



## Cohort study

## Breastfeeding is important for cognitive development in term and preterm infants

Lynne P Lewallen

Commentary on: **Quigley MA**, Hockley C, Carson C, *et al.* Breastfeeding is associated with improved child cognitive development: a population-based cohort study. *J Pediatr* 2012;160:25-32.

10.1136/ebnurs-2012-100619

School of Nursing, The University of North Carolina at Greensboro, Greensboro, North Carolina, USA

Correspondence to:

**Lynne P Lewallen**

The University of North Carolina at Greensboro, School of Nursing, PO Box 26170, Greensboro, NC 27402-6170, USA; [lplewall@uncg.edu](mailto:lplewall@uncg.edu)

### Implications for practice and research

- Cognitive development is enhanced with any breastfeeding, but more significantly with at least 4 months of breastfeeding.
- Preterm infants may especially benefit from breastfeeding.
- Studies using multi-ethnic participants should be conducted to see if the increase in cognitive ability shown in this study holds true among other ethnic groups.

### Context

The health benefits of breastfeeding for infants have been well documented. International<sup>1</sup> and country-specific<sup>2</sup> professional organisations recommend exclusive breastfeeding for the first 6 months of life and breastfeeding with complementary foods for at least 1 year. Quigley *et al* sought to measure the effects of any breastfeeding as well as the effects of exclusive breastfeeding on children's cognitive development at 5 years of age.

### Methods

Data from the Millennium Cohort Study, which measured a random sample of all infants born in England, Wales, Scotland and Northern Ireland from 2000 to 2002 were analysed. Parents were recruited when the infants were around 9 months of age (sweep 1), and they were interviewed again when the children were 3, 5 and 7 years old (sweeps 2–4). The variables measured were breastfeeding initiation, duration and exclusivity; and cognitive ability (using the British Ability Scales (BAS) subscales of naming vocabulary, picture similarities and pattern construction). The following were excluded; non-white ethnic groups, non-English speakers, children born at less than 28 weeks gestation, multiple gestations and children whose natural mother was not available. A total of 11 879 children born at term ( $\geq 37$  weeks gestation) and

those born preterm (28–36 weeks gestation) were analysed using linear regression analysis with adjustments for potential confounders and mediators that were pregnancy-related, parenting-related or socio-demographic.

### Findings

For the group of children born at term, there was a two-point difference in the naming vocabulary BAS subscale between children who were breastfed for at least 12 months and those who were never breastfed. There was also an increase of two points in the BAS subscale of picture similarities for those breastfed for at least 4 months, and a one-point increase in the BAS subscale of pattern construction for those breastfed for any length of time. For children who were born prematurely, those who were breastfed for at least 2 months showed a four-point increase in the picture similarities subscale and a six-point increase in the pattern construction subscale over those never breastfed; there was also a four-point increase in the naming vocabulary subscale for children who were breastfed for at least 4 months. There were similar findings across all subscales for those who were exclusively breastfed.

### Commentary

All children who had been breastfed showed increases in the subscales of this measure of general ability. Given that the BAS is a widely-used scale which can be compared with measures of educational progress in school<sup>3</sup> and is known to the British population, it was an appropriate instrument to measure cognitive ability. Non-white participants were excluded because of concerns about validity of BAS subscales in these groups; however, this exclusion limits the generalisability of these results. Unfortunately, some ethnic minority groups in developed countries have lower breastfeeding initiation and duration rates,<sup>4</sup> so studies using multi-ethnic participants are needed to substantiate the findings of the present study.

Large studies examining cognitive health benefits of breastfeeding have yielded conflicting results.<sup>5,6</sup> This study adds to the body of evidence suggesting that breastfeeding is associated with enhanced cognitive development as it measured the effects of breastfeeding on preterm (28–36 weeks gestation) as well as term infants, whereas other large studies excluded preterm infants. Breastfeeding seems to be especially beneficial for infants born prematurely. Preterm infants are breastfed less often due to developmental feeding issues and Neonatal Intensive Care Unit care.<sup>7</sup> These findings can be used to encourage women to initiate breastfeeding and to continue for longer.

**Competing interests** None.

#### References

1. World Health Organization (WHO). Health topics: Breastfeeding. <http://www.who.int/topics/breastfeeding/en/> (accessed February 2012).
2. American Academy of Pediatrics (AAP). Policy statement: Breastfeeding and the use of human milk. *Pediatrics* 2005;115:496–506.
3. GL Assessment. The British Ability Scale: Second edition. <http://shop.gl-assessment.co.uk/home.php?cat=303> (accessed February 2012).
4. Centers for Disease Control and Prevention (CDC). Breastfeeding report card. <http://www.cdc.gov/breastfeeding/data/reportcard.htm> (accessed February 2012).
5. Der G, Batty GD, Deary IJ. Effect of breast feeding on intelligence in children: prospective study, sibling pairs analysis, and meta-analysis. *BMJ* 2006;333:945.
6. Kramer MS, Aboud F, Mironova E, *et al.* Breastfeeding and child cognitive development: new evidence from a large randomized trial. *Arch Gen Psychiatry* 2008;65:578–84.
7. Bernaix LW, Schmidt CA, Jamerson PA, *et al.* The NICU experience of lactation and its relationship to family management style. *MCN Am J Matern Child Nurs* 2006;31:95–100.