

Cannabis in the Perinatal Period

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Didactic Speaker Disclosures

No conflicts of interest to declare

Learning Objectives

- Summarize what cannabis is and data regarding its use during the perinatal period
- Describe what is known about the risks of cannabis use in pregnancy and breast/chest feeding
- Discuss how to talk to patients about perinatal cannabis use

Cannabis

- Cannabis is a plant of the Cannabaceae family.
- Dried leaves, flowers, stems and seeds from the Cannabis sativa or Cannabis indica plant
- Cannabis contains over 400 chemicals
- THC and CDB are cannabinoids
- Delta-9-tetrahydrocannabinol (THC) is the main psychoactive component, produces the "high", cognitive effects, abuse potential, decreases nausea and pain, increases appetite
- Cannabidiol (CBD), non-intoxicating component , anti-seizure, anxiolytic, antipsychotic

How is Cannabis used?

- Smoking: joints, blunts, bong
 - Vaping: to avoid inhaling smoke
 - Edibles: effect is delayed which can lead to ingesting more than intended
 - Dabbing: Smoking THC rich resins (may be in oil form or soft/hard solid form)
 - Sprays: infusing liquids with THC or CBD
 - Tinctures: liquids infused with a solution of alcohol, highly concentrated
 - Topical: oil extracts
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- Effects may vary by method of use

Cannabis and the Law

- Cannabis is the drug most commonly used during pregnancy
- Federally: An illicit Schedule I drug
- Legal for medicinal use: 37 states plus Washington DC
- Legal for recreational use: 18 states plus Washington DC.

In Washington state:

1998: Medical cannabis legalized

2012: Recreational cannabis, legal to possess ages > 21 yo

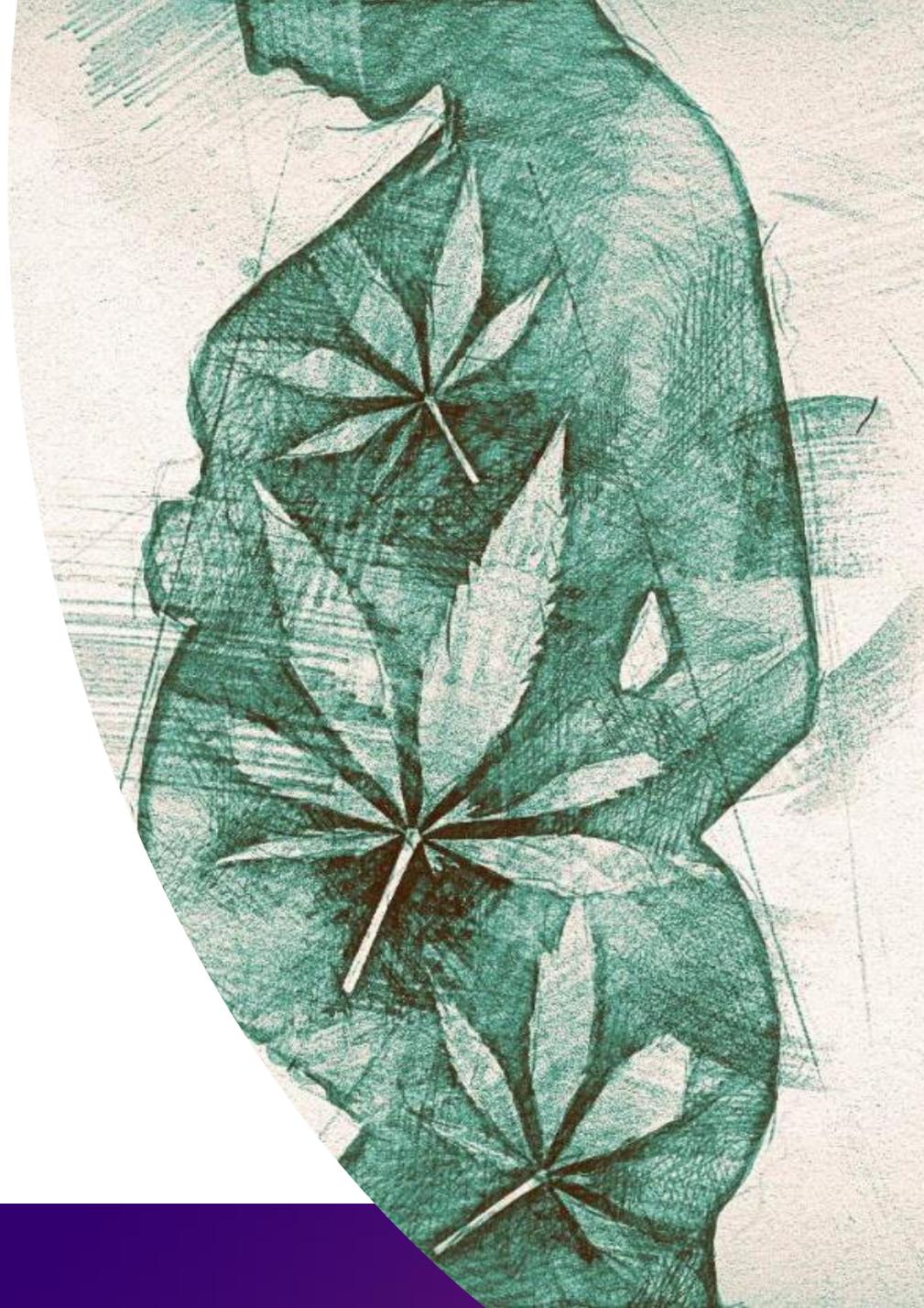
Washington state DOES NOT require mandatory state reporting for use during pregnancy

Cannabis use in the Perinatal period

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- Why is Cannabis used in Pregnancy?

Many view Cannabis as safer than traditional medications for:

- Nausea
- Anxiety
- Pain
- Depression



Rates of use during pregnancy

- Majority of users, young and of reproductive age.
- 34% to 60 % of those that use, continue during pregnancy.

Prevalence:

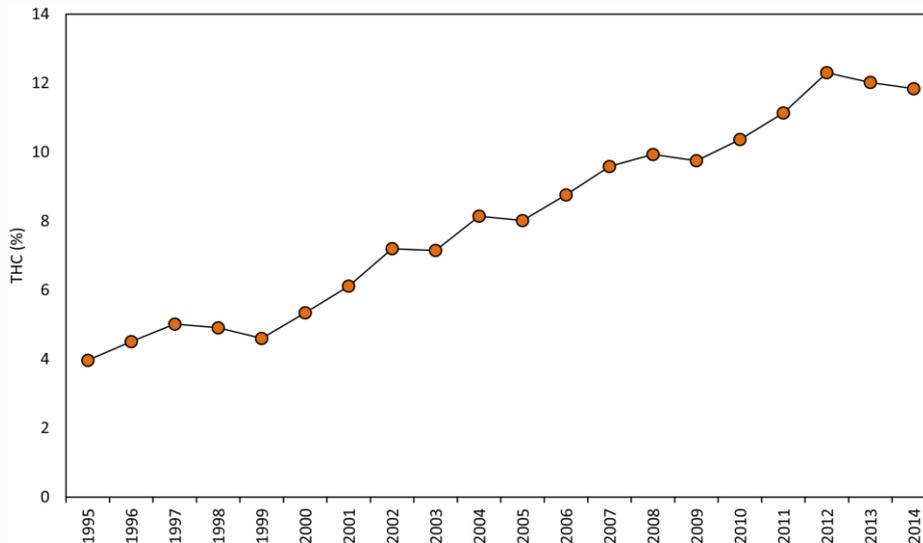
- 3.4% in 2002, 4.98% in 2016
- Daily/near daily use, increased from 0.9 % to 3.4 % from 2002-2017

Changes over the COVID 19 pandemic:

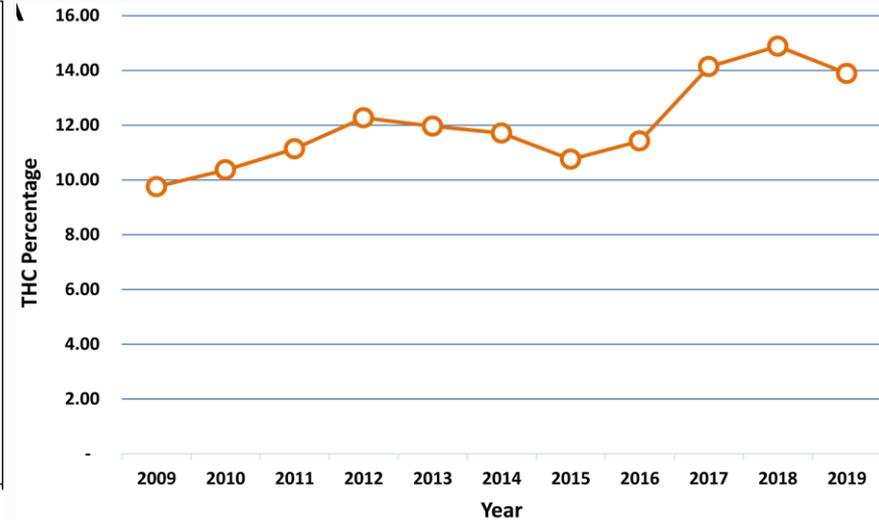
- 100,000 Kaiser patients, urine screens in early pregnancy:
 - January 2019 to March 2020, 6.75% positive for Cannabis
 - April 2020 and December 2020, 8.14%.
- One study 2002-2012, 14 % of US pregnant adolescents reported use in the past month
- Some studies find the prevalence of use in pregnancy up to 20 %

Increasing Potency

Potency of Seized Cannabis in the US



1995-2014



2009-2019

Over the past 20 years, THC concentrations have increased from 4% to 12 -25%

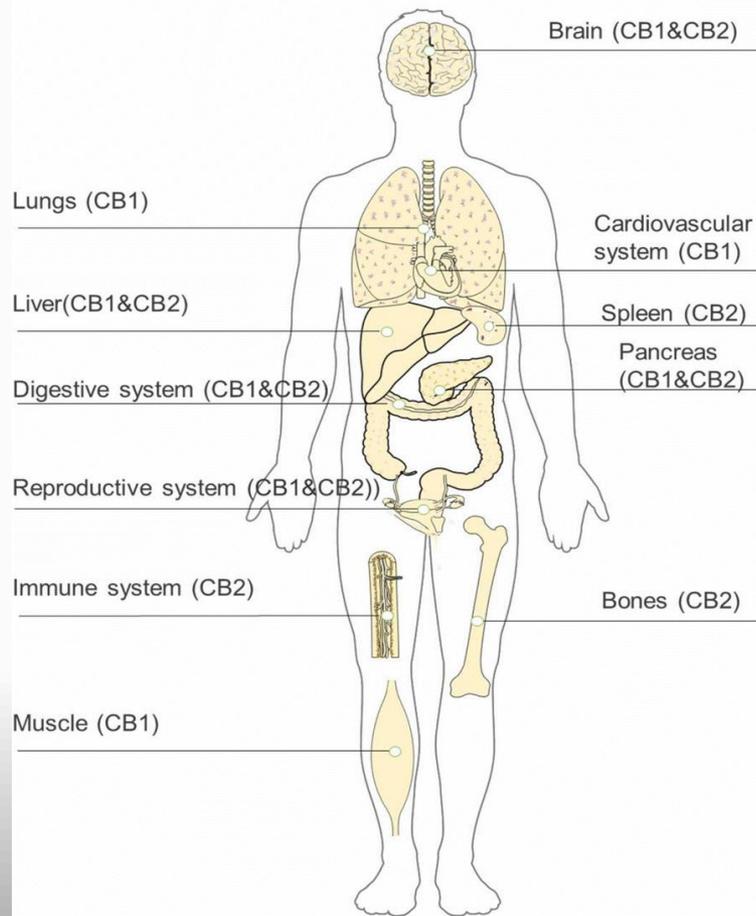
Perception of Safety

- National Survey on Drug Use and Health data 2005-2015
Asking respondents if it is safe to use.
- Possible responses included no risk, slight risk, moderate risk, great risk, or don't know.
- Currently pregnant who reported Cannabis use in the prior 30 days and stated "no risk"
- 2005: 23.7%
- 2015: 62.6%

Slight risk or no risk, 79%

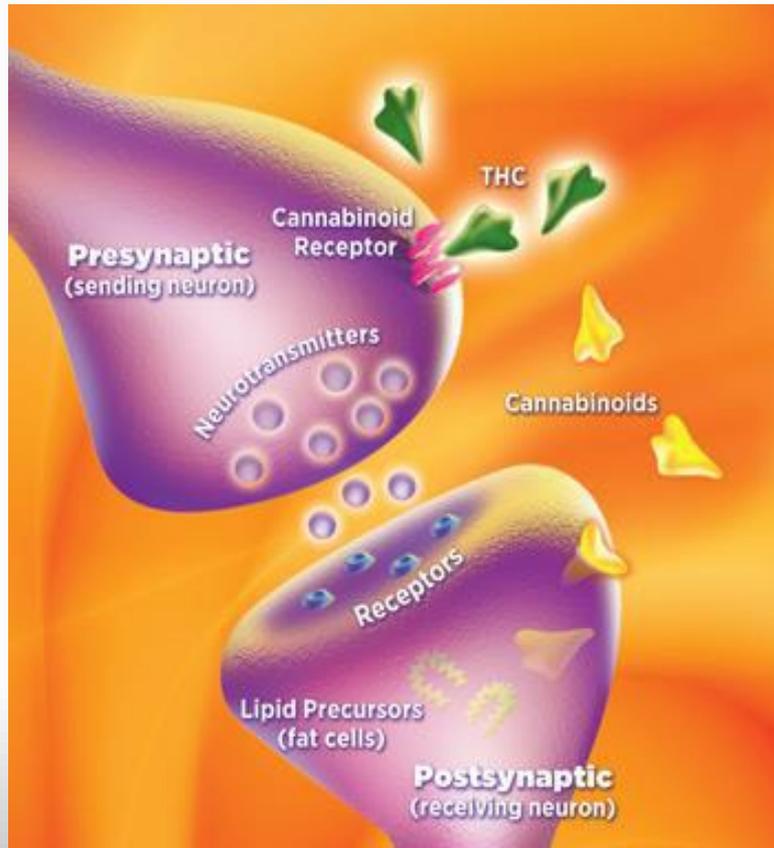
Endocannabinoid system

Cannabinoid receptors in human's body



- Endocannabinoids (chemicals in our bodies that use cannabis receptors) serve many important functions
- Regulates many physiological and cognitive processes
- Endogenous endocannabinoids are manufactured only when needed and quickly eliminated

Endocannabinoid system continued



Cannabinoid signaling is a tightly regulated processes needed for healthy embryo development including:

- Implantation & placental formation
- Cellular growth
- Brain development, cell survival & differentiation

Cannabis exposure may disrupt endocannabinoid signaling, leading to changes during pregnancy including a “rewiring” of the fetal brain

Cannabis and Fertility

- In women may reduce fertility

Chronic exposure decreases the pulsatile gonadotropin-releasing hormone (GnRH) which is part of reproductive function

- In men, may reduce sperm count and concentration, reduce sperm motility and viability

Some studies found no evidence of change in time to achieve pregnancy in naturally conceiving couples

One study using ART, cannabis use had lower oocyte yield and lower fertilization rate

Cannabis and Miscarriage

Data are not consistent

- One small study IVF patients, women who used cannabis had more than double the rate pregnancy loss
- Larger studies have not found a consistent link to risk of miscarriage
- Animal studies do suggest an increased risk of miscarriage with cannabis use in early pregnancy

Cannabis and Birth Defects

- Current data do not suggest any consistent pattern of congenital anomalies with cannabis use
- Two small studies found a possible association with gastroschisis, but not found as a clear independent variable
- One study found possible association with Ventral Septal Defect in the heart, but no other studies have found this

Cannabis and Perinatal Outcomes

Many studies with conflicting results

Best available data suggest increased risk for:

- Preterm birth, especially with heavy use
- Low birth weight (<2500 g), especially with heavy use
- Small for gestational age
- NICU admission
- Stillbirth and neonatal morbidity
- Possible neonatal withdrawal: tremor, irritability, startle

Cannabis and Developmental Outcomes



- Repeated use can disrupt/alter endocannabinoid signaling, leading to “rewiring” of the fetal brain
- Compelling evidence that suggest emotional, cognitive and behavioral adverse effects including:

Lower scores of verbal reasoning, memory problems, executive functioning deficits, hyperactivity and behavioral problems, higher rates of depression and anxiety, higher odds of substance use in adolescence

- Aug 2020, Retrospective study in Canada, > 500,000 patients, higher incidence of autism spectrum disorder (hazard ratio 1.51, 50% increased risk)

Limitations to the research

- Challenges to control for confounders: mental health disorders, socioeconomic and education factors, co-use of other substances
- Differences in study populations and methods
- Reliance on self-report
- Studies were done when THC potency was much lower
- The impact/role of cannabis use on parenting/environment
- However, best available data suggest risks for adverse perinatal and childhood neurodevelopmental outcomes
- ACOG, AAP, FDA, CDC, ABM all advise to avoid cannabis use during pregnancy and lactation

Cannabis and Lactation

- Estimated that 15% of those breast/chest feeding use cannabis
- Very limited data
- CBD & THC are passed into breast milk
- Infant dosage between 0.4%-8.7%
- Discarding pumped milk does not eliminate risk of Cannabis in milk. THC remains in fatty tissue from 6 days to > 6 weeks, even after discontinuing use.
- One study found delayed motor development, other studies conflicting.

What about CBD?

- Used for many conditions: pain, anxiety, insomnia, depression, PTSD, headaches, nausea, seizures disorders
- Scarce research exists examining pure CBD during pregnancy and lactation
- Possible risks in pregnancy/lactation:
 - * Animal research finds disruption in reproductive system of male fetuses
 - * Human tissue studies find decreased angiogenesis in umbilical cells, - may lead to pregnancy complications (placental insufficiency/pre-eclampsia) and dysregulation in the fetal immune system

What do pregnant patients learn about Cannabis?

- Patients get a wide range of health/risk messaging from providers:
 - * endorsement, harm-reduction strategies, threats of CPS reporting, to no information
- Pregnant patients believe if healthcare providers do not address their use, then there it is low risk for use
- Patients often seek information from friends, the internet, or their cannabis dispensary
- 69 % of Colorado cannabis dispensary budtenders recommended using cannabis to pregnant patients to treat nausea in the 1st trimester

Talking to patients about Cannabis use

- Ask all pregnant and postpartum patients about cannabis use
- Learn what they already know
- Understand and learn why someone is using
- Is it Cannabis use disorder? 18 % meet criteria in pregnancy
- Offer education and resources
- Use Motivational interviewing: collaborative conversation aimed at strengthening a person's own motivation and commitment to change
- One study, 101 women, using Cannabis in pregnancy
All received substance abuse counseling, 78% abstinent by 151 days (mean) and remained abstinent until delivery

Barriers to discussing use

Patients:

- Fears of CPS reporting and separation from their child
- Fear of provider judgement, being seen as an unfit parent
- Role of systemic racism and trauma that affect access to care and quality of care

Providers:

- Limited education, training, and support to care for patients who use substances
- Personal beliefs regarding substance use
- Conflicting evidence that can be difficult to present

Take homes

- Cannabis use is common, increasing among pregnant and lactating people
- Potency of THC in cannabis is steadily increasing
- Perception of safety of use in pregnancy is increasing
- Discuss cannabis use with all perinatal patients and learn the underlying reason for use
- Information and motivational enhancement are key
- Data do suggest clear risks for use in the perinatal period

Resources

- <https://mothertobaby.org/fact-sheets/marijuana-pregnancy/>

Screen for CUD:

- <http://www.warecoveryhelpline.org/wp-content/uploads/2018/04/CUDIT.pdf>
- <https://womensmentalhealth.org/posts/essential-reads-emerging-evidence-of-the-long-term-effects-of-cannabis-on-the-developing-brain/>
- <https://womensmentalhealth.org/posts/essential-reads-cannabis-and-breastfeeding/>

Contact

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- Questions?

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