# Psychiatry

## for Non-Psychiatrists

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# Management of Alcohol Use Disorder

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# Learning Objectives

1. Utilize DSM-5 diagnostic criteria for Alcohol Use Disorder to assess severity and guide treatment in clinical practice.

2. Identify evidence-based pharmacologic and behavioral treatment options for AUD and how to initiate them

3. Recognize signs and symptoms of alcohol withdrawal and how to initiate appropriate management in inpatient and outpatient settings.

4. Identify common medical and psychiatric comorbidities associated with AUD that may impact treatment planning.

# Alcohol and Public Health Impact

- Alcohol is the most commonly used substance worldwide
- **2022 NSDUH**: 29.5 million people (10.6%) in the U.S. met criteria for AUD
- Public health impact: alcohol is the **3rd leading preventable cause of death** in the U.S.
- Alcohol use disorder can complicate co-occurring medical and psychiatric problems


- Substance Abuse and Mental Health Services Administration. (2023). *2023 National Survey on Drug Use and Health (NSDUH) annual national report.*
- Centers for Disease Control and Prevention. (2023). *Facts about U.S. deaths from excessive alcohol use.*

# Risky Drinking vs Alcohol Use Disorder

- Risky Drinking
  - Quantity-based risk
  - **May** lead to harm or acute problems
  - Does not necessarily cause functional impairment

- Alcohol Use Disorder (AUD)
  - Maladaptive pattern causing functional impairment and distress
  - **Actively** causing negative consequences

National Institute on Alcohol Abuse and Alcoholism. (2023). *Alcohol use: Risky drinking and AUD.*

# Risky Drinking

- **Risky drinking**
  - consumption above safe limits
  - Men: >14 drinks/week or >4 drinks/day
  - Women: >7 drinks/week or >3 drinks/day
  - Age>65: both men and women fall under >3 drinks/day or >7drinks/week

National Institute on Alcohol Abuse and Alcoholism. *Alcohol Use Disorder (AUD) in the United States: Age Groups and Demographic Characteristics*. Published August 2025.

# What is 1 Standard Drink?

- Beer: 12 oz regular
- Wine: 5oz table wine, 3-4 oz of fortified wine
- Spirits (“hard liquor”): 1.5 oz of 80 proof liquor

# One Standard Drink

# Screening for High Risk Use

- CAGE Questionnaire – 4 items
  - Scoring: ≥2 “yes” responses suggests possible AUD
    - C – Have you ever felt you should **C**ut down on your drinking?
    - A – Have people **A**nnoyed you by criticizing your drinking?
    - G – Have you ever felt **G**uilty about your drinking?
    - E – Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (**E**ye-opener)

Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *AUDIT: The Alcohol Use Disorders Identification Test* (2nd ed.). World Health Organization.

# Screening for High Risk Use

- AUDIT (Alcohol Use Disorders Identification Test)
  - 10 items
  - Scoring: 0–40
  - ≥8 = hazardous drinking
- Audit-C (shorter version)

## 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 a month (2) | Two to three times per week (3) | Four or more times a week (4) | _____ |
| **2. How many drinks containing alcohol do you have on a typical day when you are drinking?** | | | | | |
| 1 or 2 (0) | 3 or 4 (1) | 5 or 6 (2) | 7 to 9 (3) | 10 or more (4) | _____ |
| **3. How often do you have six or more drinks on one occasion?** | | | | | |
| Never (0) | Less than Monthly (1) | Monthly (2) | Two to three times per week (3) | Four or more times a week (4) | _____ |
| **TOTAL SCORE**<br>Add the number for each question to get your total score. | | | | | _____ |

Maximum score is 12. A score of $\geq 4$ 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 or alcohol use disorders.

# Alcohol Use Disorder

- **Diagnosis requires ≥2 criteria in 12 months**

  - Larger amounts/longer than intended
  - Persistent desire/unsuccessful attempts to cut down
  - Excessive time obtaining, using, or recovering
  - Cravings/strong urge to use
  - Failure to fulfill obligations
  - Continued use despite problems
  - Giving up important activities
  - Use in hazardous situations
  - Continued use despite physical/psychological harm
  - Tolerance
  - Withdrawal

**American Psychiatric Association.** *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, Text Revision (DSM-5-TR).* Washington, DC: American Psychiatric Association; 2022

# Severity of AUD

- **Mild** (2–3 criteria): risky use, cravings, some social impairment
- **Moderate** (4–5 criteria): more functional impairment, tolerance or withdrawal often present
- **Severe** (6+ criteria): compulsive use, inability to control intake, multiple domains affected
- Severity can help guide treatment and recommendations
  - Psychotherapy vs medication management vs residential treatment

# Quiz Time!

- A 28-year-old man reports drinking 6–7 beers every Friday night with friends. He has never missed work, denies cravings, and has not tried to cut down. Last month, he was in a minor car accident after driving home intoxicated.

- **AUD or High Risk Drinking?**

# Answer

- **Risky Drinking**
- 6–7 beers every a week
- Never missed work
- Denies cravings

# Case 2

- A 32-year-old woman drinks 6–7 beers most nights. She often plans to “just have one” but ends up intoxicated. She missed work twice last month due to hangovers, her partner has complained about her drinking, and she admits she tried but could not cut back.

- **AUD or High Risk Drinking?**

# Answer

- **Alcohol Use Disorder (Moderate)**
  - Loss of control
  - Social Impairment
  - Unsuccessful Attempts to quit
  - Drinks more/longer than intended
- 4/12 of DSM-5 Criteria

# Learning Objective #2

- Identify evidence-based pharmacologic and behavioral treatment options for AUD and how to initiate them

# Risks of Excessive Alcohol Use

- Excessive alcohol use further complicates co-occurring medical and psychiatric problems
- Significantly increases risk of GI, cardiovascular, neurological disease and cancer
- Patients are at higher risk for falls and delirium
- Increases risk of unintentional injury

# Treatment Options

- FDA-Approved Medications for AUD:
  - Naltrexone
  - Acamprosate
  - Disulfiram
- Off-label (evidence-based):
  - Gabapentin
  - Topiramate

# Naltrexone (FDA Approved Medication)

- Oral and long acting injectable
  - Also approved for opioid use disorder, but its efficacy is questionable
- MOA: Mu-opioid receptor antagonist → reduces reward feelings from alcohol
- Evidence: Reduces heavy drinking
- Oral dose: 50 mg PO daily
- LAI (Vivitrol): 380 mg IM every 4 weeks

# Naltrexone

- Side effects:
  - nausea, emesis, low appetite, dizziness, fatigue, hepatocellular injury (rare), Esoinphilic pneumonia (rare), injection site reaction if given IM
- **Naltrexone and Vivitrol contraindicated in patients taking opioids** as it will precipitate opioid withdrawal
- Hepatic monitoring needed
  - Okay to start if LFTs <2-3x ULN
- Avoid in patients with acute liver failure.
- Recommend risk/benefit discussion in patients with decompensated liver cirrhosis

**StatPearls.** Naltrexone. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK534811/

# Acamprosate (FDA Approved)

- **MOA:** Modulates glutamate/GABA balance
- May help reduce anxiety, insomnia, dysphoria and cravings seen in protracted alcohol withdrawal
- Best for abstinence maintenance
- Dose dependent reduction of alcohol intake

Substance Abuse and Mental Health Services Administration (SAMHSA). *Acamprosate.* In: Treatment Improvement Protocol (TIP) Series, No. 63. Rockville, MD: SAMHSA; 2023

# Acamprosate

- Dose: 666 mg PO TID
- TID schedule can contribute to medication non-compliance
- Renally excreted → contraindicated if CrCl <30
  - Use in caution with renal impairment
- Good option for those with liver complications
- Side effects: diarrhea, nausea, anxiety, depression and SI

# Disulfiram (Antabuse) (FDA Approved)

- Disulfiram inhibits aldehyde dehydrogenase
  - Enzyme required to break down alcohol in the body
- When alcohol is consumed, acetaldehyde builds up in the body and results in an unpleasant reaction
- Reaction: flushing, throbbing headache, sweats, nausea, vomiting
- Does NOT reduce cravings

Substance Abuse and Mental Health Services Administration (SAMHSA). *Disulfiram.* In: Treatment Improvement Protocol (TIP) Series, No. 63. Rockville, MD: SAMHSA; 2023

# Disulfiram

- Dose: 250–500 mg PO daily
  - But may start lower due to potential adverse effects
- Side-effects: Metallic Taste, dermatitis, sedation, flushing, headache, tachycardia, nausea/emesis (if alcohol is consumed), hepatotoxicity
- Works best when **supervised**

# Disulfiram

- Contraindications:
  - Psychosis - can increase CNS dopamine levels
  - Cardiovascular Disease (CHF, MI)-  due to tachycardia, hypotension
  - Liver failure
  - Metronidazole (both inhibit aldehyde dehydrogenase)
  - Sertraline, Ritonavir, Amprevanir
  - Not recommended in patients over 60
  - Do not use for at least 12 hrs after last alcohol use

- In severe cases: can result in arrhythmias, MI, seizures and even death

# Key Takeaways

- Meta-analysis: Naltrexone and Acamprosate both effective
- Naltrexone better for heavy drinking reduction.
- Acamprosate better for maintaining abstinence
- Disulfiram has several contraindications
  - Patients often time avoid taking it due to its adverse reactions

# Off-Label Medications: Gabapentin

- **Gabapentin:** ↓ cravings, helpful for mild withdrawal
  - MOA: Indirectly decreases glutamate and norepinephrine
  - Reduces cravings, insomnia, and anxiety
  - Dose: 300 mg TID → titrate to 1200–1800 mg/day
    - Oral bioavailability decreases substantially between 1800-2400 mg
  - Side Effects: Sedation, dizziness, peripheral edema

Mason BJ, Quello S, Shadan F, et al. Gabapentin treatment for alcohol dependence: a randomized controlled trial. *JAMA Intern Med.* 2014;174(1):70–77

# Off-Label Medications: Topiramate

- **Topiramate:** Reduces heavy drinking days
- MOA: ↑ GABA-A activity, ↓ AMPA/kainate glutamate receptors, modulates dopamine → reduces reward from alcohol
- Clinical Effect: ↓ heavy drinking days, ↓ cravings, improves abstinence rates
- Dose: 25 mg/day → titrate to 200 mg/day (max 300 mg/day)
- Side Effects: Cognitive dulling, paresthesia, weight loss, kidney stones

Substance Abuse and Mental Health Services Administration (SAMHSA). *Topiramate.* In: Treatment Improvement Protocol (TIP) Series, No. 63. Rockville, MD: SAMHSA; 2023

# Other Strategies

- Cognitive Behavioral Therapy (CBT)
- Motivational Enhancement Therapy
- Contingency Management
- AA, smart therapy, group therapy
- Partial Hospitalization Programs
- Residential Treatment

# Learning Objective 3

- Alcohol Withdrawal Recognition & Management

# What is Alcohol Withdrawal?

- **Alcohol withdrawal syndrome:** severe physical symptoms that develop in dependent patients if alcohol is suddenly stopped or significantly reduced

# What Causes Alcohol Withdrawal?

- Chronic alcohol use changes the brain:
  - •GABA ↓
  - •Glutamate ↑
  - •Dopamine ↓
  - •Stress systems (NE) ↑
- Alcohol is needed to temporarily re-balance these neurotransmitters to feel **“normal”**
- Upon abrupt cessation/reduction, these neurotransmitter imbalances cause extreme physical and autonomic symptoms

| Phase | GABA-A (Inhibitory) | Glutamate | NE | Clinical Symptoms |
|---|---|---|---|---|
| Acute use | ↑ | ↓ | ↓ | Calm, euphoria, sedation, impaired coordination |
| Chronic use | ↓ | ↑ | ↑ | Craving, anxiety, insomnia, dysphoria —alcohol required to balance these neurotransmitters |
| Withdrawal | ↓↓ Very Low (tremors, anxiety) | ↑↑ Very High (seizures, agitation) | ↑↑ Very High (autonomic instability) | Autonomic instability, Seizures and DTs |

# Alcohol Withdrawal Symptoms & Timeline

- Symptoms range from mild tremors to seizures and delirium tremens
  - **0–12 hours:** Autonomic Instability
  - **12–24 hours:** Hallucinations
  - **24–48 hours:** Seizures
  - **48–72 hours:** Delirium Tremens (DTs)
- Usually begin 6-48 hours after alcohol stoppage or reduction
- May occur before BAL is 0 and last 2-7 days

# Alcohol Withdrawal Symptoms

- **0–12 hours: Autonomic Instability**
  - Tremor, anxiety, insomnia, nausea, vomiting, diaphoresis, agitation, headache, disorientation
  - Vitals: Tachycardia, hypertension, diaphoresis
  - Complications: Can precipitate arrhythmias or cardiac events

- **12–24 hours: Hallucinations**
  - Visual, tactile, or auditory hallucinations. Can occur without delirium

# Alcohol Withdrawal Symptoms

- **24–48 hours: Seizures**
  - Occur in 5-15% in patients
  - Caused by increased Glutamate activity
  - Generalized tonic-clonic seizures
  - Risk factors: Past history of withdrawal seizures

# Delirium Tremens

- **48–72 hours: Delirium Tremens (DTs)**
- Acute confusion, hallucinations, severe autonomic instability (hypertension, tachycardia), diaphoresis and fever
- **Medical Emergency!**
- Mortality: 5-15% if untreated

# Management of Alcohol Withdrawal

- **First-Line Treatment – Benzodiazepines**
  - Enhance GABA-A → restore inhibitory tone, counter glutamate surge

- **Diazepam & Chlordiazepoxide (Librium):**
  - Long half-life → smoother withdrawal course, fewer rebound symptoms
  - Do not use in significant liver disease

- **Lorazepam & Oxazepam:**
  - Shorter half-life, no active metabolites
  - Preferred in hepatic impairment, elderly, or renal impairment

# Benzodiazepine Administration Strategies

- Administration Strategies
- Fixed Taper: Scheduled taper over several days
- Symptom-triggered: Clinical Institute Withdrawal Assessment – Alcohol, revised (CIWA-Ar)

# CIWA

- Clinical Institute Withdrawal Assessment for Alcohol (CIWA)
  - Standardized tool to assess severity of alcohol withdrawal
  - Guides medication dosing and monitoring
  - Improves safety and efficiency in withdrawal
- 10-item scale
- Higher score indicates more severe withdrawal
  - 0–9: Minimal withdrawal
  - 10–19: Moderate withdrawal
  - ≥20: Severe withdrawal
- Medication only given if score thresholds are met

Sullivan JT, Sykora K, Schneiderman J, Naranjo CA, Sellers EM. Assessment of alcohol withdrawal: the CIWA-Ar scale. *J Stud Alcohol.* 1989;50(2):214–219

## Clinical Institute Withdrawal Assessment Scale for Alcohol, Revised (CIWA-Ar)

**Nausea and Vomiting**
0 — No nausea or vomiting
1
2
3
4 — Intermittent nausea with dry heaves
5
6
7 — Constant nausea, frequent dry heaves and vomiting

**Paroxysmal Sweats**
0 — No sweat visible
1 — Barely perceptible sweating, palms moist
2
3
4 — Beads of sweat obvious on forehead
5
6
7 — Drenching sweats

**Agitation**
0 — Normal activity
1 — Somewhat more than normal activity
2
3
4 — Moderate fidgety and restless
5
6
7 — Paces back and forth during most of the interview or constantly thrashes about

**Visual Disturbances**
0 — Not present
1 — Very mild photosensitivity
2 — Mild photosensitivity
3 — Moderate photosensitivity
4 — Moderately severe visual hallucinations
5 — Severe visual hallucinations
6 — Extreme severe visual hallucinations
7 — Continuous visual hallucinations

**Tremor**
0 — No tremor
1 — Not visible, but can be felt at finger tips
2
3
4 — Moderate when patient's hands extended
5
6
7 — Severe, even with arms not extended

**Tactile Disturbances**
0 - None
1 — Very mild paraesthesias
2 — Mild paraesthesias
3 — Moderate paraesthesias
4 — Moderately severe hallucinations
5 — Severe hallucinations
6 — Extremely severe hallucinations
7 — Continuous hallucinations

**Headache**
0 — Not present
1 — Very mild
2 - Mild
3 - Moderate
4 — Moderately severe
5 - Severe
6 — Very severe
7 — Extremely severe

**Auditory Disturbances**
0 — Not present
1 — Very mild harshness or ability to frighten
2 — Mild harshness or ability to frighten
3 — Moderate harshness or ability to frighten
4 — Moderately severe hallucinations
5 — Severe hallucinations
6 — Extremely severe hallucinations
7 — Continuous hallucinations

**Orientation and Clouding of the Sensorium**
0 — Oriented and can do serial additions
1 — Cannot do serial additions
2 — Disoriented for date but not more than 2 calendar days
3 - Disoriented for date by more than 2 calendar days
4 — Disoriented for place/person

**Cumulative scoring**

| Cumulative score | Approach |
|---|---|
| 0 — 8 | No medication needed |
| 9 — 14 | Medication is optional |
| 15 — 20 | Definitely needs medication |
| >20 | Increased risk of complications |

# **Phenobarbital** - alternative to benzodiazepines

- MOA: Enhances GABA-A and directly inhibits glutamate
- Long-acting helps provide smoother withdrawal coverage
- When to Use
  - Severe, refractory withdrawal: history of seizures/DTs, in ICU settings
  - When benzodiazepine doses are not sufficient for withdrawal symptoms

# Phenobarbital

- Studied as adjunct to benzodiazepines, not monotherapy

- Cautions:
  - Risk of respiratory depression, especially with co-ingestants or opioids
  - Requires close monitoring of vitals

- Administration:
  - Often used in symptom triggered or fixed-taper protocols

# Management of Withdrawal

- Complete Physical Exam
- Consider cardiac conditions, liver disease, pancreatic disease, GI bleed, Infections, and Neurological impairment
- Correct electrolytes, provide hydration and nutrition
- Closely monitor vitals
- Labs:
  - AST/ALT may be abnormal
  - Ehtyl Gluconuride and ethyl sulfate can confirm recent drinking
  - PETH - Can detect chronic or heavy alcohol use

# Wernicke-Korsakoff Syndrome

- Thiamine deficiency can lead to Wernicke's Encephalopathy and Korsakoff Syndrome
- Chronic alcohol use → can lead to poor nutrition and low thiamine consumption
- Chronic alcohol use can damage intestinal mucosa which interferes with the absorption of thiamine

# Wernicke-Korsakoff Syndrome

- Wernicke's Encephalopathy (acute): Acute neuropsychiatric syndrome caused by thiamine deficiency

- **Classic triad:**
  - Confusion / global encephalopathy
  - Oculomotor dysfunction (nystagmus, ophthalmoplegia)
  - Gait ataxia / balance impairment

# Wernicke's Encephalopathy

- Treatment: Immediate high-dose IV thiamine
- Prognosis: Can be reversed if treated early
- Can progress to Korsakoff's syndrome if untreated

# Korsakoff's Syndrome

- **Korsakoff's Syndrome:** Caused by untreated Wernicke's encephalopathy

- **Symptoms:**
  - Severe anterograde amnesia (cannot form new memories)
  - Retrograde amnesia
  - Confabulation (fabricated memories)
  - Executive dysfunction, apathy

# Korsakoff's Syndrome

- Treatment: Supportive, abstinence, cognitive rehab
- Prognosis: **Permanent**, some mild improvement possible
- Essential to provide thiamine during alcohol withdrawal, especially if patients appear malnourished

# Treatment and Prevention of WKS

- Thiamine IV 200–500 mg TID for 3 days
  - Follow with PO 100 mg daily until nutritional status improves
- Always give Thiamine **BEFORE** glucose
  - Glucose metabolism increases thiamine demand; giving glucose first can precipitate Wernicke's
- IV Thiamine ensures rapid repletion which can prevent Wernicke's
  - Oral Thiamine absorption is often impaired due to GI inflammation.
- Other Support:
  - Folate, B12, adequate nutrition and hydration

# Learning Objective #4

- Identify common medical and psychiatric comorbidities associated with AUD that may impact treatment planning

# Dangers of Alcohol

- Ethanol is metabolized to acetaldehyde through alcohol dehydrogenase then to non-toxic acetate

- Acetaldehyde is a cytotoxic, genotoxic and mutagenic compound
  - Damages DNA

# Medication Interactions with Alcohol

- Acetaminophen- increased risk of liver toxicity
- NSAIDs - GI bleeding
- Opioids – over-sedation, respiratory depression
- Warfarin - decreases metabolism and ↑ bleeding risk
- Anti-hypertensives - risk of postural hypotension
- Statins - increased risk of hepatotoxicity
- Atypical antipsychotics - sedation, hypotension
- Metronidazole - Disulfiram-like reaction
- Insulin - unpredictable blood glucose

# Cognitive Decline

- Excessive alcohol use contributes to
  - Brain Atrophy
  - Dementia
  - Wernicke-Korsakoff Syndrome

# Cancer Risk

- Alcohol contributes to up to 44% of cancers
  - Types of cancer: liver, pancreas, esophageal, breast, GI and Lung
- Classified as a carcinogen
- Risk of head and neck cancer is increased 35-fold for people who have a 2PPD history combined with more than 4 alcohol drinks per day

Rehm J, Shield KD. Global burden of alcohol use disorders and alcohol liver disease. *Biomedicines.* 2019;7(4):99

# Psychiatric Comorbidities in AUD

- Common Comorbidities:
  - Depression
  - Anxiety
  - PTSD
  - Bipolar disorder
  - Schizophrenia Clinical Considerations:

- High suicide risk among patients with AUD, particularly with co-occurring depression or bipolar disorder

# Psychiatric Comorbidities in AUD

- Psychiatric comorbidities can worsen treatment adherence and increase relapse risk
- Antidepressants (SSRIs, SNRIs) do not reliably reduce alcohol consumption, but are important to treat underlying psychiatric illness
- Integrated care model: combine psychiatric treatment + addiction management for optimal

# Medical Comorbidities of AUD

- Hepatic: hepatitis, cirrhosis, fatty liver, HCC
- Gastrointestinal: pancreatitis, gastritis, malabsorption
- Cardiovascular: hypertension, arrhythmias, cardiomyopathy, stroke
- Neurologic: peripheral neuropathy, cerebellar degeneration
- Hematologic: anemia, thrombocytopenia
- Endocrine: hypoglycemia, osteoporosis
- Cancer risk: oral, esophagus, liver, breast, colorectal
- Pregnancy: fetal alcohol spectrum disorders

# Quiz Time!

- A 38-year-old man with severe Alcohol Use Disorder has been abstinent for one week and is motivated to remain sober. He has normal liver function but significant renal impairment (eGFR <30). Which of the following medications should not be used?

A) Naltrexone
B) Disulfiram
C) Acamprosate
D) Gabapentin

Answer:

C) Acamprosate

•Acamprosate is contraindicated in severe renal impairment (CrCl <30 mL/min)

•Naltrexone is contraindicated in acute hepatitis or liver failure, not renal dysfunction

•Disulfiram can be used if the patient is abstinent and motivated, though monitoring is required

•Gabapentin can be used (with dose adjustments in renal impairment)

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