

Physician's Certification

Magazine

A comprehensive guide for healthcare professionals summarizing the data on medicinal *cannabis* on health outcomes in select populations and other information relevant to protecting and promoting public health and awareness.

letter to the expert

Dear Healthcare Provider,

You probably already know that in Georgia, it is completely **legal** to sell and purchase **hemp** products which can be found at gas stations, on the internet, and in retail establishments across the country. Many of these items boast legitimate claims of what is contained therein, while others contain potentially harmful substances or inaccurate amounts of cannabinoids listed on the label when tested for potency, contributing to existing stigma surrounding cannabis use.

Marijuana, on the other hand (also cannabis), a Schedule 1 controlled substance, remains illegal in Georgia. The state has made exceptions for certain individuals with qualified medical conditions to obtain tightly regulated low-THC oil for medicinal reasons from approved dispensaries, requiring certification from their doctors. This places some of the state's authority in the hands of doctors, owing to the benefits demonstrated in clinical studies. Subsequently, cannabis use has become more of a public health issue than criminal issue, and healthcare providers must be prepared to help their patients navigate safely on account of its increasing availability.

This guide aims to help aide clinicians in their duty to promote public welfare and safety and lessen the likelihood of harm. We hope it serves as a valuable starting point in encouraging providers' needed involvement, using their expertise and critical-thinking skills to inform future research, facilitate shared decision-making with their patients, promote public awareness, and drive innovation that improves health outcomes for all populations.

The North Czeorgia Cannabis Experts



HISTORY OF MEDICINAL CANNABIS

The medicinal and psychoactive properties of the cannabis plant have been known since ancient times, playing roles in both culture and medicine throughout history (Crocq, 2020).

In 1890, Dr. J. Russell Reynolds, Queen Victoria's physician, summarized 30 years' experience working with Indian hemp in the Lancet, communicating its therapeutic value on certain maladies while noting the challenges associated with its use in practice--namely, not knowing the active agent responsible for its effects and the significant variations of those effects between plants (Reynolds, 1890).

Eventually, **Cannabidiol** (CBD) was isolated followed by its psychoactive **Delta-9 tetrahydro cannabidiol** (THC) counterpart which overshadowed the former due to its obvious effects on mood, perception, and cognition (Mechoulam & Gauni, 1965). As a result, scientists began to direct their attention toward the human **endocannabinoid system** (Devane et al., 1988).

history

CRIMINALIZATION IN THE US

In the US, restrictions on cannabis began to emerge in the early 1900's, progressing to its criminalization in the 1950s. When cultural acceptance toward its use began to emerge in the 1960's, the concurrent scientific exploration of the ECS placed its acceptance in a new context.

Nevertheless, it was officially categorized as a Class I controlled substance in 1970 with research halting due to federal control over its use and supply.

CURRENT LANDSCAPE

Today, federal law limits the supply and use of whole cannabis to medical and research reasons, while individual states govern laws concerning how medical cannabis products are distributed (National Academies of Sciences, Engineering, and Medicine, et al., 2017). Today, over 20 states have legalized the use of cannabis for recreation and medical purposes.

Cannabis Legalization by State

State	Legal Status	Medicinal	 Decriminalized	
Alabama	Mixed	Yes	No	
Alaska	Fully Legal	Yes	Yes	
Arizona	Fully Legal	Yes	Yes	
Arkansas	Mixed	Yes	No	
California	Fully Legal	Yes	Yes	
Colorado	Fully Legal	Yes	Yes	
Connecticut	Fully Legal	Yes	Yes	
Delaware	Fully Legal	Yes	Yes	
District of Columbia	Fully Legal	Yes	Yes	
Florida	Mixed	Yes	No	
Georgia	Mixed	CBD Oil Only	No	7
Hawaii	Mixed	Yes	Yes	
Idaho	Fully Illegal	No	No	
Illinois	Fully Legal	Yes	Yes	
Indiana	Mixed	CBD Oil Only	No	
lowa	Mixed	CBD Oil Only	No	
Kansas	Fully Illegal	No	No	
Kentucky	Mixed	CBD Oil Only*	No	
Louisiana	Mixed	Yes	Yes	
Maine	Fully Legal	Yes	Yes	
Maryland	Fully Legal	Yes	Yes	
Massachusetts	Fully Legal	Yes	Yes	7
Michigan	Fully Legal	Yes	Yes	1
Minnesota	Fully Legal	Yes	Yes	
Mississippi	Mixed	Yes	Yes	
Missouri	Fully Legal	Yes	Yes	
Montana	Fully Legal	Yes	Yes	-
Nebraska	Fully Illegal	No	Yes	
Nevada	Fully Legal	Yes	Yes	
New Hampshire	Mixed	Yes	Yes	
New Jersey	Fully Legal	Yes	Yes	
New Mexico	Fully Legal	Yes	Yes	
New York	Fully Legal	Yes	Yes	h
North Carolina	Fully Illegal	No	Yes	
North Dakota	Mixed	Yes	Yes	
Ohio	Fully Legal	Yes	Yes	
Oklahoma	Mixed	Yes	No	
Oregon	Fully Legal	Yes	Yes	
Pennsylvania	Mixed	Yes	No	
Rhode Island	Fully Legal	Yes	Yes	
South Carolina	Fully Illegal	No	No	
South Dakota	Mixed	Yes	No	
Tennessee	Mixed	CBD Oil Only	No	
Texas	Mixed	CBD Oil Only	No	
Utah	Mixed	Yes	No	
Vermont	Fully Legal	Yes	Yes	
Virginia	Fully Legal	Yes	Yes	
Washington	Fully Legal	Yes	Yes	-
West Virginia	Mixed	Yes	No	
Wisconsin	Mixed	CBD Oil Only	No	
Wyoming	Fully Illegal	No	No	
	l/8at			/

Updated June 6, 2024. https://disa.com/marijuana-legality-by-state

Definition

Summary: Cannabis is a genus of plants known for its medicinal and psychoactive properties, used also as food and fiber. The government classifies cannabis as either being **marijuana** (>0.3% delta-9 THC) or **hemp** (<0.3% delta-9 THC) as defined by The Agriculture Improvement Act of 2018.



Traditionally, cannabis plants have been classified as one of three types based on appearance: indica, sativa, or hybrid--all whose distinct physical characteristics are reportedly associated with a range of physiological effects. However, plants within the same class often exhibit significant variability, so this classification system may be misleading and inaccurate.

Cannabis is also classified according to its chemical profile, or **chemovar**, which quantifies the active compounds present in a certain type, thus, allowing clinicians to more accurately predict the effects of a certain strain or type better than appearance alone. (Piomelli & Russo, 2016).

There are three primary classes of chemovars:

Type 1: THC dominant (CBD:THC ratio >1)

Type 2: majority CBD, moderate THC (CBD:THC ratio~1)

Type 3: low THC (<0.3 % THC)

morphology & physiology

Cannabis contains over 400 bioactive components, with at least 100 belonging to cannabinoids. Found in varying quantities throughout the entire plant, they are produced and secreted by glandular trichomes (fig. C) most concentrated in the flowers of female cannabis plants (fig. A) (Tanney et al., 2021).

Within the plant, cannabinoids exist as the carboxylic precursors, **THCA & CBDA**, which become decarboxylated into **THC & CBD** by ultraviolet rays, heat, or through combustion (National Academies, 2017).



Each cannabis plant's metabolic profile is influenced heavily by genetics and the cultivation environment (temperature, fertilization, light intensity, etc.), owing to the metabolic and morphologic variability observed between plants.

Summary: Cannabis exerts its effects as its metabolites interact with the human endocannabinoid system. THC and CBD are the most well-known metabolites, although other minor cannabinoids and terpenes have also been shown to exert therapeutic effects in scientific studies.

THC, the major psychotropic cannabinoid, exhibits a high affinity for both CB1 and CB2 receptors found principally in the mammalian nervous and immune systems, respectively (see below). CBD has a more complex pharmacology, acting as a modulator of CB1 receptors and binding to 5HT1a, TRPV1, GPR55, and adenosine receptors (Lu & Mackie, 2021; Haney, 2022).

Minor cannabinoids, such as cannabichromene (CBC), cannabidivarin (CBDV), cannabigerol (CBG), and tetrahydrocannabivarin (THCV), have been shown to exert therapeutic effects on select targets in both animal and human studies (Pattnaik et al., 2022). The benefit of these components are often potentiated by the presence of terpenes, known as the "entourage effect".

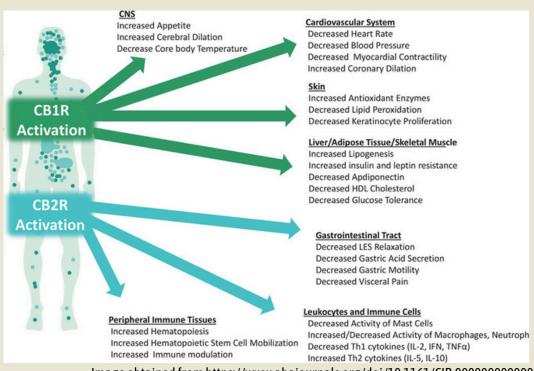


Image obtained from https://www.ahajournals.org/doi/10.1161/CIR.000000000000883#F4

Summary: the US Food & Drug Administration has a growing interest in the potential utility of cannabis on different medical conditions and in researching potential adverse affects (FDA, 2024). To date, the FDA has approved four cannabinoid products available by prescription only.

FDA Approved Formulations

Epidiolex (cannabidiol) is an oral formula approved for seizures associated with Lennox-Gastaut syndrome or Dravet syndrome in patients ≥2 y of age. Its mechanism of action is unknown, and it does not appear to exert antiseizure effects via cannabinoid receptor interaction (FDA, 2020).

Marinol (dronabinol) is a synthetic cannabinoid similar to THC and is supplied in capsule form (Dronabinol Capsules, 2019). It is indicated for adults experiencing cachexia associated with AIDS and nausea and vomiting associated with cancer chemotherapy. It demonstrates reversible, dose-dependent effects on mood, perception, cognition, and appetite by binding with CB1 receptors and interacting with the CNS in complex ways, including inducing sympathomimetic action. It is also supplied in an oral solution (Syndros).

Cesamet (nabilone) is also a synthetically derived cannabinoid similar to THC indicated in severe nausea associate with cancer chemotherapy in adults (FDA, 2006). It is supplied in capsule form and has a similar mechanism of action as dronabinol.

Summary: due to state-enacted laws removing restrictions on medical and recreational cannabis, many formulations have entered the market. These products are unregulated by the FDA which means they lack standardized dosing, cannabinoid concentration, packaging, and labeling.

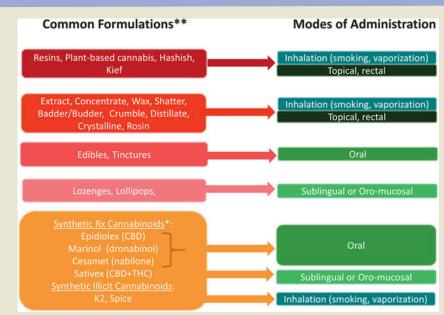


Image obtained from https://www.ahajournals.org/doi/10.1161/CIR.000000000000883#F4

Concentrate: products made by removing undesired plant parts, leaving the most desired behind (typically terpenes and cannabinoids). Can be made with or without the use of solvents (i.e., mechanical, physical means).

Badder/budder: a cake-like batter product created from whipping cannabis concentrate under heat.

Crumble: dried cannabis oil having a honeycomb consistency.

Crystalline: cannabinoids collected in their pure crystalized form.

Distillate: refined cannabinoid oil; the base of most edibles and vaporization cartridges.

Extract: concentrate created by washing trichomes off the plant with a solvent (alcohol, carbon dioxide, etc.).

Tincture: alcohol-based extract used to make edibles.

Hash/hashish: dried Cannabis flower and buds that are filtered and crushed into a sticky mass.

Kief: powder-like substance found on the flowers; most basic concentrate.

Resin: trichomes from flowers used to make hash

Rosin: end product when flower is squeezed under pressure

Shatter: translucent, brittle concentrate used to make a solvent.

Inhalation



Examples: joints, blunts, bongs, pipes, dabs, vapes **Pros:** Due to the quick onset of action with inhalation methods (minutes), this route may be advantageous for those experiencing acute or breakthrough symptoms.



Cons: exposure to toxic byproducts (produced by the combustion of cannabis) increases the risk for adverse health outcomes, especially with chronic exposure (Lopez, 2023). Although vaping exposes to less byproducts than smoking, it is associated with lung injuries, especially in unregulated products containing

vitamin E acetate. Unregulated vapes also do not limit

voltage, which increases the risk of vape-related injury.



Oral/ingested

Examples: tinctures, edibles, capsules, oils, teas

Pros: when regulated, clear dosing information is available.

Cons: variable rates of absorption may lead to delayed onset. First-pass metabolism with oral products produce greater psychotropic effects than with inhalation (Lopez, 2023). These factors contribute to accidental overdosing with cannabis. Nano-formulations help overcome these limitations, improving efficacy. Doses at 0.15-0.30 mg/kg of THC have been shown to induce psychotropic effects (Page II et al., 2020). Going "low and slow" until effects are established mitigate risk of overdose and adverse effects.





Georgia's Low-THC Oil Registry

On April 7, 2019, Georgia's Hope Act [HB 324] was signed into law, allowing select populations to access and posses up to 20 fluid ounces of low -THC (<5%) cannabis oils for medical reasons. According to O.C.G.A. § 31-2A-18, the only way to legally obtain such oils is via physician certification through the Low THC-Oil Registry.

What role do physicians play in the certification process?

Physicians must register with the Low-THC Oil Registry, explain the certification process to established patients, assess and verify their patient has a qualifying condition, add and/or remove them to/from the Registry, and submit reports as directed by the Georgia Composite Medical Board (360-36-.04).



Is this the same as a prescription?

The Board states that certification is **not** a prescription, and physicians are **not** obligated to certify a patient. (However, keep in mind hemp products can be purchased legally anywhere).

*qualifying conditions

- AIDS
- Alzheimer's disease
- Amyotrophic lateral sclerosis
- Autism spectrum disorder
- Cancer
- Crohn's disease
- Epidermolysis bullosa
- Intractable pain
- Mitochondrial disease

- Multiple sclerosis
- Parkinson's disease
- Patient is in hospice program
- Peripheral neuropathy
- Post-traumatic stress disorder
- Seizure disorders
- Sickle cell disease
- Tourette's syndrome

Addo, P.W., Poudineh, Z., Shearer, M., Taylor, N., MacPherson, S., Raghavan, V., Orsat, V., & Lefsrud, M. (2023). Relationship between total antioxidant capacity, cannabinoids and terpenoids in hops and cannabis. *Plants, 12*(6), 1225.

Arsenault, T. L., Prapayotin-Riveros, K., Ammirata, M. A., White, J. C., & Dimkpa, C. O. (2024). Compliance testing of hemp (Cannabis sativa L.) cultivars for total delta-9 THC and total CBD using gas chromatography with flame ionization detection. Plants (Basel, Switzerland), 13(4), 519.

Crocq, M. A. (2020). History of cannabis and the endocannabinoid system. Dialogues in Clinical Neuroscience, 22(3), 223–228.

Devane, W. A., Dysarz, F., Johnson, M. R., Melvin, L. S., & Howlett, A. C. (1988). Determination and characterization of a cannabinoid receptor in rat brain. *Molecular Pharmacology*, 34(5), 605-613.

Dronabinol capsules. (2019). www.camberpharma.com.

Haney, M. (2022). Cannabis use and the endocannabinoid system: A clinical perspective. American Journal of Psychiatry, 179(1), 21-25.

Hillig, K. W., & Mahlberg, P. G. (2004). A chemotaxonomic analysis of cannabinoid variation in Cannabis (Cannabaceae). American journal of botany, 91(6), 966-975. LaVigne, J. E., Hecksel, R., Keresztes, A., & Streicher, J. M. (2021). Cannabis sativa terpenes are cannabimimetic and selectively enhance cannabinoid activity. Scientific reports, 11(1), 8232.

Lopez, M., (2023). Medical cannabis dosing and administration. American Journal of Endocannabinoid Medicine. https://www.endocannabinoidmedicine.com/

Lu, H., & Mackie, K. (2021). Review of the endocannabinoid system. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 6(6), 607-615.

Mechoulam, R., & Gaoni, Y. (1965). A total synthesis of dl-Δ1-tetrahydrocannabinol, the active constituent of hashish. Journal of the American Chemical Society, 87(14), 3273-3275.

National Academies of Sciences, Engineering, and Medicine, Health and Medicine Division, Board on Population Health and Public Health Practice, & Committee on the Health Effects of Marijuana (2017). The health effects of cannabis and cannabinoids: The current state of evidence and recommendations for research. In Cannabis: Prevalence of Use, Regulation, and Current Policy Landscape. National Academies Press (US).

Page, R., Allen, L., Kloner, R., Carriker, C., Martel, C., Morris, A., Piano, M., Rana, J., & Saucedo, J. (2020). Medical marijuana, recreational cannabis, and cardiovascular health: A scientific statement from the American Heart Association. Circulαtion, 142(10).

Pattnaik, F., Nanda, S., Mohanty, S., Dalai, A. K., Kumar, V., Ponnusamy, S. K., & Naik, S. (2022). Cannabis: Chemistry, extraction and therapeutic applications. *Chemosphere*, 289, 133012.

Piomelli, D., & Russo, E. B. (2016). The Cannabis sativa versus Cannabis indica debate: An interview with Ethan Russo, MD. Cannabis and Cannabinoid Research, 1(1), 44–46.

Reynolds, J. R. (1890). On the therapeutical uses and toxic effects of cannabis indica. The Lancet, 135(3473), 637-638.

Tanney, C., Backer, R., Geitmann, A., & Smith, D.L. (2021). Cannabis glandular trichomes: A cellular metabolite factory. Frontiers in Plant Science, 12(721986)

US Food & Drug Administration. (2006). Cesamet capsules. www.accessdata.fda.gov.

US Food & Drug Administration. (2020, July). Epidiolex prescribing information. www.accessdata.fda.gov.

US Food & Drug Administration. (2024, July 16). FDA regulation of cannabis and cannabis-derived products, including cannabidiol (CBD). FDA.gov.





Who We Are

We are a team of local professionals who, at our core, want to help people.

We believe all people should be afforded the opportunity to live the best life possible, no matter their current life situation. As cannabis experts committed to promoting positive changes in the world around us, we believe it is our societal obligation to advocate for safe and responsible cannabis use.

Put it this way: if it involves cannabis, we have an interest.

By partnering with consumers, healthcare providers, and regulatory agencies, we aim to raise public awareness and encourage scientific inquiry that will help inform cannabis industry standards and best practices. As industry leaders experienced in cannabis cultivation, manufacturing, and retail, we are able to provide invaluable insights that can help business owners develop strategic plans, navigate regulatory frameworks, and establish quality assurance procedures to ensure their products are high-quality and safe.

We want to help you help those you serve, in a way that preserves your professional integrity. It is our desire to partner with you toward a better future.









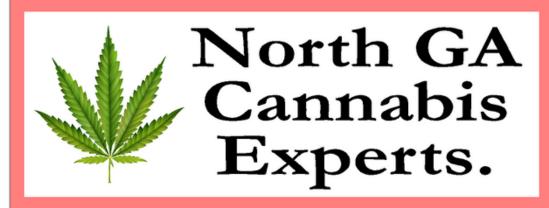






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CANNABIS USE REFERRAL

Patient Name:		
Date:		
Diagnosis:	(())	
COMMENTS:		
Physician signature:		
Physician Office Address:		
Citv:	State:	Zipcode: