# WELCOME to

# Cannabis in Clinical Care ECHO: Addressing the Spectrum of Use

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Project ECHO

# Funding Statement

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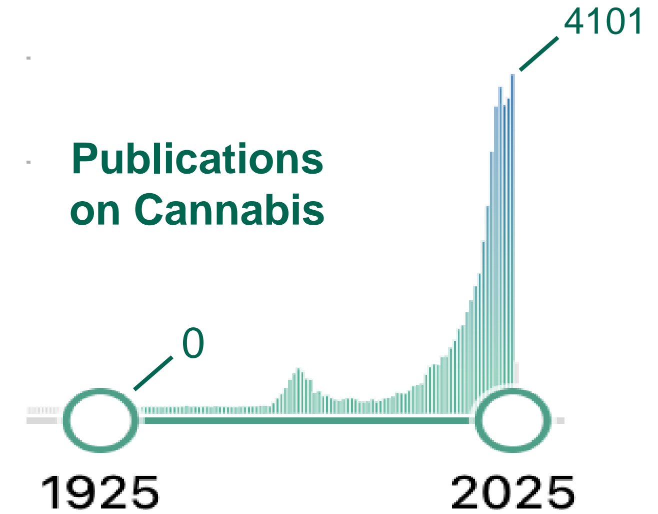
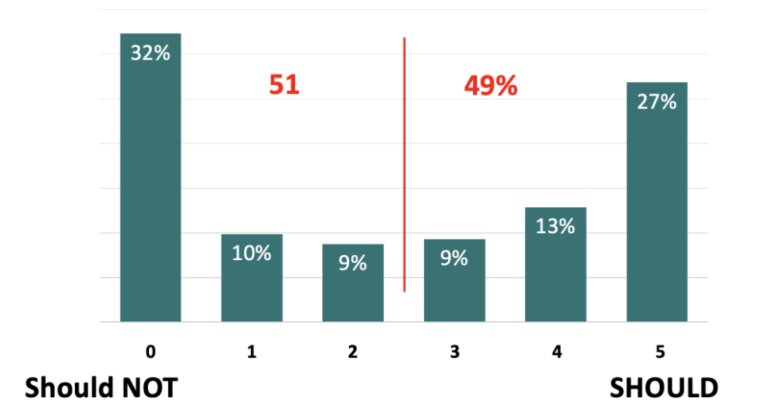
# Context

- 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.

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# 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 |

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# Cannabis 101

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2-2026

# 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?

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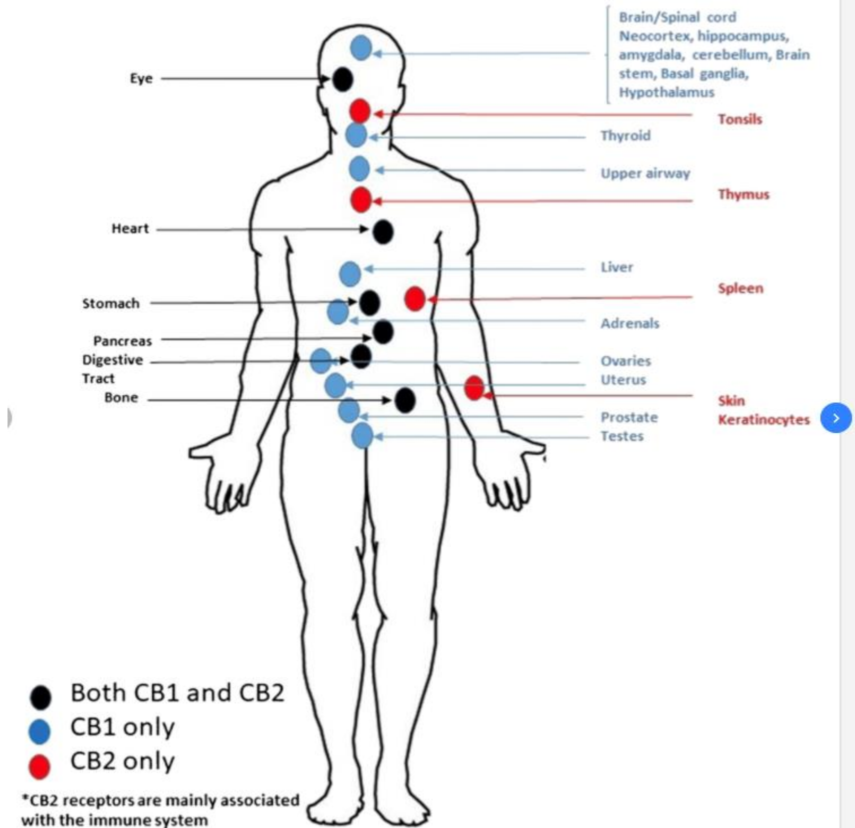
# Endogenous cannabinoid system

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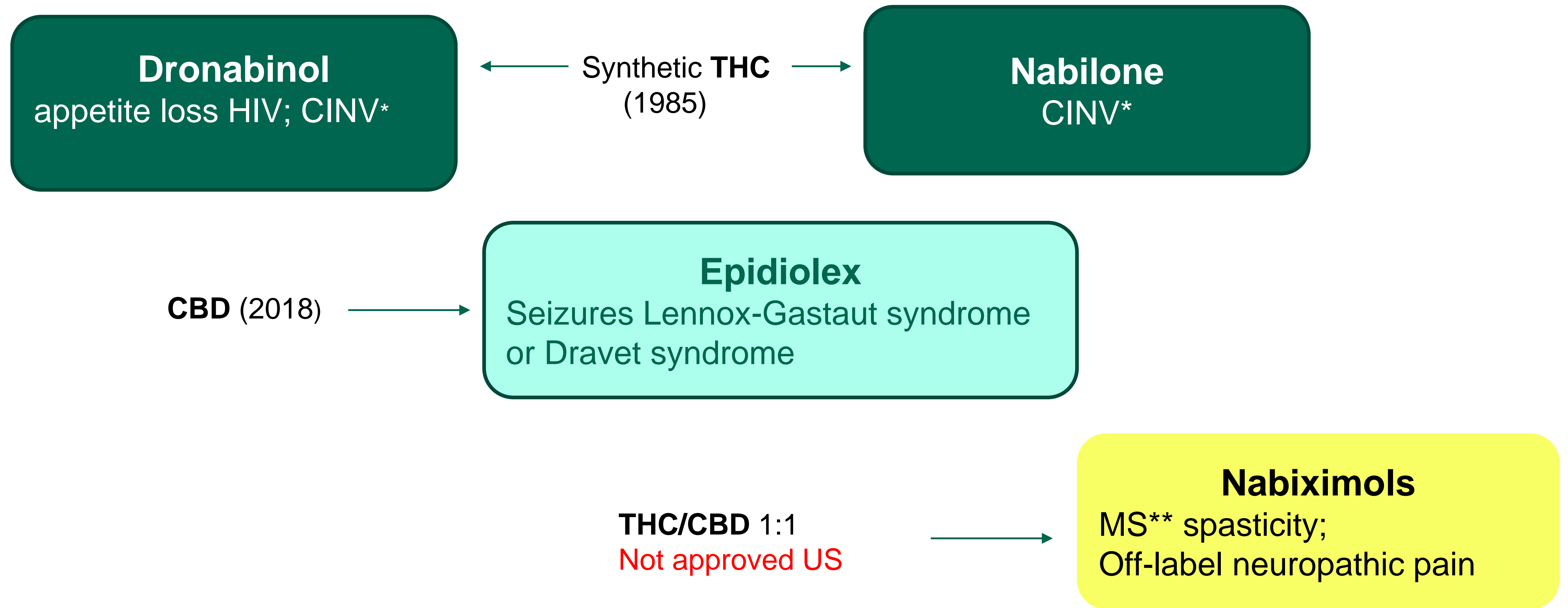
# Three pharmaceutical cannabis products are available in the U. S.




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

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

HEALTH BENEFITS OF CBD OIL

ASTHMA
CBD has potent immunosuppressive and anti-inflammatory properties

CANCER
Cannabinoids may have benefits in the treatment of cancer-related side effects

EYES
Compounds found in CBD feature neuro protection and vasodilation properties which further assist in the conservation and treatment of glaucoma

BRAIN
Anti Anxiety, Anti Depressant, Antioxidant, Neuroprotective

HEART
Anti-Inflammatory, Atherosclerosis, and Anti-Ischemic

WELL BEING
Helps to relax and to calm body and mind

INTESTINES
Cannabidiol reduces intestine inflammation through the control of the neuroimmune system

SPINAL CORD INJURY
Studies have not only demonstrated CBD's pain-killing properties, but also its ability to reduce spasms and improve motor function in SCI patients

STOMACH
Antiemetic, Appetite Control

BONE STRUCTURE
CBD works by improving bone density and reducing the occurrence of bone diseases, it strengthens the collagen "bridge" that forms at the site of the break which then hardens with the new bone

BUYING CBD OIL
Discover safe, effective, and top-rated CBD products at PopularCBDBrands.com

POPULAR CBD BRANDS

Medical Uses For CBD Oil

Arthritis
Anxiety & Depression
Cancer
Chrohn's Disease
Epilepsy
Fibromyalgia
Insomnia
Lupus
Multiple Sclerosis
Schizophrenia

CBD Oil Cannabidiol

## 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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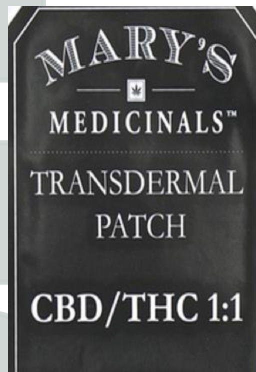
# Cannabis product formulations

**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

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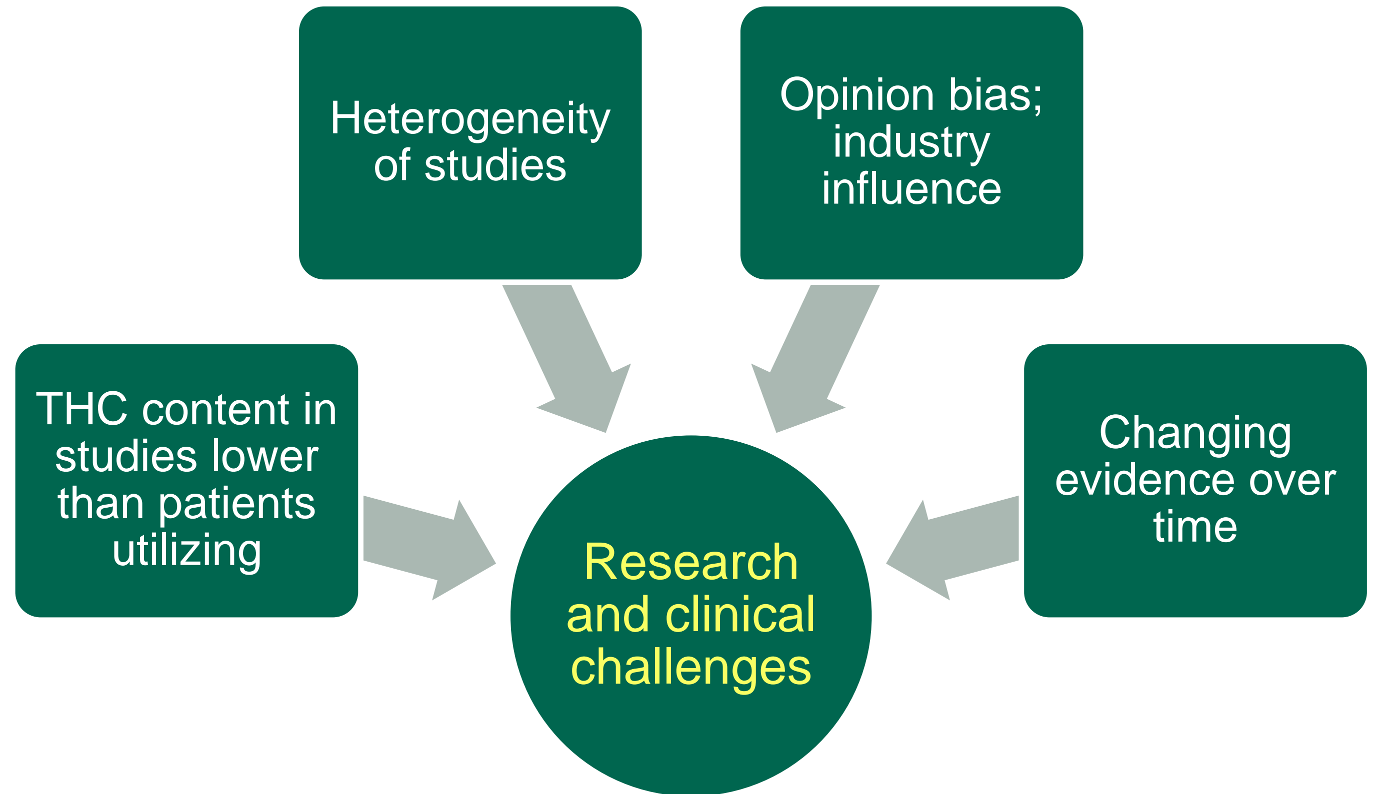
# Cannabis evidence of effects is difficult to accurately determine– more on this in future




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

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# 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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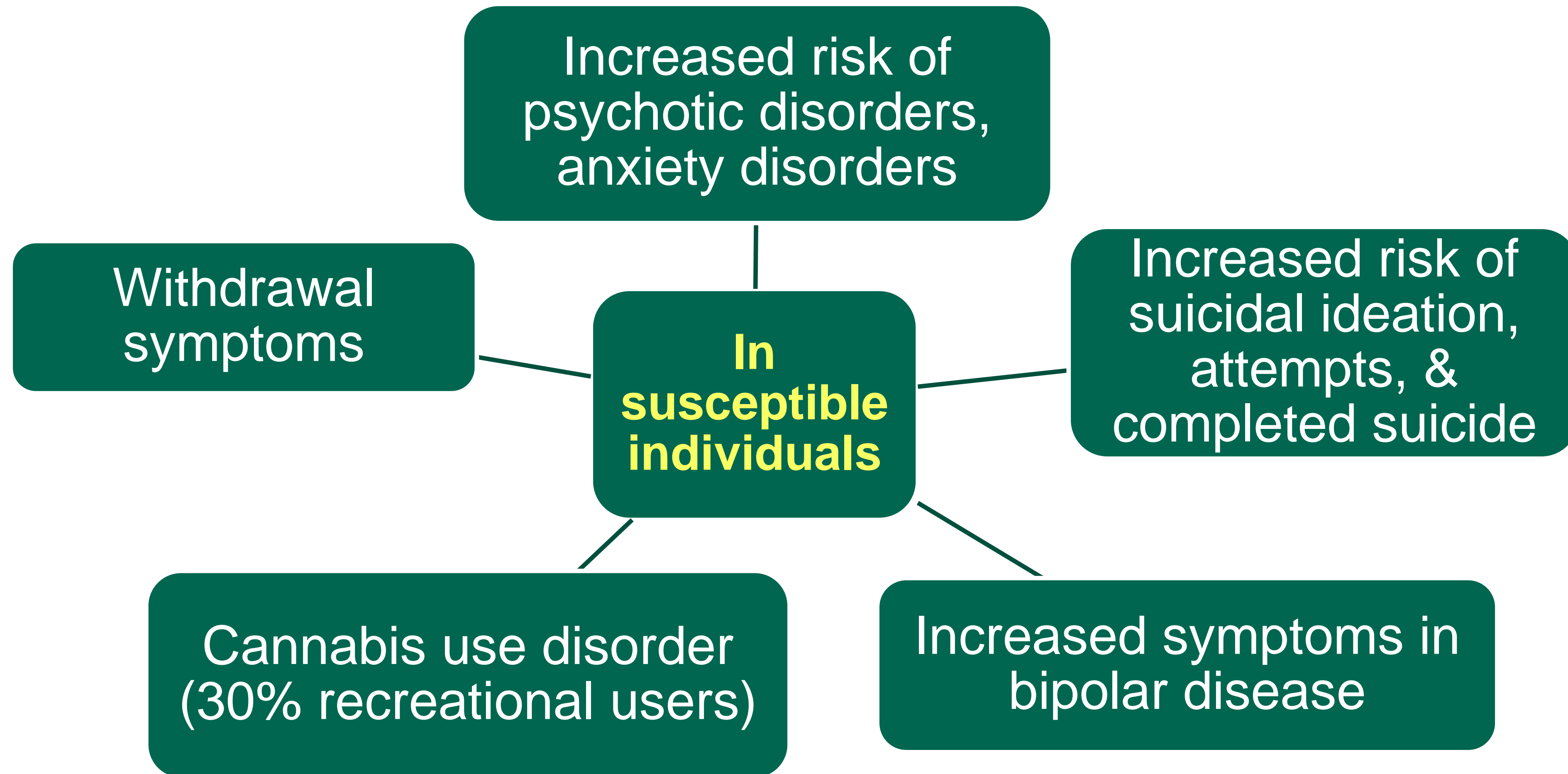
# Potential mental health harms of cannabis




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)

# WELCOME to

# Cannabis in Clinical Care ECHO: Addressing the Spectrum of Use

*Session 2, Cannabis in Society, February 18, 2026*

# Cannabis in Society: Epidemiology and Changing Patterns of Use, Federal and State Policies, Industry Influences, Public Health Impact

**Alan Budney, PhD**
**Dartmouth College**

**February 18, 2026**

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# Disclosures

Research supported by NIH-NIDA for > 35 yrs

- *Treatment Development for Substance Use Disorders (cannabis, cocaine)*
- *Lab & Survey Studies: Withdrawal, Policy, Use Characteristics, Measurement*

Scientific Review Board: *Center for Medical Cannabis Research, UCSD*

Consultant, Board of Directors: Clear30, Inc.,

Consultant, *SAMHSA project on CUD*

*Opinions are mine alone, not associated with Dartmouth College*

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# Plan for Today

- Cannabis Diversity - Products, Contents (Intoxicating vs. Not), Route of Use
- Legal Status (Still Federally illegal - effects banking / industry; Schedule I CSA)
  - State Differences: Medical vs. Not (Adult sales)
  - Industry – $30 Billion - For Profit Industry - Advertising, Lobbying
  - Perceived Risk and Perceived Benefits
- Epidemiology: Use, Frequency, Age, Quantity
- Mental Health

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## Increasing *"Diversity"* in the Cannabis World

- Pharmacological *"Diversity"*
- Consumer Product *"Diversity"*
- Individual Effects *"Diversity"*

# Cannabis Products

90 Capsules
$90.00

# Cannabis Products: Smoking / Vaping (THC plus…)

# High Potency (THC) Products – Concentrates: dabbing/vaping

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# *Edibles (THC plus…)*

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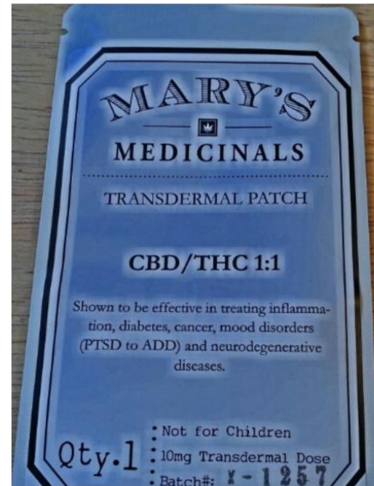
# Lotions / Cremes / Salves / Patches/ Tinctures / Pills / drops



# CBD/CBN/CBC/Terpene Products (little to no-THC)

90 Capsules
$90.00

1oz Tincture
$55.00

Tincture
$30.00

# What's in the Products?

- **Tetrahydrocannabinol (THC) ($\Delta^9$ $\Delta^8$ $\Delta^{10}$ $\Delta^{11}$***)** ***psychoactive: Intoxicating***
- **Hexahydrocannabinol (HHC) *****

- Cannabidiol (CBD)
- Cannabinol (CBN)
- Cannabigerol (CBG) *Non-psychoactive (non-intoxicating)*
- Cannabichromenene (CBC)
- Cannabigerovarin (CBG)
- Cannabivarin (CBDV)
- Cannabichromevarin (CBCV)

- Terpenes: essential oils, smells, flavor

- *** occurs naturally in cannabis, but in trace quantities insufficient for commercial production. Delta 8,10,11 must instead be converted from cannabidiol (CBD) using chemical catalysts, heat, or hydrogenation (HHC): = Hemp Derived Products

# Primary Differentiation

**THC (△9, △8, △10)**-laden products

vs.

CBD, CBG, CBC, etc. (other minor cannabinoids)

Need to make sure this is identified when discussing “cannabis” with patients or colleagues

# Legalization

- Burgeoning Cannabis Industry (for Profit)
  - Increased access to more diverse products (more attractive)
  - More access to high potency (THC) products
  - Advertising (increase perceived benefits; increase in desirability)
- Lower Perceived Risk or Harm
- Medical Cannabis Laws: Increase in Perceived Benefits

**•••• Adverse (or Positive) Impact on Society? ••••**

*https://www.nytimes.com/2026/02/09/opinion/regulate-legalized-marijuana.html*

*https://www.nytimes.com/2025/12/19/opinion/trump-marijuana-policy.html*

*https://www.apa.org/monitor/2025/06/marijuana-potency-policy-risk*

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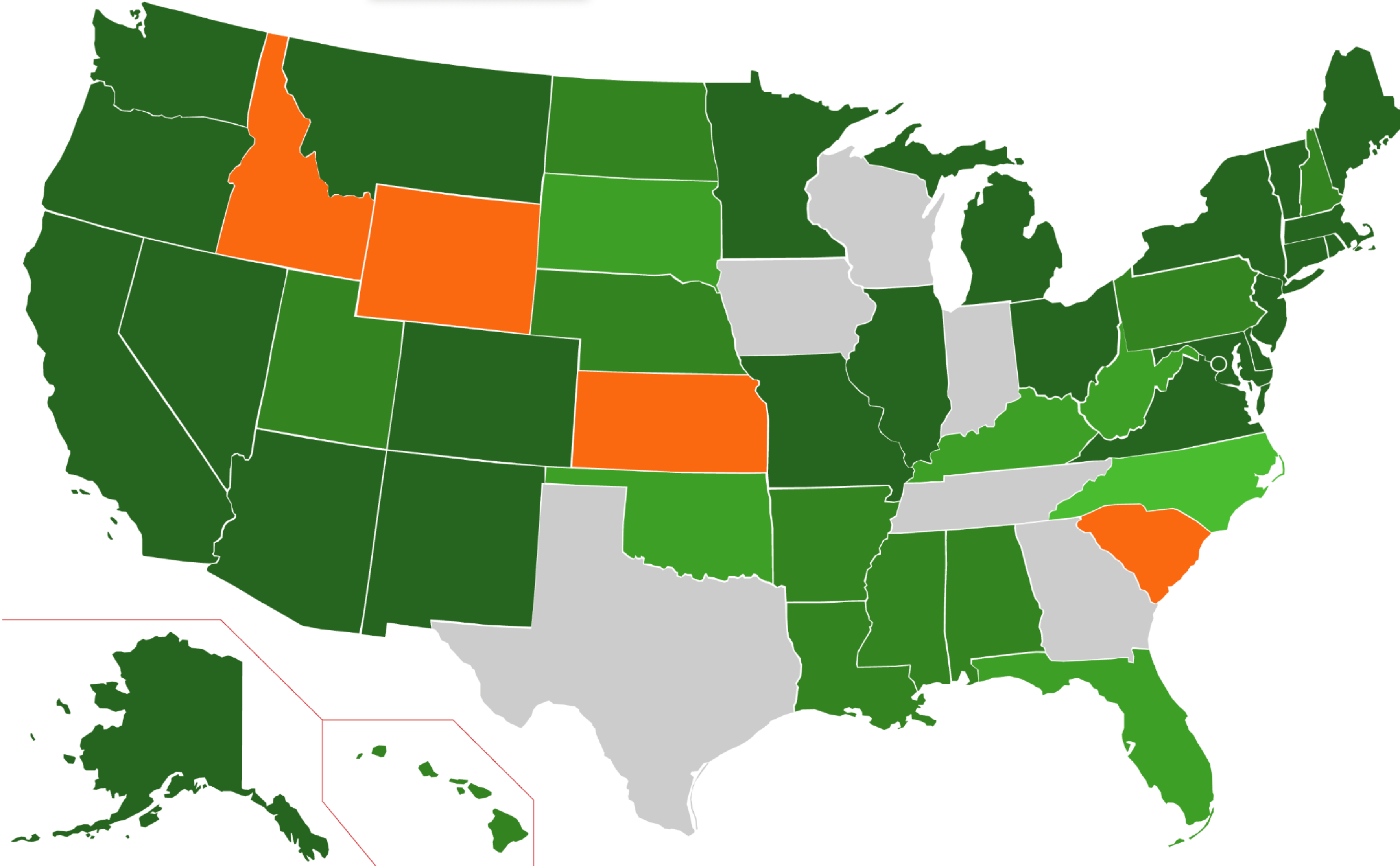
https://disa.com/marijuana-legality-by-state/




**Legal Medical Cannabis Laws:**

**n=40**

**Legal Recreational Cannabis Laws:**

**n=24**

# Legal Cannabis Industry (Big Weed)

## Over $30 billion in U.S. sales in 2024, close to the annual revenue of Starbucks.

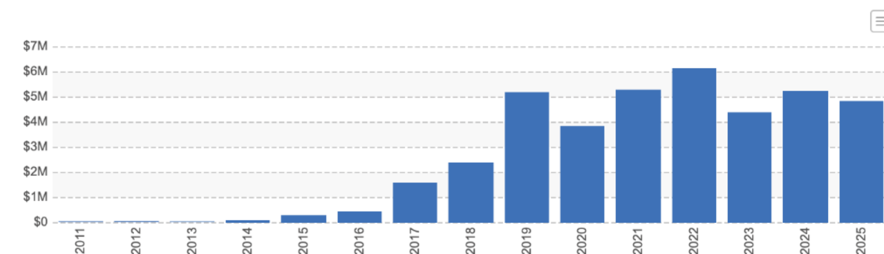
## $5.25 Million Spent on Federal Lobbying (102 Lobbyists)

- While the industry has historically focused on federal legalization and banking reform, recent data shows a strategic shift toward state-level influence and brand protection

e.g., Pro-cannabis spent over $1.6 million lobbying the PA legislature on a bill that would see major profits for existing dispensaries/growers

| $4,855,500 | 19 | 71 (50.70%) |
|---|---|---|
| Total Spent on Marijuana, 2025 | Number of Clients | Number of Lobbyists/Percent of Former Government Employees |

Annual Lobbying on Marijuana




**Reclassify from Schedule I to Schedule III.**

- The Cannabis Industry, not casual smokers, will likely benefit most
  - increase profits resulting from a more favorable tax code

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# Advertising

Do-si-dos is an indica-dominant strain with qualities similar to its parent, OGKB, a GSC-phenotype. Its aroma is pungent, sweet, and earthy with slight floral funkiness. Enjoy a puff and feel a stoney, in-your-face buzz off the start that melts down over the body with euphoria and relaxation. The Bloom Farms High Potency line has 90-93% THC and botanical terpenes for those who want heavy hits and delicious flavor for a good price.

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**Flavored marijuana vapes becoming new face of teen drug use, sparking addiction fears**

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# Online Sales and Advertising

GraniteLeaf CANNABIS

Valentine's Sales Event

Feb. 13th & 14th

20% off All Chocolates and Topicals

Bundle #1 $45
100mg CBD/THC Honey +
100mg Raspberry Dark Chocolate Bar +
1g Sweetie Pie Pre-roll Regular Price $63.50

Bundle #2 $55
200mg CBD/THC Chocolate +
300mg THC/THCA Coconut Salve +
1g Sweetie Pie Pre-roll Regular Price $76.50

We also take great pride in the quality of our GraniteLeaf Topicals and Transdermals. Many of our patients have found that these products can be very helpful in treating pain and inflammation. They can also help protect your skin from the cold, dry weather we've been having.

https://graniteleaf.com/cannabis-and-depression/

**Beach Cake Pre-Roll**

**Description**

GraniteLeaf pre-rolls are always made with fresh flower...never trim!
Cultivated in New Hampshire by GraniteLeaf Cannabis
Genetics: Florida Cake x Triangle Kush Bx1
Breeder: Jungle Boys
Top Terpenes: b-Caryophyllene | d-Limonene | b-Myrcene
Reported Effects: Pain Relief | Relaxing | Uplifting
TAC: 27.86% | Total THC: 26.70% | D9: 0.80% | THCA: 25.90% | CBGA: 1.16% | b-Myrcene: 0.38% | b-Pinene: 0.10% | d-Limonene: 0.56% | Linalool: 0.22% | b-Caryophyllene: 0.71% | a-Humulene: 0.31% | Total Terpenes: 2.28%

## Potential Benefits for Symptoms of Anxiety

− Focus

Many people have found certain products to be beneficial for redirecting focus and staying present

+ Panic Attacks
+ PTSD
+ Sleep
+ Sociability

https://graniteleaf.com/cannabis-and-anxiety/

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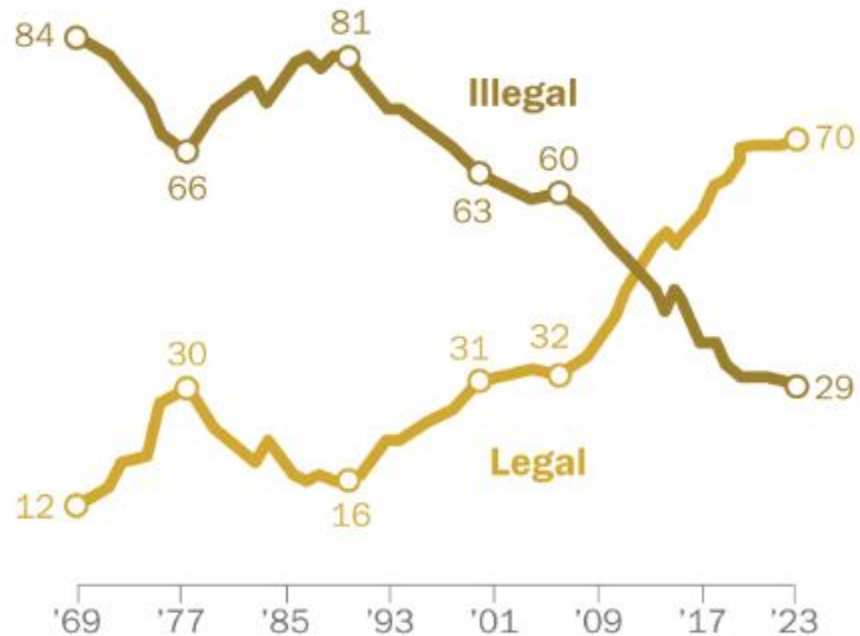
# US Population Opinions




As of 2024, more than half of Americans (54%) lived in a state where recreational marijuana use is legal

About eight-in-ten Americans (79%) live in a county with at least one cannabis dispensary

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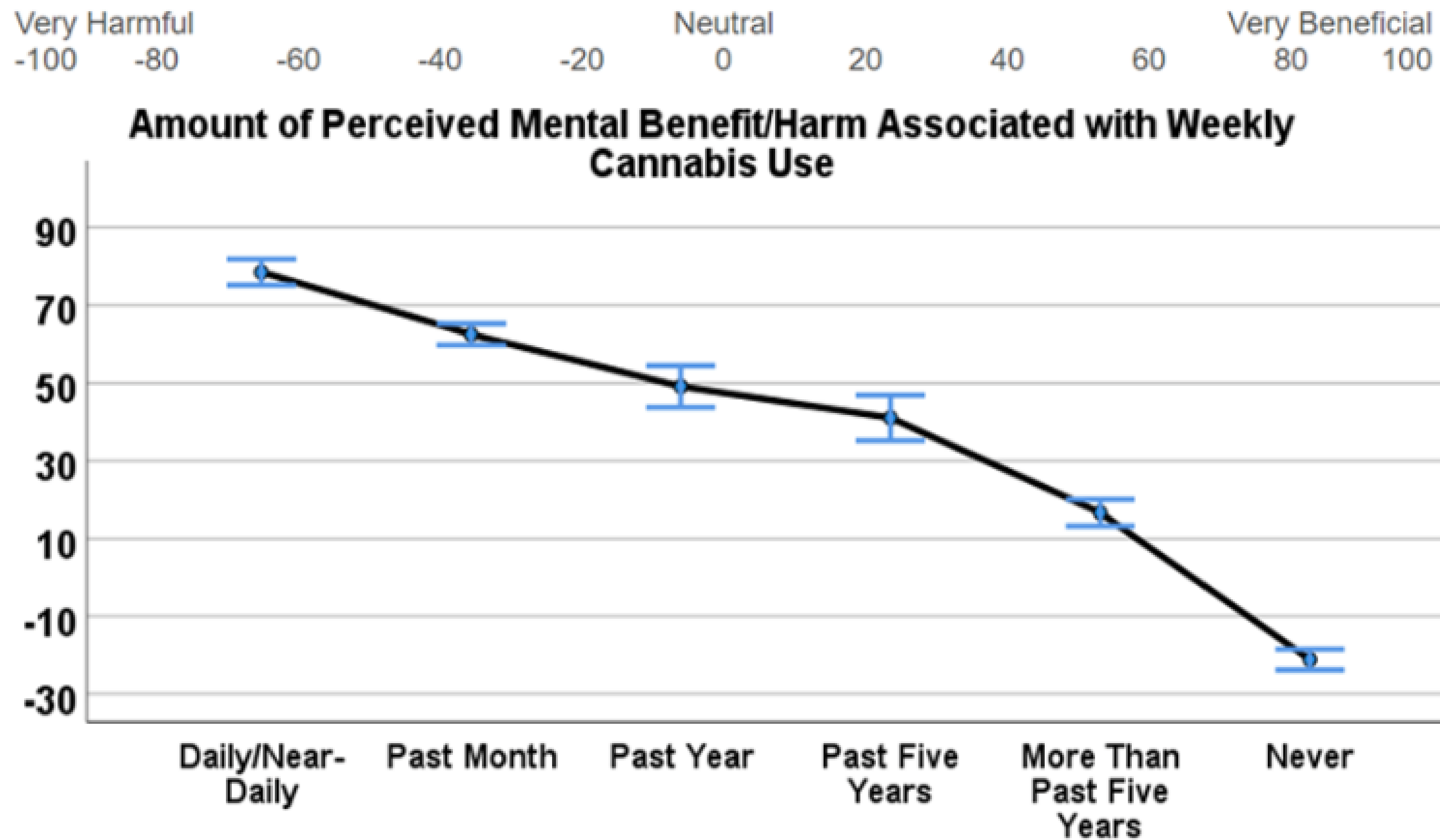


* When evaluating risk, cannabis users tend to consider potential for benefits more so than harms

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# Perceived Positive Effects of Cannabis – Going Down?

## Change in Perceived Positive Effect of Marijuana on Most Who Use It, Among Subgroups, 2022 vs. 2024

What effect do you think the use of marijuana has on most people who use it -- very positive, somewhat positive, somewhat negative or very negative?

%Very/Somewhat positive

| | 2022 % | 2024 % | 2022-2024 change (pct. pts.) |
|---|---|---|---|
| Total U.S. adults | 53 | 43 | –10 |
| **Marijuana use** | | | |
| Have ever tried marijuana | 69 | 61 | –8 |
| Have not tried marijuana | 35 | 30 | –5 |
| **Age group** | | | |
| 18-34 | 65 | 58 | –7 |
| 35-54 | 56 | 46 | –10 |
| 55+ | 43 | 31 | –12 |

## Slim Majorities in U.S. Now Say Marijuana Negatively Affects Society and Most Users

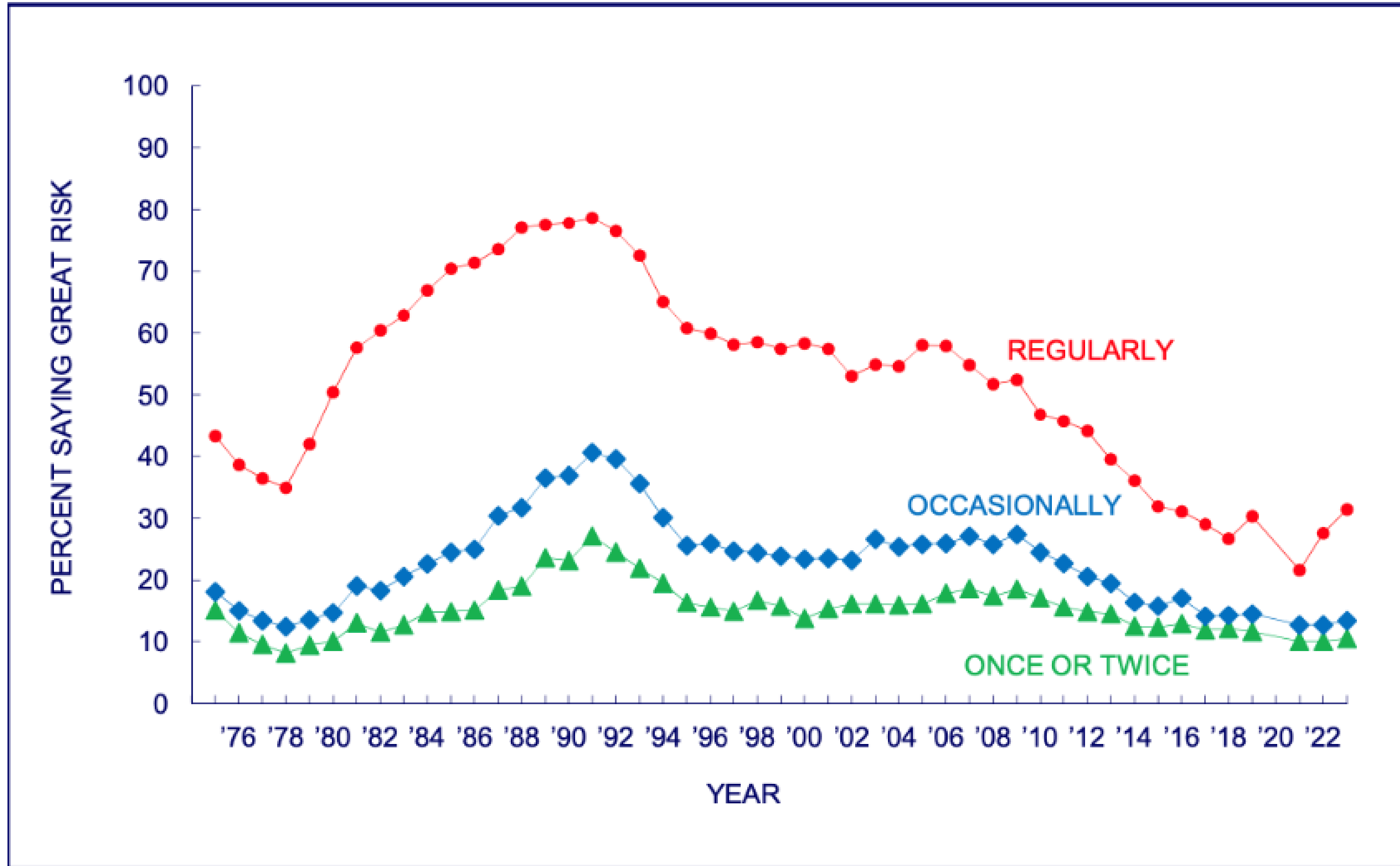
What effect do you think the use of marijuana has on [society/most people who use it]?

| | Very positive % | Somewhat positive % | Somewhat negative % | Very negative % | Total positive % |
|---|---|---|---|---|---|
| **Society** | | | | | |
| 2022 | 12 | 37 | 31 | 19 | 49 |
| 2024 | 6 | 35 | 34 | 20 | 41 |
| **Most people who use it** | | | | | |
| 2022 | 9 | 44 | 30 | 15 | 53 |
| 2024 | 7 | 36 | 32 | 19 | 43 |

Questions were rotated. Those with no opinion are not shown.

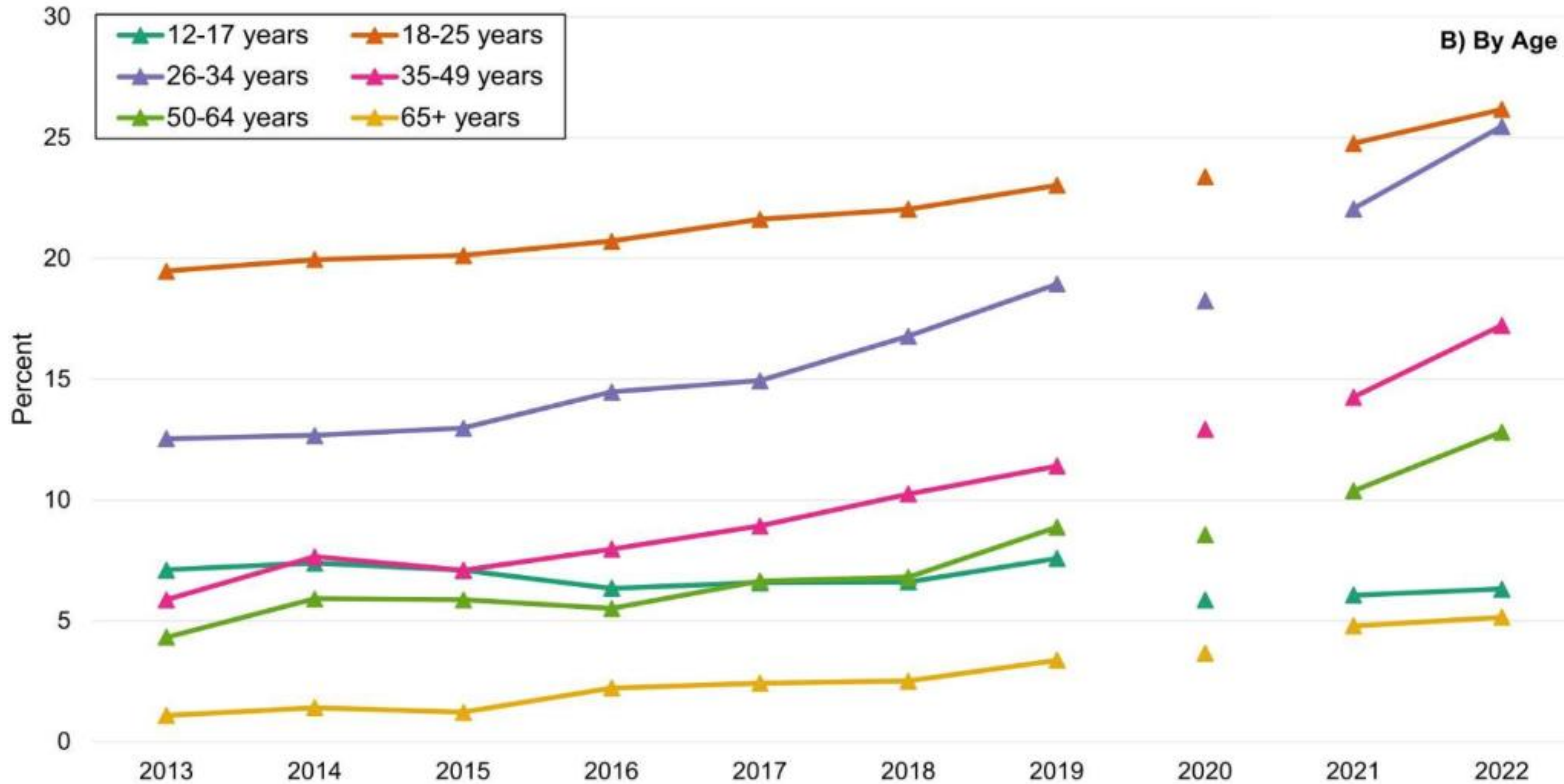
GALLUP

# Monitoring the Future Survey – Trends in Perceived Risk

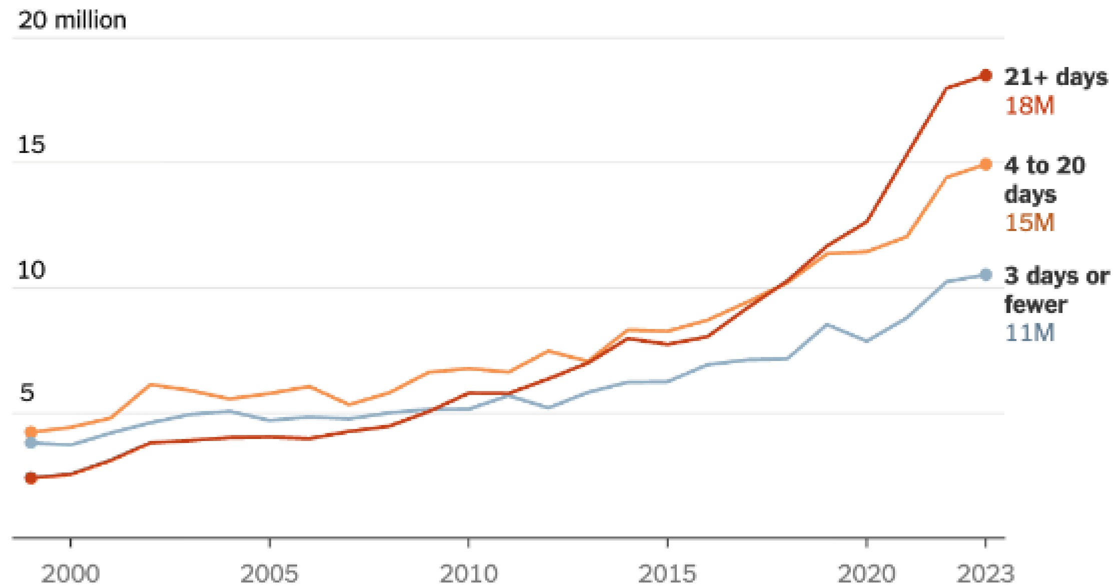


# Epidemiology / Prevalence of Use

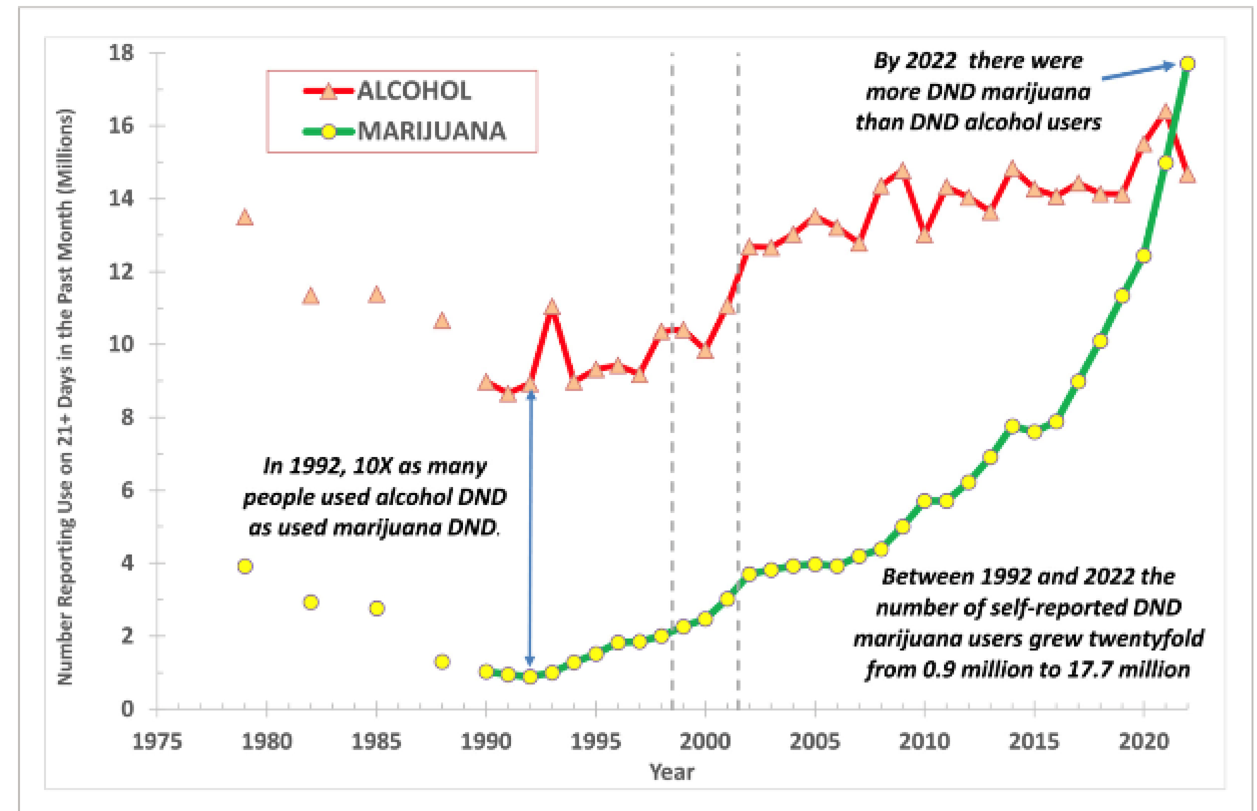
# Past Month Marijuana (Cannabis) Use (NSDUH)



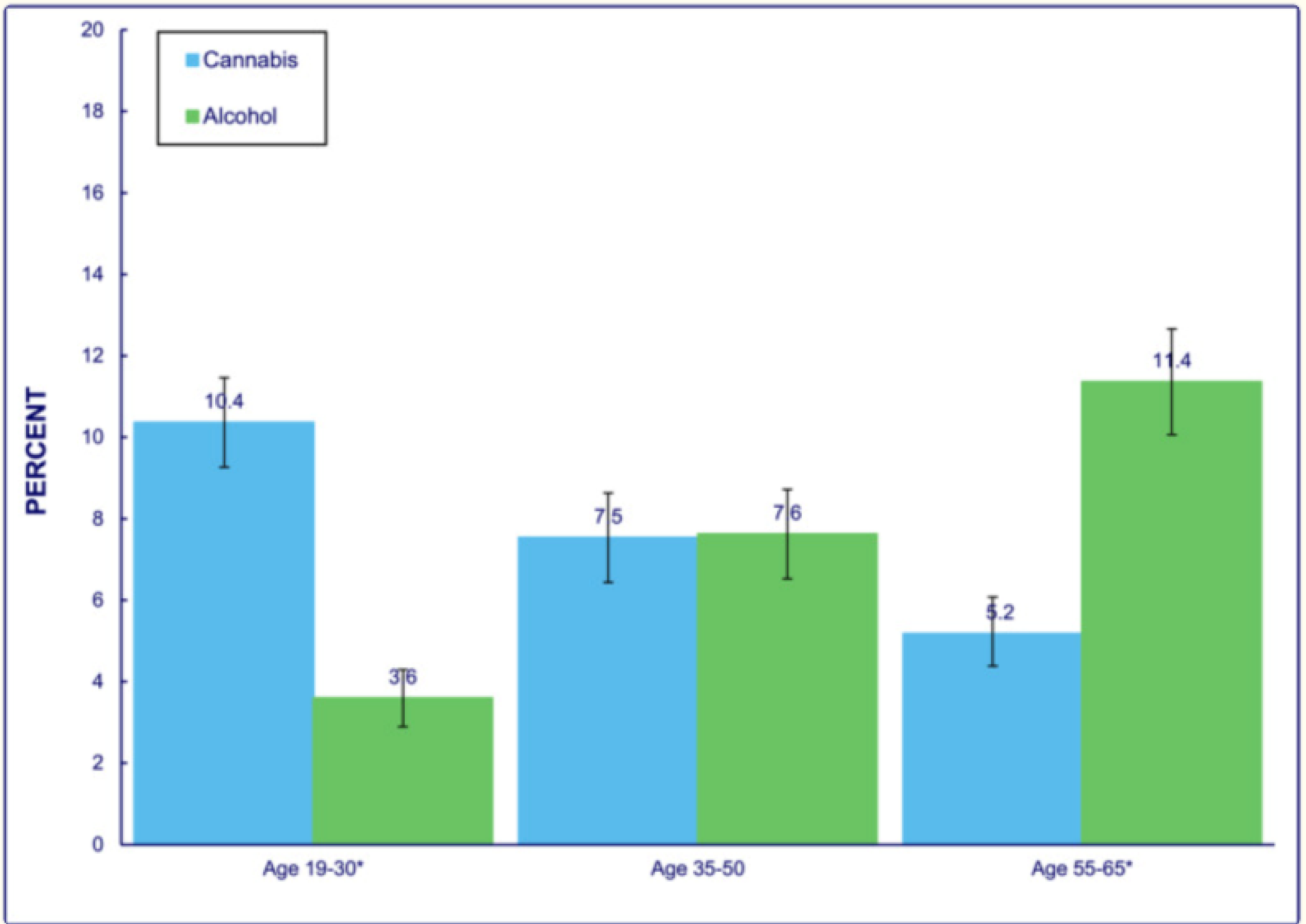
# Frequency of Cannabis (THC) Use over the Past 25 years Steepest Increase Has Been in Daily Use



Source: Jonathan Caulkins (Carnegie Mellon), based on National Survey on Drug Use and Health By



# Daily Use across Age Groups



# Adolescent Use – Stable / Trending Down

| | 2018 | 2019[ii] | 2020 | 2021 | 2022 | 2023 | 2024 | 2023-2024 change | 2019-2024 change |
|---|---|---|---|---|---|---|---|---|---|
| **Lifetime** | | | | | | | | | |
| **8th Grade** | 13.9 | 15.2 | 14.8 | 10.2 | 11.0 | 11.5 | 10.6 | -0.9 | -4.5 sss |
| **10th Grade** | 32.6 | 34.0 | 33.3 | 22.0 | 24.2 | 22.5 | 21.2 | -1.3 | -12.8 sss |
| **12th Grade** | 43.6 | 43.7 | 43.7 | 38.6 | 38.3 | 36.5 | 34.4 | -2.0 | -9.3 sss |
| **Last 12 Months** | | | | | | | | | |
| **8th Grade** | 10.5 | 11.8 | 11.4 | 7.1 | 8.3 | 8.3 | 7.2 | -1.2 | -4.6 sss |
| **10th Grade** | 27.5 | 28.8 | 28.0 | 17.3 | 19.5 | 17.8 | 15.9 | -1.9 | -13.0 sss |
| **12th Grade** | 35.9 | 35.7 | 35.2 | 30.5 | 30.7 | 29.0 | 25.8 | -3.3 s | -9.9 sss |
| **Last 30 Days** | | | | | | | | | |
| **8th Grade** | 5.6 | 6.6 | 6.5 | 4.1 | 5.0 | 4.7 | 4.3 | -0.4 | -2.3 ss |
| **10th Grade** | 16.7 | 18.4 | 16.6 | 10.1 | 12.1 | 10.3 | 9.5 | -0.8 | -8.9 sss |
| **12th Grade** | 22.2 | 22.3 | 21.1 | 19.5 | 20.2 | 18.4 | 16.2 | -2.1 | -6.1 sss |
| **Daily [d]** | | | | | | | | | |
| **8th Grade** | 0.7 | 1.3 | 1.1 | 0.6 | 0.7 | 0.9 | 0.7 | -0.2 | -0.6 |
| **10th Grade** | 3.4 | 4.8 | 4.4 | 3.2 | 2.1 | 2.7 | 2.7 | 0.0 | -2.0 ss |
| **12th Grade** | 5.8 | 6.4 | 6.9 | 5.8 | 6.3 | 6.5 | 5.1 | -1.4 | -1.3 |
| **Ever Used Daily for Month or More in Lifetime [g]** | | | | | | | | | |
| **8th Grade** | — | — | — | — | — | — | — | — | — |
| **10th Grade** | — | — | — | — | — | — | — | — | — |
| **12th Grade** | 12.3 | 14.9 | § | 12.4 | 13.6 | 11.6 | 13.4 | +1.7 | -1.5 |

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# Vulnerable Groups for Developing Problems with Cannabis

- Adolescents, Young Adults
- Disadvantaged populations
- Those with the various health/mental health conditions
  - Anxiety, Depression, PTSD, Chronic Pain, Sleep Problems, Chronic Health Conditions

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# Cannabis and Mental Illness = Negative impact

- Mental Health (MH) Disorders among cannabis consumers and CUD among those with MH Disorders
  - Are disproportionately high
  - Related to frequency and severity of use
- Users with MH Disorder are more likely to develop CUD (2x)
- Growing evidence that cannabis use may have causal impact on Psychotic Disorders; related to age of onset of cannabis use, frequency and potency.
- Cannabis use should be considered a risk factor for poor outcomes in functioning across most all mental disorders.

Borodovsky & Budney (2018); Black et al (2019)

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# Cannabis and Mental Health – positive impact?

- **Scarce / weak data** to suggest that cannabinoids improve depressive disorders, anxiety disorders, attention-deficit hyperactivity disorder, Tourette syndrome, post-traumatic stress disorder, or psychosis.
- **Very low-quality data** that pharmaceutical THC (with or without CBD) leads to a small improvement in symptoms of anxiety <u>among individuals with other medical conditions</u>
- Remains **insufficient evidence** to provide guidance on the use of any cannabinoids for treating mental disorders within a regulatory framework
- Data exist to support further research on the potential of cannabinoids on varying types of mental illness

Borodovsky & Budney (2018) Black et al (2019)

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# Caution, Skepticism, Concern?

- For-profit cannabis industry funds much of the research, and markets products well before obtaining solid clinical evidence. Not interested in gaining FDA approval? Marketing practices are questionable?

- The majority of those who enjoy cannabis for recreational (nonmedical) reasons also report using for "medical" reasons (stress, pain, sleep, mood change). Although not studied, one would expect that perceived "medical" effects might lead to gradually increased frequency of use and even increased amount used (Tolerance).

- The most vulnerable populations for cannabis-related problems are those with psychiatric or chronic health problems
  - Increased risk of cannabis misuse/overuse, cannabis use disorder, which is associated with multiple psychosocial concerns.

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# Developing Perspective and an Effective Clinical Approach – (requires much nuance)

(1) EMPATHY

(2) “Supportive” Data (analgesia, appetite, mood change)
- **Understand these data and their limitations – not an easy task**

(3) Differences Among the Cannabinoids Must Be Considered
- **Risk and Benefit Profile: No easy way to summarize this**

(4) Differences in Method of Administration (varying risk / benefit?)

(5) Alternative Medications:
- Risk/Reward, Efficacy probability, History of Success or Failure

(6) Impact on other medications (new data on CBD: inhibits liver enzyme CYP2D6; interfering with the cytochrome P450 (CYP450) enzyme system – effects metabolism of all drugs)

(7) Individual Characteristics
- psychiatric, substance use, treatment hx, family, work, other health problems)

(8) Harm Reduction

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# Public Heath Challenges IMHO

1) De-Medicalize Cannabis Use (THC) – wrong message
2) Change Positive Public Perception
3) Adopt Harm Reduction Perspective and Policies
4) Reduce Impact of Burgeoning Industry
5) Increase access to quality prevention / intervention programs
6) Develop Better Cannabis Use Guidelines
   - What level of use is low risk (safe)? High risk? Frequency and **Quantity**
   - Help everyone make informed and safe choices

# Science
# &
# Common Sense

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# Big Weed and Small Weed (Big Tobacco, Big Pharma…)

- **For-profit cannabis companies have a financial incentive to mislead the public about what they are selling.**

- Cannabis companies have made false claims that their products can treat cancer and Alzheimer's, and other mood and physical disorders.

- *FTC Announces Crackdown on Deceptively Marketed CBD Products*…companies made unsupported claims that their oils, balms, gummies, coffee, and other goods could treat serious diseases such as cancer and diabetes

- Others have sold products, in packages that mimic snacks for children.

*6 companies that make snacks with THC have been sent cease and desist letters because the packaging looks too much like foods that kids love, U.S. Federal Trade Commission (FTC)*

- Companies can increase profits by downplaying the harms of frequent use: **More than half of monthly sales come from 20 percent of customers, who tend to be heavy users who favor higher-potency products**

# WELCOME to

# Cannabis in Clinical Care ECHO: Addressing the Spectrum of Use

*Session 3, Cannabis misuse and use Disorder - Identification, referral, and treatment, March 4th, 2026*

# Cannabis Misuse and Use Disorder: Identification, Referral, Treatment

**Luke Archibald, MD**
**Abby Frutchey, LMSW, LADC, CCS**

**March 4th, 2026**

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# Screening

- Complete annually (US Preventive Services Task Force recommendation)
- Various options for screening available
- Specifically ask about “cannabis” or “marijuana” rather than “illicit” or “street” drugs
- Two-question instrument
  - How many days in the past 12 months have you used cannabis/marijuana? (2+ days positive)
  - How many days in the past 12 months have you had a strong desire or urge to use cannabis/marijuana? (5+ days positive)
- Cannabis self-report is fairly accurate if no adverse consequences

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# Common Problems Associated with Cannabis Use

- Poor work or school performance that is otherwise unexplained
- Depression and anxiety
- Recurrent respiratory tract infections
- Chronic cough
- Sleep disturbances
- Psychosis
- Nausea and vomiting
- Relationship difficulties

Turner 2014

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# DSM-5-TR Cannabis Use Disorder (CUD)

- Impaired control
- Social impairment
- Risky use
- Pharmacologic indicators

1. Taken in **larger amounts or longer period of time** than intended
2. Persistent desire or **unsuccessful efforts to cut down or control**
3. **Great deal of time spent** to obtain, use, or recover from effects
4. **Craving**, or a strong desire to use
5. **Failure to fulfill major role obligations** at work, school or home
6. Persistent or recurrent **social or interpersonal problems**
7. Important social, work or recreational **activities given up** or reduced
8. Recurrent use in **physically hazardous situations**
9. Persistent or recurrent **physical or psychological problems** due to use
10. **Tolerance**
11. **Withdrawal** (or use to avoid)

*Over 12 month period; Mild 2-3, Moderate 4-5, Severe 6+*

DSM-5-TR; Gorelick 2023

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# Other Clinical Indicators of Problematic Cannabis Use

- Daily or almost daily use
- Reports relief of anxiety as primary reason for using cannabis
- Expression of concern from family or friends

Turner 2014

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# Brief Intervention

- Appropriate for people who use cannabis identified by screening
- 1-2 short (5-20 minute) sessions of patient-centered, non-jugmental counseling
- Develop therapeutic relationship, demonstrate empathy, encourage self-efficacy
- Motivational enhancement techniques
  - Exploring pros/cons of use
  - Feedback (with permission) to link use with harmful effects
  - Those ready to make a change: set goals
  - Those not ready to make a change: acknowledge the decision, express concern, remain supportive
- Evidence for efficacy mixed

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# Treatment Goals

- Abstinence: encouraged for those with cardiovascular disease, personal history of substance use disorder, personal or family history of psychosis, pregnancy, youth
- Reduction in use. Example specific goals:
  - No more than 1 (0.5g) joint per day on weekends and up to 1 additional joint at a party
  - Next month: only 1 (0.5g) joint per weekend and up to 1 additional joint in social situations

Turner 2014

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# Referral

- Establish relationship with local addiction treatment clinic or provider
- Indicated for those unable to stop or reduce use (especially those already experiencing harms)
- Other indications of need for more intensive treatment
  - Heavy daily use
  - Problematic use of other substances
  - Co-occurring mood, anxiety, or psychotic disorders

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# Psychosocial Interventions

- Cognitive Behavioral Therapy
- Motivational Enhancement therapy
- Contingency Management
- Other
  - Digital interventions
  - Mutual help (Marijuana Anonymous or other 12-step)

Gorelick 2023

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# Motivational Interviewing

## Key Principles:

- Expressing empathy
- Developing discrepancies
- Rolling with resistance
- Supporting self-efficacy

## Core Skills (OARS):

- Open-ended questions
- Affirmations
- Reflections
- Summarize

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# Contingency Management

- Use of tangible, immediate rewards to reinforcement behaviors (monetary, vouchers, prizes)
  - Negative urine screens
  - Attendance
  - Consumption goals
- Define target behaviors and reward earned
  - Ex. twice weekly negative cannabis screen = $20
- Use of escalating schedule
  - Rewards grow with consecutive successes

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# Sample Strategies to Reduce Cannabis Use

- Record consumption on a calendar
- Purchase smaller amounts
- Prepare smaller amounts (e.g., smaller joints)*
- Wait 10 minutes between inhalations
- Use a 20-minute timeout between joints
- Set a certain number of days per week without any cannabis use
- Only use cannabis on weekends
- Avoid deep inhalations

*Reducing frequency is associated with greater improvement than reducing quantity

Turner 2014

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# Treatment - Medication

- There are no FDA-approved medications for cannabis use disorder
- No medication has shown consistent efficacy in reducing cannabis use
- Symptomatic treatment of withdrawal symptoms

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# Medications with Potential Benefit (Some Positive Trials)

- N-acetylcysteine (adolescents/young adults)
- Gabapentin
- Nabiximols
- Cannabidiol
- Varenicline
- Semaglutide/GLP-1s (?)

# N-acetylcysteine (NAC)

- Positive RCT
  - 116 adolescents/young adults
  - All received brief supportive counseling + contingency management
  - Dose: 1200mg bid
  - NAC group more likely to have a negative urine test and higher proportion of THC-negative urine specimens
- Negative RCTs
  - 302 adults (treatment-seeking with moderate-severe)
  - Adolescent/young adults without enhanced psychosocial treatment

Gray 2012; 2017

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# Nabiximols

- Cannabis whole-plant extract with 1:1 THC:CBD ratio
- Approved in Canada and Europe for spasticity associated with M.S.
- Not approved in U.S.
- Positive RCT:
  - 128 treatment-resistant participants
  - 8 SL sprays 4x daily vs placebo x 12 weeks
  - All received weekly CBT x6 weeks
  - Medication associated with lower mean number of days of cannabis use and higher proportion who reduced cannabis use by at least 50%

Lintzeris 2019

# Gabapentin

- Pilot (Phase IIa) controlled trial of 50 adults
- Dose: 1200mg daily (divided) vs placebo
- All received psychosocial support (weekly “abstinence-oriented” counseling)
- Medication group: reduced use (verified by urine tests), decreased withdrawal symptoms, greater improvement on cognitive tests
- Gabapentin has risks for misuse, associated with increased overdose risk in combination with other CNS depressants (increased risk in Opioid Use Disorder)
- This did not translate to improved abstinence outcomes in a subsequent larger study (Mason et al., results posted to clinicaltrials.gov)

Mason 2012

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# Cannabidiol (CBD)

- Pilot (Phase IIa) controlled trial: 82 adults with moderate to severe CUD
- Randomized to 200mg, 400mg, 800mg CBD vs placebo for 4 weeks
- Six 30 minute MI sessions
- 400mg and 800mg CBD reduced urine THC:creatinine ratio, increased abstinence days compared to placebo

Freeman 2020

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# Varenicline

- Nicotinic acetylcholine receptor partial agonist for nicotine cessation
- Pilot study
  - 72 adults with CUD using at least 3 days per week
  - Randomized to 6 weeks of varenicline vs placebo
  - All received 3 individual sessions of brief MET
  - Med group with higher rate of weekly reported abstinence vs placebo (17% vs 5%, relative risk 3.2, 95% CI 0.7-14.7)
  - Greater decrease in percentage of days with cannabis use (42% [CI 26.3-57.0]) vs placebo (27% [95% 13-42])
- Later phase 2 trial (174 participants) negative but significant treatment by sex interaction found (positive effect in men)

McRae-Clark 2021; 2025

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# Semaglutide

- GLP-1 receptor agonist
- Retrospective analysis of electronic health records
  - Associated with lower adjusted rates of developing CUD (vs non-GLP-1 meds) for obesity (hazard ratio 0.56 [95% CI 0.42-0.75] and diabetes (hazard ratio 0.40 [95% CI 0.29-0.56])
  - No RCTs yet

Wang 2024

# Cannabis Withdrawal

- Irritability
- Decreased appetite
- ↑ Anxiety
- Insomnia
- Restlessness
- Low mood

Connor 2022

# Dronabinol

- Synthetic form of THC
- Dosing 20mg bid x 8 weeks, followed by taper
- Improvement in withdrawal symptoms
- No difference in increasing abstinence or reducing use

Budney 2007; Levin 2011

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# Summary

- Screen for cannabis use annually
- Specific inquiry for common presenting symptoms (such as unexplained poor functioning)
- Brief intervention reasonable though evidence is not robust
- Best evidence for CBT and Motivational Enhancement
- Currently, minimal role for pharmacotherapy other than targeting withdrawal symptoms

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# WELCOME to

# Cannabis in Clinical Care ECHO: Addressing the Spectrum of Use

*Session 4: Therapeutic Cannabis Part 1- Potential Benefits*
*March 18th, 2026*

# Therapeutic Cannabis Part 1: Potential Benefits

**Charles Brackett, MD, MPH**

**March 18th, 2026**

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## Therapeutic Use of Cannabis is Common

- Cannabis has been used therapeutically for centuries and there are plausible physiologic reasons for potential benefits
- 27% of adults in US report having ever used cannabis for medical purposes:
  - 53% for pain
  - 52% for anxiety
  - 46% for insomnia
- 11% use CBD for therapeutic purposes
- 75% of primary care patients who use cannabis say they do it to manage symptoms
- 39 states allow legal use of therapeutic cannabis
- 29% of people using therapeutic cannabis meet criteria for CUD
  - Half moderate-severe, with negative social, occupational or other consequences

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## There is inadequate evidence about whether or not cannabis may be therapeutic

- State laws that allow legal access to cannabis for therapeutic use and determine which conditions qualify for certification are based on a legislative process and not scientific evidence
- Most health claims are anecdotal or based on low quality evidence
- High quality evidence is very limited due to cannabis being illegal at the federal level
- High quality evidence is mostly limited to pharmaceutical cannabinoids
- Cannabis has hundreds of biologically active constituents
- High quality research is needed!

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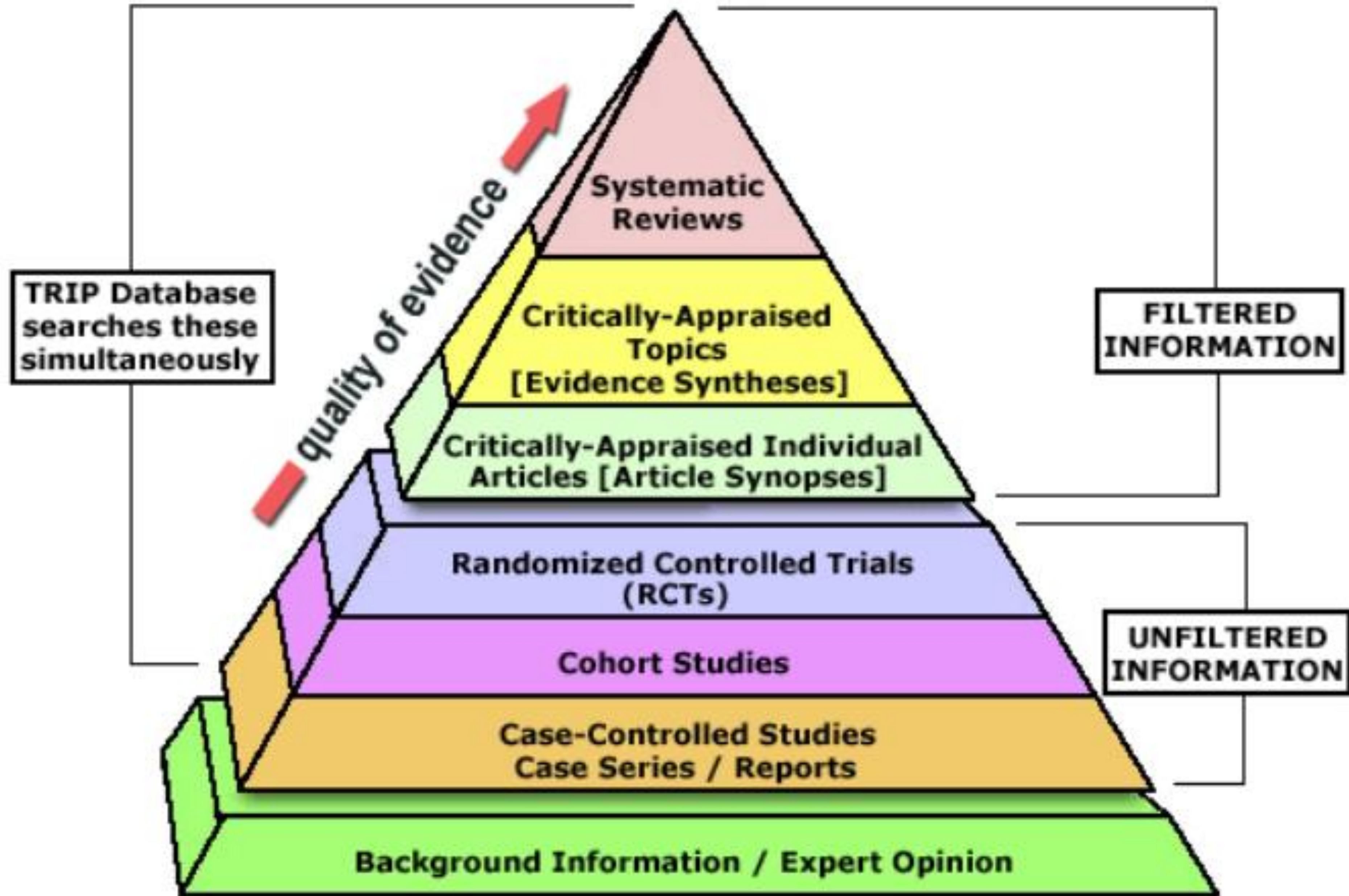


1

2

3,4

5

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# New Hampshire Qualifying Conditions

- Conditions determined by a political process, driven by patient and cannabis advocates
- Unlike FDA approval of medications, scientific proof of efficacy is not required
- Legislators vote on bills to add
- Medical oversight board advises

**A. Qualifying Diagnosis & Qualifying Symptom** *(Check all that apply)*

**I certify that I am treating the patient named above, who has the following condition(s):**

- ☐ Acquired immune deficiency syndrome
- ☐ Alzheimer's disease
- ☐ Amyotrophic lateral sclerosis
- ☐ Cancer
- ☐ Chronic pancreatitis
- ☐ Crohn's disease
- ☐ Ehlers-Danlos syndrome
- ☐ Epilepsy
- ☐ Glaucoma
- ☐ Hepatitis C
- ☐ Lupus
- ☐ Multiple sclerosis
- ☐ Muscular dystrophy
- ☐ One or more injuries or conditions that has resulted in one or more qualifying symptoms listed below
- ☐ Parkinson's disease
- ☐ Positive status for human immunodeficiency virus
- ☐ Spinal cord injury or disease
- ☐ Traumatic brain injury
- ☐ Ulcerative colitis

**AND who has a severely debilitating or terminal medical condition, or its treatment, that has produced at least one of the following qualifying symptoms or side effects:**

- ☐ Agitation of Alzheimer's disease
- ☐ Cachexia
- ☐ Chemotherapy-induced anorexia
- ☐ Constant or severe nausea
- ☐ Elevated intraocular pressure
- ☐ Moderate to severe insomnia
- ☐ Moderate to severe vomiting
- ☐ Seizures
- ☐ Severe pain
- ☐ Severe, persistent muscle spasms
- ☐ Wasting syndrome

**OR**

**B. Stand-Alone Medical Condition** *(Check all that apply)*

**I certify that I am treating the patient named above, who has the following condition(s):**

- ☐ Autism spectrum disorder (age 21 and older)
- ☐ Autism spectrum disorder (under age 21)
  *(See additional certification requirement on page 3)*
- ☐ Generalized anxiety disorder
- ☐ Moderate or severe post-traumatic stress disorder
- ☐ Moderate to severe chronic pain
- ☐ Severe pain

**I certify that I am treating the patient named above for the following condition:**

- ☐ Opioid use disorder with associated symptoms of cravings and/or withdrawal *(Requires a provider who is board-certified in Addiction Medicine or Addiction Psychiatry)*

  Certification Board Name: ____ Certification Number: ____

- ☐ Any debilitating or terminal medical condition or symptom *(not listed above)*, for which, in my clinical opinion, the potential benefits of using therapeutic cannabis would likely outweigh the potential health risks (age 21 and older)

  Condition/Symptom: ____ *(must be legible)* OR ICD-10: ____

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# Qualifying Medical Conditions

## Stand-Alone Condition

| Qualifying Medical Condition | Number of Patients |
|---|---|
| Moderate to severe chronic pain | 8,238 |
| Moderate or severe PTSD | 3,191 |
| Severe pain | 1,983 |
| Autism spectrum disorder (age 21 and older) | 85 |
| Autism spectrum disorder (under age 21) | 8 |
| Opioid Use Disorder, with associated symptoms of cravings and/or withdrawal | 9 |

| Qualifying Symptoms / Side Effects | Number of Patients |
|---|---|
| Severe pain | 1,980 |
| Severe, persistent muscle spasms | 1,137 |
| Moderate to severe insomnia | 1,045 |
| Constant or severe nausea | 667 |
| Seizures | 235 |
| Chemotherapy-induced anorexia | 187 |
| Cachexia | 183 |
| Moderate to severe vomiting | 158 |
| Elevated intraocular pressure | 85 |
| Wasting syndrome | 48 |
| Agitation of Alzheimer's disease | 19 |

JAMA | Review

# Therapeutic Use of Cannabis and Cannabinoids
## A Review

*JAMA*. 2026;335(4):345-359.

Michael Hsu, MD; Arya Shah, MD; Ayana Jordan, MD, PhD; Mark S. Gold, MD; Kevin P. Hill, MD, MHS

REVIEW

Annals of Internal Medicine

# Cannabis-Based Products for Chronic Pain
## An Updated Systematic Review

*Ann Intern Med.* 2026;179:230-241

**Roger Chou, MD; Rongwei Fu, PhD; Azrah Y. Ahmed, BA; and Benjamin J. Morasco, PhD**

JAMA Internal Medicine | Review

# Cannabis and Mental Health
## A Review

*JAMA Intern Med*. doi:10.1001/jamainternmed.2025.8215
Published online March 9, 2026.

Devan Kansagara, MD, MCR; Garth E. Terry, MD, PhD; Chelsea K. Ayers, MPH; Deepak C. D'Souza, MBBS, MD

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# Pain

- Chronic non-cancer pain
  - 7 RCTs of nabiximols (6 for neuropathic pain) show slightly reduced short term pain severity c/w placebo (half point on 10 point scale)- no improvement in function
  - Summary of evidence (from ACP) of synthetic Rx THC- nabilone may slightly reduce severity, but no improvement in function or disability. Dronabinol – no effect
  - 2 RCTs of high THC:CBD ratio-no evidence of improved pain
  - Guidelines recommend against first line use and use of inhaled cannabis; consider in neuropathic pain not responding to first line options
- Cancer pain
  - Meta-analysis of opioid-refractory pain (4/1333)- moderate certainty of no benefit
  - ASCO guideline (2024): insufficient evidence to recommend

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# Psychiatric Use- General Comments

- APA and ASAM recommend against use to treat any psychiatric disorder, and emphasize that use can exacerbate or precipitate mental illness
- Many people who use cannabis use it to self-medicate mental health symptoms
- No clear benefits
- Increased risk of psychosis, anxiety, suicide, depression, CUD
- Worsens bipolar, schizophrenia, major depressive disorder
- High potency THC products are especially dangerous
- Cannabis withdrawal causes anxiety, insomnia, restlessness and agitation- some may think these are primary mental health issues that respond to cannabis

# Psychiatric Conditions

- PTSD
  - Low certainty evidence that cannabis does not reduce PTSD symptoms (systematic review)
  - VA guideline strongly recommends against use
- Anxiety (most common self-reported reason for use)
  - Cannabis use is associated with anxiety disorders
  - Acute use of THC: low dose may help, high dose can cause anxiety
  - Meta-analysis of CBD (8/316, some not randomized-low quality) showed oral CBD had a large effect on reducing anxiety
- Depression
  - Not much data; data that exist show no benefit
  - Heavy cannabis use is associated with higher risks of self-harm
- Insomnia
  - Meta-analysis of use in chronic pain (39/5100) showed small improvements in sleep quality
  - Guidelines recommend against use

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# Psychiatric Conditions- Continued

- Bipolar
  - Observational trials (7) consistently show increased mania and psychosis, lower rates of recovery, and more frequent adverse social and occupational events
- Psychosis
  - THC can cause acute psychosis, CBD does not
  - Half of those with CIP go on to develop chronic psychotic disorders
  - Cohort study: 11x increase in psychotic disorders associated with use during adolescence
  - In those with established psychotic disorders, use increases relapses, positive symptoms and hospitalizations
  - Dose response relationship: daily use→1.76x increase in psychosis
  - CBD may have anti-psychotic properties
- ADHD
  - Commonly used to self-medicate symptoms, but known to cause inattention, poor focus
  - One small RCT of nabiximols showed no benefit
- OUD- patient reports and observational studies suggest may help with withdrawal, but clinical trials have not shown benefits, and there are significant safety concerns

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# Other Conditions

- Evidence of benefit (FDA approved indications)
  - Chemotherapy associated nausea and vomiting (dronabinol, nabilone)
  - AIDS associated anorexia: moderate effect on weight gain (dronabinol)
  - Spasticity from MS (nabiximols)
  - CBD for seizures from Tuberous Sclerosis, Lenox-Gastaut and Dravet syndromes (Epidiolex)
- Evidence of lack of benefit
  - Glaucoma/elevated intraocular pressure
  - Alzheimer's
- Insufficient or conflicting evidence
  - N/V not due to chemo
  - Crohn's/UC
  - Hepatitis C, HIV
  - Ehler's-Danlos
  - Cachexia or wasting from cancer
  - Epilepsy (other than above
  - ALS, muscular dystrophy
  - spasticity from spinal cord or TBI
  - Cancer
  - Lupus
  - Chronic pancreatitis
  - OUD
  - Parkinson's (no motor benefit, CBD may help agitation, REM sleep behavior disorder)

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## Contraindications (Conditions associated with increased risk of harms)

- SUD (ASAM states risks>benefits)
- Mental illness (APA: risks>benefits for THC containing products)
- Pulmonary disease (inhaled)
- Cardiac disease (inhaled, but also THC can cause tachycardia, orthostatic hypotension, incr risk of stroke and MI)
- Fall risk or frailty
- Severe liver disease
- Pregnancy (or planning), breast feeding
- Anyone <25 or >65 years of age

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# Potential Harms

## ***THC***

- ***Neurocognitive***: drowsiness, sedation, impaired reaction time/attention/cognition/judgement-increasing risk for accidents, increased impulsivity, decreased learning, motivation and executive function
- ***Psychiatric***: increased anxiety, panic, depression, bipolar and PTSD symptoms (in patients seeking relief of these symptoms); acute psychosis and increased risk of schizophrenia and bipolar disorder; cannabis use disorder (continued use despite harmful consequences, ~10% of recreational users) and physiological dependence (withdrawal symptoms include irritability, insomnia, anxiety and decreased appetite)
- ***Medical***: increased appetite, cannabis hyperemesis syndrome, liver injury, respiratory symptoms, cardiovascular effects: increased heart rate and orthostatic hypotension, increased risk of stroke and MI; medication interactions
- ***Pregnancy and breast-feeding***: use should be avoided due to risk of preterm birth, low birthweight, pregnancy loss, neurodevelopmental effects, and possible chromosomal and congenital defects
- ***Social***: cannabis remains illegal at the federal level, and certification does not exempt a person from an employer's rules against drugs in the workplace, charges of driving while under the influence of drugs, etc.

## CBD

- diarrhea, nausea, anorexia, sedation, hepatotoxicity (from high doses) and medication interactions

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## Cannabis-Drug Interactions

- Cytochrome P450 (CYP) Enzyme System
  - THC: inhibits1A2, 2B6, 2C9, 2D6
  - CBD: inhibits 3A4, 2B6, 2C9, 2D6, C19, 2E1
- UDP-Glucuronosyltransferases
- Drug Transporters
- Pharmacodynamic interactions: additive, synergistic and antagonistic effects
- High Risk: Sz meds, warfarin, immunosuppressants (incr –limus),
- Moderate risk- opioids- incr bup levels, barbiturates, Haldol, tamoxifen
- SSRIs- esp fluoxetine can incr levels of THC and CBD

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## Summary

- High quality evidence does not support the use of cannabis or cannabinoids for most conditions for which it is promoted.
- Therapeutic cannabis containing THC should never be a first line treatment, but reserved for patients not responding to or tolerating approved therapies
- CBD is associated with less harm, and may be useful for anxiety
- Reasonable to consider for neuropathic pain not responding to approved meds
- No clear benefit and substantial risk for use to treat psychiatric conditions/symptoms

# WELCOME to

# Cannabis in Clinical Care ECHO: Addressing the Spectrum of Use

*Session 5: Therapeutic Cannabis Part 2- Certification and Management*
*April 1st, 2026*

# THERAPEUTIC CANNABIS

# CERTIFICATION AND MANAGEMENT

JERRY KNIRK, MD

RETIRED SPINE SURGEON

FORMER NH STATE REPRESENTATIVE

CHAIR, NH THERAPEUTIC CANNABIS MEDICAL OVERSIGHT BOARD

NO CONFLICTS OF INTEREST

PREPARED IN CONJUNCTION WITH THE THERAPEUTIC CANNABIS MEDICAL OVERSIGHT BOARD

# MANAGEMENT PRINCIPLES CANNABIS IN CLINICAL PRACTICE

- Briefly discuss the certification process in New Hampshire
  - Your state certification process may be different

- Management principles are universally applicable
  - To all states
  - To therapeutic or recreational use

# WHY HAVE A THERAPEUTIC CANNABIS PROGRAM?

- Cannabis is readily available
  - Black market products
    - May not be safe
    - Not tested or labelled
    - No education of risks

- NH Therapeutic Cannabis Program adds safety
  - All products must be tested (using an independent lab) for pesticides, contaminants and cannabinoid content
  - All products must be labelled with cannabinoid concentration
  - Patients can be educated

# NEW HAMPSHIRE THERAPEUTIC CANNABIS PROGRAM (TCP)

- Signed into law 2013
    - Operational 2016

- Creates an exemption in state law from criminal penalties for qualifying patients and their designated caregivers—will not be charged with possession
    - Designated caregiver purchases and handles cannabis for the patient
        - Non-driving elderly patient
        - Not competent to handle cannabis or medications
        - Minor

- Provider certifies patient to use therapeutic cannabis.
- Cannabis is obtained from dispensaries called Alternative Treatment Centers (ATCs)

# CANNABIS LEGAL ISSUES

- Not legal under Federal Law
- Cannabis is a Schedule I controlled substance
  - Provider can not prescribe cannabis
  - Provider certifies the patient has a qualifying condition <u>and</u> qualifying symptom set in statute
    - Political process of approval of qualifying conditions and symptoms

# THERAPEUTIC CANNABIS MEDICAL OVERSIGHT BOARD (TCMOB)

- Constituted in statute in 2019
  - Response to lack of medical input in political process of deciding qualifying conditions
- Advises the legislature and DHHS
- Charged with oversight of clinical, quality, and public health related matters of therapeutic cannabis in NH:
  - Develops provider and patient education materials
  - Reviews and advises on
    - Qualifying conditions—existing and proposed
    - Program practices and rules
      - Packaging, labelling, testing

# TCMOB MEMBERS

- Members:
  - Medical Director DHHS
  - Qualifying patient
  - A representative of an Alternative Treatment Center (ATC) (dispensary)
  - 10 medical providers representing different fields:

| | |
|---|---|
| Neurology | Family or Internal Medicine |
| Pain Management | OB/GYN |
| Oncology | Addiction |
| Psychiatry | Palliative Care |
| Pediatrics | Physiatry/orthopedics |

# TCMOB DECISION-MAKING IS DIFFICULT

- Anecdotal experience is abundant
- Scientific evidence is limited
- TCMOB seeks to balance the potential for therapeutic benefits of cannabis with the potential risks for harm
- TCMOB members are very diverse in approach to cannabis
- Often added guardrails to new qualifying conditions to reach consensus
- Reviewing existing conditions
  - Hearing in May (May 20?) regarding removal of glaucoma and Hep-C as qualifying conditions
    - Will be posted on Therapeutic Cannabis Program or TCMOB webpage (DHHS site)

# TCMOB HAS SOME VACANCIES

- Contact me jerryknirk@gmail.com if interested
- Want providers who:
  - Respect science and can evaluate the literature
  - Have clinical experience and understand individual variability

# NEW HAMPSHIRE THERAPEUTIC CANNABIS PROGRAM

## Certification of a Patient to Use Therapeutic Cannabis

# WHO CAN PROVIDE CERTIFICATION?

- ANY physician, APRN or PA who is
  - Licensed in NH and by DEA
- Any other NH provider (naturopath, dentist, podiatrist, etc.) who is
  - Licensed in NH and by DEA
  - Who is primarily responsible for the care of the specific qualifying medical condition

# REQUIREMENTS FOR CERTIFYING A PATIENT

- Must have provider-patient relationship

- In-person full medical assessment
  - History
  - Review of labs, imaging, other relevant tests
  - Diagnosis of condition
  - Treatment plan

- Informed consent: Explain potential heath effects of therapeutic use of cannabis
  - Certifying provider is required to provide counseling regarding risks of cannabis use:
    - During pregnancy and while breastfeeding to women of childbearing age
    - During adolescence to patients <25 yo and their caregiver

- Complete Written Certification

- Follow-up with patient for monitoring of effects

- There are no registration nor educational requirements for providers to certify

# CERTIFICATION: ADDITIONAL INFORMATION

- Therapeutic cannabis certification valid for up to 3 years
- Can do short-duration card for less than one year
- Certification can be withdrawn by provider for cause
- If desired, the certifying provider can direct the ATC as to the strain of cannabis, THC/CBD ratio, and method of administration and the ATC must follow that guidance

# PEDIATRIC CERTIFICATION

- Any patient under the age of 18
- Parent or legal guardian must be designated caregiver
- Written certifications from 2 providers – one must be a pediatric care provider (pediatrician or FP)

# REFERRAL TO OTHER PROVIDERS FOR CERTIFICATION

- May be appropriate if:
  - Provider does not feel comfortable or competent to certify
  - Provider practices in a setting which prohibits certification
- Therapeutic Cannabis program does not refer

# CERTIFYING A PATIENT

## Has evolved over the years
## Two-Tiered Approach

- 1. **Using a list of qualifying conditions/symptoms set in statute**
  - Good for provider with limited knowledge of TC
    - 1. Certify that the patient has <u>both</u> a qualifying condition <u>and</u> qualifying symptom

      OR
    - 2. Stand-alone condition (no separate associated qualifying symptom needed)

- 2. **Provider discretion**
  - For adults 21 years of age or older, provider may certify for any debilitating or terminal medical condition or symptom for which the potential benefits of using therapeutic cannabis would, in the provider's clinical opinion, likely outweigh the potential health risks for the patient. The certifying provider must indicate on the written certification the patient's specific condition or symptom.
  - Option is listed in stand-alone condition section of form

# PROVIDER CERTIFICATION FORM—CONDITIONS AND SYMPTOMS

**A. Condition / Symptom** ***(Check all that apply)***

**I certify that I am treating the patient named above, who has the following condition(s):**

- ☐ Acquired immune deficiency syndrome
- ☐ Alzheimer's disease
- ☐ Amyotrophic lateral sclerosis
- ☐ Cancer
- ☐ Chronic pancreatitis
- ☐ Crohn’s disease
- ☐ Ehlers-Danlos syndrome
- ☐ Epilepsy
- ☐ Glaucoma
- ☐ Hepatitis C
- ☐ Lupus
- ☐ Multiple sclerosis
- ☐ Muscular dystrophy
- ☐ One or more injuries or conditions that has resulted in one or more qualifying symptoms listed below
- ☐ Parkinson’s disease
- ☐ Positive status for human immunodeficiency virus
- ☐ Spinal cord injury or disease
- ☐ Traumatic brain injury
- ☐ Ulcerative colitis

**AND who has a severely debilitating or terminal medical condition, or its treatment, that has produced at least one of the following qualifying symptoms or side effects:**

- ☐ Agitation of Alzheimer’s disease
- ☐ Cachexia
- ☐ Chemotherapy-induced anorexia
- ☐ Constant or severe nausea
- ☐ Elevated intraocular pressure
- ☐ Moderate to severe insomnia
- ☐ Moderate to severe vomiting
- ☐ Seizures
- ☐ Severe pain
- ☐ Severe, persistent muscle spasms
- ☐ Wasting syndrome

**OR**

**B. Condition Only** ***(Check all that apply)***

**I certify that I am treating the patient named above, who has the following condition(s):**

- ☐ Autism spectrum disorder (age 21 and older)
- ☐ Autism spectrum disorder (under age 21)
  *(See additional certification requirement on page 3)*
- ☐ Generalized anxiety disorder
- ☐ Moderate to severe post-traumatic stress disorder
- ☐ Moderate to severe chronic pain
- ☐ Severe pain

**I certify that I am treating the patient named above for the following condition:**

- ☐ Opioid use disorder with associated symptoms of cravings and/or withdrawal *(Requires a provider who is board-certified in Addiction Medicine or Addiction Psychiatry)*

Certification Board Name: ____________________ Certification Number: ____________

- ☐ Any debilitating or terminal medical condition or symptom, for which, in my clinical opinion, the potential benefits of using therapeutic cannabis would likely outweigh the potential health risks (age 21 and older only)

Condition/Symptom: ____________________ *OR* ICD-10: ____________
*(must be legible)*

**CONDITION AND SYMPTOM**

<—Chose at least one condition

**AND**

<—Chose at least one associated symptom

OR

**STAND-ALONE CONDITION**

<—Chose one condition

# CONFUSION ABOUT WHY SOME CONDITIONS ARE ON LIST

## THAT IS DUE TO HOW THE LAW IS WRITTEN

- Statutory structure requires both a condition and a symptom—provider must state the condition leading to the symptom in order to treat the symptom
- Presence of a condition on the list does not imply that cannabis treats or cures the condition

- Cannabis is FDA approved for chemotherapy associated nausea
- To certify in the program must list
  - Condition-cancer
  - Symptom-nausea
- No implication that cannabis cures cancer

- To treat agitation of Alzheimers, must list
  - Condition-Alzheimers
  - Symptom-agitation of Alzheimers
- No implication that cannabis cures or prevents Alzheimers

# CHRONIC PAIN CLARIFICATION

- Chronic pain does not need to be constant, just chronic

- Chronic pain may be intermittent, for example
    - Recurring, intermittent low back pain
    - Episodic migraine headaches

# CAN DO SYMPTOM-BASED CERTIFICATION

- Therapeutic cannabis may be used to address a prominent symptom for which the underlying condition is unclear
  - In the diagnosis section there is a “catch-all” condition

# PROVIDER CERTIFICATION FORM—CONDITIONS AND SYMPTOMS

**A. Condition / Symptom** ***(Check all that apply)***

**I certify that I am treating the patient named above, who has the following condition(s):**

- ☐ Acquired immune deficiency syndrome
- ☐ Alzheimer's disease
- ☐ Amyotrophic lateral sclerosis
- ☐ Cancer
- ☐ Chronic pancreatitis
- ☐ Crohn's disease
- ☐ Ehlers-Danlos syndrome
- ☐ Epilepsy
- ☐ Glaucoma
- ☐ Hepatitis C
- ☐ Lupus
- ☐ Multiple sclerosis
- ☐ Muscular dystrophy
- ☒ One or more injuries or conditions that has resulted in one or more qualifying symptoms listed below
- ☐ Parkinson's disease
- ☐ Positive status for human immunodeficiency virus
- ☐ Spinal cord injury or disease
- ☐ Traumatic brain injury
- ☐ Ulcerative colitis

**AND who has a severely debilitating or terminal medical condition, or its treatment, that has produced at least one of the following qualifying symptoms or side effects:**

- ☐ Agitation of Alzheimer's disease
- ☐ Cachexia
- ☐ Chemotherapy-induced anorexia
- ☐ Constant or severe nausea
- ☐ Elevated intraocular pressure
- ☐ Moderate to severe insomnia
- ☐ Moderate to severe vomiting
- ☐ Seizures
- ☐ Severe pain
- ☐ Severe, persistent muscle spasms
- ☐ Wasting syndrome

**OR**

**B. Condition Only** ***(Check all that apply)***

**I certify that I am treating the patient named above, who has the following condition(s):**

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Certification Board Name: ______________________ Certification Number: ______________

☐ Any debilitating or terminal medical condition or symptom, for which, in my clinical opinion, the potential benefits of using therapeutic cannabis would likely outweigh the potential health risks (age 21 and older only)

Condition/Symptom: ______________________ *OR* ICD-10: ______________
*(must be legible)*

## CONDITION AND SYMPTOM

<—Chose at least one condition

## AND

<—Chose at least one associated symptom

# CERTIFICATION FORMS/RESOURCES WHERE TO FIND

- Department of Health and Human Services, Division of Public Health Services, Therapeutic Cannabis Program
  - Therapeutic Cannabis Program website https://www.dhhs.nh.gov/programs-services/population-health/therapeutic-cannabis
  - Written Certification https://www.dhhs.nh.gov/sites/g/files/ehbemt476/files/documents/2021-11/tcp-writtencertification.pdf
  - Patient Application (patient's responsibility): https://www.dhhs.nh.gov/sites/g/files/ehbemt476/files/documents/2021-11/tcp-applicationpatient.pdf

# THERAPEUTIC CANNABIS PROGRAM ADMINISTRATOR

- Michael Holt—since program inception—can call for help
  - Will answer questions about program
  - Will walk you through certification process


- michael.Holt@dhhs.nh.gov

- 603-271-9234

# NEW HAMPSHIRE THERAPEUTIC CANNABIS PROGRAM

## PROGRAM DATA

# THERAPEUTIC CANNABIS REGISTRY DATA (2024)

- 14,075 Qualifying patients
- 1,163 Designated caregivers
- 1,433 Providers have certified at least one patient

## Qualifying Patients by Age Group

| | 17 and under | 18 thru 25 | 26 thru 35 | 36 thru 45 | 46 thru 55 | 56 thru 65 | 66 thru 75 | 76 thru 85 | 86 and above |
|---|---|---|---|---|---|---|---|---|---|
| # Patients | 7 | 463 | 1463 | 2525 | 2677 | 3574 | 3132 | 764 | 100 |

- Only 7 minors
- Largest age groups are 56 to 75 years

# MOST COMMON QUALIFYING CONDITIONS (2024)

- Chronic pain (56%)
- Severe pain (14%)

→ 70% of patients

- PTSD (23%)
- One or more injuries/conditions (catch-all; an unnamed diagnosis with a qualifying symptom) (19%)
- Cancer (6%)
- Spinal cord injury or disease (5%)

# NEW HAMPSHIRE THERAPEUTIC CANNABIS PROGRAM

## Alternative Treatment Centers (ATCs-Dispensaries)

# ALTERNATIVE TREATMENT CENTER (ATC) ROLE

- ATC grows cannabis and processes it into products
  - Independent testing by outside labs for contaminants, pesticides, cannabinoid concentration
- ATC dispenses cannabis
  - In child-proof packaging
  - Labelled as to cannabinoid concentration

# ATC STAFF

- Training
  - Are trained by the ATC to be knowledgeable about products, formulations and routes of administration
  - Are not required in NH to have other formal training or certification

- Role
  - Confirm patient history
  - Counsel patient re: optimal formulation, titration and dosing
  - Implement provider input as directed

# ATC PRODUCTS

- ATCs offer numerous strains and methods of administration.
  - Not every dispensary will offer the same inventory
  - Strain information available on ATC websites

- Products include
  - Whole flower for smoking—rapid onset, short duration
  - Products for vaporization—rapid onset, short duration
  - Edibles—gummies, brownies, beverages—delayed onset, long duration
  - Tinctures—oral, rectal suppositories
  - Topicals—creams and salves
  - Oils—for patient to make own edibles

# CANNABIS IN CLINICAL PRACTICE

# MANAGEMENT PRINCIPLES

# THERAPEUTIC CANNABIS: RECOMMENDED CLINICAL PRACTICES

Basic Approach

- Cannabis has risk of misuse, addiction and diversion—can be associated with serious harm
- Manage similarly to opioids and other medications prone to misuse
- Special care in consideration of use in patients with identified medical, mental health, substance, social, or other issues that can be negatively impacted by cannabis use

# MANAGEMENT PRINCIPLES APPLY TO ALL PATIENTS

# NOT JUST THERAPEUTIC CANNABIS PATIENTS

- Cannabis use is common
- Majority of those using cannabis recreationally report they use it for “therapeutic” reasons
- No matter why it is used, cannabis has risks
  - Risk exposure may be greater in recreational users (no education)
- Ask every patient about cannabis use in a non-judgmental way to guide medical management—especially high-risk groups
  - Age<25
  - Women of childbearing age
  - H/O Substance use disorder
  - Mental health disorders
  - On medications (drug-drug interactions)

# VAST ROOM FOR IMPROVEMENT REGARDING CANNABIS IN CLINICAL PRACTICE

- Study of provider behavior based on survey of adult cannabis users who discussed therapeutic cannabis with a healthcare provider
  - Only 44% discussed cannabis risks
  - Only 47% discussed cannabis use at subsequent visits
  - Discussion of safe use practices ranged from 10-20%
- Limited training and knowledge of providers
- In absence of guidance from provider, patient may turn to less reliable sources of information

*Achar, Budney, Struble, Am J Addict, 2025;34:277-288*

# RISK CONSIDERATIONS THERAPEUTIC VS. RECREATIONAL USE

- Evidence mostly from studies of recreational use
- Risks of well-managed therapeutic use may differ from recreational use
  - *Could be lower be due to*
    - Pattern of use and dose used
    - Later age of onset of use
    - Expectations—to relieve symptoms, not intoxication
  - *Could be higher due to*
    - Drug interactions
    - Co-occurring morbidities
    - Higher doses & concentrations of cannabinoids
- Side effects may differ among individuals and with differing cannabinoid profiles

# HIGH-RISK GROUPS
# CANNABIS IN CHILDREN AND ADOLESCENTS

- **More vulnerable population—time of rapid brain development**
  - **Brain development not completed until mid-20's**
  - **Increased risk of short- and long-term neurodevelopment effects (Volkow, 2014):**
    - Impaired short-term memory, attention, and problem-solving – may impact learning
    - Long-term use in adolescence correlated with cognitive deficits extending to adulthood
    - Alterations in coordination, reaction time, judgement – may contribute to unintentional injuries and deaths
    - Concerns for increased risk of mental health disorders, including depression and psychosis
    - Negative health effects on lung function with smoking
  - **Risk of dependence/addiction increases with earlier onset of use (Winters, 2008)**

# HIGH-RISK GROUPS
# CANNABIS IN PREGNANCY

- **THC crosses the placenta—Potential harms**
- **Gestational**
  - Increased risk of stillbirth, low birth weight and preterm birth (Gunn, 2016)
- **Fetal neurodevelopment**
  - Adverse effects on neurodevelopment, including long-term cognitive changes and impairment of executive function (Metz, 2015)
  - Adverse effects on mental health including increased psychotic-like episodes and internalizing and externalizing attention, thought and social problems (Paul, 2020)
  - Prenatal exposure may predict use in young adulthood (Sonon, 2015)

- **Legal (NH): Plan of Safe Care (POSC), referral to Child Protective Services if neglect/abuse**

- **Watch out for pregnant women who self-medicate with cannabis for anxiety or nausea**

# HIGH-RISK GROUPS
# CANNABIS IN BREASTFEEDING

- **THC passes into breastmilk**

- THC stored in mother's fat cells, slowly released over weeks
  - THC detected in breast milk
    - 6 days after single use,
    - 4 – 6 weeks after daily use (Bertrand, 2018)
  - "Pumping and Dumping" does not work (Garry, 2009)

# CONTRAINDICATIONS BY RISK GROUP

- **ABSOLUTE**
  - Pregnancy
  - Breastfeeding
  - Psychosis
  - Unstable cardiac disease
- **NEARLY ABSOLUTE**
  - Age<25
- **RELATIVE**
  - OUD, CUD
    - Possible use by addiction specialist to treat craving with CBD
  - Mental health disorders
    - Anxiety-role for CBD
- **MONITOR CLOSELY**
  - Age >65, frail (consider physiological age)
  - Cardiac disease
  - Multiple medical problems
  - Use low dose, low THC, educate re: risk mitigation

# LACK OF HIGH-QUALITY EVIDENCE

## Lack of evidence of efficacy ≠ evidence of lack of efficacy

- Limitations of current evidence
  - Much of newer evidence based upon dronabinol or nabilone(synthetic THC), not whole plant with other cannabinoids
    - Herbal cannabis complex with >70 cannabinoids & over 450 chemical constituents
      - Many less studied cannabinoids & terpenes contribute to effects with synergistic actions
      - Whole plant may work better than a single cannabinoid

# CONFUSION REGARDING CHRONIC PAIN

- National Academies of Science review 2017 concluded: “There is substantial evidence that cannabis is an effective treatment for chronic pain in adults”
- Recent reviews not as favorable

- NAS 2017 based more on literature using whole plant products

# APPLICABILITY

- Is data based upon synthetic THC applicable to products dispensed at ATCs?
- ATCs do not dispense dronabinol or nabilone
- Many ATC products are
  - Whole plant
  - Full-spectrum tinctures, extracts and edibles

- WE NEED BETTER DATA

# NUANCES IN CLINICAL DECISION MAKING

- Some disagreement on guidelines
  - ASAM guidelines—cannabis contraindicated in OUD management (due to THC)
  - Some addiction specialists see a role of CBD to treat craving
- Even a small effect may be helpful to quality of life
- Subpopulations may respond differently from large population in study
- Benefits may outweigh the risks for symptom control
  - PTSD with night terrors—not able to sleep well
    - Cannabis decreases REM sleep—decreases night terrors—improved sleep
- May certify for harm reduction (safe, tested product with known cannabinoid concentrations)
  - Anxiety
    - Cannabis commonly used by non-certified patients for anxiety
    - CBD may be helpful for anxiety, but THC can cause anxiety
    - Certify for harm reduction (low THC/high CBD products)

# COMPARISON TO FDA APPROVED DRUGS

- Should not hold cannabis to higher level of efficacy than approved drugs
  - Insomnia—small improvements in sleep quality with cannabis, guidelines recommend against
  - Compare to Belsomra (FDA approved)—fall asleep 6 minutes earlier, only 16 min more total sleep than placebo (Woloshin and Schwartz, 2015)
    - Small effect
    - Significant side-effects (sleepwalking, next day drowsiness)

# MAY CONSIDER A TRIAL OF CANNABIS

- Even without conclusive data a trial of cannabis may be reasonable with careful follow-up
- Monitoring for:
  - Improvement in quality of life
  - Side effects
  - Misuse

- Withdraw certification if necessary

# CERTIFICATION AND MANAGEMENT

- More than just filling out a form—be a <u>provider</u>, not a <u>clerk</u>
- Treating a <u>person</u> with a condition, not a <u>condition</u> with a person attached
- Assess the condition <u>and</u> the person
  - Are there better management options?
    - Cannabis may be reasonable to try but is not the first option
      - Insomnia?—first address sleep hygiene, maybe CBT
      - Consider risks/benefits of FDA approved medications vs cannabis
  - Assess risks
  - Balance risks and benefits
  - Follow-up to assess effects
- If you are not the PCP, inform PCP if you certify a patient

# EDUCATE PATIENT

- Not all cannabis the same—THC/CBD ratios
- Risks of use—especially in high-risk groups
- Safe storage—keep away from children
- Safe use
  - Method of administration (combustion, vape, oral, tincture)
  - THC/CBD ratios
- Cannabis-medication interactions
- Employment impact—Drug testing—THC stored in fat—persists in blood and urine long after use even without impairment

# EDUCATE ABOUT DOSING

- No set dose—not a prescription

- Determining dose and method of administration is a process

  - Every patient responds differently to different strains.

  - Regardless of what is used, start with low dose
    - Slowly titrate dose for desired effect with minimal side effects

  - Caution with oral dosing (delayed onset of effect)

  - START LOW AND GO SLOW

# PROVIDER RESPONSIBILITY

- Provider is responsible for properly evaluating a patient’s medical condition
- Subject to board discipline
  - “nothing shall prevent a professional licensing entity from sanctioning a provider for failing to properly evaluate a patient's medical condition.”

# **THERAPEUTIC CANNABIS**
# *CLINICAL BEST PRACTICES*

**Evaluation**

- History of presenting problem, indication for cannabis
- Prior therapeutic trials and outcomes
- Other medical issues
- Current medications (to watch for drug-drug interactions)
- Child-bearing plans, test females for pregnancy as indicated
- Mental health and substance use history including past cannabis use
- Family and social history, context
- Employment: what employer allows, safety sensitive position?
- Appropriate physical exam, labs, studies
- Consider urine drug screening and PDMP check

# MANAGEMENT OF THERAPEUTIC CANNABIS

Evaluate & assess risks/benefits

↓

Establish informed consent/agreement

↓

Initiate trial with clear goals

↓

Initiate with appropriate routes, cannabinoids

↓

Monitor effects, side effects, risk behaviors

↓

Revise care as indicated

If **negative** outcomes
(No progress, unmanageable side effects, persistent risk behaviors)

Consider discontinuation
Provide alternative care
CUD treatment if indicated

If **positive** outcomes:
(Progress towards goals, no unmanageable side effects, no persistent risk behaviors)

Consider continuation

# SUMMARY

- Be a provider treating a person with a condition
  - Not just filling out a form
- Educate the patient
- Consider and balance risks and benefits
- Define goals of treatment
- Monitor for effects
- Ask about cannabis use in all patients

# THANK YOU