CANNABIS AND MATERNAL MEDICINE

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Most widely used illicit drug

Can be smoked, eaten, or in some rare cases liquid form

Varies widely in cost and potency, but in general, most cannabis available currently is far more potent than cannabis consumed in 1960-70’s (4-5% THC vs 15-20% THC)

Modern strains also lower in CBD (neuroprotective)
Infinite number of nicknames based on region and strain of plant being referred to. Most common generic terms include “weed” and “pot”

Most strains are variations of Cannabis Indica, Cannabis Sativa, or some hybrid

Indica ~ “body high” relaxing, sedating
Sativa ~ “head high” psychedelic, mind altering

THC = main psychotropically active ingredient, most concentrated in plant resin
Cannabis Strains

- **Indica**
  - Afghani
  - Bubba Kush
  - Northern Lights
  - Purple Urkle

- **Sativa**
  - Acapulco Gold
  - Island Sweet Skunk
  - Purple Haze
  - Sour Diesel
Cannabis Strains

- Hybrids
  - Blue Dream
  - Cannatonic
  - OG Kush
  - White Widow
Whole Plant
Cannabis Bud
THC concentrated resin
Joints – Cannabis cigarettes
Blunts – Hollowed out cheap cigars filled with Cannabis and re-wrapped
Bowls – Cannabis packed into the bowl of a pipe
Bong – Pipe with water filter element
Vaporizer – Heats Cannabis so that THC evaporates and can be inhaled without burning plant material
Dabs – Highly concentrated resin “wax” (80-90% THC vs Hashish at 40-50%). Wax can be “dabbed” onto bud or smoked directly via a “rig”
“Dime bag” = $10 worth
“Dub” = $20 worth
A gram
“eighth” = 1/8 oz = 3.5 grams = $40 for fairly high potency
Joints vs Blunts

Normal Joint
- Oil Extraction
- Liquid Extraction
- Supercritical CO2 Extraction
Concentrates: Wax and Shatter
Cannabis Tonics

![Image of a bottle with a marijuana leaf and flowers]

![Image of a cocktail glass with a marijuana leaf on the rim]

![Image of a hand pouring liquid into a glass with a small bottle nearby]
Intoxication Sxs

- Anxiolysis
- Drowsiness
- Slowed motor response, delayed reflexes
- Increased Appetite
- Injected Sclera (blood shot eyes): may be independent of smoking. THC → lower BP → vasodilation
- Amotivation
- Increased novelty (Golden Girls reruns)
- Time Dilation “chronic”
- “Paranoia” (usually refers to feelings of self consciousness as opposed to frank delusions)
- Psychosis
Conflicting Data from Research

Clear Cognitive effects with intoxication including tracking, motor coordination, visual functions, and particularly complex tasks that require divided attention

However, only modest impairments on actual road tests

“Experienced smokers who drive on a set course show almost no functional impairment under the influence of marijuana, except when it is combined with alcohol” (Sewell, et al. THE EFFECT OF CANNABIS COMPARED WITH ALCOHOL ON DRIVING, Am J Addict. 2009; 18(3): 185–193.)
Alcohol users tend to underestimate their degree of impairment.

Cannabis users tend to overestimate their degree of impairment.

Driving and simulator studies show marijuana use by drivers is likely to result in decreased speed and fewer attempts to overtake, as well as increased “following distance”.
Cannabis and Driving

- **Cannabis impairs automatic functions** in driving but not conscious control
- **Alcohol impairs conscious control** but not so much automatic functions
- The synergistic impairment of automatic and conscious functions is why even low doses of alcohol with cannabis can lead to severe impairment
Multiple studies from around the world (US, Australia, Switzerland, Sweden, etc...) seem to consistently find minimal danger with THC blood level below 5 ng/mL with sudden spike in danger above 5 ng/mL.

In the US, 6 states with “per se” laws, typically with limit of 5 ng/mL (Nevada and Ohio limit of 2 ng/mL).

12 states with “zero tolerance” laws.

All other states (including CA) use DUI standards, field sobriety tests, and “Drug Recognition Experts.”

Criteria vary state by state, some convict with “any” impairment, other require “substantial” or “significant.”
THC and CBD

TETRAHYDROCANNABINOL (THC)

CANNABIDIOL (CBD)
THC Potential Benefits

- Anti-nausea
- Anti-spastic
- Neuropathic pain
- Appetite stimulation
Cesamet (Nabilone): synthetic based, capsules, FDA approved for chemo-related nausea

Marinol (Dronabinol): FDA approved for AIDS related weight loss and chemo related nausea, also synthetic, not as potent as Nabilone
CBD Side Effects

- Dry mouth
- Increased tremor in some Parkinson’s patients
- Low blood pressure
- Lightheadedness
- Drowsiness
CBD Potential Benefits

- Anxiolysis
- Anti-inflammation/Pain
- Anti-Nausea
- Neuro-protective (anti-seizure)
- Epidiolex: FDA approved June 2018
- Approved to treat Lennox-Gastaut syndrome or Dravet syndrome based seizures

JAMA study, self report with toxicology testing, pregnant women in Northern California

Kaiser Permanente population 2009-2016

Rates of use (defined as any use in the past 30 days) increased from 4.2% to 7.1% (Wolff, et al. Trends in Self-reported and Biochemically Tested Marijuana Use Among Pregnant Females in California From 2009-2016. *JAMA*. 2017;318(24):2490-2491.)
Colorado Based study found 50% increased likelihood of low birth weight but not small for gestational age, preterm birth, or neonatal intensive care unit admission. 5.7% prevalence rate of use. (J Pediatr. 2018 Jun;197:90-96. doi: 10.1016/j.jpeds.2018.02.005. Epub 2018 Mar 28.)
Another study found Maternal marijuana use was not associated with a composite of small for gestational age, spontaneous preterm birth, or hypertensive disorders of pregnancy. However, it was associated with an increased risk of neonatal morbidity. aOR of 3.11 for any form of complication (pulmonary morbidity, necrotizing enterocolitis, seizures, retinopathy of prematurity, infection morbidity, anemia requiring blood transfusion, neonatal surgery, hyperbilirubinemia, neurological morbidity, or death prior to hospital discharge) (Am J Obstet Gynecol. 2017 Oct;217(4):478.e1-478.e8. doi: 10.1016/j.ajog.2017.05.050.)
Breastfeeding? 2.5% transmission rate  (Obstet Gynecol. 2018 May;131(5):783-788. doi: 10.1097/AOG.0000000000002575.)

In another study, median concentration of Δ9-THC was 9.47 ng/mL  (Bertrand et al. Marijuana Use by Breastfeeding Mothers and Cannabinoid Concentrations in Breast Milk Pediatrics. September 2018, VOLUME 142 / ISSUE 3)

Long-term neurobehavioral effect of exposure to delta-9-tetrahydrocannabinol on the developing brain is unclear. (some anatomical findings such as increased cortical thickness but unclear if any clinical significance)