
Detoxing and Dopesick
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# Non-Declaration Statement

I have no relevant relationships with ineligible companies to disclose within the past 24 months.

# Objectives

01

The learner will be able to identify the signs and symptoms of acute alcohol and opioid withdrawal.

02

The learner will be able to identify the risks and complications of alcohol and opioid withdrawal.

03

The learner will be able to identify best practice pharmacologic therapies for acute alcohol and opioid withdrawal.

# Alcohol Abuse and Dependence

- Prevalence in U.S.
  - 29 million ages 12 and older with AUD
    - 10 % in this age group
  - 11-32% inpatients
    - Approximately 50% of those with alcohol use disorder experience alcohol withdrawal
    - 500,000 episodes of withdrawal severe enough to require pharmacologic treatment each year
  - Excessive alcohol consumption: 3rd leading preventable cause of death in US

# Alcohol Abuse and Dependence

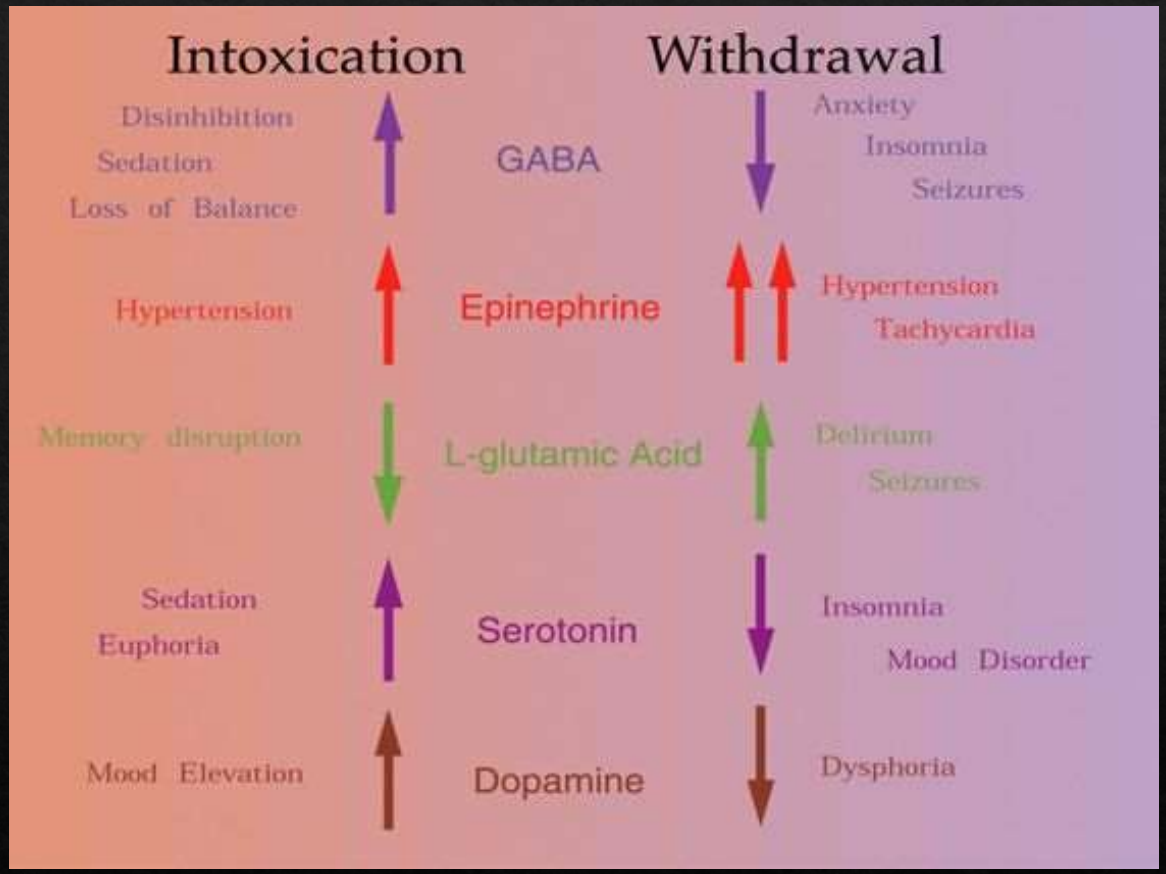
- Risk Factors
  - Substance abuse history
  - History of mental illness
  - History as victim of abuse
- Complications
  - High risk behaviors
    - Drunk driving
    - Unsafe sex
    - Falls/trauma
  - Liver damage, cirrhosis
  - GERD/PUD
  - Esophageal varices
  - Acute Hemorrhage – increased risk of bleeding
  - Heart Failure
  - Insulin resistance
  - Wernicke's encephalopathy

# Alcohol Withdrawal


- Predictors of withdrawal:
  - Consumption of more drinks per occasion
  - Prolonged, sustained intake
  - Presence of more alcohol-related problems
  - No withdrawal symptoms >24 hrs after last drink less likely to develop symptoms

# Alcohol Withdrawal

- Alcohol Intoxication: CNS depressant
- Alcohol Withdrawal: CNS hyperactivity



# Minor Alcohol Withdrawal

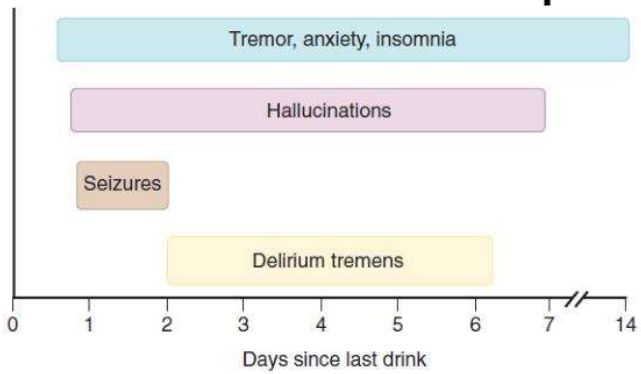
- Insomnia
- Tremulousness
- Mild anxiety
- GI upset, anorexia
- Headache
- Diaphoresis
- Palpitations


IF ALCOHOL CAN DAMAGE
YOUR SHORT TERM MEMORY
IMAGINE THE DAMAGE
ALCOHOL CAN DO

# Alcohol Withdrawal

- 20% of patients experience moderate to severe symptoms:
  - Hallucinosis
  - Seizures
  - Delirium tremens

## Alcohol withdrawal spectrum




**Timing of alcohol withdrawal syndromes**

| Syndrome | Clinical findings | Onset after last drink |
|---|---|---|
| Minor withdrawal | Tremulousness, mild anxiety, headache, diaphoresis, palpitations, anorexia, GI upset; Normal mental status | 6 to 36 hours |
| Seizures | Single or brief flurry of generalized, tonic-clonic seizures, short post-ictal period; Status epilepticus rare | 6 to 48 hours |
| Alcoholic hallucinosis | Visual, auditory, and/or tactile hallucinations with intact orientation and normal vital signs | 12 to 48 hours |
| Delirium tremens | Delirium, agitation, tachycardia, hypertension, fever, diaphoresis | 48 to 96 hours |

Alcohol Abuse And Dependence: Patrick G. O'Connor. UpToDate

# Alcoholic Hallucinosis

- Typically begins 12-24 hrs after last drink
- Resolves in another 24-48 hrs
- Usually visual
- NO disorientation
- Vital signs are normal
- Contributing factors:
  - Possibly genetic
  - Possibly due to reduced thiamine absorption

# Alcohol Withdrawal Seizures

- Occur within 6-48 hrs after cessation or after significant reduction
- Occurs in up to 10-30% of withdrawal patients
- Typically tonic-clonic, brief and single or in short cluster of 2-3
- Potential for status epilepticus is low

- Risk factors:
  - Concurrent withdrawal from benzos or sedative-hypnotics
  - Hypokalemia
  - Thrombocytopenia
  - Repeat withdrawals – "kindling effect"
  - Ages 50-60 yrs may emerge

# Delirium Tremens

- Withdrawal Delirium
- Begins between 72-96 hours after last drink
- Up to 5 % of hospitalized withdrawal patients
- Risk factors:
  - Increasing age
  - Concurrent illness
  - w/drawal w/+ BAC
- Rapid-onset
- Disorientation
- Hallucinations
- Agitation
- Autonomic hyperactivity
  - Fevers
  - Tachycardia
  - HTN
  - Diaphoresis

# Assessment Tools

- CIWA-Ar score
- RASS score
- Moderate and Severe Alcohol Withdrawal Rapid Overview (uptodate)

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

Clinical Institute Withdrawal Assessment for Alcohol – revised (CIWA-Ar) scale

| **Clinical Institute Withdrawal Assessment for Alcohol revised** | |
|---|---|
| **Symptoms** | **Range of scores** |
| Nausea or vomiting | 0 (no nausea, no vomiting) –7 (constant nausea and/or vomiting) |
| Tremor | 0 (no tremor) – 7 (severe tremors, even with arms not extended) |
| Paroxysmal sweats | 0 (no sweat visible) – 7 (drenching sweats) |
| Anxiety | 0 (no anxiety, at ease) – 7 (acute panic states) |
| Agitation | 0 (normal activity) – 7 (constantly trashes about) |
| Tactile disturbances | 0 (none) – 7 (continuous hallucinations) |
| Auditory disturbances | 0 (not present) – 7 (continuous hallucinations) |
| Visual disturbances | 0 (not present) – 7 (continuous hallucinations) |
| Headache | 0 (not present) – 7 (extremely severe) |
| Orientation/clouding of sensorium | 0 (orientated, can do serial additions) – 4 (Disorientated for place and/or person) |

- Score:
- <10: Very mild withdrawal
- 10 to 15: Mild withdrawal
- 16 to 20: Modest withdrawal
- >20: Severe withdrawal

# Richmond Agitation Sedation Scale (RASS)

## Richmond Agitation-Sedation Scale

| | Target RASS Value | RASS Description |
|---|---|---|
| +4 | Combative | Combative, violent, immediate danger to staff |
| +3 | Very Agitated | Pulls or removes tube(s) or catheter(s); aggressive |
| +2 | Agitated | Frequent non-purposeful movement, fights ventilator |
| +1 | Restless | Anxious, apprehensive but movements are not aggressive or vigorous |
| 0 | Alert and Calm | |
| -1 | Drowsy | Not fully alert, but has sustained awakening to voice (eye opening & contact **greater** than 10 seconds) |
| -2 | Light Sedation | Briefly awakens to voice (eye opening & contact **less** than 10 seconds) |
| -3 | Moderate Sedation | Movements or eye opening to voice (but **NO** eye contact) |
| -4 | Deep Sedation | No response to voice, but has movement or eye opening to physical stimulation |
| -5 | Unarousable | No response to voice or physical stimulation |


DAD JOKES ABOUT
ALCOHOL WITHDRAWAL ARE SHAKY
CIWA I DID THERE?

# Alcohol withdrawal treatment

Alleviate symptoms, prevent complications

Identify and correct underlying metabolic derangements

- Benzodiazepines
- IV fluids
- MVI/Thiamine/Folate
- Monitor with CIWA-AR and Vital signs

# Alcohol Withdrawal Pharmacologic Therapy

- Benzodiazepines are first-line treatment
  - Treat agitation
  - Prevent progression of withdrawal
  - Diazepam (Valium), Lorazepam (Ativan), Chlordiazepoxide (Librium)
    - Diazepam and Chlordiazepoxide generally preferred
    - Lorazepam preferred for advanced cirrhosis or acute alcoholic hepatitis

# Symptom-Triggered Benzo Dosing

- Valium dosing
  - 5-20mg PO/IV as needed using CIWA scale – every 1-4 hrs
    - Mod – Sev. Withdrawal 5-10mg IV every 5-10 min.
- Lorazepam dosing
  - 2-4mg PO/IV as needed using CIWA scale – every 1-4 hrs
    - Mod. – Sev. Withdrawal every 15 -20 min

# Phenobarbital Dosing

- Off-label use
- Acute withdrawal:
  - Initial dose 130mg or 260mg x 1
  - Then 130mg every 15-30 min as needed
- Maintenance dosing
  - 130-260mg/day in 2-3 divided doses for 3-5 days, with taper of 10% reduction/day.

# Clonidine

- Off-label use
- Similar mechanism of action to Precedex
- Stop all home BP meds
- Max Clonidine out as much as BP will allow
- Will treat sympathetic nervous system response
  - Decrease BP/HR
  - Decrease agitation

# Front-loading vs. Symptom-based treatment

- Front-loading
  - Is patient likely to be harmed by prolonged periods of hypertension and tachycardia or by complications from prolonged physical restraint?
  - Rapidly performed
  - Heavier sedation
  - Needs ICU admission

# Symptom-based treatment

- Symptom-Triggered
  - Use CIWA-Ar every 10-15 min-6 hrs
  - RASS for intubated patients or for manipulative patients
  - Requires less medication and shorter treatment period than fixed schedule
  - Usually benzos

# Refractory DT treatment

Resistant alcohol withdrawal

ICU admission

Phenobarbital with benzodiazepine – work synergistically

- Generally limit to 15mg/kg in first 24 hrs
- Maintenance dose 130-260mg/day divided for 3-5 days, 10% reduction/day thereafter
- Not enough research to recommend as a single agent – but could be recommended in future

Precedex and Propofol – need further research

# Initiation of Medications for Alcohol Use Disorder at Discharge

- 6700 hospitalized patients with meds initiated at discharge
  - 42 % lower rate all-cause death
  - 42% less all-cause ED visits
  - 42% less readmissions at 30 days
  - 51% lower rate of alcohol-related ED visits or hospitalizations

# First-Line Agents at Discharge

- Naltrexone 380mg IM every 4 weeks
- Naltrexone 50mg PO daily – up to 100mg daily
- Acamprosate 666mg TID
- Disulfiram 250-500mg PO daily
- Topiramate 25mg PO daily, increase to max 300mg/day

# Dopesick

# Opioid Use Disorder (OUD)

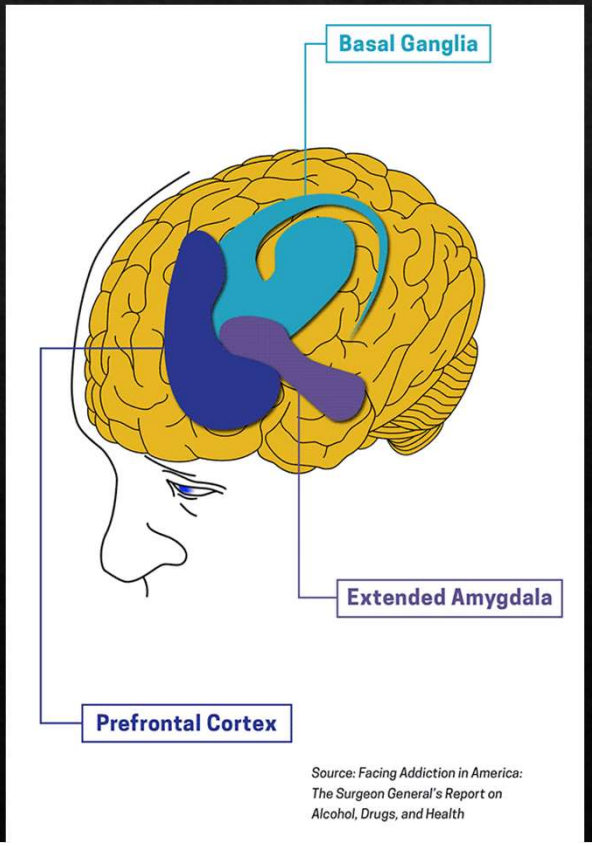
- *****Chronic, relapsing illness*****
- Epidemic proportions
- In 2021, 9.2 million people age 12 or older misused opioids in the U.S.
- Between 2002 and 2018, heroin use and disorder nearly doubled in the U.S.
- 106,699 drug overdose deaths in the U.S. in 2021
  - 75% involved an opioid– 80,411 deaths
  - >130 people die from opioid-related drug overdoses per day
  - Increasing due to cutting w/Fentanyl

# Opioid Use Disorder

- Risk factors
  - Hx substance use disorder
  - Younger age
  - More severe pain
  - Mental disorders
  - Hx childhood maltreatment
- Complications
  - Infection – cellulitis, IE, OM
  - HIV, Hepatitis, TB, syphilis
  - Narcotic bowel syndrome
  - Hyperalgesia
  - Overdose

# Opioids and the Human Brain

- Opioids interfere with the way that the neurons either send, receive or process their neurotransmitters.
  - Heroin activates the neurons
  - Heroin acts as a "fake" neurotransmitter
- Natural vs. Drug rewards
  - Drug use = fewer neurotransmitters in reward circuit
    - Fewer receptors to receive signals
    - Contributes to tolerance




*Source: Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health*

# “Skin-Popping”

# Opioid Withdrawal

- Craving
- Dysphoria, restlessness
- Watering eyes, runny nose
- Body aches, joint pain
- Nausea, vomiting, abdominal cramping, diarrhea

| COWS Scale | |
|---|---|
| Pulse | GI upset |
| Sweating | Tremor |
| Restlessness | Yawning |
| Pupil size | Anxiety Irritability |
| Bone/joint aches | Goosebumps |
| Runny nose/tearing | |

# Acute Opioid Withdrawal Treatment

Buprenorphine and Methadone for natural-occurring withdrawal only - do not use in iatrogenic withdrawal

Fluid resuscitation

Adjunctive medications

- Anti-emetics – Zofran, Compazine, Phenergan
- Anti-diarrheal – Loperamide, Octreotide
- Anti-anxiety, muscle relaxant – Diazepam
- Alpha-2 adrenergic agonists - Clonidine

# Clonidine

- Off-label use Opioid withdrawal
  - Adjunct to opioid agonist for relief of withdrawal symptoms.
  - Can be used as primary treatment
- Dosing
  - Again, stop all BP meds and use max dose
  - Initial dose 0.1-0.2mg depending on BP/HR
  - Then 0.1-0.3mg every 6-8hrs based on COWS score or symptom severity

# Medication-assisted treatment (MAT)

"Recovery status is best defined by factors other than medication status. Neither medication-assisted treatment of opioid addiction nor the cessation of such treatment by itself constitutes recovery. Recovery status instead hinges on broader achievements in health and social functioning – with or without medication support."

- Recovery experts A. Thomas McLellan and William White

# MAT

- Reduce morbidity and mortality
- Decrease OD deaths
- Reduce transmission of infectious disease
- Increase treatment retention
- Improve social functioning
- Reduce criminal activity

# MAT
# Buprenorphine and Methadone

- Acute pain Indications
  - Can continue maintenance med (if on Buprenorphine only) although not generally effective in practice
  - Maximize non-pharmacologic therapies
  - Supplement with additional opioid
  - Always d/c Naltrexone
- Use for naturally-occurring withdrawal
  - Methadone 10mg IM or 20mg PO
    - Better for patients addicted to high doses opioids
  - Buprenorphine 4-8mg SL
    - Risk of dental decay noted in 2022

# Buprenorphine vs. Methadone

## Buprenorphine

- Generally preferred for treatment over Methadone
- Initiate in a state of mild to moderate withdrawal
- Ceiling effect
- Combined with Naloxone to help prevent IV abuse
  - Naloxone has poor SL bioavailability
  - Suboxone, Zubsolv branded names

## Methadone

- Full mu-opioid agonist
- Not safe in overdose
  - Additive effect with other opioids

# Buprenorphine Dosing

- Start when signs opioid w/drawal occur, but no sooner than 12 hours after last opioid use.
  - ER Injection – SubQ, 100-300mg once monthly
  - SL tablet/film
    - 4 – 8 mg initial dose (8-32mg seen in ED)
    - Maintenance: adjust in increments of 4mg to a level that maintains treatment and suppresses opioid w/drawal treatment
    - Doses >16mg not much better efficacy
    - Max dose 24mg/day in VA
    - Dosing frequency – patient preference

# Buprenorphine Dosing

- Initial maintenance dosing CRITICAL
- Cohort study approx. 50,000 patients starting transmucosal Buprenorphine
  - Higher average daily doses during 1st 30 days = lower rates of opioid-related overdose mortality in 1st year of treatment
    - Doses 8-16mg and >16mg/day = 55-64% reductions in overdose deaths
- Higher dosing may be needed due to higher potency street drugs - fentanyl

# Methadone Dosing

- Overall more risky drug
  - High abuse liability, resp. depression, QT prolongation, additive effects with benzo and other CNS depressants
- For acute withdrawal, short-term medically supervised
- Titrate to approx. 40mg/day in divided doses for 2-3 days
  - After 2-3 days, gradually decrease dose on a daily basis or at 2-day intervals

# Rapid Methadone Titration Method

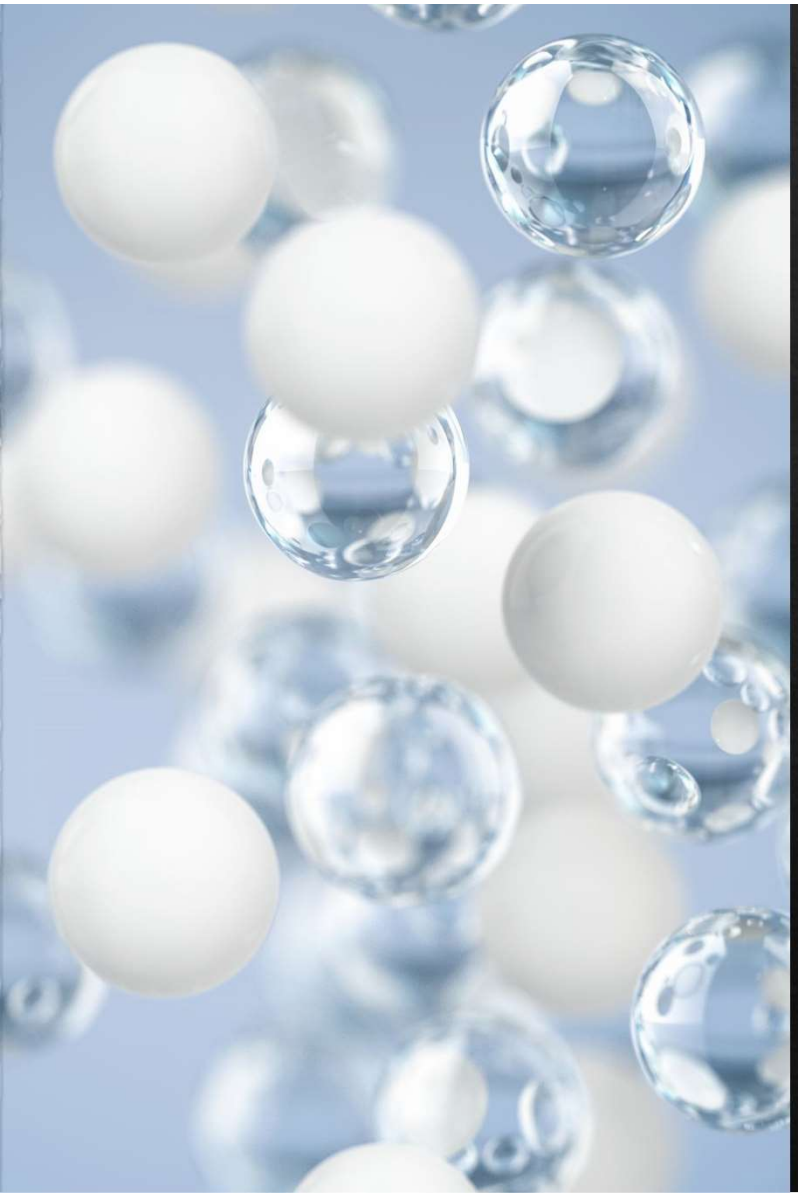
- Hospital setting
- Retrospective study 25 individuals with OUD (hospitalized for other medical reasons)
- Rapid initiation – average daily doses up to 60mg on day 1and up to 100mg on days 4-7
- No reported need to hold doses or administer Narcan d/t excessive sedation
- May improve treatment adherence

# MAT SAMHSA Guidelines

https://store.samhsa.gov/product/Advisory-Sublingual-and-Transmucosal-Buprenorphine-for-Opioid-Use-Disorder-/SMA16-4938

# Xylazine
# “Tranq” “Zombie Drug”

- Alpha-2 Agonist Vet medication – animal sedation and analgesia
- Commonly laced in heroin, fentanyl, cocaine
- OD:  coma, apnea, bradycardia, hypotension
- Severe necrotic skin ulcerations and abscesses with parenteral use
- Naloxone ineffective as reversal agent
- Treatment: Supportive care



# Clinical Pearls

- Alcohol withdrawal is best managed by symptom-triggered benzodiazepine therapy.
- Escalating alcohol withdrawal should include combination Phenobarbital and benzodiazepine therapy.
- Opioid abuse is a chronic relapsing illness.
- Chronic treatment of opioid use disorder best practice is Buprenorphine and Methadone.
- Xylazine is an emerging health threat in the US.

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# Questions?

Feel free to contact me at

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