Letter to the Editor

Breastfeeding and bigger brains. What comes first?

To the Editor,

Several agents may inhibit both lactation and fetal brain's growth. Classical observations in lactating women indicate that smoking decreases prolactin concentrations (Andersen *et al.* 1982) while prenatal smoking exposure is known to be associated with significantly smaller frontal lobe and cerebellar volumes in the brains of preterm infants (Ekblad *et al.* 2010). In utero exposure to synthetic glucocorticoids is associated with reduced head circumference at birth (Ali Khan *et al.* 2011) and has an adverse effect on the success of subsequent lactation (Henderson *et al.* 2008). *In vivo* and *in vitro* evidence exists to suggest that exposure to elevated testosterone concentrations can promote neuronal damage (Estrada *et al.* 2006; Whitehouse *et al.* 2010) and a number of papers report an association between high levels of androgens during gestation and subsequent poor breastfeeding outcomes (Carlsen *et al.* 2010). Moreover, we have reported that head circumference at birth ≥ 33 cm is an independent predictor of breastfeeding onset success and thereafter up to 28 days postpartum (Verd *et al.* 2013).

Herba *et al.* (2013) report positive associations between exclusive breastfeeding and infants' brain development at 2 months of age. They have also found larger head circumference among exclusively breastfed babies. They suggest that breastfeeding in the early post-natal period can influence early brain development. On the other hand, a careful reading of their work reveals that women who did not breastfeed rated significantly higher for smoking during pregnancy. And unfortunately, it is unknown whether differences in head circumference were present at birth. Therefore, we do not know whether inequalities in brain development in the first 2 months of life can be mainly explained by the intrauterine endocrine milieu to which the fetus is exposed or by breastfeeding-related factors, such as long-chain polyunsaturated fatty acids or maternal education factors. Although Herba's study does provide important data on breastfeeding practices and early brain development, there

is a need to further improve the understanding of the mechanisms through which brain development and breastfeeding mutually interact.

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