

# Cannabis, Vaping, Harm Reduction, and Medical Advice

MO ACP Scientific Meeting  
Fred Rottnek, MD, MAHCM  
Program Director, Addiction Medicine Fellowship

September 8, 2023



# Objectives

Objectives: As a result of this session, participants will be able to

- **Recall** methods and messages of harm reduction that are already part of our youth and culture
- **Discuss** the risks and benefits of cannabis use
- **Identify** evidence-based and evidence-informed harm reduction education in prevention and treatment of people with substance use disorders
- **Have conversations** about harm reduction and harm reduction problem-solving

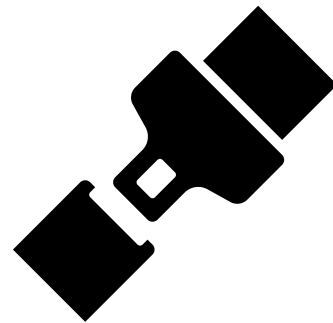
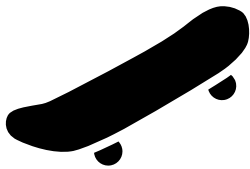
# Objectives

Objectives: As a result of this session, participants will be able to

- Recall methods and messages of harm reduction that are already part of our youth and culture
- Discuss the risks and benefits of cannabis use
- Identify evidence-based and evidence-informed harm reduction education in prevention and treatment of people with substance use disorders
- Have conversations about harm reduction and harm reduction problem-solving

# Harm Reduction and Childhood

- Consider harm reduction
- Think about the messages you received from the adults in your life
- How did adults message harm reduction?



# When is Harm Reduction Medical Advice?

## With an “h”

- Put a coat on; use your seat belt; don't drink and drive
- Normalize conversations about substances and mental health
- Don't demonize or disparage people in your life with addictions
- Maintain communication

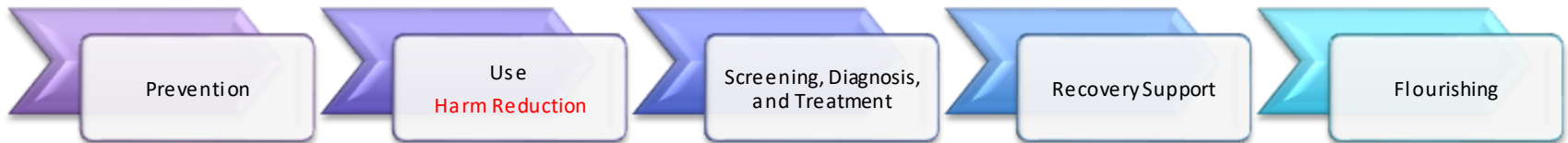
## With an “H”

- Sinclair Method
- Reduce use
- Carry Narcan (naloxone)
- Expand syringe access programs
- Use safely



# Controversial? Confusing? Conflicting?

- Where does harm reduction fit on the substance use pathway?



# Objectives

Objectives: As a result of this session, participants will be able to

- **Recall** methods and messages of harm reduction that are already part of our youth and culture
- **Discuss the risks and benefits of cannabis use**
- **Identify** evidence-based and evidence-informed harm reduction education in prevention and treatment of people with substance use disorders
- **Have conversations** about harm reduction and harm reduction problem-solving

# What is Hemp? What is Marijuana?

- Same plant, different ratios of elements
  - Hemp
    - No more than 0.3% THC (Tetrahydrocannabinol)
    - 2018 Farm Bill lifted restrictions on hemp
    - Industrial hemp uses
      - Hemp fibers: textiles or industrial processes.
      - Grain
      - Flowers: cannabidiol, a hemp extract also known as **CBD**.
  - **Marijuana**
    - Typically, 5-20% THC
- Hydroponic vs field grown plants



This Photo by Unknown Author is licensed under [CC BY-ND](#)



# Cannabis Products



# Cannabis Components

- Cannabis has over 120 phytocannabinoids, 20 flavonoids, as well as 150 aromatic substances called terpenes contained in its plant resin.
  - CBD is a compound which has anti-anxiety, anticonvulsant, immunomodulating, and anti-inflammatory properties.
  - THC is a compound that has pain reducing, appetite stimulating, antispasmodic, and anti-inflammatory properties as well as potent psychoactive effects that create changes in perception.
  - Terpenes and flavinoids are still being studied but are believed to have many antibiotic, anti-cancer, and psychoactive properties
- Judith K. Booth, Jörg Bohlmann, Terpenes in Cannabis sativa – From plant genome to humans, Plant Science, Volume 284, 2019, Pages 67-72, ISSN 0168-9452, <https://doi.org/10.1016/j.plantsci.2019.03.022>

# What cannabis products are FDA-approved?

- Synthetic THC
  - Dronabinol (Marinol and Syndros)
  - Nabilone (Cesamet)
- Higher potency CBD oil, Epidiolex
  - Two types of pediatric seizures: Lennox-Gastaut syndrome, Dravet syndrome
  - <https://www.gwpharm.com/healthcare-professionals/epidiolex>
    - National Center for Complementary and Integrative Health. Cannabis (Marijuana) and Cannabinoids: What You Need to Know. NCCIH. Published November 2019.  
<https://www.nccih.nih.gov/health/cannabis-marijuana-and-cannabinoids-what-you-need-to-know>

# Medical Cannabis: Benefits

- CBD Oil, high potency
  - Treatment of Lennox-Gastaut syndrome
  - Treatment of severe myoclonic epilepsy
- Neurologic conditions
  - For [multiple sclerosis](#) symptoms of pain and spasm, consider oromucosal cannabinoid spray (nabiximols), or oral marijuana extract (OCE), or delta-9 tetrahydrocannabinol (THC) to reduce patient reported symptoms of spasticity and pain, except for neuropathic pain ([Weak recommendation](#)).
  - For [Huntington disease](#), consider nabilone for the short-term treatment of chorea ([Weak recommendation](#)).
  - For [HIV-associated neuropathic pain](#), consider smoked marijuana as a treatment option ([Weak recommendation](#)).
  - For chronic [neuropathic pain](#) (not HIV or multiple sclerosis-related), consider cannabinoids for pain relief ([Weak recommendation](#)).
- For [chemotherapy-induced nausea and vomiting](#)
- For [fibromyalgia](#), consider cannabinoids (such as nabilone), especially in patients with significant sleep problems ([Weak recommendation](#)).
- For [glaucoma](#), marijuana can lower intraocular pressure but marijuana is not currently recommended in any form for treatment of glaucoma.
  - National Center for Complementary and Integrative Health. Cannabis (Marijuana) and Cannabinoids: What You Need to Know. NCCIH. Published November 2019.  
<https://www.nccih.nih.gov/health/cannabis-marijuana-and-cannabinoids-what-you-need-to-know>

# Cannabis Risks (1)

- **Acute adverse effects** may include dizziness, drowsiness, nausea, increased heart rate, hyperemesis, psychomotor impairment, and increased risk of motor vehicle accidents.
- **Long-term adverse effects** of smoking marijuana include cannabinoid hyperemesis syndrome, chronic bronchitis symptoms without development of chronic obstruction, and psychosis. [Dynamed Plus](#)
- **Effects on adolescents**
  - Effect on the brain and learning
  - Link to lower threshold/risk for schizophrenia

# Cannabis Risks (2)

- It's still illegal at a federal level
- Lack of FDA regulation
  - Varying strength
  - Varying purity
- Health risks related to combustion
- Combination with other central nervous system depressants, e.g., benzodiazepines, opioids, alcohol
- CBD oil is generally considered safe, but it may affect how other drugs are metabolized
- Cheap drugs are like cheap tattoos

# Cannabinoid Hyperemesis Syndrome (CHS)

Consists of severe recurrent nausea and vomiting in patients with prolonged chronic use of cannabis (typically,  $\geq$  weekly use) which typically manifests in **3 phases**

**1. Prodromal phase** consists of morning nausea, abdominal discomfort, and fear of vomiting

- may last months or years
- patient maintains normal eating habits, but may increase cannabis use due to well-known antiemetic effects
- <https://www.dynamed.com/drug-review/adverse-effects-of-cannabinoids#GUID-8D08387B-542D-441E-B321-69677CAC6D1F>

# Cannabinoid Hyperemesis Syndrome (CHS)

2. **Hyperemetic phase** consists of severe, intense emesis with vomiting episodes throughout the day

- hot-water bathing relieves symptoms, with higher temperatures conferring increased relief; as water cools, symptoms recur
- patients may present to emergency departments repeatedly
- lab testing and imaging may be nonspecific
- weight loss may occur
- typically lasts for 24-48 hours ([Curr Drug Abuse Rev 2011 Dec;4\(4\):241full-text](#))

3. **Recovery phase** - complete cessation of cannabis use (including synthetic cannabinoids) required; process may take months while cannabinoids are eliminated from system

- <https://www.dynamed.com/drug-review/adverse-effects-of-cannabinoids#GUID-8D08387B-542D-441E-B321-69677CAC6D1F>



# Objectives

Objectives: As a result of this session, participants will be able to

- **Recall** methods and messages of harm reduction that are already part of our youth and culture
- **Discuss** the risks and benefits of cannabis use
- **Identify evidence-based and evidence-informed harm reduction education in prevention and treatment of people with substance use disorders**
- **Have conversations** about harm reduction and harm reduction problem-solving

# 11/8/2022, Amendment 3, Missouri Legalization Initiative

- **Remove state prohibitions** on purchasing, possessing, consuming, using, delivering, manufacturing, and selling marijuana for personal use for adults over the age of twenty-one;
- Require a **registration card** for personal cultivation with prescribed limits;
- Allow persons with certain marijuana-related non-violent offenses to **petition for release from incarceration or parole and probation and have records expunged**;

# 11/8/2022, Amendment 3, Missouri Legalization Initiative

- Establish a **lottery selection process** to award licenses and certificates;
- Issue **equally distributed licenses** to each congressional district; and
- Impose a **six percent tax** on the retail price of marijuana to benefit various programs

# Harm Reduction and Cannabis Delivery



## Combustion

- Joints
- Blunts
- Pipes



## Vaping

- E-cigarettes



## Edibles

- Candies
- Baked products
- Beverages

# Harm Reduction with Cannabis

- Avoid early age initiation of cannabis use (i.e., definitively before the age of 16 years),
- Choose low-potency tetrahydrocannabinol (THC) or balanced THC-to-cannabidiol (CBD)–ratio cannabis products,
- Abstain from using synthetic cannabinoids,
- Avoid combusted cannabis inhalation and give preference to nonsmoking use methods,
- Avoid deep or other risky inhalation practices,
- Avoid high-frequency (e.g., daily or near-daily) cannabis use,
- Abstain from cannabis-impaired driving,
- Populations at higher risk for cannabis use–related health problems should avoid use altogether

Benedikt Fischer, Cayley Russell, Pamela Sabioni, Wim van den Brink, Bernard Le Foll, Wayne Hall, Jürgen Rehm, and Robin Room, 2017: [Lower-Risk Cannabis Use Guidelines: A Comprehensive Update of Evidence and Recommendations](https://doi.org/10.2105/AJPH.2017.303818)

American Journal of Public Health **107**, e1\_e12, <https://doi.org/10.2105/AJPH.2017.303818>

# Harm Reduction with Cannabis

When to use cannabis with great caution

- History of schizophrenia
- Uncontrolled hypertension/CAD
- COPD or lung pathology (smoking and vaping)
- Current Immune treatment
- Pregnancy
- Children

# Nicotine

How have we reduced risks associated with using nicotine?



# What is vaping?

Over 460 brands and variations

- e-cigs
  - e-hookahs
  - hookah pens
  - vapes
  - vape pens
  - mods (customizable, more powerful vaporizers)
- A solution is evaporated by a battery-powered heating coil
  - A person inhales this vapor
  - The solution contains nicotine, THC, flavors, and other ingredients



# What is vaping?

E-pipe



E-cigar



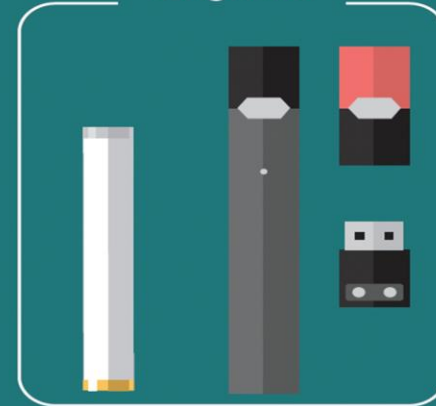
Large-size tank devices



Medium-size tank devices



Rechargeable e-cigarette



Disposable e-cigarette



# Is vaping good or bad?

## Adults

- It has helped some adults cut back combustible tobacco use (many more deaths from tobacco than other psychoactive substances combined)
- Not FDA approved, but few studies

## Teens and young adults

- Hugely popular
- Harder to detect than other tobacco and cannabis delivery systems
- Perceived as healthier

# Risks associated with vaping

What is in the product?

- Bronchiolitis obliterans (Popcorn Lung)
  - <https://www.npr.org/2019/09/19/762241293/will-patients-with-lung-illnesses-linked-to-vaping-make-a-full-recovery>
  - <https://www.webmd.com/lung/popcorn-lung#1>
- Impurities and additives are being investigated
  - [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/severe-lung-disease.html#latest-outbreak-information](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html#latest-outbreak-information)
- Vitamin E additives
- Flavorings and diluents: diacetyl and 2,3-pentanedione

# Stacking and other practices

Adolescent brains and high potency nicotine and/or THC

- High potency THC
- Nicotine withdrawal
- Impact of inhaling foreign chemicals into lungs

# Substances For Treatment Of Tobacco/Nicotine Use Disorder

## OTCs

- Nicotine patch
- Nicotine gum
- Nicotine lozenge
- Nicotine packet
- Nicotine via vaping?

## Prescription

- Nicotine nasal spray
- Nicotine inhaler
- Varenicline
- Bupropion SR



# Follow the money

- Juul Community,  
[www.juul.com](http://www.juul.com)

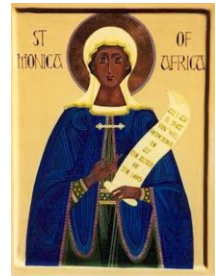


# Objectives

Objectives: As a result of this session, participants will be able to

- Recall methods and messages of harm reduction that are already part of our youth and culture
- Identify evidence-based and evidence-informed harm reduction education in prevention and treatment of people with substance use disorders
- **Have conversations about harm reduction and harm reduction problem-solving**

# Let's practice...



- 55-year-old man is using **cannabis** to manage his neuropathy. He wants to continue using, but he wants to know the best way to use.
- 17-year-old is busted for vaping **nicotine** at school. He wants to continue because he thinks it's safer than smoking tobacco. He wants to know what you think.
- 21-year-old friend is taking orders from people in his dorm for products from a dispensary in Collinsville, IL. He wants to know what you want.
- 22-year-old friend is taking orders for products to purchase when he flies home to Vermont for Winter Break. (Cannabis tax is lower there).



# Resources and Perspectives

- American Society of Addiction Medicine (ASAM), The Role of the Physician in “Medical” Marijuana, [https://www.asam.org/docs/public-policy-statements/1role\\_of\\_phys\\_in\\_med\\_mj\\_9-10.pdf?sfvrsn=0](https://www.asam.org/docs/public-policy-statements/1role_of_phys_in_med_mj_9-10.pdf?sfvrsn=0)
- ASAM, Public Policy Statement on Marijuana, Cannabinoids and Legalization, [https://www.asam.org/docs/default-source/public-policy-statements/marijuana-cannabinoids-and-legalization-9-21-2015.pdf?sfvrsn=38e06fc2\\_0](https://www.asam.org/docs/default-source/public-policy-statements/marijuana-cannabinoids-and-legalization-9-21-2015.pdf?sfvrsn=38e06fc2_0)
- Ken Sabet, *Smokescreen: What the Marijuana Industry Doesn't Want You to Know*, 2021

# Resources and Perspectives

- Smart Approaches to Marijuana, <https://learnaboutsam.org/>
- Cannabis and Pain: A Clinical Review, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5549367/>
- Cannabidiol (CBD) use in psychiatric disorders: A systematic review, <https://www.sciencedirect.com/science/article/pii/S0161813X19300774>
- Upcoming publications from the SSM/SLU team:
  - Journal of Family Practice, *Cannabis and Pain Management: What Do We Know? What Are We Learning?*
  - Missouri Family Physician, *Pain, Cannabis, and Safety in a Recreational Cannabis State*

# Additional Resources

- *What's Next When 'Just Say No' Doesn't Work? The Importance of Harm Reduction in Preventing and Treating Addictions*, Fred Rottnek, <https://www.chausa.org/docs/default-source/health-progress/whats-next-when-just-say-no-doesnt-work.pdf?sfvrsn=0>
- Short documentaries
  - Don't Wait, a film by Addiction is Real, <https://www.addictionisreal.org/dont-wait>
  - *Not My Child*, a film about substance use disorders <https://www.notmychildfilm.com/>

# Questions?



Fred Rottnek, MD, MAHCM

[Fred.Rottnek@slucare.ssmhealth.com](mailto:Fred.Rottnek@slucare.ssmhealth.com)

SSM Health/Saint Louis University School of Medicine Addiction  
Medicine Fellowship,

[https://www.slu.edu/medicine/family-medicine/addiction-  
medicine.php](https://www.slu.edu/medicine/family-medicine/addiction-medicine.php)