

## Alcohol Withdrawal

**Approach:** Provide a clinical scenario (*patient arriving 8 hours after last drink and with fine tremor, anxiety, and slightly elevated BP + HR*). Focus initial discussion on the physiologic mechanisms underlying EtOH withdrawal. Have learners discuss and fill out charts related to types of alcohol withdrawal syndromes and treatment options.

**Hook:** Alcohol withdrawal is one of the few psychiatric presentations that can require ICU-level care. Early recognition and appropriate treatment in the first 48 hours are critical for favorable outcomes.

**Disparities in Care:** Among people who identify with minoritized racial/ethnic identities, experiences of discrimination are associated with increased risk of alcohol use disorder (Glass et al., Drug Alcohol Dep, 2020). A similar association is observed for discrimination related to sexual orientation (McCabe et al., Alcohol Clin Exp Res, 2019).

**EtOH withdrawal at the neurotransmitter level**      GABA = depressant      Glutamate = excitatory

- With **chronic alcohol use** →  $\uparrow$  /  $\downarrow$  endogenous GABA tone &  $\uparrow$  /  $\downarrow$  endogenous excitatory glutaminergic tone.
- With **abrupt cessation of alcohol use** → increased / reduced GABA tone and under / over expression of excitatory neurotransmitters (glutamate, norepinephrine, and dopamine).

### Alcohol withdrawal syndromes

Syndrome	Onset (s/p last drink)	Signs/symptoms	Neurotransmitters affected	Treatment
Uncomplicated withdrawal	6-12 hours	Anxiety, restlessness, fine tremor, GI upset, diaphoresis	Decreased GABA activity	Benzodiazepines; gabapentin on outpatient basis
Alcohol withdrawal seizures	12-48 hours	Episode of singular, self-limited, tonic-clonic convulsions	Decreased GABA activity + increased glutamate activity	Benzodiazepines or phenobarbital
Alcoholic hallucinosis	12-24 hours	Visual >> olfactory, tactile hallucinations. NOTE: No attention deficits or autonomic hyperactivity	Increased dopamine activity	Dopamine antagonists
Delirium tremens	48-72 hours	Confusion, disorientation, autonomic hyperactivity ( $\uparrow$ temp, HR, BP), hallucinations, seizure	Decreased GABA activity + increased glutamate, dopamine, and norepinephrine activity	Typically ICU level care; benzodiazepines or phenobarbital; anesthetic agents; dopamine antagonists; frequently require intubation

Note: All patients should receive thiamine given risk of Wernicke's encephalopathy or Korsakoff's syndrome!

### Inpatient Detoxification

Benzodiazepines	Phenobarbital
<p>- <b>Dosing:</b> Can be symptom-driven (CIWA) or fixed-dose (latter with increased risk of complicated withdrawal)</p> <p>- <b>Longer-acting agents</b> (diazepam &amp; chlordiazepoxide) preferred due to half-life and self-tapering properties</p> <p>- <b>NOTE:</b> Lorazepam used for patients with significant liver injury, as it avoids first-pass hepatic metabolism</p>	<p>- <b>Dosing:</b> Commonly loaded on day 1 based on ideal body weight, +/- oral taper</p> <p>- <b>Absolute contraindications:</b> History of Stevens-Johnson syndrome/toxic epidermal necrolysis or acute intermittent porphyria</p> <p>- <b>Relative contraindication:</b> High likelihood of self-directed discharge</p> <p>- <b>NOTE:</b> Due to long half-life and reliable pharmacokinetics, phenobarbital is a good option for patients with prior or current DTs or high likelihood of ICU-level care</p>