

Primary Care Update: The ever-changing landscape of medical (and now, recreational) cannabis in Illinois



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Disclosures

None

Objectives

To educate the primary care physician on the following:

- Updates to the IL Medical Cannabis Program and pending expansion of eligible medical conditions
- Clinical pearls on medical cannabis route, dosing, frequency
- Recreational cannabis legislation -what can we expect?



Main Updates: Compassionate Use of Medical Cannabis Program

- Permanent program
- Expansion of conditions plus 11 more
- Patients may grow up to 5 plants in enclosed, locked space in their residence

Who can certify besides M.D or D.O physicians:

- Advanced Practice Registered Nurse
- Physician Assistant

All must have active controlled substance license.

SB2023: Text of the bill

- [http://www.ilga.gov/legislation/101/SB/PDF/
10100SB2023lv.pdf](http://www.ilga.gov/legislation/101/SB/PDF/10100SB2023lv.pdf)

IL Medical Cannabis Program

- Illinois is the 20th state to legalize medical marijuana
- This is no longer a pilot program- it's permanent.
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MCPP Update June 6, 2019



Debilitating conditions

- | | |
|--|---|
| <ul style="list-style-type: none">1. Alzheimer's disease agitation2. Amyotrophic lateral sclerosis3. Anorexia nervosa4. Arnold-Chiari malformation and syringomyelia5. Autism6. Cachexia/wasting syndrome7. Cancer8. Causalgia9. Chronic inflammatory demyelinating polyneuropathy10. Chronic pain11. Complex regional pain syndromes type I and II)12. Crohn's disease (including, but not limited to, ulcerative colitis)13. Dystonia14. Ehlers-Danlos syndrome15. Fibromyalgia, severe16. Fibrous dysplasia17. Glaucoma18. Hepatitis C19. HIV positive or AIDS status20. Hydrocephalus21. Interstitial cystitis22. Irritable bowel syndrome23. Lupus24. Migraines25. Multiple sclerosis | <ul style="list-style-type: none">26. Muscular dystrophy27. Myasthenia gravis28. Myoclonus29. Nail-patella syndrome30. Neuro-Behcet's autoimmune disease31. Neurofibromatosis32. Neuropathy33. Osteoarthritis34. Parkinson's35. Polycystic kidney disease36. Post-traumatic stress disorder (PTSD)37. Reflex sympathetic dystrophy (RSD)38. Residual limb pain39. Rheumatoid arthritis40. Seizures (including those characteristic of epilepsy)41. Sjogren's syndrome42. Spinal cord disease, including but not limited to arachnoiditis, Tarlov cysts, hydromyelia, syringomyelia43. Spinal cord injury44. Spinocerebellar ataxia (SCA)45. Superior canal dehiscence syndrome46. Terminal illness with a diagnosis of 6 months47. Tourette's,48. Traumatic brain injury and post-concussion syndrome |
|--|---|

Newly added conditions (11 new with 1 modification*)

- Anorexia nervosa
- Autism
- Chronic pain
- Crohn's disease (including, but not limited to, ulcerative colitis)*
- Ehlers-Danlos syndrome
- Irritable bowel syndrome
- Migraines
- Neuro-Behcet's autoimmune disease
- Neuropathy
- Osteoarthritis
- Polycystic kidney disease
- Superior canal dehiscence syndrome

When does this go into effect?

- After Governor Pritzker's signature, it will take about 3 months of rule-making before it goes into effect.
- No signing date has been determined yet.

Certifying Healthcare Provider requirements

- Physician is in good standing with IDPH
- Full prescribing rights – DEA, IL Controlled substances
- Bonafide relationship with patient- parameters not defined

Opioid Alternative Pilot Program (OAPP)

- Physician must register for first time- IL driver's license scanned & uploaded to site
- \$10 fee for patients' 90-day access
- May renew eligibility- no limits
- Must see patient in clinic for each renewal
- No caregiver provision for OAPP patients
- 18+ years only

Patient Eligibility for OAPP

- Patient must be already prescribed opioids, or
- Patient must qualify for a potential opioid prescription.

Opioid Alternative Pilot Program data, as of May 31, 2019:

- OAPP commenced Jan. 31, 2019
- OAPP patients registered -- 1,713
- OAPP patients awaiting physician certification
-- 783
- Number of physicians registered with OAPP
-- 460

OAPP update June 6, 2019

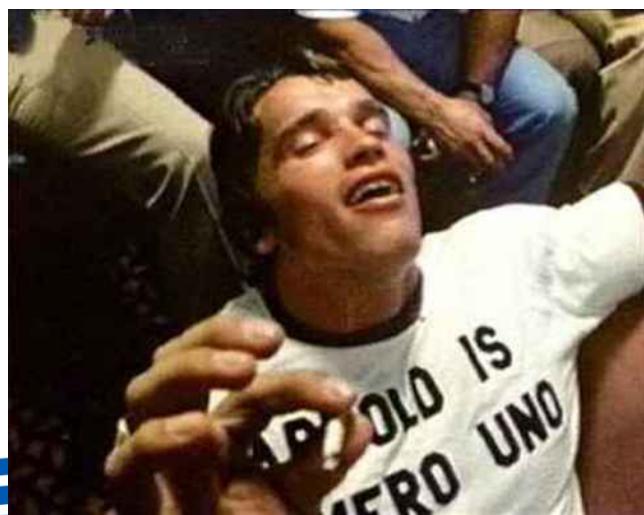
Adult Use Health Advisory Committee

- (1) The Director of Public Health, or his or her designee, who shall serve as the Chairperson.
- (2) The Secretary of Human Services, or his or her designee, who shall serve as the Co-Chairperson.
- (3) A representative of the poison control center.
- (4) A pharmacologist.
- (5) A pulmonologist.
- (6) An emergency room physician.
- (7) An emergency medical technician, paramedic, or other first responder.
- (8) A nurse practicing in a school-based setting.
- (9) A psychologist.
- (10) A neonatologist.
- (11) An obstetrician-gynecologist.
- (12) A drug epidemiologist
- (13) A medical toxicologist
- (14) An addiction psychiatrist
- (15) A pediatrician.
- (16) A representative of a statewide professional public health organization.

Adult Use Health Advisory Committee

- (17) A representative of a statewide hospital/health system association.
- (18) An individual registered as a patient in the Compassionate Use of Medical Cannabis Pilot Program.
- (19) An individual registered as a caregiver in the Compassionate Use of Medical Cannabis Pilot Program.
- (20) A representative of an organization focusing on cannabis-related policy.
- (21) A representative of an organization focusing on the civil liberties of individuals who reside in Illinois.
- (22) A representative of the criminal defense or civil aid community of attorneys serving Disproportionately Impacted Areas.
- (23) A representative of licensed cannabis business establishments.
- (24) A Social Equity Applicant.

Marijuana: Panacea, scourge or both?

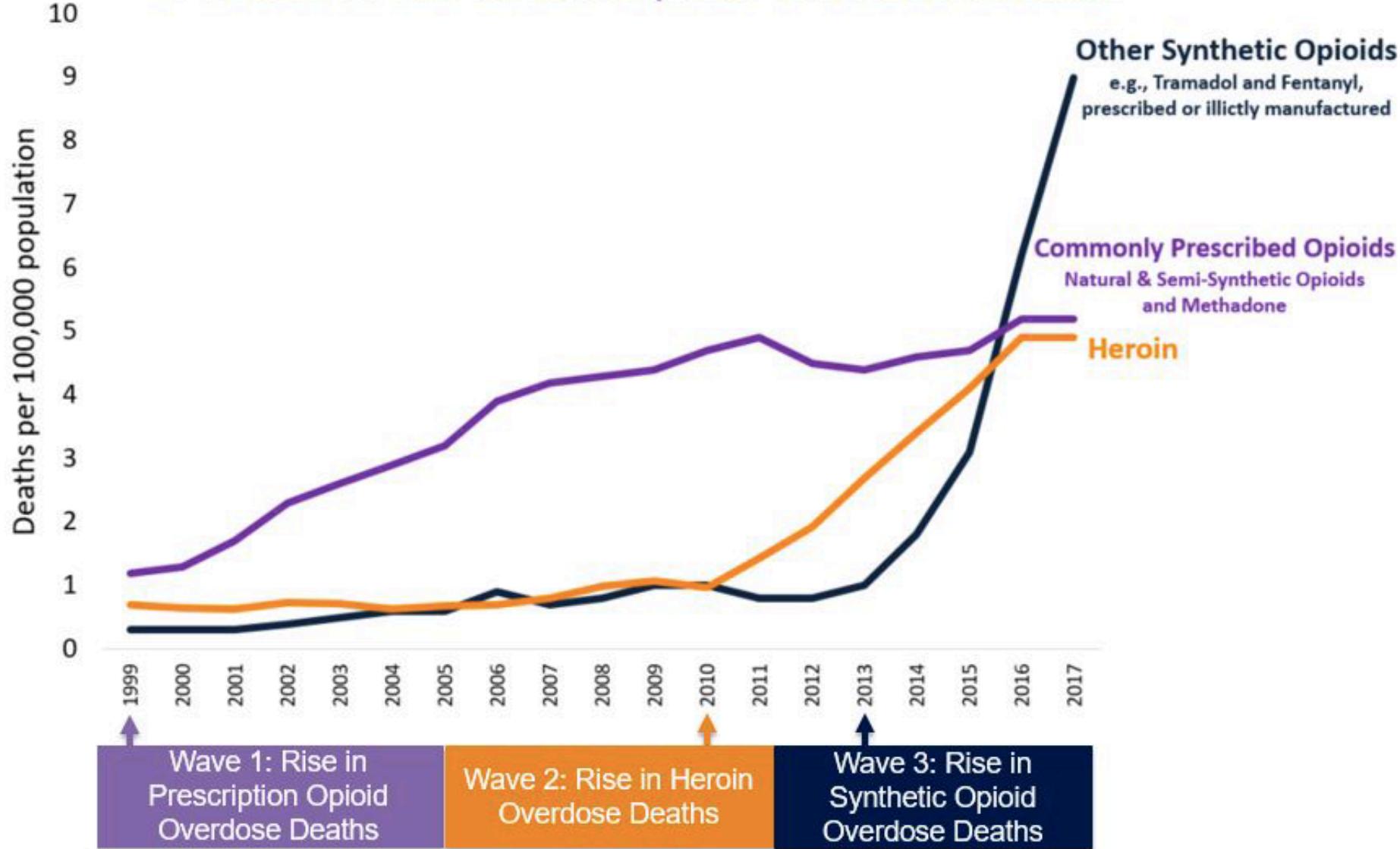


The U.S. Opioid Epidemic

- Drug overdose deaths continue to increase in the United States.
- From 1999 to 2017, more than 700,000 people have died from a drug overdose.
- Around 68% of the more than 70,200 drug overdose deaths in 2017 involved an opioid.
- In 2017, the number of overdose deaths involving opioids (including prescription opioids and illegal opioids like heroin and illicitly manufactured fentanyl) was 6 times higher than in 1999.
- **On average, 130 Americans die every day from an opioid overdose.**

Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2017. <http://wonder.cdc.gov>.

3 Waves of the Rise in Opioid Overdose Deaths



SOURCE: National Vital Statistics System Mortality File.

Cannabis: A protective effect against mortality?

- 1999 to 2010, 13 states in the U.S. with medical cannabis laws experienced a **24.8%** lower mean annual opioid overdose mortality rate compared with states *lacking* medical cannabis laws.
- The mortality reduction effect strengthened over time (but did not go past 2010).
- This does not imply cause-effect.

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 Oct;174(10):1668-73.

BUT. . .

“Association between medical cannabis laws and opioid overdose mortality has reversed over time.”

- 22.7% increase in opioid deaths in states passing a medical cannabis law (95% CI) when data was tracked from 1999-2017.
- Bachuber article tracked from 1999-2010. Replicating the Bachuber model confirmed their results from 1999-2010.
- But in 2012, the trend went the other way.

Shover CL, Davis CS et al. Proceedings of the Nat'l Ac of Sciences of USA. June 10, 2019.

Conclusion?

- Two ecological studies noted a positive trend and a negative trend.
- Can we conclude that cannabis saves lives from opioid overdoses and promotes opioid overdose deaths? NO.
- Authors felt the associations between the two phenomena were spurious, rather than a reflection of cannabis saving lives 10 years ago but killing people today.
- Need RCTs on opioids / cannabis to make better conclusions.

Shover CL, Davis CS et al. Proceedings of the Nat'l Ac of Sciences of USA. June 10, 2019. Funding: NIDA, NIH, VA

Ecologic study on Medicare D rxs: Bradford & Bradford in J Health Affairs

- \$165.2 million per year reduction in enrollee spending in medical cannabis states on meds for the following conditions:
 - Anxiety
 - Depression
 - Nausea
 - Pain
 - Psychosis
 - Seizures
 - Sleep disorders

Bradford A, Bradford D. Medical Marijuana Laws Reduce Prescription Medication Use In Medicare Part D. Health Aff July 2016 35:71230-1236c

EXHIBIT 2

Daily doses filled per physician per year in states with and without a medical marijuana law

Annual number of daily doses prescribed per physician in states:

Condition category	Without a medical marijuana law	With a medical marijuana law	Difference
Anxiety	11,220.29	10,113.77	1,106.51***
Depression	9,576.73	8,296.25	1,280.47***
Glaucoma	2,551.40	2,616.04	-64.64***
Nausea	10,067.92	9,040.22	1,027.70***
Pain	31,810.07	28,165.54	3,644.53***
Psychosis	11,421.46	10,298.60	1,122.86***
Seizures	9,398.60	8,028.74	1,369.85***
Sleep disorders	7,557.97	6,942.94	615.03***
Spasticity	2,067.82	1,645.43	422.38***

SOURCE Authors' analysis of data for 2010–13 from the disease-specific extracts in the Medicare Part D Prescription Drug Event Standard Analytic File. *** $p < 0.01$

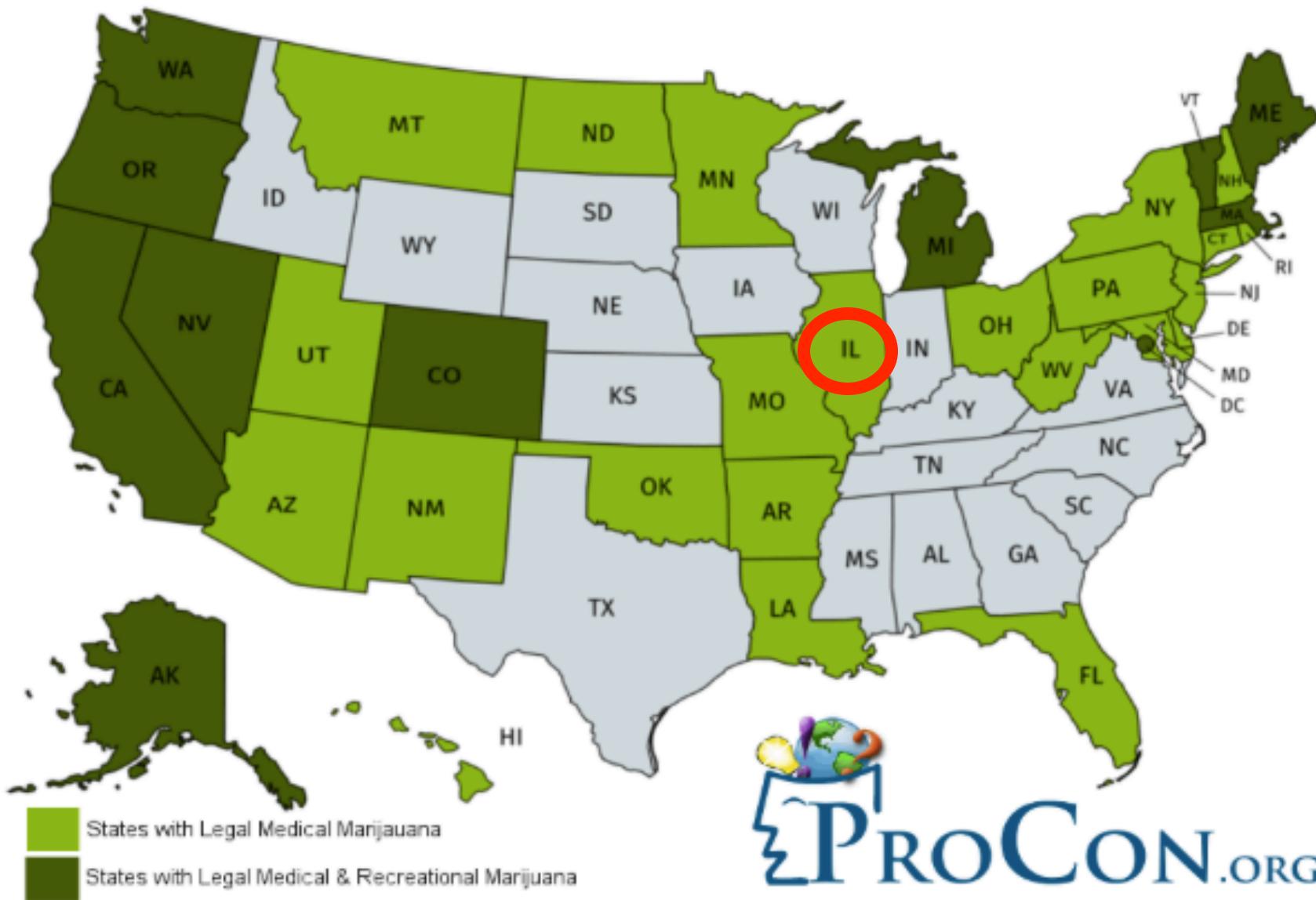
Medical Marijuana Laws Reduce Prescription Medication Use In Medicare Part D
Health Aff July 2016 35:71230-1236c

Ecologic study on Medicaid opioid prescriptions

- Medicaid patients in 8 medical & recreational (“adult use”) cannabis states
- Lower opioid prescribing rate: 6.38%
- Lower Medicaid spending on rx opioids
 $9.78\% = \$1,815 \text{ per 1000 enrollees.}$
- Lower Medicaid spending on non-opioid prescriptions = 8.69%

Wen H, Hockenberry J. Association of medical and adult-use marijuana laws with opioid prescribing for Medicaid enrollees. JAMA Internal Medicine, May 2018.

33 Legal Medical Marijuana States & DC 11 ~~10~~ Legal Recreational Marijuana States & DC



IL Medical Cannabis Program

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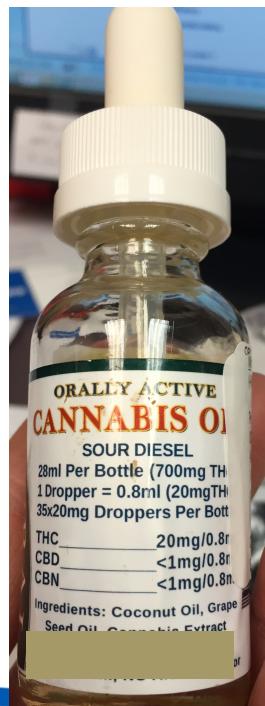


Inhaled: vaporized vs smoked



Edibles

- Typical doses can start at 2.5 mg-10 mg THC per edible dose, start at bedtime.



RSO oil concentrates

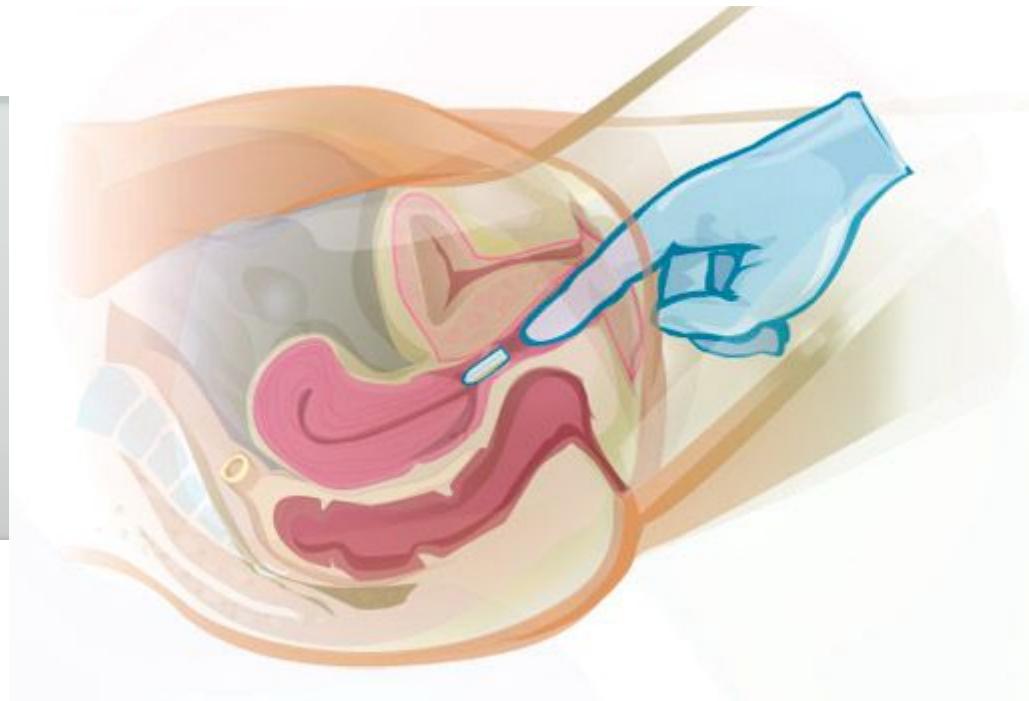
- Do not start a cannabis-naïve patient on RSO oil – it may be too strong to start with this.
- Dose is “grain of rice” or tiny smear on a toothpick, or ‘dot’ of an i, rubbed on tooth or gum.



Topicals



Medical cannabis suppositories & pelvic symptoms



Suggested starting dose regimen: cannabis naïve patients

- Take an edible or puff of vaporizer at bedtime nightly if needed.
- Edibles: 1/8th to 1/4th piece. Use sharp knife to divide the chocolate or gumdrop. Take the piece at bedtime before brushing teeth.
- Increase by another 1/8th or 1/4th sized piece nightly until desired effect achieved.
- Start with lowest THC/high CBD ratio possible. Or, just take hemp oil which is CBD only with trace to no THC (available OTC).
- Inhalation: Take 1 puff from vaporizer pen or Volcano device. Increase by 1 more puff as tolerated if effect is not adequate after 1-2 hours. This can vary greatly.
- Avoid starting with smoked flower or RSO oil concentrate in cannabis naïve patients. May incorporate in the future as tolerated/needed.

Contraindications

Absolute

- At risk for psychosis (increases risk of schizophrenic psychosis in those vulnerable).
- Under age 18 years *
- Pregnant/nursing mothers?

* Unless with qualifying condition

Strict Precautions

- Elderly: watch for cardiovascular side effects (tachycardia, dizziness)
- Watch for psychotropic reactions (panic)
- Addiction disorder
- Severe cardiovascular disease (due to tachycardia, orthostatic hypotension)

1. Moore TH, et al. Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review. Lancet. 2007;370:319–328.
2. Grotenhermen F, et al. The Therapeutic Potential of Cannabis and Cannabinoids. Dtsch Arztebl Int. 2012 July; 109(29-30): 495–501.

Addiction rates: a comparison

Lifetime dependence risk of

- 32% for nicotine
- 23% for heroin
- 17% for cocaine
- 15% for alcohol
- 9% in marijuana users

Robson P. Abuse potential and psychoactive effects of delta-9-tetrahydrocannabinol and cannabidiol oromucosal spray (Sativex), a new cannabinoid medicine. Expert Opin Drug Safe. 2011;10(5):675-685.

Bostwick, JM. Blurred boundaries: the therapeutics and politics of medical marijuana. Mayo Clin Proc. Feb. 2012;87(2):172-186.

Take home point

- The risk of pediatric ingestion may likely increase with the availability of medical marijuana.



Hurley W. Anticipated medical effects on children from legalization of marijuana in Colorado and Washington State: a poison center perspective. JAMA Pediatr. 2013 Jul;167(7):602-3.

The case for full-spectrum, THC-containing medical cannabis for therapeutic use

Leikin J, Temple LM. THC: Friend or Foe? J Clin Toxicol. In press

Pros	Cons
<p>Cannabis, including THC is an effective, evidence-based medicine for certain conditions and should not be excluded from clinical use.</p> <p>Whole plant cannabis which includes THC has substantial evidence of therapeutic effectiveness for reducing chronic pain, chemotherapy-induced nausea and vomiting and patient-reported multiple sclerosis spasticity symptoms.</p> <p>Moderate evidence shows improved short-term sleep outcomes from obstructive sleep apnea, fibromyalgia, chronic pain, and multiple sclerosis.</p> <p>Limited evidence shows help with increasing appetite and improving weight loss from HIV/AIDS, improving symptoms of Tourette syndrome, improving anxiety symptoms, and improving symptoms of posttraumatic stress disorder.⁴⁰</p>	<p>Cannabis does not change the pathophysiology or progression of any disease (except for glaucoma) and its medicinal benefits are unproven and unpredictable.</p> <p>The pharmacology of each cannabinoid is complicated and thus the effects (and duration of effects) are unpredictable. This makes dose titration and therapeutic drug monitoring virtually impossible. Furthermore, the usual delivery system (smoking) is hazardous in itself and the peak oral absorption of cannabinoids is so prolonged (about three hours) as to make it virtually impractical.^{38,39}</p>
<p>Death from cannabis overdose is possible but unlikely (excluding accidents). The opioid and chronic pain epidemic requires effective alternatives to pain management, including medically supervised cannabis.</p> <p>There is insufficient evidence to refute or support a statistical association between cannabis use and death from cannabis overdose.⁴⁰</p>	<p>Cannabis drug toxicity is primarily cumulative and thus difficult to recognize.</p> <p>While acute drug effects are relatively easy to diagnose and treat, cumulative drug effects are problematic (especially when neurologically based).³⁹</p>
<p>Medical cannabis may have positive effects on public health and government spending</p>	<p>The collateral effects of cannabis impairment are not addressed in any</p>

Barriers to achieving optimal success with medical cannabis: Opportunities for quality improvement*

- Retrospective qualitative chart review of 117 patients
- Top conditions: cancer, fibromyalgia and seizures
- 88.0% reported some degree of relief. Level of relief not studied.
- Top symptoms relieved: insomnia, chronic pain and anxiety
- 29.1% patients reported encountering barriers or side effects
- Most common side effect: undesired psychoactive effects.
- Other barriers included uncertainty regarding cannabis dose, frequency, route, strain, and insufficient funds to obtain an adequate supply.

* Temple L, Lampert S, Ewigman B. J Alt Compl Med, Sept.2018

Common Adverse Effects

Anxiety

Reduced tear flow

Altered sense of time

Decreased eye blink rate

Bronchitis

Dizziness

Reddened eyes

Changes in visual perceptions

Decreased sperm count

Dry mouth

(and possibly associated caries and periodontitis)

Slowed pupillary response to light

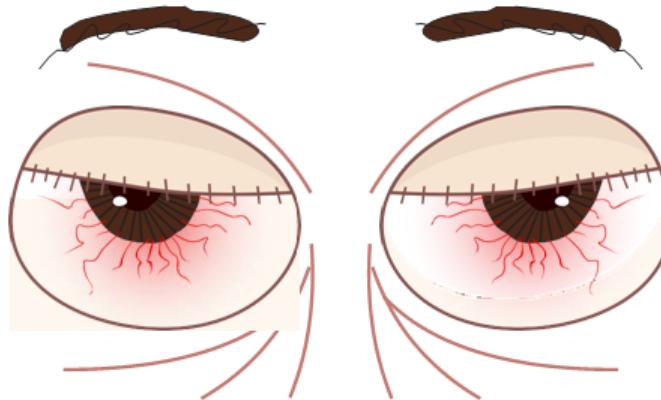
Sedation

Reduced coordination

Ataxia

Cough

Dysphoria



(Ashton 1999, Hall and Solowij 1998,
Handbook on Cannabis 2015)

Serious adverse effects of cannabis

- Addiction
- Psychosis
- Cannabis hyperemesis syndrome
- Metabolic

Remedies for unpleasant side effects

Ancient cannabis antidotes: due to the terpenoid content

- Lemon- include some rind (limonene)
 - Pine nuts (pinene)
 - Pistachios (pinene)
 - Black pepper (pinene, myrcene, B-caryophyllene)
 - Calamus plant roots
 - Choline supplementation
-
- Time, hydration, reassurance

Russo, E. Taming THC: potential cannabis synergy and phytocannabinoid-terpenoid entourage effects. British Journal of Pharmacology, Jan 2011

Drug Interactions Cytochrome P450 Enzymes



- ▶ THC and CBD are metabolized by CYP3A4 and CYP2C9 (Yamaori et al 2012, Watanabe et al 2007).
 - CYP3A4 inhibitors slightly increase THC levels.
 - CYP3A4 inducers slightly decrease THC and CBD levels.
- ▶ CBD, but not THC, is metabolized by CYP2C19 (Stout and Cimino 2014).

Drug Interactions

Cytochrome P450 Enzymes



- ▶ **THC is a CYP1A2 inducer.**
 - Theoretically, THC can decrease serum concentrations of clozapine, duloxetine, naproxen, cyclobenzaprine, olanzapine, haloperidol, and chlorpromazine (Flockhart 2007, Watanabe et al 2007).
- ▶ **CBD is a potent inhibitor of CYP3A4 and CYP2D6.**
 - As CYP3A4 metabolizes about a quarter of all drugs, CBD may increase serum concentrations of macrolides, calcium channel blockers, benzodiazepines, cyclosporine, sildenafil (and other PDE5 inhibitors), antihistamines, haloperidol, antiretrovirals, and some statins (atorvastatin and simvastatin, but not pravastatin or rosuvastatin).
 - CYP2D6 metabolizes many antidepressants, so CBD may increase serum concentrations of SSRIs, tricyclic antidepressants, antipsychotics, beta blockers and opioids (including codeine and oxycodone).

Drug Interaction Studies

► Warfarin

- THC and CBD increase warfarin levels (Yamaori et al 2012).
- Frequent cannabis use has been associated with increased INR.

► Alcohol

- Alcohol may increase THC levels (Hartman 2015).

► Theophylline

- Smoked cannabis can decrease theophylline levels (Stout and Cimino 2014).

► Indinavir or nelfinavir

- Smoked cannabis had no effect (Abrams et al 2003).

► Docetaxel or irinotecan

- Cannabis infusion (tea) had no effect (Engels et al 2007).

► Clobazam

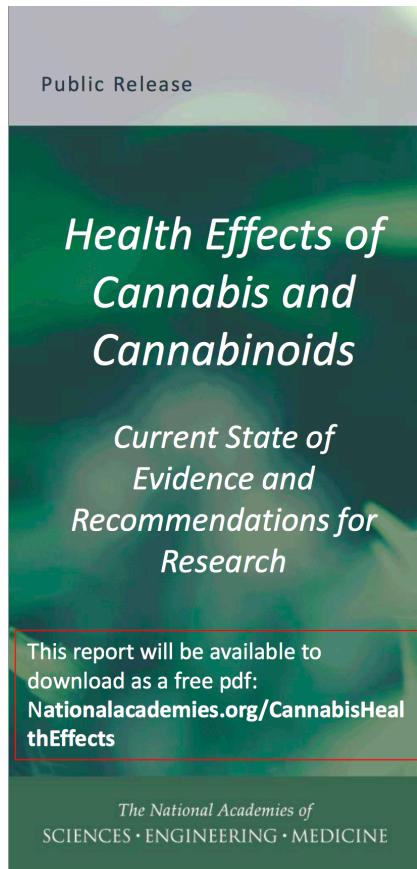
- In children treated with CBD for epilepsy, CBD increased clobazam levels (Geffrey et al 2015).

Drug Interaction Studies

► CNS depressants

- Cannabis has additive CNS depressant effects with alcohol, barbiturates and benzodiazepines.
- In a small study, cannabis did not have additive CNS effects when combined with opioids (Abrams et al 2011).

Evidence-based reference: Free online



The image shows the cover of a report titled "Health Effects of Cannabis and Cannabinoids: Current State of Evidence and Recommendations for Research". The cover is dark green with white text. At the top left, it says "Public Release". The title is in a large serif font. Below the title, there is a subtitle in a smaller serif font. At the bottom, there is a red-bordered box containing text about where to download the report. At the very bottom, it says "The National Academies of SCIENCES • ENGINEERING • MEDICINE". To the right of the cover, there is a close-up photograph of a cannabis plant with a large, dense flower bud.

Public Release

*Health Effects of
Cannabis and
Cannabinoids*

*Current State of
Evidence and
Recommendations for
Research*

This report will be available to download as a free pdf:
[NationalAcademies.org/CannabisHealthEffects](https://www.nationalacademies.org/CannabisHealthEffects)

*The National Academies of
SCIENCES • ENGINEERING • MEDICINE*

NationalAcademies.org/CannabisHealthEffects

Integrative therapies: Non-pharmacologic methods for managing pain, promoting wellness



Michael F. Chronic phantom limb pain



April 14, 2010



Grace L: Breast cancer survivor/thriver

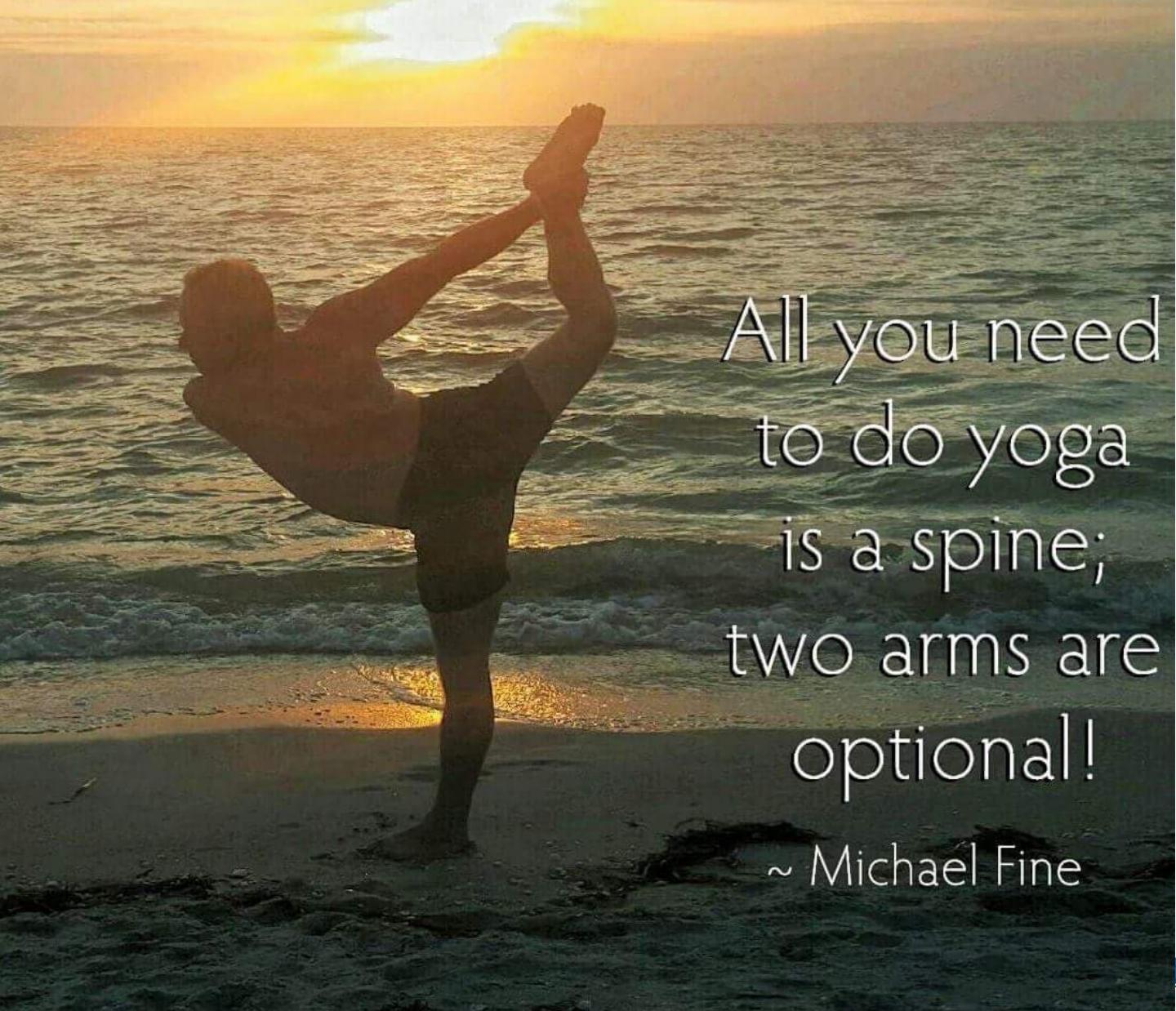


Ken R. – Parkinsons Disease



Adrienne A. with Fibromyalgia



A photograph of a person performing a complex yoga pose on a beach at sunset. The person is in a one-legged standing split, with their right leg extended vertically upwards and their left leg bent at the knee with the foot held near the right thigh. Their arms are raised, with hands clasped behind their head, creating a triangle shape. The background features a warm sunset over the ocean, with the sun partially obscured by clouds. The overall atmosphere is serene and focused.

All you need
to do yoga
is a spine;
two arms are
optional!

~ Michael Fine

Thank you!



The NorthShore Integrative Medicine Team
www.northshore.org/integrative