What are the maternal and child health impacts of cannabis use during pregnancy?

Students: Jadyn Jelinski, Jordan Mehling, Asha Nelson, Tori Osborne & Aleena Taylor

References

1. Alberta Health Services. (n.d.). *Cannabis & pregnancy/breastfeeding.* https://www.albertahealthservices.ca/info/Page17998.aspx#:~:text=There%27s%20no%20known%20safe%20amount,THC%20is%20passed%20to%20them.

2. Allen, A. M., Jung, A. M., Alexander, A. C., Allen, S. S., Ward, K. D., & al'Absi, M. (2020). Cannabis use and stressful life events during the perinatal period: cross‐sectional results from Pregnancy Risk Assessment Monitoring System (PRAMS) data, 2016. *Addiction*, *115*(9), 1707–1716. https://doi.org/10.1111/add.15003.

3. Baker, T., Datta, P., Rewers-Felkins, K., Thompson, H., Kallem, R. R., & Hale, T. W. (2018). Transfer of Inhaled Cannabis Into Human Breast Milk. *Obstetrics and Gynecology, 131*(5), 783–788. https://doi.org/10.1097/AOG.0000000000002575.

4. Bandoli, G., Jelliffe-Pawlowski. L., Schumacher, B., Baer, R., Felder, J., Fuchs, J., Oltman, S., Steurer, M., & Marienfeld, C. (2021). Cannabis-related diagnosis in pregnancy and adverse maternal and infant outcomes. *Drug and Alcohol Dependance,* 228. https://www.sciencedirect.com/science/article/pii/S0376871621002520?fr=RR-2&ref=pdf_download&rr=82ab65a5684a6e0c.

5. Bayrampour, H. & Asim, A. (2021). Cannabis use during the preconception period and pregnancy after legalization. *Journal of Obstetrics and Gynaecology Canada, 43*(6), 740-745. https://doi.org/10.1016/j.jogc.2021.02.119.

6. Bertrand, K. A., Hanan, N. J., Honerkamp-Smith, G., Best, B. M., & Chambers, C. D. (2018). Marijuana use by breastfeeding mothers and cannabinoid concentrations in breast milk. *Pediatrics, 142*(3), e20181076. https://doi.org/10.1542/peds.2018-1076.

7. Cameron, L. D., Fleszar-Pavlović, S. E., Yepez, M., Manzo, R. D., & Brown, P. M. (2022). Beliefs about marijuana use during pregnancy and breastfeeding held by residents of a Latino-majority, rural region of California. *Journal of Behavioral Medicine*, *45*, 544–557. https://doi-org.ezproxy.macewan.ca/10.1007/s10865-022-00299-1.

8. Cao, S., Jones, M., Tooth, L., & Mishra, G. D. (2021). Association between preconception cannabis use and risk of postpartum depression: Findings from an Australian longitudinal cohort. *Drug & Alcohol Dependence*, *226*, 108860. https://doi.org/10.1016/j.drugalcdep.2021.108860.

9. Chabarria, K. C., Racusin, D. A., Antony, K. M., Kahr, M., Suter, M. A., Mastrobattista, J. M., & Aagaard, K. M. (2016). Marijuana Use And Its Effects in Pregnancy. *American Journal of Obstetrics & Gynecology*, *215*(4), 506.e1-506.e7. https://doi-org.ezproxy.macewan.ca/10.1016/j.ajog.2016.05.044.

10. Committee Opinion No. 722: Marijuana Use During Pregnancy and Lactation. (2017). *Obstetrics and Gynecology, 130*(4), e205–e209. https://doi.org/10.1097/AOG.0000000000002354.

11. Corsi, D. J., Donelle, J., Sucha, E., Hawken, S., Hsu, H., El-Chaâr, D., Bisnaire, L., Fell, D., Wen, S. W., & Walker, M. (2020). Maternal cannabis use in pregnancy and child neurodevelopmental outcomes. *Nature Medicine, 26*(10), 1536-1540. https://doi.org/10.1038/s41591-020-1002-5.

12. Day, N. L., Leech, S. L., & Goldschmidt, L. (2011). The effects of prenatal marijuana exposure on delinquent behaviours are mediated by measures of neurocognitive functioning. *Neurotoxicology and Teratology, 33*(1), 129-136. http://dx.doi.org/10.1016/j.ntt.2010.07.006.

13. El Marroun, H., Bolhuis K., Franken I. H. A., Jaddoe V. W. W., Hillegers M. H., Lahey, B. B., & Tiemeier H. (2019). Preconception and prenatal cannabis use and the risk of behavioural and emotional problems in the offspring; a multi-informant prospective longitudinal study. *International Journal of Epidemiology, 48*(1), 287–296. https://doi.org/10.1093/ije/dyy186.

14. Government of Canada. (2022a). *Canadian cannabis survey 2022: Summary.* https://www.canada.ca/en/health-canada/services/drugs-medication/cannabis/research-data/canadian-cannabis-survey-2022-summary.html#s2-1.

15. Government of Canada (2022b). *Cannabis use for non-medical purposes among Canadians (aged 16+).* https://health-infobase.canada.ca/cannabis/.

16. Jarlenski, M., Krans, E. E., Chen, Q., Rothenberger, S. D., Cartus, A., Zivin, K., & Bodnar, L. M. (2020). Substance use disorders and risk of severe maternal morbidity in the United States. *Drug & Alcohol Dependence*, *216*, 108236. https://doi.org/10.1016/j.drugalcdep.2020.108236.

17. Kharbanda, E. O., Vazquez-Benitez, G., Kunin-Batson, A., Nordin, J. D., Avalow, O., & Romitti, P. A. (2020). Birth and early developmental screening outcomes associated with cannabis exposure during pregnancy. *Journal of Perinatology, 40*(3), 473-480. https://doi.org/10.1038/s41372-019-0576-6.

18. Knopf, A. (2020). FDA on CBD in pregnancy and breastfeeding. *The Brown University Child and Adolescent Behaviour Letter, 36*(4), 9-10. https://doi.org/10.1002/cbl.30458.

19. Lo, J. O., Hedges, J. C., & Girardi, G. (2022). Impact of cannabinoids on pregnancy, reproductive health, and offspring outcomes. *American Journal of Obstetrics and Gynecology*, *227*(4), 571–581. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9530020/.

20. Luke, S., Hobbs, A. J., Smith, M., Riddell, C., Murphy, P., Agborsangaya, C., Cantin, C., Fahey, J., Der, K., Pederson, A., & Nelson, C. (2022). Cannabis use in pregnancy and maternal and infant outcomes: A Canadian cross-jurisdictional population-based cohort study. *PLoS One, 17*(11) https://doi.org/10.1371/journal.pone.0276824.

21. Mark, K., Otieno, L., Moore, E., Zehra, A., & Mitchell, M. (2021). Association between continued cannabis use during pregnancy and symptoms of anxiety and depression. *International Review of Psychiatry*, *33*(6), 528–533. https://doi.org/10.1080/09540261.2021.1898348.

22. Metz, T. D., McMillin, G. A., Silver, R. M., Allshouse, A. A., Heard, K., Jensen, T. L., Wymore, E. M., Stickrath, E., Conageski, C., Kinney, G. L., & Binswanger, I. A. (2021). Quantification of prenatal marijuana use: evaluation of the correlation between self‐report, serum, urine and umbilical cord assays among women delivering at two urban Colorado hospitals. *Addiction*, *117*(1), 172–181. https://doi-org.ezproxy.macewan.ca/10.1111/add.15606.

23. Moss, M. J., Bushlin, I., Kazmierczak, S., Koop, D., Hendrickson, R. G., Zuckerman, K. E., & Grigsby, T. M. (2021). Cannabis use and measurement of cannabinoids in plasma and breast milk of breastfeeding mothers. *Pediatric Research, 90*(4), 861–868. https://doi-org.ezproxy.macewan.ca/10.1038/s41390-020-01332-2.

24. Nguyen, V.H., Harley, K.G. (2022). Prenatal cannabis use and infant birth outcomes in the pregnancy risk assessment monitoring system. *The Journal Of Pediatrics,* 240, 87-93 https://www.sciencedirect.com/science/article/pii/S0022347621008787.

25. Paul, S. E., Hatoum, A. S., Fine, J. D., Johnson, E. C., Hansen, I., Karcher, N. R., Moreau, A. L., Bondy, E., Qu, Y., Carter, E. B., Rogers, C. E., Agrawal, A., Barch, D. M., & Bogdan, R. (2021). Associations between prenatal cannabis exposure and childhood outcomes. *JAMA Psychiatry, 78*(1), 1-13. 10.1001/jamapsychiatry.2020.2902.

26. Prewitt, K,. Hayer, S., Garg, B., Benson, A., Hedges, M., Caughey, A., & Lo, J. (2023) Impact of Prenatal Cannabis Use Disorder on Perinatal Outcomes. *Journal of Addiction Medicine, 17*(3), e192- e198 https://journals.lww.com/journaladdictionmedicine/abstract/2023/05000/impact_of_prenatal_cannabis_use_disorder_on.20.aspx.

27. Renard, J., & Konefal, S. (2022). *Clearing the smoke on cannabis: Cannabis use during pregnancy and breastfeeding.* Canadian Centre on Substance Use and Addiction. https://www.ccsa.ca/sites/default/files/2022-05/CCSA-Cannabis-Use-Pregnancy-Breastfeeding-Report-2022-en.pdf.

28. Rompala, G., Nomura, Y., & Hurd, Y. L. (2021). Maternal cannabis use is associated with suppression of immune gene networks in placenta and increased anxiety phenotypes in offspring. *Proceedings of the National Academy of Sciences, 118*(47), e2106115118. https://doi.org/10.1073/pnas.2106115118.

29. Statistics Canada. (2022). *Drug metabolites in wastewater in select Canadian cities, by month, 2019 and 2020.* https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310082001.

30. Statistics Canada. (2023a). *Drug metabolites in wastewater in select Canadian cities, by month, 2022 to 2023*. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310087101.

31. Statistics Canada. (2023b). *Sales of cannabis by liquour and cannabis authorities and other retail outlets, by cannabis type.* https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010016401.

32. Yuyan, S., Zhu, B., & Liang, D. (2021). The associations between prenatal cannabis use disorder and neonatal outcomes. *Addiction*, *116*(11), 3069–3079. https://doi-org.ezproxy.macewan.ca/10.1111/add.15467.