ASAM REVIEW COURSE 2026

Medical Co-Morbidities: Diagnosis, Prevention and Complications

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Learning Objectives

1

Conduct an appropriate history and physical exam for persons with substance use disorder.

2

Identify key medical co-morbidities that can occur with substance use disorder.

Presentation Outline

Routine and Preventive Care

- History
- Physical examination
- Labs
- Preventative Care
- Preconception Care

Medical Consequences of Alcohol and Drug Use

- Alcohol
- Tobacco
- Opioids
- Stimulants
- Injection Drug Use
- Cannabis

SUD = Poor Medical Care

- Reasons
- Barriers
- Consequences

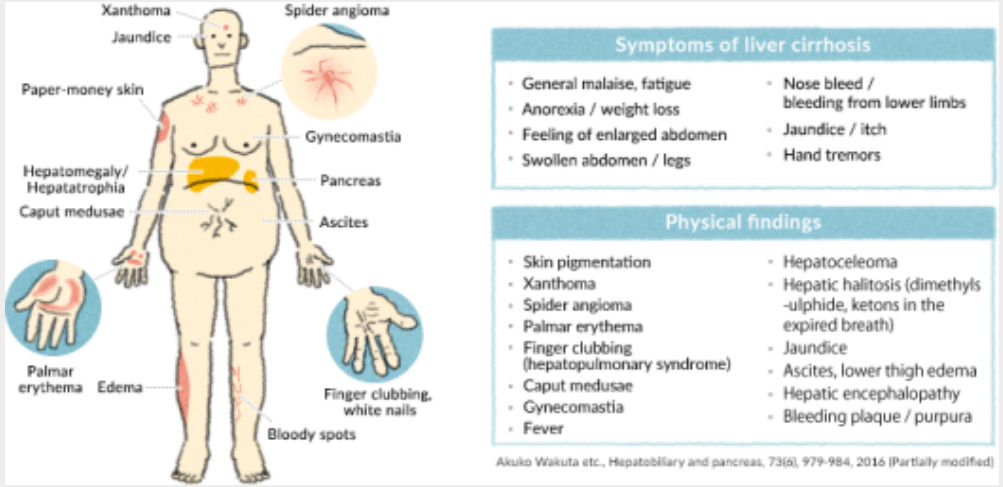
Chan Carusone, S., Guta, A., Robinson, S. et al. "Maybe if I stop the drugs, then maybe they'd care?"—hospital care experiences of people who use drugs. Harm Reduct J 16, 16 (2019).

General Medical Evaluation

- Medical History
- Physical Examination
- Tests
- Preventative Counseling
- Preventative Screening
- Immunizations
- Chemoprophylaxis

Alcohol

- Affects every organ system
- Women>>Men
- Is any ETOH safe?
- Physical Exam Findings:

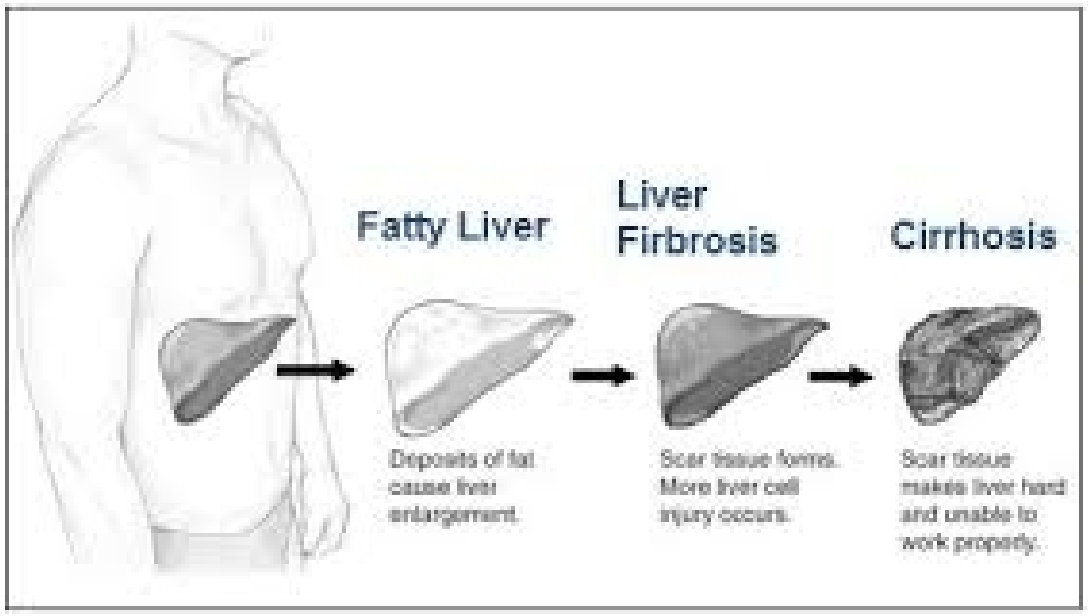


- Spider angiomas
- Palmar Erythema

- Jaundice
- Ascites

Alcohol

- GI-
  - Esophagitis/gastritis, Mallory-Weiss tears, esophageal varices
  - Pancreatitis (dose-related toxic effect)
  - Alcohol-related liver disease
    - AST/ALT >2
    - Fatty liver
    - Alcohol related hepatitis (ALH)
    - Cirrhosis-10-20%



Alcohol

- Respiratory
  - Aspiration
  - OSA
- Infectious
  - Hepatitis
  - SBP
  - TB
- Nutrition-vitamin and mineral deficiencies
  - B1, B6, riboflavin, niacin, Vit D, Mg2+, Ca2+, folate, PO4, zinc

Alcohol

- CV
  - HTN-dose dependent
  - Cardiomyopathy-dilated
  - Atrial Fibrillation “Holiday Heart”
- Heme/Oncology
  - Anemia-macrocytic
  - Thrombocytopenia/pancytopenia
  - Coagulopathy
  - Increase CA: breast, oral, GI, hepatic (no safe threshold)

Zhao J, Stockwell T, Naimi T, Churchill S, Clay J, Sherk A. Association Between Daily Alcohol Intake and Risk of All-Cause Mortality: A Systematic Review and Meta-analyses. JAMA Netw Open. 2025;6(3)

Alcohol

- Neurological
  - Neuropathy-peripheral/autonomic
  - Sleep
  - Cognition
  - Cerebellar dysfunction
  - Trauma

Wernicke Encephalopathy	Korsakoff's Syndrome
C-Confusion	R-Retrograde amnesia
O-Ophthalmoplegia	A-Anterograde amnesia
A-Ataxia	C-Confabulation
T-Thiamine Deficiency	K-Korsakoff psychosis

Alcohol

- Endocrine
  - Hypogonadism
    - Direct testicular effect
    - Hepatic dysfunction → reduction in gonadal hormones
  - Decreased fertility
  - Hyperlipidemia
- Musculoskeletal
  - Prolonged immobilization
  - Gout
  - Osteonecrosis

Tobacco

- Leading cause of preventable death
- CV
  - HTN
  - CAD (multifactorial)
  - Peripheral vascular disease
- GI
  - GERD/PUD
  - Pancreatitis
  - Inflammatory Bowel Disease
  - Malignancy

Tobacco

- Respiratory
  - COPD
  - Malignancy
  - Asthma
  - PTX
  - Pulmonary HTN
  - Pneumonia/bronchitis

Tobacco

- Heme/Onc
  - 49% of cancer deaths related to tobacco use
  - Oral, gastric, lung, breast, cervical, bladder, kidney
  - DVT/PE
- Neurological
- Infectious Disease
- Reproductive/Endocrinology
  - Grave's Disease/hypothyroidism
  - Erectile Dysfunction/infertility
  - Osteoporosis


I didn't survive drugs & alcohol
so I could die from lung cancer.
I had to stop smoking.
CIGARETTES ARE MY GREATEST ENEMY

Tobacco Cessation and Recovery?

- Continued tobacco use predicted return to all substance use
- Should residential treatment programs allow nicotine use?
- Will patients leave prematurely?
- Philadelphia, California, NY experiences

Weinberger AH, et al. Cigarette Smoking Is Associated With Increased Risk of Substance Use Disorder Relapse: A Nationally Representative, Prospective Longitudinal Investigation. J Clin Psychiatry. 2017 Feb;78(2)

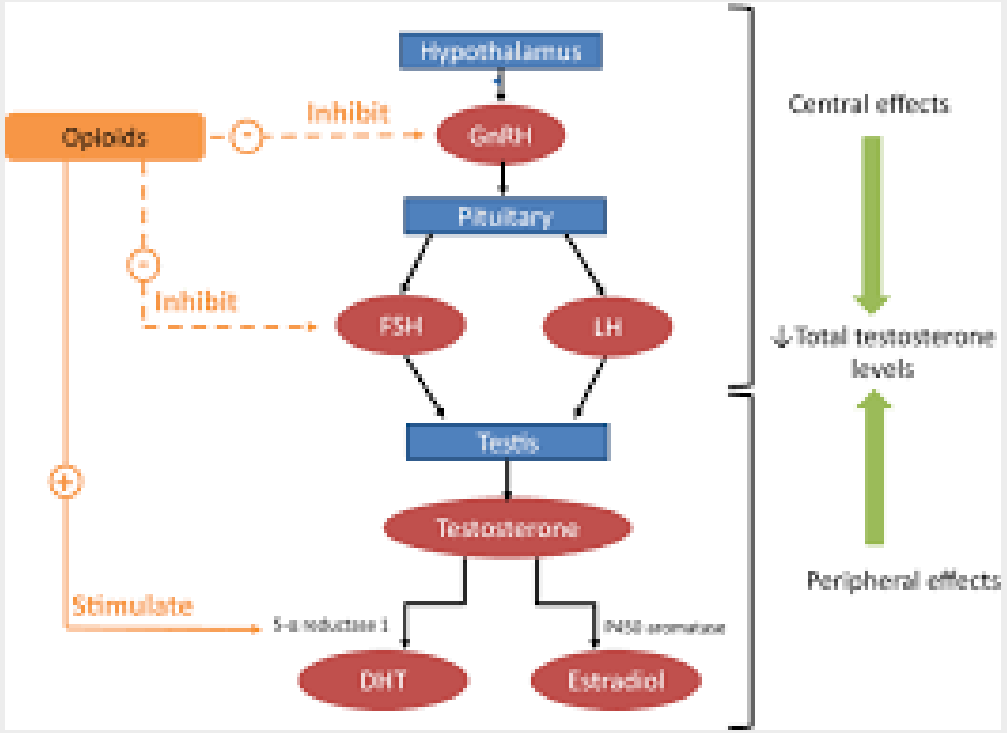
Pagano A, et al Evaluating a Tobacco-free Policy Intervention in Residential Substance Use Disorder Programs. J Drug Issues. 2025 Feb 24;56(3):482–501

Opioids

- ID
  - IVDA-endocarditis, osteomyelitis, Hep C and HIV
  - STD
- Respiratory-overdose, chest wall rigidity with FENT, pulmonary edema
- Endocrine-reduction in steroid hormones
- Trauma-rhabdomyolysis, compartment syndrome
- Respiratory-OSA,
- GI-constipation

Opioid Induced Hypogonadism

- Low libido
- Muscle wasting
- Increased adiposity
- Depression
- Osteoporosis
- Treatment:
  - Testosterone replacement



Mayo Clinic Proceedings: Innovations, Quality & Outcomes, ISSN: 2542-4548, Vol: 3, Issue: 3, Page: 276-284

QT Prolongation

- DX:
  - Men-460-469 ms (borderline) 470+ prolonged
  - Women-460-479 ms (borderline) 480+ prolonged
- Medications: methadone, quinolones, ondansetron, macrolides, hydroxyzine, citalopram
- ↓Mg2+, K+, Ca2+
- Screening:
  - Good family and medical history-look at all medicines
  - Genetic testing
  - EKG at higher doses of methadone?
- Flockhart Table/APP-IUSOM
- Credible Meds/APP

Treece JM, Al Madani M, El Khoury G, Khraisha O, Martin JE, Baumrucker SJ, et al. Comprehensive review on methadone induced QT prolongation and torsades. J Pharmacol Pharmacother 2018;9:66-7511 -12 -2017 R

Risk Factors for TdP

Risk Factors for Torsades de Pointes	
Nonmodifiable	**Modifiable**
Female sex	Multiple QT-prolonging medications
Older age	Drug toxicity
Structural or functional heart disease	Drug-drug interactions
Congenital long-QT syndrome	Severe acute illness
Personal history of drug-induced QT prolongation	Bradycardia
Family history of sudden (or aborted) cardiac death	Hypokalemia, hypomagnesemia, hypocalcemia
Poor metabolizer at CYP enzymes	Hepatic or renal impairment

Adapted from Funk MC et al, Am J Psychiatry *2020;177(3):273–274*

“My dentist says Suboxone caused my tooth loss!”

- Many drugs cause dental problems!
  - Reduction in saliva-xeromastia
  - Tooth grinding-bruxism
  - Periodontal disease
- Active addiction
  - Poor oral hygiene
  - Poor nutrition/high sugar intake
  - Lack of access to prophylactic care

Screening Questions for Dental Problems

- Do you experience dry mouth?
- Do you notice pain in your teeth or gum bleeding when brushing?
- When did you last see a dentist?
- Have you been told you grind your teeth or have you noticed wear or chipping?
- How often do you brush your teeth and floss?
- Do you frequently consume simple carbs and sugary drinks?

Yazdanian M, Armoon B, Noroozi A, Mohammadi R, Bayat AH, Ahounbar E, et al. Dental caries and periodontal disease among people who use drugs: a systematic review and meta-analysis. BMC Oral Health 2020;20:44.

How To Discuss With Patients

- 2022-FDA warning
- AR very low
- Practical measures
  - Regular dental care
  - Tobacco cessation (all forms)
  - Rinse mouth, delay brushing

Suzuki J, Mittal L, Woo SB. Sublingual buprenorphine and dental problems: a case series. Prim Care Companion CNS Disord 2013;15:PCC.13l01533.

LFT’s and Naltrexone

- Indication OUD/AUD-baseline higher risk of hepatic disease
- No need to check LFT’s prior to initiating treatment
- HCV, HBV not a contraindication
- Elevated LFT’s no greater than placebo

Springer, Sandra A., “Monitoring of Liver Function Tests in Patients Receiving Naltrexone or Extended-Release Naltrexone,” PCSS clinical guidelines, Update 2022

Stimulants

- CNS
  - CVA-5X increased risk hemorrhagic (METH), also ischemic (COC)
- CV
  - MI
  - HTN
  - Aortic dissection
  - Ventricular arrhythmia
  - Supportive treatment: β1blocker not associated with unopposed α activity
- GI
  - Ischemic bowel
  - Colitis

Arenas DJ, Beltran S, Zhou S, Goldberg LR. Cocaine, cardiomyopathy, and heart failure: a systematic review and meta-analysis. Sci Rep. 2020 Nov 13;10(1):19795

Stimulants

- Renal
  - AKI
  - CKD
- Pulmonary
  - PAH
- Dermatological
- Dental

Tanz LJ, Miller KD, Dinwiddie AT, Gladden RM, Asher A, Baldwin G, Nesbit B, O'Donnell J. Drug Overdose Deaths Involving Stimulants - United States, January 2018-June 2024. MMWR Morb Mortal Wkly Rep. 2025 Aug 28;74(32):491-499.

Do I get an EKG prior to starting a prescribed stimulant?

- Kids, young adults-no
  - Low pretest probability
  - Look at EKG if one is available
- Older Adults-poor data
  - Risk of RX stimulants is hypertension, tachycardia, vasospasm
  - BP and HR every 6 months
  - EKG annually? Look for QRS widening, ventricular conduction delay, arrhythmia

Medical Complications of Inhalants-Acute

- Acute
  - Sudden Sniffing Death-fatal cardiac arrhythmia
  - Seizures
  - Hypoxia
  - Aspiration
  - Accidents

Berling I and Isbister GK, Addiction 2025;120(9):1884–1888

Medical Complications of Inhalants-Chronic

- Neuropsychiatric
  - White matter changes-cognition loss
  - Cerebellar dysfunction
  - Peripheral neuropathy
  - Mood disorders
- Pneumonitis
- Hepatoxicity
- Bone marrow suppression
- Hematologic malignancies
- Congenital defects
- Nitrous Oxide-Vitamin B 12

Lubman DI et al, Br J Pharmacol 2008;154(2):316–326

Medical Complications of IVDU

- HIV
  - PWID=10% of new HIV cases since 2012
  - Reduction:
    - SSP-reduction in HIV by 50%
    - PrEP, overdose prevention sites
- Hepatitis
  - 65% PWID-->anti HCV +
  - SSP, MOUD-reduction in HCV
  - DAA regardless of stage of recovery
  - IVDU most common risk factor for new HBV

www.cdc.gov/hepatitis/php/npr-2025/hep-c-reduce-infections-pwid.html

PrEP

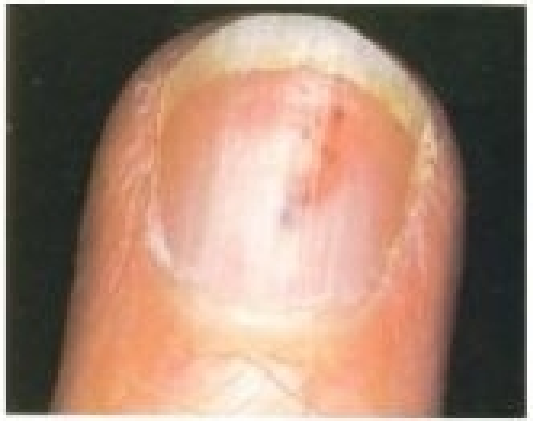
- Public Health Goal: reduce new HIV infections by 75% by 2025 and 90% by 2030
- CDC, FDA endorse PrEP as effective strategy to reduce new HIV infections among PWID
- Fewer than 2% PWID filled RX for PrEP
- LAI forms of PrEP- every two months and every six months
- All forms if PrEP appropriate in pregnancy and lactation

Streed CG, Morgan JR, Gai MJ, Larochelle MR, Paasche-Orlow MK, Taylor JL. Prevalence of HIV Preexposure Prophylaxis Prescribing Among Persons With Commercial Insurance and Likely Injection Drug Use. JAMA Netw Open. 2022;5(7):e2221346

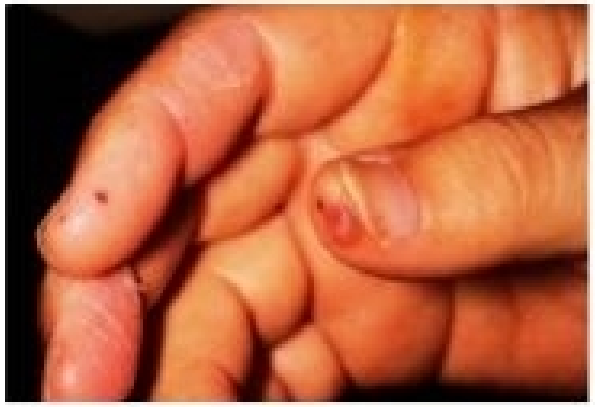
Medical Complications of IVDU

- Serious Bacterial Infections
  - Osteomyelitis
  - Endocarditis
    - S. aureus (often methicillin resistant)
    - Osler nodes, Roth spots, splinter hemorrhages, Janesway lesions
    - Vasculitis
    - Standard of care is multidisciplinary approach

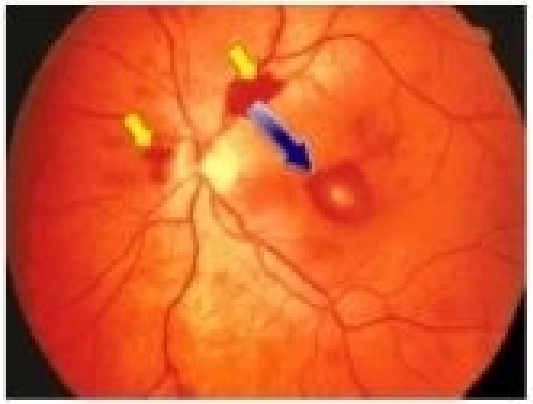
Appa A, et al; Patient-Directed Discharges Among Persons Who Use Drugs Hospitalized with Invasive Staphylococcus aureus Infections: Opportunities for Improvement. Am J Med. 2022 Jan;135(1):91-96



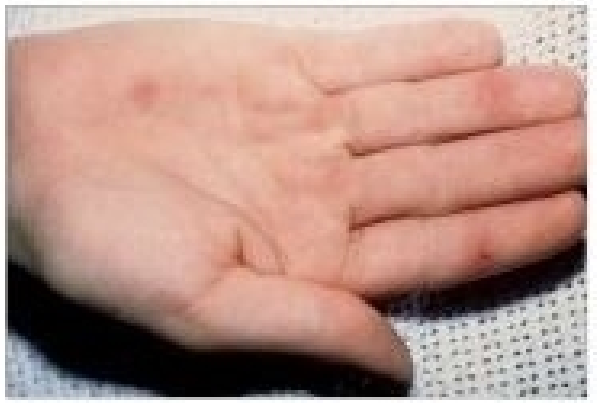
Splinter hemorrhage



Osler node



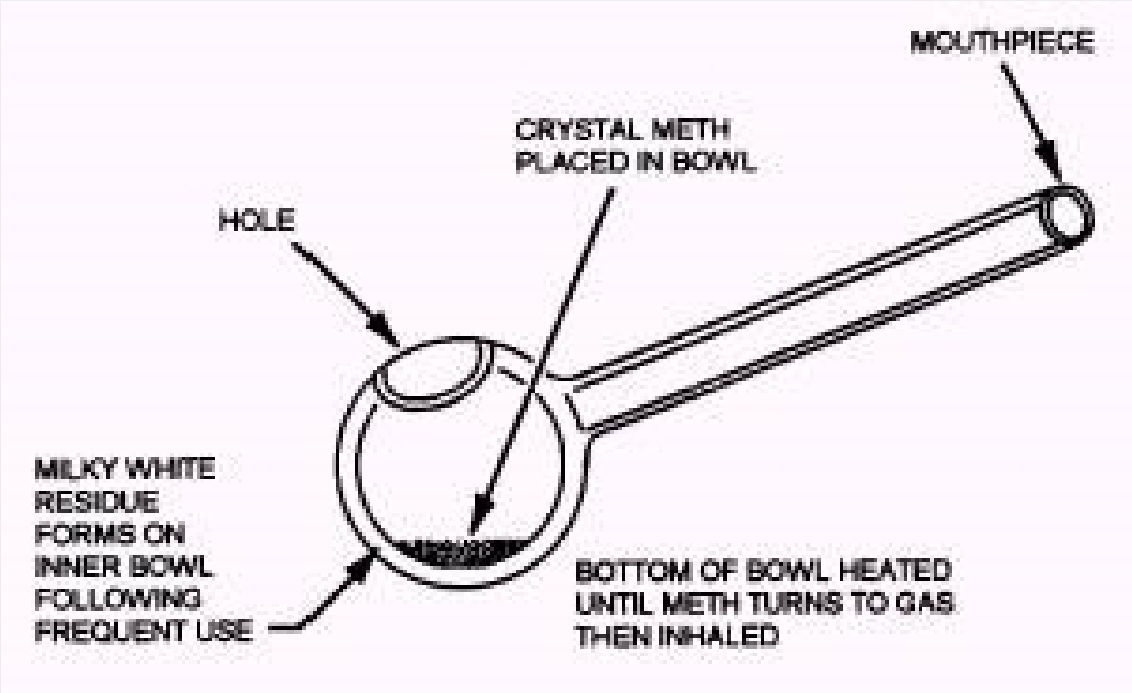
Roth's spot



Janeway lesion

Medical Complications of Inhaling Drugs

- Inhalation and insufflation
- Shared equipment-->risks of ID
- Poor adherence to barriers during SI
- Trauma-burns, cuts
- Harm reduction



Best Practices Recommendations for Canadian Harm Reduction Programs-CATIE, 2020

Cannabis

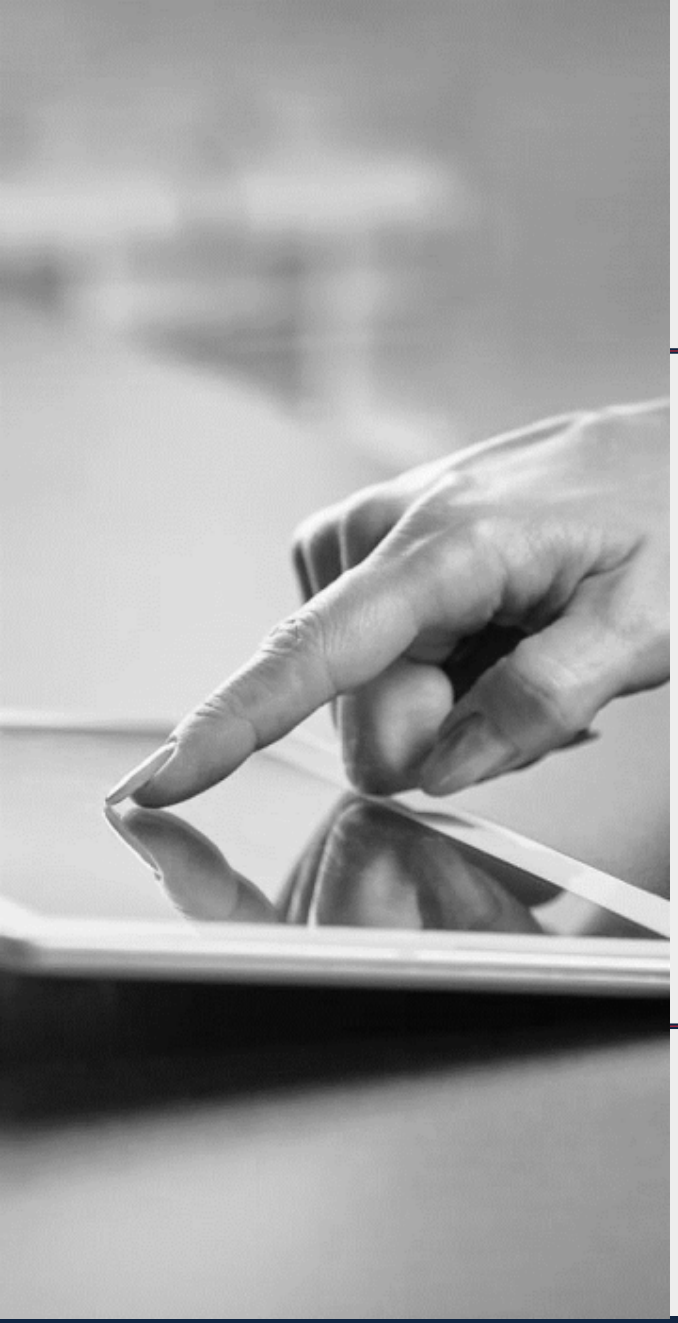
- Hyperemesis Syndrome
  - Downregulation of CNS CBD R and upregulation of gut CBD R
  - Chronic cannabis use-Rome V Criteria
  - Relieved with hot showers
  - Resolved with cessation
- Medical Cannabis
  - Medical condition with RCT suggests response to THC
  - Symptoms refractory to pharmacotherapy
  - No SUD/psychological morbidity

Gabriel P. A. et al. (2024) The impact of cannabis on non-medical opioid use among individuals receiving pharmacotherapies for opioid use disorder: a systematic review and meta-analysis of longitudinal studies, The American Journal of Drug and Alcohol Abuse, 50:1, 12-26, DOI: 10.1080/00952990.2025.2287406

Swartz JA, Franceschini D. Cannabinoid Hyperemesis Syndrome, 2016 to 2022. JAMA Netw Open. 2025 Nov 3;8(11):e2545310. doi: 10.1001/jamanetworkopen.2025.45310. PMID: 41284293; PMCID: PMC12645340.

Conclusion

- Targeted history and physical exam
- Physical health
- Teach patients to advocate for themselves
- Tobacco and alcohol most toxic substances
- Partnership with primary care colleagues



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