

TOXICOLOGY • SUBSTANCE USE

Alcohol *Intoxication*

Acute CNS depression caused by ethanol consumption that exceeds the liver's metabolic capacity — a high-yield emergency topic spanning safety, prioritization, and clinical judgment.

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Content sourcing note: Alcohol intoxication was not included in your uploaded reference notes. Content below is compiled from standard NGN NCLEX 2026 references — *Saunders Comprehensive Review*, ATI Mental Health & Adult Med-Surg, Lippincott NCLEX-RN Review, and current ENA toxicology / CDC clinical guidelines.



Definition & Overview

WHAT IT IS • WHY IT MATTERS



What it is

Acute **CNS depression** from ethanol exceeding the liver's ability to metabolize it (~1 oz/hr). Affects every organ — brain, heart, lungs, GI, kidneys.



Legal & Clinical

Thresholds

- ▶ **0.08%** — Legal intoxication (US driving)
- ▶ **0.30%** — Stupor, possible coma
- ▶ **≥ 0.40%** — Potentially fatal



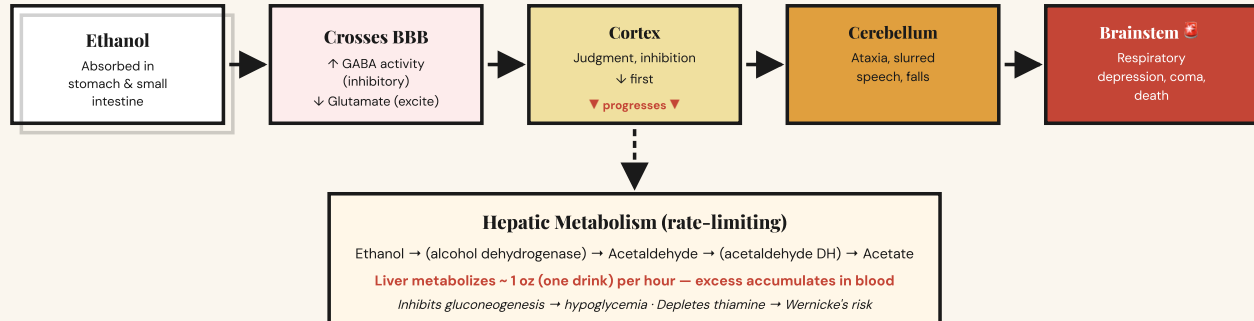
Why it matters

Most commonly abused CNS depressant. High mortality from **respiratory depression, aspiration, trauma, and hypoglycemia**. Often co-occurs with opioids, benzos, head injury.

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Pathophysiology

HOW ETHANOL SHUTS THE BRAIN DOWN





Signs & Symptoms

BY BAC LEVEL · EARLY → LATE

**0.02 –
0.05%**

Mild: Relaxed, talkative, flushed, mild euphoria, mild impaired judgment.

**0.06 –
0.15%**

Moderate: Slurred speech, ataxia, decreased inhibition, impaired memory & reaction time, mood swings.

**0.16 –
0.29%**

Severe: Marked ataxia, nystagmus, vomiting, blurred vision, emotional lability, confusion.

**0.30 –
0.39%**

Stupor: Loss of consciousness, urinary incontinence, hypothermia, bradycardia, depressed reflexes.

≥ 0.40%

Coma / death zone: Respiratory failure, profound hypotension, loss of gag reflex, possible death.



Early / Mild Cues

- ▶ Euphoria & disinhibition
- ▶ Flushed face, warm sensation
- ▶ Slurred speech
- ▶ Mild ataxia, unsteady gait
- ▶ Talkativeness, impaired judgment
- ▶ Nystagmus on lateral gaze



Red Flag / Severe Cues

- ▶ RR < 12 / shallow breathing
- ▶ SpO₂ < 92%, cyanosis
- ▶ Hypotension & bradycardia
- ▶ Hypothermia (vasodilation)
- ▶ Hypoglycemia (BG < 70)
- ▶ Loss of gag reflex → aspiration
- ▶ Stupor → coma → unresponsive
- ▶ Seizure (may signal withdrawal or head injury)



Priority Nursing Interventions

ABC FRAMEWORK · ACTION VERBS

A Airway

- ▶ **Position** lateral / recovery
- ▶ **Suction** at bedside
- ▶ **Assess** gag reflex
- ▶ **NPO** until alert
- ▶ **Prepare** for intubation if obtunded

B Breathing

- ▶ **Monitor** RR & SpO₂ q15 min
- ▶ **Apply** O₂ to keep SpO₂ ≥ 94%
- ▶ **Assess** breath sounds (aspiration)
- ▶ **Obtain** ABG for severe cases
- ▶ **Call** RRT if RR < 10

C Circulation

- ▶ **Establish** IV access (LR or NS)
- ▶ **Cardiac** monitoring
- ▶ **Check** BG → D50W if < 70
- ▶ **Give** Thiamine **BEFORE** glucose
- ▶ **Warm** with blankets (hypothermia)

Safety

- ▶ **Fall** precautions / side rails up
- ▶ **Neuro** checks q1h (LOC)
- ▶ **Assess** for head/spine trauma
- ▶ **Screen** for co-ingestion (opioids, benzos)
- ▶ **Monitor** for withdrawal 6–24 h after last drink

⚠ Critical sequence — "Thiamine BEFORE glucose"

Giving IV dextrose to a thiamine-deficient patient can **precipitate Wernicke's encephalopathy** (confusion, ataxia, ophthalmoplegia). Always give 100 mg Thiamine IV/IM first, then D50W if hypoglycemic.

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Pharmacology

ACUTE CARE · RECOVERY SUPPORT

Thiamine (Vitamin B₁)

ACUTE · PREVENT WERNICKE

WHY	Chronic alcohol use depletes thiamine; without it, glucose load can trigger Wernicke-Korsakoff.
DOSE / ROUTE	100 mg IV or IM — BEFORE any glucose-containing fluid.
SIDE EFFECTS	Generally well tolerated; rare anaphylaxis with rapid IV push.
NURSING	Administer FIRST . Continue daily during admission.

Dextrose 50% (D50W)

ACUTE · HYPOGLYCEMIA

WHY	Alcohol suppresses hepatic gluconeogenesis → hypoglycemia is common in acute intoxication.
DOSE / ROUTE	25 g (1 amp) IV push if BG < 70 mg/dL.
NURSING	Recheck BG in 15 min. Hypertonic — large-bore IV; assess for extravasation.

Naloxone (Narcan)

ACUTE · CO-INGESTION

WHY	If respiratory depression is unexplained or opioid co-ingestion is suspected — there is NO ANTIDOTE FOR ETHANOL .
DOSE / ROUTE	0.4–2 mg IV/IM/IN; repeat q2–3 min.
NURSING	Short half-life — monitor for re-sedation; not effective on pure alcohol toxicity.

Lorazepam / Diazepam (Benzodiazepines)

WITHDRAWAL · NOT INTOXICATION

WHY	First-line for alcohol WITHDRAWAL (CIWA protocol) and withdrawal seizures — they replace lost GABA tone.
KEY TRAP	Do NOT give to an actively intoxicated patient — additive CNS/respiratory depression.
NURSING	Use CIWA-Ar scoring; monitor sedation, RR, BP. Lorazepam preferred in liver disease.

Long-Term Recovery Pharmacology

Drug	Action	Key teaching
Disulfiram (Antabuse)	Aversion therapy — blocks acetaldehyde DH	Avoid ALL alcohol (mouthwash, cough syrup, sauces, aftershave). Reaction: flushing, N/V, tachycardia, hypotension.
Naltrexone	Opioid antagonist — reduces cravings	Check LFTs; avoid in liver failure or opioid use.

Drug	Action	Key teaching
Acamprosate	Restores GABA/glutamate balance	Use after detox; renal dosing.



NCLEX Test Traps

WRONG VS RIGHT · WHAT GETS MISSED

✗ TRAP

Give IV dextrose immediately for hypoglycemia.

✓ CORRECT

Administer **Thiamine FIRST**, then dextrose — prevents Wernicke's encephalopathy.

✗ TRAP

Position the intoxicated patient supine to monitor breathing.

✓ CORRECT

Lateral / recovery position — prevents aspiration if vomiting occurs.

✗ TRAP

Restrain an agitated patient who smells of alcohol.

✓ CORRECT

Assess first — agitation may be hypoxia, hypoglycemia, head injury, or withdrawal, not intoxication.

✗ TRAP

Confuse intoxication with withdrawal.

✓ CORRECT

Intoxication = CNS DEPRESSION (sedated, slow).
Withdrawal = CNS EXCITATION (tremors, tachycardia, HTN, seizures, DTs).

✗ TRAP

Give activated charcoal to absorb the alcohol.

✓ CORRECT

Activated charcoal **does NOT bind alcohol**. Care is supportive — airway, fluids, glucose, thiamine.

✗ TRAP

Give a benzodiazepine to calm an intoxicated patient.

✓ CORRECT

Benzos are for **withdrawal**. Giving them during intoxication = additive respiratory depression / death.

✗ TRAP

Discharge the sober-appearing patient after 2 hours.

✓ CORRECT

Monitor for **withdrawal onset at 6–24 hours** after last drink; **DTs peak at 48–96 h** — life-threatening.



Patient & Family Education

DISCHARGE · LONG-TERM RECOVERY



Safety at Home

- ▶ NEVER drive or operate machinery while drinking
- ▶ Avoid combining alcohol with sedatives, opioids, sleep aids
- ▶ Eat before & during drinking — slows absorption
- ▶ Recognize binge drinking limits (♂ ≥5, ♀ ≥4 drinks / 2 h)



Withdrawal Warning Signs

- ▶ Tremors, anxiety, sweating (6–12 h after last drink)
- ▶ Seizures (12–48 h) — call 911
- ▶ Hallucinations (12–24 h)
- ▶ Delirium Tremens (48–96 h) — medical emergency



Recovery Support

- ▶ Alcoholics Anonymous (AA) / SMART Recovery
- ▶ Outpatient or inpatient rehab
- ▶ Family counseling — Al-Anon for loved ones
- ▶ Therapeutic communication; **non-judgmental** stance



Nutrition & Self-Care

- ▶ Daily multivitamin with Thiamine, Folate, B-complex
- ▶ High-protein, balanced meals — restore nutrition
- ▶ Hydrate; limit caffeine during early recovery
- ▶ Identify triggers, build coping skills, sleep hygiene



If Taking Disulfiram

- ▶ Avoid all alcohol products: mouthwash, vanilla extract, cough syrup, aftershave, hand sanitizer
- ▶ Carry medical-alert ID
- ▶ Wait 12 h after last drink before starting
- ▶ Reaction lasts 30 min — several hours



Long-Term Risks to Discuss

- ▶ Cirrhosis, esophageal varices, pancreatitis
- ▶ Cardiomyopathy, HTN, atrial fibrillation
- ▶ Wernicke-Korsakoff syndrome (irreversible if untreated)
- ▶ Cancers: oral, esophageal, liver, breast



Memory Boosters

MNEMONICS · PATTERN RECOGNITION

SLURRED

Signs of acute intoxication

- S** Slurred speech
- L** Loss of coordination (ataxia)
- U** Unsteady gait / Uninhibited
- R** Respiratory depression (late)
- R** Reduced reflexes
- E** Emesis / Euphoria
- D** Disorientation, Drowsy

CAGE

Screening tool — ≥ 2 yes = problem drinking

- C** Cut down — ever tried?
- A** Annoyed — by others' criticism of drinking?
- G** Guilty — about drinking?
- E** Eye-opener — drink first thing in AM?

"Thiamine before Glucose"

Always give **Thiamine 100 mg IV/IM FIRST**. Then dextrose if hypoglycemic. Prevents iatrogenic **Wernicke's encephalopathy**.

DOWNERS vs UPPERS

Alcohol = **DOWNER**. Picture the body slowing: RR↓, HR↓, BP↓, Temp↓, LOC↓. **Withdrawal flips everything UP**: tremors↑, HR↑, BP↑, anxiety↑, seizures.

🕒 Withdrawal Timeline — "6, 12, 24, 48, 96"

6–12 h tremors, anxiety · 12–24 h hallucinations · 24–48 h seizures · 48–96 h Delirium Tremens (DTs) — high mortality.



NCJMM Clinical Judgment Scenario

SIX-STEP NEXT GENERATION CASE

Case

A **45-year-old male** with known alcohol use disorder is brought to the ED by friends after a college reunion. He was found unresponsive in a restroom with a strong odor of alcohol. No empty bottles found. Bystanders deny known head injury.

BP	HR	RR	SPO ₂	TEMP	BG	GCS
88/52	52	8	86%	95.4°F	58	7

STEP 1 · RECOGNIZE CUES

What stands out?

- Severe respiratory depression (RR 8, SpO₂ 86%)
- Hypotension & bradycardia (88/52, HR 52)
- Hypothermia (95.4°F) & hypoglycemia (BG 58)
- Decreased LOC (GCS 7 — cannot protect airway)
- Strong odor of alcohol; known alcohol use disorder

STEP 2 · ANALYZE CUES

What is happening clinically?

- Severe **acute alcohol intoxication** with CNS / respiratory depression
- Risk for **aspiration** (lost gag reflex, GCS < 8)
- Hypoglycemia from suppressed gluconeogenesis
- Hypothermia from peripheral vasodilation
- Latent risk for **Wernicke's encephalopathy** with dextrose
- Rule out co-ingestion (opioids, benzos) & head trauma

STEP 3 · PRIORITIZE HYPOTHESES

Rank by ABC & threat to life

- **#1** Airway / breathing failure (highest mortality risk)
- **#2** Hypoglycemia (acute neurologic insult)
- **#3** Aspiration prevention
- **#4** Hypothermia & hemodynamic instability
- **#5** Plan for withdrawal in 6–24 h

STEP 4 · GENERATE SOLUTIONS

What interventions are appropriate?

- Reposition lateral / recovery; suction at bedside
- Apply high-flow O₂ via non-rebreather; prepare bag-valve-mask & intubation tray

- Establish 2 large-bore IVs; warmed isotonic fluids
- Administer Thiamine 100 mg IV **FIRST**, then D50W 25 g IV
- Apply warming blanket / Bair Hugger
- Obtain labs: BAC, BMP, ABG, CBC, LFTs, ammonia, tox screen, lactate
- Naloxone if opioid co-ingestion suspected; CT head if trauma cannot be excluded
- Begin continuous cardiac & SpO₂ monitoring; CIWA protocol scheduled

STEP 5 · TAKE ACTION

Sequence of execution

1. Roll patient lateral; open airway; suction secretions
2. NRB mask 15 L/min; call RRT / anesthesia for airway support
3. Insert 2 × 18 g IVs; draw labs simultaneously
4. **Thiamine 100 mg IV push** → then **D50W 25 g IV push**
5. Start warmed LR at 250 mL/h; apply warming blanket
6. Place on cardiac monitor & continuous pulse ox; q15 min vitals
7. Reorient when arousable; notify HCP; document baseline neuro exam

STEP 6 · EVALUATE OUTCOMES

Expected response within 1–2 hours

- ✓ RR ≥ 12, SpO₂ ≥ 94% on lowest tolerated O₂
- ✓ BG ≥ 70 mg/dL on recheck
- ✓ BP ≥ 90/60, HR 60–100
- ✓ Temp ≥ 97°F
- ✓ Improved LOC — follows commands, protects airway
- ✓ No signs of aspiration on lung auscultation
- ☑ Transition to CIWA-Ar monitoring & withdrawal prophylaxis
- ☑ Social work / addiction counseling consult before discharge