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Marijuana: Weeding Out Fact From Fiction

- I. History of Cannabis and Its Regulations
  - A. 2737 B.C. earliest documented medicinal use
  - B. 1851 Initially classified for medical use
  - C. 1937 First criminalized against advice of AMA
  - D. 1970 Controlled Substances Act = Marijuana listed as “Schedule I” drug
  - E. 2016 DEA considered rescheduling Marijuana as “Schedule II” but has not.
- II. Medical vs Recreational Marijuana and is Marijuana a medicine?
  - A. Whole unprocessed marijuana plant and its basic extracts are not medicine. FDA is regulatory body that decides if substances become drugs and regulates the prescribing and dispensing of those drugs. FDA has not approved the marijuana plant itself as medicine.
  - B. What calling medical marijuana is actually recreational marijuana sold, and smoked, vaporized and eaten, as medicine.
  - C. Cannabinoids, 100+ chemicals within marijuana, particularly THC (psychoactive ingredient that provides “high”) CBN and CBD, hold most promise as a medicine. Note that there are also naturally occurring cannabinoids produced in our bodies.
  - D. Four FDA approved such medicines already – **Dronabinol** (Marinol and Syndros )and **Nabilone** (Cesamet) (both synthetic/Man-made THC-based) for nausea and to boost appetite. **Epidiolex** as CBD-based liquid drug for two rare and serious forms of epilepsy. Also, Canada, United Kingdom and several European countries using **Nabiximols** (Sativex), a THC and CBD based mouth spray, to treat spasticity in MS. U.S. researching same to treat cancer pain. Note that there are no other FDA approved drugs containing either THC or CBD.
  - E. 2018 Farm Bill: Legalized, on a federal level, regulated Industrial Hemp or any part of Cannabis plant w/ THC concentration .3% or lower. This removes Hemp from the Controlled substances Act and DEA’s schedule 1 classification allowing the legal farming, distribution and research of Hemp. Now each State has the final say around whether these CBD/THC products can be legally sold in that State. The contents and labeling of these products are not regulated so you cannot be absolutely sure what you are getting.
- III. Why FDA has not approved Marijuana as a drug?
  - A. Federal government erected major barriers to researching the potential health effects or harm of cannabis-based products.
    - 1. Only one legal source for research – University of Mississippi facility since 1968.
    - 2. Researchers must get OK from the DEA and in some states, a state board of medical examiners.
    - 3. DEA requires elaborate security measures to limit number of people who come into contact with marijuana during research.
    - 4. Testing the health effects of marijuana products marketed to consumers is illegal. Example, prevention by federal law for biomedical researchers to test the harm/benefits of highly concentrated Cannabis (DABS) even while sales doubled in Colorado between 2015-2016.
    - 5. Federal law bars scientists from testing edibles for contaminants, investigating their effects on patients with certain medical conditions, or administering them to lab animals.
  - B. These strictures leave patients, health care professionals and policy makers without evidence they need to make sound decisions on use of cannabis and cannabinoids.



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- IV. National Academy of Science Report – January 2017
  - A. Assessed 10,000 studies on marijuana relationship to host of health issues
  - B. Found cannabis and cannabinoids effectively treat chronic pain; eases chemotherapy induced nausea in cancer patients; spasticity in those with MS; and help some sleep.
  - C. Did not find cannabis or cannabinoids to be effective treatment for Epilepsy, Parkinson's disease symptoms and support of abstinence from addictive substances.
  - D. Also found: solid relationship between those who smoke frequently and developing psychotic illnesses like schizophrenia, although not clear whether one causes the other; use during pregnancy = more likely to have smaller babies who face a range of early disadvantages; worsened respiratory symptoms and bronchitis.
  - E. Overall report states there is a lack of evidence based information on the health risks of cannabis and cannabinoids which poses as significant public health risk. Much more research needed.
- V. State of the Union
  - A. Federally illegal. Each individual state is left to decide on legalization (medical and recreational), regulation and monitoring.
  - B. 15 States and DC legalized recreational use.
  - C. 36 States and DC legalized medical use. 13 other states have restrictive laws limiting THC (psychoactive cannabinoid) content so there can be access to products rich in CBD (non-psychoactive cannabinoid).
  - D. Approximately 30 Countries have legalized medical marijuana use.
  - F. Dangers of popular vote vs using well-established regulatory process and power of big business
    - A. In general, people AND the media are uninformed and/or misinformed.
    - B. Many pundits are powerful and get paid to deliver a message supporting their interests. Often mislead the public on purpose. THIS IS FACT!
    - C. Movie, "The Merchants of Doubt" – Dr. Naomi Oreskes
    - D. History of Tobacco
  - G. SAMPLE of POSSIBLE Unintended Consequences
    - A. Increased access and use by minors
    - B. Generation of adults with permanent damage to their brains thus at a disadvantage in life and our country at a competitive disadvantage.
    - C. Significant increase in need for addiction treatment and not enough resources.
    - D. Harm to vulnerable populations – elderly, very young, those with physical/emotional problems.
    - E. Creation of an infrastructure we cannot dismantle or properly control.
- VI. What to do (Sample)
  - A. Slow everything down and let science inform our decisions.
  - B. Make it easier for scientists to get studies approved, financed and published.
  - C. Minimize harm even if that means some people who could benefit don't have access.
  - D. Learn from past mistakes including putting controls in place NOW for how marijuana can be marketed (i.e., Skinnygirl marijuana)
  - E. Prepare nation's healthcare to respond to increased pressure from the public for marijuana and the negative health consequences policy changes will spur.
  - F. Prevent big marijuana industry from creating and sustaining new generations of young people addicted to their product.
  - G. Require growers and dispensaries to contribute a % of their profits to prevention and treatment of addiction.





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- H. Educate, Educate, Educate parents, kids, doctors etc.
  - I. Stop calling recreational marijuana a medicine. Call it what it is or name it something different to distinguish it from recreational use.
  - J. The way we are legalizing, prescribing and dispensing marijuana is not only putting people at risk but is also undermining the potentially promising future of properly studied and approved marijuana-based medicine.
- VII. Marijuana is addictive, is a gateway to other drugs and can be harmful to adolescent/ early adulthood brain development.
- A. THC levels 15%-30%; DABS 80%-90%; Vaping can be >95%
  - B. On average, 1 in 6 who start using as adolescents and 1 in 9 who start in adulthood will become addicted.
  - C. 6500 people begin daily use each year. 10-20% of whom will become addicted. Very conservative stats that likely underestimate use in this country.
  - D. Jury is still out on the effects of legalizing marijuana on opioid mortality rates. Initial analysis by NIDA found that overdose mortality rates between 1999-2010 in states allowing medical marijuana use were 21% lower than expected. When analysis extended through 2017 found trend reversed with overdose death rate 22.7% higher than expected.
- VIII. The Brain
- A. Early human brain development changes in response to experience. Very sensitive time for permanent changes (positive and negative) to occur in brain structure and function.
  - B. Proliferation-produce new brain cells and synapses. (in utero and pre-adolescence), Thickening of Gray Matter-hard wiring of brain, Pruning-brain cells die off which is normal and natural; and myelination – faster and more synchronized processing (adolescence).
  - C. Gray Matter- Thin, folding outer-layer or cortex of the brain. Where processes of thought and memory are based.
  - D. Pre-frontal cortex (critical for all complex thinking) is last to develop. Fully developed by approximately 22 years old for girls and 25 for boys. Some research suggests even later for both.
  - E. Adolescence: increase in the activity of neural circuits utilizing dopamine and greater release of dopamine in response to experiences. Leads to: impulsivity; increased susceptibility for addiction; hyper-rationality – think in literal, concrete terms. Look at facts not the big picture (vs gist thinking – Consider the larger context of decisions and use intuition to aim for positive values we care about rather than focusing on the immediate dopamine driven rewards).
  - F. Brain during teen years is like a car with a good accelerator but a weak brake.
  - G. Regular users who start smoking marijuana before 18 at risk for the following impairments: decrease in IQ; compromised development of the grey matter in their brains (in Pre-Frontal Cortex and Emotional Centers); decrements in short term/working and long term memory, attention, complex thinking/planning/execution, processing speed, inhibitory control, developing habits and routines, delays/limitations to socio-emotional development; higher risk for schizophrenia, depression and anxiety; increased risk of other drug use.
- IX. Resources
- Google National Institute on Drug Abuse (NIDA) – offers extensive collection of publications, videos and educational materials; Also check out [www.drugabuse.gov](http://www.drugabuse.gov); [www.teen.drugabuse.gov](http://www.teen.drugabuse.gov); [www.niaaa.nih.gov](http://www.niaaa.nih.gov); [www.nimh.nih.gov](http://www.nimh.nih.gov); [www.samhsa.gov](http://www.samhsa.gov); <https://drugpubs.drugabuse.gov>