

# Risks of Cannabis Use in Pregnancy and Lactation

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## Disclosures

I have no relevant financial relationships with any commercial interests.



# Objectives

After this presentation, learners will be able to:

1. Understand the recommendations and risks for cannabis use during pregnancy and lactation;
2. Describe harm reduction approaches to use when working with clients to assist in abstinence; and
3. Explain where to find resources to share with clients and other health professionals.



# Definitions

- **Lactation** = Feeding human milk - expressed/pumped milk, direct breastfeeding/chestfeeding.
- **Cannabis** = Plant >500 chemical compounds - inclusive of marijuana, weed, pot, CBD, THC, etc.
- **Cannabis use** = Smoking, vaping, eating, drinking, dabbing cannabis products or use of creams/lotions, tinctures, concentrates.
- **Tetrahydrocannabinol or THC** = Main psychoactive component of the cannabis plant.
- **Cannabidiol or CBD** = CBD and THC bind to many same receptors. CBD not psychoactive. Widely available, little is known.
- **Perinatal** = Pregnant and up to one year after the end of a pregnancy.



# Why are we talking about this?

Benefits of human milk

Increase in availability

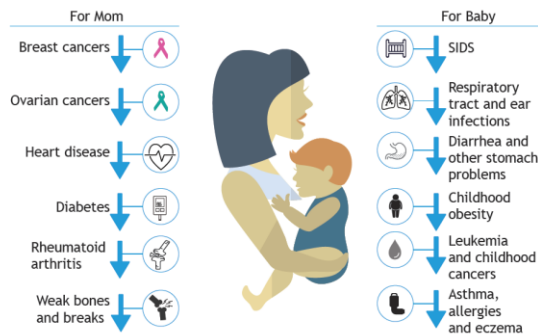
Cannabis = third most popular recreational drug (alcohol, tobacco)

Increase in use during pregnancy



## Benefits of Breastfeeding

Breastfeeding improves the health of mom and child by reducing the risks of:



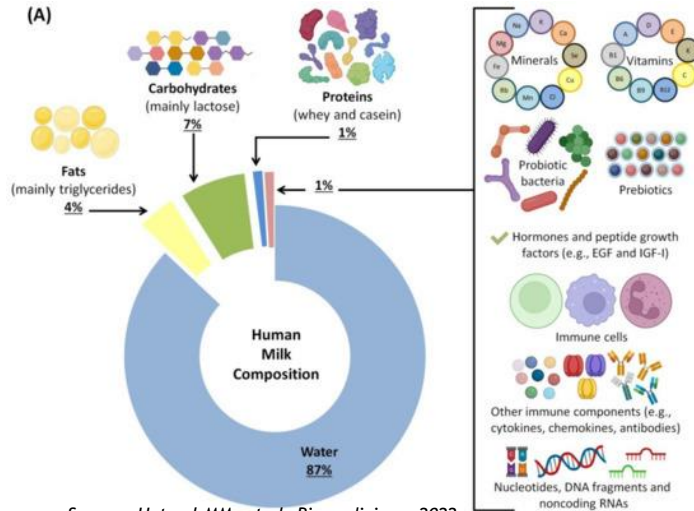
Source: Pediatrics, March 2012, 129 (3).

The longer breastfeeding occurs, the more health benefits for parent and baby.

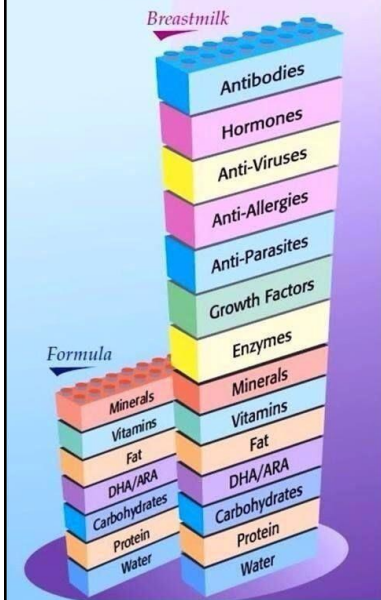
Source: Eidelman Al, et al. Pediatrics. 2012



# Human Milk Composition



Breastmilk has more of the good things babies need



# Amazing Breast Milk

More than formula

Antibodies = immunity

Inhibits bacteria

Supply and demand

Source: Source: Kim SY, et al. Clin Exp Pediatr. 2020.  
Image Source: California WIC.



# Recommendations

All major medical organizations

6 months exclusive

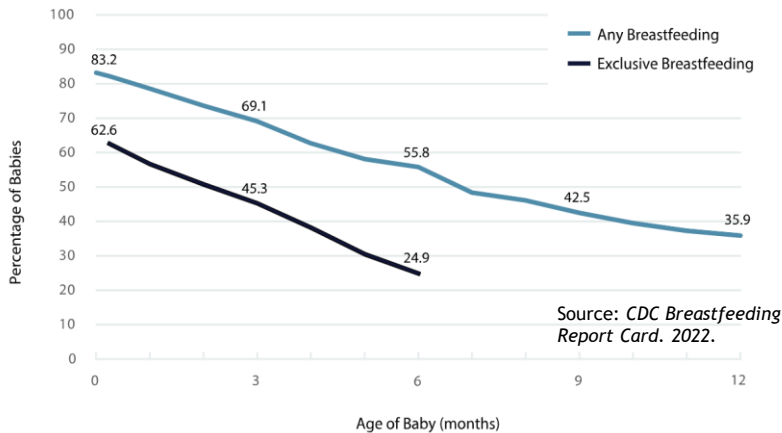
Support > 2 years

Source: *Pediatrics*. 2022



# Breastfeeding Duration

Figure 1. Percentage of Babies Receiving Any and Exclusive Breast Milk During the First 12 Months, Among Children Born in 2019



Source: *CDC Breastfeeding Report Card*. 2022.



# Breastfeeding Report Card

Proportion of infants breastfed	Healthy People 2030 Target† (2020 Target)	U.S. National*	Colorado*	Colorado WIC**
Ever	-- (81.9%)	84.1%	89.0%	82%
At 6 months	-- (60.6%)	59.8%	69.7%	30%
At 1 year	54.1% (34.1%)	39.5%	44.8%	26%
Excl. 3 months	-- (46.2%)	46.3%	55.8%	26%
Excl. 6 months	42.4% (25.5%)	27.2%	34.0%	14%

\*CDC National Immunization Survey (NIS) 2024, 2021 births  
 †Healthy People 2030 Breastfeeding Objectives; Baseline rates NIS 2015  
 \*\*Colorado WIC Compass data for 2023



# Cannabis



# Historical

Medicinal use >5000 years

Early 1900s decline in use

1970 added to Schedule 1 Substances = Dangerous with high potential for abuse, no medicinal purpose

>500 known compounds



# Cannabis Legalization

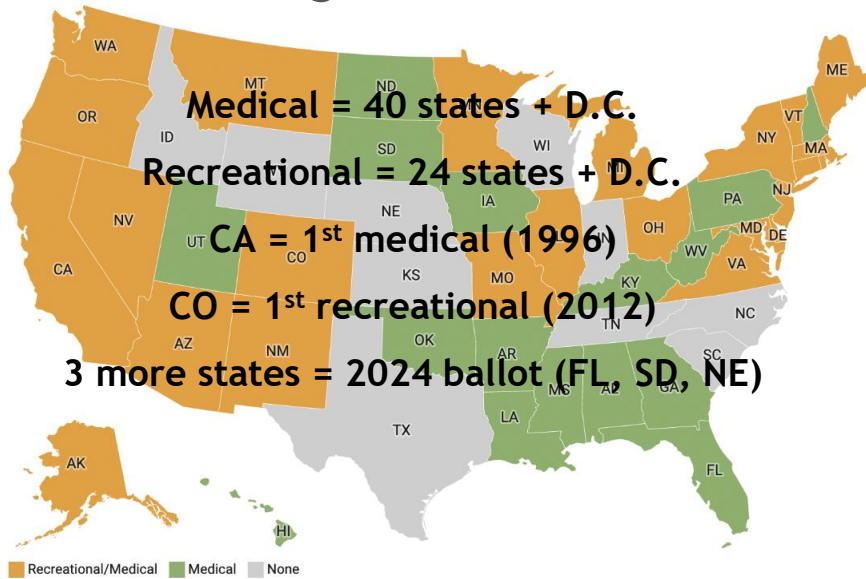


Image source: MJBizDaily

# Prevalence of Cannabis Use

## Any use during pregnancy:

- 3.4% in 2002
- 7.0% in 2017

## Daily/near daily use during pregnancy:

- 0.9% in 2002-03
- 3.4% in 2016-17

## Decreases during pregnancy

- 3<sup>rd</sup> trimester lowest

## Increases postpartum

- 11% using at one year

Source: Young-Wolff KC, et al. *JAMA Netw Open*. 2019.; Volkow ND, et al. *JAMA*. 2019.; Ryan SA, et al. *Pediatrics*. 2018.



# Why Using?

- Nausea
- Mental health
- Stress
- Pain
- Seek “natural” choice





# Potency

## Increase in THC amount:

- 4% in 1995
- 12% in 2015

## Average potency in Colorado products:

- 19.2% for flower
- 67.8% for concentrate

## CBD products found to contain THC

Source: *ElSohly MA, et al. Biol Psychiatry. 2016.*; *CO Marijuana Registry. 2020.*



# Cannabis Pharmacokinetics

- Absorbed in blood/plasma within seconds inhaling; 1-2 hrs ingesting
- 11-hydroxyl-THC rapidly decreases over 3-4 hrs
- 11-nor-9-carboxy-THC detectable in plasma >1 week
- Impacted by chronic/heavy use

Source: *Musshoff F, et al. Ther Drug Monit. 2006.*; *Manno JE, et al. J Anal Toxicol. 2001.*



**Discovered 1990s**

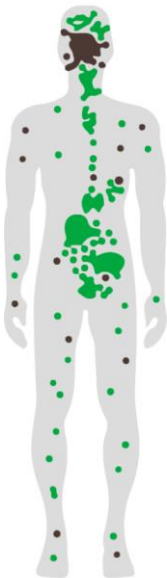
**Early in embryonic development**

**Placental endocrine function**

**Fetal growth**

**Brain development**

**Exogenous causes disruptions**



**HUMAN ENDOCANNABINOID SYSTEM**

**CB1**


CB1 Receptors Target

- × Motor Activity
- × Thinking
- × Motor Co-ordination
- × Appetite
- × Short Term Memory
- × Pain Perception
- × Immune Cells


**CB2**

CB2 Receptors Are Much Broader Than CB1 And Influence Most Of The Body


- × Gut
- × Kidneys
- × Pancreas
- × Adipose Tissue
- × Skeletal Muscle
- × Bone health
- × Eyes
- × Tumours
- × Reproductive System
- × Immune System
- × Respiratory Tract
- × Skin health
- × CNS
- × Cardiovascular System
- × Liver



Source: DiMarzo V, et al. *Nat Rev Drug Discov.* 2004. Bara A, et al. *Na Rev Neurosci.* 2021. Image source: Amsterdam Genetics.



# Pregnancy: Birth & Child Outcomes



# Research Limitations

Limited = illegal federally

Confounded = polysubstance use, social & environmental, research limitations

Focus on THC only

Short- & long-term effects unclear



## Recommendations:

All major medical organizations

Educate patients on potential risks

Abstain from using during pregnancy & lactation

Source: ACOG 2021. AAP 2022. AAFP 2021. NANN. ACNM 2023. ABM 2019.



# Birth Outcomes

## THC + metabolites

- Placenta; meconium; umbilical cord blood

## Increased risk:

- Small for gestational age
- Preterm delivery
- Low birth weight
- NICU admission

## Frequency of use

\*Confounded by tobacco use; unknown if directly related to cannabis

Source: Marchand G, et al. *JAMA Netw Open*. 2022;; Coris DJ, et al. *JAMA*. 2019.; English DR, et al. *Addiction*. 1997.



# Child Outcomes

## Limited/conflicting on long-term effects of prenatal exposure

## Longitudinal Studies: exposure = increased risk of:

- Brain development
- School outcomes
- Response to stressors
- Anxiety/mental health

\*Confounded by polysubstance use, SES, research factors (potency, design, laws, quantification)

Source: Baranger DAA, et al. *JAMA Pediatr*. 2022.; Paul SE, et al. *JAMA Psychiatry*. 2021.; Fried PA, et al. *Neurotoxicol Teratol*. 2001.



# Gene Expression Effects

Exogenous exposure = increased:

- Drug- & alcohol-seeking behavior
- Substance misuse
- Brain alterations
- Negative mental health impacts
- Increased cortisol levels
- Anxiety, hyperactivity

\*Longitudinal data, very preliminary data

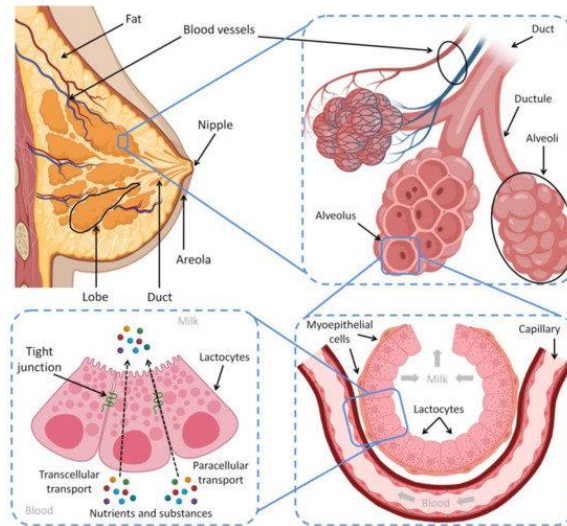
Source: Szutorisz H, et al. *Neuropsychopharmacology*. 2014.; Rompala G, et al. *Proc Natl Acad Sci USA*. 2021.



# Cannabis & Lactation



# Human Milk Production



Source: Hatmal MM, et al. *Biomedicines*. 2022.



## THC/metabolites

Abstain or decrease use

Unknown risk from milk alone

Not contraindication to breastfeeding

Individual risk:benefits

Must provide care, education, support

Source: Meek JY, Noble L. *Pediatrics*. 2022.; Mourh J, Rowe H. *Breastfeed Med*. 2017. Reece-Stremtan S, Marinelli KA. *Breastfeed Med*. 2015.



## Human Milk Concentrations

THC is fat soluble

Stored in body

Detected in milk days to weeks after use

Vary greatly by individual + product + route + frequency + metabolism

Peaks ~1-2 hrs after inhaled; >4 hrs edibles

Source: Baker T, et al. *Obstet Gynecol.* 2018.; Wymore EM, et al. *JAMA Pediatr.* 2021.; Moss MJ, et al. *Pediatr Res.* 2021.;



## Exposure Through Human Milk

Unknown, limited, conflicting

Bioavailability of child unclear

Immediate/long-term effects unknown

No research-backed amount/frequency for safe or unsafe use

Source: Bertrand KA, et al. *Pediatrics.* 2018.; Concheiro M, et al. *Drug Test Anal.* 2021. Lucas CJ, et al. *Br J Clin Pharmacol.* 2018.



## What do we know?

- Limited research; confounded
- Peak ~1-2 hrs after inhalation
- Concentration increases with continued use
- Differences with chronic & occasional use
- Metabolism effects/varies
- May effect birth outcomes, gene expression
- Recommend not to use in pregnancy/lactation

## Harm Reduction Approaches



# Harm Reduction

Evidence-based

Strategies to reduce negative consequences

Goal = decreased use, abstinence

Involves policies, practices, laws



## Patients report:

- Not receiving info
- Wanting more info on potential health effects
- Dissatisfied with care/lack of info
- Perceive cannabis as safer
- Leads to confusion, distrust

Source: Holland CL, et al. *Obstet Gynecol.* 2016. Holland CL, et al. *Patient Educ Couns.* 2016.; Woodruff, et al. *Drug Alcohol Depend.* 2021.



## Equity Considerations

- Generational & systemic racism, trauma, biases = social & structural stigmas, policies
- Communities of color targeted for criminalization
- Black and white use at same rates
- Black tested at higher rates

Source: Jones KM, et al. *Breastfeed Med.* 2015. Chiang KV, et al. *MMWR Morb Mortal Wkly Rep.* 2021. Roberts SCM, et al. *J Behav Health Serv Res.* 2012.



## Harm Reduction General

- Understand why using
- Early conversations - preconception
- Want what is best for their family
- Only purchase licensed dispensaries
- Use lower concentration products
- Avoid use with other substances



# Harm Reduction Lactation

- Support lactation
- Weigh risks:benefits
- Conversation!
- Work to decrease/stop use
- Feed prior to using
- Pumping & dumping not evidence-based for cannabis



# Harm Reduction Caregiving

- Store in original child-resistant packaging, locked out of reach
- Sober caregiver
- No smoking/vaping around children
- Wash hands after using
- Safe sleep habits
- No driving high



## Harm Reduction Screening

- Pregnancy = open to behavioral changes
- No judgment
- Verbal screening with validated tool (e.g., SBIRT, 5ps, CUDIT-R)
- Mental health screenings
- Discuss + refer
- No FDA-approved cessation treatments

Source: McBride CM, et al. *Cancer Control*. 2003.; Hsieh WJ, et al. *Health Aff*. 2021.



## Harm Reduction Toxicology Testing

- Only ordered to guide clinical management
- Not automatic
- Informed consent
- Need conversations
- Difficult to interpret - individual differences
- May harm relationship/trust

Source: Sharma P et al. *Iran J Psychiatry*. 2012.; Manno JE, et al. *J Anal Toxicol*. 2001.; Musshoff R, et al. *Ther Drug Monit*. 2006.



## Punitive Policies

- Ineffective
- Harm relationship
- Conflated with biases
- Higher abuse in states that criminalize use during pregnancy
- Disincentivize individuals to seek care/treatment
- Restricting care

Source: Faherty LJ, et al. *JAMA Netw Open*. 2019.; Atkins DN, et al. *Health Aff*. 2020.



## Harm Reduction Policies

- Testing only ordered to guide clinical care
- Informed consent & refusal
- Not related to patient history, demographics, insurance type, etc.
- Positive test does not equal child abuse/neglect
- Provide care

Source: Simmons E, et al. *Prev Med*. 2022.; Roberts SCM, et al. *J Behav Health Serv Res*. 2021.



# Harm Reduction Overview

- Need trauma informed, culturally responsive care
- Open conversations
- Understand why using
- Reduce or abstain messaging
- Early detection/ discussions



# Resources



- CDPHE - Marijuana
- ToughAsAMother.org
- ForwardTogetherCO.com
- ParentsThrive.org
- InfantRisk.com or 1-806-352-2519 M-F 7a-4p MT
- [Pregnancy & Substance Use: Harm Reduction Toolkit](#)
- Pregnancy related depression

## Cannabis, You and Your Baby

With a baby, there are so many things to think about.

This information can help you make the best choice for you and your baby.

People use cannabis and cannabis containing products for many reasons, including morning sickness/nausea, anxiety, pain relief and stress. However, much is unknown about how using cannabis during pregnancy or lactation could affect your pregnancy and your baby.

### Fast Facts



**Cannabis is not recommended to use while pregnant or lactating**

Certain medications should be avoided while pregnant or lactating due to potential harm to your baby. The same is true for cannabis. All major medical organizations and the CDC strongly recommend against using cannabis during pregnancy and lactation.



**Components of cannabis can stay in the body after use and pass to your baby**

Cannabis is broken down in the body. Some parts are stored in the body and can pass onto your baby during pregnancy and through human milk, both while you are using and weeks later. It is unknown if these components cause harm to your baby. Once you stop or decrease use, the levels in your body will go down over time.



**More use could cause more complications**

Studies show people who use cannabis more often (at least once a week or more) during pregnancy could deliver early and may have small birth weight babies, especially if tobacco is also used. Cannabis use during pregnancy may also impact a baby's brain development.



**There is a lot that we don't know**

More research is needed on the short and long term effects of cannabis use during pregnancy and lactation. It is difficult to be certain about the specific effects of cannabis on pregnancy and your developing baby, in part because much research cannot separate the effects of cannabis use from tobacco, alcohol, drugs and other social factors.

Cannabis use: smoking, vaping, eating, drinking, dabbing or use of creams/lotions containing cannabis (marijuana, CBD, THC, etc.). Cannabis is sometimes called many names, including marijuana, weed, pot and others.

Lactation: all forms of feeding a baby human milk, including expressed/pumped milk, or directly breastfeeding or chestfeeding.



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## Summary

- Understand reasons for use
- Not recommended during pregnancy & lactation
- Research limitations
- Compounds stay in body after use
- Potential risks: short- and long-term
- Conversations are key + provide support
- Patients want information
- Use harm reduction



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1. Centers for Disease Control and Prevention. Health Effects of Marijuana. <https://www.cdc.gov/marijuana/health-effects/index.html>.
2. Lucas CJ, Galetis P, Schneider J. The pharmacokinetics and the pharmacodynamics of cannabinoids. *Br J Clin Pharmacol*. 2018;84(11):2477-82.
3. Ryan SA, Ammerman SD, O'Connor ME. Marijuana Use During Pregnancy and Breastfeeding: Implications for Neonatal and Childhood Outcomes. *Pediatrics*. 2018;142(3):e20181889.
4. Volkow ND, et al. Self-reported Medical and Nonmedical Cannabis Use Among Pregnant Women in the United States. *JAMA*. 2019;322(2):167-69.
5. Young-Wolff KC, et al. Self-reported Daily, Weekly, and Monthly Cannabis Use Among Women Before and During Pregnancy. *JAMA Netw Open*. 2019;2(7):e196471.
6. Colorado Dept. of Public Health and Environment. Pregnancy Risk Assessment Monitoring System - Data. [https://cohealthviz.dphe.state.co.us/VHSEBPublic/Views/2020TableauSummaryTables\\_NewLogo/2020PRAMSSummaryTables](https://cohealthviz.dphe.state.co.us/VHSEBPublic/Views/2020TableauSummaryTables_NewLogo/2020PRAMSSummaryTables). Accessed March 21, 2023.
7. Colorado Dept. of Public Health and Environment. Pregnancy Risk Assessment Monitoring System - Marijuana Use During Pregnancy and Breastfeeding in Colorado. <https://marijuanahealthreport.colorado.gov/health-data/pregnancy-risk-assessment-monitoring-system-prams-data>. Accessed January 23, 2023.
8. Colorado Department of Public Health and Environment. Postpartum Behavioral Health in Colorado. 2021. <https://drive.google.com/file/d/1Kp2ixDIAiGPtY7MN8j4XHJF9G439AGmb/view>. Accessed February 7, 2023.
9. ElSohly MA, et al. Changes in Cannabis Potency Over the Last Two Decades (1995-2014) - Analysis of Current Data in the United States. *Biol Psychiatry*. 2016;79(7):613-19.
10. Holland CL, et al. Obstetric Health Care Providers' Counseling Responses to Pregnant Patient Disclosures of Marijuana Use. *Obstet Gynecol*. 2016;127(4):681-87.
11. Holland CL, et al. "Anything Above Marijuana Takes Priority": Obstetric Providers' Attitudes and Counseling Strategies Regarding Perinatal Marijuana Use. *Patient Educ Couns*. 2016;99(9):1446-51.
12. Jarlenski M, et al. Pregnant Women's Access to Information About Perinatal Marijuana Use: A Qualitative Study. *Womens Health Issues*. 2016;26(4):452-59.
13. Weisbeck SJ, et al. Perceptions About Cannabis Use During Pregnancy: A Rapid Best-Framework Qualitative Synthesis. *Can J Public Health*. 2021;112(1):49-59.
14. Woodruff K, Scott KA, Roberts SCM. Pregnant people's experiences discussing their cannabis use with prenatal care providers in a state with legalized cannabis. *Drug Alcohol Depend*. 2021;227:108998.
15. Di Marzo V, Bifulco M, De Petrocellis L. The Endocannabinoid System and its Therapeutic Exploitation. *Nat Rev Drug Discov*. 2004;3(9):771-84.
16. Fernández-Ruiz JJ, et al. Role of Endocannabinoids in Brain Development. *Life Sci*. 1999;65(6-7): 725-36.
17. Bara A, et al. Cannabis and synaptic reprogramming of the developing brain. *Nat Rev Neurosci*. 2021;22(7):423-38.
18. Maia J, et al. The Cannabinoid Delta-9-tetrahydrocannabinol Disrupts Estrogen Signaling in Human Placenta. *Toxicol Sci*. 2020;177(2):420-30.
19. El Marroun H, et al. Intrauterine Cannabis Exposure Affects Fetal Growth Trajectories: the Generation R Study. *J Am Acad Child Adolesc Psychiatry*. 2009;48(12):1173-81.
20. Campolongo P, et al. Developmental Exposure to Cannabinoids Causes Subtle and Enduring Neurofunctional Alterations. *Int Rev Neurobiol*. 2009;85:117-33.
21. Harkany T, et al. Endocannabinoid Functions Controlling Neuronal Specification During Brain Development. *Mol Cell Endocrinol*. 2008;286(1-2 Suppl 1):S84-90.

22. Schneider M. Cannabis Use in Pregnancy and Early Life and Its Consequences: Animal Models. *Eur Arch Psychiatry Clin Neurosci*. 2009;259(7):383-93.
23. Lozano J, et al. Biological Matrices for the Evaluation of In Utero Exposure to Drugs of Abuse. *Ther Drug Monit*. 2007;29(6):711-34.
24. Marchand G, et al. Birth Outcomes of Neonates Exposed to Marijuana in Utero: A Systematic Review and Meta-Analysis. *JAMA Netw Open*. 2022;5(1):e214653.
25. Corsi DJ, et al. Association Between Self-reported Prenatal Cannabis Use and Maternal, Perinatal, and Neonatal Outcomes. *JAMA*. 2019;322(2):145-52.
26. Joseph-Lemon L, et al. Outcomes of Cannabis Use During Pregnancy Within the American Association of Birth Centers Perinatal Data Registry 2007-2020: Opportunities Within Midwifery-Lead Care. *J Perinat Neonatal Nurs*. 2022;36(3):264-73.
27. Metz TD, Borgelt LM. Marijuana Use in Pregnancy and While Breastfeeding. *Obstet Gynecol*. 2018;132(5):1198-1210.
28. Committee on Obstetric Practice. Marijuana Use During Pregnancy and Lactation. *Amer College Obstet Gyn*-722. 2021;130(4):e205-9.
29. Warshak CR, et al. Association Between Marijuana Use and Adverse Obstetrical and Neonatal Outcomes. *J Perinatol*. 2015;35(12):991-5.
30. English DR, et al. Maternal Cannabis Use and Birth Weight: a Meta-Analysis. *Addiction*. 1997;92(11):1553-60.
31. Baranger DAA, et al. Association of Mental Health Burden with Prenatal Cannabis Exposure from Childhood to Early Adolescence: Longitudinal Findings from the Adolescent Brain Cognitive Development (ABCD) Study. *JAMA Pediatr*. 2022;176(12):1261-65.
32. Willford JA, et al. Effects of Prenatal Tobacco, Alcohol and Marijuana Exposure on Processing Speed, Visual-motor Coordination, and Interhemispheric Transfer. *Neurotoxicol Teratol*. 2010;32(6):580-88.
33. Fried PA, Watkinson B. Differential Effects on Facets of Attention in Adolescents Prenatally Exposed to Cigarettes and Marijuana. *Neurotoxicol Teratol*. 2001;23(5):421-30.
34. Goldschmidt L, Day NL, Richardson GA. Effects of Prenatal Marijuana Exposure on Child Behavior Problems at Age 10. *Neurotoxicol Teratol*. 2000;22(3):325-36.
35. Paul SE, et al. Associations Between Prenatal Cannabis Exposure and Childhood Outcomes. *JAMA Psychiatry*. 2021;78(1):1-13.
36. Szutorisz H, et al. Parental THC Exposure Leads to Compulsive Heroin-seeking and Altered Striatal Synaptic Plasticity in the Subsequent Generation. *Neuropsychopharmacology*. 2014;39(6):1315-23.
37. Rompala G, Nomura Y, Hurd YL. Maternal Cannabis Use is Associated with Suppression of Immune Gene Networks in Placenta and Increased Anxiety Phenotypes in Offspring. *Proc Natl Acad Sci USA*. 2021;118(47):e2106115118.
38. Centers for Disease Control and Prevention. Contraindications to Breastfeeding or Feeding Expressed Breast Milk to Infants. <https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/Contraindications-to-breastfeeding.html>.
39. Meek JY, Noble L. Policy Statement: Breastfeeding and the Use of Human Milk. *Pediatrics*. 2022;150(1):e2022056988.
40. Section on Breastfeeding; Eidelman AI, et al. Breastfeeding and the Use of Human Milk. *Pediatrics*. 2012;129(3):e827-41.
41. Bartick MC, et al. Suboptimal Breastfeeding in the United States: Maternal and Pediatric Health Outcomes and Costs. *Matern Child Nutr*. 2017;13(1):e12366.
42. Moss MJ, et al. Cannabis Use and Measurement of Cannabinoids in Plasma and Breast Milk of Breastfeeding Mothers. *Pediatr Res*. 2021;90(4):861-68.
43. Wymore EM, et al. Persistence of  $\Delta$ -9-Tetrahydrocannabinol in Human Breast Milk. *JAMA Pediatr*. 2021;175(6):632-4.
44. Drugs and Lactation Database (LactMed®). Cannabis: Summary of Use During Lactation. National Institute of Child Health and Human Development. 2006 [updated 2022]. <https://www.ncbi.nlm.nih.gov/books/NBK501587/>. Lucas CJ, Galetis P, Schneider J. The Pharmacokinetics and the Pharmacodynamics of Cannabinoids. *Br J Clin Pharmacol*. 2018;84(11):2477-82.
45. Bertrand KA, et al. Marijuana Use by Breastfeeding Mothers and Cannabinoid Concentrations in Breast Milk. *Pediatrics*. 2018;142(3):e20181076.
46. Baker T, et al. Transfer of Inhaled Cannabis into Human Breast Milk. *Obstet Gynecol*. 2018;131(5):783-88.



47. Concheiro M, et al. Assessment of Biological Matrices for the Detection of in Utero Cannabis Exposure. *Drug Test Anal.* 2021;13(7):1371-82.
48. Mourh J, Rowe H. Marijuana+Breastfeeding: Applicability of the Current Literature to Clinical Practice. *Breastfeed Med.* 2017;12(10):582-96.
49. Reece-Stremtan S, Marinelli KA. ABM Clinical Protocol #21: Guidelines for Breastfeeding and Substance Use or Substance Use Disorder, Revised 2015. *Breastfeed Med.* 2015;10(3):135-41.
50. Davis E, et al. Cannabis use in pregnancy and breastfeeding: The pharmacist's role. *Can Pharm J (Ott).* 2020;153(2):95-100.
51. McBride CM, Ostroll JS. Teachable moments for promoting smoking cessation: the context of cancer care and survivorship. *Cancer Control.* 2003;10(4):325-33.
52. Holland CL, et al. Obstetric Health Care Providers' Counseling Responses to Pregnant Patient Disclosures of Marijuana Use. *Obstet Gynecol.* 2016;127(4):681-87.
53. Committee on Obstetric Practice. Optimizing Postpartum Care. *Amer College Obstet Gyn.* 2021;736.
54. Hsieh WJ, et al. Patients' Perceptions of Perinatal Depression Screening: A Qualitative Study. *Health Aff.* 2021;40(10):1612-17.
55. Postpartum Support International. PSI Factsheets. 2023. <https://www.postpartum.net/resources/psi-brochure/>.
56. Fischer B, et al. Lower-Risk Cannabis Use Guidelines (LRCUG) for reducing health harms from non-medical cannabis use: A comprehensive evidence and recommendations update. *Int J Drug Policy.* 2022;99:103381.
57. Musshoff F, Madea B. Review of Biological Matrices as Indicators of Recent or Ongoing Cannabis Use. *Ther Drug Monit.* 2006;28(2):155-63.
58. Manno JE, et al. Temporal Indication of Marijuana Use Can Be Estimated From Plasma, Urine Concentrations of Delta9-tetrahydrocannabinol, 11-Hydroxy-delta9-tetrahydrocannabinol, and 11-Nor-delta9-tetrahydrocannabinol-9-carboxylic acid. *J Anal Toxicol.* 2001;25(7):538-49.
59. Hale TW, Rowe HE. Medications and Mothers' Milk, 16th ed. Hale Publishing LP, Plano, TX. 2014.
60. Sharma P, Murthy P, Bharath MMS. Chemistry, Metabolism, and Toxicology of Cannabis: Clinical Implications. *Jran J Psychiatry.* 2012;7(4):149-156.
61. Chayasisobhon S. Mechanisms of Action and Pharmacokinetics of Cannabis. *Perm J.* 2020;25:1-3.
62. Faherty LJ, et al. Association of Punitive and Reporting State Policies Related to Substance Use in Pregnancy with Rates of Neonatal Abstinence Syndrome. *JAMA Netw Open.* 2019;2(11):e1914078.
63. Atkins DN, Durrance CP. State Policies That Treat Prenatal Substance Use as Child Abuse or Neglect Fail to Achieve Their Intended Goals. *Health Aff.* 2020;39(5):756-63.
64. Simmons E, Austin AE. Association of Prenatal Substance Use with Prenatal and Postpartum Care: Evidence from the Pregnancy Risk Assessment Monitoring System, 2016-2019. *Prev Med.* 2022;159:107065.
65. Roberts SCM, Nuru-Jeter A. Universal Screening for Alcohol and Drug Use and Racial Disparities in Child Protective Services Reporting. *J Behav Health Serv Res.* 2012;39(1):3-16.
66. Office of the Surgeon General. The Surgeon General's Call to Action to Support Breastfeeding. 2011. <https://www.ncbi.nlm.nih.gov/books/NBK52682/>. Accessed February 2, 2023.
67. Jones KM, et al. Racial and Ethnic Disparities in Breastfeeding. *Breastfeed Med.* 2015;10(4):186-96.
68. Colorado Department of Public Health and Environment. [Health eMoms Survey Data: Survey 1.1, 2018 & 2019 Birth Cohorts](#).
69. Substance Abuse and Mental Health Services Administration. Key Substance Use and Mental Health Indicators in the United States: Results from the 2021 National Survey on Drug Use and Health. [Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data/report/2021-nsduh-annual-national-report](https://www.samhsa.gov/data/report/2021-nsduh-annual-national-report).
70. Roberts SCM, Nuru-Jeter A. Women's Perspectives on Screening for Alcohol and Drug Use in Prenatal Care. *Womens Health Issues.* 2010;20(3):193-200.
71. Chiang KV, et al. Racial and Ethnic Disparities in Breastfeeding Initiation-United States. *MMWR Morb Mortal Wkly Rep.* 2021;70:769-74.

# Thank You!

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