

# Maternal Alcohol Use During Lactation and Child Development

Lauren M. Jansson, MD

Gibson and Porter<sup>1</sup> are commended for providing information on a difficult-to-research and poorly understood topic: longitudinal child developmental effects of maternal substance use via breast milk. The authors of this interesting and important study found an association between maternal alcohol consumption during lactation and later negative effects on child development, namely, reduced abstract reasoning ability at 6 to 7 years, in a dose-dependent manner. The finding is not surprising when we consider the potential pharmacokinetic basis for it and the known harmful effects of alcohol on the developing brain. Alcohol concentrations in breast milk resemble those in maternal blood within 30 to 60 minutes of ingestion; the amount of alcohol in breast milk is ~5% to 6% of the weight-adjusted maternal dose,<sup>2</sup> and newborns metabolize alcohol at approximately half the rate of adults.<sup>3</sup> The wide range of potentially severe effects due to prenatal alcohol exposures to the developing fetal brain are well known.<sup>4</sup> There is no reason to think that maleffects could be limited to only prenatal exposures, especially considering animal models that find postnatal alcohol exposures linked to brain changes that affect cognition and behavior.<sup>5,6</sup> Previous recommendations that reveal limited alcohol consumption to be compatible with breastfeeding during critical periods of development, such as the first months of life,<sup>7,8</sup> may need to be reconsidered in light of this combined evidence.

The authors report no relationship between maternal alcohol

consumption and decreased cognition in infants who were never breastfed, suggesting that alcohol exposure through breast milk was responsible for the findings. What is more difficult to ascertain and quantify, however, are the potential effects of other environmental and genetic risks that can lead to results such as those reported in this study. For the population of women who use or misuse substances during lactation, postnatal exposures via breast milk could compound prenatally acquired functional deficits associated with in utero exposures. Prenatal alcohol exposure has been associated with similar findings in children such as difficulties in completing tasks that require abstract reasoning.<sup>9</sup> Although findings in this study were independent of prenatal alcohol consumption, pregnancy alcohol use was recorded by maternal self-report retrospectively, and there are often multiple psychosocial and other pressures for women to deny gestational substance use. A mother who uses alcohol while breastfeeding may have a current alcohol use disorder and be more likely to provide insensitive handling of her child or to have problems with self-regulation, impulsivity, impaired judgment, and the ability to make safe choices for herself and/or her child. Maternal alcohol or other use disorder usually exists with other risk factors that can negatively impact the emotional, behavioral, or cognitive functioning of the child.<sup>10</sup> Mothers with any substance use disorder are more likely to have associated cognitive (eg, executive functioning) and/or

FREE

*Department of Pediatrics, School of Medicine, Johns Hopkins University, Baltimore, Maryland*

Opinions expressed in these commentaries are those of the author and not necessarily those of the American Academy of Pediatrics or its Committees.

**DOI:** <https://doi.org/10.1542/peds.2018-1377>

Accepted for publication May 7, 2018

Address correspondence to Lauren M. Jansson, MD, The Center for Addiction and Pregnancy, 4940 Eastern Ave, D4E, Baltimore, MD 21224. E-mail: [ljansson@jhmi.edu](mailto:ljansson@jhmi.edu)

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2018 by the American Academy of Pediatrics

**FINANCIAL DISCLOSURE:** The author has indicated she has no financial relationships relevant to this article to disclose.

**FUNDING:** No external funding.

**POTENTIAL CONFLICT OF INTEREST:** The author has indicated she has no potential conflicts of interest to disclose.

**COMPANION PAPER:** A companion to this article can be found online at [www.pediatrics.org/cgi/doi/10.1542/peds.2017-4266](http://www.pediatrics.org/cgi/doi/10.1542/peds.2017-4266).

**To cite:** Jansson LM. Maternal Alcohol Use During Lactation and Child Development. *Pediatrics*. 2018;142(2):e20181377

psychiatric comorbidities<sup>11</sup> or be exposed to violent environments along with their children.<sup>12</sup> Maternal psychopathology and exposure to violence could predispose the child to not only physical harm but alterations in trajectories of child development because early communication failures or poor maternal-child synchrony can affect behavioral, cognitive, emotional, and social capacities of the developing child. Also considered might be maternal fetal alcohol spectrum disorder or fetal alcohol syndrome and transgenerational or epigenetic substance exposure effects for mothers and offspring. Nicotine use or dependence, unlikely to produce impairments in maternal functioning and hence parenting, was not associated with any detectable impact on child development in this study.

It is clear that more research such as this is needed to fully understand the effects of maternal use of alcohol and other substances, including marijuana, during lactation on the developing child. Suggestions for future research of this ilk might include the concurrent examination of specific psychosocial risks existent in breastfeeding versus nonbreastfeeding mothers who use or misuse substances, including

cognitive and behavioral functioning of the mother and the incidence of maternal psychiatric comorbidities, and the prospective and quantitative measurement of maternal other substance and/or medication exposures in the prenatal and postnatal periods. However, Gibson and Porter<sup>1</sup> present an important step in our understanding of the complex neurobiological and developmental vulnerability of the substance-exposed child.

### REFERENCES

1. Gibson L, Porter M. Drinking or smoking while breastfeeding and later cognition in children. *Pediatrics*. 2018;142(2):e20174266
2. Mennella JA, Beauchamp GK. The transfer of alcohol to human milk. Effects on flavor and the infant's behavior. *N Engl J Med*. 1991;325(14):981–985
3. Idänpään-Heikkilä J, Jouppila P, Akerblom HK, Isoaho R, Kauppila E, Koivisto M. Elimination and metabolic effects of ethanol in mother, fetus, and newborn infant. *Am J Obstet Gynecol*. 1972;112(3):387–393
4. Dörrie N, Föcker M, Freunschtl I, Hebebrand J. Fetal alcohol spectrum disorders. *Eur Child Adolesc Psychiatry*. 2014;23(10):863–875
5. Xu W, Hawkey AB, Li H, et al. Neonatal ethanol exposure causes behavioral

deficits in young mice. *Alcohol Clin Exp Res*. 2018;42(4):743–750

6. Boschen KE, Ruggiero MJ, Klintsova AY. Neonatal binge alcohol exposure increases microglial activation in the developing rat hippocampus. *Neuroscience*. 2016;324:355–366
7. American Academy of Pediatrics. Alcohol & breast milk. 2015. Available at: <https://www.healthychildren.org/English/ages-stages/baby/breastfeeding/Pages/Alcohol-Breast-Milk.aspx>. Accessed April 24, 2018
8. Haastrup MB, Pottegård A, Damkier P. Alcohol and breastfeeding. *Basic Clin Pharmacol Toxicol*. 2014;114(2):168–173
9. Mattson SN, Crocker N, Nguyen TT. Fetal alcohol spectrum disorders: neuropsychological and behavioral features. *Neuropsychol Rev*. 2011;21(2):81–101
10. Smith VC, Wilson CR; Committee on Substance Use and Prevention. Families affected by parental substance use. *Pediatrics*. 2016;138(2):e20161575
11. Fitzsimons HE, Tuten M, Vaidya V, Jones HE. Mood disorders affect drug treatment success of drug-dependent pregnant women. *J Subst Abuse Treat*. 2007;32(1):19–25
12. Velez ML, Montoya ID, Jansson LM, et al. Exposure to violence among substance-dependent pregnant women and their children. *J Subst Abuse Treat*. 2006;30(1):31–38

## Maternal Alcohol Use During Lactation and Child Development

Lauren M. Jansson

*Pediatrics* 2018;142;

DOI: 10.1542/peds.2018-1377 originally published online July 30, 2018;

### Updated Information & Services

including high resolution figures, can be found at:  
<http://pediatrics.aappublications.org/content/142/2/e20181377>

### References

This article cites 11 articles, 2 of which you can access for free at:  
<http://pediatrics.aappublications.org/content/142/2/e20181377#BIBL>

### Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):

#### **Nutrition**

[http://www.aappublications.org/cgi/collection/nutrition\\_sub](http://www.aappublications.org/cgi/collection/nutrition_sub)

#### **Breastfeeding**

[http://www.aappublications.org/cgi/collection/breastfeeding\\_sub](http://www.aappublications.org/cgi/collection/breastfeeding_sub)

#### **Substance Use**

[http://www.aappublications.org/cgi/collection/substance\\_abuse\\_sub](http://www.aappublications.org/cgi/collection/substance_abuse_sub)

### Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:

<http://www.aappublications.org/site/misc/Permissions.xhtml>

### Reprints

Information about ordering reprints can be found online:  
<http://www.aappublications.org/site/misc/reprints.xhtml>

# American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



# PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

## Maternal Alcohol Use During Lactation and Child Development

Lauren M. Jansson

*Pediatrics* 2018;142;

DOI: 10.1542/peds.2018-1377 originally published online July 30, 2018;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/142/2/e20181377>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 345 Park Avenue, Itasca, Illinois, 60143. Copyright © 2018 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®

