TEXAS CANNABIS POLICY CENTER

TEXAS CANNABIS LUNCH & LEARN

- Cannabis 101
- Regulatory Overview
- Cannabis and Public Health
- Cannabis Economics
- Policy Landscape & Future Issues
- Q&A - There are no dumb questions!

Susan Hays,

Cannabis Attorney & Lobbyist

Susan Hays is an attorney and advocate with over 30 years of experience in law, politics, and public affairs and 10 years experience in cannabis policy. Her practice spans legislative advocacy, regulatory matters, and legal strategy. Known for her clear analysis and grounded approach, she works at the intersection of law, policy, and public discourse to promote reasoned, evidence-based solutions. She currently serves as the public representative to DPS's advisory Working Group on TCUP.

Hemp v. Marijuana

. . . the plant Cannabis sativa L. and any part of that plant, including the seeds of the plant and all **derivatives**, extracts, **cannabinoids**, isomers, acids, salts, and salts of isomers, whether growing or not, with a **delta-9 tetrahydrocannabinol** concentration of **not more than 0.3 percent** on a **dry weight** basis.

– TEX. AGRIC. CODE § 121.001 (emphasis added); *see also* 7 U.S.C. § 1639o(1)

Cannabis Chemotypes

(forget Sativa and Indica)

Type 1 – higher ratio of THC to CBD (marijuana)

Type 2 – 1:1 CBD:THC (marijuana)

Type 3 – higher ratio of CBD to THC (maybe hemp)

Type 4 – CBG dominant (hemp)

Type 5 – high fiber yield; very small detectable cannabinoids (hemp)

Type 6 – THCV dominant (hemp?)

Hot topics: Synthetic & Intoxicating

	Natural	Semi-Synthetic or Converted	Synthetic
Intoxicating	D9-THC	D8-THC*, D10-THC, D7-THC, D6-THC, THC-O	THCP†, HHC, EXO-THC, HHCP, THCH, CB9A
Not Intoxicating	Full Spectrum & Broad Spectrum hemp, Cannabidiol (CBD/CBDA), Cannabidivarin (CBDV), Cannabigierol (CBG/CBGA); Cannabichromene (CBC) Cannabicitran (CBT); Cannabicyclol (CBL); Cannabielsoin (CBE); Cannabinol (CBN); Tetrahydrocannabivarin (THCV)	CBN* THCV*	None in the marketplace

TCUP v. Hemp

Marijuana (TCUP after HB46)	**Hemp (after the Gov. Exec. Order)**
Illegal federally but TCUP exempted from state law. 10 mg THC cap per dosing unit	Legal, but where is the line when the molecules are the same. 0.3% D9 THC cap
DPS regulates everything + DSHS rules	TDA (grow), DSHS → TABC (products). Labs?
Extremely high fees, limited licenses & locations	Unlimited with low fees (soon to change)
Heavy enforcement by DPS	DSHS limited bandwidth (shifting to TABC)
Heavily regulated vertical integration distribution; pre-approval of all products; Very limited points of sale to patients	Free market supply chain with no pre-approval of products; Sold everywhere including online direct-to-consumer

THC Caps in Hemp

State Status	Cap (mg THC/dose)
Legal (AZ, CA, CO,NY, OR, VA, WA)	0 to 2 mg; some with 15:1 or 20:1 CBD ratio
Full Medical (AL, HI, KY, LA, ND, UT)	0.5 to 5 mg; some with 15:1 CBD ratio
“Low-THC” Medical (GA, IA, TN)	4, 10, or 15 mg; no ratio

TCUP <> Hemp Collision

2015 - “low THC” TCUP passes: **<0.5% THCs**
2018 - Farm Bill legalizes hemp: **<0.3% D9 THC**
2019 - Texas passes hemp bill, adds TCUP conditions but does not raise THCs cap
2021 - TCUP THC cap raised to **1%**, adds PTSD
2023 - no hemp bill passes
2025 - no hemp bill passes; chronic pain & other conditions added. Cap = **10mg “per dosing unit”**

Nishi Whiteley,

Cannabis Educator

Nishi Whiteley, COO of CReDO Science, is an expert in cannabis with over 25 years of international business development experience. She authored Chronic Relief: A Guide to Cannabis for the Terminally & Chronically Ill and MyChronicRelief.com, along with several popular science articles and three peer-reviewed journal publications. At CReDO, which leads in cannabis clinical research, formulation, education, and innovation, Whiteley is **dedicated to bridging cannabis science with practical applications to promote informed, evidence-based policy and enhance patient care.**

Cannabis
& Public Health

Nishi Whiteley
COO, CReDO Science

October 28, 2025

Cannabis

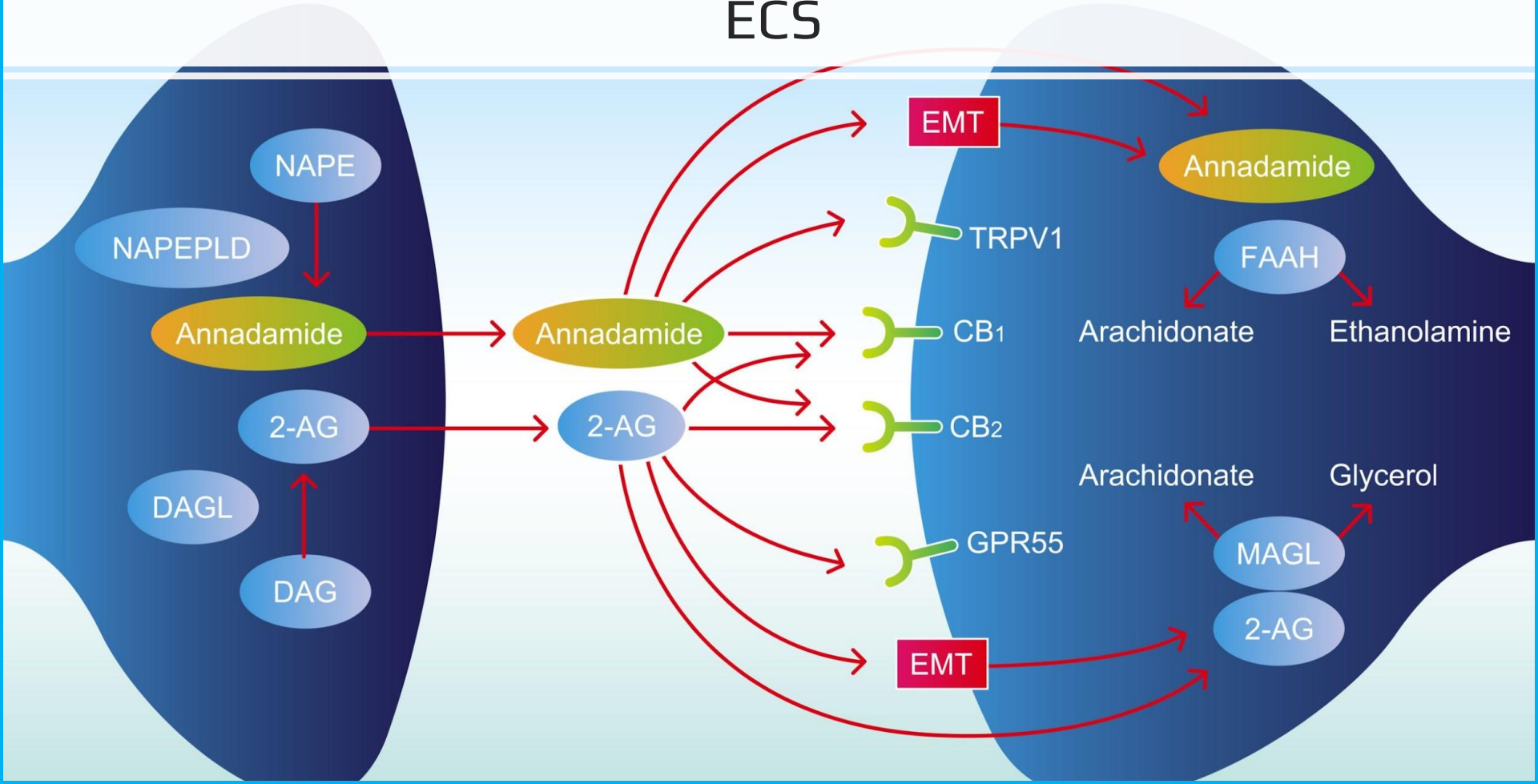
The Endocannabinoid System

Regulates, modulates or plays a role in EVERY major biological function in the body:

- Pain control
- Mood
- Immune Function
- Newborn Suckling
- Appetite
- Temperature Regulation
- Memory
- Inflammation Regulation
- Neuroprotection
- Reward Mechanisms

SOURCE: Raphael Mechoulam, Linda A. Parker. "The Endocannabinoid System and the Brain." *The Annual Review of Psychology*, 2013: 21-47.

ECS


NAPE
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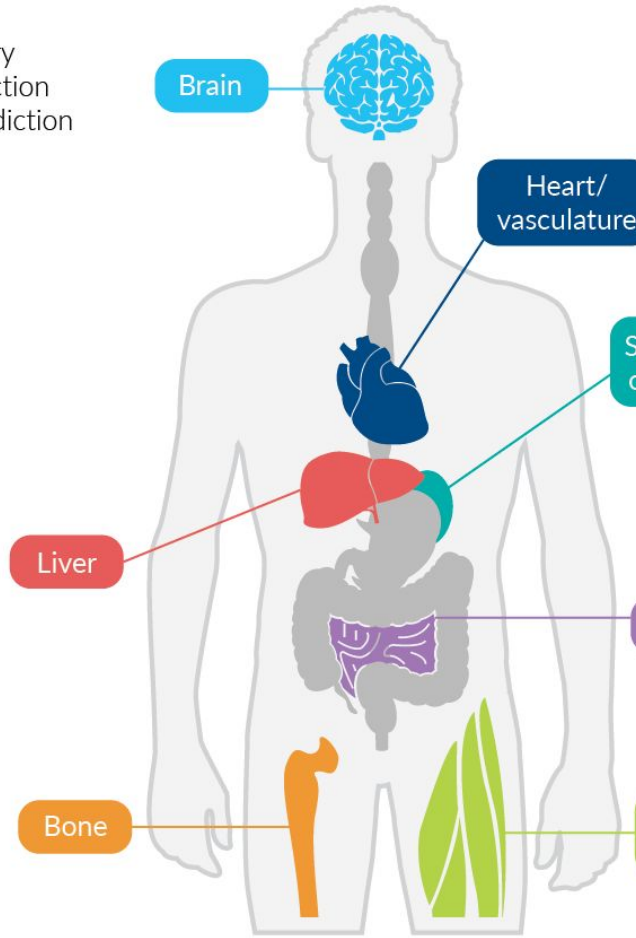


CB_1
· Neurotransmission
· Cognition and memory
· Control of motor function
· Reward pathways/addiction
· Nociception

CB_2
· Nociception
· Neuroinflammation
· Neuroprotection

CB_1
· Steatosis
· Fibrinogenesis
· Insulin resistance

CB_2
· Antifibrinogenic
· Hepatoprotection

CB_2
· Bone formation
and turnover

CB_1
· Heart rate
· Hypotension
· Cardiac dysfunction
· Weakened myocardial
contractility

CB_2
· Cardioprotective

CB_1 & CB_2
· Immunomodulation

CB_1
· Gut motility
· Appetite

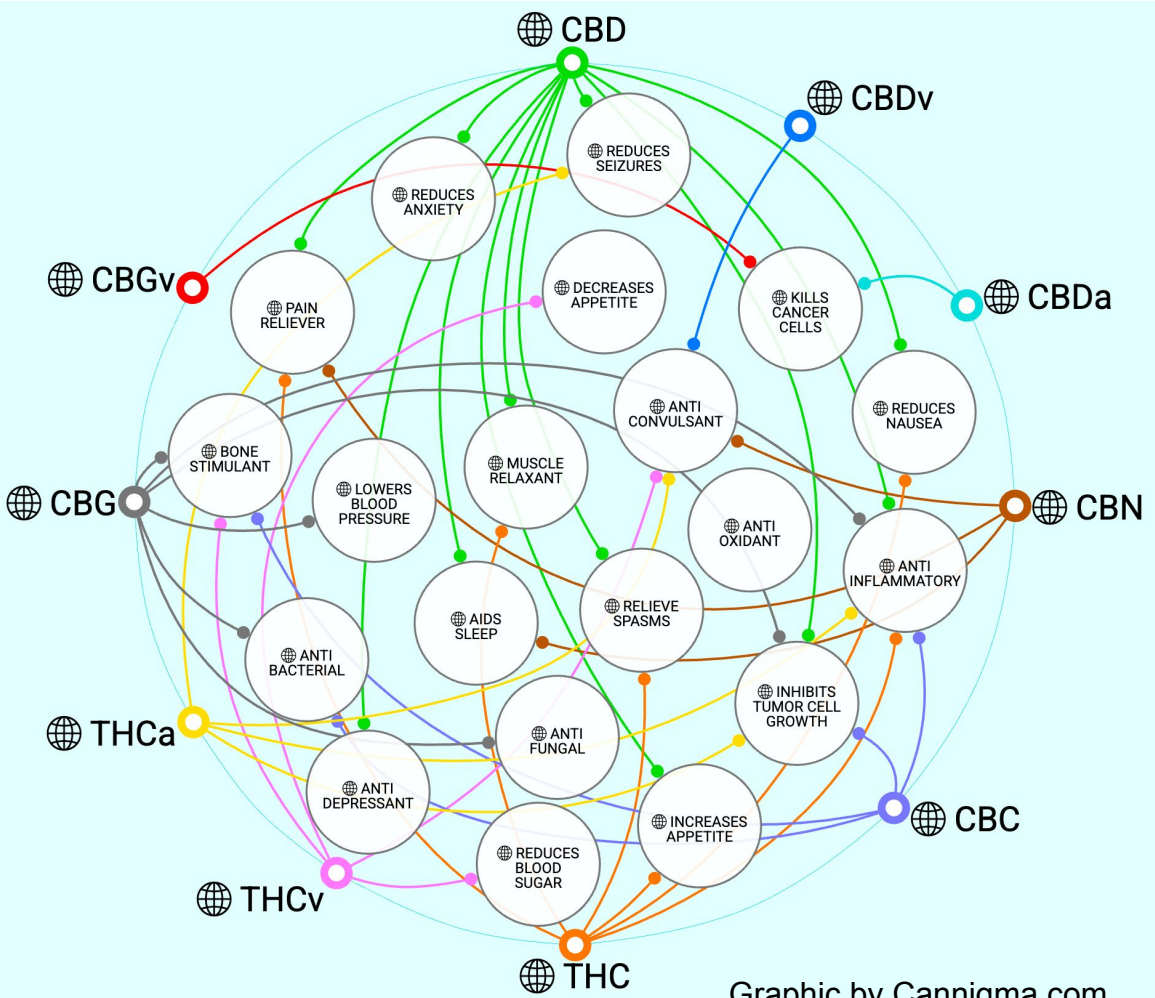
CB_2
· Gut motility
· Inflammation

CB_1
· Energy metabolism
· Insulin resistance

Image by Cayman Chemical

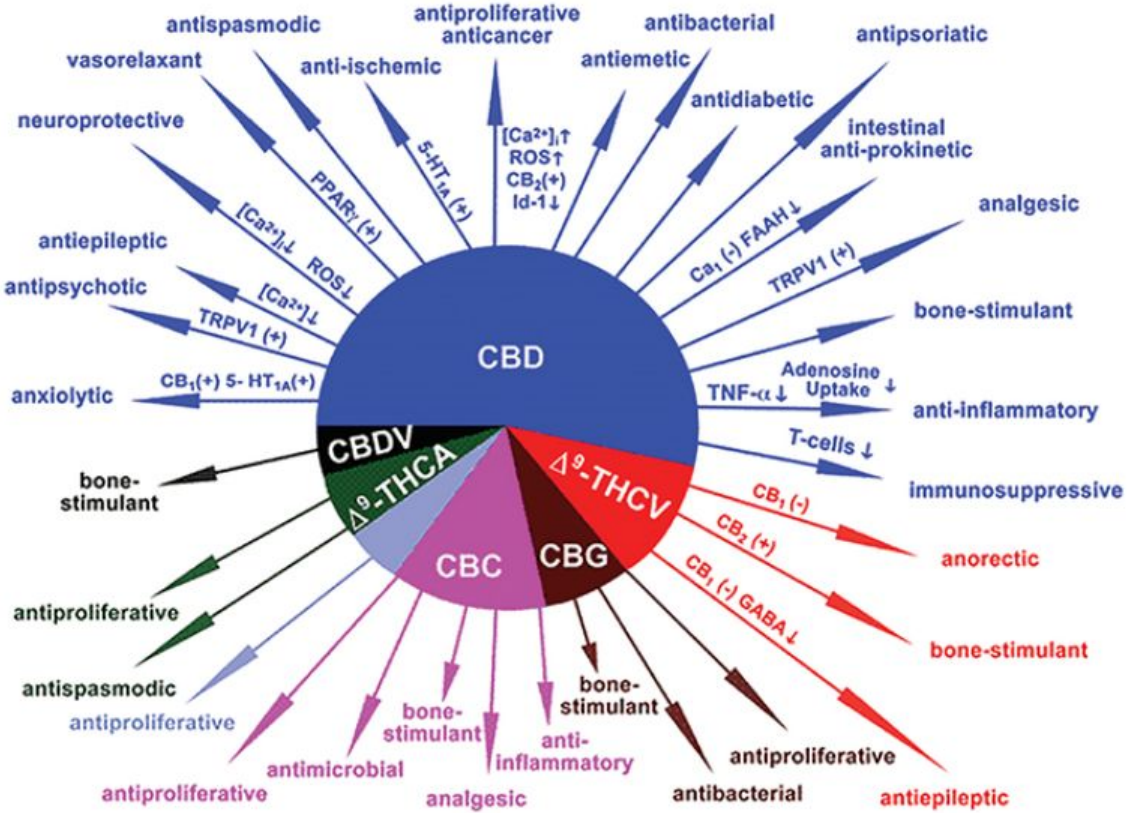
Cannabinoids

- Primary class of chemicals in the cannabis plant
- More therapeutic when used together vs. isolated
- Over 150 different cannabinoids – most have medicinal effects
- Activate different receptor pathways at the same time



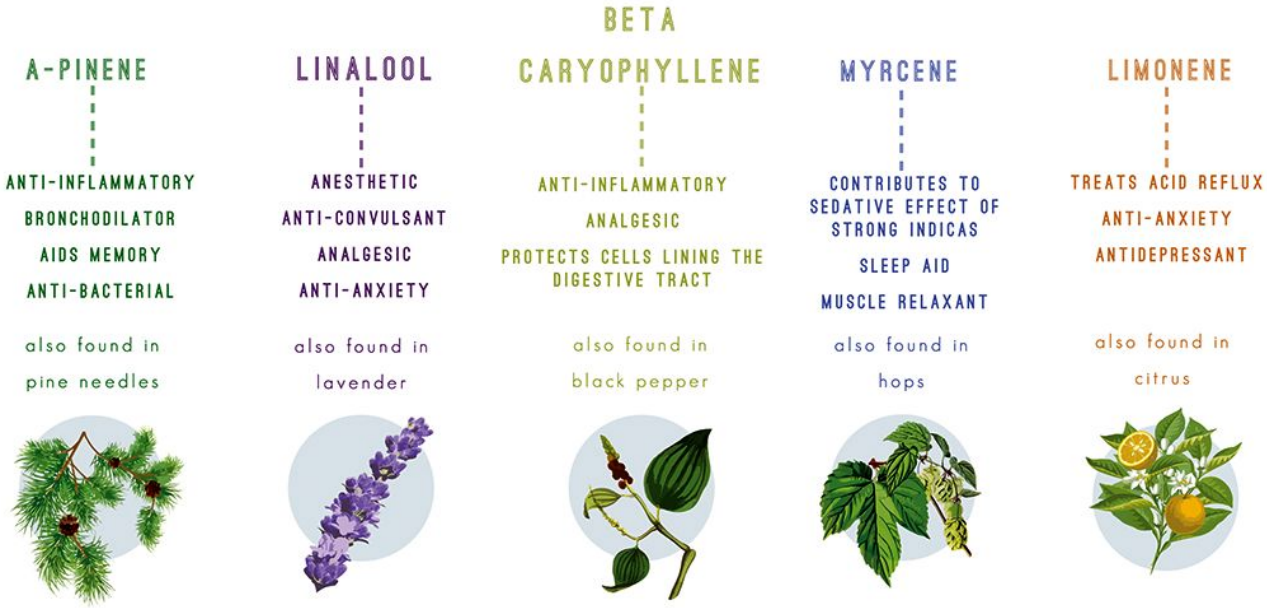
Pharmacological actions of non-psychotropic cannabinoids

(with the indication of the proposed mechanisms of action).



Source: Trends in Pharmacology

Terpenes



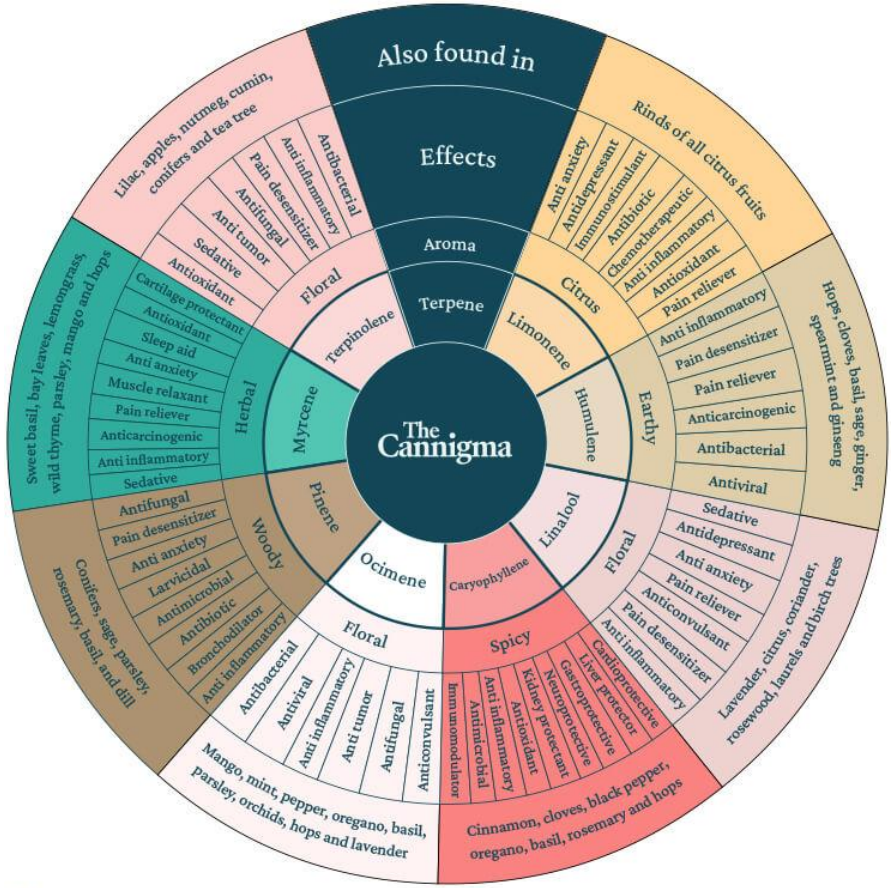
Source Canabisdigest.ca

Terpenes

There are 17ish terpenes that are commonly found in North American Cannabis.

They:

- Are Therapeutic
- Are GRAS
- Work multimodally



References:
* *Medicinal Properties of Cannabinoids, Terpenes, and Flavonoids in Cannabis, and Benefits in Migraine, Headache, and Pain*, Eric P Baron
* *Cannabis Pharmacology: The Usual Suspects and a Few Promising Leads*, Ethan B Russo, Jahan Marcu

The Case for THC

1. THC demonstrates broad-spectrum therapeutic effects across 70+ health outcomes

- A comprehensive evidence map of 194 studies found that THC-containing cannabis formulations were effective in managing diverse conditions including chronic pain, chemotherapy-induced nausea, muscle spasticity, and appetite loss.

2. THC interacts with the endocannabinoid system to regulate immune and neurological function

- THC binds to CB1 and CB2 receptors in the endocannabinoid system, modulating inflammation, pain perception, and mood. This mechanism underpins its use in treating conditions like inflammatory bowel disease, multiple sclerosis, and anxiety disorders.

3. THC is effective in cancer symptom management—and may have anti-tumor properties

- A meta-analysis of over 10,000 peer-reviewed studies found strong evidence that THC-rich cannabis alleviates cancer-related symptoms such as pain, nausea, and appetite loss. Emerging data also suggest potential anti-cancer effects, including tumor growth inhibition.

4. THC has a favorable safety profile when used therapeutically

- Across clinical trials and observational studies, THC was generally well-tolerated. Adverse effects were dose-dependent and manageable, with no evidence of organ toxicity or long-term harm when used under medical supervision.

5. THC's therapeutic versatility spans neurological, gastrointestinal, viral, and psychiatric conditions

- Beyond pain and nausea, THC has shown promise in treating HIV-related cachexia, PTSD, epilepsy, and even emerging viral conditions like SARS-CoV-2 and monkeypox, highlighting its adaptability across medical domains.

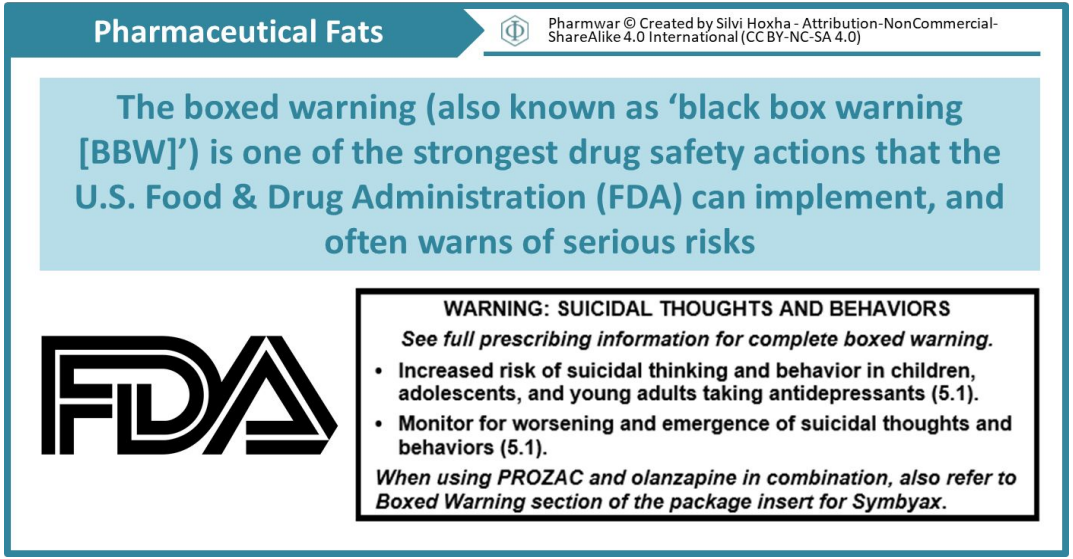
Sources: Science News Today - Cannabis & Cancer,, MDPI- Therapeutic Potential of Cannabis, Frontiers in Pharmacology - Evidence map

Black Box Drugs

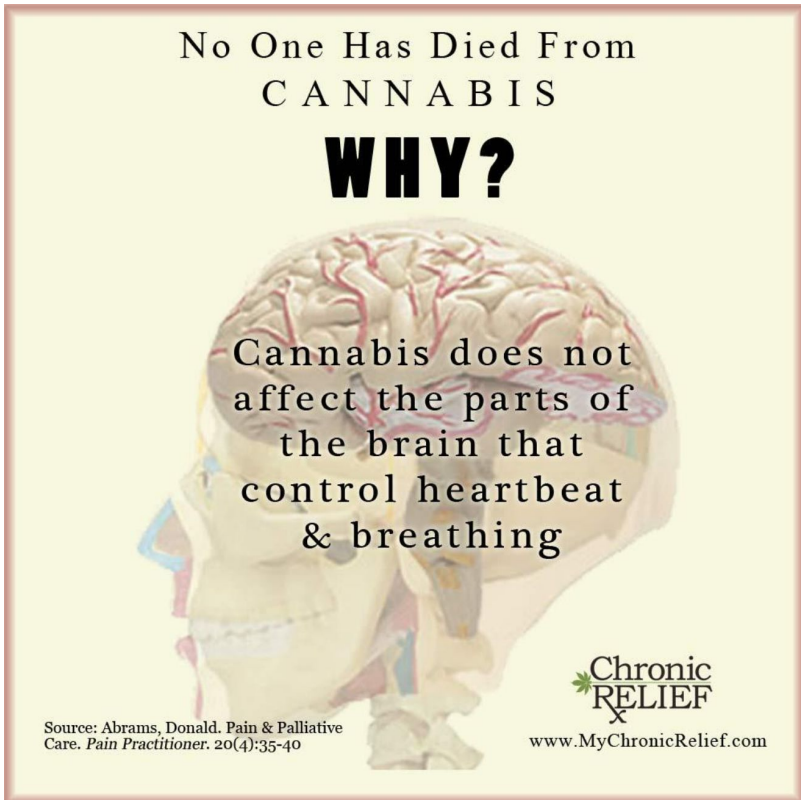
Over 400 (out of 4,430) medications carry black box warnings, which indicate serious risks of adverse effects.

Examples include:

- alprazolam (Xanax),
- clonazepam (Klonopin),
- diazepam (Valium), as
- ticagrelor (Brilinta)
- lamotrigine (Lamictal)
- Methotrexate (Trexall)



Safety



For Comparison

- Cannabis has
  - Wide therapeutic window
  - Low toxicity
  - Short term side effects
  - Potentiates opioids 3-9X
- Hospitalizations for aspirin toxicity: ~3,000–4,000 per year (mostly accidental or therapeutic error).
- Comparative mortality:
  - Opioids: >80,000 deaths/year
  - Alcohol: ~140,000 deaths/year
  - Acetaminophen: ~500 deaths/year
  - Aspirin: ~50–100 deaths/year
  - **Cannabis ~ 0 deaths/year**

Most Addictive Substances

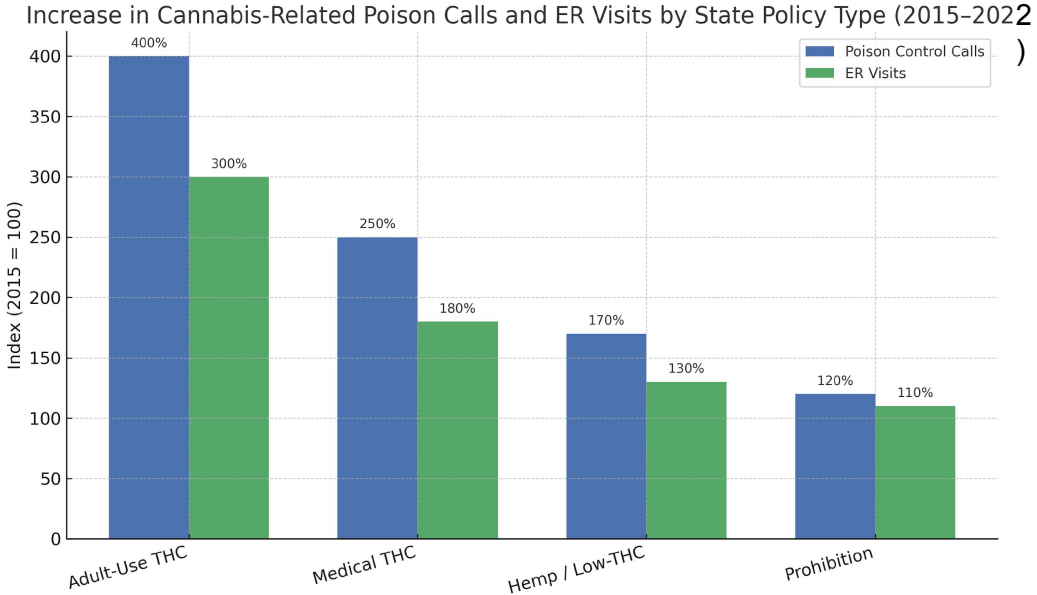
Rank	Substance (generic examples)	Addiction Potential	Primary Mechanism of Action	Dependence Severity	Withdrawal Severity	Representative Source
1	**Heroin (diacetylmorphine)**	🔴 Very High	μ-opioid receptor agonist → massive dopamine surge	Very high	Severe	*The Lancet* (Nutt et al., 2007)
2	**Crack Cocaine**	🔴 Very High	Rapid dopamine reuptake blockade (smoked → instant peak)	Very high	Severe (craving, dysphoria)	*Nature Reviews Neurosci.*, 2018
3	**Nicotine**	🔴 High	Nicotinic ACh receptor activation → dopamine release	High	Moderate	*JAMA* (Marynak et al., 2025)
4	**Alcohol (ethanol)**	🔴 High	GABA_A agonist + NMDA inhibition	High	Life-threatening (delirium tremens)	*Science* (Koob & Le Moal, 2008)
5	**Methamphetamine**	🔴 High	Massive dopamine/norepinephrine release	High	Severe (anhedonia, fatigue)	*Addiction* (McKetin et al., 2019)
6	**Prescription opioids (fentanyl, oxycodone, morphine)**	🔴 High	μ-opioid receptor agonism	High	Severe	*NEJM* (Volkow et al., 2022)
7	**Barbiturates (phenobarbital, secobarbital, etc.)**	🟠 Moderate–High	GABA_A receptor positive modulation	High	**Severe, can be fatal**	*JAMA Psychiatry* (2020)
8	**Benzodiazepines (diazepam, alprazolam, etc.)**	🟠 Moderate–High	GABA_A receptor potentiation	Moderate–High	Severe (seizures, delirium)	*CNS Drugs* (Lader, 2011)
9	**Methadone**	🟠 Moderate	μ-opioid receptor agonist (long-acting)	Moderate	Prolonged but less severe than heroin	*NEJM* (Kreek et al., 2010)
10	**Cannabis (THC-dominant)**	🟢 Low–Moderate	CB1 receptor agonism → dopamine modulation	Low	Mild (irritability, insomnia)	*NASEM, 2017*
11	**Caffeine**	🟢 Low	Adenosine receptor antagonism	Mild	Mild (headache, fatigue)	*Psychopharmacology* (Juliano & Griffiths, 2004)
12	**MDMA (ecstasy)**	🟢 Low	Serotonin and dopamine release	Mild	Mild (fatigue, low mood)	*Human Psychopharm.* (Parrott, 2

The Lancet (Nutt et al., 2007, 2010), *JAMA Psychiatry* (Volkow et al., 2022), *NEJM* (Koob & Le Moal, 2008; Volkow et al., 2016), *Addiction* (2020s updates on stimulant and sedative dependence), *Nature Reviews Neuroscience* (2018)

Overconsumption

Year	Total Marijuana-Related Calls	Calls Involving Children (Ages 0-5)	Percentage of Total Calls
2017	923	44	4.8%
2022	2,592	740	28.6%

- Presents in many ways: panic, low blood pressure, rapid heart rate, nausea, stupor, psychosis.
- Time is the best medicine, with lemonade and pistachio, possible CBD/CBG vape
- Children under 10yr are less likely to be impacted by overconsumption
- Overconsumption should not result in a hospital stay except in a psychotic break which is rare.



Possible Side Effects

- Cannabinoid Hyperemesis Syndrome (CHS)
- Chronic Bronchitis
- Tachycardia
- Adverse mood reaction
- Sedation
- Throat irritation
- Constipation
- Hyperemesis
- Dry Mouth
- Itching
- Dizziness
- Loss of balance
- Short term memory interruption
- Impairment of cognition
- Couch lock
- Expanded sense of time
- Shame
- Judgement of others
- Addiction

Natural & Synthetic Cannabinoids — NOT The Same		
Category	Natural Cannabinoids (from cannabis or hemp)	Synthetic Cannabinoids (including synthetic THC*) [10]
Common Risks	Mild and temporary: short-term memory issues, dry mouth, drowsiness, increased appetite, occasional anxiety, over-intoxication, psychosis is rare at low-modest doses. [4]	Severe and unpredictable: toxic chemical exposure, extreme anxiety, paranoia, psychosis, seizures, hallucinations, possible long-term mental health damage, nausea, vomiting, suicidal ideation, renal failure and more[2,3,10].
Potential Benefits	Pain relief, neuroprotection, anxiety reduction, seizure control, anti-inflammatory, improved sleep, and more. [2]	Minimal value due to impurities (risk outweigh benefits): mostly recreational use for euphoria or sedation. If clean, may provide similar benefits of THC. [10]
Recommended Dose / Serving	2.5–5 mg typically. Studies (e.g., Sativex™) show up to 20 mg/day generally well tolerated. Outliers may need higher doses. [2]	1–5 mg. Real doses often exceed labels, increasing overdose risk. Labeling rarely accurately warns of risks.
Psychosis Triggering Dose	Rare at 10–15 mg; effects subside as THC exits the system. [4]	Often reported at 10 mg or less; effects more severe and longer-lasting. [10]
The Nuance	Predictable, transient effects that resolve as metabolized.	**More potent (2-100X),** stronger binding, longer toxicity, higher risk of permanent brain impact[2]. SCbs produce toxicity not associated with THC. [10]
Public Health Concerns	Naturally occurring, studied, and safe if properly regulated.	Illicitly made, poorly labeled, may contain toxic and carcinogenic additives. [10]
Suggested Regulations	Allow free commerce with regulation for label requirements, quality assurance including lab testing, and age restrictions. [2, 4]	Do not allow. Enforce the ban.
***Includes JWH compounds, THCP, other CP compounds, K2, Spice. Does not include the FDA approved drugs Marinol, Cesamet, Syndros.**		

Macleod, J et al. 2004. Psychological and social sequelae of cannabis and other illicit drug use by young people: a systematic review of longitudinal, general population studies. *Lancet* 363(9421):1579-88. [63]

- "Cannabis use appears to have increased substantially amongst young people over the past 30 years, from around 10% reporting ever use in 1969–70, to around 50% reporting ever use in 2001, in Britain and Sweden. If the relation between use and schizophrenia were truly causal and if the relative risk was around five-fold then the incidence of schizophrenia should have more than doubled since 1970. However, population trends in schizophrenia incidence suggest that incidence has either been stable or slightly decreased over the relevant time period." (p. 1585)

- "Despite widespread concern, we have found no strong evidence that use of cannabis in itself has important consequences for psychological or social health." (p. 1586)

Possible Positive Side Benefits

- Relaxation
- Better sleep
- Focus
- Sexual arousal, better sex, and greater sensuality
- Sense of peace
- Euphoria
- Heightened awareness of sensations, music, emotions, beauty, and self
- Creativity
- Enhanced spirituality
- Enhanced body consciousness
- Forgetting trauma & unnecessary details
- Remembering buried memories
- Improved sense of hope and optimism
- Weight loss

Educate – Don’t Overregulate

Physicians

- Understand basics of ECS
- Describe components of the plant & their biological effects
- Review legal landscape in the U.S.
- Describe evidence for conditions managed with cannabis
- Understand potential risks
- Understand clinical management

Consumers

- Understand basics components of offered & lingo
- Understand different delivery mechanisms & pros and cons
- Understand risks & harm reduction
- Start low, go slow
- What to do if you over consume

Support a Texas Cannabis Consumer website!

“Cannabis is the single most versatile herbal remedy, and the most useful plant on Earth. No other single plant contains as wide a range of medically active herbal constituents.”

Dr. Ethan Russo,
CEO CReDO Science & Board-Certified Neurologist

CReDO SCIENCE

Nishi Whiteley
nw@credo-science.com

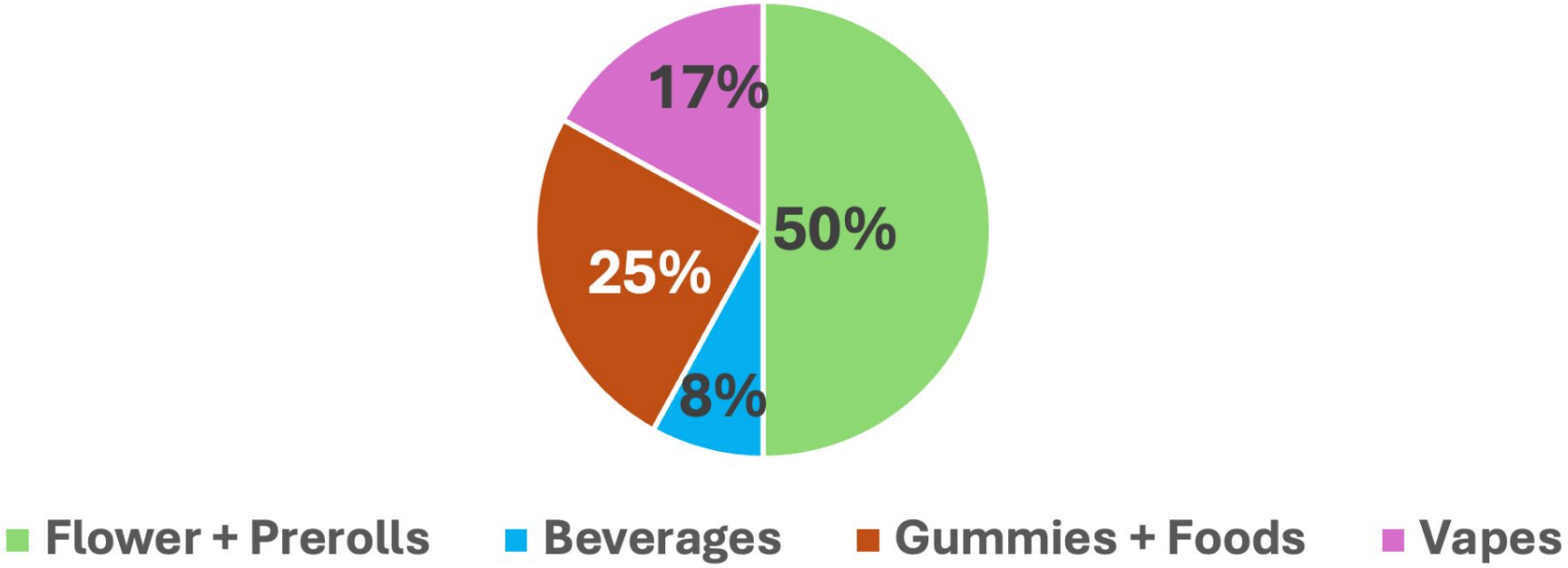
Robin Goldstein, PhD,

Cannabis Economist

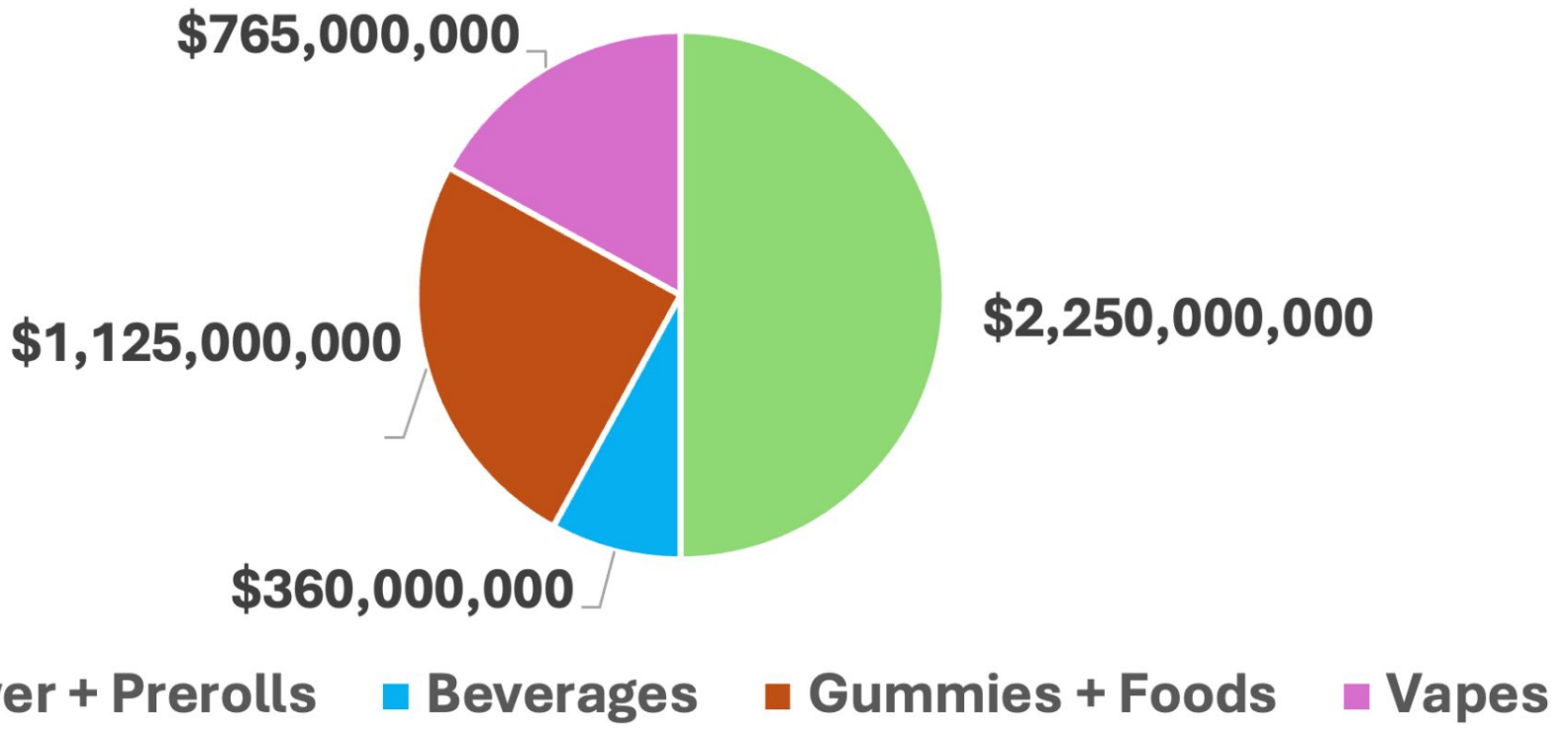
Robin Goldstein is an economist, lawyer, and Director of the Cannabis Economics Group at the University of California, Davis. He co-authored the book "Can Legal Weed Win?" (University of California Press, 2022) and leads research at UC Davis on cannabis markets, regulations, prices, and competition between legal and illegal markets.

His work focuses on how policy shapes real-world outcomes in the cannabis industry, and on generating data-driven insights to guide effective and economically sound regulation.

Current Texas Hemp Market:
Estimated Category Shares by Percentage of Revenue



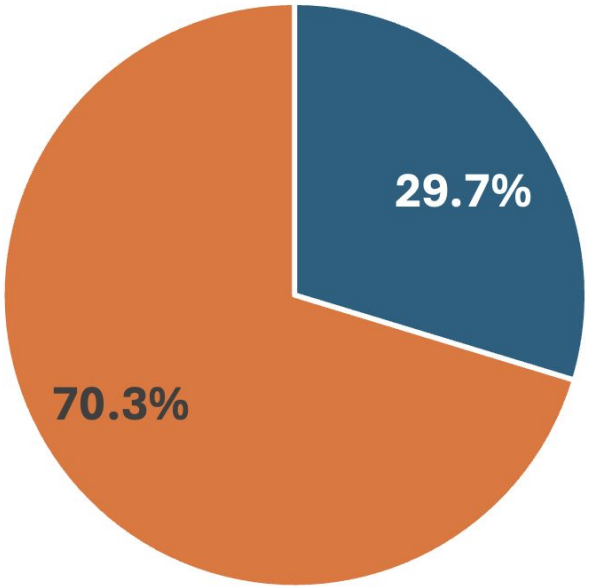
Current Texas Hemp Market: $4.5 billion
Estimated Category Shares by Total Revenue



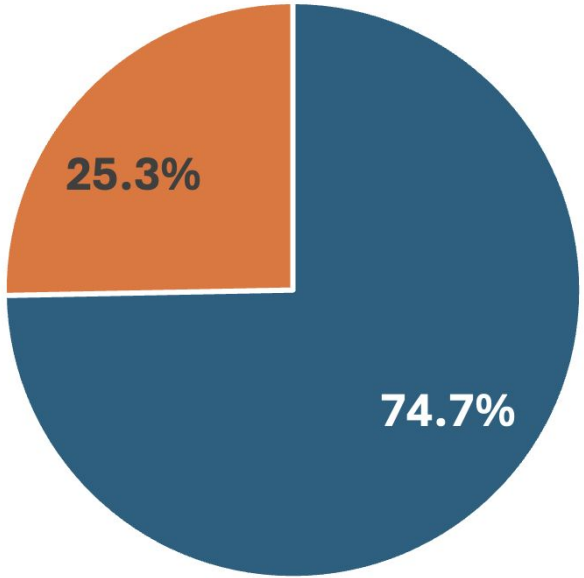
3 regulatory scenarios for Texas hemp

1. Only THC foods and beverages permitted
2. THC foods and beverages + THCa flower
3. THC foods and beverages + THCa flower + vapes

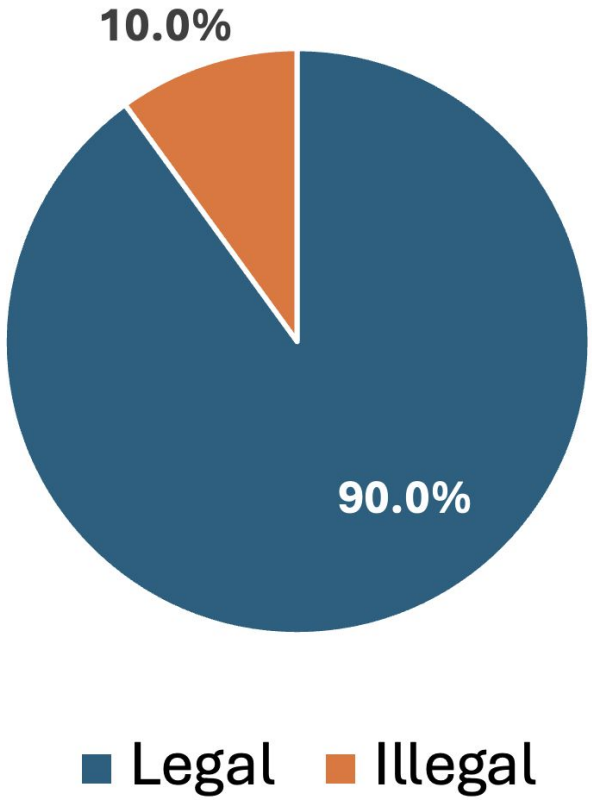
<u>Scenario 1 - Only foods + beverages permitted:</u> 70% of market ($3.2B) goes to illegal drug cartels, 30% ($1.3B) is legal



<u>Scenario 2 - Foods + beverages + THCa flower permitted:</u> 25% of market ($1.1B) goes to illegal drug cartels, 75% ($3.4B) is legal



<u>Scenario 3 - Foods + beverages + THCa flower + vapes permitted:</u> 10% of market ($0.5B) goes to illegal drug cartels, 90% ($4.0B) is legal



Estimated businesses surviving vs. failing in 3 scenarios

	Hemp stores that stay in business	Hemp stores that go out of business
Current market before regulations	**3,000 (100%)**	**0 (0%)**
Scenario 1 - Only foods + beverages permitted (no THCa flower or vapes)	**600 (20%)**	**2,400 (80%)**
Scenario 2 - Foods + beverages + THCa flower permitted (no vapes)	**2,700 (90%)**	**300 (10%)**
Scenario 3 - Foods + beverages + THCa flower + vapes permitted	**2,900 (97%)**	**100 (3%)**

TEXAS CANNABIS POLICY CENTER

Heather Fazio,

Cannabis Policy Expert

Heather Fazio is the director of the Texas Cannabis Policy Center. She's a longtime advocate for responsible cannabis policy in Texas and has worked to educate lawmakers, mobilize grassroots support, and build coalitions to advance meaningful reform. Through training events, legislative briefings, and advocacy campaigns, Heather has equipped Texans to engage effectively in the policymaking process and helped keep patient rights, personal freedom, and accountability at the center of cannabis policy discussions.

Texas Compassionate Use Program

DEPARTMENT OF PUBLIC SAFETY

12 New Licenses

At least **9 New Licenses by December 1**, 2025

- Chosen from existing pool of applicants

Additional **3 licenses by April 1**, 2026

- May be chosen from existing pool or new applicants

Licensing Window Open - Closed September 15.

New Rules

For the **satellite location** application process, design and security requirements, and a timeline for reviewing and taking action on applications submitted.

To monitor whether a dispensing organization is using a license and to revoke the license of a dispensing organization that does not dispense low-THC cannabis within the time required.

Texas Compassionate Use Program

DEPARTMENT OF STATE HEALTH SERVICES

Current Rules

Determining Neurodegenerative Diseases that Qualify for TCUP

DSHS has established a long list of neurodegenerative diseases that qualify a patient for TCUP and has the authority accept doctor recommendations and add new qualifying neurodegenerative diseases.

New Rules

Vape Device Approval and New Doctor-Recommended Qualifying Conditions

Rules will establish a process for doctors to request (but not get) new qualifying conditions for the Compassionate Use Program and set clear standards and timelines for reviewing and approving medical devices used for pulmonary inhalation.

September 10, 2025 | Adult-Use Cannabis, Hemp, State Policy

Advocates Applaud Gov. Abbott's Executive Order on THC

Austin, Texas — The Texas Cannabis Policy Center (TCPC) commends Governor Greg Abbott for issuing an executive order today that directs state agencies to restrict youth access to THC while ensuring responsible adults ret...

The Executive Order directs the following agency actions:

- DSHS and TABC must ban sales to minors and require verification of government-issued ID at the point of sale, with failure to do so resulting in the loss of a retailer's license.
- DSHS must review existing rules for possible revision, including strengthening testing and labeling requirements to ensure informed consumers, increasing licensing fees to facilitate enforcement, and improving recordkeeping to assist agency oversight.
- DSHS, TABC, and DPS must coordinate and increase enforcement across the state, in partnership with local law enforcement agencies.
- TABC, DSHS, Texas A&M AgriLife Extension Service, and other agencies will conduct a study on a comprehensive regulatory model similar to House Bill 309. This framework would provide a safe, transparent, and enforceable system that cracks down on abuse while preserving adult access to legal products.

Consumable Hemp Regulations

Current Rules

Regulating Manufacturing and Retail Sales

DSHS licenses consumable hemp manufacturers, registers retailers, and enforces regulations through inspections, random sampling, and penalties.

New Rules

New Rules Directed by Gov. Greg Abbott

Emergency rules from DSHS and TABC ban sales to anyone under 21 with mandatory ID verification, with license loss for violations.

Additional new rules and regulations will impose total THC limits, strengthen testing and labeling standards for safety and transparency, increase licensing fees to support enforcement, and improve record-keeping to enhance agency oversight.

Consumable Hemp Regulations

Transfer of Responsibility

Transfer Responsibilities: DSHS to TABC

TABC will take on the responsibility for compliance checks, enforcement operations, and seizure authority. The Memorandum of Understanding will establish protocols for **information sharing between agencies**, including reporting and identification of funding sources.

Interim Study

Interagency Interim Study

Launch a comprehensive **regulatory study** TABC, DSHS, and Texas A&M AgriLife Extension Service, exploring a long-term framework similar to alcohol regulation.

Consumable Hemp Regulations

TEXAS DEPARTMENT OF PUBLIC SAFETY

DPS Criminal Investigations and Coordination with Local Law Enforcement

From Gov. Abbott's Executive Order

DPS shall coordinate with other law enforcement and regulatory agencies to ensure enforcement of state laws governing unlawful sales of consumable hemp products, and to take appropriate measures to deter and address violations consistently across the State.

Governor Abbott Directs DPS To Increase Hemp Enforcement

DPS's Criminal Investigations Division will target vape and smoke shops of concern, conduct inspections with law enforcement partners, and use findings to launch undercover operations and criminal investigations. The DPS Crime Lab will test seized products, and agents will pursue charges against violators in coordination with federal and local partners.

Key Legislative Issues to Watch

2027

Evolving Policy Landscape & Future Legislative Issues

- Driving under the influence and combined substance use.
- Youth access and marketing safeguards.
- Product safety, labeling, and manufacturing standards.
- Consumer Education
- TCUP Patient Protections
- Product Availability
- Regulation of Testing Labs, Third Party Testing for TCUP
- Improving TCUP, Reducing Overly Burdensome Regulations
- Defining Synthetic Products
- Adverse Effect Reporting

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