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Breast-Feeding Linked to Higher 14-Month Mental Development

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September 22, 2011 — Breast-feeding is linked to higher mental development at age 14 months, according to the results of a birth cohort study reported in the September 19 issue of *Pediatrics*.

"Several studies have reported positive associations between breastfeeding and children's cognition," write Mònica Guxens, MD, MPH, PhD, from the Center for Research in Environmental Epidemiology, Hospital del Mar Research Institute, and CIBER Epidemiologia y Salud Pública, all in Barcelona, Spain, and colleagues. "Parental factors are thought to explain a large part of this association. However, the potential role of long-chain polyunsaturated fatty acid (LC-PUFA) content in breast milk remains uncertain."

The goal of the study was to examine the effects of parental psychosocial factors and colostrum LC-PUFA levels on modulating the association between breast-feeding and children's neurodevelopment. As part of the INMA-INfancia y Medio Ambiente Project, a total of 657 women in their first trimester of pregnancy were recruited to a population-based birth cohort in the city of Sabadell in Catalonia, Spain.

A questionnaire was used to collect data regarding parental characteristics and breast-feeding. At age 14 months, 504 children underwent testing of mental and psychomotor development by trained psychologists using the Bayley Scales of Infant Development.

Children who had a high percentage of breast-feeds among all milk feedings during the first 14 months were more likely to have better child mental development (0.37 points per month of full breast-feeding; 95% confidence interval, 0.06 - 0.67). This association was only partially accounted for by maternal education, social class, and IQ. Children who were breast-fed longer and who had exposure to higher ratios between omega-3 (n-3) and omega-6 (n-6) PUFAs in colostrum had significantly higher mental scores than children with low breast-feeding duration exposed to low levels.

"Greater levels of accumulated breastfeeding during the first year of life were related to higher mental development at 14 months, largely independently from a wide range of parental psychosocial factors," the study authors write. "LC-PUFA levels seem to play a beneficial role in children's mental development when breastfeeding levels are high."

Limitations of this study include use of colostrum LC-PUFAs as a proxy of breast milk fatty acid profiles during lactation, lack of data on LC-PUFA concentrations in colostrums for all mother-child pairs, and lack of data on the amount or types of LC-PUFAs provided by infant formulas. In addition, a limitation of the exclusive breast-feeding definition was that all partial breast-feeders were classified together as nonexclusive, regardless of whether their level of breast-feeding intensity was relatively high.

"LC-PUFA levels in colostrum, specifically high n-3 versus n-6 fatty acids, seem to play a beneficial role in child neurodevelopment when infants receive large amounts of breast milk during the first year of life; parental psychosocial factors explained only a small part of this association," the study authors conclude. "The follow-up of our birth cohort will allow us to explore if this effect on cognitive development seem[s] stronger at older ages. Overall, our results suggest that the effect of breastfeeding in child neurodevelopment seems to be driven in part by breast milk's LC-PUFA content."

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