WELCOME to

Cannabis in Clinical Care ECHO: Addressing the Spectrum of Use

Session 1, Cannabis 101, February 4, 2026

Funding Statement

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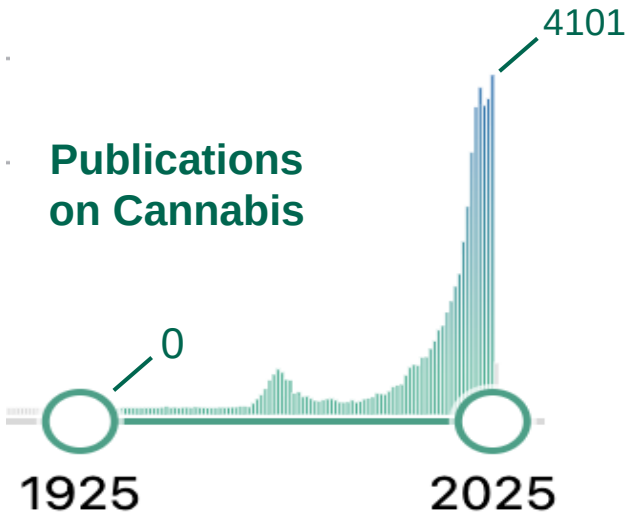
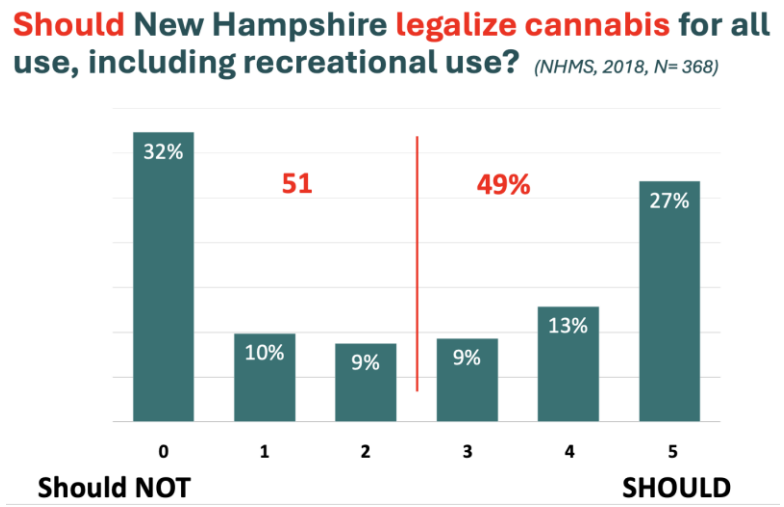
Context

- Cannabis public policies are rapidly changing
- Cannabis use is relatively common
  - 47% of U.S. adults report ever using
  - 17% report “current use”
  - 27% report trial of current therapeutic use
  - Almost 7% meet criteria for cannabis use disorder
- Little training in cannabis & cannabinoid issues
- Medical literature on cannabis is burgeoning
- Opinions about cannabis are divergent & strong





Gallup, 2024; Hsu et al,Therapeutic use of Cannabis and Cannabinoids, JAMA 2025, CDC.gov 2025: PubMed accessed 2-3-26: NH Medical Society Survey 2017

Series Learning Objectives

After participating in this activity, learners will be able to:

1. Explain the basic pharmacology and known actions of cannabis.
2. Describe harmful patterns of cannabis use, including cannabis use disorder (CUD), and provide appropriate supportive interventions.
3. Determine patient eligibility for therapeutic cannabis use and provide appropriate counseling, certification, and ongoing management.

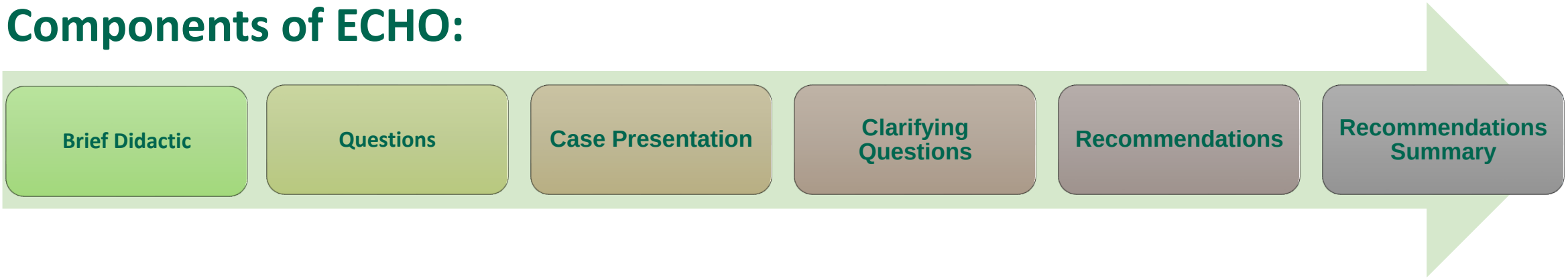
Series Sessions

Date	Session Title
2/4/2026	Cannabis 101
2/18/2026	Cannabis in Society
3/4/2026	Cannabis Misuse and Use Disorder
3/18/2026	Therapeutic Cannabis Part 1
4/1/2026	Therapeutic Cannabis Part 2
4/15/2026	Open Discussion

Project ECHO (Extension for Community Healthcare Outcomes)

- All teach, all learn.
- ECHO is a telementoring model that uses virtual technology to support case-based learning and to engage the wisdom and experience of all attending.
- Highly Interactive.

Components of ECHO:



Today's Program

- Brief housekeeping
- Didactic: Cannabis 101

  Kathleen Broglio, ARNP, DNP

  – Q and A
- Poll
- Discussion
- Summary
- Up Next

Notes

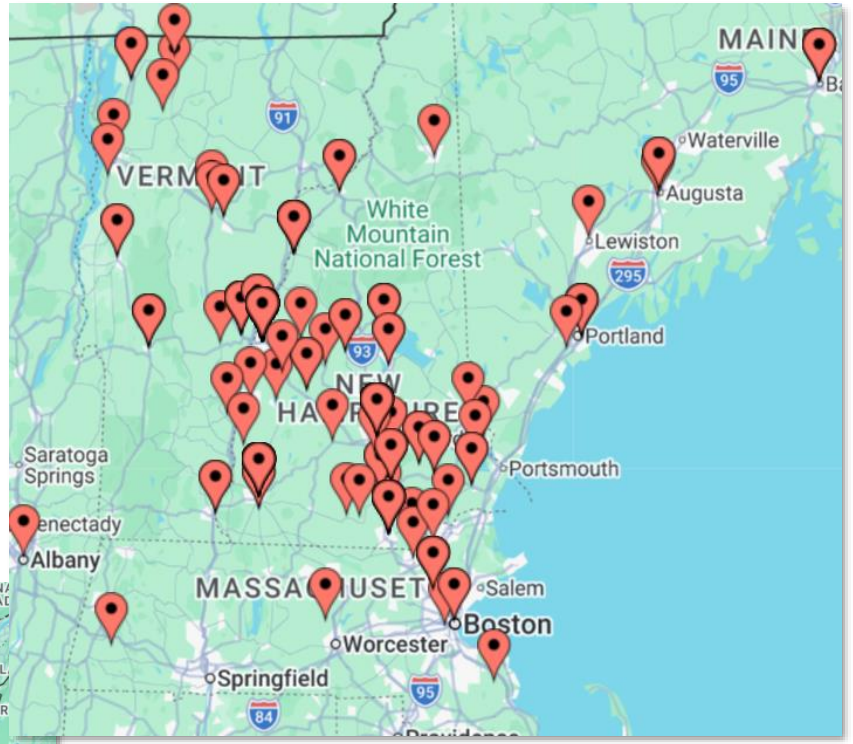
- Raise virtual hand or enter comments in chat at any time. We will call on you when it works. Please mute otherwise.
- To protect individual privacy, please use non-identifying information when discussing cases.
- We will be recording the didactic part of these sessions. *Participating in these session is understood as consent to be recorded. Thank you!*
- Closed Captioning will be enabled during sessions
- Questions to ECHO Tech Support thru personal CHAT or ECHO@hitchcock.org

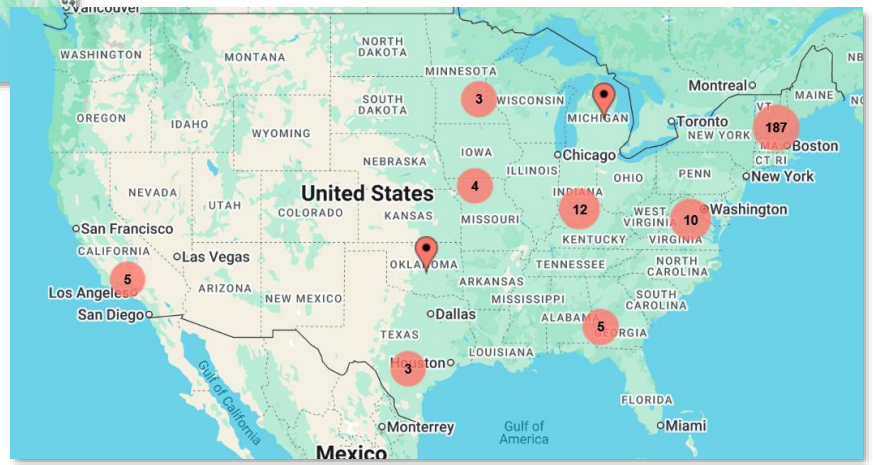
CME/CNE

- One hour of free CME/CNE/CE (social workers) is available for every session attended, up to 6 sessions.
- Track participation via DH iECHO site
- A link will be provided at the end of the course to submit your attendance and claim your CME/CNE/ CE (social workers)
- No relationships to disclose among planners, panel, speakers

ECHO Participant Demographics
Total Registrants: 243

Professional Identities	
Nurses	79
Providers (Physicians, MD/DO-23, ARNP-20, PA-2)	59
Behavioral Health/Counseling/Social Work	41
Other Healthcare	27
Administration	26
Community Workers	6
School Administration and Teachers	5
Other	10





Core Panel

Abby Frutchey, LMSW, LADC, CCS	Substance Use Response Coordinator, Community Caring Collaborative
Alan Budney, PhD	Professor, Geisel School of Medicine at Dartmouth
Charles Brackett, MD	Physician, General Internal Medicine, Dartmouth Health
Jerry Knirk, MD	Chair, NH Therapeutic Cannabis Medical Oversight Board
Joanne Wagner, MSW, LICSW	Manager Behavioral Health Clinicians, Dartmouth Health
Kathleen Broglio, DNP, APRN	Nurse Practitioner Section of Palliative Medicine, Dartmouth Health
Luke Archibald, MD	Section Chief, Addiction Treatment Program, Dartmouth Health
Seddon Savage, MD. MS	ECHO Education Director and Facilitator, Dartmouth Health

Cannabis 101

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2-2026

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Disclosures

- I do not have any relevant financial disclosures

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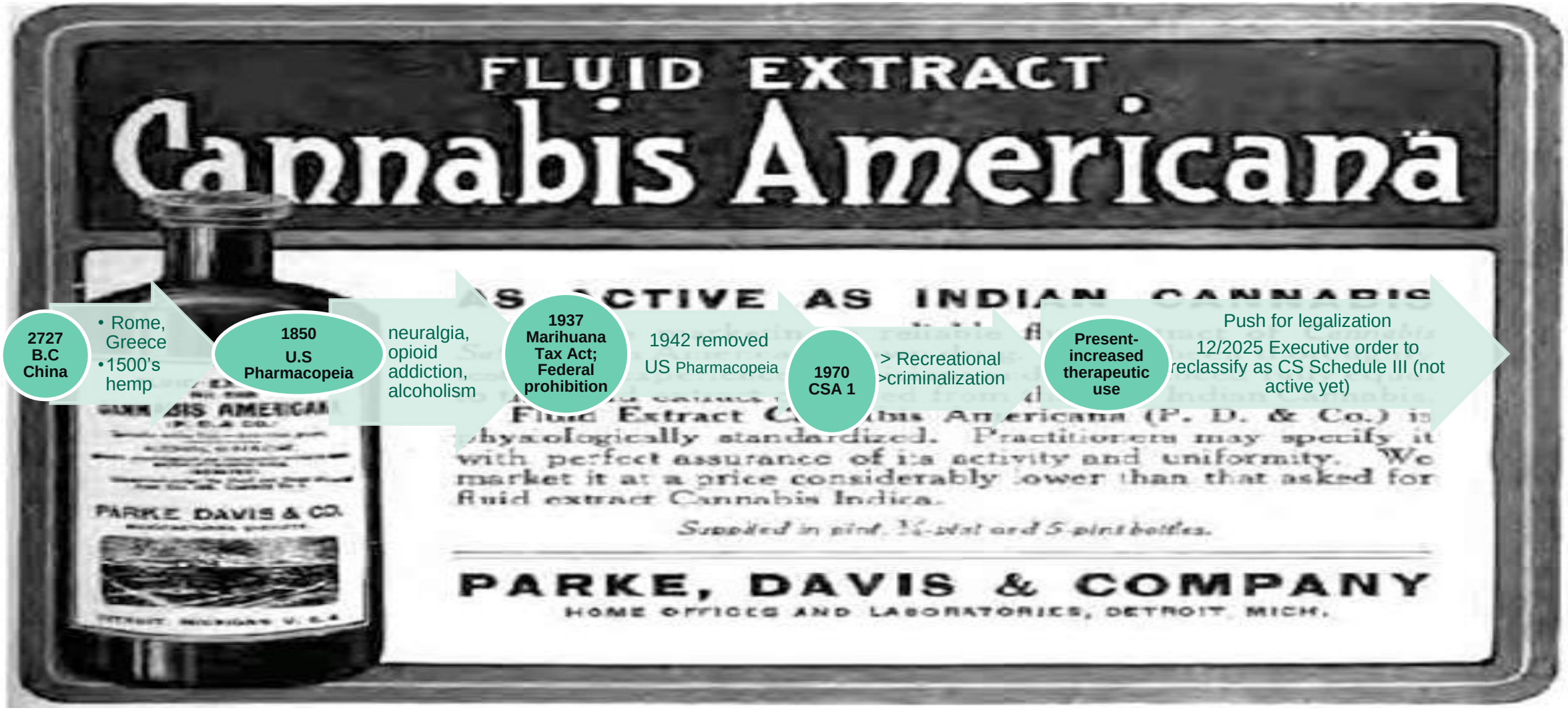
Objectives

- Discuss history of cannabis use
- Describe cannabis pharmacology and routes of administration
- Discuss potential harms of cannabis

Cannabis has been utilized for centuries



2727 B.C China
- Rome, Greece
- 1500's hemp

1850 U.S Pharmacopeia
neuralgia, opioid addiction, alcoholism

1937 Marihuana Tax Act; Federal prohibition
1942 removed US Pharmacopeia

1970 CSA 1
> Recreational >criminalization

Present- increased therapeutic use
Push for legalization
12/2025 Executive order to reclassify as CS Schedule III (not active yet)

https://www.deamuseum.org/ccp/cannabis/history.html; https://www.visualcapitalist.com/history-medical-cannabis-shown-one-giant-map/

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Cannabis Pharmacology – What do we know?

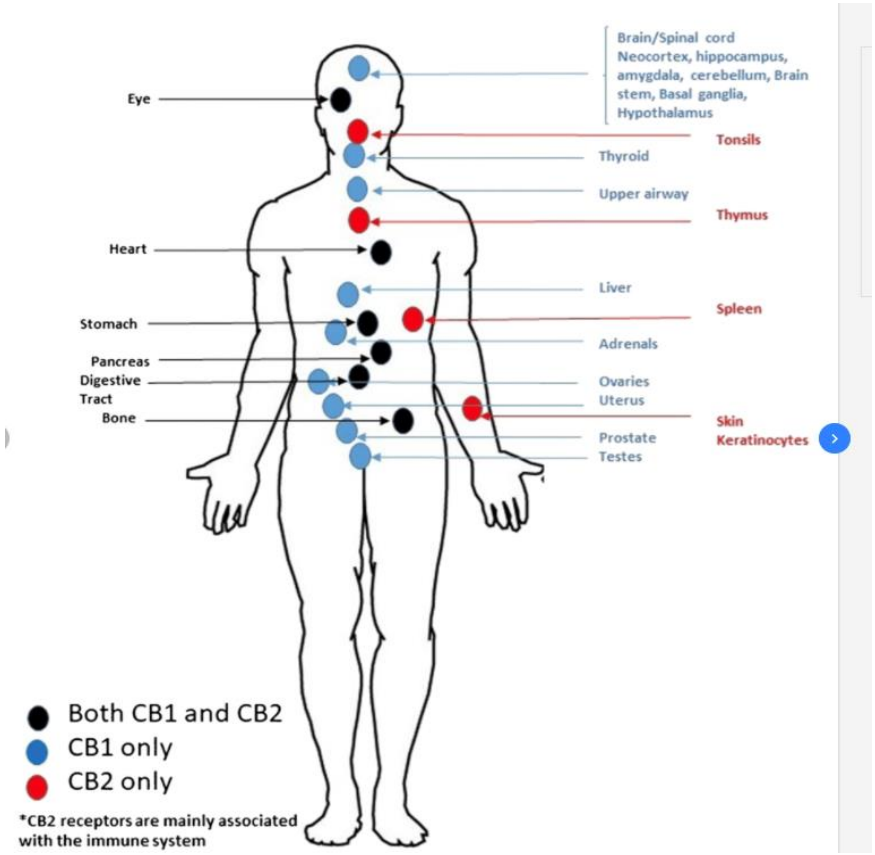
Endogenous cannabinoid system

Endocannabinoids bind to cannabinoid receptors to exert diverse physiologic effects

- CB1 (primarily in nervous system)
- CB2 (primarily in immune system)

Physiologic roles in

- Nociception (pain regulation)
- Mood modulation including reward
- Cognition, learning & memory
- Energy balance, appetite



Implications: Limited understanding of the effects of exogenous (external) cannabinoids (like THC/CBD) on endogenous (internal) cannabinoid system

Volkow et al. *Annu Rev Pharmacol Toxicol,* 2017;57:285-308; DiMarzo & Piscitelli, The Endocannabinoid System & Its Modulation by Phytocannabinoids, Neurotherapeutics, 2015

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Cannabis contains > 100 phytocannabinoids and > 600 chemical constituents

- Two most prevalent cannabinoids
  - **Δ^9-tetrahydrocannabinol (THC)** - psychoactive; anti-emetic, analgesia, appetite stimulation (discovered 1964)
  - **Cannabidiol (CBD)** –not psychoactive; anti-convulsant, anxiolysis, anti-inflammatory (discovered 1988)

- Less studied cannabinoids & terpenes may contribute to effects

- NO standardization -Diverse strains bred and available
  - Very high THC concentrations are available
    - 1970s - 3-5% THC typical -Vape products > **94% THC available in dispensary**
  - Low THC, high CBD products and intermediate blends are available

Rock, Parker,. Adv Exp Med Biol. 2021;1264:1-13. doi: 10.1007/978-3-030-57369-0_1. PMID: 33332000.

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What formulations of cannabis are utilized?

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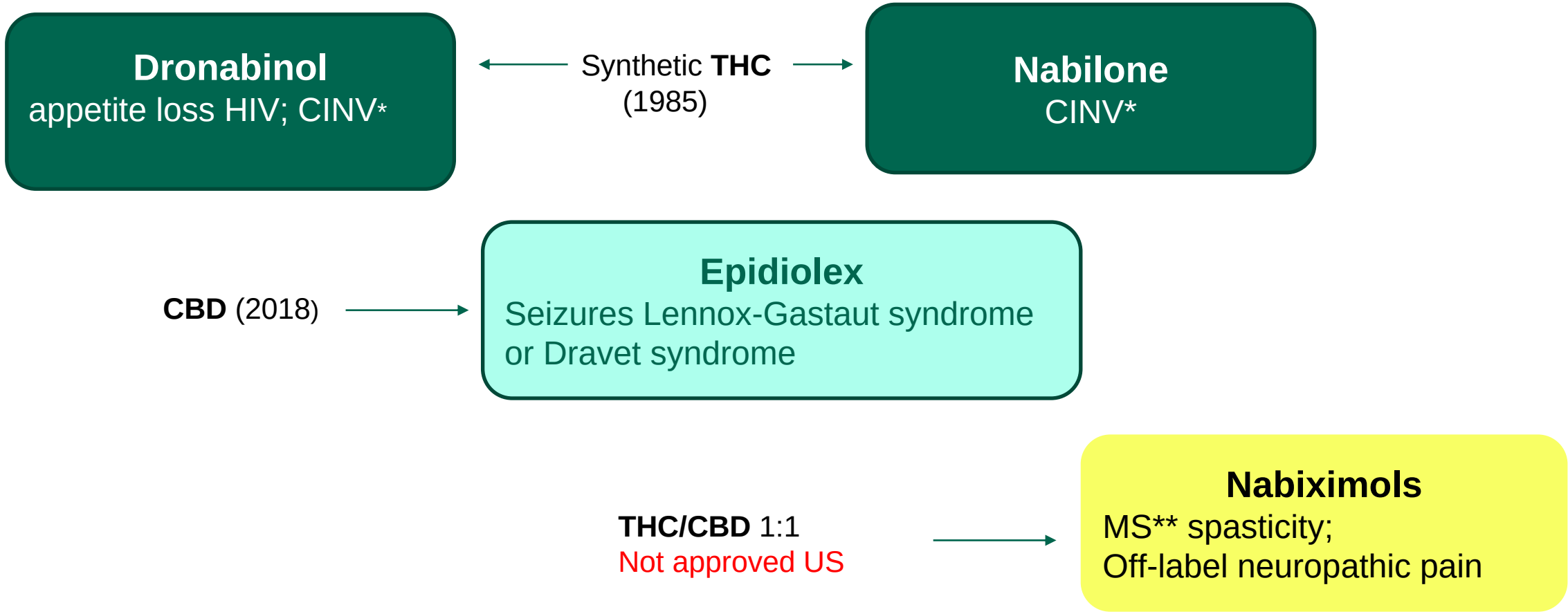
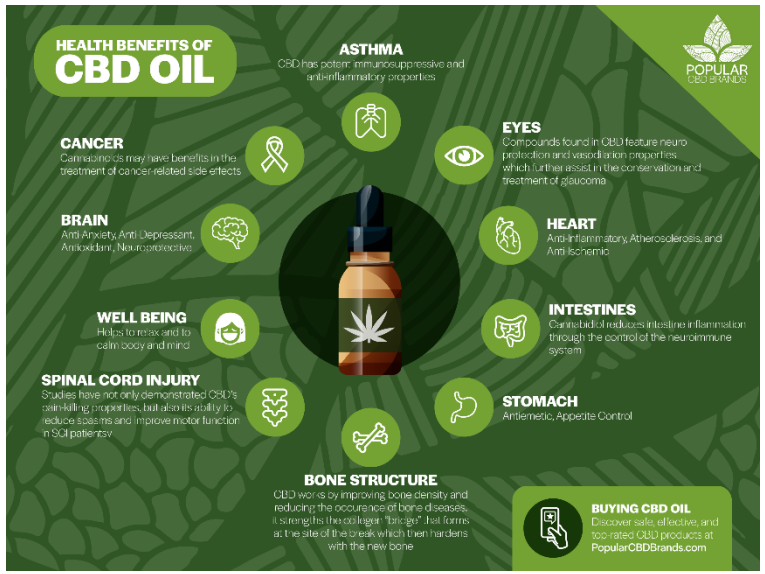
Three pharmaceutical cannabis products are available in the U. S.



*CINV – chemotherapy induced nausea and vomiting; **MS multiple sclerosis

Cannabidiol (CBD) is widely available now, but is not highly regulated



58 of 84 samples of CBD purchased online had mislabeled CBD content Bonn-Miller et al. *JAMA*. 2017;318 (17):1708-1709

Enthusiasm for use is not supported by the current evidence for efficacy

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Cannabis product formulations

Smoked

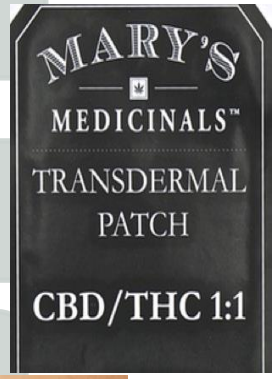
- Rapid onset of action 5-10 min
- Duration 2-4 hrs.
- Bioavailability 10-30%

Vaporization

- Rapid onset of action (peak 5-10 min)
- Metered dosing devices
- Risk of EVALI (e-cig/vaping associated lung injury)

Edibles

- Slower onset of action 60-180 min
- Duration 6-8 hours
- Bioavailability 6% extensive first pass effects



Transmucosal Sublingual

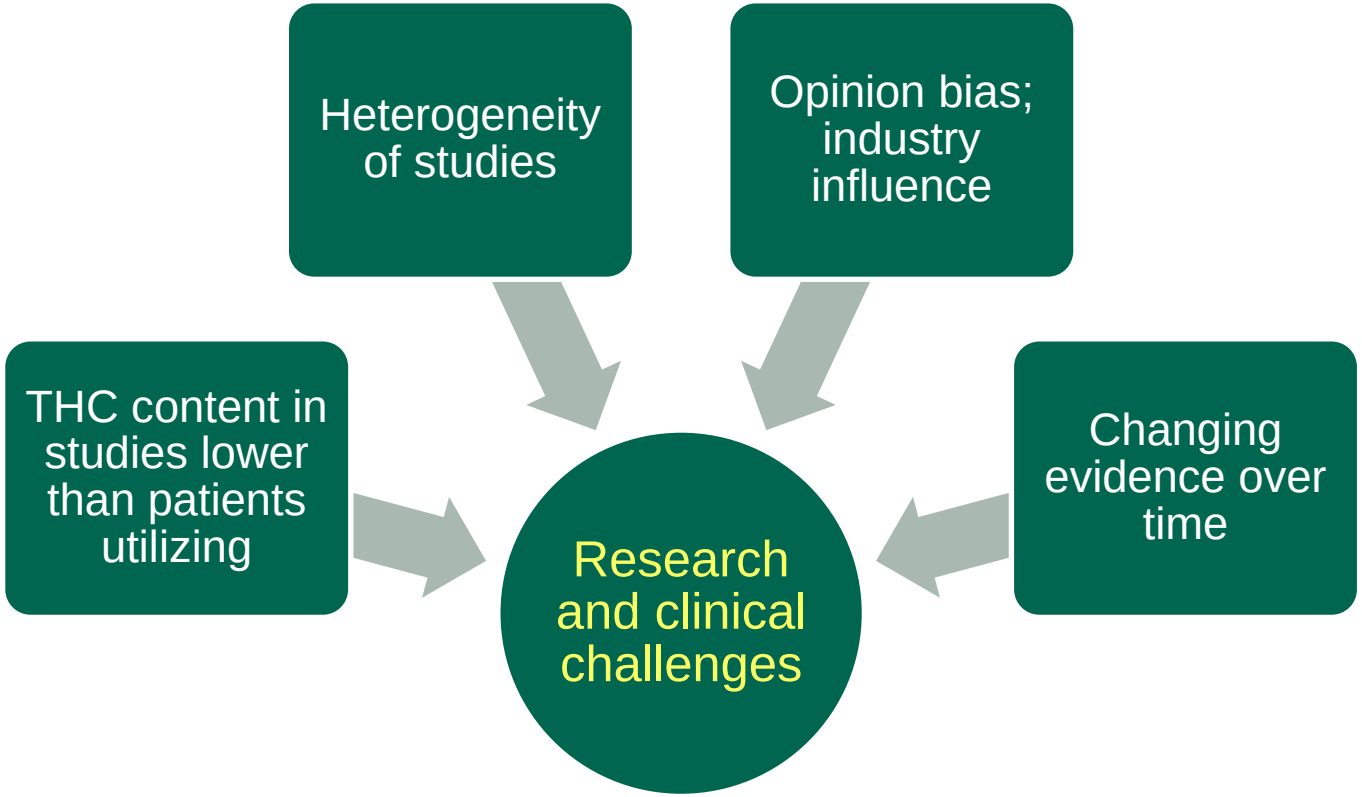
- More rapid onset of action than orals 15-45 minutes
- Duration 6-8 hours
- Pharmaceutical form (nabiximols) available

Transdermal Topical

- Variable onset - duration
- Highly lipophilic
- Slow onset, stable blood levels

MacCallum & Russo. *Eur J Int Med.* 2018;49:12-19

Cannabis evidence of effects is difficult to accurately determine– more on this in future



NASEM; 2017https://www.nap.edu/catalog/24625/the-health-effects-of-cannabis-and-cannabinoids-the-current-state; Abrams, *Eu J Int Med,* 2018, 49, 7-11

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Potential Harms of Cannabis Use

Prenatal developmental changes	• Potential cognitive deficits, learning disabilities
Developmental changes in adolescents	• Intellectual, motivational, maturational
Motor vehicle accidents from acute cannabis intoxication	• Some studies show a significant correlation between high THC blood concentrations and car crash risk
Cardiopulmonary	• Mixed effects BP; trigger MI, CVA, exacerbation COPD

National Institute of Drug Abuse – Cannabis https://nida.nih.gov/research-topics/cannabis-marijuana#short-term-health-cannabis
Preuss et al. Front Psychiatry. 2021 28;12:643315. doi: 10.3389/fpsyt.2021.643315

Should there be concern about drug-drug interactions with cannabis?

- Cannabis metabolized through CYP450 system
  - Greater than 100 known drug-drug interactions – **knowledge actual clinical effects still evolving**
- Interactions may increase
  - warfarin/heparin metabolism
  - some anticonvulsant levels
  - blood glucose lowering agents activity
  - sedative effects opioids and benzodiazepines

Take home: ASK if patients are utilizing cannabis

Alsherbiny & Li. *Medicines* 2019; *6:* 3; doi:10.3390/medicines6010003; Qian et al. *J Clin Psychopharm.* 2019;39(5):462-471

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Cannabis and Cardiovascular System

- THC partial agonist – activate endocannabinoid system
  - Stimulate sympathetic nervous system → hyperadrenergic state→ increased oxidative stress→ increased risk for cardiac events including acute MI, TIA, CVA, possible arrhythmias
- CBD may decrease heart rate and blood pressure and improve vasodilation
  - ***Data from Systematic reviews shows ASSOCIATIONS between cannabis use and adverse cardiac events such as MI, CVA, and Atrial Arrhythmias***

Page et a. A Scientific Statement From the American Heart Association. *Circulation* 2020;142(10):e131-e152
Storck et al. *Heart* Published Online First: 17 June 2025. doi: 10.1136/heartjnl-2024-325429
Chye et al. *Heart rhythm*. doi:10.1016/j.hrthm.2025.05.062

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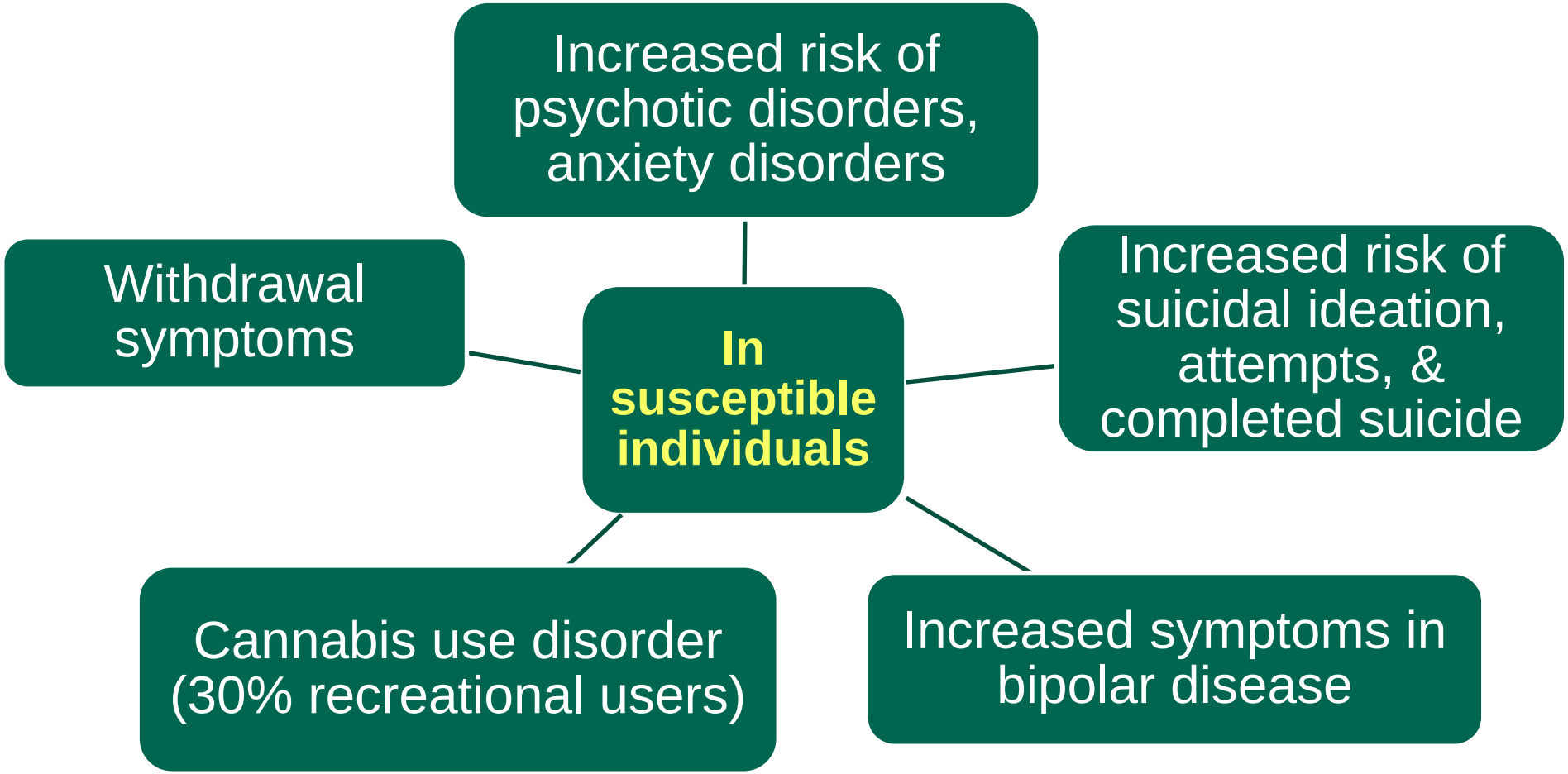
Potential mental health harms of cannabis



National Academies of Science, Engineering & Medicine, 2017 Report; Substance Abuse and Mental Health Services Administration- https://www.samhsa.gov/substance-use/learn/marijuana/risks

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Cannabis may affect work performance

- High quality studies evaluating effect of **medical** cannabis on workplace performance lacking[1]
  - Reported ‘adverse effects’ such as sedation, nausea/vomiting, dizziness and euphoria could be associated with performance
- Canadian study showed 2-fold increase of injury risk for ‘workplace cannabis use’ but none for ‘non-workplace use’[2]
- Case control study related to recreational marijuana legalization
  - 8.4% increase in workplace injuries among younger workers aged 20 to 34 years old[3]

[1]O’Neill et al. *Workplace Health & Safety*. 2023;71(9):400-410. doi:10.1177/21650799; [2] Carnide et al. *Canadian Journal of Public Health*. 2023;114(6):947-955. doi:10.17269/s41997-023-00795-0 ; Li et al.JAMA Health Forum. 2024 2;5(2):e235438. doi: 10.1001/jamahealthforum.2023.5438

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Some take away considerations

- Cannabis has been used for centuries
- Knowledge about cannabis pharmacology and its effects on the endocannabinoid system is evolving
- Cannabis is not ‘benign’ and may carry more risks than currently known

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Which of the following potentially challenging clinical scenarios have you encountered in your practice or other work? (Please check all that apply).

1. Patient seeks certification for therapeutic cannabis for a State approved indication, but you question or disagree with the scientific or clinical validity of use.
2. Patient acknowledges frequent cannabis use for enjoyment and perceives no harm, but you or others are concerned it is negatively impacting their function or health
3. Patient uses cannabis several times a day, reporting it helps them cut down on the use of drugs they perceive as more harmful (such as opioids, methamphetamine or cocaine
4. Patient is certified to use therapeutic cannabis and wishes to continue, but you observe no therapeutic benefit and/or perceive more negative than positive effects.
5. Patient seeks therapeutic certification for an indication that is not approved by state, but you perceive it may be worth a clinical trial.
6. Other challenging scenarios? (Please note in Chat)