

# Maternal Alcohol Use During Lactation and Child Development

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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

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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.

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