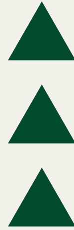
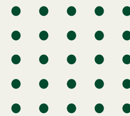
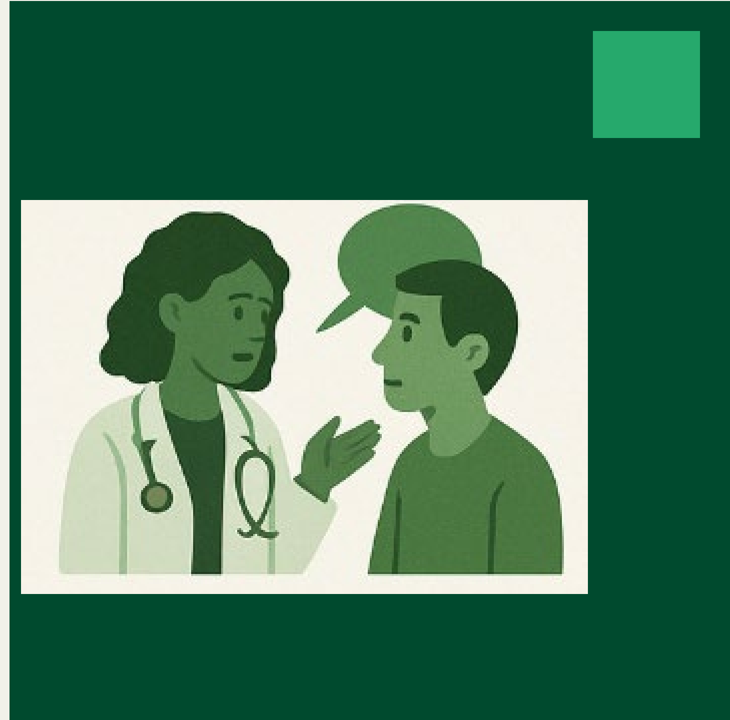
Alcohol Use Disorder In Primary Care







Liz Haberkorn, DNP, FNP-BC

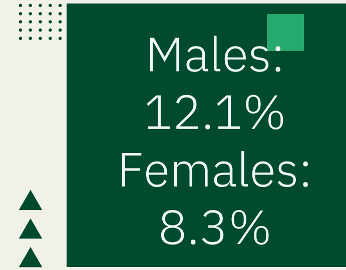
Objectives

- **Describe** the epidemiology and burden of Alcohol Use Disorder (AUD) in the U.S.
- **Apply** DSM-5 criteria and validated screening tools (e.g., AUDIT) to identify AUD.
- **Recognize** key physical exam findings and relevant history elements.
- **Initiate** evidence-based treatments, including medications for AUD.
- **Promote** non-stigmatizing language and compassionate care in clinical practice.

I have no disclosures.

Epidemiology

- ~29 million people aged 12+ had AUD in the past year *(2022)*
  → **10.2%** of the population
- Highest prevalence among:
  - Adults aged 18–25
  - American Indian/Alaska Native (11.6%)
  - Multiracial adults (13.6%)
- ~757,000 adolescents aged 12–17 had AUD (2.9%)
- Consequences:
  - AUD contributes to over 140,000 deaths annually in the U.S.
  - Major driver of liver disease, trauma, cancer, and mental health comorbidities



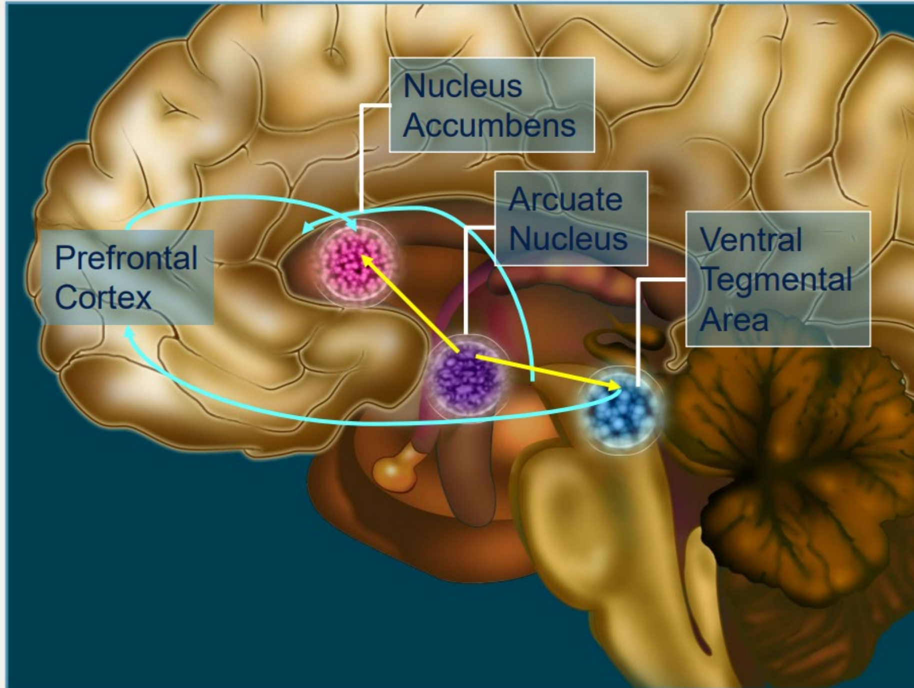
NIAAA, SAMHSA

By the Numbers: Relative Scope of the Problem

Alcohol		Opioids	
Past-year use	179,144,000	Past-year misuse	10,810,000
% of population	65.1%	% of population	4%
AUD	14,504,000	OUD	2,060,000
% of population	5.3%	% of population	0.8%
ED visits	1,714,757 *Primary reason*	ED visits	408,079 *Primary reason*
	4,936,690 *All alcohol-related*		1,461,770 *All opioid-related*
Deaths	95,158 *Annual deaths*	Deaths	46,802 *2018 overdose deaths*
	44,080 *Acute (e.g., injury)*		31,533 *Synthetic opioids*
	51,078 *Chronic (e.g., liver disease)*		14,996 *Heroin*
			14,975 *Rx Opioids*

Data sources: 2019 NSDUH, Nationwide Emergency Department Sample, 2018 CDC Overdose Death Data, 2011-2015 CDC Alcohol Related Death Inventory

Neurobiology of Addiction



Binge/ Intoxication Stage

Basal Ganglia

Dopamine, GABA, glutamate, opioid peptides

Withdrawal/ Negative Affect Stage

Amygdala

Dopamine, vasopressin, norepinephrine

Preoccupation/ Anticipation Stage

Prefrontal cortex

Glutamate, ghrelin

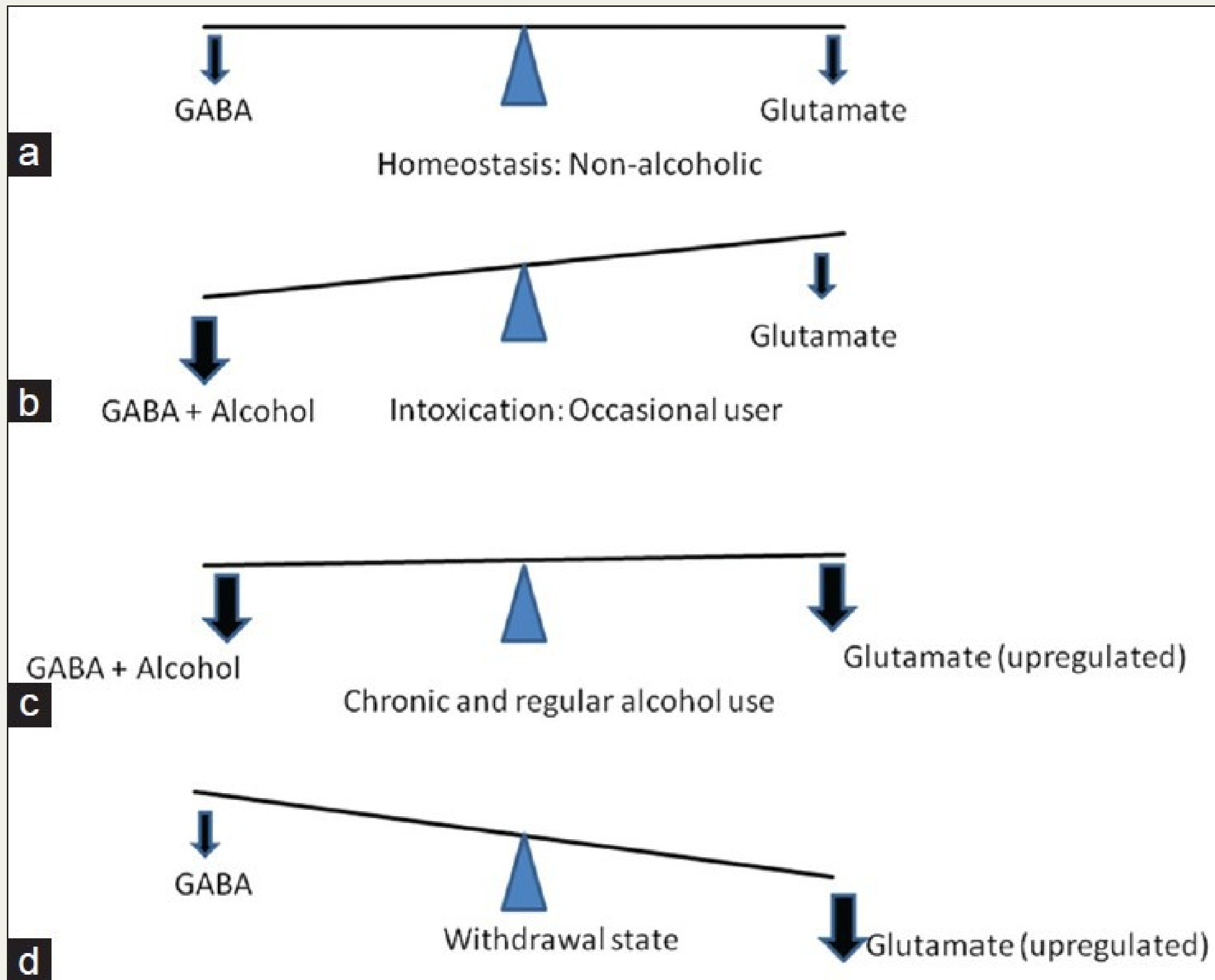
American Society of Addiction Medicine (ASAM), 2023; NIAAA

Neurobiology of Addiction

Alcohol

GABA	CNS Inhibition	Sedation, relaxation
Glutamate	CNS Excitation	Withdrawal,excitability
Opioid	Euphoria	Euphoria, craving
Dopamine	Addiction	Reinforcement, addiction
Serotonin	Impulsivity	Mood, impulsivity
Cannabinoid	Pleasant Feeling	Pleasure, relaxation

American Society of Addiction Medicine (ASAM), 2023



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AUD: A Chronic Brain Disease

Why this matters in primary care:

- AUD is **not a moral failing** — it's a treatable medical condition
- Neurobiology explains **why relapse can happen** — not a lack of willpower
- **Chronic care model** (like diabetes or hypertension) is most effective
- **Holistic Care** – Manage comorbid conditions (e.g., depression, hypertension, liver disease) alongside AUD
- **Continuity & Trust** – Strong provider-patient relationships support behavior change

AHRQ, SAMHSA, NIAAA

Reduce Stigma: Mindful of Language

"It sounds like alcohol has been causing some challenges for you. I'm here to support you – would it be okay if we talked about some options that might help?"

Instead of ….	**Say….**
Alcoholic	Person with AUD
Substance abuser	Person who uses substances
Relapsed	Return to use
Clean/ sober	In recovery or not using

Standard Drink

12 fl oz of regular beer	=	8–9 fl oz of malt liquor (shown in a 12 oz glass)	=	5 fl oz of table wine	=	1.5 fl oz shot of 80-proof spirits (whiskey, gin, rum, vodka, tequila, etc.)
about 5% alcohol		about 7% alcohol		about 12% alcohol		about 40% alcohol

Beer

The percent of "pure" alcohol, expressed here as alcohol by volume (alc/vol), varies by beverage.

Niaaa.nih.gov. 2022. What Is A Standard Drink? National Institute on Alcohol Abuse and Alcoholism (NIAAA).

How Many Shots Are in a Bottle?

* Based on the average 1 1/2 ounce shot

50 ml
1.7 oz
Miniature
(Mini or Nip)
1 shot

100 ml
3.4 oz
Quarter Pint
2 shots

200 ml
6.8 oz
Half Pint
4 shots

375 ml
12.7 oz
Pint
8 shots

750 ml
25.4 oz
Standard Bottle
(Fifth)
16 shots

1 L
33.8 oz
Liter
22 shots

1.5 L
50.7 oz
Magnum
33 shots

1.75 L
59.2 oz
Half Gallon
(Handle)
39 shots

3 L
101.4 oz
Double Magnum
(Jeroboam)
67 shots

4.5 L
152.2 oz
Rehoboam
101 shots

from the spruce

Graham, C., 2021. How Many Shots Are in That Bottle of Liquor? The Spruce Eats

Unhealthy Alcohol Use

	Female	Male
Daily Limit	No more than 1 drink	No more than 2 drinks
Weekly Limit	No formal weekly limit; drink less for better health	
Drinking less is better for health. Do not drink more than the daily limit, even occasionally.		

Number of drinks is determined by the U.S. Department of Health and Human Services, Dietary Guidelines for Americans 2020-2025.

Screening

- **NIAAA Single Question Screener**
  - How many times in the past year have you had 5 or more drinks in a day (♂) or 4 or more drinks in a day (♀)?
  - >0 is considered a positive screen.
- **AUDIT-C**
- **DSM-5: AUD Adaptation**

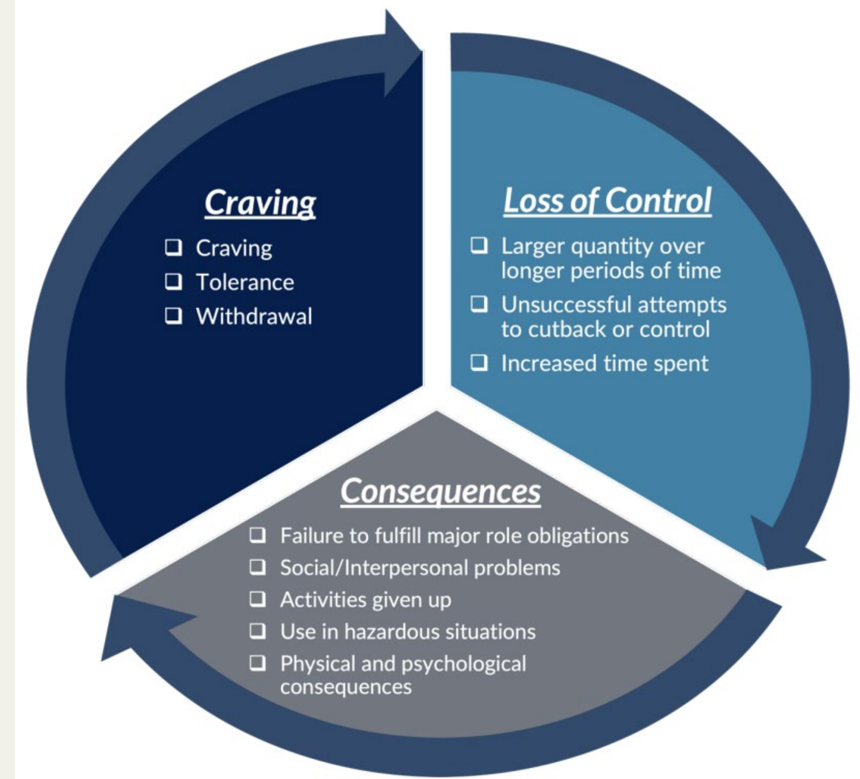
AUDIT-C

Please circle the answer that is correct for you.					
1. How often do you have a drink containing alcohol?					**SCORE**
Never (0)	Monthly or less (1)	Two to four times per month (2)	two or three times per week (3)	Four or more times per week (4)	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?					
0-2 drinks (0)	3 or 4 drinks (1)	5 or 6 drinks (2)	7 to 9 drinks (3)	10 or more drinks (4)	
3. How often do you have six or more drinks on one occasion?					
Never (0)	Less than monthly (1)	Monthly (2)	Weekly (3)	Daily or almost daily (4)	
TOTAL SCORE *Add the number for each question to get your score.*					
Maximum score is 12. A score of ≥ 4 identifies 86% of men who report drinking above recommended levels or meets criteria for alcohol use disorders. A score of > 2 identifies 84% of women who report hazardous drinking of alcohol use disorders.					

https://www.hepatitis.va.gov/alcohol/treatment/audit-c.asp

DSM-5: AUD Adaptation

- 3 C's: Craving, Loss of Control, Consequences
- AUD Diagnosis: 2 or more diagnostic criterion in the prior *12 months*
- Severity: The criteria count is used to determine the severity of the diagnosis:
  - Mild (2-3)
  - Moderate (4-5)
  - Severe ($\geq$6)



ASAM, 2024

Substance Use History

- **Substance(s)** used (alcohol, tobacco, cannabis, stimulants, opioids, etc.)
- **Route** (oral, inhaled, injected)
- **Quantity** and **frequency** (daily, binge, social)
- **Age of first use** and **escalation**
- **Last use** and **pattern over time**
- **Periods of abstinence**, triggers
- **Impact on function**: work, school, family, relationships
- **Attempts to quit**, cravings, withdrawal symptoms
- **Concurrent mental health** concerns (depression, anxiety, PTSD)
- **Family history** of substance use or psychiatric illness

Physical Exam

System	Findings
General	Tremor, weight loss, poor hygiene
Skin	Spider angiomas, palmar erythema, bruising
HEENT	Parotid enlargement, scleral icterus
Cardiac	Tachycardia, hypertension
Abdominal	Hepatomegaly, RUQ tenderness, ascites
Neuro	Ataxia, neuropathy, confusion

Look for withdrawal symptoms!

Cardiovascular

Tachycardia and Hypertension

- Chronic alcohol use alters **autonomic regulation**. When alcohol is withdrawn, there's a **rebound surge in sympathetic activity** due to:
  - ↓ GABA activity (less inhibition)
  - ↑ Glutamate activity (more excitation)
- The **increased norepinephrine release** leads to **tachycardia, elevated blood pressure**, tremors, and anxiety during withdrawal.

Neurological

Ataxia, Confusion, Neuropathy

- Chronic alcohol use affects the **cerebellum** → leads to **ataxia, wide-based gait, and coordination problems**.
- **Peripheral neuropathy** results from **B1 (thiamine) deficiency** and direct alcohol toxicity to nerves.
- Confusion or memory problems may indicate **Wernicke's encephalopathy**, especially if combined with ataxia and ophthalmoplegia.

SBIRT & Brief Intervention

Key Steps for Brief Intervention:

1. **Ask permission** to discuss alcohol use
2. **Provide feedback** on screening results
3. **Advise** on cutting down or quitting
4. **Assess readiness** to change (use motivational interviewing)
5. **Negotiate goals** and follow-up plan

Treatment

Behavioral Therapies

- **Cognitive Behavioral Therapy (CBT)** – Identifies triggers, builds coping skills
- **12-Step or Mutual-Help Groups** – AA, SMART Recovery, Women for Sobriety
- **Integrated Behavioral Health** – Collaboration with therapists, care managers, peer support

Medications

- **Naltrexone**
- **Acamprosate**
- **Disulfiram**
- **Gabapentin**
- **Topiramate**

Naltrexone

GABA	CNS Inhibition	Sedation, relaxation
Glutamate	CNS Excitation	Withdrawal,excitability
Opioid	Euphoria	Euphoria, craving
Dopamine	Addiction	Reinforcement, addiction
Serotonin	Impulsivity	Mood, impulsivity
Cannabinoid	Pleasant Feeling	Pleasure, relaxation

NIAAA, NIH

Acamprosate

★ GABA	CNS Inhibition	Sedation, relaxation
★ Glutamate	CNS Excitation	Withdrawal,excitability
Opioid	Euphoria	Euphoria, craving
Dopamine	Addiction	Reinforcement, addiction
Serotonin	Impulsivity	Mood, impulsivity
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Disulfiram

GABA	CNS Inhibition	Sedation, relaxation
Glutamate	CNS Excitation	Withdrawal,excitability
Opioid	Euphoria	Euphoria, craving
★ Dopamine	Addiction	Reinforcement, addiction
Serotonin	Impulsivity	Mood, impulsivity
Cannabinoid	Pleasant Feeling	Pleasure, relaxation

Does **not affect cravings or neuroadaptation**
Works via **behavioral deterrence**, not brain chemistry

Gabapentin - off label

★ GABA	CNS Inhibition	Sedation, relaxation
★ Glutamate	CNS Excitation	Withdrawal,excitability
Opioid	Euphoria	Euphoria, craving
★ Dopamine	Addiction	Reinforcement, addiction
★ Serotonin	Impulsivity	Mood, impulsivity
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Topiramate - off label

★ GABA	CNS Inhibition	Sedation, relaxation
★ Glutamate	CNS Excitation	Withdrawal,excitability
Opioid	Euphoria	Euphoria, craving
★ Dopamine	Addiction	Reinforcement, addiction
Serotonin	Impulsivity	Mood, impulsivity
Cannabinoid	Pleasant Feeling	Pleasure, relaxation

Medications for AUD

FDA approved vs off-label medications for MAUD:

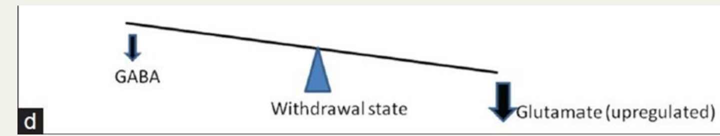
	Naltrexone	Acamprosate	Disulfiram	Gabapentin	Topiramate
Dose	50mg PO daily or 380mg IM monthly	666mg three times daily	250mg daily	600mg three times daily*	100mg two times daily*
FDA Approved for AUD	YES	YES	YES	NO	NO
Side effects	• Nausea • Headache • Dysphoria • Hepatotoxicity	• Diarrhea (16%)	• Hepatitis • Neuropathy • "Disulfiram reaction"	• Dizziness / ataxia • Somnolence • Diversion?	• Cognitive disturbance • GI upset • Taste perversion • Paresthesia
Price	$33 / month $1350 /month (injection)	$70 / month	$34 / month	$30 / month	$14 / month
Notes	• Safe in Child-Pugh Class A/B • No opioids!	• Safe in Child-Pugh Class A/B • Avoid with CKD	• Only appropriate if goal is abstinence	• Slow titration • Consider with neuropathy	• Caution with CKD • Consider with seizure history

**Requires uptitration*

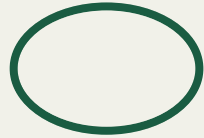
ASAM, 2023

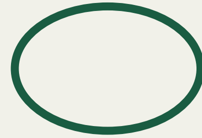
What About Withdrawal?

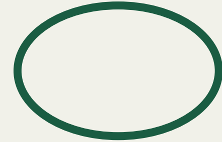
Managing Alcohol Withdrawal



- Chronic alcohol use = ↑ GABA, ↓ glutamate
- Sudden cessation = GABA crash, glutamate surge → CNS hyperexcitability
- Autonomic instability: tremors, anxiety, tachycardia, **seizures**
- **Timeline:**



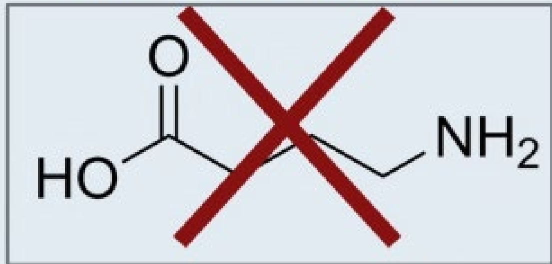




First hours - days	1-2 days	48-72 hours
Predominantly minor moderate symptoms	Hallucinations begin 1-2 days after cessation of alcohol intake	Delirium tremens (DTS) generally peak at 48-72h, though seizures usually peak early

Uncomplicated Withdrawal

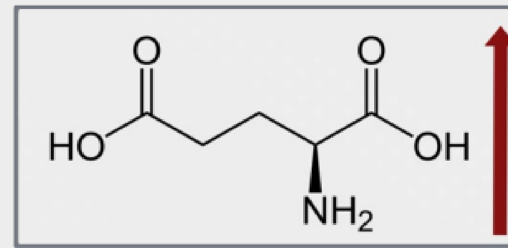
- Early symptoms
  - Begin early in course of withdrawal
  - Anxiety, diaphoresis, nausea, vomiting, tremor, nystagmus

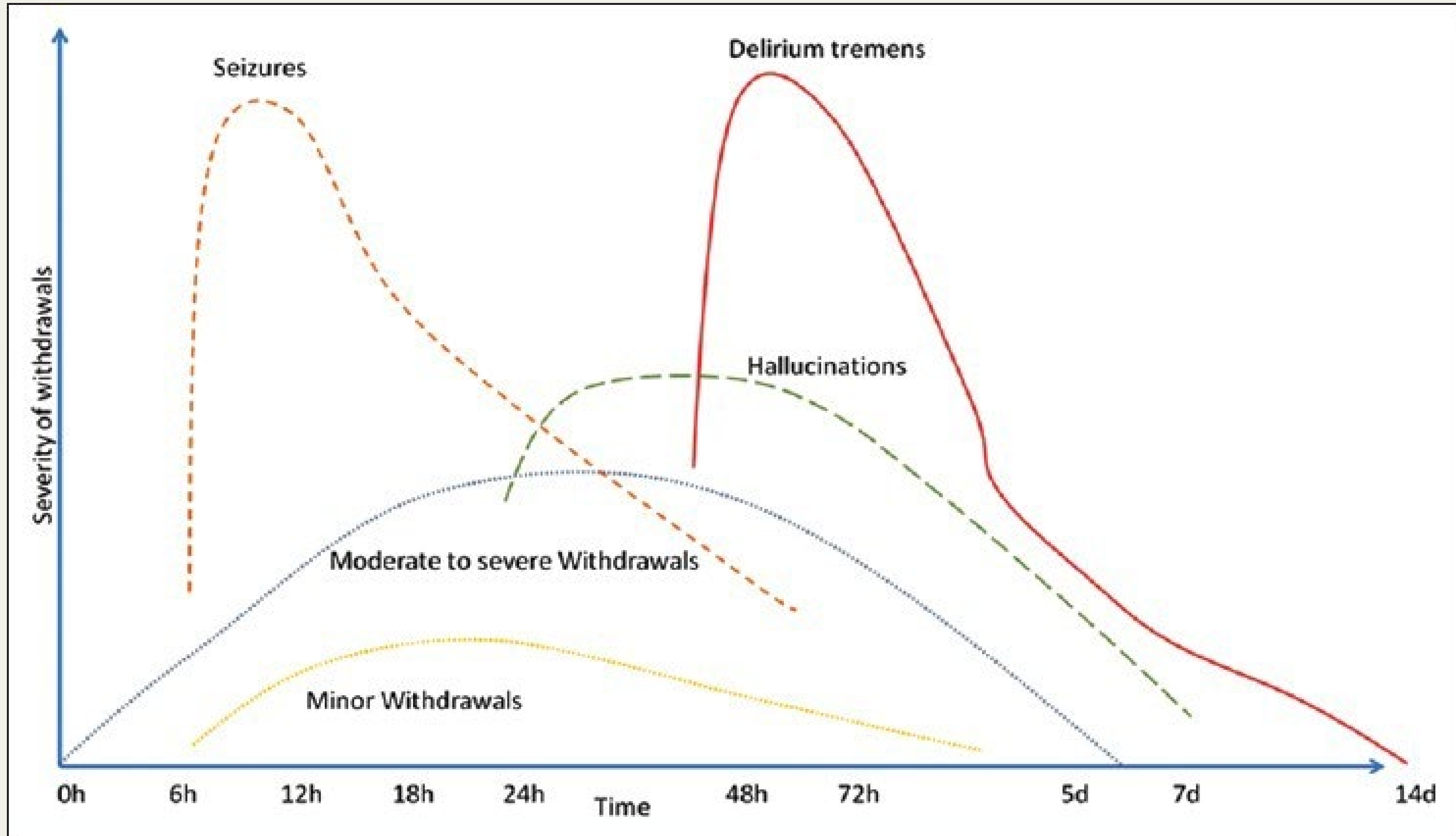


Complicated Withdrawal

- 5% of withdrawal
- Generally symptoms begin in 3-5 days
  - Autonomic hyperactivity - hypertension, tachycardia
  - Disorientation, paranoia, psychosis

- Seizures peak < 24hrs





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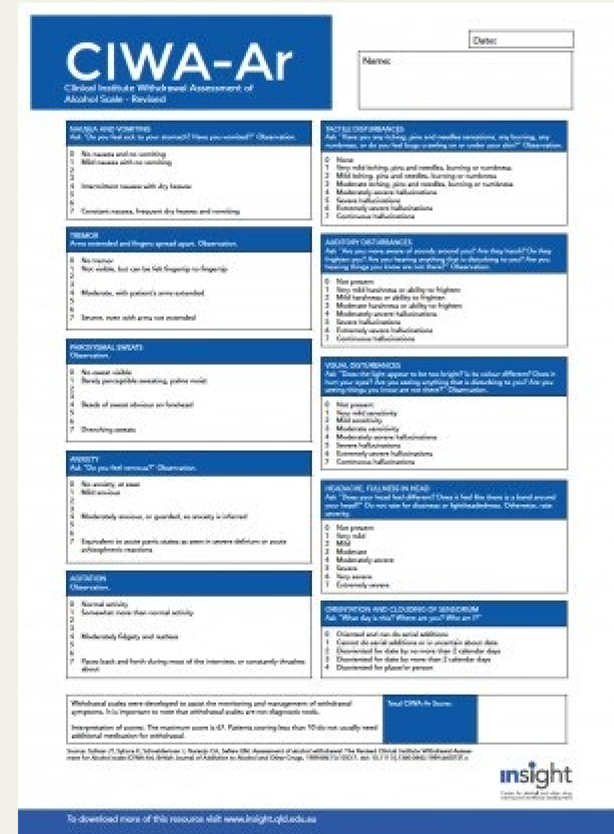
Safe for Outpatient Withdrawal?

Clinical Institute Withdrawal Assessment of Alcohol Scale - Revised

1. Nausea/vomiting
2. Tremor
3. Paroxysmal sweats
4. Anxiety
5. Agitation
6. Tactile disturbances (e.g., itching, burning)
7. Auditory disturbances
8. Visual disturbances
9. Headache/fullness in head
10. Orientation and clouding of sensorium (0–4 scale)



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Outpatient Management Triage Checklist
Support system
Only mild or moderate symptoms
Ability to check in frequently
No significant comorbidities or pregnancy
No history of severe withdrawal

Medications for outpatient withdrawal

- **Benzodiazepines**
  - Preferred for higher-risk patients
  - Good for those with active withdrawal symptoms
  - Long-acting preferred (e.g., diazepam, chlordiazepoxide)
  - Gentler taper
  - Safer in liver disease
- **Gabapentin**
  - Generally safer and less sedating
  - Less risk of reinforcing dependence
  - May reduce the **kindling effect** (progressively worse withdrawal over time)
  - Helpful for patients with anxiety, insomnia, or mild symptoms

Myrick H, Malcolm R, Randall PK, Boyle E, Anton RF, Becker HC, Randall CL. *A double-blind trial of gabapentin versus lorazepam in the treatment of alcohol withdrawal.*Alcohol Clin Exp Res. 2009;33(9):1582–1588.
Caputo, F., & Bernardi, M. (2010). Medications acting on the GABA system in the treatment of alcoholic patients. *Current Pharmaceutical Design, 16*(18), 2118–2125.

Long-Acting vs Short Acting Benzodiazepines

Long-acting benzodiazepines are preferred as they provide a gentler taper and are safe for patients with liver disease. You can substitute chlordiazepoxide for diazepam by simply using a 50-milligram tablet instead of a 10-milligram tablet.

Medication Options	
Diazepam	**Gabapentin**
• Day 1: 10mg orally q6h • Day 2: 10mg orally q8h • Day 3: 10mg orally q12h • Day 4: 10mg orally once (provide ~5 extra prn doses)	• Day 1: 300mg orally q6h • Day 2: 300mg orally q8h • Day 3: 300mg orally q12h • Day 4: 300mg orally ance (provide ~5 extra prn doses)

Special Populations

- Older Adults
- Pregnant Patients
  - No safe level of alcohol use during pregnancy
  - Focus on harm reduction
- Patients with co-occurring mental health disorders
- People who inject drugs or are unstably housed

Case Study

- 45 year old man - routine physical
- AUDIT-C = 6
- Medical History:
    - Hypertension (controlled)
    - Lives alone, works full time
    - No history of seizures or liver disease
    - LFTs: mildly elevated AST/ALT
- You ask if he’s ever had withdrawal symptoms. He describes mild shakiness and trouble sleeping when he tries to stop drinking.

Does James meet criteria for AUD? If so, what severity?

Yes – Moderate Alcohol Use Disorder

Based on DSM-5:

- Drinking more than intended
- Unsuccessful attempts to cut back
- Continued use despite known health risks maybe! (e.g., elevated LFTs)
- Tolerance (needs more to feel effect)
- Withdrawal symptoms (shakiness, sleep issues)

➡️ **5 criteria = Moderate AUD**

Would you treat him in primary care or refer?

Treat in primary care

- CIWA-Ar is low (6) → safe for outpatient
- No history of seizures or delirium tremens
- Mild withdrawal symptoms
- Stable housing and functioning
- Willing to talk about treatment
- He’s an excellent candidate for outpatient management with follow-up.

What medication options might be appropriate? Why?

Oral Naltrexone

- Reduces cravings and heavy drinking
- Good for patients still drinking who want to cut down
- Reasonable LFTs (mild elevation only)

Alternative: Gabapentin

- If he has anxiety or sleep disturbance as main withdrawal complaints
- Safe in liver disease, but less directly targeted to reward system

Disulfiram not ideal (he’s not abstinent), Acamprosate less helpful unless already stopped drinking

What other supports or referrals could help James succeed?

Behavioral Therapy

- CBT or motivational interviewing to support change

Mutual Help Group

- SMART Recovery or AA if he's open to group support

Regular Follow-Up in Primary Care

- Monitor symptoms, check liver function, adjust treatment

Consider Pharmacist or Social Work Involvement

- For medication adherence, support with cost or lifestyle

Summary

- AUD is a chronic, relapsing brain disease
- Primary care is the front line
- Medications are effective and underused
- Behavioral and peer support are essential
- Know when to treat, when to refer

Questions?

Resources

Clinical Guidance & Evidence

- **NIAAA Core Resource on Alcohol**
  https://www.niaaa.nih.gov/health-professionals-communities/core-resource-on-alcohol
  → Clinical tools, screening guides, neuroscience, and treatment strategies
- **SAMHSA TIP 63: Medications for Alcohol Use Disorder**
  https://store.samhsa.gov/product/TIP-63-Medications-for-Opioid-Use-Disorder-Full-Document/PEP20-02-01-006
  → Full clinical guidelines on pharmacologic treatment options
- **AHRQ Systematic Review** – Pharmacotherapy for AUD
  https://effectivehealthcare.ahrq.gov/products/alcohol-use-disorders/protocol
  → Evidence reviews for meds in outpatient primary care
- **ASAM eLearning – Alcohol Use Disorder: Neurobiology, Diagnosis & Treatment**
  https://elearning.asam.org/products/alcohol-use-disorder-neurobiology-diagnosis-and-treatment-2023
  → CME course with current insights on AUD management

Resources cont’d

Patient-Facing Resources

- **NIAAA Treatment Navigator**
  https://alcoholtreatment.niaaa.nih.gov/
  → Helps patients find treatment options tailored to their needs
- **SAMHSA Treatment Locator**
  https://findtreatment.gov
  → Search tool for local addiction treatment and mental health services
- **Mutual Help Groups**
  - **AA**: https://www.aa.org
  - **SMART Recovery**: https://www.smartrecovery.org
  - **Women for Sobriety**: https://womenforsobriety.org

Tools for Practice

- **AUDIT & AUDIT-C Forms**
  (Found in NIAAA Core Resource or EHR screening tools)
- **CIWA-Ar Tool (PDF)**
  https://www.mdcalc.com/ciwa-ar-alcohol-withdrawal
  → Can also use as mobile app

Resources

American Society of Addiction Medicine. (2023). *Alcohol use disorder: Neurobiology, diagnosis, and treatment* [Online course]. ASAM eLearning. https://elearning.asam.org/products/alcohol-use-disorder-neurobiology-diagnosis-and-treatment-2023

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