrawal Assessment Alcohol Scale Revised (CIWA)

Richmond Agitation and Sedation Scale (RASS)

Brief Alcohol Withdrawal Scale

The Brief Alcohol Withdrawal Scale (BAWS)

	0 None	1 Mild	2 Moderate	3 Severe
Tremor	No tremor	Not visible, but can be felt	Moderate, with arms extended	At rest, without arms extended
Diaphoresis/ Sweats	No sweats	Mild, barely visible	Beads of sweat	Drenching sweats
Agitation	RASS =0 Alert and calm	RASS = +1 Restless, anxious, apprehensive, movements not aggressive	RASS = +2 Agitated, frequent non-purposeful movement	RASS = +3 or +4 Very agitated or combative, violent
Confusion/ Orientation	Orientation to person, place, time	Disoriented to time (e.g., by more than 2 days or wrong month or wrong year) or to place (e.g., name of building, city, state), but not both	Disorientation to time and place	Disorientation to person
Hallucinations (visual, auditory, tactile)	None	Mild (vague report, reality testing intact)	Moderate (more defined hallucinations)	Severe (obviously responding to internal stimuli, poor reality testing)

Abbreviations: RASS, Richmond Agitation-Sedation Scale

BAWS $\geq$ 6
Severe AWS

Lindner et al. *J Addict Med*. 2019
Rastegar et al. SAJ 2017

Group Discussion

How would you manage August's alcohol withdrawal? Setting? Medications?

Assessing Risk for Severe Withdrawal

- History of alcohol withdrawal delirium or withdrawal seizure
- Numerous prior withdrawal episodes in patient's lifetime
- Comorbid medical or surgical illness (especially traumatic brain injury)
- > 65 years old
- Long duration of heavy and regular alcohol consumption
- Seizure(s) during the current withdrawal episode
- Marked autonomic hyperactivity on presentation
- BAL at time of presentation
- Physiological dependence on GABAergic agents such as benzodiazepines or barbiturates

Prediction of Alcohol Withdrawal Severity Scale (PAWSS)

Maldonado et al., 2014

Part A: Threshold Criteria:

("+" or "-", no point)

Have you consumed any amount of alcohol (i.e., been drinking) within the last 30 d? OR did the patient have a "+" BAL upon admission? _____

IF the answer to either is YES, proceed with test:

Part B: Based on patient interview:

(1 point each)

1. Have you ever experienced previous episodes of alcohol withdrawal? _____
2. Have you ever experienced alcohol withdrawal seizures? _____
3. Have you ever experienced delirium tremens or DT's? _____
4. Have you ever undergone alcohol rehabilitation treatment? _____
   (i.e., in-patient or out-patient treatment programs or AA attendance)
5. Have you ever experienced blackouts? _____
6. Have you combined alcohol with other "downers" like benzodiazepines or barbiturates during the last 90 d? _____
7. Have you combined alcohol with any other substance of abuse during the last 90 d? _____
8. Have you been recently intoxicated/drunk within the last 30 d ? _____

Part C: Based on clinical evidence:

(1 point each)

9. Was the patient's blood alcohol level (BAL) on presentation >200? _____
10. Is there evidence of increased autonomic activity?
    (e.g., HR >120 bpm, tremor, sweating, agitation, nausea) _____

Total Score: _____

Notes: Maximum score = 10. This instrument is intended as a SCREENING TOOL. The greater the number of positive findings, the higher the risk for the development of alcohol withdrawal syndromes. A score of ≥4 suggests HIGH RISK for moderate to severe AWS; prophylaxis and/or treatment may be indicated.

PAWSS 4

MODERATE TO SEVERE ALCOHOL WITHDRAWAL

Maldonado et al 2014

Withdrawal Management Pharmacotherapy

Benzodiazepines

- Augment GABA
- Most evidence-based treatment
- Benzodiazepines reduce incidence of seizures and recurrence
- Benzodiazepines prevent incident delirium tremens

Day	Medication	Fixed Schedule	Symptom Triggered Schedule
1	Diazepam	10mg every 6 hours	10mg every 4 hours
2	Diazepam	10mg every 8 hours	10mg every 6 hours
3	Diazepam	10mg every 12 hrs	10mg every 6 hours
4	Diazepam	10mg at bedtime	10mg every 12 hours
5	Diazepam	10mg at bedtime	10mg every 12 hours

Saitz R, Mayo-Smith MF, Roberts MS, et al JAMA. 1994
Sereny 1965, Kiam 1969, Zilm 1980, Sellers 1983, Naranjo 1983

Tiglao et al 2021
Muncie, Yasinian, Oge, 2013
Cohen, Alexander, Holt 2022

Gabapentin

- GABA Analog
- Individuals with mild withdrawal (CIWA-Ar< 15)
- Favorable option if plans to use for treatment of AUD
- Efficacy in reducing mild alcohol withdrawal symptoms other than seizure and DTs

Strategy 1

Day	Dose
1	300mg every 6 hours
2	300mg every 8 hours
3	300mg every 12 hours
4	300mg at bed time

Strategy 2

	Day Dose	Night Dose	As Needed
Starting	300mg TID	600-1200mg	300mg x 2
Titration	600mg TID	600-1200mg	
Taper	600mg QD		

Cohen, Alexander, Holt 2022
Provincial Guideline for the Clinical Management of High-Risk Drinking and Alcohol Use Disorder. 2019.

Phenobarbital

- Acts on GABA and glutamate signaling
- Inhibits the NMDA-type glutamate receptors
- Increases the duration of the GABA channel opening

NARROW THERAPEUTIC WINDOW

LONG HALF LIFE (75-126 HRS)

ONSET OF ACTION 5-30MIN (IV/IM); 1HR (PO)

DRUG INTERACTIONS IE METHADONE

Outcomes vary by setting.

- Effective and well tolerated alternative to BZDs for treatment of alcohol withdrawal.

- Emergency Departments:

Phenobarbital when used as an adjunctive to benzodiazepines can be benzodiazepine sparing. Rosenson et al 2013

- ICU:

Phenobarbital decreases the need for adjunctive medications- Tidwell et al 2018
Phenobarbital as an adjunct to benzodiazepines is associated with reduced ICU LOS and reduction in mechanical ventilation. Gold et al, 2007
Mechanical ventilation rates were noninferior compared with the previous benzodiazepine-based pathway for the treatment of severe AWS- Bosch et al 2021

Lee et al. *Acad Emerg Med Nov 2023*

After 1 day of outpatient alcohol withdrawal management, August is already feeling better. She was able to accomplish tasks that she had not been able to do for a long time. She expresses interest in starting a medication to help with drinking. She continues outpatient alcohol withdrawal management.

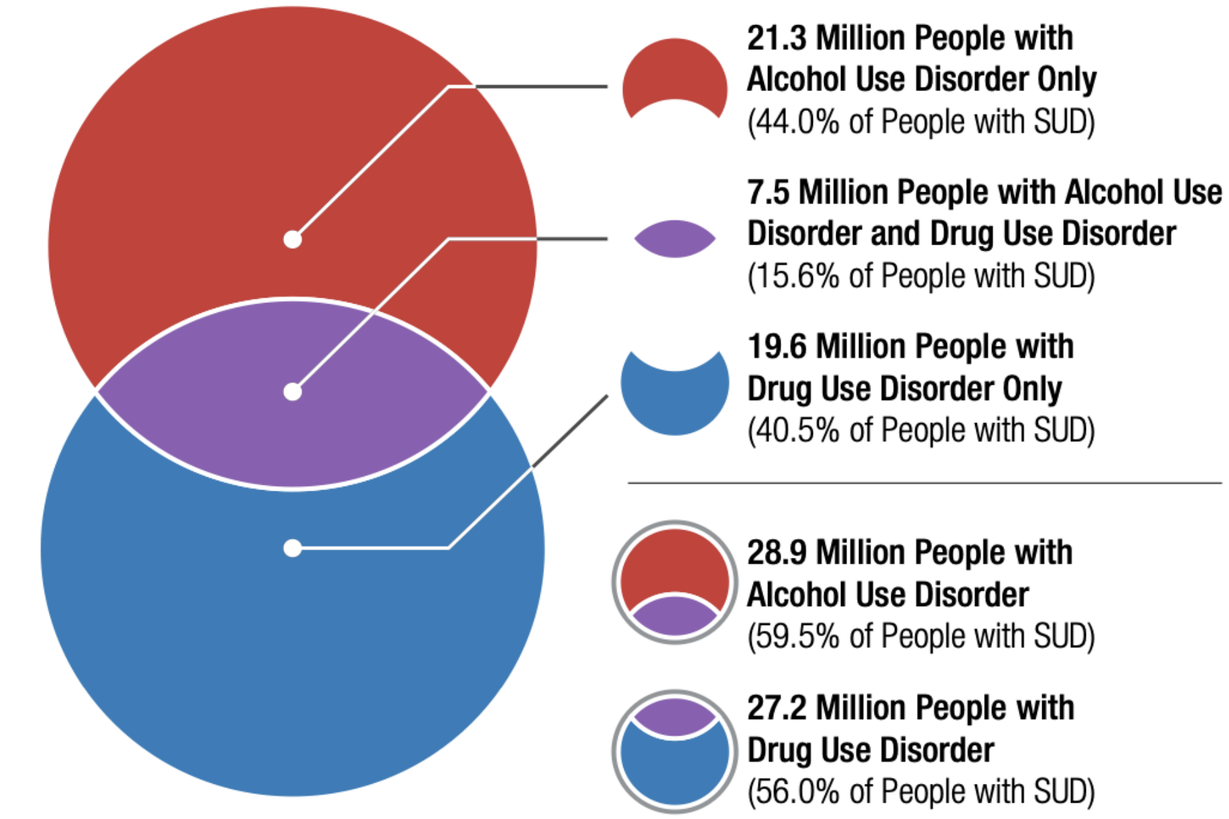
August’s Withdrawal Management

- Day 1:Diazepam10mg PO Q6H
- Day 2:Diazepam10mg PO Q8H
- Day 3: Diazepam10mg PO Q12H
- Day 4: missed appointment
- Day 5: Diazepam 5mg PO Q8H
- Day 6: Diazepam 5mg PO Q12H
- Day 7: Diazepam 5mg x 1

Alcohol Use Disorder Trends

2019	14.5 million
2020	28.3 million
2021	29.5 million
2022	29.5 million
2023	28.9 million

Figure 29. Alcohol Use Disorder or Drug Use Disorder in the Past Year: Among People Aged 12 or Older with a Past Year Substance Use Disorder (SUD); 2023



SAMHSA, NSDUH 2019-2023

178,000 people die annually from Alcohol related death in the US.

The number and rate of alcohol-related deaths increased approximately 25% between 2019 and 2020, the first year of the COVID-19 pandemic.

Alcohol is the third leading cause of preventable cancer.

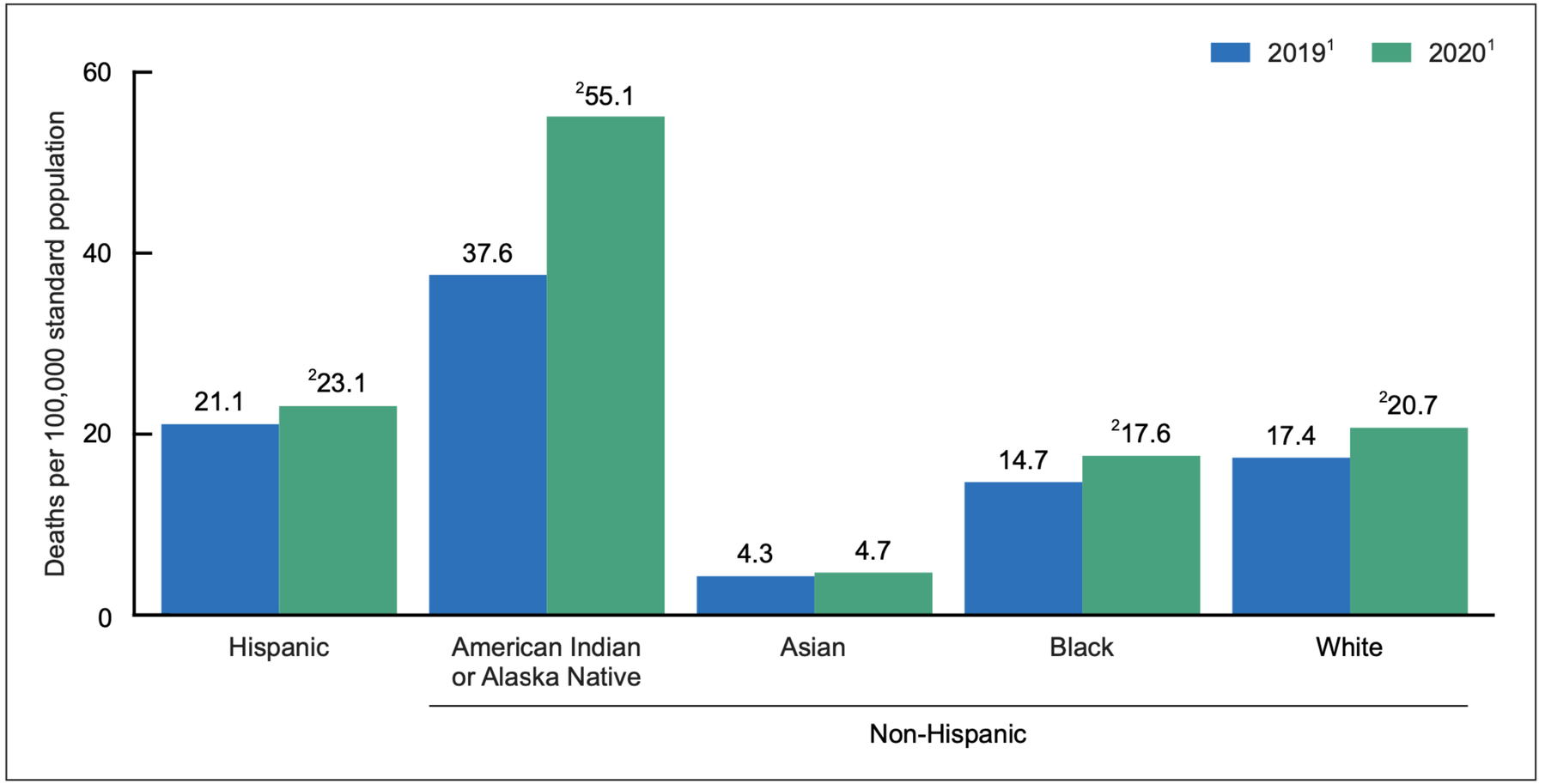
CDC, 2022

White et al JAMA 2022

Alcohol related deaths

In 2020, age-adjusted rates of alcohol-induced deaths in adults aged 65 and over **were highest for non-Hispanic American Indian or Alaska Native (AIAN) adults** followed by rates for **Hispanic (23.1)**

Figure 2. Age-adjusted rate of alcohol-induced death for adults aged 65 and over, by race and Hispanic origin and year: United States, 2019 and 2020

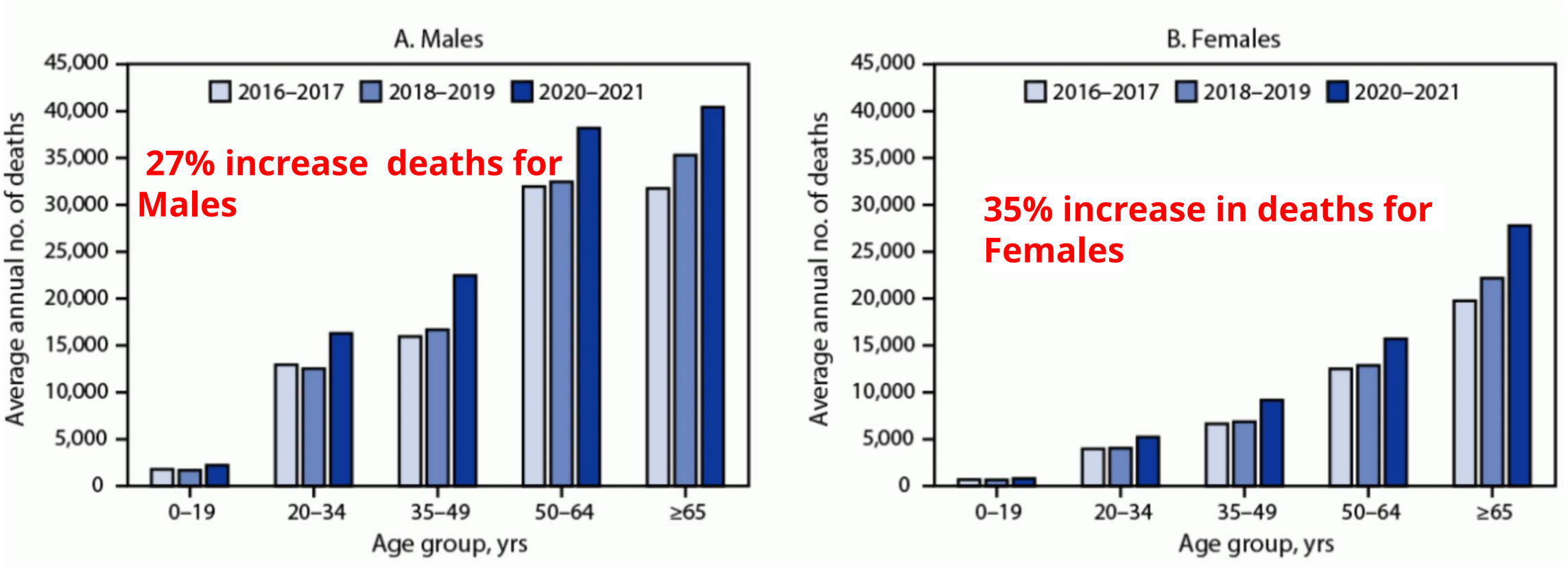


CDC, 2022

Alcohol related deaths

2016–2017 to 2020–2021, the average annual number of U.S. deaths from excessive alcohol use increased by more than **40,000 (29%)**

FIGURE. Average annual number of deaths from excessive alcohol use,* by age group and period among males (A) and females (B) — United States, 2016–2021



Esser MB, Sherk A, Liu Y, Naimi TS. Deaths from Excessive Alcohol Use — United States, 2016–2021. MMWR Morb Mortal Wkly Rep 2024;73:154–161

WITHDRAWAL MANAGEMENT

TREATMENT

Pharmacotherapy (MAUD)

Counseling, intensive outpatient treatment,

SMART Recovery®
Life beyond addiction

Alcoholics Anonymous®

Mutual Support Group

Managing medical and psychiatric co-morbidities

Friedmann PD, Saitz R, Samet JH. JAMA 1998

MAUD initiation is associated with a **42%** relative and **18%** absolute reduction in 30-day **all-cause mortality** or return to hospital.

Bernstein et al, JAMA Netw Open. 2024

Receipt **any MAUD** was associated with **reduced incidence** and **progression** of alcohol associated liver disease.

Vannier *JAMA Netw Open.* 2022

What is your patient’s goal?

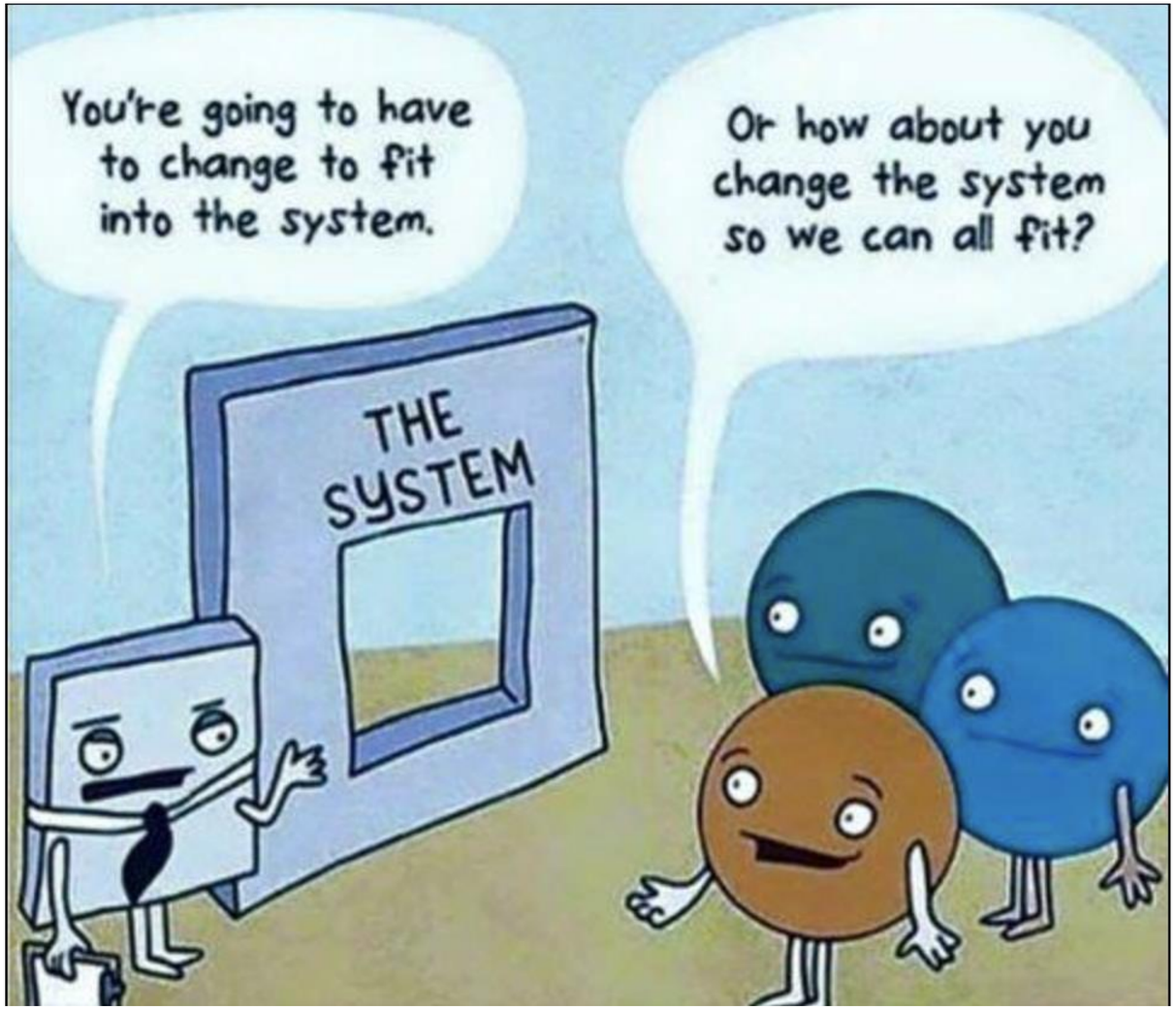
Treatment Disparities

Black and Laine adults report greater risk to heavy drinking, alcohol-related health concerns and social concerns negatively impacting life.

Native communities suffer health disparities related to SUD. AI/ANs have the greatest unmet need for treatment among all ethnic groups in the U.S

Latine less likely to be offered information on alcohol treatment services than Whites by health care providers.

Pinedo et al. *Drug Alcohol Depend* 2021
Skewes et al. *Am J Community Psychol* 2019



Credit: Sara Zimmerman

Potential solutions

- **Cultural adaptation**
- **Increasing accessibility to treatment**
- **Making time to explain MAUD clearly during visit**
- **Taking a holistic view, accounting for historical trauma**

Hall et al *J Subst Abuse Treat*. 2022
Skewes et al *Am J Community Psychol*. 2019

Naltrexone

Reduces **return heavy drinking** and **number of heavy drinking days**

NNT=11

The Medical Letter on Drug Therapeutics 2021
McPheeters et al Agency for Healthcare Research and Quality (US) 2023

Naltrexone

- Dosing: 50mg PO daily or 380mg IM monthly
- MOA: opioid receptor antagonist
- Common adverse reactions: nausea, vomiting, headache, dizziness, dysphoria

Acamprosate

Modestly improves abstinence

NNT=11

Rösner S, et al. Cochrane Database Syst Rev. 2010
Jonas D, et al. JAMA 2014
Ray, Oslin Drug Alcohol Depend 2009
Lopez J Stud Alcohol Drugs. 2017

The Medical Letter on Drug Therapeutics 2021
McPheeters et al Agency for Healthcare Research and Quality (US); 2023

Acamprosate

- Dosing: 666mg PO TID or 333mg PO TID (CrCl 30-50ml/min)
- MOA: unknown, enhancing of GABA system
- Common Adverse Reactions: diarrhea
- Contraindication: CrCl<30ml/min

Disulfiram

Supervised administration provides significantly better outcomes

Disulfiram

Dosing: 250-500mg PO daily

MOA: inhibits aldehyde dehydrogenase

Adverse reactions: dermatitis, neuropathy

Contraindications: severe myocardial disease, history of psychosis, decompensated liver disease

The Medical Letter on Drug Therapeutics 2021
Cohen, Alexander, Holt 2022
McPheeters et al Agency for Healthcare Research and Quality (US); 2023

Non-FDA approved for AUD OFF LABEL MEDICATIONS

Gabapentin

Reduction in Return to heavy drinking and return to any drinking

Gabapentin

- Target Dosing:1800mg/day
- MOA: Enhancing GABA
- AE: cognitive impairment and dizziness

The Medical Letter on Drug Therapeutics 2021
McPheeters et al Agency for Healthcare Research and Quality (US); 2023

Topiramate

Reduction in Heavy drinking, drinks/drinking day, drinking days

Topiramate

Target Dosing: 300mg daily

MOA: Enhancing GABA and Glutamate systems

Adverse reactions: Paresthesia, anorexia, taste perversion, difficulty concentrating, renal stones, visual problems

The Medical Letter on Drug Therapeutics 2021

Johnson et al JAMA 2007;298(14)

Pani PP, et al. Cochrane Database Syst Rev 2014;2:CD008544

McPheeters et al Agency for Healthcare Research and Quality (US); 2023

Baclofen Reduction in return to any drinking

The Medical Letter on Drug Therapeutics 2021

Johnson et al JAMA 2007;298(14)

Pani PP, et al. Cochrane Database Syst Rev 2014;2:CD008544

McPheeters et al Agency for Healthcare Research and Quality (US); 2023

Baclofen

Dosing: 30-300mg daily

MOA: GABA agonist

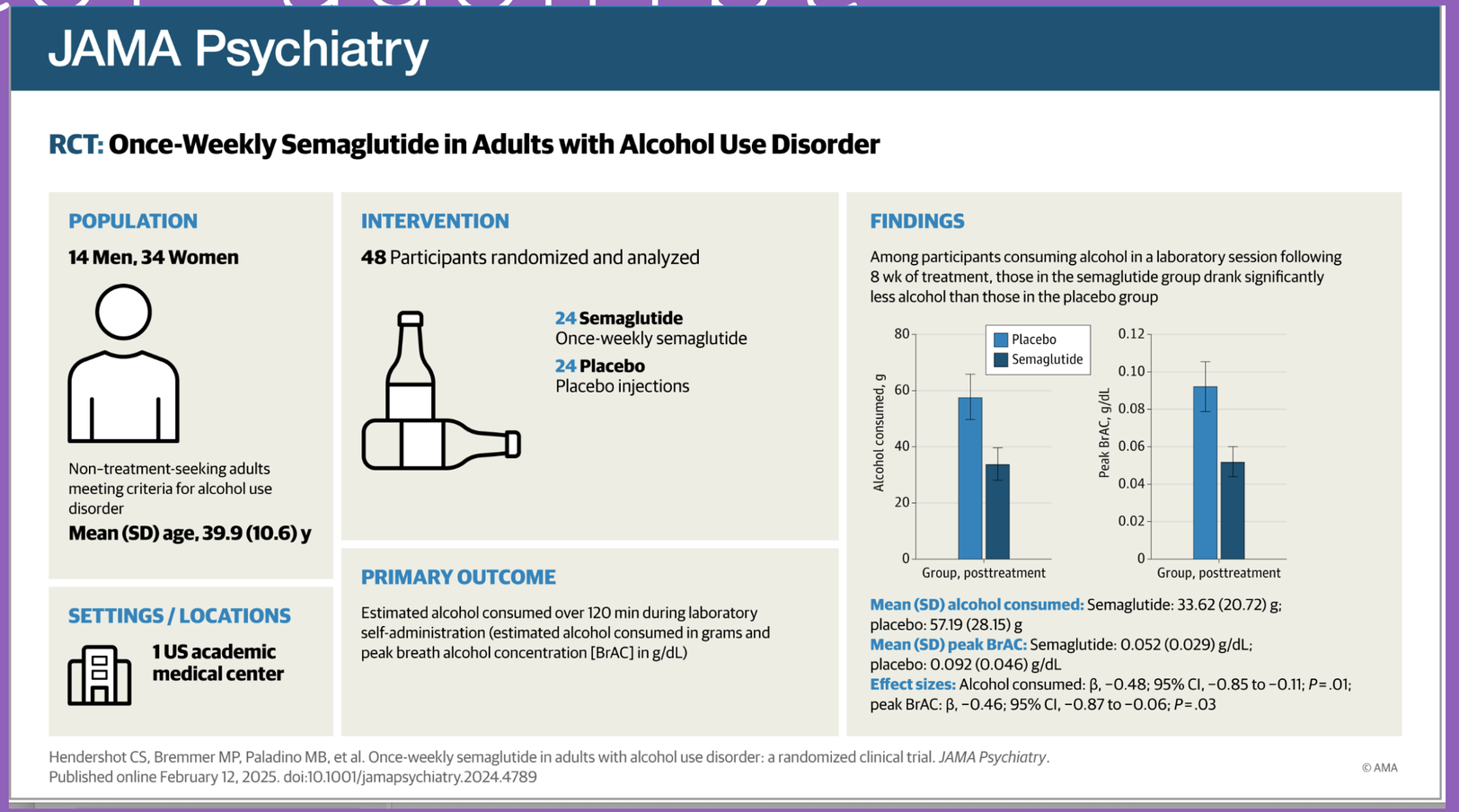
AE: drowsiness, dizziness

ACG recommended for compensated alcohol associated liver disease: 15mg TID max

The Medical Letter on Drug Therapeutics 2021
Johnson et al JAMA 2007;298(14)
Pani PP, et al. Cochrane Database Syst Rev 2014
McPheeters et al Agency for Healthcare Research and Quality (US); 2023

Glucagon-like peptide-1 receptor agonist

- Reduces cravings & rewarding effects
- Reduces alcohol use
- Semaglutide and liraglutide, associated with a markedly reduced risk of AUD- and SUD-related hospitalizations in patients with



JAMA Psychiatry

RCT: Once-Weekly Semaglutide in Adults with Alcohol Use Disorder

POPULATION

14 Men, 34 Women

Non-treatment-seeking adults meeting criteria for alcohol use disorder

Mean (SD) age, 39.9 (10.6) y

SETTINGS / LOCATIONS

1 US academic medical center

INTERVENTION

48 Participants randomized and analyzed

24 Semaglutide
Once-weekly semaglutide

24 Placebo
Placebo injections

PRIMARY OUTCOME

Estimated alcohol consumed over 120 min during laboratory self-administration (estimated alcohol consumed in grams and peak breath alcohol concentration [BrAC] in g/dL)

FINDINGS

Among participants consuming alcohol in a laboratory session following 8 wk of treatment, those in the semaglutide group drank significantly less alcohol than those in the placebo group

Mean (SD) alcohol consumed: Semaglutide: 33.62 (20.72) g; placebo: 57.19 (28.15) g
Mean (SD) peak BrAC: Semaglutide: 0.052 (0.029) g/dL; placebo: 0.092 (0.046) g/dL
Effect sizes: Alcohol consumed: β, −0.48; 95% CI, −0.85 to −0.11; *P* = .01; peak BrAC: β, −0.46; 95% CI, −0.87 to −0.06; *P* = .03

Hendershot CS, Bremmer MP, Paladino MB, et al. Once-weekly semaglutide in adults with alcohol use disorder: a randomized clinical trial. *JAMA Psychiatry*. Published online February 12, 2025. doi:10.1001/jamapsychiatry.2024.4789

Hendershot CS, Bremmer MP, Paladino MB, et al. JAMA Psych 2025
Lähteenvuo et al. JAMA Psychiatry. 2025

Why do I do this work?

If people die, how can they recover?

How do I teach this?

- **M** Morning report on withdrawal
- **C** Chalk Talk on MAUD
- **A** Ambulatory case on MAUD
- **P** Pearls at the Bedside
- **J** Journal Club
- **V** Visit a community organization

Additional Resources


DR. RICHARD SAITZ
EXIT
MD