

Managing Alcohol Withdrawal Syndrome

Assessment and Disposition for Front-line Providers

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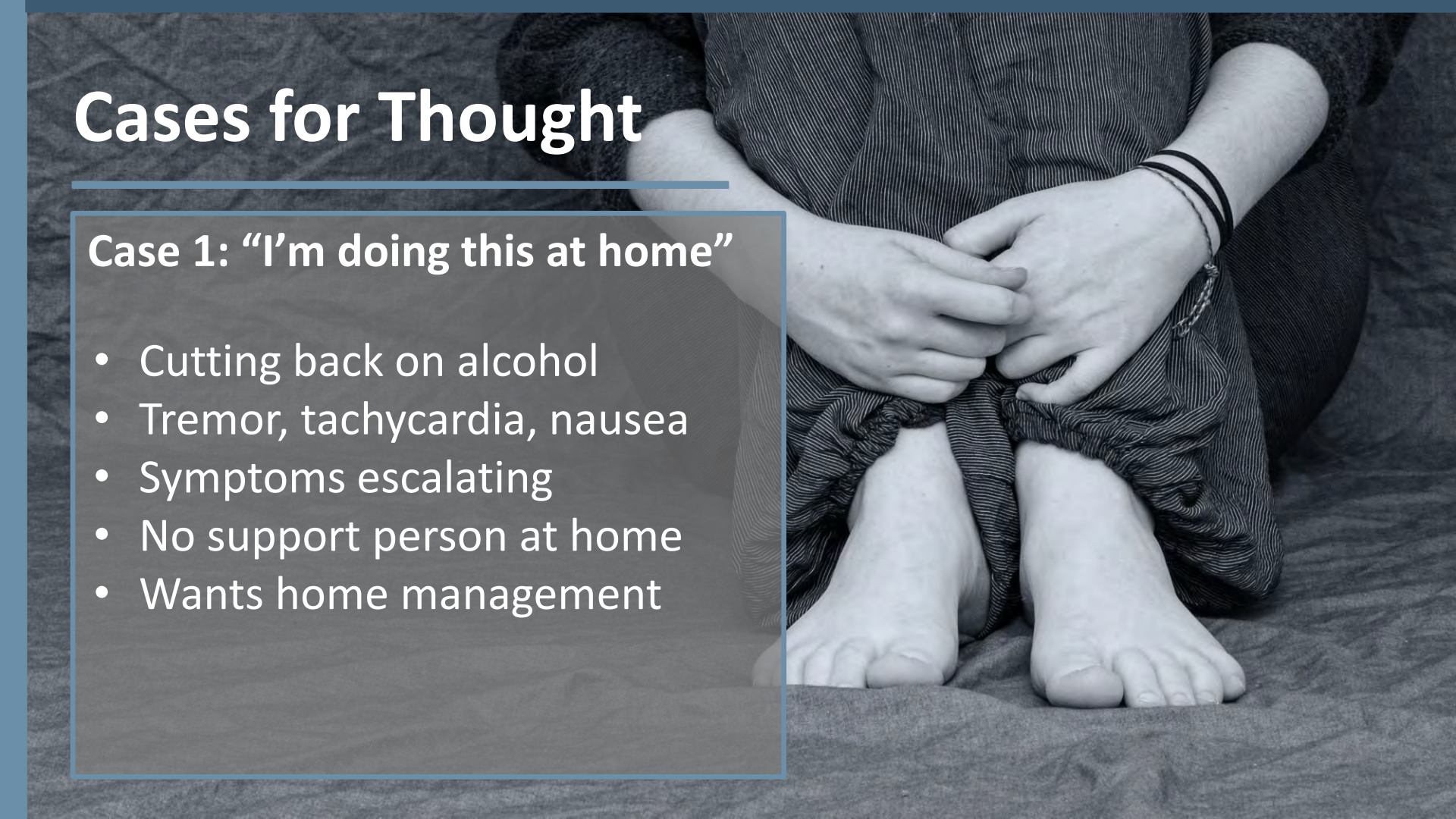
Disclosures

I have no conflicts of interest to disclose

Objectives

- *Consider some cases*
- *Review basic neurobiology of withdrawal*
- *Review Withdrawal Syndromes and Clinical Presentations*
- *Understand the general timeline of withdrawal presentations*
- *Review Prevalence of Withdrawal*
- *Review a clinical decision-making framework for disposition*
- *Discuss CIWA- AR and PAWSS for Risk stratification (and the limitations)*
- *Tips for assessing alcohol use patterns*
- *Case discussion*

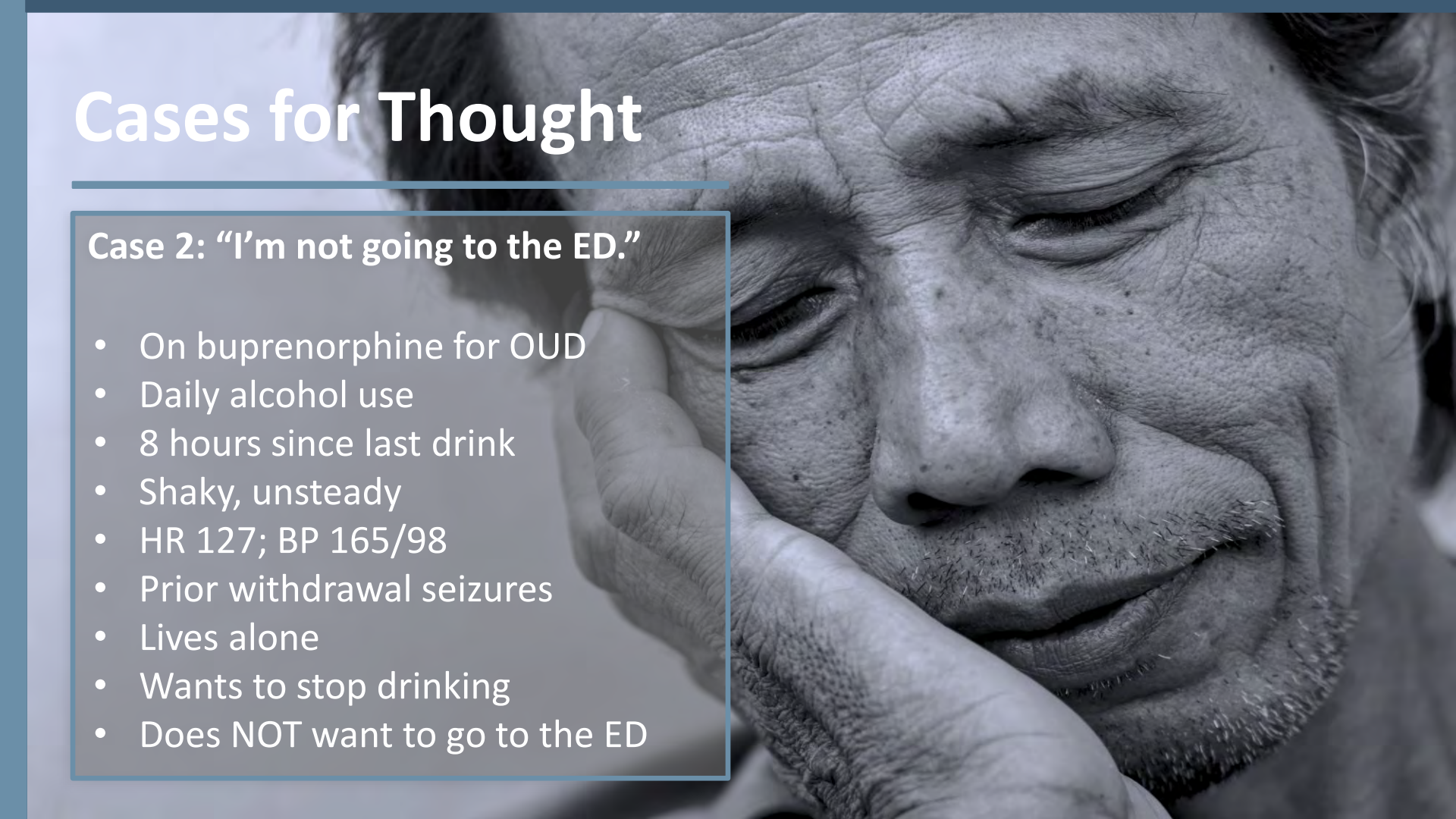
Cases for Thought

A black and white photograph of a person sitting on a couch, hunched over with their head buried in their arms, suggesting distress or isolation. The person is wearing a dark, striped shirt and has their hands clasped in front of them. The background is a textured, dark surface.

Case 1: “I’m doing this at home”

- Cutting back on alcohol
- Tremor, tachycardia, nausea
- Symptoms escalating
- No support person at home
- Wants home management

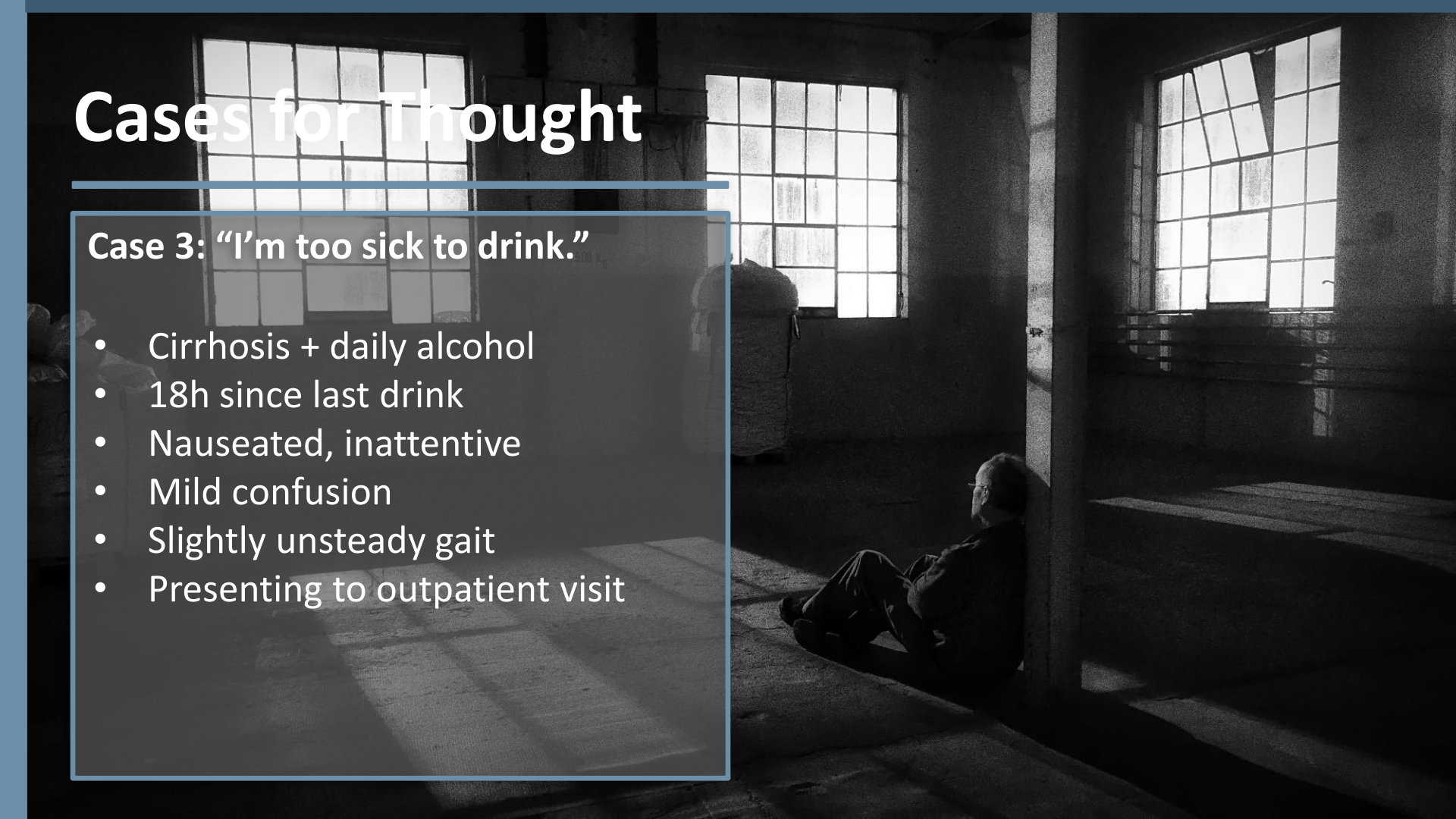
Cases for Thought



Case 2: "I'm not going to the ED."

- On buprenorphine for OUD
- Daily alcohol use
- 8 hours since last drink
- Shaky, unsteady
- HR 127; BP 165/98
- Prior withdrawal seizures
- Lives alone
- Wants to stop drinking
- Does NOT want to go to the ED

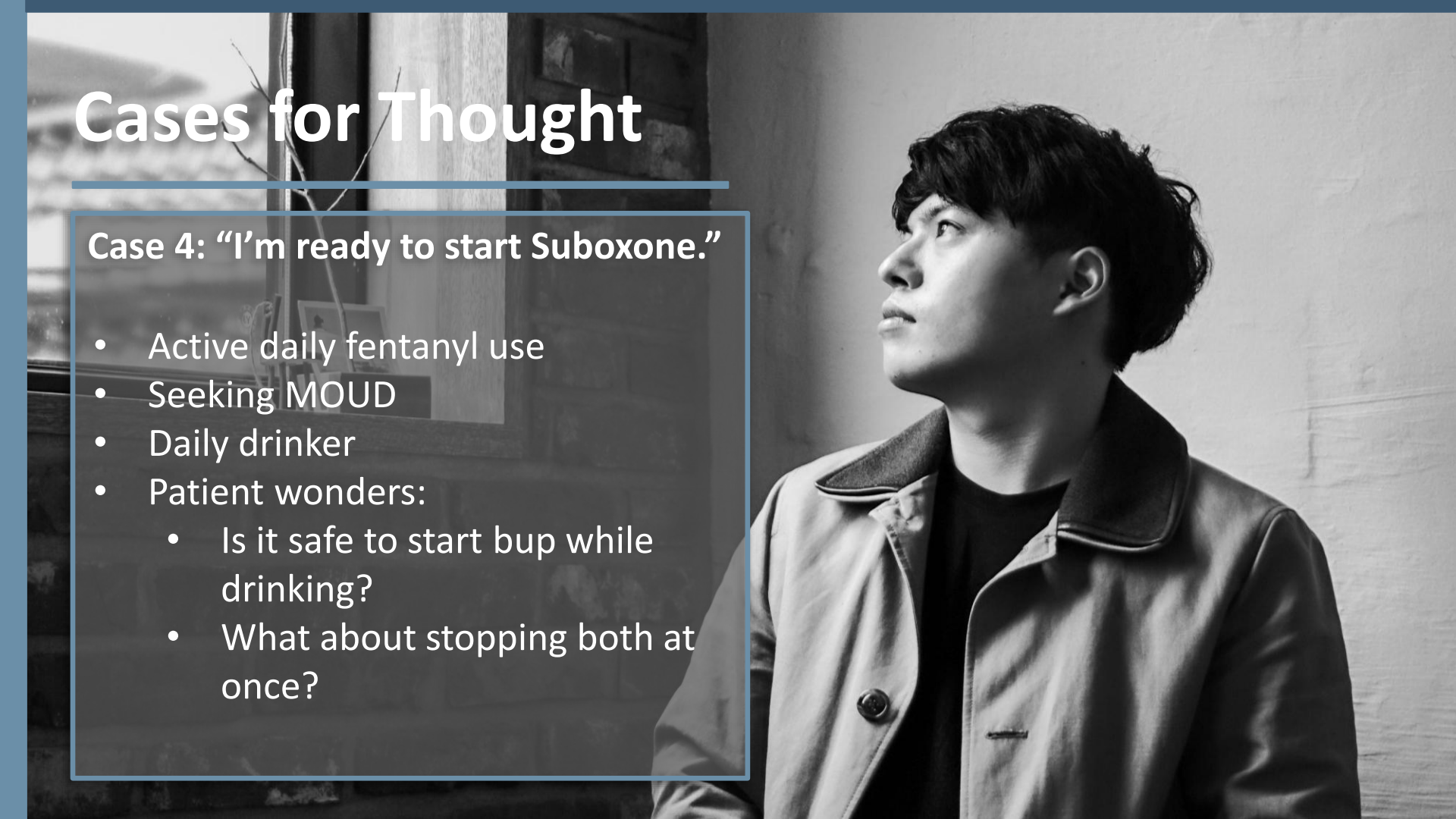
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Case 3: "I'm too sick to drink."

- Cirrhosis + daily alcohol
- 18h since last drink
- Nauseated, inattentive
- Mild confusion
- Slightly unsteady gait
- Presenting to outpatient visit

Cases for Thought

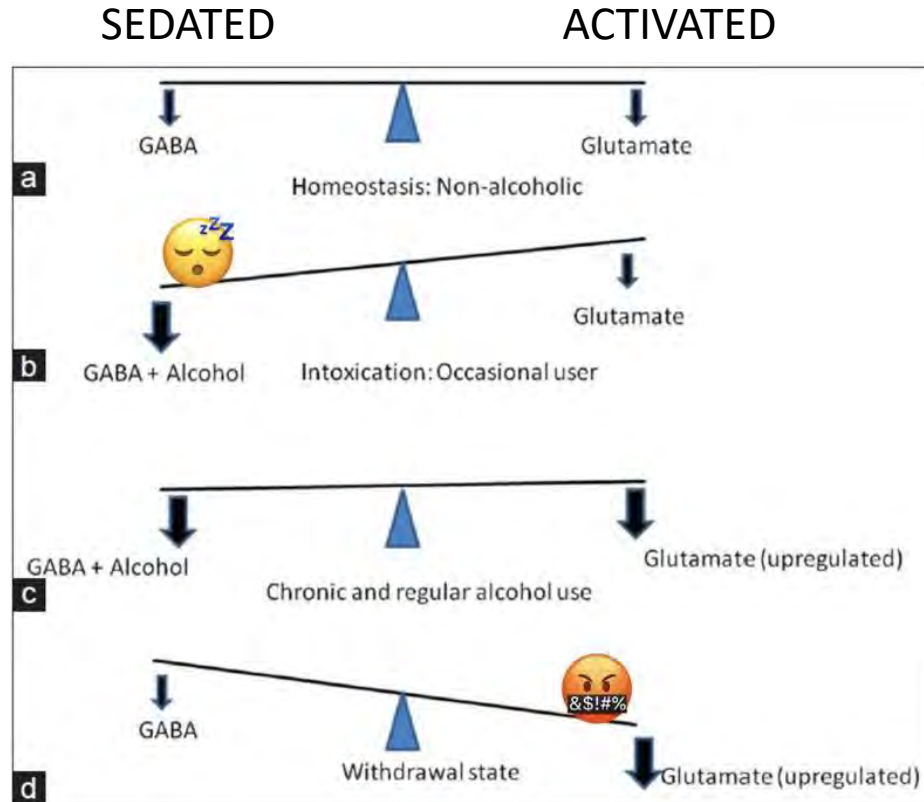


Case 4: “I’m ready to start Suboxone.”

- Active daily fentanyl use
- Seeking MOUD
- Daily drinker
- Patient wonders:
 - Is it safe to start bup while drinking?
 - What about stopping both at once?

Neurochemistry of Alcohol Withdrawal: GABA / Glutamate Balance

Neurobiology



The Four States

a. Non-alcoholic
Balanced GABA / Glutamate homeostasis

b. Intoxication (occasional)
Alcohol adds inhibition → mild GABA dominance

c. Chronic use
CNS compensates: ↓ GABA receptors, ↑ NMDA (glutamate)

d. Withdrawal
Alcohol removed → unopposed glutamate excitation = AWS symptoms

Clinical Presentation: Unopposed Neurologic Excitation

Autonomic

- Rapid heart rate
- High blood pressure
- Sweats
- Elevated temperature
- Rapid breathing

Neurologic

- Tremor (shakes)
- Seizures (24–48 h)
- Ataxia (unsteadiness)
- Sleep disturbance

Affective

- Anxiety
- Irritability
- Poor mood
- Restlessness

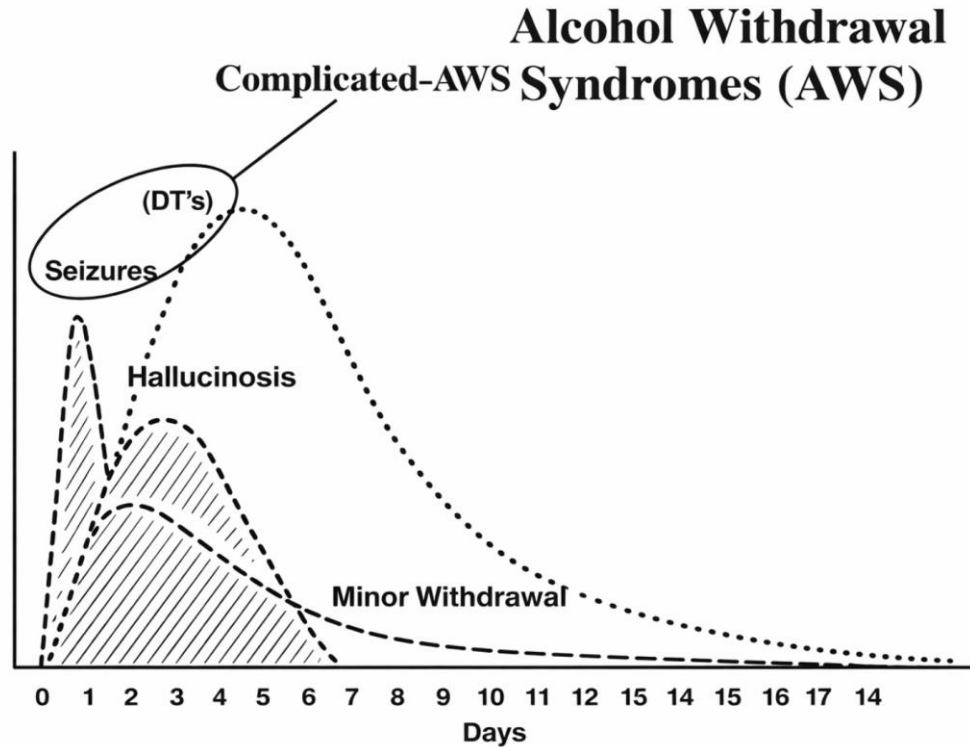
Perceptual

- Visual hallucinations
- Auditory hallucinations
- Tactile disturbances



Alcohol Withdrawal Syndromes: Population-Level Curves

Withdrawal Timeline



Reading This Graph

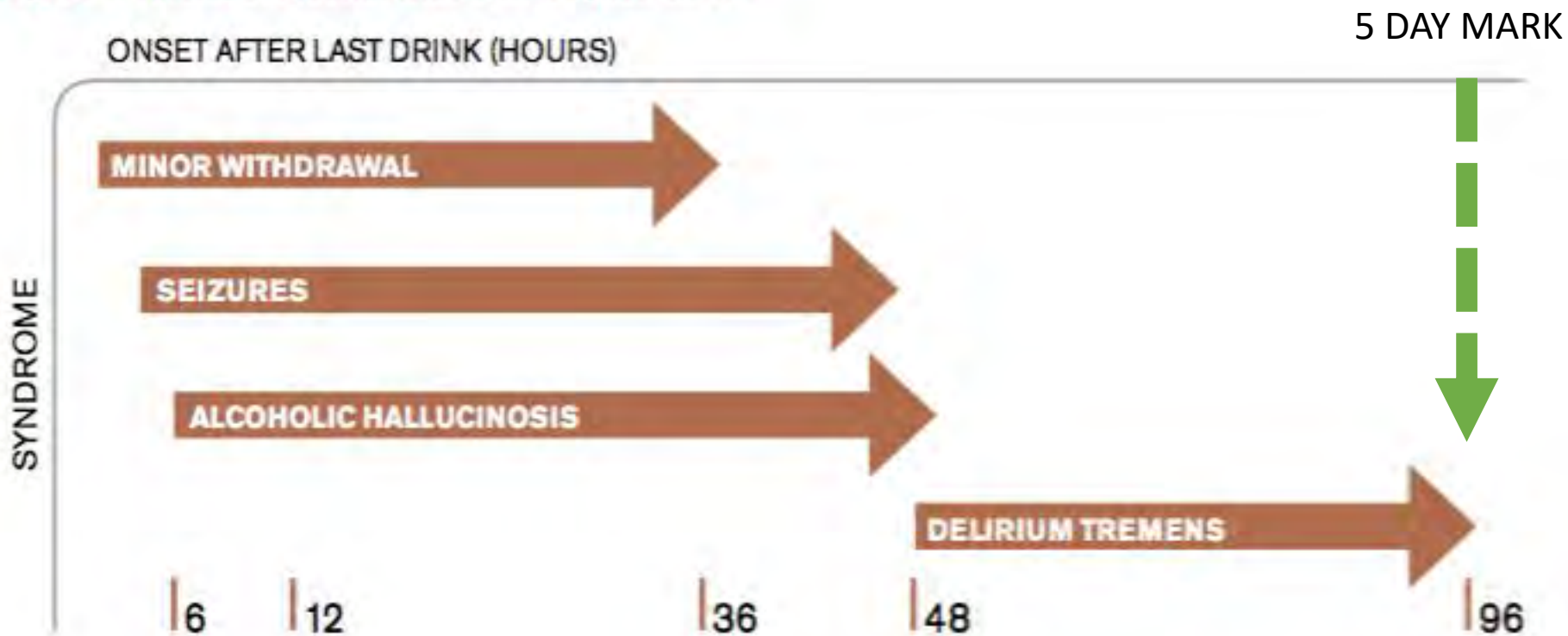
Minor/early withdrawal: tremor, autonomic/affective sx days to weeks

Hallucinoses: Peaks days 2–3, resolves by day 5–6

Seizures: Days 1–2; can occur with no prior sx

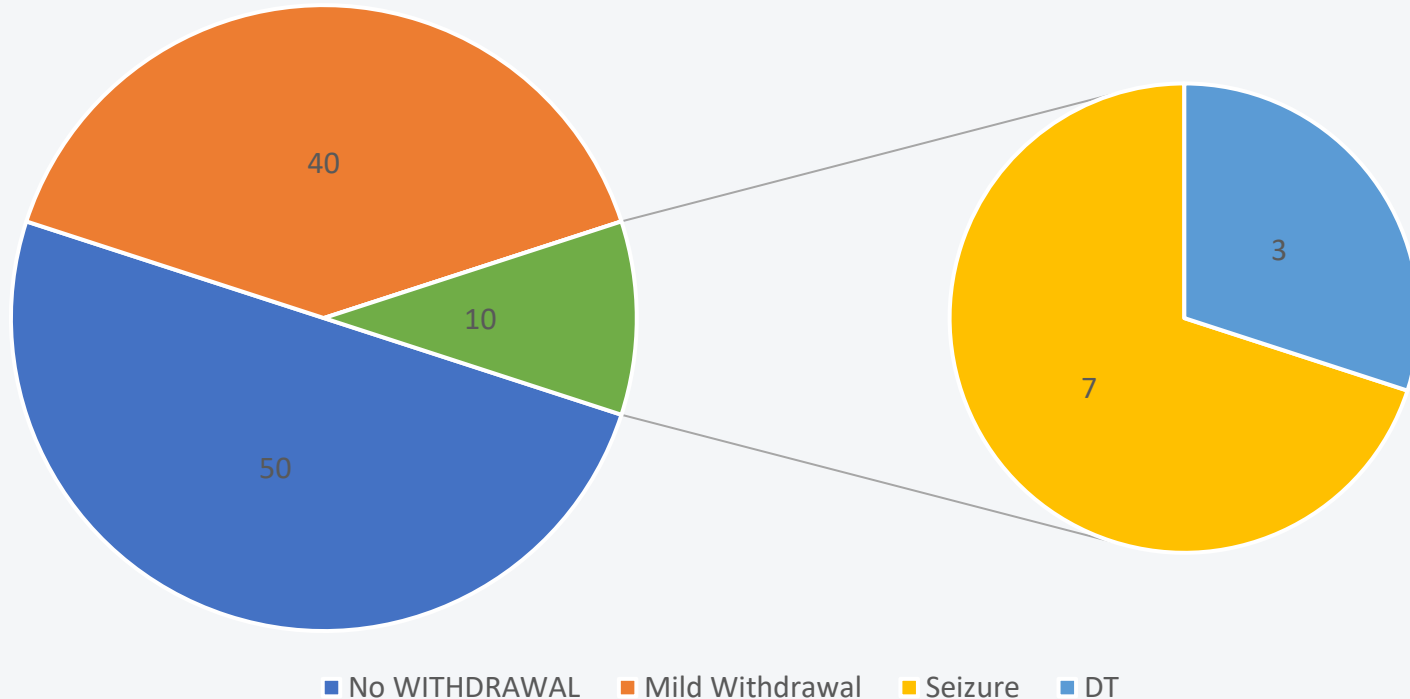
DTs = Delirium Tremens: autonomic instability, disorientation, confusion, agitation

Figure 1. Timing of alcohol withdrawal syndromes¹³

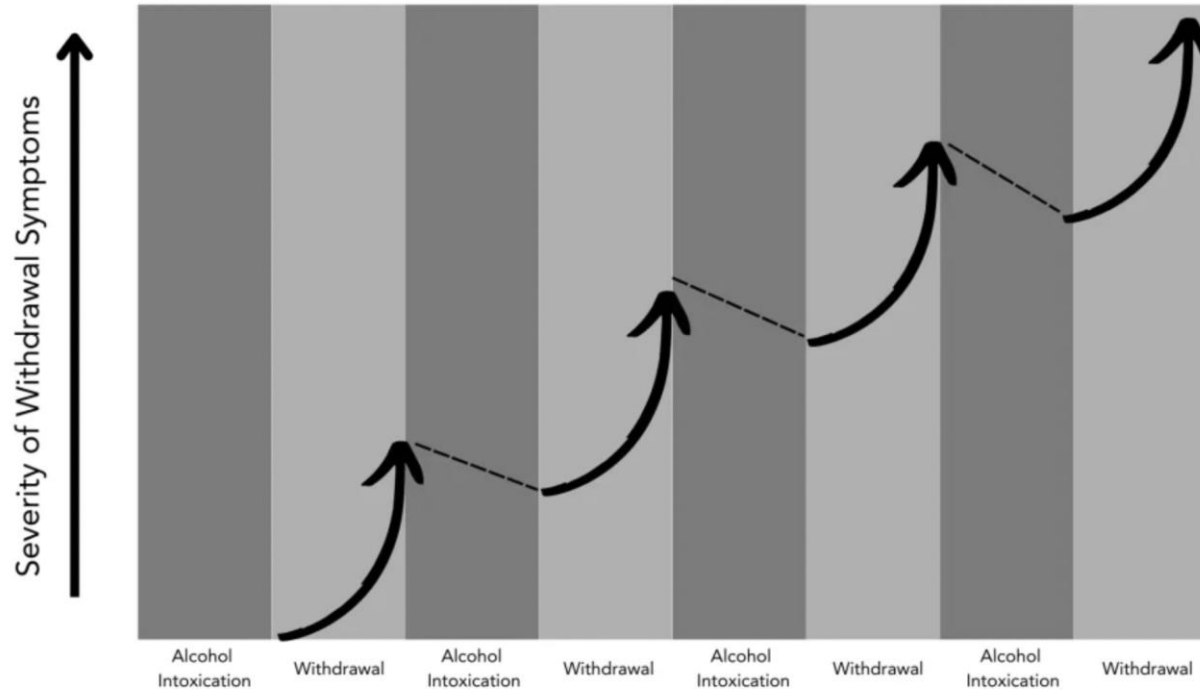


Will my patient seeking SUD treatment experience withdrawal?

100 AUD Patients Who Stop Drinking



The Kindling Effect: Withdrawal Severity Escalates with Repetition



Clinical Implications

- Each withdrawal episode lowers the seizure threshold
- Severity ratchets up even when drinking quantity stays the same
- 'I've had withdrawal before and it was fine' is a red flag, not reassurance
- Harm reduction matters: preventing any withdrawal episode reduces future risk

Classic vs. Modern Model

Classic Teaching

- Stepwise, linear progression
- Timeline-based
- Predictable escalation
- One-size-fits-all monitoring

VS

Modern Understanding

- **Heterogeneous**
- Patients do NOT reliably follow classic pattern
- Risk-stratified, individualized approach
- Trajectory reassessment over time

Can my patient with AUD safely detox in the ambulatory setting?



Clinical Decision-Making Framework

1 Assess Risk

- **PAWSS**
- Comorbid illness
- Concurrent substances

2 Evaluate Current Severity

- **CIWA-Ar**
- Vital Signs
- Orientation

3 Consider Context

- Clinical Mimics
- Eating/drinking
- Home situation
- Health literacy
- Phone access
- Ability to reassess

4 Reassess Trajectory

- Trend over time > single snapshot
- Repeat CIWA
- Repeat VS
- Adjust plan accordingly

Avoid anchoring on a single CIWA-Ar score or a single timepoint. Withdrawal is a dynamic process.

PAWSS: Prediction of Alcohol Withdrawal Severity Scale

PAWSS is a predictive tool — completed on admission before withdrawal begins. Unlike CIWA-Ar (severity), PAWSS stratifies future risk.

10 Yes/No Historical Items (1 point each)

- **Prior alcohol withdrawal episode**
- **Prior seizure during withdrawal**
- **Prior delirium tremens**
- Current blood alcohol level ≥ 200 mg/dL
- Positive urine toxicology for CNS depressant
- **Recent heavy alcohol use (>40 std drinks in 7 days)**
- Prior alcohol detox hospitalization
- Current/recent use of benzodiazepines
- Concurrent acute medical illness
- Recent blackouts from drinking

Score Thresholds

0–3	Low risk
≥ 4	High risk for seizure / DT

Why Use PAWSS?

- Predictive, not reactive
- Based on history — usable before withdrawal onset
- Guides prophylactic treatment decisions
- Application to ambulatory setting is unvalidated but reasonable

Use PAWSS on admission + CIWA-Ar serially. Together they cover prediction and ongoing severity.

Risk Stratification

Strongest Predictor of Severe Withdrawal: **Prior delirium tremens or withdrawal seizure**

→ PAWSS captures this directly. A single 'yes' here warrants heightened vigilance.

Risk Factor	Clinical Significance	Captured in
Prior DTs or seizures	Strongest single predictor	PAWSS item 2 & 3
Heavy daily use (>8 drinks/day)	Degree of physiologic adaptation	PAWSS items 6
Kindling / repeated withdrawals	Lowers seizure threshold each episode	PAWSS item 1
Comorbid acute illness	Reduces physiologic reserve	PAWSS item 9
Concurrent CNS depressant use	Additive withdrawal burden	PAWSS item 5 & 8
Elevated BAL on presentation	Predicts depth of upcoming withdrawal	PAWSS item 4

Alcohol Use History: Getting Accurate Data

Interview Technique

- **Your job is to convert CONTAINERS to drinks or alcohol units**
- Use normalization
- Avoid yes/no
- Ask: 'What do you usually drink? What's your drink of choice?'
- Ask: 'When you drink X do you buy it in a pint, fifth, nip, handle? How long does it take to finish it?'
- Ask: 'Has how much you're drinking changed in the last few months? Does it fluctuate?'
- <https://casaa.unm.edu/tools/baccalc.html>

1 standard drink = 14 g pure alcohol (12 oz beer, 5 oz wine, 1.5 oz spirits)

Standard Drink Conversion

Container	Std Drinks
12 oz beer (5%)	≈ 1
16 oz 'pint' (5%)	≈ 1.3
40 oz malt liquor (7%)	≈ 4.5
750 mL wine (bottle)	≈ 5
375 mL wine (half bottle)	≈ 2.5
750 mL spirits (fifth)	≈ 17
1.75 L spirits (handle)	≈ 39
1 oz shot (80-proof)	≈ 1

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CIWA-Ar: Clinical Institute Withdrawal Assessment for Alcohol

10 Assessed Domains

- Nausea / vomiting (0–7)
- Tremor (0–7)
- Paroxysmal sweats (0–7)
- Anxiety (0–7)
- Agitation (0–7)
- Tactile disturbances (0–7)
- Auditory disturbances (0–7)
- Visual disturbances (0–7)
- Headache / fullness (0–7)
- Orientation / clouding (0–4)

Max score: 67. Validated instrument — most widely used in clinical practice.

Score Interpretation

< 8	Mild — monitor
8–15	Moderate — treat
≥ 16	Severe — treat urgently

Limitations of CIWA-Ar

- Requires patient cooperation
- Snapshot — not predictive
- Can underestimate risk in altered patients
- Use with clinical judgment + PAWSS

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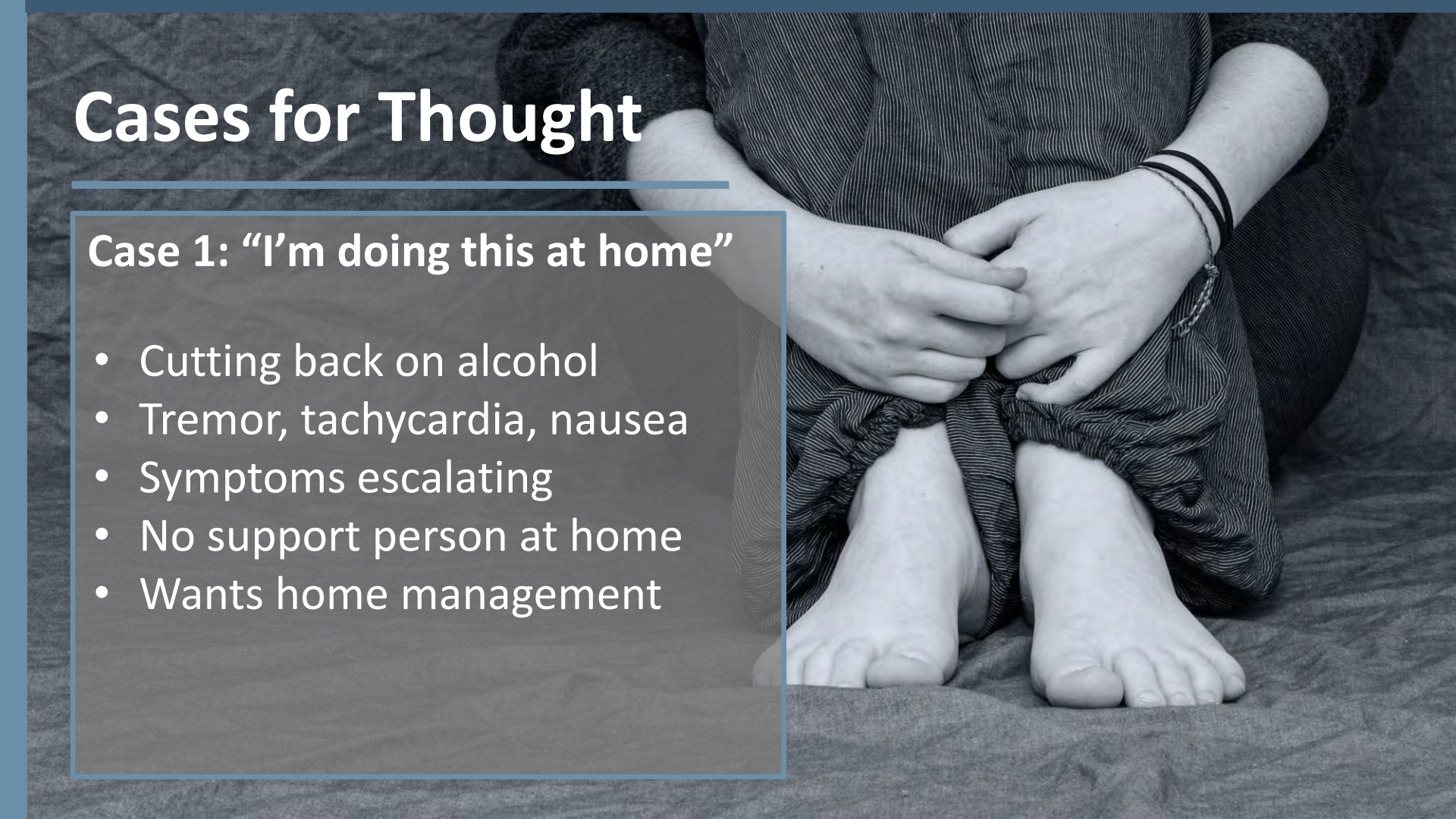
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Some Helpful Rules of Thumb...

- 1 >5 days since last drink and no symptoms of withdrawal → serious withdrawal unlikely
- 2 Other medical and psychiatric conditions should be evaluated including alcohol use disorder complications
- 3 PAWSS > 4 → Consider ED stabilization and/or admission
- 4 CIWA-Ar > 15 → Consider ED stabilization and/or admission
- 5 CIWA-Ar < 8 may not need detoxification → calculate PAWSS & perform serial assessment

Avoid anchoring on a single CIWA-Ar score or a single timepoint. Withdrawal is a dynamic process.

Cases for Thought

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Case 1: “I’m doing this at home”

- Cutting back on alcohol
- Tremor, tachycardia, nausea
- Symptoms escalating
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- Wants home management

Escalating Outpatient Withdrawal: Patient Wants to Go Home

Vignette

Cutting back on alcohol · Tremor, tachycardia, nausea · Symptoms escalating · No stable/trusted support person at home · Wants outpatient / home management

Risk Assessment

- PAWSS: any prior seizures / DTs?
- CIWA-Ar: 8
- Escalating symptoms
- Active alcohol use
- No support

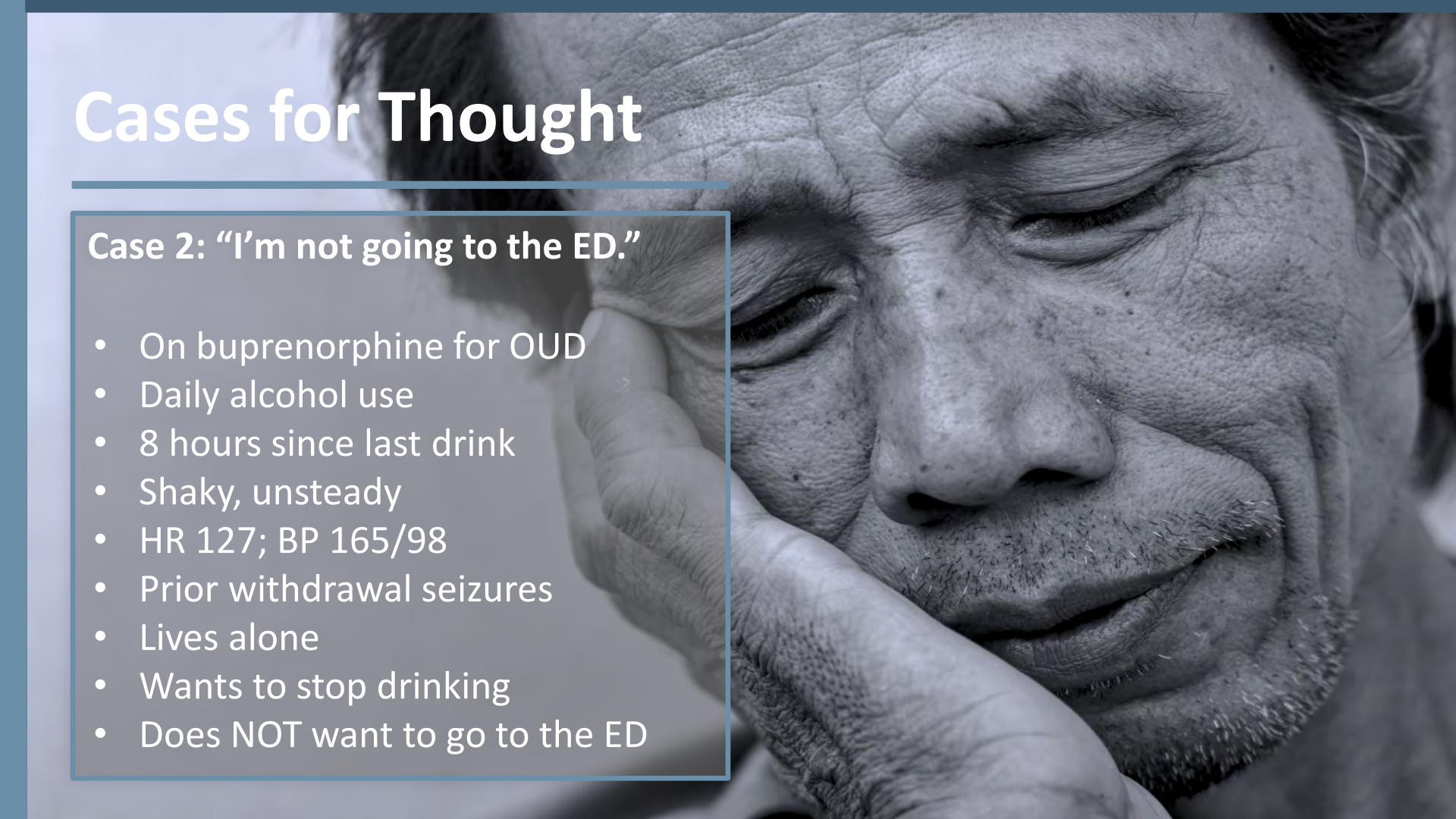
Why Home Is Unsafe Here

- Escalating symptoms = trajectory not yet at peak
- Seizures can occur with no warning in escalating withdrawal
- No support person = unwitnessed seizure risk
- 'Mild now' does not mean 'mild later' — this patient is actively worsening

Disposition & Approach

- Recommend ED or inpatient
- Frame as safety: 'I'm worried about what happens if you deteriorate at home alone'
- Explore barriers to hospital: stigma, prior bad experiences, logistics,
- Harm reduction if refusing
- Consider: can any support person be identified urgently?

Cases for Thought



Case 2: "I'm not going to the ED."

- On buprenorphine for OUD
- Daily alcohol use
- 8 hours since last drink
- Shaky, unsteady
- HR 127; BP 165/98
- Prior withdrawal seizures
- Lives alone
- Wants to stop drinking
- Does NOT want to go to the ED

Daily Drinker on Buprenorphine: Seizure History, Lives Alone

Vignette

On buprenorphine for OUD · Daily alcohol use · 8 hours since last drink · Shaky, unsteady, elevated HR/BP · History of alcohol withdrawal seizures · Lives alone · Wants to stop drinking · Does NOT want to go to the ED

Why This Is Very High Risk

- Prior alcohol withdrawal seizure = PAWSS 1 + 2
- 8 hours since last drink — peak risk (24–48 h)
- CIWA-Ar = 7
- Lives alone = unwitnessed seizure risk
- Buprenorphine is PAWSS item 8

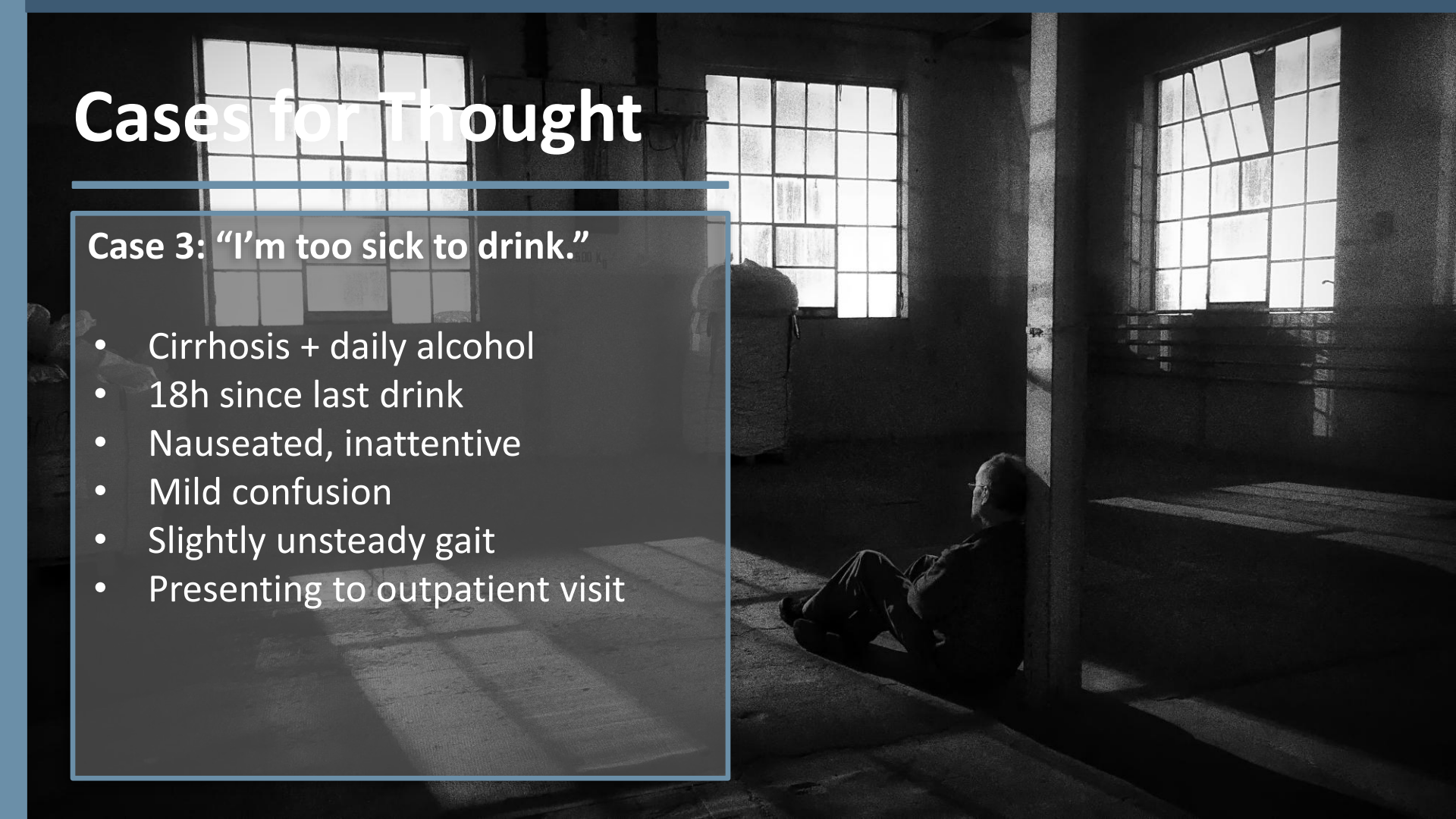
Buprenorphine & Alcohol Withdrawal

- Buprenorphine treats OUD — it does NOT treat AWS
- Do NOT discontinue buprenorphine
- Both OUD and AUD must be addressed simultaneously
- Benzos for AWS are appropriate — CNS depression risk outweighed by seizure risk

Disposition & Conversation

- Strong recommendation for ED or inpatient admission
- Align with patient's goal: 'You want to stop drinking — the safest way to do that is with medical support'
- If refuses: harm reduction plan, return precautions
- Do not withhold buprenorphine

Cases for Thought



Case 3: "I'm too sick to drink."

- Cirrhosis + daily alcohol
- 18h since last drink
- Nauseated, inattentive
- Mild confusion
- Slightly unsteady gait
- Presenting to outpatient visit

Cirrhosis + 18 Hours Without Drinking: Confusion and Vital Signs

Vignette

Cirrhosis + daily alcohol · 18 h without drinking (too sick to drink) · Confused, tachycardic, hypertensive, unsteady · Presenting to outpatient visit

Why Cirrhosis Changes Everything

- Cirrhosis = liver failing
- Affects many other organs and the ability of the body to clear toxins
- Cirrhosis increases risk of bleeding
- Cirrhosis lowers ability to fight infection
- Cirrhosis can lead to electrolyte changes

Management Approach

- Call 911 / ED transfer from this visit
- IV access, labs
- Thiamine
- CIWA-Ar unreliable if confused
- ICU-level care may be necessary

Cirrhosis + confusion = ED now. Give thiamine before dextrose. CIWA-Ar is unreliable in confusion — use fixed-dose protocol with short-acting benzos.

I sent my patient to the Emergency Department... what will happen?

There are several options for ED upfront detoxification

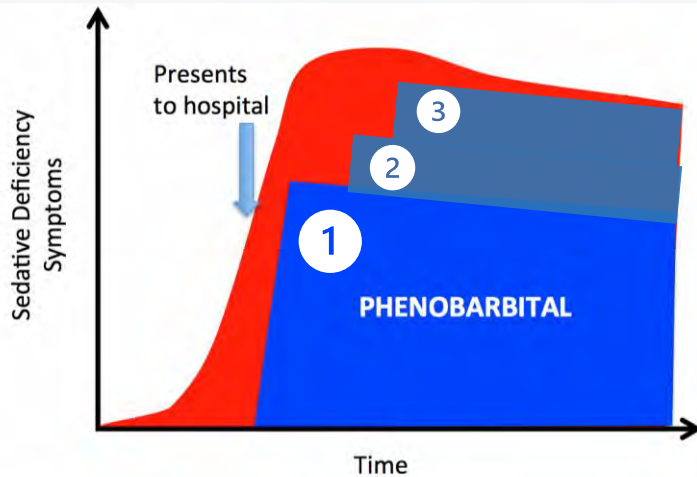
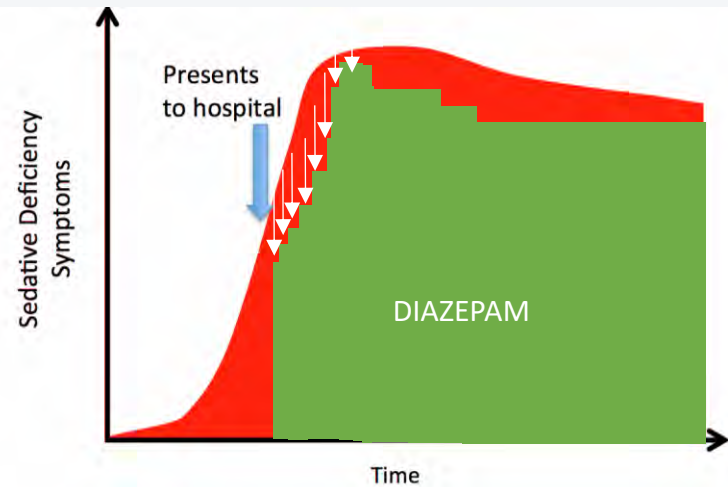
Knowing the characteristics of each drug help you choose the agent and approach

Medication	Time to Onset (IV)	Time to Peak Effect (IV) TITRATIBILITY	Half-life (t _{1/2}) TAPERABILITY
Diazepam (IV)	1–5 min	5–10 min	20–50 hr (active metabolites: up to 100+ hr)
Lorazepam (IV)	5–10 min	10–20 min	10–20 hr
Midazolam (IV)	1–5 min	5–10 min	1.5–3 hr
Phenobarbital (IV)	5–10 min	15–30 min	80–120 hr

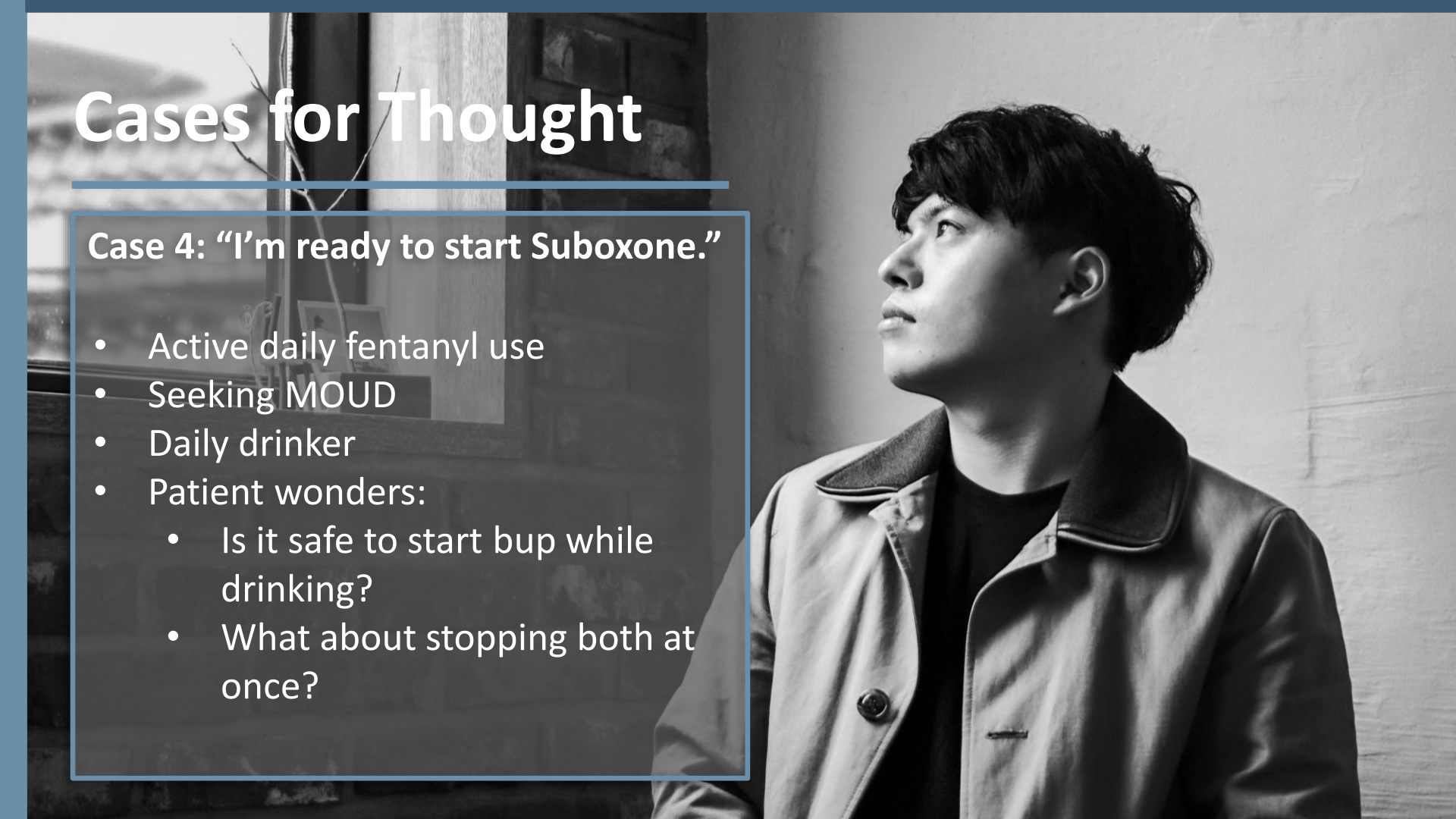
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- Seeking MOUD
- Daily drinker
- Patient wonders:
 - Is it safe to start bup while drinking?
 - What about stopping both at once?

Starting Buprenorphine While Still Drinking: Fentanyl Use Disorder + AUD

Vignette

Active daily fentanyl use (seeking MOUD) · Moderate AUD, currently drinking · Wants buprenorphine · Is it safe to start bup while drinking? What about stopping both at once? Who qualifies for ambulatory withdrawal?

Start Bup While Drinking?

- Yes — OUD treatment is not withheld for AUD
- Bup does not worsen or trigger AWS
- Active drinking is NOT a contraindication
- Treating OUD reduces overall substance risk
- Avoid intoxicated induction — confirm not acutely intoxicated at first dose
- Document PAWSS at baseline

Stopping Both at Once?

- Not recommended
- Sequence: stabilize on bup → then address alcohol cessation
- Both at once → inpatient or intensive outpatient only
- Continue bup through alcohol withdrawal — never stop it

Ambulatory W/D Criteria

- ✓ PAWSS 0–3
- ✓ No prior seizures/DTs
- ✓ CIWA-Ar < 8
- ✓ Sober support 24/7
- ✓ No acute illness
- ✓ Daily follow-up able
- ✓ No high-risk sedatives
- ✓ Phone/transport access

Buprenorphine is not withheld for AUD. Alcohol withdrawal is the lethal risk — assess PAWSS, stagger cessation, and confirm ambulatory eligibility before home management.

Alcohol withdrawal can be safely performed in the outpatient setting but requires thoughtfulness and vigilance

- Use PAWSS
- Use CIWA-Ar serially to track real-time severity
- Know the withdrawal timeline — but don't be ruled by it
- Prior DTs or seizures = highest alert
- Your job is to anticipate deterioration, not react to it

Key References

1. American Society of Addiction Medicine. *The ASAM Clinical Practice Guideline on Alcohol Withdrawal Management*. J Addict Med. 2020;14(3S):1-72. PMID: 32349052
2. Kosten TR, O'Connor PG. Management of drug and alcohol withdrawal. *N Engl J Med*. 2003;348(18):1786-1795. PMID: 12702767
3. Mayo-Smith MF. Pharmacological management of alcohol withdrawal. *JAMA*. 1997;278(2):144-151. PMID: 9228430
4. Sullivan JT, Sykora K, Schneckloth R, et al. Assessment of alcohol withdrawal: CIWA-Ar. *Br J Addict*. 1989;84(11):1353-1357. PMID: 2597811
5. Maldonado JR, Sher Y, Ashouri JF, et al. Prediction of Alcohol Withdrawal Severity Scale (PAWSS). *Alcohol*. 2014;48(4):375-390. PMID: 24657098
6. Becker HC. Alcohol withdrawal: neurobiology and clinical implications. *Alcohol Res*. 2012;34(4):448-461. PMID: 23584111
7. Dhaliwal JS. Diazepam. *StatPearls*. 2023. PMID: 30020673
8. National Institute for Health and Care Excellence. *Alcohol-use disorders (CG100)*. 2010 (updated 2017)