Facts about Cannabis and “Medical Marijuana” for Youth

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Progress in Pediatrics Meeting
21 April 2017

Disclosure Information

I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider of commercial services discussed in this CME activity

I will mention clinical trials involving the following:
– Cannabidiol (Epidiolex)
– Nabiximols (Sativex)

Objectives

• Name key adverse effects of cannabis use by youth
• Enhanced ability to provide psychoeducation to parents regarding cannabis
• Increased ability and comfort with providing psychoeducation and anticipatory guidance to teens about cannabis
• Be able to explain physician role and responsibilities in “medical marijuana” programs
What does one mean by “Marijuana”?

- **Marijuana**: non-scientific name for *Cannabis sativa*
- **Cannabis**: more scientific, clinical/research term used for *C sativa*
- Delta-9-tetrahydrocannabinol (THC): the main psychoactive component of *C sativa*
- THC is a Cannabinoid
- Synthetic cannabinoid analog: JWH-018, dronabinol

What does one mean by “Marijuana”?

- Cannabis ≠ THC
- Cannabinoid ≠ Marijuana
- Dronabinol & Nabilone ≠ “Medical marijuana”
- Nabiximols ≠ “medical marijuana”
- Cannabidiol ≠ “cannabis oil”
- Endocannabinoid system ≠ endo-THC system

How many?

- Over 60 cannabinoids in *cannabis sativa* plant
- Most of which have *not* been characterized, let alone effects of combination

Cannabis IS addictive

8000 subjects, age 15-64 years
Of those who endorsed at least one time cannabis use, about 9 percent eventually developed dependence

Compared to alcohol 15 percent
cocaine 17 percent
heroin 23 percent


Cannabis IS Addictive

![Prevalence of lifetime diagnosis of alcohol or marijuana dependence by age of use initiation](https://example.com)

Cannabis: Changes in Potency

- Tested product seized by DEA from 1995 to 2014
- 2010-2014: Shift from marijuana to more sinsemilla
- THC potency tripled from ~4 to ~12 %
- CBD content halved (~.28% to <.15%)
- THC:CBD increased from 14 to 80

Cannabis Use Increases the Risk of Substance Use Disorder

Past year cannabis use associated with:

<table>
<thead>
<tr>
<th>Dx</th>
<th>Prevalence OR</th>
<th>Incidence OR</th>
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</thead>
<tbody>
<tr>
<td>alcohol use disorder</td>
<td>2.5</td>
<td>2.7</td>
</tr>
<tr>
<td>cannabis use disorder</td>
<td>12.4</td>
<td>9.5</td>
</tr>
<tr>
<td>other drug use disorder</td>
<td>3.1</td>
<td>2.6</td>
</tr>
<tr>
<td>nicotine dependence</td>
<td>1.5</td>
<td>1.7</td>
</tr>
</tbody>
</table>


Cannabis and Psychosis: How Much Proof Do We Need?

“It has been almost 30 years since Andreasson...demonstrated an association between cannabis use and subsequent onset of schizophrenia.”

Cannabis Use IS Marker of Other Substance Use

Kids who report past year cannabis use need to be screened for all other substance use

Cannabis and Other Substance Use

- Child/adolescent cannabis use is a marker for other substance use. Period.
- Child/adolescent cannabis use is neither normal nor normative. Period.
- There is no “healthy use” in children/teens. Period.

Cannabis and Cars Don’t Mix

- Cannabis intoxication impairs driving
  - Reaction time, attention, lane tracking
- Driving under the influence of cannabis doubles MVC risk

Li, M.C., Brady, J.E., GilMadjin, C.J. et al. (2012) Marijuana use and motor vehicle crashes. Epidemiologic Reviews, 34, 60-72.
“Weed” Does Make You Dumber: How would you like to shave off 6 IQ points?

Teens Are Not Little Adults

16-17 year-old vs 24-28 year-old

↓ subjective, memory, physiological and psychotomimetic effects

↓ satiety

↓ inhibitory processes


Legislation: DEA Scheduling

Bippity-Boppity-Boo,
Put it in Schedule II
FDA Approved Medications

• **Nabilone** (synthetic delta-9-THC)
  – Indication:
    • N/V associated with cancer chemotherapy in patients who have failed to respond adequately to conventional antiemetic treatments (adult)

• **Dronabinol** (synthetic delta-9-THC analog)
  – Indications:
    • anorexia associated with weight loss in patients with AIDS (adults); and
    • N/V associated with cancer chemotherapy in patients who have failed to respond adequately to conventional antiemetic treatments (adult)

FDA Investigational Medications

• **Epidiolex** - plant-derived cannabidiol [CBD]

• **Sativex** – nabiximols; plant-derived CBD+THC
  (GW Pharmaceuticals)

Variable “Programs” and Products

• Raw plant, **smokeable** product for “medicinal” use (CA, IL) +/- **retail** recreational market, including edibles (CO, WA)

• **Oral** "Cannabis Oil" only (AL*, GA, IA*)

• **Non-smokeable** C. sativa plant extracts (MN)
University of Alabama at Birmingham
Cannabidiol Highlights
• Must be Alabama resident
• Specific and complex medical record requirements
• Neurologist referral

http://www.uab.edu/medicine/neurology/research/uab-cannabidiol-program

UAB CBD Preliminary

• “…many patients do have a reduction in seizure activity, and we hope our efforts will further define how to best utilize CBD oil for maximum benefit to the appropriate patient population.”
  - Martina Bebin, M.D., professor of neurology and principal investigator for the pediatric study
Variable Compound Source and Scrutiny

- GW Pharmaceuticals ≠ “Medical Marijuana”
- GW FDA scrutinized trials and regulation
  - Orphan Drug status for CBD in Dravet, Lennox-Gastaut, neonatal HIE
- “Medical Marijuana” no current GMP, or surveillance

How is a plant to be “dosed”?  

Example: Trimethoprim/Sulfamethoxazole

- We dose TMP/SMX in mg amounts of TMP component
- When “dosing” cannabis, milligrams of what?
- What about the hundreds of other potentially active compounds?
- How is a pharmacist to check our Rx?
- How is a nurse to check dose accuracy before administering?

I’ll just leave these here...


Qualifying Conditions

• Cancer associated with severe/chronic pain, nausea or severe vomiting, or cachexia or severe wasting
• Glaucoma
• HIV/AIDS
• Tourette Syndrome
• Amyotrophic Lateral Sclerosis (ALS)
• Seizures, including those characteristic of Epilepsy

Qualifying Conditions

• Severe and persistent muscle spasms, including those characteristic of Multiple Sclerosis
• Inflammatory bowel disease, including Crohn's disease
• Terminal illness, with a probable life expectancy of less than one year
• "Intractable" pain
• Posttraumatic stress disorder
Practitioner Experience So Far: Seizures

• Cost and no reduction in seizures
• Unwillingness to try other proven therapies
• Some seizures improved and others worsened
• Diazepam has been lowered due to somnolence
• We did see some AED level changes
• Has had just 1 follow up appointment with me since starting cannabis

Practitioner Experience So Far: Seizures

• Neurologist who has prescribed anti-seizure medications has threatened to discontinue prescribing due to use of medical marijuana because of concerns for interactions

Minnesota Possession Laws

<table>
<thead>
<tr>
<th>Possession</th>
<th>Offense</th>
<th>Penalty</th>
<th>Incarceration</th>
<th>Max. Fine</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10 mg</td>
<td>Misdemeanor</td>
<td>Fines</td>
<td>6 months</td>
<td>$10,000</td>
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<tr>
<td>11-150 mg</td>
<td>Misdemeanor</td>
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<td>$20,000</td>
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<tr>
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<td>6 months</td>
<td>$60,000</td>
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<tr>
<td>501-1000 mg</td>
<td>Misdemeanor</td>
<td>Fines</td>
<td>6 months</td>
<td>$100,000</td>
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<tr>
<td>More than 1000 mg</td>
<td>Felony</td>
<td>Fines</td>
<td>6 months</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

* A conditional exchange is possible for first time offenders
* Home is a pasive home education course requirement
Kansas Possession Laws

It is a crime to possess any amount of marijuana (including small amounts for personal use) in Kansas. (Kan. Stat. Ann. § 21-5706(b)(3).)

Kansas Proposed Legislation

SB 151, would allow medical professionals to prescribe and dispense "non-intoxicating cannabinoid medicine."

Practitioner Liability

“Policy makers often make decisions based on the majority will of the electorate, but physicians and other healthcare practitioners do not.”

http://www.americanbar.org/content/dam/aba/administrative/healthlaw/health_mo_premium_hi_healthlawyer_v29_2802.authcheckdam.pdf
Practitioner Liability

“The dispositive question in malpractice cases is not whether the physician’s actions were legally authorized but whether they were performed in accordance with professional standards of care.”

http://www.americanbar.org/content/dam/aba/administrative/healthlaw/health_mo_premium_hi_healthlawyer_v29_2802.authcheckdam.pdf

If pediatricians don’t initiate the conversation and provide reliable information…

Someone else will provide propaganda
Quick Facts to Keep Straight

- Cannabis is NOT medication
- Today’s marijuana is VERY different from 20 years ago
- Cannabis IS addictive
- Youth cannabis use IS a marker of other substance use

Areas to Cover in Parent Discussion

- Today’s marijuana is NOT the same
  - Increasing cannabis THC potency
  - Decreasing cannabis CBD content
- Cannabis is risk for other substance use
- Routes of use and speed of CNS delivery
- Complicated, real relationship with psychosis
- High risk sexual activity, injuries, driving
- Most kids AREN’T using it
- Lack of regulation as pharmaceutical

Someone else will provide propaganda

www.coloradopotguide.com
Tips for Speaking with Kids

- Speak early and often
- Reminder of confidentiality and its limits
- Make it safe to talk about
- Remember they respect us for being knowledgeable, not cool
- Focus on patient strengths
- Encourage parent/caregiver involvement in discussion

Questions?