

**MARIJUANA:
HEALTH IMPACTS ON AT-RISK AND
UNDERSERVED POPULATIONS:
INFANTS/CHILDREN/YOUTH/
PREGNANT WOMEN/ 9/23/19**

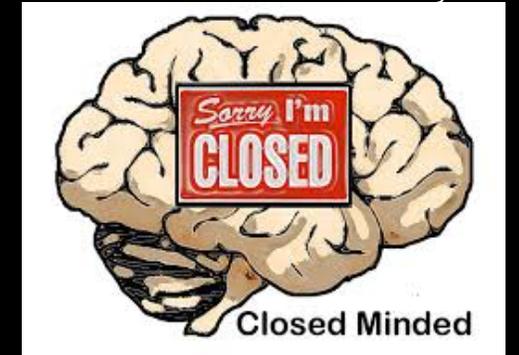
**Howard L. Bost Memorial Bost Health Policy Forum
Kathy K Hager, DNP, APRN, FNP-BC, CDE**

FENCE SITTING



Bad or
good?

MY MIND IS MADE UP



Don't confuse me with the facts

45% of kids in 12th grade REPORT using marijuana in their life time



2-5% of pregnant women REPORT marijuana use; > 25% in hi risk groups

20% of 24 yr old prenatal women reported using marijuana

Marijuana during pregnancy – associations between hyperactivity, altered responses to visual stimuli, increased trembling, and a high pitched cry

SUMMARY

4

- Evidence is scant (and contradictory) in most areas
- If a person uses marijuana, that person is also more likely to smoke and use alcohol and other illicit drugs
- In areas where research is stronger, there is a problem with confounding factors
- Kids and people in general think marijuana's 'probably ok'
- Marijuana is not the same strength as the marijuana of the 60s-80s
- Marijuana is a schedule I drug, along with heroin; it needs to be a schedule II at least
- Marijuana needs to have well controlled clinical trials to determine effects on pregnancies, infants, children and teens
- Everyone needs to know the dangers!
- Marijuana needs to be locked up like all other drugs and guns

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- Can marijuana use during and after pregnancy harm the baby?
- More research is needed
- Self-reported: prevalence of prenatal marijuana use is 2-5% (up to 15-28% among young, urban, and socioeconomically disadvantaged women); Thompson, Dejong, Lo, 2019, 4, 50-52)
- Marijuana use in pregnancy ^ 62% From 2002 TO 2014 (ALLEN, 2017)
- One study found that about 20% of pregnant 24 years old and younger screened positive for marijuana (some generalize ^10%, Roth, Satran & Smith, 2015)
 - Women were about 2x as likely to screen positive for marijuana use via a drug test than they state in self reported measures
 - This suggests that self-reported rates of marijuana use in pregnant females may not be an accurate measure of marijuana use (85)

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- There is **no human research** connecting marijuana use to the chance of miscarriage (86,87), although **animal studies** indicate that the risk for miscarriage increases if marijuana is used early in pregnancy (88)
- Some **associations** have been found between marijuana use during pregnancy and future developmental and hyperactivity disorders in children (89-92)
- Research has shown that **pregnant women who use marijuana have a 2.3 x greater risk of still birth** (98); Supported/ refuted in Thompson, DeJong, Lo (2019)
- Given the potential of marijuana to negatively impact the developing brain, the **American College of Obstetricians and Gynecologist recommends against using marijuana while trying to get pregnant, during pregnancy, and while they are breastfeeding** (99).
- **Combo of tobacco and marijuana was associated with an \wedge incidence of maternal asthma, preterm delivery, decreased head circumference and decreased birth weight** (Stickrath, MD, 2019, ref. 10)

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- Human research has shown that some babies born to women who used marijuana during their pregnancies display **altered responses to visual stimuli, increased trembling, and a high pitched cry** (104), which could indicate problems with neurological development (105)
- In school, **marijuana-exposed children are more likely to show gaps in problem solving skills, memory, (106) and the ability to remain attentive. (107)**
- **More research is needed – to disentangle marijuana-specific effects from those of other environmental factors that could be associated with a mother's marijuana use, such as an impoverished home environment or the mother's use of other drugs. (97)**
- **Prenatal marijuana exposure is associated with an \wedge likelihood of a person using marijuana as a young adult, even when other factors that influence drug use are considered. (108)**

WHAT ABOUT SCREENING DURING PRENATAL EXAM

- Cannabis use Disorder Identification Test
- What about child protective services?
- Which states have laws requiring reporting?
- What about the provider-patient relationship?
- Does criminalization decrease visits to PCP?
- Marijuana use is associated with decreased folic acid....(AWHONN Position statement, 2018)

AUGUST 30, 2019: THIS AIN'T YOUR MOTHER'S MARIJUANA:

9

- Surgeon General **Jerome Adams** and **Health & Human Services (HHS) Secretary Alex Azar** on marijuana
New York Times

- Smoking or vaping marijuana is dangerous for pregnant women and their developing babies

- Concern that pregnant women, teenagers are unaware of the health hazards posed by new, professionally grown marijuana crops (Kaplan, 8/29)

- From the 97s to 2000s there has been a 6-7 fold & in potency (Warner, Roussos-Ross & Behnke; 2014)

Washington Post

- Greater access and increased potency a public awareness campaign on social media about the effect it can have on the developing brain

- Up to 58% of women who use marijuana during pregnancy, also smoke tobacco; marijuana has NOT been linked to major or minor congenital anomalies (Gonzales, Krishna, 2017)

- The effects of heavy tobacco use are more striking than those of marijuana use (Hill, Reed, 2013)

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- Recent results from two prospective longitudinal twin studies did not support a causal relationship between marijuana use and IQ loss
- Those who used marijuana did show a significant decline in verbal ability and in general knowledge between the preteen years (9-12, before use) and late adolescence / early adulthood (17-20)
- However, at the start of the study, those who would use in the future already had lower scores on these measures than those who would not use in the future, and no predictable difference was found between twins when one used marijuana and one did not.
- This suggests that observed IQ declines, at least across adolescence, may be caused by shared familial factors (e.g. genetics, family environment), not by marijuana use itself (45)
- All this is further confounded by use of other substances

BREAST FEEDING

THOMPSON, DEJONG, LO, 2019, CME REVIEW ARTICLE

- If a nursing mom smokes 1-2 marijuana cigs / day, a nursing infant may ingest approximately 0.01 to 0.1 mg of THC daily
- In one study 18% of moms reported using marijuana while breastfeeding
- It is NOT currently recommended to withdraw lactation support if women are unable to abstain from marijuana use

THIS AIN'T YOUR MOTHER'S MARIJUANA CONT'D

- USA Today:
- HHS Secretary Alex Azar –the amount of THC –the chemical that leads to psychological effects in marijuana – now is about three times higher than a few decades ago
- A third of teens who vape use their e-cigarette devices for marijuana oil.. And edible, oils or waxes lead to another tripling of the effect of THC
- Third most common illegal substance used by high school students after alcohol and electronic cigarettes
- One in five teens who try it will become addicted
- Teens are most likely to miss or drop out of school, and significant drops in cognition have been reported in adults who started using as young teens (O'Donnell, 8/29)

THIS AIN'T YOUR MOTHER'S¹³ MARIJUANA

Politico:

- “In 2017, about 9.2 million people ages 12-25 reported that they used marijuana in the last month (Alex Azar: HHS).
- High school students’ perception of marijuana as harmful has been declining over the past decade (Roubein, 8/29)

ALL YOUNG CANNABIS USERS FACE PSYCHOSIS RISK

- June 15, 2018
- Cannabis use directly \wedge psychosis risk in teens
- **Chicken or egg issue.** Is it that people who are prone to mental health problems are more attracted to cannabis, or is it something about the onset of cannabis use that influences the acceleration of psychosis symptoms?"
(Conrod)

ALL YOUNG CANNABIS USERS FACE PSYCHOSIS RISK

- "It's extremely important that governments dramatically step up their efforts around access to evidence-based cannabis prevention programs" (Conrod)
- 30% of older high school students in the Canadian province of Ontario use cannabis
- Pediatric marijuana ingestions increased following legalization (Child Trends, Leubitz, et Al. (2019))

HIGH POTENCY CANNABIS TIED TO 50% OF NEW PSYCHOSIS CASES

MEGAN BROOKS, MARCH 20, 2019

- "Differences in frequency of **daily cannabis** use and in use of **high potency cannabis** contributed to the striking variation in the incidence of psychotic disorder
- "This has important implications for public health, given the increasing availability of high potency cannabis" (Di Forti).

HIGH POTENCY CANNABIS TIED TO 50% OF ¹⁷NEW PSYCHOSIS CASES

MEGAN BROOKS, MARCH 20, 2019

- Assuming causality, if high potency cannabis were no longer available, the incidence of psychosis would drop significantly

CHILD TRENDS: MARIJUANA USE PUBLISHED SEPT 10, 2018

- Marijuana use among high school students has fluctuated over the last several decades.
 - 2017:
 - 6 % of eight-grade students and
 - 23 % of 12th grade students reported using marijuana in the past 30 days

CHILD TRENDS 40 YEARS: MARIJUANA USE

- More than twice as many students report having used marijuana at some point in their lives as those who report use in the last month
- **In 2017**
 - 14% of eight graders
 - 31 % of tenth graders
 - 45 % of twelfth graders
 - (1)*

FACTS

- Reports of
 - **suicide attempts increased from 0.7% of survey participants in 2013 to 1.8% in 2018**
 - **proportion of students reporting severe depression rose from 9.4% to 21.1% in 2018**
- HEALTH NEWS
- AUGUST 29, 2019 / 12:51 PM / 5 DAYS AGO
- **Depression, anxiety rising among U.S. college students**
- Saumya Joseph

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- **Marijuana = most commonly used illicit drug**
- More common among men than women
- Medical emergencies possibly related to marijuana use have also increased?
- **13% marijuana users are between ages 12 and 17 (6)**
- **? increase due to increased use, increased potency of marijuana (amount of THC it contains) or other factors**
- **Mentions of marijuana in medical records do not necessarily indicate that these emergencies were directly related to marijuana intoxication**

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- Marijuana significantly impairs judgment, motor coordination and reaction time (7-9)
- Marijuana is the illicit drug most frequently found in the blood of drivers who have been involved in vehicle crashes, including fatal ones (10)
- The role played by marijuana in crashes is often unclear because it can be detected in body fluids for days or even weeks after intoxication and because people frequently combine it with alcohol.
- Those involved in vehicle crashes with THC in their blood, particularly higher levels, are 3-7 times more likely to be responsible for the incident than drivers who had not used drugs or alcohol

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- Is marijuana addictive?
- Marijuana use can lead to the development of problem use, known as a marijuana use disorder, **which takes the form of addiction in severe cases**
- Recent data suggest that 30 % of those who use marijuana may have some degree of marijuana use disorder (18)
- People who begin using **marijuana before age 18 are 4-7 x more likely to develop a marijuana use disorder than adults (19)**
- Studies suggest that (26, 27) **9% of people who use marijuana will become dependent on it (24, 25) rising to about 17 % in those who start using in their teens**

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- Rising potency
- In early 90s, the average THC content in confiscated marijuana samples was 3.8%
- In 2014, it was 12.2 %
- The average marijuana extract contains more than 50% THC, with some samples exceeding 80%
- These trends raise concerns that the consequences of marijuana use or in young people, whose brains are still developing (What are marijuana's long term effects on the brain)?
- Recent studies suggest that experienced people may adjust the amount they smoke and how much they inhale based on the believed strength of the marijuana they are using, but they are not able to fully compensate for variations in potency (30, 31)

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA²⁵

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- Is marijuana a gateway drug?
- Some research suggests that marijuana use is likely to precede use of other licit and illicit substances (46)
- Majority of people who use marijuana do not go on to use other, 'harder' substances
- Alcohol and nicotine prime the brain for a heightened response to other drugs (52) and are, like marijuana, also typically used before a person progresses to other, more harmful substances.
- Other factors besides biological mechanisms, such as a person's social environment, are also critical in a person's risk for drug use
- An alternative to the gateway-drug hypothesis is that people who are more vulnerable to drug-taking are simply more likely to start with readily available substances such as marijuana, tobacco, or alcohol, and their subsequent social interactions with others who use drugs increases their chances of trying other drugs
- Further research is needed to explore this question

NATIONAL INSTITUTE ON DRUG ABUSE (NIDA): MARIJUANA

(LAST UPDATED JULY 2019: [HTTPS://WWW.DRUGABUSE.GOV](https://www.drugabuse.gov))

- What are the effects of secondhand exposure to marijuana smoke?
- At this point, very little research on this question has been conducted
- Rat studies – secondhand exposure to marijuana smoke affected a measure of blood vessel function as much as secondhand tobacco smoke and the effects lasted longer (83)

WHAT ABOUT THE LATEST HEADLINES?

- Three vaping associated deaths
- ED admissions
- Ventilator dependency
- 450 cases under review
- <https://www.wsj.com/articles/authorities-investigating-450-vaping-illnesses-and-a-third-death-11567794441>

POSITION STATEMENT ANA

- Therapeutic Use of Marijuana and Related Cannabinoids
- Effective Date: 2016; Status: Revised; Written by: ANA Center for Ethics and Human Rights; Adopted by: ANA Board of Directors
- The purpose of this statement is to reiterate the American Nurses Association's (ANA) support for the review and reclassification of marijuana's status from a federal Schedule I controlled substances to facilitate urgently needed clinical research to inform patients and providers on the efficacy of marijuana and related cannabinoids.
- This position statement speaks only to the use of marijuana and related cannabinoids in the context of health care. It addresses the roles and responsibilities of nurses related to the use of cannabinoids for health care.

- **MARCH 16, 1999**
- **PRESS RELEASE**
- **U.S. Institute of Medicine Study:**
- **Benefits of Medical Marijuana Outweigh Risks, Long-Awaited Science Review Concludes**

MEDICAL MARIJUANA: THE INSTITUTE OF MEDICINE REPORT
RONALD W. PIES, MD
JANUARY 6, 2010

In sum, there is a pressing need for more high-quality research in the area of medical marijuana and cannabinoid use

AMERICAN ACADEMY OF NEUROLOGY AND
AMERICAN ACADEMY OF PEDIATRICS HAVE
RECOMMENDED THAT DEA DECLASSIFY
MARIJUANA TO ALLOW FOR FURTHER
MEDICAL RESEARCH

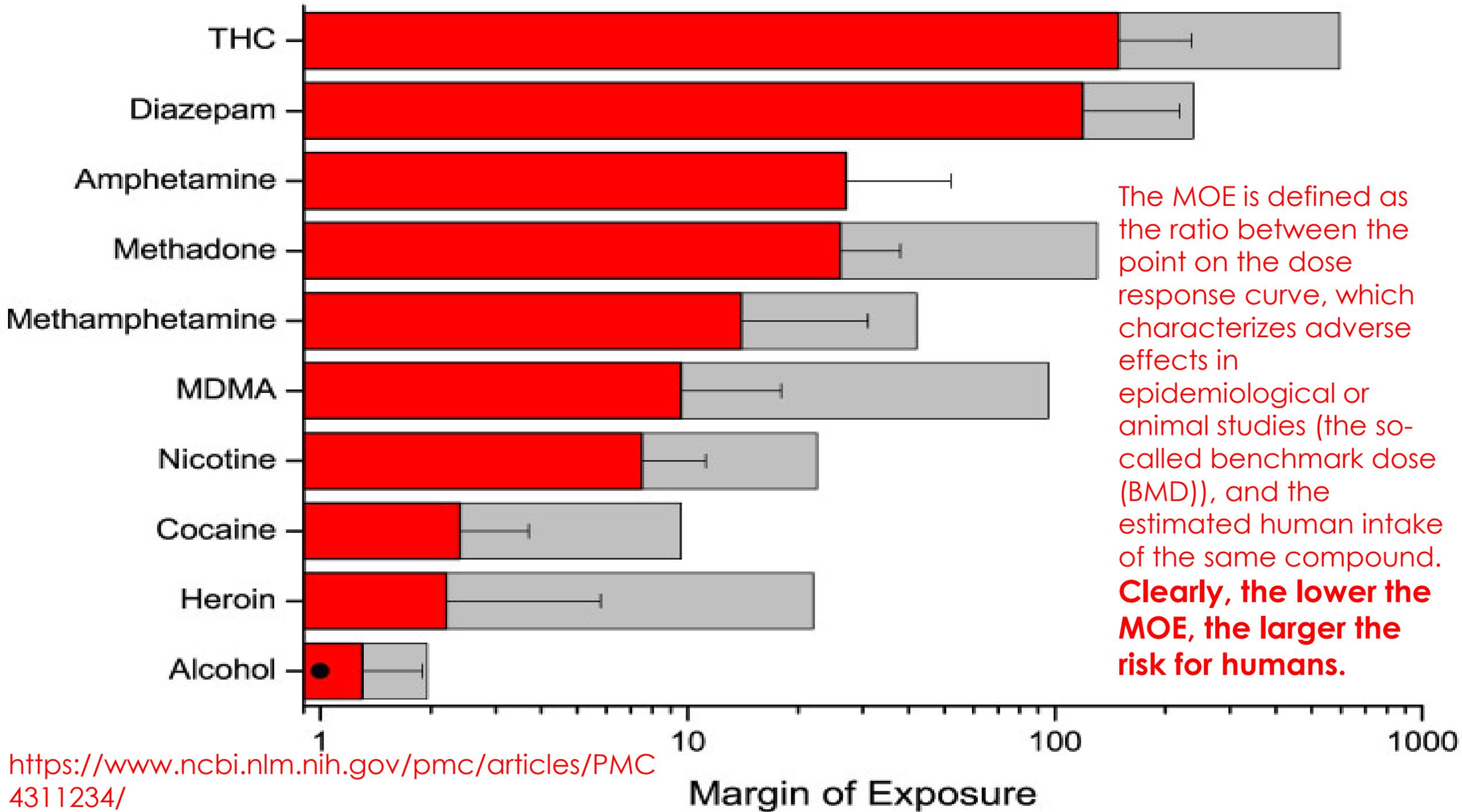
- Gonzales, Krishna, 2017. Topics in Obstetrics & Gynecology: Marijuana use in pregnancy



- The American Academy of Addiction Psychiatry endorses the Institute of Medicine (IOM) report supporting the therapeutic value of cannabinoid drugs for control of nausea and vomiting associated with cancer chemotherapy and appetite stimulation in wasting illnesses such as associated with AIDS. We are in favor of compassion for the ill and the availability of marijuana for medical purposes based on current evidence. However, it must be noted that the products sold as “Marijuana”, contains numerous different medically active compounds in different proportions.
- **We therefore make the following recommendations:**
- 1. That the medically active components of marijuana undergo clinical trials for FDA drug approval as a Schedule 2 drug(**S**).
- <https://www.aaap.org/wp-content/uploads/2018/07/MJ-policy-FINAL.pdf>

HOW LONG HAS MARIJUANA BEEN AROUND?

- Oldest evidence of marijuana use discovered in 2500-year-old cemetery in peaks of western China / probable use x 4000 years
- By **Andrew Lawler** Jun. 12, 2019 , 2:00 PM
- <https://www.sciencemag.org/news/2019/06/oldest-evidence-marijuana-use-discovered-2500-year-old-cemetery-peaks-western-china>



QUESTIONS TO PONDER DURING OUR³⁵ QUESTION & ANSWER / DISCUSSION PERIOD

- Why haven't we studied it?
- Why haven't we rescheduled it?
- Why don't we run campaigns about its dangers?
- Why are there NOT campaigns to lock up all drugs, like we do with guns?
- Why wouldn't we legalize something that is so available (up to 45% of kids have used it by the 12th grade)...
- ...so that we can control it and lower the dose back to our mother's marijuana and standardize it?