



**Brigham and Women's Hospital**  
Founding Member, Mass General Brigham

# **Cannabis in General Medicine**

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- Harvard Medical School
- Brigham and Women's Hospital
- VA Medical Center Emergency Department
- *InhaleMD*
- Association of Cannabinoid Specialists



# DISCLOSURES

None



# OBJECTIVES

- Understand that cannabis, if used properly, can be effective medicine for specific problems
- Recognize that many new cannabis products are unregulated and unsubstantiated





## Types of Symptoms Well Treated with Cannabis

1

Pain

4

Anorexia

2

Depression and Anxiety

5

Nausea and vomiting

3

Insomnia

6

Sexual Dysfunction



## But, isn't it addictive?

Remember that dependence  $\neq$  addiction

Dependence = biological or psychological habituation to a substance such that withdrawal causes symptoms. Air, food, shelter, water, beta blockers, SSRI examples

Addiction (per DSM-V) = dependence that causes adverse effects on patient's life circumstances (trouble with the law or destruction of key relationships)



Lifetime dependence risk of 7% in cannabis users vs 32% for nicotine, 23% for heroin, 18% for benzodiazepines, 17% for cocaine, and 15% for alcohol

Cannabis risk “front-loaded”

Typical withdrawal = 3-7 of insomnia and mood instability

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



# Cognitive Issues

## Healthy Volunteer (Rec User) Studies:

Several studies using I.Q. and fMRI have shown changes in cognitive function from prolonged use of cannabis

However, these were all done with recreational users with unknown (likely higher than medical) doses.

Best study to date shown ~8 point I.Q. drop in verbal memory function only. None in execute function, spatial or quantitative function. Seen only after 20-30 years “heavy” use.

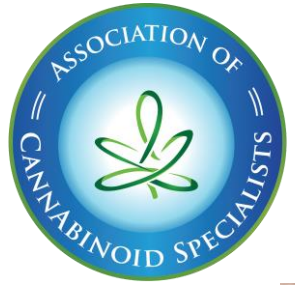
## Patient Studies:

Few studies on actual patients. Studies from Staci Gruber at HMS showed cognitive improvement in patients. Likely b/c illness causes significant cognitive impairment.

Gruber, S. A., Sagar, K. A., Dahlgren, M. K., Gonenc, A., Smith, R. T., Lambros, A. M., ... Lukas, S. E. (2018). The Grass Might Be Greener: Medical Marijuana Patients Exhibit Altered Brain Activity and Improved Executive Function after 3 Months of Treatment. *Frontiers in Pharmacology*, 8, 983. <https://doi.org/10.3389/fphar.2017.00983>







# Routes of Administration

## Smoking

- Rapid onset, relatively short duration
- Cheap and effective
- May yet prove to be bad for lungs

## Vaporizing

- Not cheap, needs machine
- Easy to titrate
- Presumably better for lungs: no combustion

## Eating

- Long onset, long duration
- Calories!
- Make your own or buy
- Hard to titrate

## Tincture

- BS: Sublingual or transdermal
- Cumbersome to make
- Unreliable delivery

## Topicals

- Good for skin
- No evidence for deeper penetration

3





## The Dose Matters



10-15mg

Not





# All About Strains and CBD

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- Strains: no significant medical differences
- CBD: useful in lab, not in real world, can interact with meds



## Drug Interactions: Real vs. Theoretical

### Medications that concern us:

Medications  
that are  
trending on  
Google:

	CBD	THC
Adalimumab (Humira)	N	N
Advair (fluticasone/salmeterol)	N	N
Albuterol (Ventolin)	N	N
Amlodipine (Norvasc)	N	N
Amoxicillin	N	N
Aripiprazole (Abilify)	N	T
Azithromycin (Zithromax, Z-PAK)	N	N
Esomeprazole (Nexium)	Y	N
Etanercept (Enbrel)	N	N
Hydrochlorothiazide	N	N
Infliximab (Remicade)	N	N
Lantus Solostar (insulin glargine)	N	T
Ledipasvir and sofosbuvir (Harvoni)	N	N
Levothyroxine (Synthroid)	N	N
Lisdexamfetamine (Vyvanse)	N	N
Lisinopril (Prinivil, Zestril)	N	N
Metformin (Glucophage)	N	N
Pregabalin (Lyrica)	N	N
Riotropium (Spiriva Handihaler)	N	N
Rosuvastatin (Crestor)	N	N
Simvastatin (Zocor)	N	T
Sitagliptin (Januvia)	N	T
Sofosbuvir (Sovaldi)	N	N

	CBD	THC
Amiodarone (Pacerone)	Y	N
Cetirizine (Zyrtec)	N	N
Clonazepam (Klonopin)	N	N
Clopidogrel (Plavix)	N	T
Eszopiclone (Lunesta)	N	N
Everolimus (Afinitor)	Y	T
Loratadine (Claritin)	Y	T
Lorazepam (Ativan)	Y	T
Quetiapine (Seroquel)	N	T
Remeron (Mirtazapine)	Y	N
Tacrolimus (Protopic, Prograf)	Y	Y
Trazadone (Desyrel)	N	N
Warfarin (Coumadin)	Y	T
Zolpidem (Ambien)	N	N



# Certification Is Not the Goal

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- Effective and Safe Medical Care
- Dispensaries provide misinformation and take advantage of patients
- Close medical guidance and availability of doctor key

# MOC Reflective Statement

- Cannabinoids, if used properly, can be effective for diverse conditions like pain, anxiety, depression, insomnia, nausea, anorexia, and sexuality
- Cannabis can cause dependence and use disorder if not used with careful attention to dose and frequency
- Inhalation or oral ingestion are, at present, the viable approaches and differ in their onset and duration, and therefore have different use cases
- Dose and timing are, like with any medication, crucial elements of success. 10mg THC is an average dose
- Strains and Indica/Sativa classification are not reliable predictors of medical outcomes
- CBD, while non-intoxicating, has not shown benefit in humans at available doses and can interact with a range of potentially dangerous medications
- Focus for both patient and practitioner should not be on “getting the card” but rather on safe and effective treatment



# TAKE HOME MESSAGES

- Cannabis, if used properly, can be effective medicine for specific problems
- Many new cannabis products are unregulated and unsubstantiated



# About the Association of Cannabinoid Specialists (ACS)



- **International organization** of healthcare professionals at the forefront of cannabinoid medicine
- **Membership benefits** include:
  - Advocacy
  - Education
  - Networking
  - Events

Visit [www.cannaspecialists.org](http://www.cannaspecialists.org) to learn more



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## References

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