

Alcohol Withdrawal

DSM-5-TR 291.81 | ICD-10-CM F10.239, F10.232

GABA-glutamate rebound after cessation in a dependent drinker, spanning tremor to withdrawal seizures and delirium tremens.

SYMPTOM ONSET

6-24 hr after last drink

WITHDRAWAL SEIZURES

~10% of AWS; 12-48 hr

DELIRIUM TREMENS

~3-5% of AWS; 48-96 hr

DT MORTALITY

~15-20% untreated; <5% treated

CLINICAL PICTURE

- Autonomic hyperactivity begins 6 to 24 hours after the last drink: tremor, diaphoresis, tachycardia, hypertension, nausea, anxiety, and insomnia.
- Withdrawal seizures are generalized tonic-clonic, usually single or in a brief cluster, and peak between 12 and 48 hours after cessation.
- Alcoholic hallucinosis appears at 12 to 24 hours with vivid visual or tactile hallucinations, a clear sensorium, and preserved orientation.
- Delirium tremens** emerges at 48 to 96 hours with clouded consciousness, disorientation, severe agitation, fever, and full autonomic storm.
- Severity worsens with each prior detoxification through kindling, so a history of past withdrawals predicts course better than reported intake.
- Occult trauma, infection, pancreatitis, GI bleeding, and hepatic encephalopathy frequently coexist and can mimic or amplify withdrawal.

DIAGNOSTIC CRITERIA AT A GLANCE

- Requires cessation or reduction of heavy, prolonged alcohol use followed by at least 2 of 8 characteristic signs within hours to a few days.
- The eight signs are autonomic hyperactivity, hand tremor, insomnia, nausea or vomiting, transient hallucinations or illusions, psychomotor agitation, anxiety, and seizures.
- Symptoms must cause significant distress or impairment and must not be attributable to another medical condition or to another substance.
- The specifier with perceptual disturbances applies when hallucinations or illusions occur with intact reality testing and a clear sensorium.
- Delirium tremens is coded separately as alcohol withdrawal delirium, which additionally requires disturbed attention and awareness.

NEUROBIOLOGY & PHYSIOLOGY

- Chronic alcohol downregulates **GABA-A** receptors and upregulates **NMDA** receptors; abrupt cessation leaves unopposed glutamatergic excitation.
- Sympathetic outflow surges as alpha-2 autoreceptor inhibition is lost, producing tachycardia, hypertension, tremor, and diaphoresis.
- Kindling from repeated withdrawal episodes progressively lowers seizure threshold through limbic sensitization, so each detox is more dangerous.
- Hypomagnesemia, hypokalemia, hypophosphatemia, and hypoglycemia are near-universal and independently lower the seizure threshold further.
- Thiamine** stores deplete within 2 to 3 weeks of poor intake, and a glucose load given without thiamine can precipitate Wernicke encephalopathy.
- The Wernicke triad of confusion, ophthalmoplegia, and ataxia is complete in fewer than 20% of cases, so treat empirically on suspicion alone.

PSYCHOLOGICAL MECHANISMS

- Fear of withdrawal itself is a major driver of continued drinking and of premature self-discharge from medical detoxification.
- Anxiety, insomnia, and dysphoria persist for weeks as protracted withdrawal and strongly predict early relapse if left unaddressed.
- Conditioned withdrawal responses can be triggered by drinking cues alone, producing craving that convincingly mimics physiologic symptoms.
- Detoxification is not treatment; without immediate linkage to ongoing care, relapse after medical withdrawal alone exceeds 70%.
- Shame and prior negative experiences in emergency settings reduce honest disclosure of intake, so corroborate the history when possible.

DIFFERENTIAL & COMORBIDITY

- Score severity with the 10-item **CIWA-Ar** (maximum 67): under 8 is mild, 8 to 15 moderate, and above 15 severe with high complication risk.
- Exclude sepsis, meningitis, subdural hematoma, thyrotoxicosis, hepatic encephalopathy, anticholinergic toxicity, and sedative-hypnotic withdrawal.
- CIWA-Ar** is invalid in intubated, delirious, or non-communicating patients; use **RASS** with objective vital signs in those settings instead.
- Predict risk prospectively with the **PAWSS**: a score of 4 or more identifies patients who need prophylactic medication for complicated withdrawal.
- Delirium tremens risk factors: prior DTs or withdrawal seizure, **CIWA-Ar** above 15, systolic BP above 150, concurrent infection, and heavy daily intake.

Treatment EVIDENCE-BASED MANAGEMENT

PHARMACOLOGIC

- Benzodiazepines** are the only class proven to reduce withdrawal seizures and delirium; every other agent is adjunctive, never a substitute.
- Symptom-triggered dosing when **CIWA-Ar** exceeds 8 to 10 lowers total benzodiazepine exposure and shortens treatment versus fixed schedules.
- Fixed-schedule **chlordiazepoxide 50-100 mg** every 6 hours tapered over 3 to 5 days suits unmonitored settings and prior complicated withdrawal.
- Front-loading **diazepam 10-20 mg** every 1 to 2 hours to light sedation exploits active metabolites to produce a self-tapering course.
- Give **thiamine 100-500 mg IV** before any dextrose, and use **lorazepam 1-4 mg** in cirrhosis, advanced age, or respiratory compromise.

PSYCHOTHERAPY

- Withdrawal management alone does not treat alcohol use disorder; begin **motivational interviewing** during the medicated phase itself.
- CBT** with relapse prevention started on the inpatient unit and continued in outpatient care improves 12-month abstinence rates.
- Brief interventions** of 1 to 4 sessions during the hospital stay increase treatment entry and reduce subsequent drinking quantity.
- A warm handoff to a scheduled outpatient appointment within 72 hours of discharge outperforms a referral slip by a very wide margin.
- Twelve-step facilitation** begun during the admission raises mutual-help attendance after discharge and supports early abstinence.

ADJUNCT & SUPPORTIVE

- Phenobarbital 10-15 mg/kg** loading is used for benzodiazepine-refractory withdrawal and increasingly as monotherapy in emergency settings.
- Refractory delirium tremens needs ICU care with **dexmedetomidine** or propofol infusion alongside continued benzodiazepines and airway control.
- Beta blockers** and **clonidine** blunt autonomic signs but mask **CIWA-Ar** scores and do not prevent seizures or delirium on their own.
- Admit for prior DTs or withdrawal seizure, **PAWSS** of 4 or more, unstable medical or psychiatric comorbidity, pregnancy, or no sober support.
- Correct magnesium, potassium, phosphate, and folate; check glucose, LFTs, lipase, CBC, and head CT when trauma or focal signs are present.

CLINICAL PEARLS

- Thiamine before glucose, always: dextrose first can precipitate Wernicke encephalopathy.
- Kindling means each prior detox raises seizure and DT risk; count past withdrawals.
- Untreated delirium tremens kills 15-20%; treated, under 5%. It is an emergency.

References

- Amato, L., Minozzi, S., Vecchi, S., & Davoli, M. (2010). Benzodiazepines for alcohol withdrawal. *Cochrane Database of Systematic Reviews*, 2010(3), CD005063. <https://doi.org/10.1002/14651858.CD005063.pub3>
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>
- American Society of Addiction Medicine. (2020). The ASAM clinical practice guideline on alcohol withdrawal management. *Journal of Addiction Medicine*, 14(3S), 1-72. <https://doi.org/10.1097/ADM.0000000000000668>
- Canver, B. R., Newman, R. K., & Gomez, A. E. (2024). *Alcohol withdrawal syndrome*. In *StatPearls*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK441882/>
- Mayo-Smith, M. F. (1997). Pharmacological management of alcohol withdrawal: A meta-analysis and evidence-based practice guideline. *JAMA*, 278(2), 144-151. <https://doi.org/10.1001/jama.1997.03550020076042>
- Saitz, R., Mayo-Smith, M. F., Roberts, M. S., Redmond, H. A., Bernard, D. R., & Calkins, D. R. (1994). Individualized treatment for alcohol withdrawal: A randomized double-blind controlled trial. *JAMA*, 272(7), 519-523. <https://doi.org/10.1001/jama.1994.03520070039035>
- Schuckit, M. A. (2014). Recognition and management of withdrawal delirium (delirium tremens). *New England Journal of Medicine*, 371(22), 2109-2113. <https://doi.org/10.1056/NEJMr1407298>
- Sullivan, J. T., Sykora, K., Schneiderman, J., Naranjo, C. A., & Sellers, E. M. (1989). Assessment of alcohol withdrawal: The revised Clinical Institute Withdrawal Assessment for Alcohol scale (CIWA-Ar). *British Journal of Addiction*, 84(11), 1353-1357. <https://doi.org/10.1111/j.1360-0443.1989.tb00737.x>

NOTE

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