

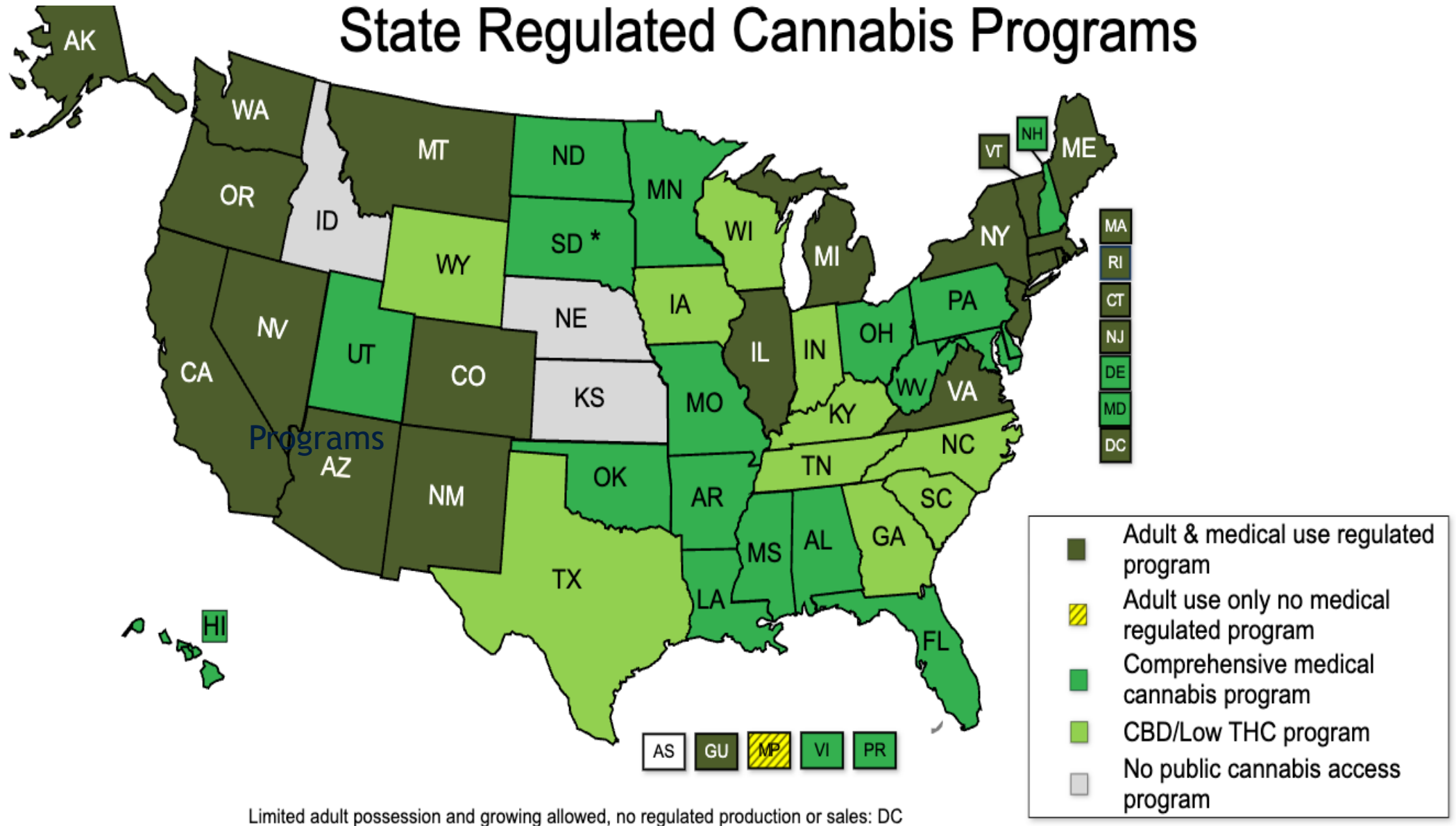
Medical Marijuana 101; What to know, Where to go, What we are learning

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Division of Supportive Medicine

PMMNG July 9, 2022

State Regulated Cannabis Programs



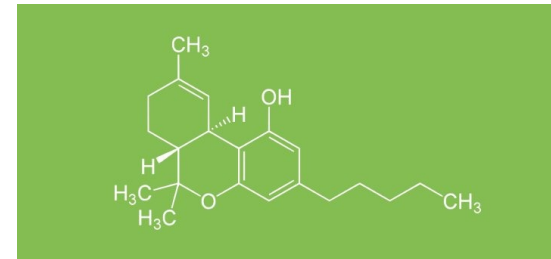
Cannabis = taxonomic term referring to a genus of flowering plants that are members of the family Cannabaceae, consisting of 1000's of phytochemicals, divided into 3 species (c. sativa, c. indica, c. ruderalis)

	Marijuana**	Hemp
<u>United States Law Defines as:</u>		
Plant Components	leaves, flowers and viable seeds of cannabis	stalks, stems and sterilized seeds of cannabis
Δ9- Tetrahydrocannabinol (THC) = main psychoactive component	>0.3%	<0.3%
Cannabidiol (CBD)	Any	Any

**Used interchangeably with cannabis, given range of possible patient products used, term cannabis is more accurate and inclusive in this setting

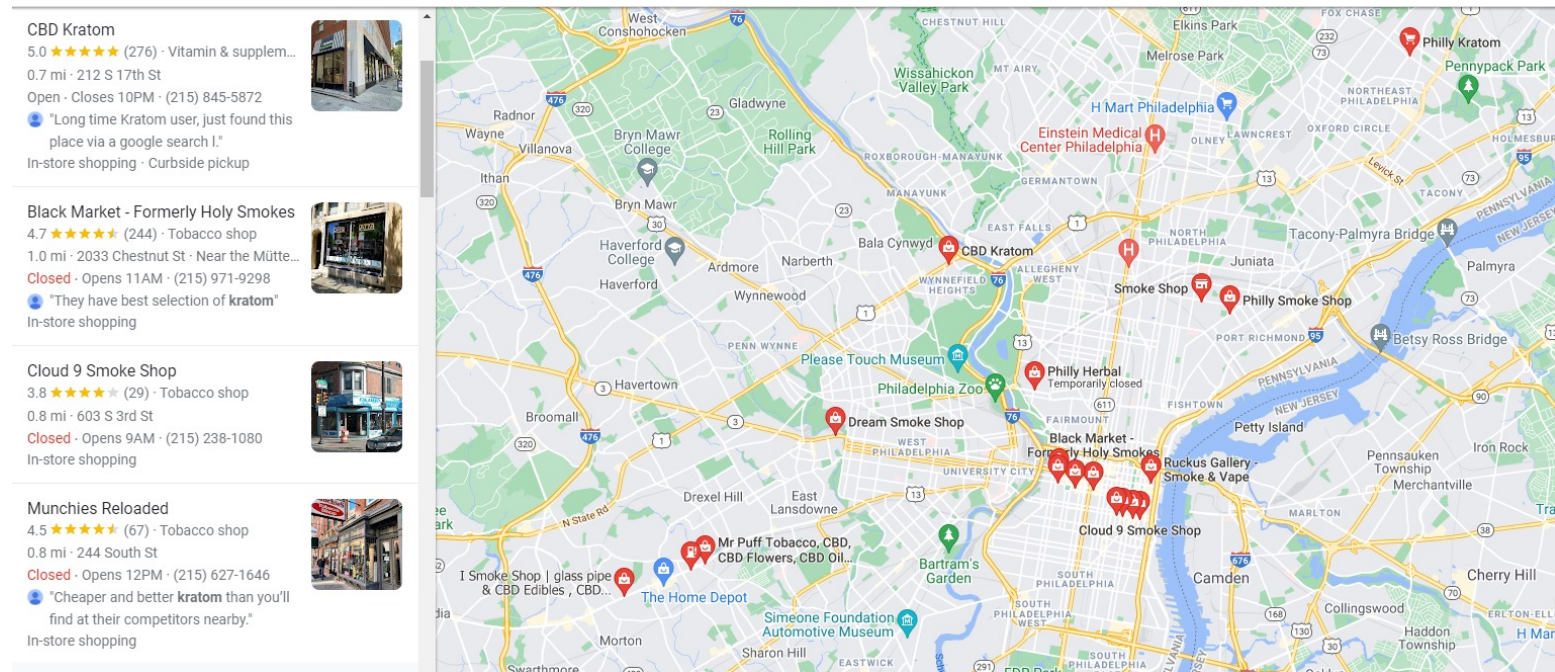
Pathophysiology, active components

- *Cannabis sativa*
 - Genus and species name for the marijuana plant
 - Hemp
- THC
 - Δ^9 -Tetrahydrocannabinoid, psychoactive component of *c. sativa*
 - 5-30% in medical marijuana strains
- CBD
 - Cannabidiol, no psychoactive aspect but is studied for medical properties
- Active at CB1, CB2 and TRPV receptors



Legislation of hemp under the Farm Bill has dramatically changed the ‘market’

- CBD
- Kratom - herbal extract that comes from the leaves of an evergreen tree (*Mitragyna speciosa*) grown in Southeast Asia
- $\Delta 8$ -THC



Terpenes



Bisabolol

floral

Properties
anti-inflammatory
anti-irritant
anti-microbial



Borneol

mint

Properties
anti-inflammatory
antinociceptive



Camphene

fir needles, musky earth

Properties
anti-oxidant
skin lesion



Caryophyllene

spicy

Properties
anti-bacterial
anti-inflammatory
anti-fungal



Delta 3 Carene

pine, rosemary

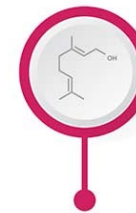
Properties
anti-inflammatory
bone stimulant



Eucalyptol

mint

Properties
anti-bacterial
anti-fungal



Geraniol

peach, rose grass

Properties
anti-cancer
anti-oxidant
neuroprotectant



Humulene

earthy

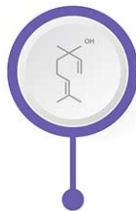
Properties
anti-bacterial
anti-inflammatory
anti-tumor effects



Limonene

bitter citrus

Properties
anti-anxiety
anti-cancer
digestion, gallstones



Linalool

floral

Properties
anti-anxiety
anti-epileptic
anti-psychotic
pain killing



Myrcene

citrus, cloves

Properties
relaxing
sedating



Pinene

pine

Properties
anti-depressant
anti-inflammatory
anti-microbial



Phytol

balsamic, floral

Properties
anti-insomnia
immunosuppressant



Terpinolene

smoky, woody

Properties
anti-bacterial
anti-fungal
anti-insomnia
antiseptic



Trans-nerolidol

citrus, rose

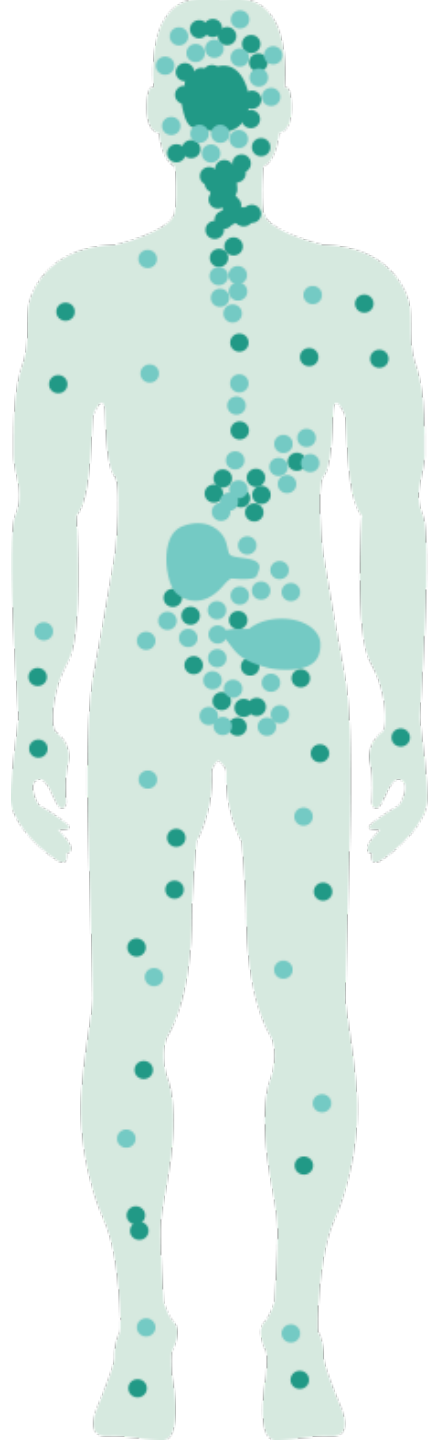
Properties
anti-cancer
anti-microbial
anti-oxidant,
anti-parasitic



Valencene

sweet citrus

Properties
anti-inflammatory
anti-melanogenesis
antiallergic



CB1

CB1 Receptors target:

- Motor activity
- Thinking
- Motor co-ordination
- Appetite
- Short term memory
- Pain perception
- Immune cells

CB2

CB2 Receptors are much broader than CB1 and influence most of the body

- Gut
- Kidneys
- Pancreas
- Adipose tissue
- Skeletal muscle
- Bone
- Eye
- Tumours
- Reproductive system
- Immune system
- Respiratory tract
- Skin
- CNS
- Cardiovascular system
- Liver

medicalmarijuana.pa.gov

procon marijuana map - Google x Medical Marijuana Program x

https://www.health.pa.gov/topics/programs/Medical%20Marijuana/Pages/Medical%20Marijuana.aspx

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Department of Health

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How to Get Medical Marijuana Apply for ID Card/Access Account How to Renew my Registration Find a Practitioner Find a Dispensary Complete Practitioner Registry Med Marijuana Assistance Program

Health > All Health Topics > Programs > Medical Marijuana

Pennsylvania Medical Marijuana Program

- [Withdrawal of Products Containing Additives Not Approved for Inhalation by the FDA](#)
- [Known Additives Contained in One or More Products on the Withdraw List](#)
- [Notice to Patients and Caregivers of February 4, 2022](#)
- [Medical Marijuana Assistance Program \(MMAP\) FAQ](#)
- [Medical Marijuana Coronavirus \(COVID-19\) Notice - June 15, 2021](#)
- [PROPOSED RULEMAKING Medical Marijuana Proposed Regulations Notice – March 5, 2021](#)
- [Medical Marijuana Two-Year Final Report - May 15, 2020](#)
- [Extension of Medical Marijuana Temporary Regulations Notice - April 2, 2020](#)
- [2020 Act 10 - PA General Assembly](#)

The Pennsylvania Department of Health is in the process of implementing the state's Medical Marijuana Program, signed into law on April 17, 2016. When fully implemented, the Medical Marijuana Program will provide access to medical marijuana for patients with a serious medical condition through a safe and effective method of delivery that balances patient need for access to the latest treatments with patient care and safety. This guide will connect you with medical marijuana resources and information for patients and caregivers, growers and processors, dispensaries, physicians, and laboratories.

<https://padohmmp.custhelp.com/app/login>

Information for:

- [Patients and Caregivers](#)
- [Schools](#)
- [Growers and Processors](#)
- [Dispensaries](#)
- [Physicians](#)
- [Laboratories](#)
- [Clinical Research](#) (Chapter 20)
- [Medical Marijuana Advisory Board](#)
- [Medical Marijuana Assistance Program](#)

Questions?

Please call 888-733-5595. Our call center hours of operation are 7AM - 9PM ET, seven days a week, excluding state holidays.

Dispensary Map (SE PA)

Chrome File Edit View History Bookmarks Profiles Tab Window Help

Medical Marijuana Availability | X

https://www.google.com/maps/d/u/0/viewer?mid=10yxX22qEa2exw8ENNzcZ2d39mq11d2qj&ll=40.064499866446866%2C-75.24214852663407&z=11

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Ethos Pennsylvania - Philadelp...

This map was created by a user. [Learn how to create your own.](#)

Dispensary name
Ethos Pennsylvania - Philadelphia

Medical marijuana available beginning:
1/2/20

Open on:
1/2/20

Product available as of 6/14/2022:
Yes

Address
807 Locust Street

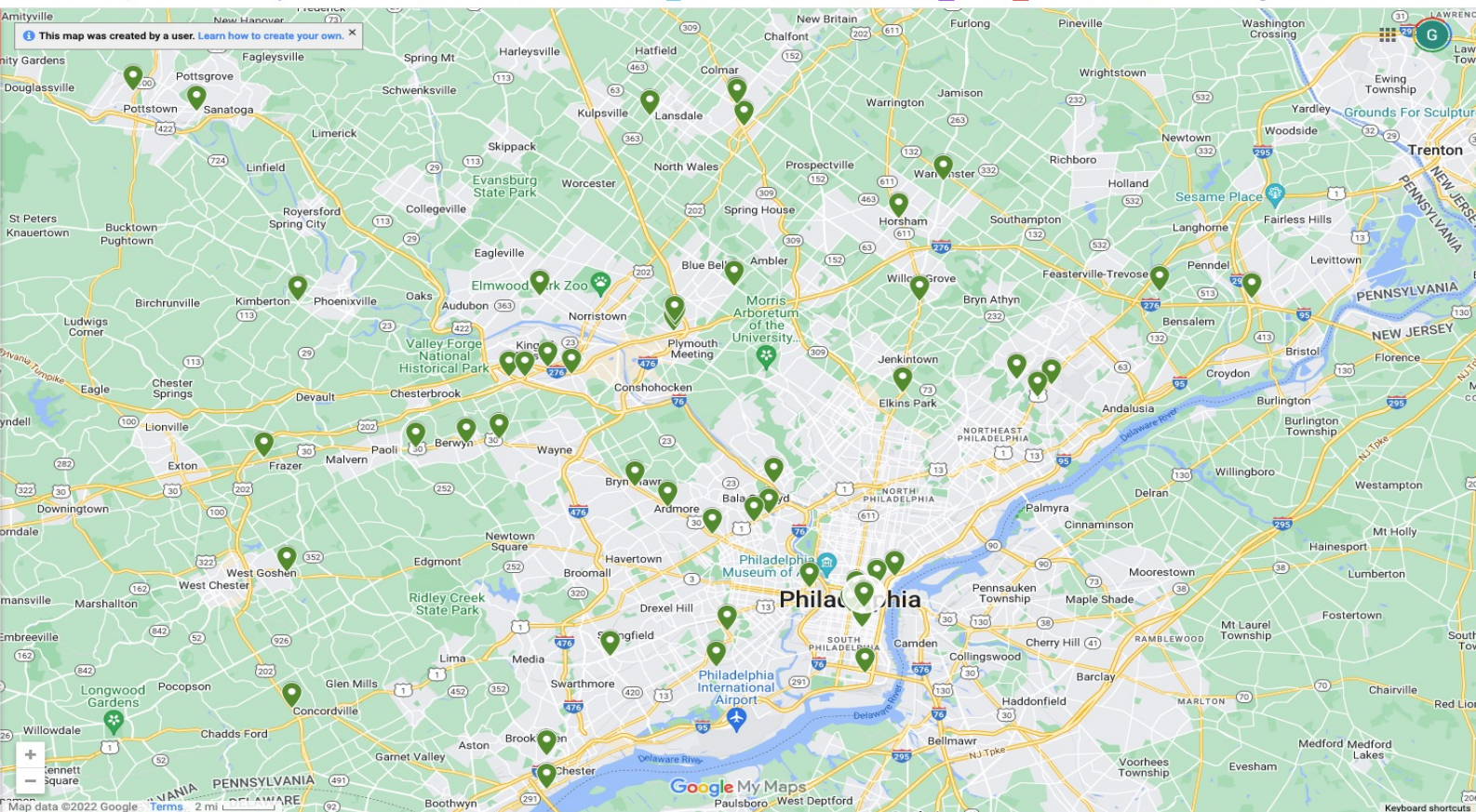
City
Philadelphia

State
PA

Zip Code
19107

Phone number
267-861-7350

Website
www.ethospa.com



How do you guide a patient?



Calypso
1000mg THC Tincture 30mL
Hybrid THC: 33.6mg/mL



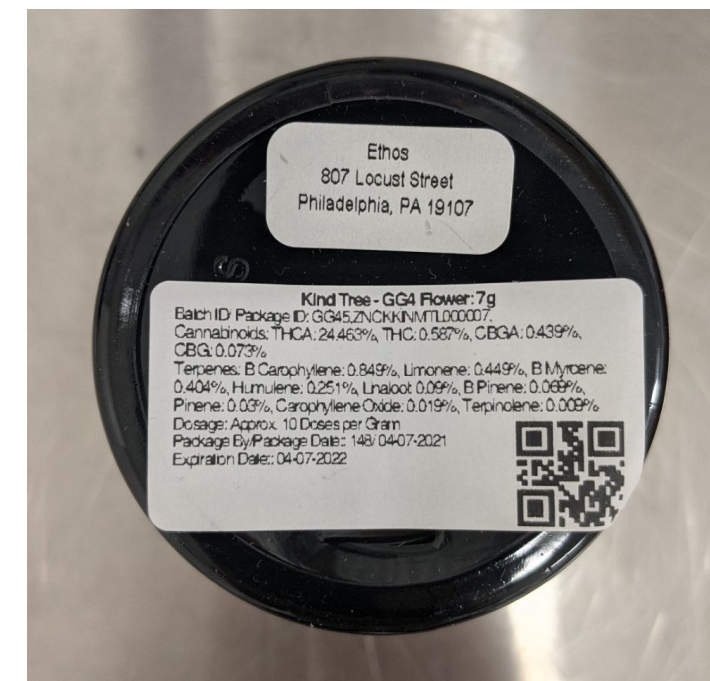
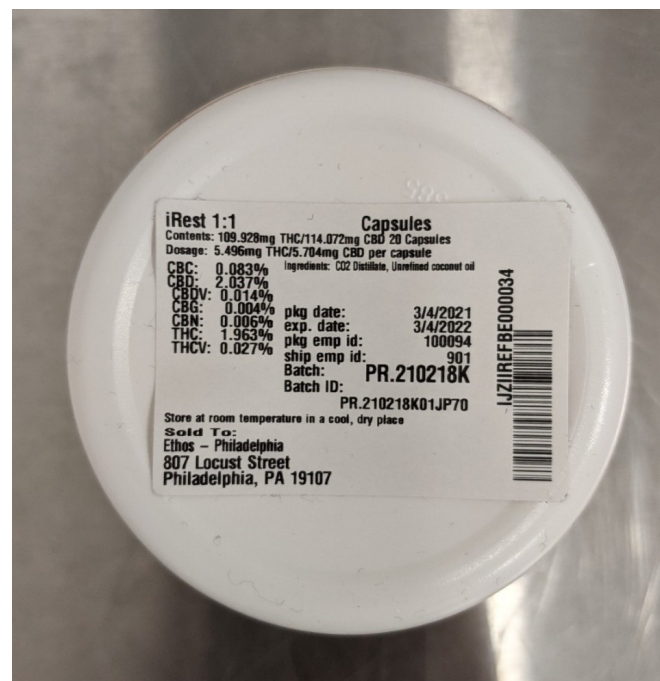
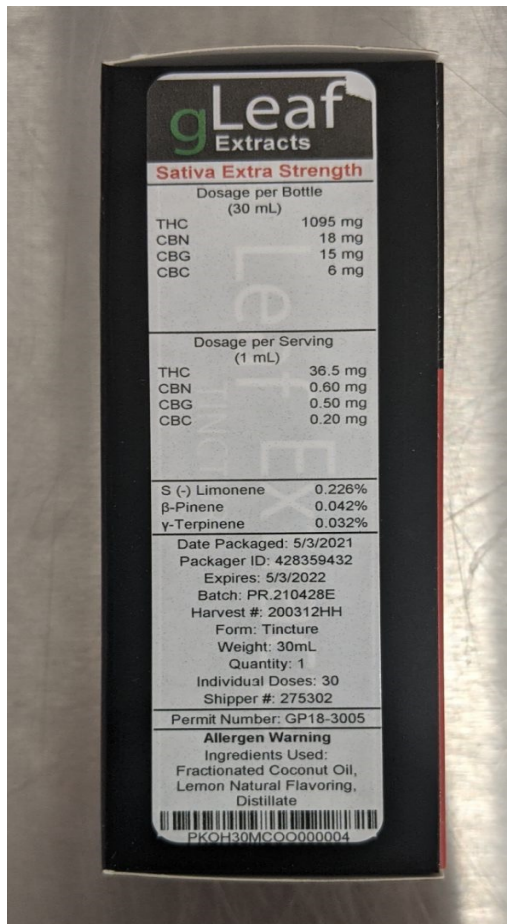
Natural Selections
Banana Tree (Rain Delay Pheno) 3.5g
Hybrid THC: 22.08%



MÜV
Beach Wedding Distillate Disposable Vape Pen 300mg
Hybrid THC: 74.66% | CBD: 0.29%

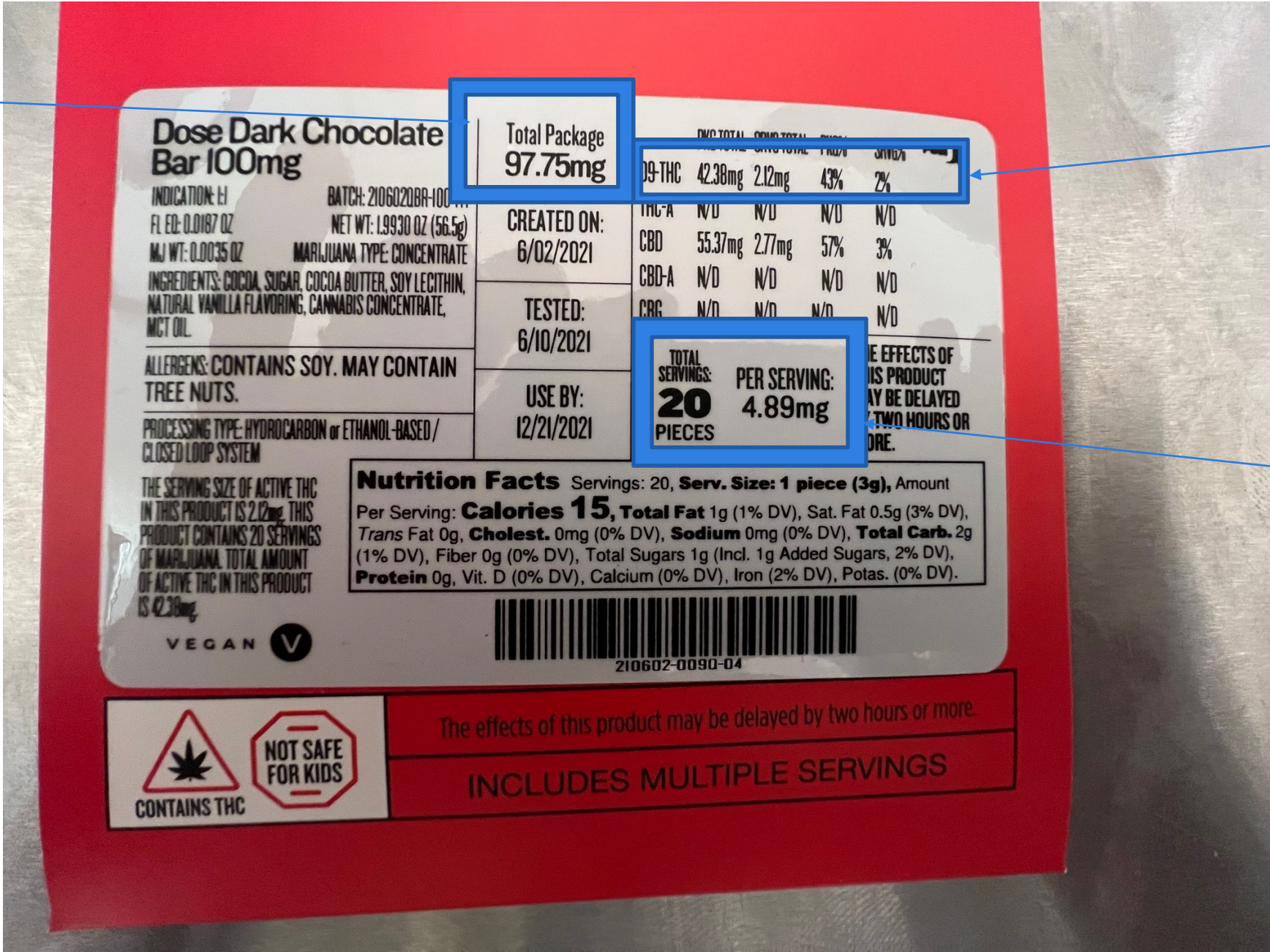


Doctor Solomon's
Doze 1:1 CBN:THC Tincture 15ml
Hybrid THC: 3.4mg/mL | CBD: 3.4mg/mL



Total active cannabinoids
*in this product there is both THC and CBD

In products ingested orally, composition is reported in mg



42.38mg of THC in the *entire* product, 2.12mg THC in each serving (in this case, 1 square of chocolate)

In 1 square of chocolate (1 serving) there is 4.89mg of Total Active Cannabinoids In this example, there is THC and CBD in roughly a 1:1 ratio

Cannabis Pharmacokinetics			
Form	Onset of Action	Peak Effect	Duration of Effect
Inhalation (includes vaporization or smoking)	0-10 min	3-10 min	2-4 hrs
Oral	1-3 hrs	1-2 hrs	6-12 hrs
Sublingual	15-60 min	45 mins	4-6 hrs
Topical	5-120 mins	variable	variable

Initial THC Dosing		
Form	Dose	Comments
Inhalation (includes vaporization or smoking)	1 short inhalation	<ul style="list-style-type: none">Wait 10-15 minutes to see effectInhale longer duration puff for stronger effect
Oral	2.5-5 mg	<ul style="list-style-type: none">Consider starting with ¼-1/2 of edible productWait 1 -2 hours to see effect before redosing for desired effect
Sublingual	2.5-5 mg	<ul style="list-style-type: none">Wait 45 minutes to see effect before redosing for desired effect
Topical	Liberal amount to affected area	<ul style="list-style-type: none">Do not bathe or swim after

Medical *Cannabis* Formulations

- Inhalation
 - Duration of action: 0.5 - 2 hrs
 - Patient counseling
 - Quick onset of effect
 - Easiest product to titrate to effect
 - Start with lowest vaporization temperature setting to avoid coughing
 - May not be easy to use for patients with throat or mouth sores
 - Should not be recommended in immunocompromised (Flower) or with known lung problems

Medical *Cannabis* Formulations

- Oral
 - Erratic, lower bioavailability
 - Time to peak: 60-120 min
 - Duration of effect: 4 - 6 hours

Grotenhermen. Clin Pharmacokinet. 2003.
Foster et al. Am J Med. 2019.
Huestis. Chem Biodivers. 2007.

Medical *Cannabis* Formulations

- Oral
 - Patient counseling
 - Raw product
 - Unlikely to get an effect due to the need for decarboxylation which created with heat
 - THCA → THC
 - Edibles
 - Baked goods take longer to work than tinctures
 - Consuming on an empty stomach may intensify the effect
 - Dosing
 - Conservative starting dose is 2.5-5 mg
 - Increase by 2.5mg every 24 hours until you get the desired effect

Grotenhermen. Clin Pharmacokinet. 2003.
Foster et al. Am J Med. 2019.

Medical *Cannabis* Formulations

- Topical
 - Slow onset of action
 - Duration of action: hours
 - Patient counseling
 - Identify a local application site
 - Wash and dry the area before application
 - Be generous with application
 - Massage product into the skin
 - Wash hands after application
 - Do not apply before showering or swimming

What to consider

- Do you have a reason to medically prefer a specific form?
- Focus on THC and CBD alone - we don't know enough about anything else
 - Broad strokes - THC predominant, CBD Predominant, Intermediate
 - Oral ingestion is either mg or ratio THC:CBD, inhaled is %
- How experienced is patient with Marijuana?
- Start Slowly

What we think happens. . . .



What really happens . . .

