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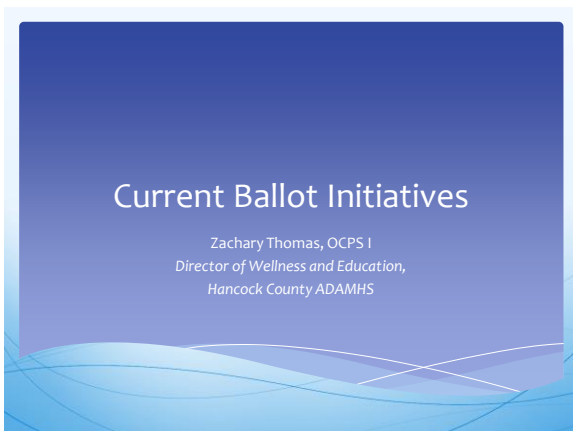
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## Responsible Ohio

- \* Statewide political action committee proposing legalization and commercialization of marijuana for both medical and recreational use.
- \* As of July 1, 2015, over 695K signatures collected, submitted to Secretary of State for validation.
- \* Anticipated to be on November 2015 ballot.
- \* First ballot initiative to legalize marijuana for *both* medical and recreational use at the same time.

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## Responsible Ohio

- \* Authorizes privatization of marijuana growing sites – 10 sites throughout Ohio, owned by multi-millionaire investors.
- \* Creates a constitutionally sanctioned monopoly (cartel).
- \* Establishes a state appointed control board that oversees all aspects of marijuana industry – from seed to consumption.

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## Responsible Ohio: Local Implications

- \* Allowances for medical use carry broad interpretation.
- \* Unlimited number of medical marijuana dispensaries allowed.
- \* Hancock County permitted up to 7 recreational marijuana stores.
- \* Exponentially increases access to marijuana by youth, particularly through marijuana-infused products.
- \* Complicates drug-free work place rules.

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## Responsible Ohio

The amount of marijuana allowed for possession would provide an opportunity for an individual to be

**continuously intoxicated,  
twenty-four hours a day for 108 days.**

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## Responsible Ohio

### LEGAL MARIJUANA OPPORTUNITIES FOR OHIOANS

Ohioans will have more opportunities to take part in their own industry. For example, they can own and operate legal dispensaries. These marijuana-based products are subject to strict and robust safety, design, product, packaging, and transport controls, including tracking. They also must not make any **new** **additions** and **expansion** of **new** **additions**. The responsible office oversees the industry closely.

Responsible  
OHIO

#### Marijuana Growth, Cultivation & Extraction Facilities

These facilities will be the source of all legal marijuana used for personal and medical use.

#### MARIJUANA TESTING FACILITIES

These facilities will be responsible for testing marijuana products for safety and quality.

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## House Joint Resolution 4

- \* Legislation that would make it more difficult for monopolies and special interests to insert themselves and their business interests into Ohio's Constitution.
- \* Creates first step asking voters to approve monopoly; second step asking voters to approve subject matter.
- \* Since introduction, Responsible Ohio has changed campaign strategy to address denial of voter rights.

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## Consequences of Marijuana Legalization in Colorado

Mark Miller

Chair, Community Awareness Committee, Opiate Task Force  
Hancock County Prosecuting Attorney

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## Impact of the Legalization of Marijuana for Medical and Recreational Purposes In Colorado

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## Colorado

### Medical marijuana legalized in 2000.

- Colorado has two primary medical marijuana laws. Colorado's first and oldest medical marijuana law is a constitutional amendment passed by voters in 2000 authorizing patients and their caregivers to possess, cultivate, and use medical marijuana. Colorado's second medical marijuana law enacted in the summer of 2010 established the Colorado Medical Marijuana Code, C.R.S. 12-43.3-101 et seq., which creates a dual licensing scheme that regulates medical marijuana businesses at both the state and local level.

### Recreational use of marijuana was legalized in 2012.

- You must be 21 years old to purchase, possess, or use marijuana or marijuana products. It is illegal to give or sell retail marijuana to minors.

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## Colorado

Marijuana is not just about smoking. 2.85 million units of marijuana-infused foods and beverages were sold in Colorado in 2014.

Source: Colorado Department of Revenue.

The marijuana-focused private equity firm, Privateer Holdings, in partnership with the descendants of Bob Marley, have created a multinational cannabis brand named "Marley Natural."

There was no mention of these branded marijuana products, candies, beverages, or advertising practice in the course of the political campaigns to legalize marijuana.

Source: Smart Approaches to Marijuana, Lessons After Two Years of Marijuana Legalization (Short Report issued January 5, 2015).

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## Marijuana Use

- \* 85,000 – number of Colorado adults who are 21 and older using marijuana regularly (at least once a month) – 9% of Colorado population.
- \* 23% of the marijuana users in Colorado consume marijuana daily.
- \* 19,550 stoned Coloradans each day.

Source: The Cannabist.com: \$573 million in pot sales: Here are 12 stats that define the year in marijuana, accessed June 2015, Published: December 26, 2014, 3:29 PM.

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## Marijuana Use

- \* 103,918 – number of medical marijuana patients reporting "severe pain" as their condition for a license – or 94% of the state's total patients.

Source: The Cannabist.com: \$573 million in pot sales: Here are 12 stats that define the year in marijuana, accessed June 2015, Published: December 26, 2014, 3:29 PM.

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## Tax Revenue

- \* Tax revenue from legal recreational marijuana may be far less than anticipated. In Colorado, tax revenues from legal recreational marijuana sales were anticipated to be 70 – 100 million dollars with the first 40 million designated for the rebuilding of Colorado's schools.

Source: Thomas Helleck, "Colorado's Tax Income from Legalizing Marijuana is Less Than Expected, It Still Might Have to Give It Back," International Business Times, Feb. 11, 2015 and Tony Nitti, "Understanding the Impact of Legalized Recreational Marijuana on State Tax Revenue," Forbes, Sept. 24, 2015.

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## Tax Revenue

- \* In reality, Colorado collected only \$44 million.
- \* Less than 1% of the State's \$20.5 Billion state budget for 2014.
- \* It is also expected that the high water mark for tax revenue would be in the first initial years of legalization because after the "wow" factor of legal recreational marijuana wears off, use and tax revenue may decline.

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## Tax Revenue

- \* Illegal marijuana is still cheaper than legal marijuana sold at a dispensary which is taxed at more than 27%.
- \* About 23% of the estimated marijuana users in Colorado have a medical card. Claims vary whether this number is growing or remaining steady. It is believed the reason this number is so high is because the cost of a medical card is \$15 and, unlike recreational marijuana's high tax rate, the tax on medical marijuana is only 2.9%.

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## Crime

- \* Though there has been no pot-fueled crime wave, some marijuana related crimes have increased in Denver: Pot-related burglaries increased 32%, and unsurprisingly, citations for using marijuana in public shot up 245% (Smoking in public can still result in a \$100 fine or 15 days in jail)

Source: Mother Jones: A Year After Legalizing Weed, Colorado Hasn't Gone to Pot, accessed June, 2015, citing data from the Denver Department of Safety.

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## Crime

- \* In the city and county of Denver, overall crime is slightly higher through November 2014 than it was during the same time period in 2013. Most crime categories are up, like simple assault and criminal mischief; but some categories show reductions, like sex offenses, kidnapping and motor vehicle theft. Some trends possibly related to marijuana include:

Disorderly conduct - 51% increase.  
Drug violations - 12% increase.  
Public Drunkenness - 53% increase.

Source: Denver Police Department.

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## Crime

- \* Overall, traffic fatalities in Colorado decreased 14.8% from 2007 through 2012. During the same five years in Colorado, traffic fatalities involving operator's testing positive for marijuana increased 100%.

Source: National Highway Transportation Safety Administration, Fatality Analysis Reporting System (FARS), 2006-2001 and Rocky Mountain HIDTA 2012.

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## Marijuana and Children

- \* There was a 32% increase in drug-related suspensions and expulsions in Colorado for academic school years 2008/2009 to 2012/2013

Source: Colorado Department of Education, Suspension/Expulsion Statistics (School Years 2005-2013). Accessed July 2014.

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## Marijuana and Children

- \* Arrests for marijuana use in Denver public schools increased by 6% between 2013 and 2014.
- \* Teen admission to treatment for marijuana use at the Arapahoe House treatment network in Colorado increased by 66 % between 2011 and 2014.

Source: Smart Approaches to Marijuana, Lessons After Two Years of Marijuana Legalization. (Short report issued January 5, 2015).

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## Marijuana and Children

- \* A study from the University of Colorado Anschutz Medical Campus in Aurora, Colorado revealed that 74% of teens in treatment for substance abuse were using someone else's diverted medical marijuana.

Source: Journal of the American Academy of Child and Adolescent Psychiatry, July 31, 2012 new release, "Diverted Medical Marijuana Use Common Among Teens: Study," accessed August 3, 2013.

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## Physiological Effects of Marijuana Use

Barbara Wilhelm, R.N.  
Chair, Medical Committee, Opiate Task Force  
Deputy Health Commissioner,  
Findlay City Health Department

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## The Physiology of Marijuana Use

- \* Cannabis Sativa
- \* Smoked, Eaten, Vaporized, or Brewed
- \* Intoxicating Ingredient: THC
- \* Potency Is Increasing from less than 1% in the 70's to 3-4% in the 90's to 13% today.

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Brain's Chemical



Anandamide

Drug



THC

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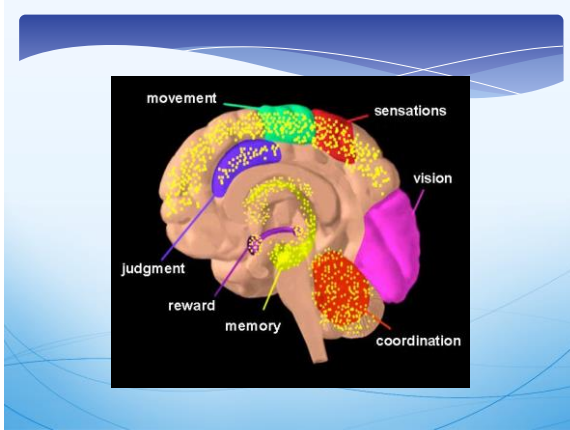
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## Effects of Marijuana

- \* Altered senses (auditory and visual)
- \* Altered sense of time
- \* Changes in mood
- \* Impaired body movement & coordination
- \* Difficulty with thinking and problem solving
- \* Impaired learning & memory
- \* Trouble concentrating
- \* Hallucinations

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## Effects of Marijuana

- \* Temporary paranoia
- \* Depression
- \* Anxiety
- \* Increased appetite
- \* Red eyes
- \* Dry mouth
- \* Sleep disruption
- \* Increased heart rate
- \* Breathing problems
- \* Reproductive problems

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## Is Marijuana Addictive?

- \* Contrary to common belief, marijuana can be addictive.
- \* Research suggests that about 1 in 11 users becomes addicted increasing among those who start as teens (to about 17 percent, or 1 in 6) and among people who use marijuana daily (to 25-50 percent).
- \* Withdrawal symptoms include agitation, anxiety, insomnia and irritability.

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## Resources

- \* Potency Monitoring Project; Journal of Forensic Science, Volume 55, Issue 5, September 2010.
- \* Casual Marijuana Use Linked to Brain Abnormalities, Journal of Neuroscience, April 16, 2014.
- \* National Institute on Health, NIH, U.S. National Library of Medicine, David Merrill M.D. Columbia University, September 8, 2013.
- \* National Institute on Drug Abuse, Bethesda Maryland, *Research Reports: Marijuana*, June 2015.

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## Marijuana for Medical Purposes

Michael Milks, Ph. D.  
Professor of Pharmaceutical Sciences,  
The University of Findlay

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## Marijuana Plant



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## *Cannabis sativa* Leaves



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## *Cannabis indica*



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### *Cannabis ruderalis*




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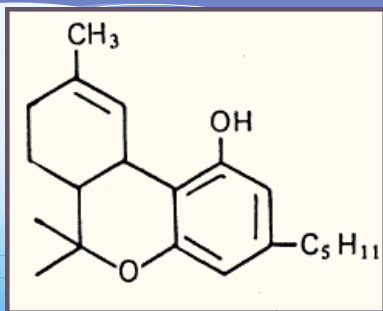
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### Tetrahydrocannabinol ( $\Delta^9$ -THC)




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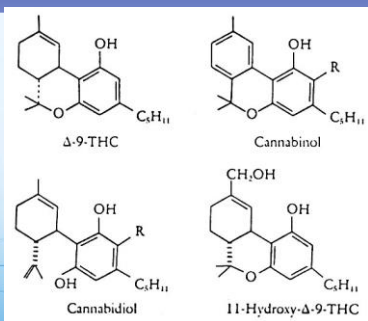
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### THC and Metabolites




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## Marinol® (dronabinol = synthetic $\Delta^9$ -THC)




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## Marinol® (C-III)

- FDA approved for:
  - Anorexia associated with weight loss in patients with AIDS
  - Nausea and vomiting associated with cancer chemotherapy in patients who have failed to respond adequately to conventional antiemetic treatments

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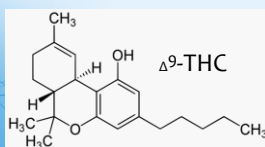
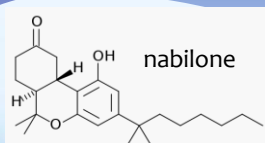
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## Cesamet® (nabilone)




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## Cesamet® (nabilone) (C-II)

- FDA approved for:
  - Nausea and vomiting associated with cancer chemotherapy in patients who have failed to respond adequately to conventional antiemetic treatments
- “Off-Label” Use
  - Huntington disease chorea (American Academy of Neurology guidelines support short-term use of nabilone based on a small short-term controlled trial)

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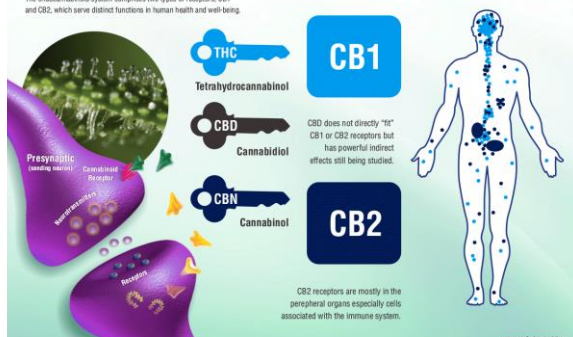
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### The Human Endocannabinoid System

CB1, CB2, and THC fit like a lock and key into existing human receptors. These receptors are part of the endocannabinoid system which impact physiological processes affecting pain modulation, memory, and appetite plus anti-inflammatory effects and other immune system responses. The endocannabinoid system comprises two types of receptors, CB1 and CB2, which serve distinct functions in human health and well-being.

CB1 receptors are primarily found in the brain and central nervous system, and to a lesser extent in other tissues.

Receptors are found on cell surfaces




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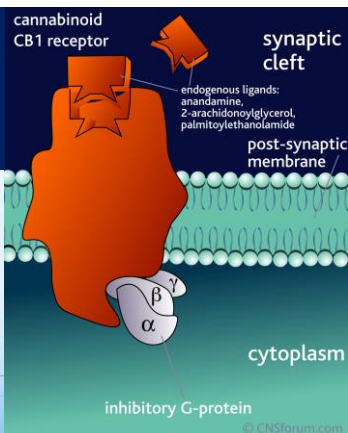
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## Cannabinoid CB1 Receptor




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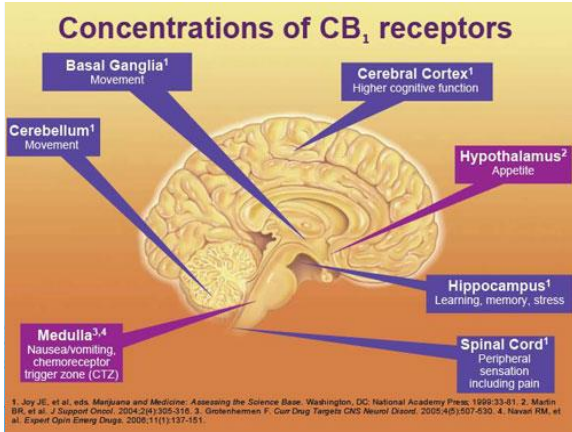
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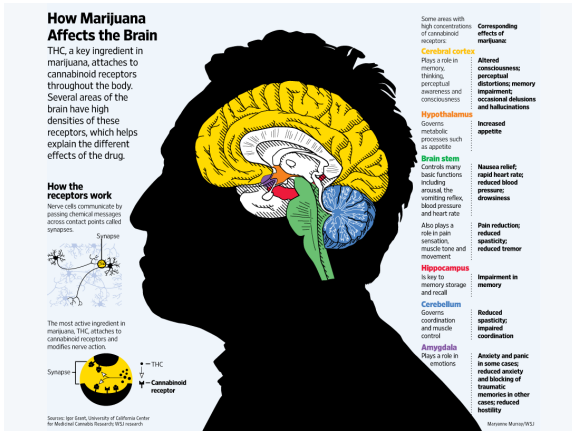
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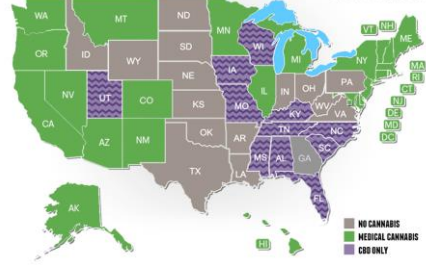
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## 23 MEDICAL CANNABIS STATES

AS OF 01/15/2015



■ NO CANNABIS  
 ■ MEDICAL CANNABIS  
 ■ CBD ONLY

## Medical Marijuana

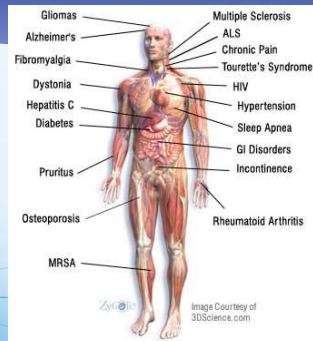


Image Courtesy of  
3DScience.com

## Compassionate Care Act

- Cancer
- HIV/AIDS
- Multiple sclerosis
- ALS (Lou Gehrig's Disease)
- Epilepsy

## Safety and Efficacy of Medical Marijuana

Koppel BS, Brust JC, Fife T, Bronstein J, Youssof S, Gronseth G, Gloss D (April 2014). "Systematic Review: Efficacy and safety of medical marijuana in selected neurologic disorders: Report of the Guideline Development Subcommittee of the American Academy of Neurology". *Neurology* 82 (17): 1556–63

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## Safety and Efficacy of Medical Marijuana (Neurology 82 (17): 1556–63)

- 34 medical studies
- Only 8 were considered Class I research quality (randomized clinical trial)
- EFFECTIVE:
  - Spasticity
  - centrally-mediated pain and painful spasms
- ALL other neurological claims were deemed "inconclusive" or "ineffective"

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## Safety and Efficacy of Medical Marijuana

Whiting PF, Wolff, RF, Deshpande S, Di Nisio M, Duffy S, Hernandez AV, Keurentjes JC, Lang S, Misso K, Ryder S, Schmidtkofer S, Westwood M, Kleijnen J. (June 2015) "Cannabinoids for Medical Use: A Systematic Review and Meta Analysis ". *JAMA* 313(24): 2456–73

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## Safety and Efficacy of Medical Marijuana (JAMA 133 (24): 2456-73)

- 79 medical studies (randomized clinical trials)
- EFFECTIVE:
  - **moderate** quality evidence
  - chronic pain
  - spasticity

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## Safety and Efficacy of Medical Marijuana (JAMA 133 (24): 2456-73)

- EFFECTIVE:
  - **low** quality evidence
  - nausea and vomiting (chemo)
  - weight gain in HIV infection
  - sleep disorders
  - Tourette syndrome

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## Safety and Efficacy of Medical Marijuana (JAMA 133 (24): 2456-73)

- INEFFECTIVE or INCONCLUSIVE:
  - psychosis
  - glaucoma
- INCREASED RISK of short-term ADVERSE EFFECTS (dizziness, dry mouth, nausea, fatigue, somnolence, euphoria, vomiting, disorientation, drowsiness, confusion, loss of balance, and hallucination)

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## Components of Marijuana Smoke

**TABLE 9 - 1**  
A comparison of the components of marijuana and tobacco smoke

Component	Marijuana	Tobacco
Carbon monoxide (mg)	17.6	20.2
Carbon dioxide (mg)	57.3	65.0
Ammonia (micrograms)	228.0	178.0
Acetaldehyde (micrograms)	1200.0	980.0
Acetone (micrograms) <sup>†</sup>	443.0	578.0
Benzene (micrograms) <sup>†</sup>	76.0	67.0
Toluene (micrograms) <sup>†</sup>	112.0	108.0
THC (tetrahydrocannabinol) (micrograms)	820.0	—
Nicotine (micrograms)	—	2850.0
Napthalene (nanograms)	3000.0	1200.0

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## Compassionate Care Act

- **Carcinogenic**
- NY and MN have banned medical marijuana administration via **smoking**

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## Conclusions



- Some medical/scientific support for limited compassionate use of cannabinoids
- Careful consideration of risk/benefit ratio (i.e. justification of use *in lieu* of other medication)

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## Next Steps Questions & Answers

Mark Miller  
Hancock County Prosecuting Attorney

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## Resources

- \* Smart Approaches to Marijuana (SAM):  
<https://learnaboutsam.org/>
- \* Drug Free Action Alliance (DFAA):  
<https://www.drugfreeactionalliance.org/marijuana>
- \* Your Path To Health (ADAMHS):  
<http://www.yourpathtohealth.org/marijuana-information/>
- \* Zach Thomas, Director of Wellness and Education (ADAMHS): [zthomas@yourpathtohealth.org](mailto:zthomas@yourpathtohealth.org)

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## Thank You

Hancock County Community Partnership  
Hancock County Opiate Task Force

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