

Research Overview on Cannabis Use During Pregnancy and Lactation

In the creation of CDPHE's cannabis informational handouts for families and clinicians, CDPHE reviewed a variety of information sources on cannabis use during pregnancy and lactation. When developing statements and recommendations, CDPHE focused on the most current peer-reviewed scientific research articles.

This is an evolving area of research; there are limitations to the available research on cannabis use during pregnancy and lactation. In currently available scientific articles, it is difficult to be certain about the specific short- and long-term effects of cannabis on pregnancy and child development. Many studies are limited because the effects of cannabis use cannot be separated from tobacco, alcohol and other drug use, or other social-economic factors. Further research is needed into the overall health and safety effects of cannabis use during pregnancy and lactation.

The following articles were used to inform the creation of the CDPHE parent handouts/factsheets on cannabis use during pregnancy and lactation.

- Centers for Disease Control and Prevention (CDC) - [Marijuana Use and Pregnancy](#).
- Centers for Disease Control and Prevention - [Breastfeeding and Marijuana](#).
- Food and Drug Administration (FDA) - [What You Should Know About Using Cannabis, Including CBD, When Pregnant or Breastfeeding](#).
- American College of Obstetricians and Gynecologists (ACOG) - [Marijuana Use During Pregnancy and Lactation](#). *Committee Opinion*. 2017. 722.
- American Academy of Pediatrics (AAP) - [Counsel against marijuana use in pregnancy, breastfeeding](#).
- American Academy of Pediatrics (AAP) - [Breastfeeding Recommendations](#).
- American Academy of Family Physicians (AAFP) - [Marijuana and Cannabinoids: Health, Research and Regulatory Considerations](#) (Position Paper). 2019.
- Ryan SA, Ammerman SD, O'Connor ME, et al. Marijuana Use During Pregnancy and Breastfeeding: Implications for Neonatal and Childhood Outcomes. *Pediatrics*. 2018;142(3):e20181889. doi.org/10.1542/peds.2018-1889
- Ryan SA, O'Connor ME, Ammerman SD. [Counsel against marijuana use in pregnancy, breastfeeding](#). *AAP Clinical Report*. 2018.
- Corsi, D.J., Donelle, J., Sucha, E. et al. [Maternal cannabis use in pregnancy and child neurodevelopmental outcomes](#). *Nat Med*. 2020;26:1536-1540.
- Corsi DJ, Walsh L, Weiss D, et al. [Association Between Self-reported Prenatal Cannabis Use and Maternal, Perinatal, and Neonatal Outcomes](#). *JAMA*. 2019;322(2):145-152.
- Roncero C, Valriberas-Herrero I, Mezzatesta-Gava M, Villegas JL, Aguilar L, Grau-López L. [Cannabis use during pregnancy and its relationship with fetal developmental outcomes and psychiatric disorders. A systematic review](#). *Reprod Health*. 2020;17(1):25.
- MacDuffie, K, PhD; Kleinhans, N, Stout, K; Wilfond, B. [Protection Versus Progress: The Challenge of Research on Cannabis Use During Pregnancy](#). *Pediatrics*. 2020;146:S93-S98.

Articles supporting CDPHE evidence statement about THC passed through placenta and the fetus absorbs and metabolizes THC:

- ElSohly MA, & Feng, S. [delta 9-THC metabolites in meconium: identification of 11-OH-delta 9-THC, 8 beta,11-diOH-delta 9-THC, and 11-nor-delta 9-THC-9-COOH as major metabolites of delta 9-THC](#). *J Anal Toxicol*. 1998;22(4):329-335.
- ElSohly MA, et al. [Immunoassay and GC-MS procedures for the analysis of drugs of abuse in meconium](#). *J Anal Toxicol*. 1999;23(6):436-445.
- Falcon M, et al. [Maternal hair testing for the assessment of fetal exposure to drug of abuse during early pregnancy: Comparison with testing in placental and fetal remains](#). *Forensic Sci Int*. 2012;218(1-3):92-96.
- Joya X, et al. [Gas chromatography-mass spectrometry assay for the simultaneous quantification of drugs of abuse in human placenta at 12th week of gestation](#). *Forensic Sci Int*. 2010;196(1-3):38-42.
- Kim J, et al. [Detection of in utero cannabis exposure by umbilical cord analysis](#). *Drug Test Anal*. 2018;10(4):636-643.
- Marchei E, et al. [Quantification of Delta9-tetrahydrocannabinol and its major metabolites in meconium by gas chromatographic-mass spectrometric assay: assay validation and preliminary results of the "meconium project"](#). *Ther Drug Monit*. 2006;28(5):700-706.

Articles supporting CDPHE evidence statement about THC passed through breast milk and may persist for several weeks after reported last use:

- Baker T, et al. [Transfer of Inhaled Cannabis Into Human Breast Milk](#). *Obstet Gynecol*. 2018;131(5):783-788.
- Bertrand KA, et al. [Marijuana Use by Breastfeeding Mothers and Cannabinoid Concentrations in Breast Milk](#). *Pediatrics*. 2018;142(3).
- Moss M, et al. [Cannabis use and measurement of cannabinoids in plasma and breast milk of breastfeeding mothers](#). *Pediatr Res*. 2021;90(4):861-868. doi:10.1038/s41390-020-01332-2
- Perez-Reyes M, Wall ME. [Presence of delta9-tetrahydrocannabinol in human milk](#). *N Engl J Med*. 1982;307(13):819-820.
- Sempio C, et al. [Detection of Cannabinoids by LC-MS-MS and ELISA in Breast Milk](#). *J Anal Toxicol*. 2021;45(7):686-92.
- Wymore EM, et al. [Persistence of Δ-9-Tetrahydrocannabinol in Human Breast Milk](#). *JAMA Pediatr*. 2021;175(6):632-634.