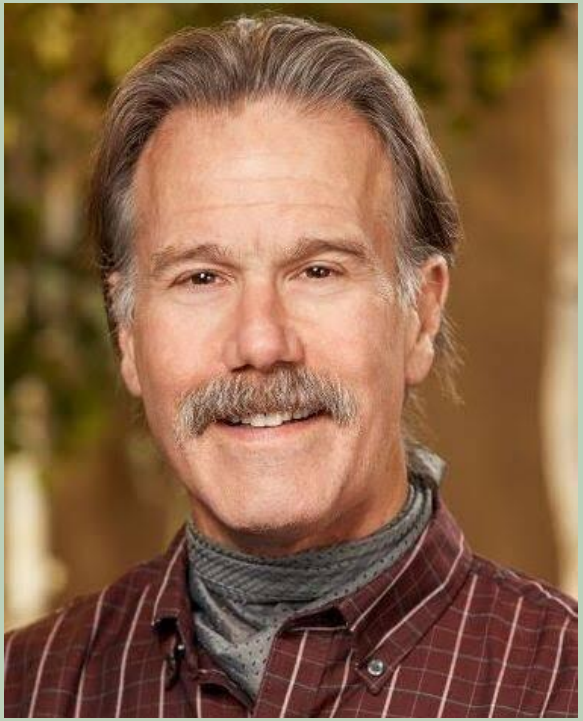
Medical Marijuana (Cannabis) for the primary care provider

Vivian Moise, MD

Spokane Pain Conference
October, 2026



Special thanks to Dr. Greg Carter



Disclosures



- No conflicts of interest
- No, I do not use cannabis myself
- Yes, I do authorize medicinal cannabis for many of my patients

Learning Objectives:

At the conclusion of the presentation the attendee will be able to -



- Understand **historical** aspects of medicinal cannabis
- Describe major **pharmacological effects** of cannabinoids on the **endocannabinoid system**
- Explain **risks/benefits** of cannabis use for medicinal purposes
- Know how to **register a patient** for medicinal cannabis use
- Understand current state of **research**

History

- Cannabis plant dates back 35+ million years
- Used as food, herbal medicine, and spiritual/recreational intoxicant for essentially all of recorded human history





Prehistoric cave drawings

History

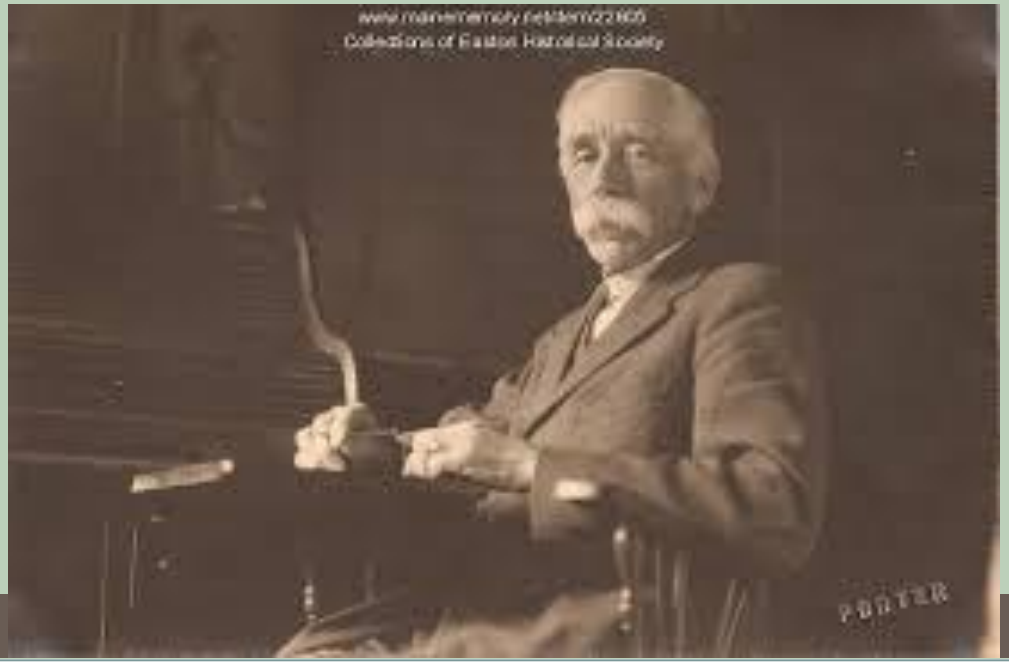
- among the oldest agricultural crops in the world, cultivated for over 10,000 years, for fiber, rope, clothing, fuel & as medicine



Historical Use as Medication, in USA

- **Widely prescribed by physicians in the United States 1890-1937**
- **In the 1920's, American physicians wrote three million cannabis-containing prescriptions per year!**



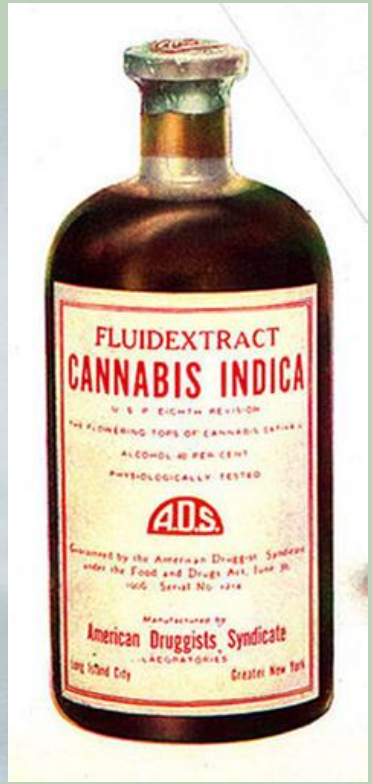


Historical Use as Medication, in USA

- **Cannabis based medications were produced by Eli-Lilly, Parke Davis, Sharp Dohme, the Smith Brothers, and others.**







History of the **Eradication** of Medical Cannabis



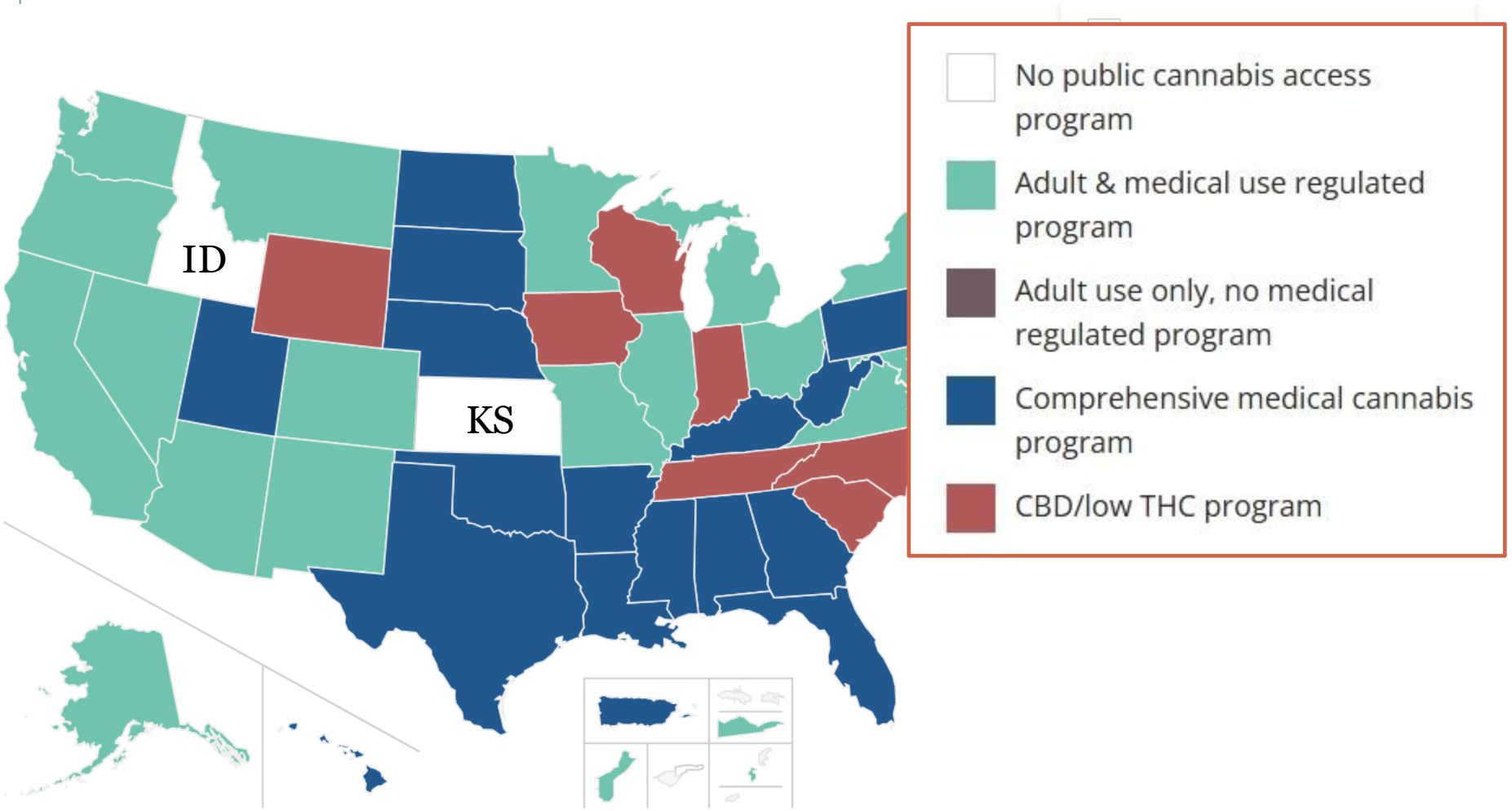
- **1930 - cannabis under increasing scrutiny by Federal Bureau of Narcotics (FBN) but driven mainly by *money, politics and racism, not science.***
- **1937 - Marijuana Tax Act made possession or transfer of cannabis illegal throughout the United States under federal law.**
- **The American Medical Association (AMA) opposed the act**
- **1942 - All use of cannabis was criminalized in the United States, and still remains as such under Federal law**

Know your current state medical cannabis laws at



- **http://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx**

- This website is an up to date resource for the laws regarding cannabis in every state in the United States


ID
KS
No public cannabis access program
Adult & medical use regulated program
Adult use only, no medical regulated program
Comprehensive medical cannabis program
CBD/low THC program

Today

- ***Despite being de-criminalized in 48/50 states, cannabis is still a schedule 1 drug federally = dangerous with no medical use (same schedule as heroin!)***



=



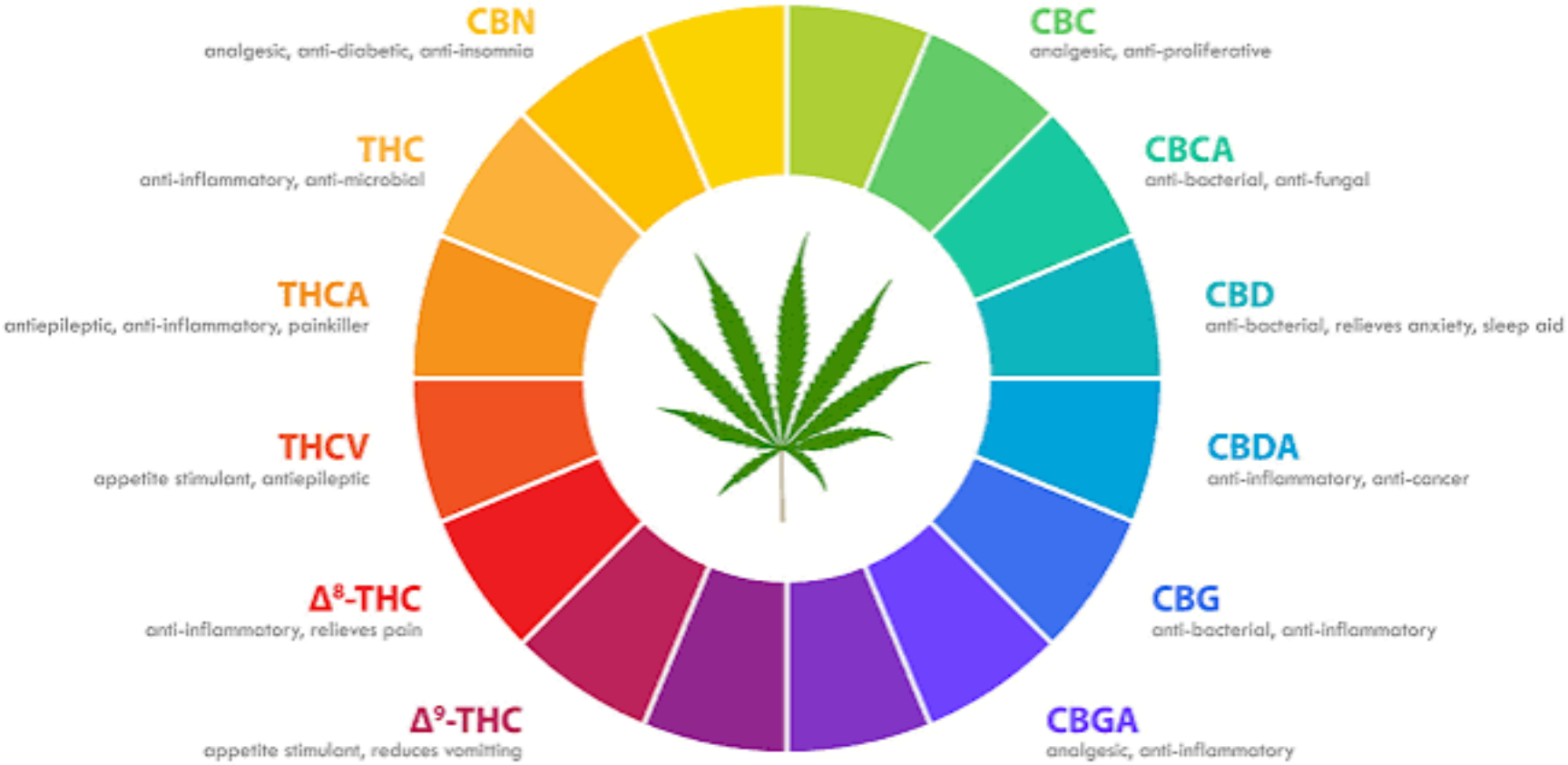


History of discovery of components of the cannabis plant

- **1940 - CBD (Cannabidiol) was the 1*st* *cannabinoid discovered*** (by Dr. Roger Adams and his team, University of Illinois)
- **1964 - THC (Tetrahydrocannabinol) was discovered** (in Israel by Dr. Raphael Mechoulam) over 20 years after CBD



Over 150 different cannabinoids subsequently discovered!!



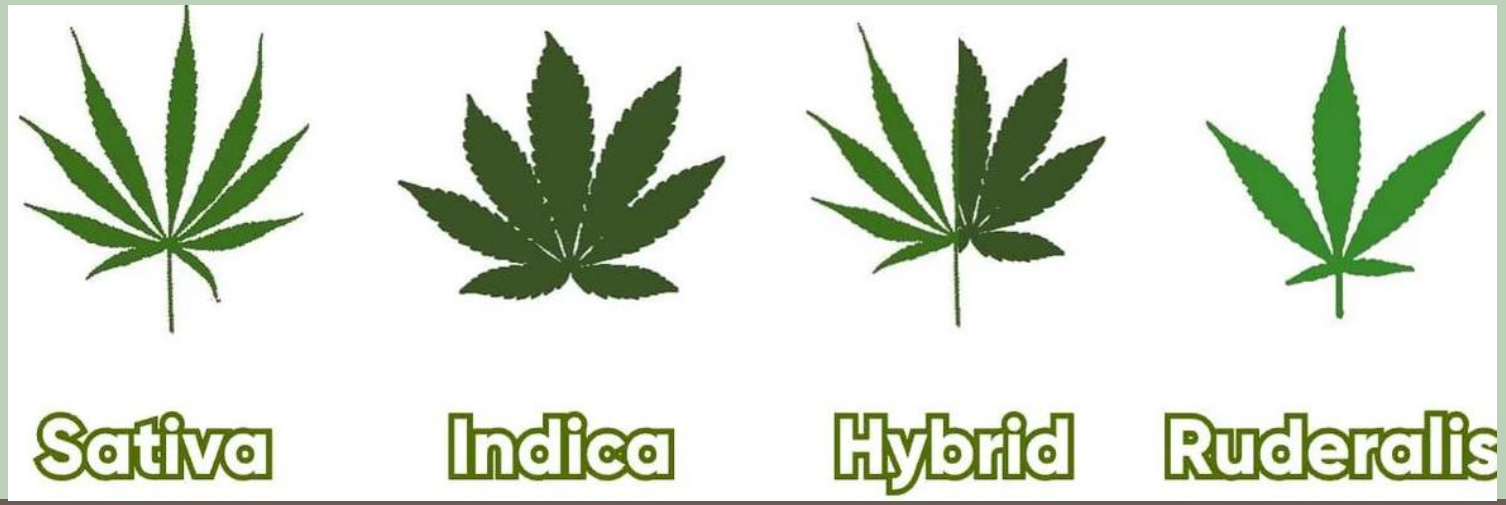
Predominant cannabinoids in cannabis plant



- ***Tetrahydrocannabinol (THC) – psychoactive***
- ***Cannabidiol (CBD): analgesia; moderates effects of THC.***
- ***Cannabinol (CBN): anticonvulsant.***
- ***Tetrahydrocannabivarin (THCV): anti-inflammatory.***
- ***Cannabichromene (CBC): mixed effects.***
- ***Cannabicyclol (CBL): mixed effects***

Species (strains) of Cannabis

- ***Sativa:*** tall, thin plants (up to 20 ft), **THC > CBD**
- ***Indica (wide leaf type):*** short dense plants, **CBD>THC**
- ***Ruderalis***: small plants with **CBD >>THC**, very low THC
- ***> 700 strains***: Most cannabis sold today is from crossbred hybrids



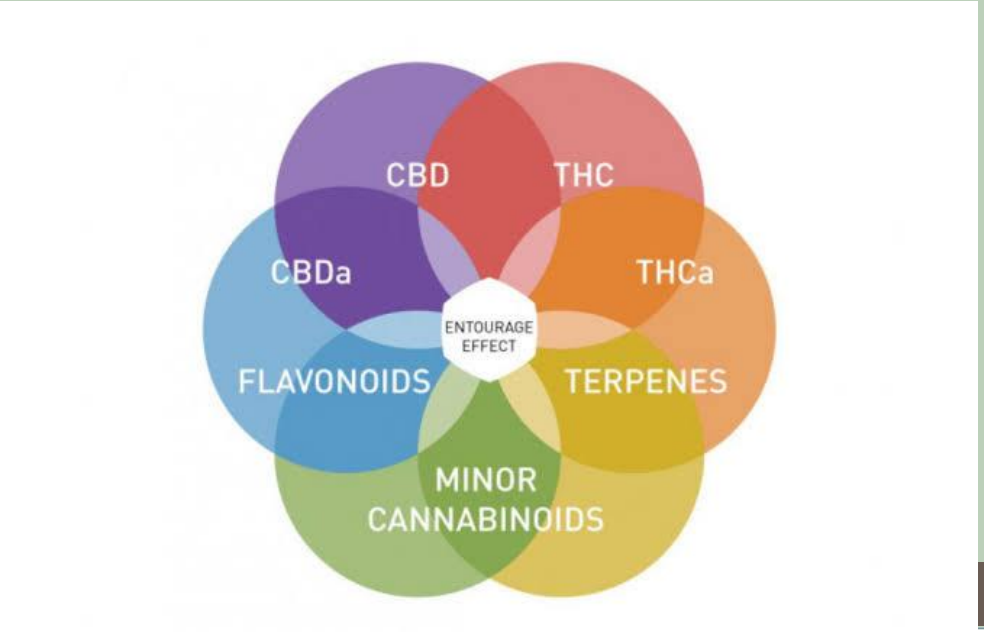
What about hemp?

- Subspecies of high THC Sativa
- Has **0.3% or less THC by law,** so no “high”
- Contains 6-20% CBD
- Many industrial and commercial uses
- Unknown if has any medicinal benefits



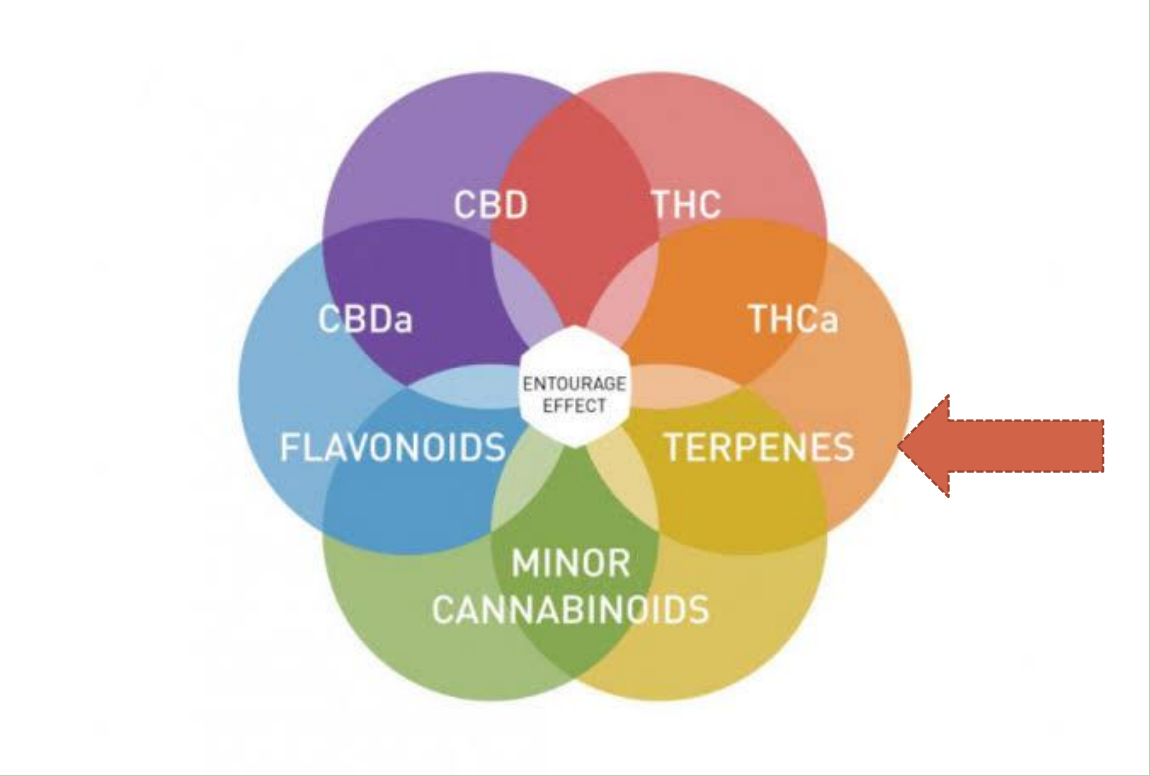
The “Entourage Effect” for Pain Relief

- Evidence suggests that **combining THC and CBD** provides **better pain relief** than using either compound on its own
- They work synergistically to boost benefits while minimizing unwanted side effects



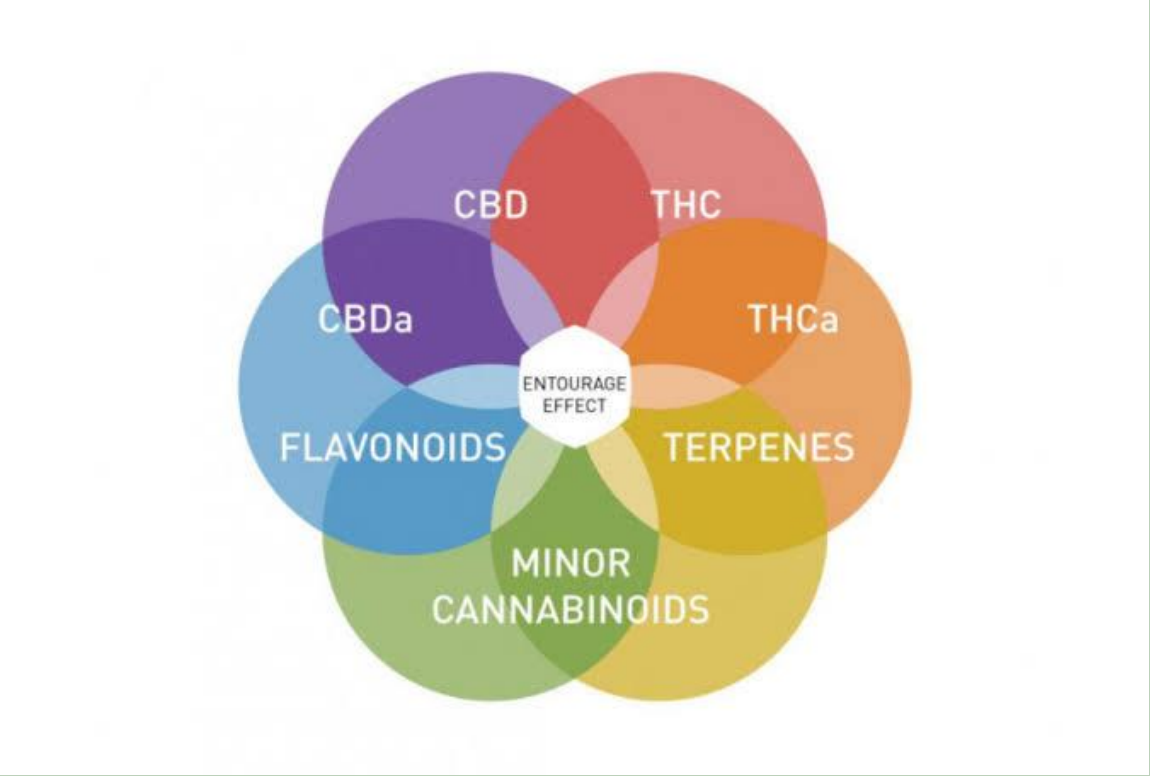
The “Entourage Effect” for Pain Relief

- **Terpenes** in cannabis affect absorption of the cannabinoids, so can also affect their effectiveness.



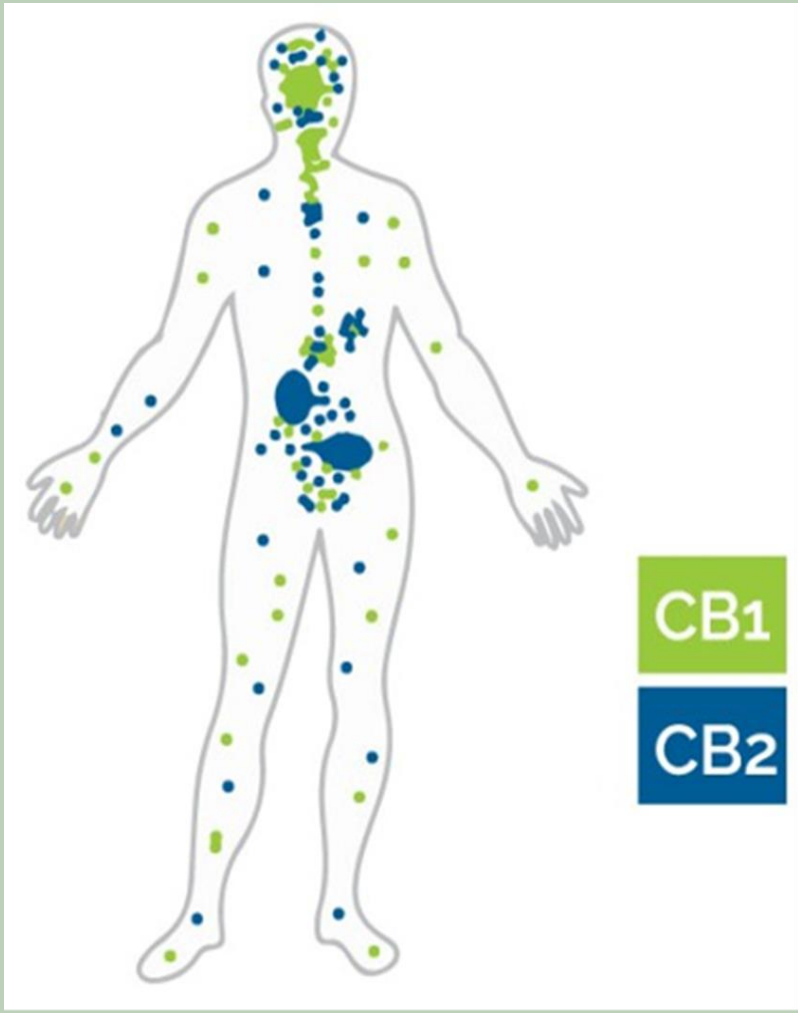
The “Entourage Effect” for Pain Relief

- So **marijuana plant** more effective than pure CBD from **hemp**, for medicinal benefits



Early 1990s (after CBD, THC discovery), Endocannabinoid System (ECS) discovered

- ECS is within the human body
- Cannabinoid receptors – main ones CB1/CB2
- We have our own internal cannabinoids

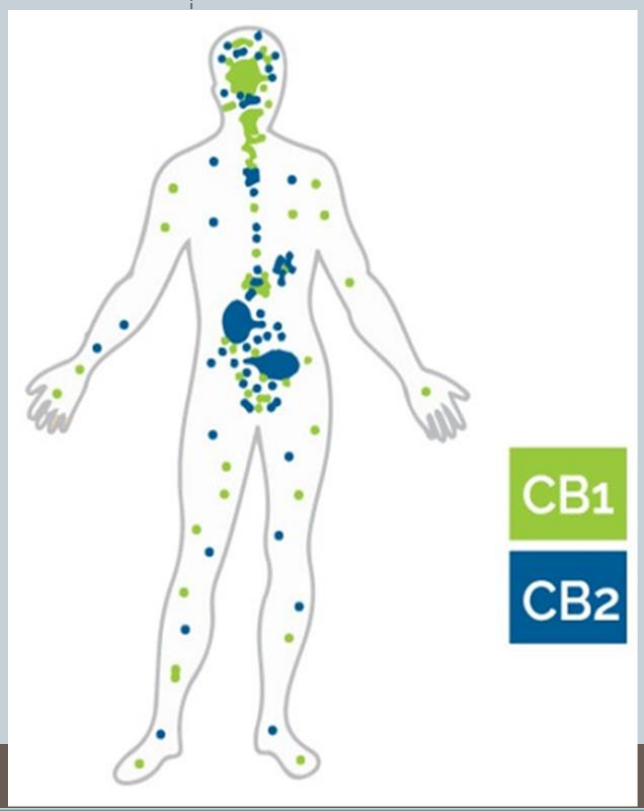


Endocannabinoid Receptors

CB1

- highly expressed in ***brain***
- --also in
  - Adipose tissue,
  - liver,
  - **Skeletal muscle**,
  - GI tract,
  - reproductive tissue,
  - cardiovascular tissue

- CB2
- highly expressed in ***immune cells***



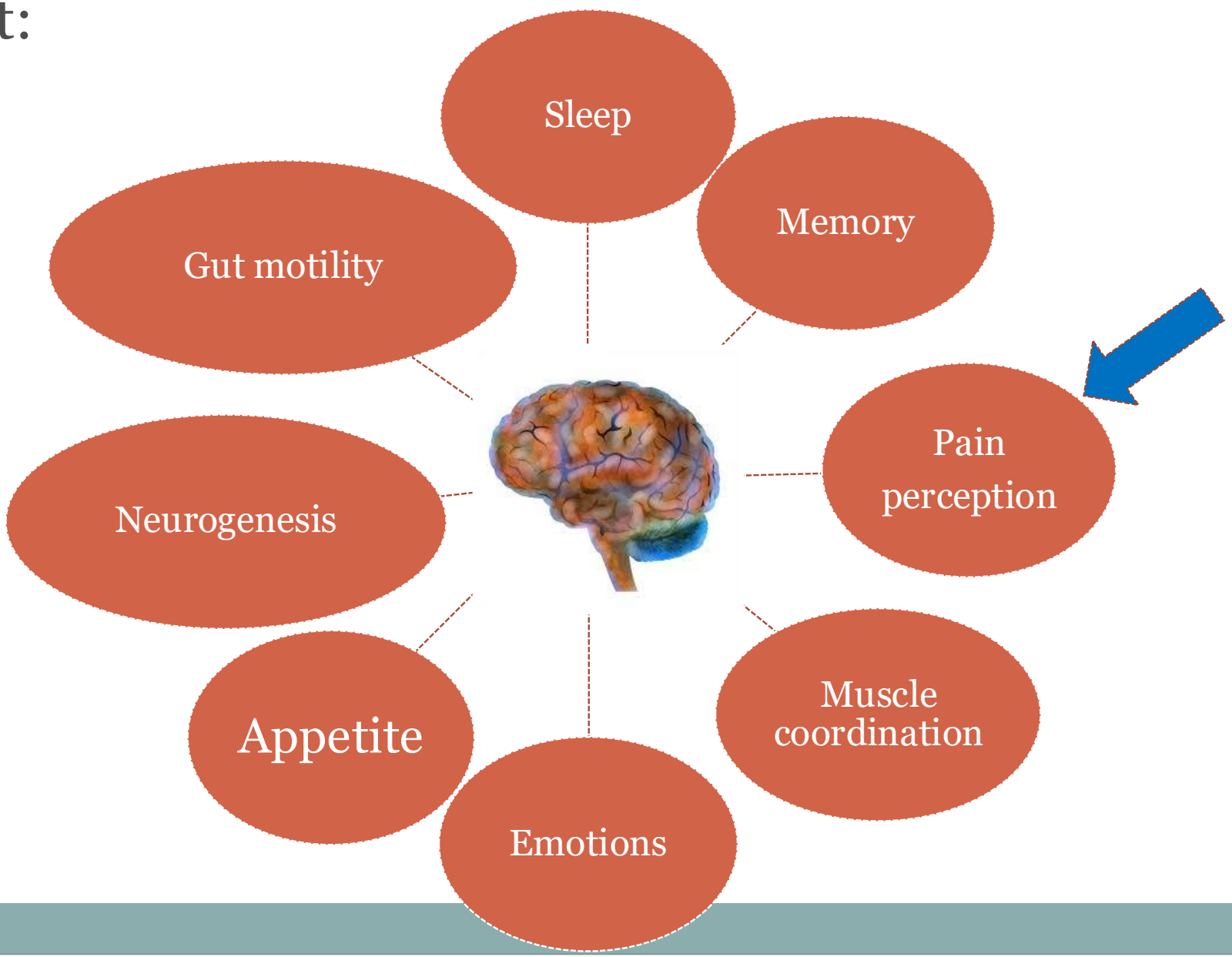
Physiological Effects of Endocannabinoids

- Endocannabinoids are released as an ***adaptive response to cellular stress***, aimed at re-establishing cell ***homeostasis***.
- e.g.***"Runner's high"***





- Endocannabinoids are ***neuromodulators*** that affect:



The Endocannabinoid System (ECS)

- Endocannabinoids are ***<u>immunomodulators</u> that control inflammation***
  - Activate macrophages, neutrophils, B cells and T cells
  - Regulates migration of B cells and maintains healthy IgM levels.



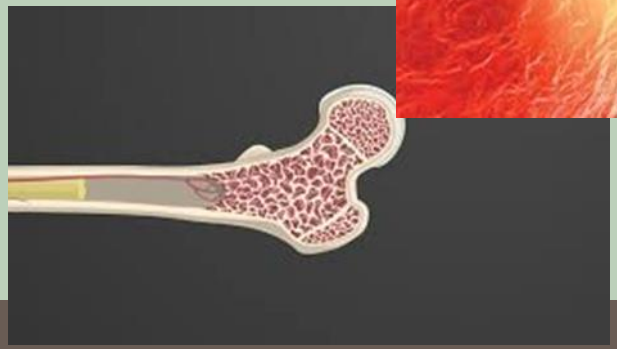
Physiological Effects of Endocannabinoids

- Endocannabinoids affect a large number of other physiological processes including:

  --Cardiovascular function
  --Reproduction
  --Bone formation



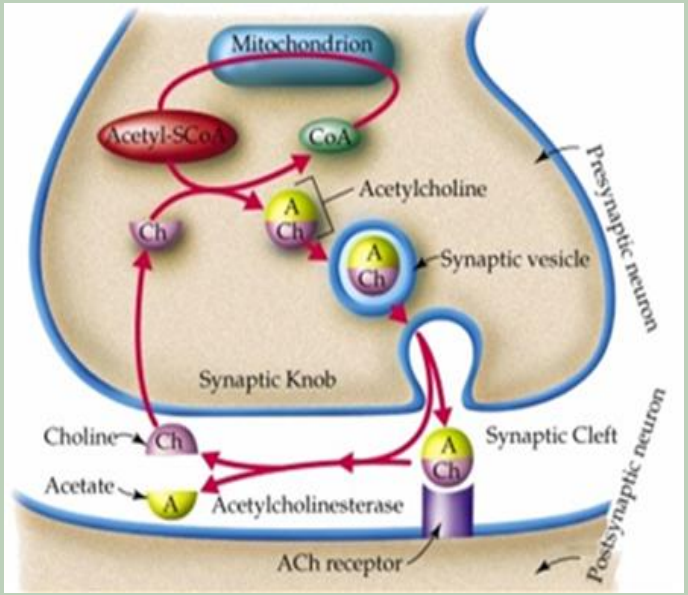




Retrograde Neurotransmission
in endocannabinoid system

Classical neurotransmitter

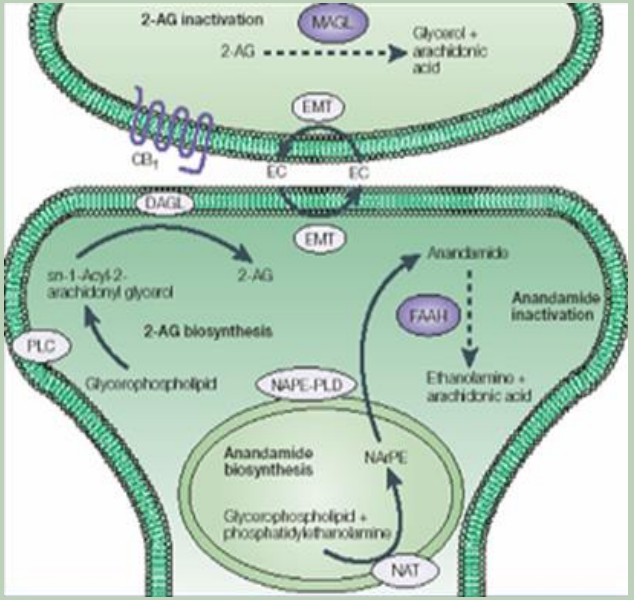
Presynaptic



Postsynaptic

Retrograde neurotransmitter

Presynaptic



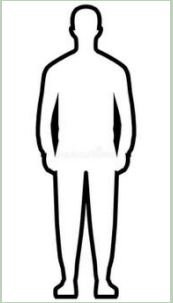
Postsynaptic

Research on Medicinal Use of Cannabis

- *Extensive* basic science **animal** research
- *More limited* **human** research







Conducting clinical human research:

- Must get special registration for research from the Drug Enforcement Admin (DEA) which has specific requirements for site where cannabis will be studied.
- National Institute on Drug Abuse (NIDA) within the National Institutes of Health (NIH) funds research with max of $500,000 (vs millions in pharmaceutical industry trials)
- NIDA provides poor quality cannabis cigarettes for research from the University of Mississippi



Human Research on medicinal cannabis



Most studies have been

- --small
- --imperfectly controlled
- --short duration
- --with variable dosing amounts
- --combine study data from variable delivery systems and variable outcome measures
- --Pharmaceutical industry is interested in research, but will not fund studies until DEA changes schedule 1 designation

Good Review Article on human research using cannabis for treatment of pain

Cannabinoids for Treatment of Chronic Non-Cancer Pain; a Systematic Review of Randomized Trials." Br J Clin Pharmacol 2011 2(5):735-44 PMID: 21426373

- Review of **randomized controlled trials**
- Cannabis treating **chronic non-cancer pain**: neuropathic pain, fibromyalgia, rheumatoid arthritis, and mixed chronic pain
- **Excellent quality trials**
- 15 of the 18 trials showed **significant analgesic effect** of cannabis
- **No serious adverse effects**; only a few withdrawals from the studies

Another Good Review Article on human research using cannabis for treatment of pain

Cannabinoids for the Treatment of Chronic Non-Cancer Pain: An Updated Systematic Review of Randomized Controlled Trials. J Neuroimmune Pharmacol. 2015; 10(2):293-301.

- Review of **randomized control trials**
- **Eleven new trials**
- **Excellent quality studies**.
- 7/11 trials showed **significant analgesic effect**.
- Several trials also showed **improvement in sleep, muscle stiffness and spasticity**
- **Adverse effects** most frequently reported (**fatigue and dizziness)** were **mild to moderate** in severity and generally well tolerated.

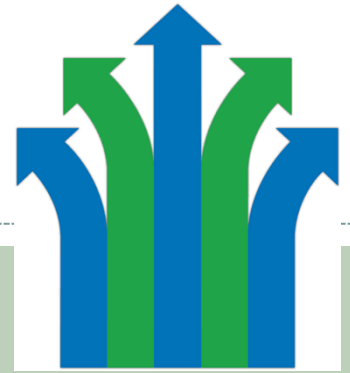
Conclusions from human studies on cannabis?



- Cannabis appears to have a ***modest benefit*** in treatment of many forms of **pain** (neuropathic pain, chronic non-cancer pain, fibromyalgia)
- Medical use of cannabis does appear to be ***safe***
- Other benefits, including improvements in **sleep and spasticity** from cannabis use



Future Research Directions



- Much more research needed!
- Need to use standardized extracts
- Need to use consistent delivery methods (NOT smoking)
- Needs standardized patient pain types (i.e., don't lump fibromyalgia in with neuropathic pain)
- Need longer trials
- Need studies directly comparing cannabis to other analgesics

How to use in your medical practice

MARY JANE, M.D.
420 High Street
Cannabis, Colorado 42020

Name _____ D.O.B. _____

Address _____ Date _____

Rx



_____
(signature)

NR ____ Label ____ Refill _____ times

☐ Dispense as written

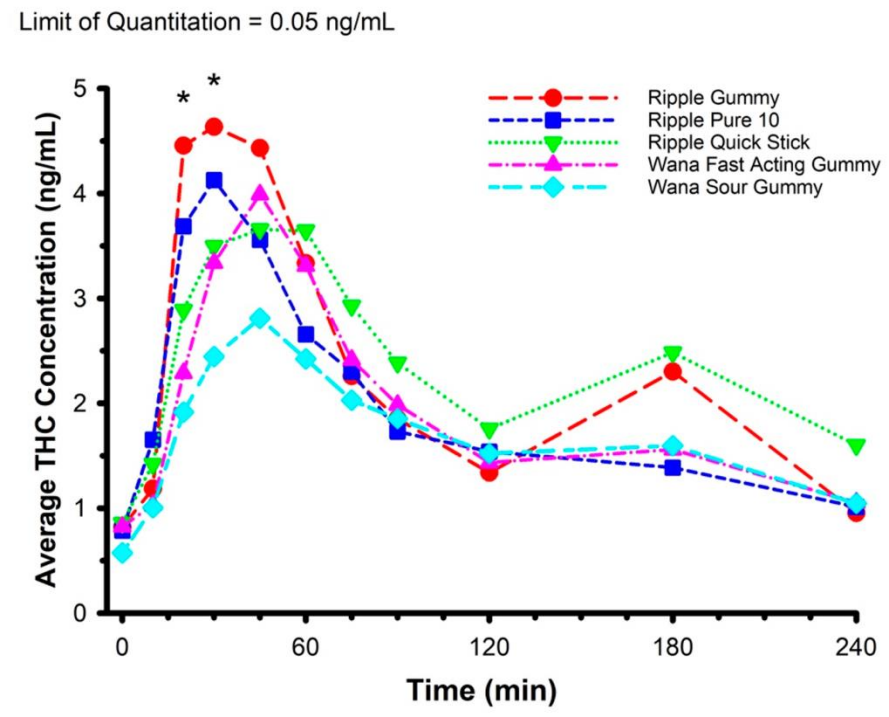
How to use in your medical practice



- Clinical Pharmacology
- Methods of use
- Dosing paradigms
- Side effects
- Patient instructions
- State registration form

CLINICAL PHARMACOLOGY OF CANNABIS

- First-pass rapid metabolism through liver (after PO admin) for rapid clearance from plasma
- Cleared 20-35% through urine; 65-80% through feces



CLINICAL PHARMACOLOGY OF CANNABIS

- After cleared from plasma, stored up in adipose, then very slowly eliminated from body over days to weeks
- Urine drug screen stays positive for up to 4 weeks after use



CLINICAL PHARMACOLOGY OF CANNABIS

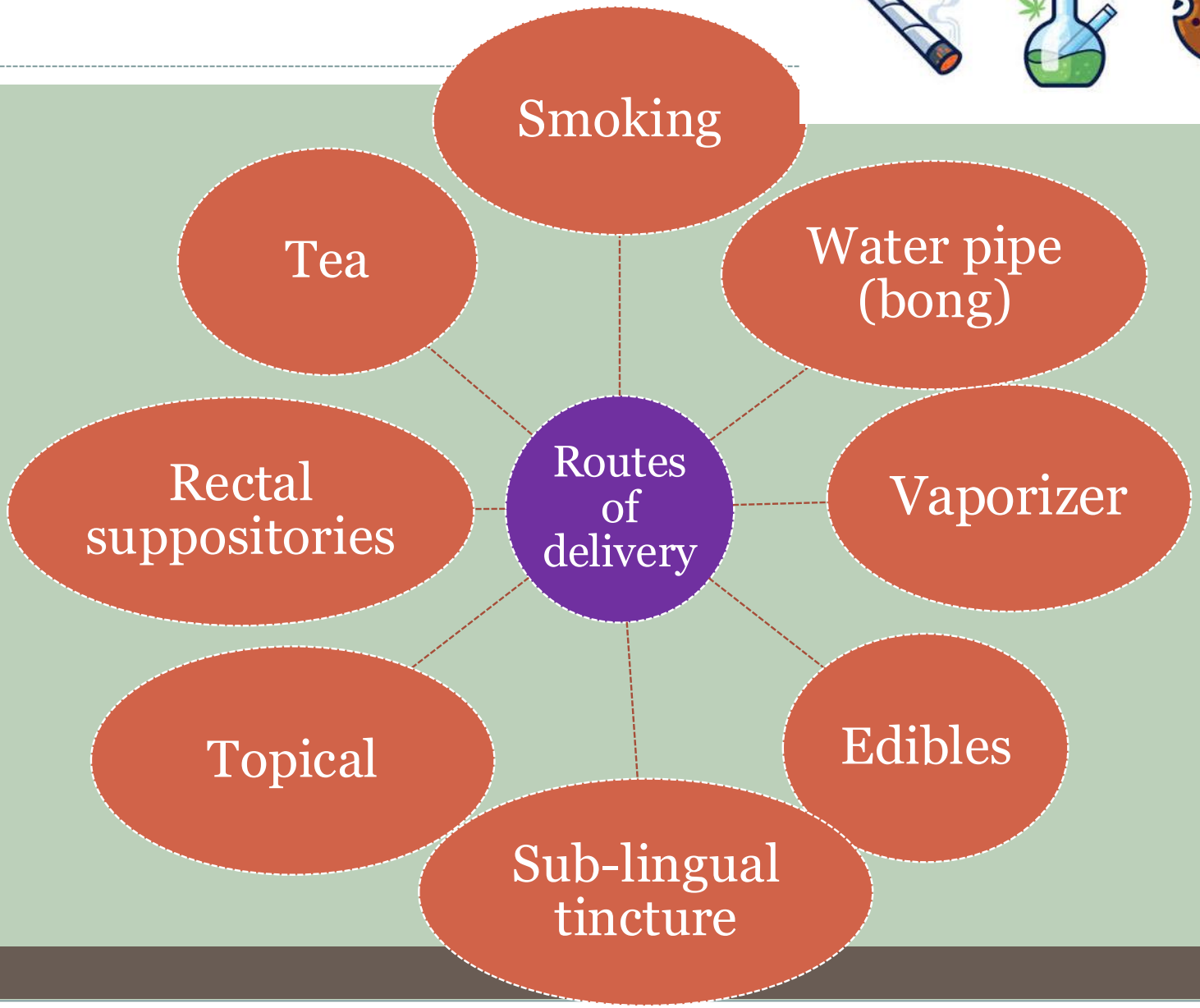
- Pregnancy Category C
- Present in breast milk
- Don’t use if pregnant or nursing!





Routes of delivery for cannabis

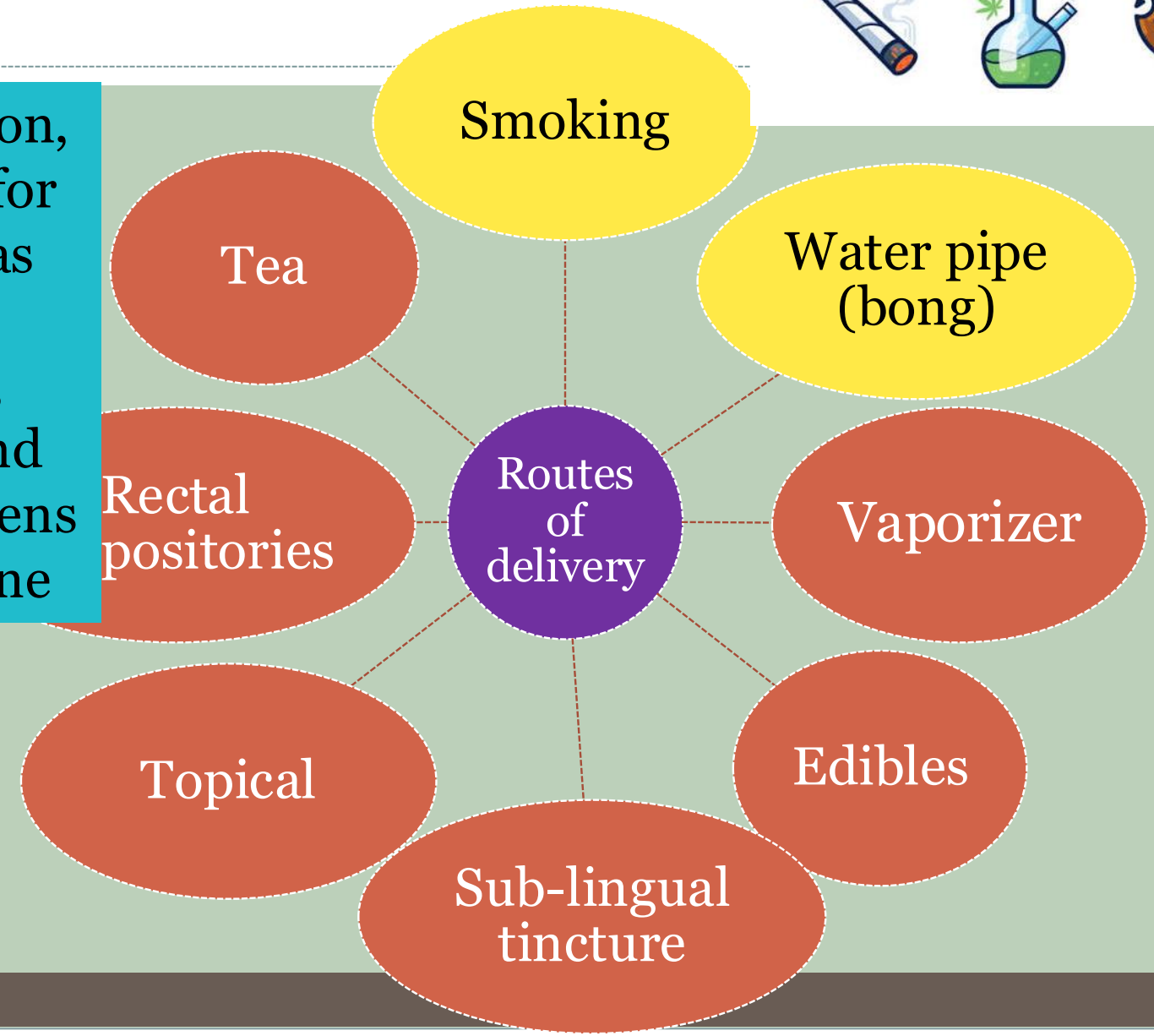




Routes of delivery for cannabis

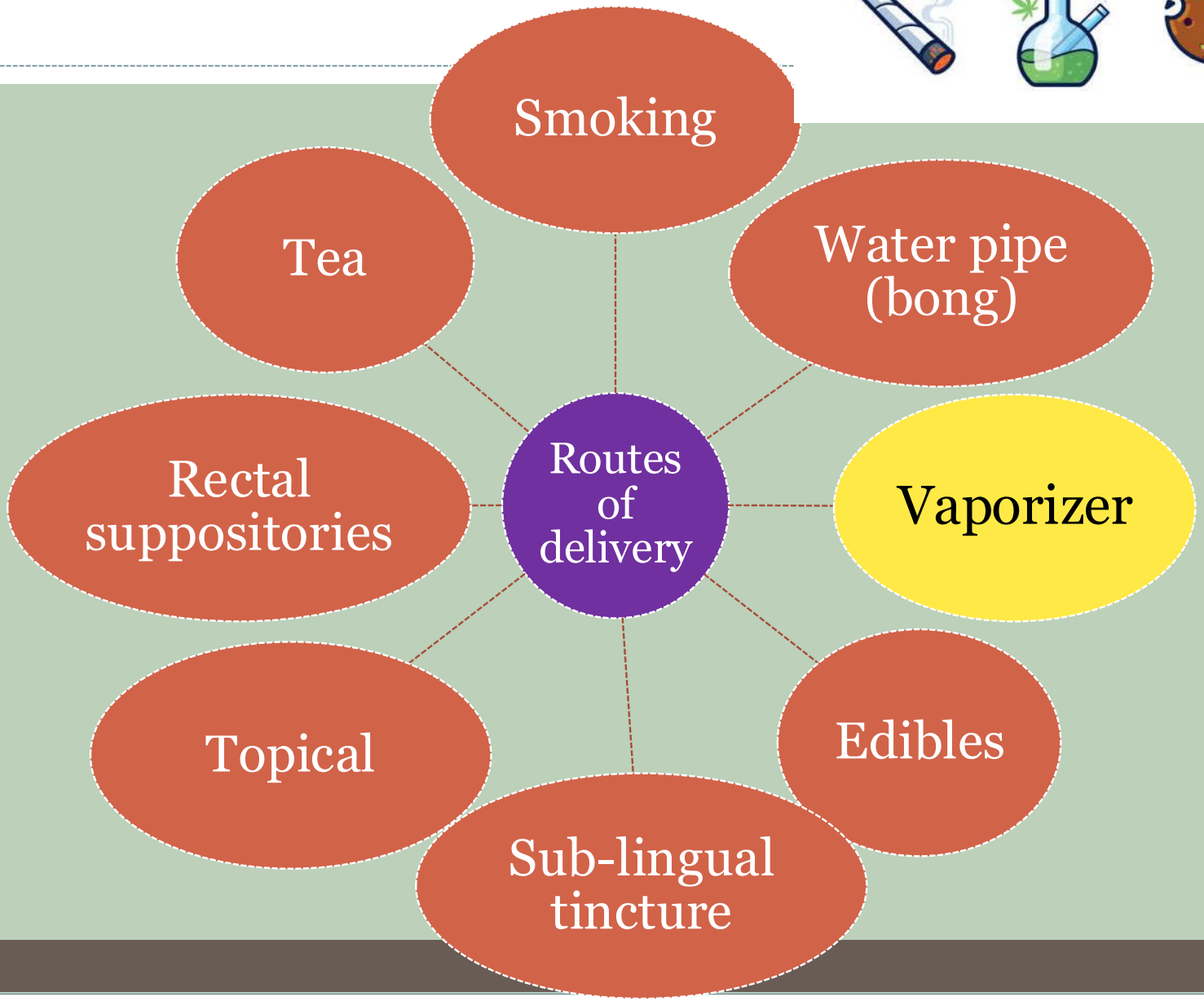


Fast action, but bad for lungs: has similar irritants, toxins and carcinogens as nicotine



Routes of delivery for cannabis





Vaporization of Cannabis

Safer alternative to smoking



How Do Vaporizers Work?

- Cannabinoids start to vaporize at about 300 °F (150 °C), with optimal vaporization at 338 °F (170 °C).
- Temperature over 392 °F (200 °C) will burn the cannabis, creating unwanted smoke.
- Hot vapor inhaled by patient – very rapid onset of effect (within a few minutes)
- Vaporizer better than vape pen, as some cheap vape pens will burn cannabis and create smoke
- Good vaporizers cost $140-$400

Routes of delivery for cannabis



Routes of delivery

- Smoking
- Tea
- Vaporizer
- Rectal suppositories
- Water pipe (bong)
- Topical
- Edibles
- Sublingual tincture

45-75 min to kick in, lasts 6-8 hr

15-30 min to kick in, Lasts 2-4 hr

Routes of delivery for cannabis



No studies:
Cannabis oil suspended in cocoa butter, used vaginally or rectally for targeted relief with less “high”

Routes of delivery

- Smoking
- Water pipe (bong)
- Vaporizer
- Edibles
- Sub-lingual tincture
- Topical
- Rectal/vaginal suppositories

Routes of delivery for cannabis



Must contain milk to absorb cannabinoids

Routes of delivery

- Smoking
- Water pipe (bong)
- Vaporizer
- Edibles
- Sub-lingual tincture
- Topical
- Rectal suppositories
- Tea

Routes of delivery for cannabis



Routes of delivery

- Smoking
- Water pipe (bong)
- Vaporizer
- Edibles
- Sub-lingual tincture
- Topical
- Rectal suppositories
- Tea

Research lacking; May help hand arthritis

Recommended Methods of Use for Patients



- *DO NOT SMOKE*
- **Vaporizer** for ***FAST*** effect.
- **Oral** for ***LONGER*** effect.
- **Sublingual tincture** has intermediate onset and duration
- **Topical, supp** for ***LOCAL*** effect – not well studied

Dosing Paradigms - Vaporizing



- **START LOW; GO SLOW.**
- **Vaporize is a good initial method as easy to titrate**
- **2-3 inhalations, stop, wait ten minutes to gauge effect**
- **Repeat Q4 hr prn**

Dosing w/edibles

- ***Edibles are trickier to dose***
- More powerful & long lasting
- Dosing (with THC) is 5-10 mg every 6 hours – CBD dosing can go much higher
- THC/CBD ratio of about 1:1 is *probably* best for pain
- Pure CBD not well-studied but probably does have some efficacy for pain – mostly anecdotal

Medicinal Use of Cannabis

- ***Inform patient that they do not need to feel high to get pain relief !***



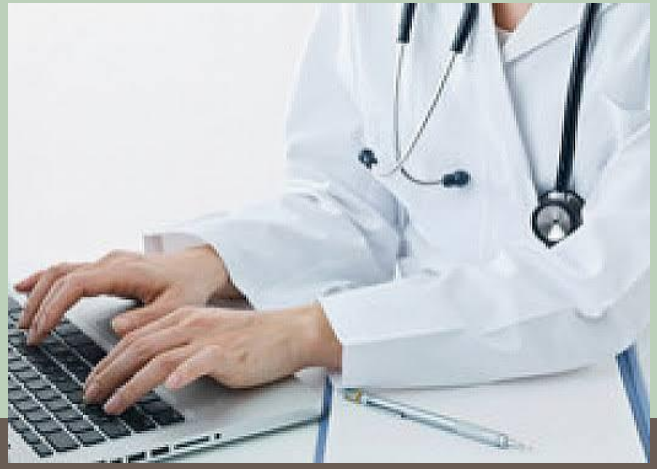
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Risks of medicinal cannabis

- Inform patient of risk of potential temporary CNS side effects
  --more common with new users

- BE SURE TO DOCUMENT DISCUSSION OF RISKS/BENEFITS IN YOUR CHART



Possible temporary CNS Side Effects

- Disinhibition
- Euphoria
- Drowsiness
- Impaired recent memory
- Sensory perception changes
- Abnormal balance
- Decreased muscle strength

continued…



Possible temporary CNS Side Effects

- Impaired judgment
- Slowed reaction times
- Impaired complex motor coordination

SO DON'T DOSE AND DRIVE!!!



Side effects seen **only with high doses**

- Psychosis (disorganized thoughts, confusion, paranoia or agitation)



Side effects seen **only with high doses**

- Tolerance may develop in heavy, long term users - may need higher doses to relieve symptoms





What about hyperemesis?

- Hyperemesis syndrome only seen with **massive doses** – should never see (or need to discuss with patients) in medical setting



What about cardiovascular side effects?



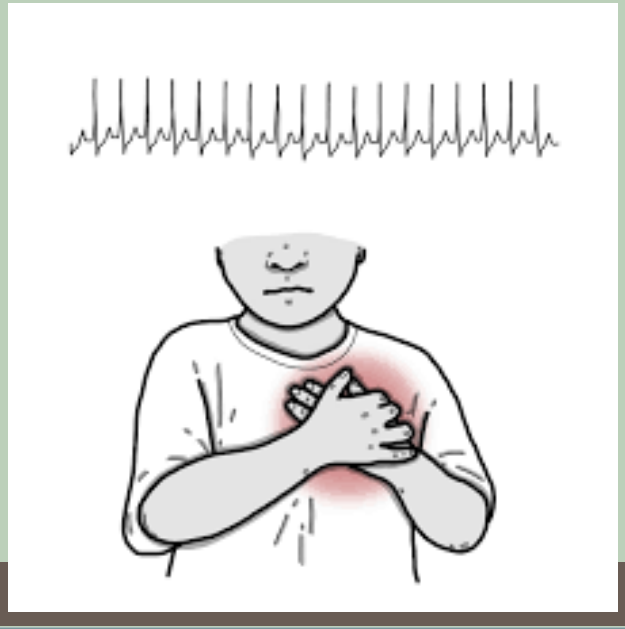
Journal of the American Heart Association, 2024

Association of Cannabis Use With Cardiovascular Outcomes Among US Adults

Abra M. Jeffers , PhD; Stanton Glantz , PhD; Amy L. Byers, PhD, MPH; Salomeh Keyhani , MD, MPH

What about cardiovascular side effects?

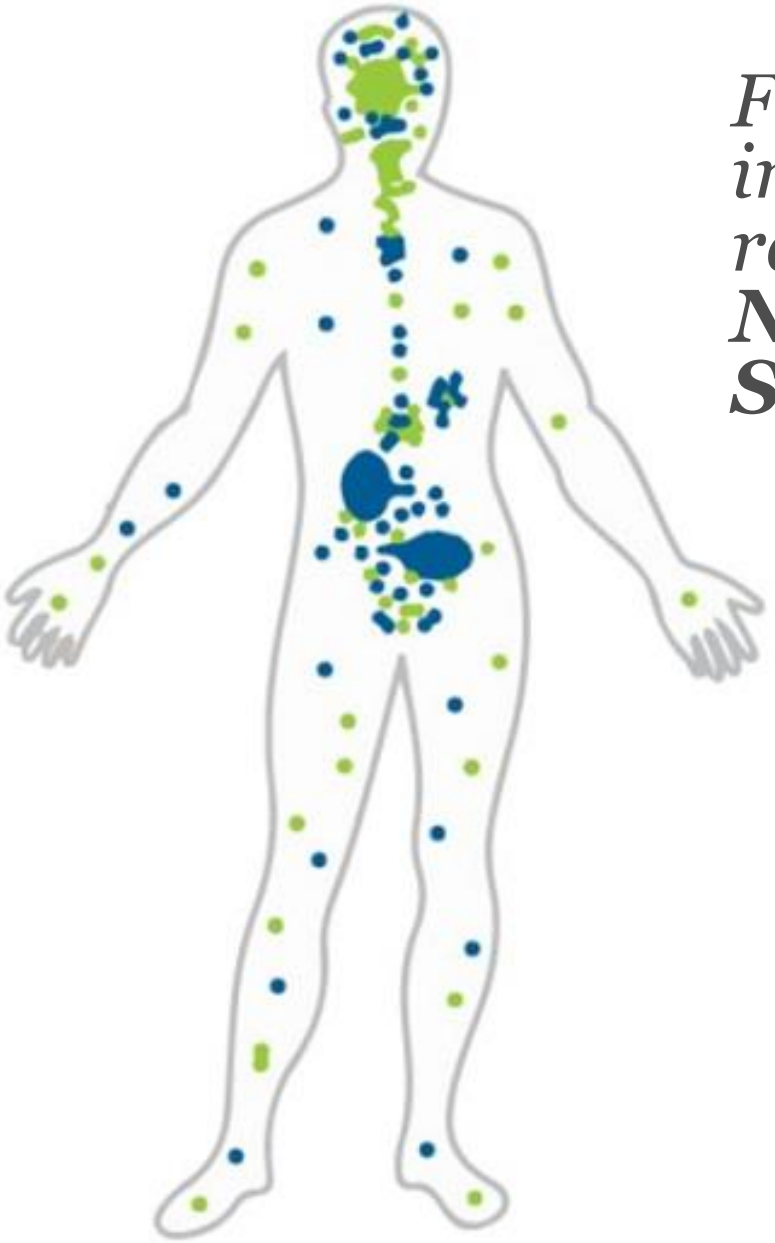
- **Ultra-high THC doses** or rapid THC dose escalation can stimulate the sympathetic system, and cause tachycardia and hypertension.
- **Smoking** cannabis may slightly increase MI risk



What about cardiovascular side effects?



- CBD counteracts the high HR and high BP effects of high dose THC
- Rx drug Sativex with 50/50 CBD/THC showed **<2%** effect on HR or BP in standard therapeutic doses
- So to prevent CV side effects, recommend
  - **Use cannabis containing 50% or more CBD**
  - **Don't smoke it**



Few cannabinoid receptors in lungs or in brainstem respiratory areas, so ***NO RESPIRATORY SUPPRESSION*** *from cannabis*

CB1

CB2

Child and Pet Safety Risks

- Rare reports of children or pets dying from eating large amount of edibles
- Keep all cannabis products away from children & pets!

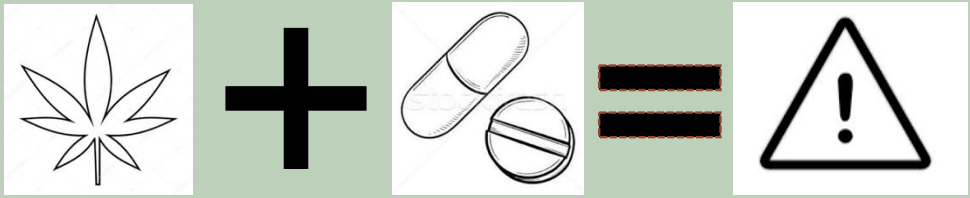






Important Drug Drug Interactions

Clinically significant drug-drug interactions are <u>rare</u>

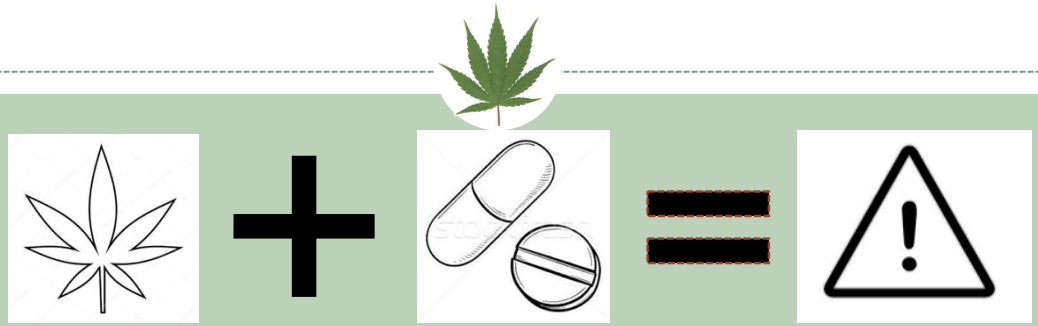


- **Benzodiazepines**

--CBD inhibits CYP2C19 system, so may decrease benzo metabolism and enhance benzo effects (sedation, confusion, intoxication)

--Use cannabis with caution if patient on benzodiazepines

Important Drug Drug Interactions



- **SNRI/SSRI Antidepressants**

  --High cannabis doses may raise levels of SNRIs/SSRIs

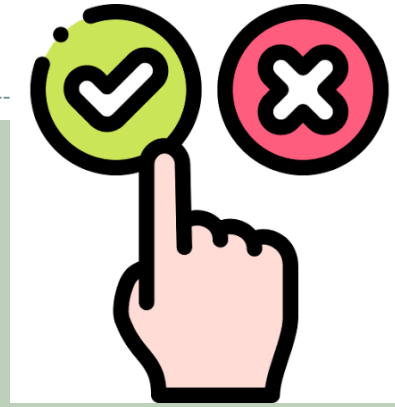
  --Monitor for serotonin syndrome if on high dose cannabis (hi HR/BP, agitation, M. twitching/stiffness, sweating, etc)

- **Anticholinergic medications**

  --May increase anticholinergic effects of these meds

  --Watch for tachyarrhythmia

Summary of **Why Cannabis is a good option** for treating **Pain**



- Improves pain & function, without respiratory suppression or constipation
- Improves sleep
- May also reduce inflammation and have neuroprotective and anti-tumor properties
- Decreases need for opioids
- No overdose death risk!

Authorizing a patient:

- In WA state, an **in-person exam** is required, to document:
  --Diagnostic evaluation with dx of a debilitating or terminal medical condition
  --Shows that a provider-patient relationship exists
  --Treatment plan
  --Confirm other treatments have been tried first
  --Discussion of possible side effects
  --Discussion of risks to children and pets
  --Told not to use if pregnant or breast feeding

- Fill out Cannabis authorization form

Why is authorization needed if recreational cannabis is legal here, so anyone can buy it

- **Patient gets a 47% discount** at cannabis dispensary with medicinal use authorization (deferred sales tax and excise tax)



WA State Medical Cannabis Authorization

- Short 1 page form
- Available on line at **Washington Dept. of Health (DOH)**



Top half of form

Clear Form

HEALTH

Washington State Medical Cannabis Authorization

This form must be completed and signed by the authorizing practitioner or delegate. This authorization form is **not** a prescription and does not provide protection from arrest unless the qualifying patient and their designated provider is also entered in the medical cannabis authorization database by a certified consultant and receives a recognition card.

3. Does patient have a "designated provider (DP)? This is a caregiver okay to pick up cannabis for them

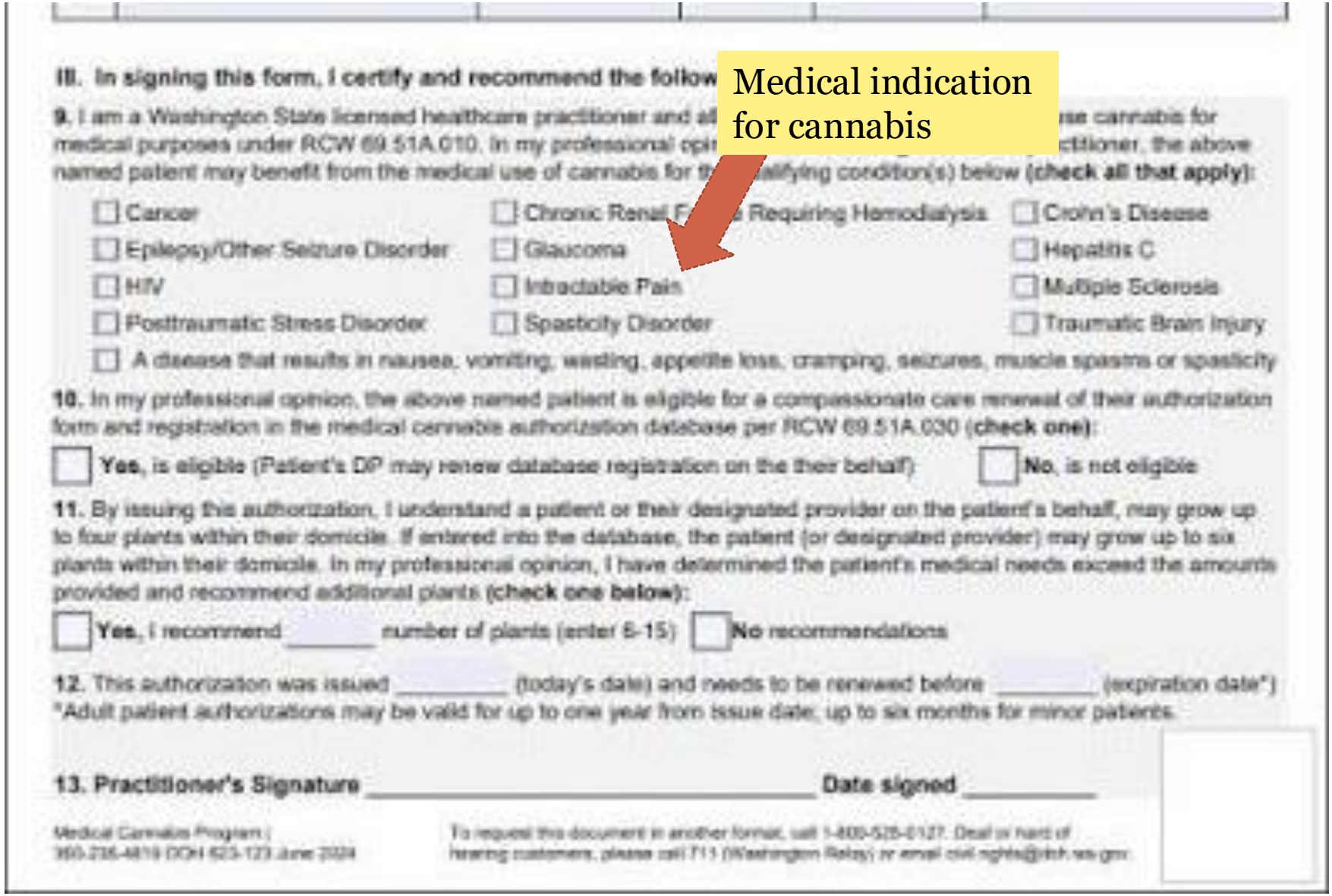
I. Patient and Designated Provid

1	Patient's Full Name: (same as state-issued ID)			
2	Street address: (No P.O. Box)	City:	State: WA	Zip:
3	Does the patient have a designated provider (DP)? (**check one below**) ☐ **Yes**, patient sign's **item 6** below, unless they are a minor (under age 18) ☐ **No**, continue to **Section II**			
4	DP or Parent/Legal Guardian's Name:		Date of Birth:	
5	Street address: (No P.O. Box)	City:	State: WA	Zip:
6	I am an adult patient (18 and older) and agree the person named above will serve as my designated provider. **Patient Signature:** _____ **Date:** _____ (RCW69.51A.010(11))			

II. Healthcare Practitioner Information

7	Healthcare Practitioner's Name (as it appears on license):		WA License Number: (Example: MD00001111O):		
8	Office/Clinic Address (No P.O. Box):	City:	State:	Zip:	Phone:

Bottom half



III. In signing this form, I certify and recommend the follow

Medical indication for cannabis

9. I am a Washington State licensed healthcare practitioner and al[illegible]se cannabis for medical purposes under RCW 69.51A.010. In my professional opi[illegible]ctitioner, the above named patient may benefit from the medical use of cannabis for th[illegible]alifying condition(s) below **(check all that apply)**:

- ☐ Cancer
- ☐ Chronic Renal F[illegible] Requiring Hemodialysis
- ☐ Crohn's Disease
- ☐ Epilepsy/Other Seizure Disorder
- ☐ Glaucoma
- ☐ Hepatitis C
- ☐ HIV
- ☐ Intractable Pain
- ☐ Multiple Sclerosis
- ☐ Posttraumatic Stress Disorder
- ☐ Spasticity Disorder
- ☐ Traumatic Brain Injury
- ☐ A disease that results in nausea, vomiting, wasting, appetite loss, cramping, seizures, muscle spasms or spasticity

10. In my professional opinion, the above named patient is eligible for a compassionate care renewal of their authorization form and registration in the medical cannabis authorization database per RCW 69.51A.030 **(check one)**:

☐ **Yes**, is eligible (Patient's DP may renew database registration on the their behalf) ☐ **No**, is not eligible

11. By issuing this authorization, I understand a patient or their designated provider on the patient's behalf, may grow up to four plants within their domicile. If entered into the database, the patient (or designated provider) may grow up to six plants within their domicile. In my professional opinion, I have determined the patient's medical needs exceed the amounts provided and recommend additional plants **(check one below)**:

☐ **Yes**, I recommend _____ number of plants (enter 6-15) ☐ **No** recommendations

12. This authorization was issued _____ (today's date) and needs to be renewed before _____ (expiration date*)
*Adult patient authorizations may be valid for up to one year from issue date; up to six months for minor patients.

13. Practitioner's Signature _____ **Date signed** _____

Medical Cannabis Program |
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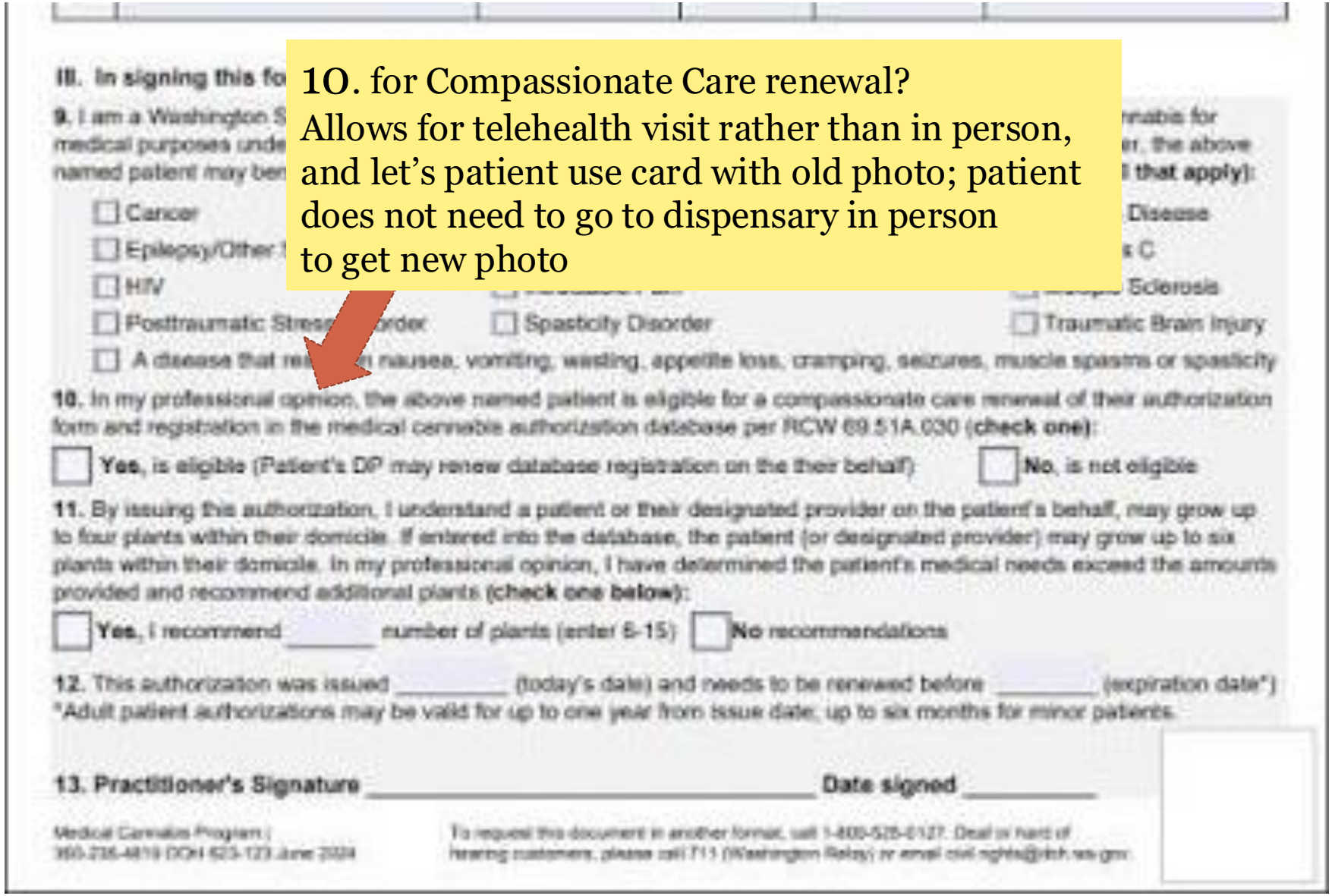
To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email civil.rights@doh.wa.gov.

Diagnosis options on Authorization Form



- Cancer
- Epilepsy
- PTSD
- Chronic renal failure
- Glaucoma
- Intractable pain
- Spasticity disorder
- Multiple Sclerosis
- Crohn's disease
- Hepatitis C
- Traumatic Brain Injury
- Any disease resulting in nausea, vomiting, anorexia, wasting, cramping, muscle spasms, seizures or spasticity

Bottom half



10. for Compassionate Care renewal?
Allows for telehealth visit rather than in person, and let's patient use card with old photo; patient does not need to go to dispensary in person to get new photo

III. In signing this fo

9. I am a Washington S nnabis for medical purposes unde r, the above named patient may ben that apply):

- Cancer
- Epilepsy/Other
- HIV
- Posttraumatic Stress order
- Spasticity Disorder
- Traumatic Brain Injury
- A disease that re n nausea, vomiting, wasting, appetite loss, cramping, seizures, muscle spasms or spasticity

10. In my professional opinion, the above named patient is eligible for a compassionate care renewal of their authorization form and registration in the medical cannabis authorization database per RCW 69.51A.030 (**check one**):

☐ **Yes**, is eligible (Patient's DP may renew database registration on the their behalf) ☐ **No**, is not eligible

11. By issuing this authorization, I understand a patient or their designated provider on the patient's behalf, may grow up to four plants within their domicile. If entered into the database, the patient (or designated provider) may grow up to six plants within their domicile. In my professional opinion, I have determined the patient's medical needs exceed the amounts provided and recommend additional plants (**check one below**):

☐ **Yes**, I recommend _____ number of plants (enter 6-15) ☐ **No** recommendations

12. This authorization was issued _____ (today's date) and needs to be renewed before _____ (expiration date*)
*Adult patient authorizations may be valid for up to one year from issue date; up to six months for minor patients.

13. **Practitioner's Signature** _____ **Date signed** _____

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Bottom half

III. In signing this form, I certify and recommend the following:

9. I am a Washington State licensed healthcare practitioner and allowed to authorize my patients to use cannabis for medical purposes under RCW 69.51A.010. In my professional opinion, as the treating healthcare practitioner, the above named patient may benefit from the medical use of cannabis for the qualifying condition(s) below **(check all that apply)**:

- ☐ Cancer
- ☐ Chronic Renal Failure Requiring Hemodialysis
- ☐ Crohn's Disease
- ☐ Epilepsy/Other Seizure Disorder
- ☐ Glaucoma
- ☐ Hepatitis C
- ☐ HIV
- ☐ Intractable Pain
- ☐ Multiple Sclerosis
- ☐ Posttraumatic Stress Disorder
- ☐ Spasticity Disorder
- ☐ Traumatic Brain Injury
- ☐ A… …mping, seizures, muscle spasms or spasticity

10. In my … …passionate care renewal of their authorization form and … …W 69.51A.030 **(check one)**:

☐ **Yes,** … …r behalf) ☐ **No,** is not eligible

11. By issuing this authorization, I understand a patient or their designated provider on the patient's behalf, may grow up to four plants within … domicile. If entered into the database, the patient (or designated provider) may grow up to six plants within the … cile. In my professional opinion, I have determined the patient's medical needs exceed the amounts provided and rec… …nd additional plants **(check one below)**:

☐ **Yes,** I recommend _____ number of plants (enter 6-15) ☐ **No** recommendations

12. This authorization was issued _____ (today's date) and needs to be renewed before _____ (expiration date*)
*Adult patient authorizations may be valid for up to one year from issue date; up to six months for minor patients.

13. Practitioner's Signature _____ **Date signed** _____

Medical Cannabis Program | …
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11. Check if patient wants to grow their own plants, and okay with you. Indicate # of plants from 6 to 15

Bottom half

III. In signing this form, I certify and recommend the following:

9. I am a Washington State licensed healthcare practitioner and allowed to authorize my patients to use cannabis for medical purposes under RCW 69.51A.010. In my professional opinion, as the treating healthcare practitioner, the above named patient may benefit from the medical use of cannabis for the qualifying condition(s) below **(check all that apply)**:

- ☐ Cancer
- ☐ Chronic Renal Failure Requiring Hemodialysis
- ☐ Crohn's Disease
- ☐ Epilepsy/Other Seizure Disorder
- ☐ Glaucoma
- ☐ Hepatitis C
- ☐ HIV
- ☐ Intractable Pain
- ☐ Multiple Sclerosis
- ☐ Posttraumatic Stress Disorder
- ☐ Spasticity Disorder
- ☐ Traumatic Brain Injury
- ☐ A disease that results in nausea, vomiting, wasting, appetite loss, cramping, seizures, muscle spasms or spasticity

10. In my professional opinion, the above named patient is eligible for a compassionate care renewal of their authorization form and registration in the medical cannabis authorization database per RCW 69.51A.030 **(check one)**:

☐ **Yes**, is eligible (Patient's DP may renew database registration on the their behalf) ☐ **No**, is not eligible

11. By issuing this authorization … to four plants within their domicile … plants within their domicile. In my professional … provided and recommend additional plants (**check one below**):

☐ **Yes**, I recommend _____ number of plants (enter 6-15) ☐ **No** recommendations

12. This authorization was issued _____ (today's date) and needs to be renewed before _____ (expiration date*)
*Adult patient authorizations may be valid for up to one year from issue date; up to six months for minor patients.

13. Practitioner's Signature _____ **Date signed** _____

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To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email cmp@doh.wa.gov.

Date signed and date expires (usually 1 year later)

MD, DO, PA, ARNP'S licensed in WA can authorize

More about the Authorization Forms:

- **Must print on tamper-resistant paper** with the **RCW 69.51A.030 logo** in the lower right corner
  --can find links on-line at DOH to order the paper
- **Cannot use prescription paper** which has a different logo in lower right corner



More about the Authorization Forms:

- **Dispensary provides laminated cannabis card** when patient brings in the authorization form



Following the patient over time:



- ***Remind patient to start low, go slow***
- ***Monitor*** for effectiveness
- ***Monitor for aberrant behavior or dependency*** (using above recom'd amount, asking for extra copies of authorization form, etc)
- If patient already on opioids, can ***add cannabis to lower their dose of opioids***

Use with caution for the following:



- **History of addiction,** as cannabis may be psychologically addicting
- **Long term recreational use** of high THC cannabis
- **Significant mental health disorder**, especially any of the schizoaffective disorders, and get approval from their mental health professional
- **Children or adolescents**

Geriatric use of cannabis

- Cannabis is very well tolerated in older patients (per the literature)
- Often will relieve pain gently, help sleep, stimulate appetite, brighten mood in older patients



What About prescription cannabis meds ?



- ***Dronabinol*** *Legal in USA*
  --100% THC
  --Schedule 3 drug
  --FDA approved for anorexia and weight loss from AIDS and for N&V from chemotherapy if poor response to conventional antiemetics

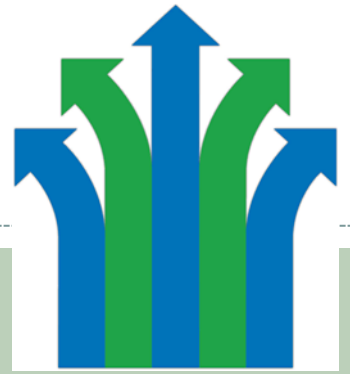
- ***Nabilone*** *Legal in USA*
  --Man-made cannabis
  --Mimics THC, binds to CB1 and CB2 receptors
  --Schedule 2 drug
  --FDA approved for severe N&V from cancer chemotherapy

What About prescription cannabis meds ?

- ***Cannabidiol*** *Legal in USA since 2018*
  --formulation of CBD from hemp; contains no THC
  --not a controlled drug!
  --FDA approved only for Lennox-Gastaut Syndrome
  --no data on chronic pain

- ***Nabiximols*** *Legal in 25 countries, not USA*
  --1:1 THC and CBD
  --Pump-action spray provides 2.7mg of THC and 2.5mg of CBD
  --Intermediate onset, 15-40 minutes

Future Directions



- **Re-scheduling by feds** – cannabis belongs in schedule 3 (like marinol) - otherwise cannabis based medicines cannot be developed in the USA
- Re-scheduling would allow **pharmacists** to be involved in dispensing, counseling and education
- **Need to develop medicines with a mixture of cannabinoids (THC, CBD) and terpenes**, which will likely be the most effective, rather than isolated, purified single cannabinoid medications, due to entourage effect



- Remaining slides contain education resources, literature review and bibliography

Thank you for your attention!



Education resources



- on-line education on the medicinal uses of cannabis: http://adai.uw.edu/mcacp/
- American Academy of Cannabinoid Medicine: https://aacmsite.org/
- Society of Cannabis Clinicians: https://www.cannabisclinicians.org/
- International Cannabinoid Research Society https://icrs.co/index.html

Metanalyses of Human Data for pain



- Phillips TJ, Cherry CL, Cox S, Marshall SJ, Rice AS. Pharmacological treatment of painful HIV-associated sensory neuropathy: a systematic review and meta-analysis of randomized controlled trials. *PLoS One* 2010; 28;5(12):e14433.
- Martín-Sánchez E, Furukawa TA, Taylor J, Martin JL. Systematic review and meta-analysis of cannabis treatment for chronic pain. *Pain Med* 2009; 10(8):1353-68.
- Campbell FA, Tramèr MR, Carroll D, Reynolds DJ, Moore RA, McQuay HJ. Are cannabinoids an effective and safe treatment option in the management of pain? A qualitative systematic review. *BMJ* 2001; 323(7303):13-6.
- Machado Rocha FC, Stéfano SC, De Cássia Haiek R, Rosa Oliveira LM, Da Silveira DX. Therapeutic use of Cannabis sativa on chemotherapy-induced nausea and vomiting among cancer patients: systematic review and meta-analysis. *Eur J Cancer Care* 2008;17(5):431-43.

Lynch ME et al., 2011 review

Lynch ME, Campbell F. Cannabinoids for Treatment of Chronic Non-Cancer Pain; a Systematic Review of Randomized Trials. *Br J Clin Pharmacol* 2011 2(5):735-44 PMID: 21426373

- Systematic review of RCTs for cannabis treating chronic non-cancer pain: neuropathic pain, fibromyalgia, rheumatoid arthritis, and mixed chronic pain.
- Quality of trials = excellent.
- 15 of the 18 trials showed significant analgesic effect of cannabis.
- No serious adverse effects; only a few withdrawals from the studies.
- ***Overall evidence indicates that cannabinoids are safe and effective***.

Lynch ME et al., 2015 f/u review

- Lynch ME, Ware MA. Cannabinoids for the Treatment of Chronic Non-Cancer Pain: An Updated Systematic Review of Randomized Controlled Trials. J Neuroimmune Pharmacol. 2015; 10(2):293-301

- Eleven new trials
- Quality of trials excellent.
- Seven trials showed significant analgesic effect.
- Several trials also showed improvement in sleep, muscle stiffness and spasticity
- Adverse effects most frequently reported such as fatigue and dizziness were mild to moderate in severity and generally well tolerated.
- ***This review adds further support that currently available cannabinoids are safe, moderately effective analgesics that provide a reasonable therapeutic option in the management of chronic non-cancer pain.***

Hill KP. Medical Marijuana for Treatment of Chronic Pain and Other Medical and Psychiatric Problems: A Clinical Review. JAMA 2015; 23-30;313(24):2474-83



- Use of marijuana for chronic pain, neuropathic pain, and spasticity due to multiple sclerosis is supported by high-quality evidence.
- Six trials that included 325 patients examined chronic pain
- 6 trials that included 396 patients investigated neuropathic pain
- 12 trials that included 1600 patients focused on multiple sclerosis
- **"Several of these trials had positive results, suggesting that marijuana or cannabinoids may be efficacious for these indications"**

Cohen NL, Heinz AJ, Ilgen M, Bonn-Miller MO. Pain, Cannabis Species, and Cannabis Use Disorders. J Stud Alcohol Drugs. 2016 77(3):515-20.



- 163 medical cannabis users completed assessments of medical cannabis use motives, history, preferences (species type), and problems, as well as current pain level.
- ***Individuals who used cannabis to manage chronic pain experienced fewer cannabis use problems than those who did not use it for pain***;
- ***individuals who used cannabis for chronic pain were more likely to use indica over sativa.***

Mücke M, Phillips T, Radbruch L, Petzke F, Häuser W. Cannabis-based medicines for chronic neuropathic pain in adults. Cochrane Database Syst Rev. 2018 2018; 7;3:CD012182



- included 16 studies, 1750 participants.
- studies ranged from 2 to 26 weeks long
- Study quality: low in 2 studies, moderate in 12 studies and high in 2 studies.
- 9 studies were at high risk of bias for study size.
- ***Cannabis-based medicines increased number of people achieving 50% or greater pain relief compared with placebo (21% versus 17%; - 95% confidence interval)***

Baron EP, et al Patterns of medicinal cannabis use, strain analysis, and substitution effect among patients with migraine, headache, arthritis, and chronic pain in a medicinal cannabis cohort. J Headache Pain. 2018 24;19(1):37

- ***Chronic pain was the most common reason for cannabis use***, consistent with most registries.

- ***high THC strains most preferred in the chronic pain/headache patients***

Meng H, Johnston B, Englesakis M, Moulin DE, Bhatia A. Selective Cannabinoids for Chronic Neuropathic Pain: A Systematic Review and Meta-analysis Anesth Analg. 2017; 125:1638-52



- 11 randomized controlled trials; 1219 patients (614 in selective cannabinoid and 605 in comparator groups)
- variability in quality of reporting, etiology of neuropathic pain, type and dose of selective cannabinoids.
- Use of selective cannabinoids was associated with improvements in quality of life and sleep
- no major adverse effects.
- Selective cannabinoids provide a small analgesic benefit

Societal Benefit

- ***Medical cannabis laws are associated with significantly lower state-level opioid overdose mortality rates.***

- Ref: ***Bachhuber MA, Saloner B, Cunningham CO, Barry CL.Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010. JAMA Intern Med. 2014 ;174(10):1668-73.***

Societal Benefit

- ***overall reductions in Medicare spending when states implemented medical marijuana laws were estimated to be $165.2 million per year in 2013.***

- Ref: Bradford AC, Bradford WD. Medical Marijuana Laws Reduce Prescription Medication Use In Medicare Part D. Health Aff (Millwood). 2016 1;35(7):1230-6.

Whiting PF, Wolff RF, Deshpande S, et al. Cannabinoids for Medical Use: A Systematic Review and Meta-analysis. JAMA 2015; 23-30;313(24):2456-73.



- 79 trials (6462 participants) were included
- ***Most trials showed improvement in symptoms associated with use of cannabinoids***
- nausea and vomiting
- reduction in pain
- reduction in spasticity
- Common AEs included dizziness, dry mouth, nausea, fatigue, somnolence, euphoria, vomiting, disorientation, drowsiness, confusion, loss of balance, and hallucination

Use discretion in reading literature



- *Walitt B, Klose P, Fitzcharles MA, Phillips T, Häuser W. Cannabinoids for fibromyalgia. Cochrane Database Syst Rev. 2016 18;7:CD011694*
- **This study actually only looks at nabilone. Nabilone is 100% THC, not the same thing as "cannabinoids"**
- Authors found no convincing, unbiased, high quality evidence suggesting that nabilone is of value in treating people with fibromyalgia.
- The tolerability of nabilone was low in people with fibromyalgia.

Stockings E, et al Cannabis and cannabinoids for the treatment of people with chronic non-cancer pain conditions: a systematic review and meta-analysis of controlled and observational studies. Pain 2018; 159(10):1932-1954.



- ***From NIDA; limited bibliography (40 references)***
- ***no significant impacts upon physical or emotional functioning***
- ***low-quality evidence of improved sleep and patient global impression of change.***
- ***Evidence for effectiveness of cannabinoids in CNCP is limited.***

Abuhasira R, Schleider LB, Mechoulam R, Novack V. Epidemiological characteristics, safety and efficacy of medical cannabis in the elderly. Eur J Intern Med. 2018;49:44-50.



- prospective study- included 2736 patients above 65 years of age who received medical cannabis from January 2015 to October 2017 in clinic
- Outcomes were pain intensity, quality of life and adverse events at six months.
- mean age was 74.5 ± 7.5 years.
- The most common indications for cannabis treatment were pain (66.6%) and cancer (60.8%).
- After six months of treatment, 93.7% of the respondents reported improvement in their condition and the reported pain level was reduced from a median of 8 on a scale of 0-10 to a median of 4. Most common adverse events were: dizziness (9.7%) and dry mouth (7.1%).
- After six months, 18.1% stopped using opioid analgesics or reduced their dose.
- **cannabis is safe and efficacious in the elderly population**.
- Cannabis use may decrease the use of other prescription medicines, including opioids. Gathering more evidence-based data, including data from double-blind randomized-controlled trials, in this special population is imperative.

Mari Carmen Torres-Moreno, Esther Papaseit, Marta Torrens, et al. Assessment of Efficacy and Tolerability of Medicinal Cannabinoids in Patients With Multiple Sclerosis. A Systematic Review and Meta-analysis. JAMA Network Open. 2018;1(6):e183485.



- Cannabis safe for use in MS population
- Oral compounding only - results suggest a limited efficacy of cannabinoids for the treatment of spasticity, pain, and bladder dysfunction in patients with MS.

Fisher E, Moore RA, Fogarty AE, et al. Cannabinoids, cannabis, and cannabis-based medicine for pain management: a systematic review of randomized controlled trials . Pain 2020 May 18. Online ahead of print.



- 36 studies (7217 participants) delivering cannabinoids (8 studies), cannabis (6 studies), and Cannabis Based Medicines CBM (22 studies)
- The evidence neither supports nor refutes claims of efficacy for cannabinoids, cannabis, or CBM in the management of pain.