

# Links Tighten Between IQ, Breast-Feeding

Breast-feeding longer can make children smarter. That's the conclusion of a study published Monday in *JAMA Pediatrics*, a journal of the American Medical Association.

In many ways, the study won't surprise proponents of breast-feeding, who have long posited a connection between nursing and cognition and now have an additional piece of research to back up their argument. Skeptics could likely stick to the view that what matters most is how smart a baby's mom is, or that social pressure to breast-feed can have its own problems for children's development by creating stressed-out parents. However, the findings are likely to add muscle to public-health advocates' push to increase breast-feeding rates, which start out around 75% but slump to an average of 25% at a baby's first birthday, according to the Centers for Disease Control and Prevention.

The *JAMA* study isn't the first to study a link between nursing and intelligence, but researchers say it is more conclusive because of its size and how it has isolated variables such as the mother's IQ and the child's upbringing. Previous studies have had difficulty adjusting for other factors that might influence a child's IQ, were limited by their small size or didn't account for length of nursing, said Mandy Belfort, the *JAMA* study's lead author and assistant professor of pediatrics at Harvard Medical School.

The latest study examined and rated each child's environment based on factors such as how many books are available, and gave each mother an IQ test. They also asked detailed questions about factors that might influence IQ, such as child care, income and parental education. They then subtracted those factors using a statistical model. Dr. Belfort said she hopes that "what we have left is the true connection" with nursing and IQ.

Breast-feeding is hard to study in a randomized trial because it is unethical to put some children in the non- group, Dr. Belfort said, which leaves researchers

with observational studies such as the one she conducted. Researchers at Boston Children's hospital followed 1,312 babies and mothers from 1999 to 2010. They found out how many of those children were still consuming their mothers' milk at their first birthday, and then tested the children's intelligence at ages 3 and 7.

Intelligence is a strange brew of nature and nurture and isolating one factor is challenging. Breast-feeding in the first place has a lot to do with class and wealth, with richer, better educated women typically opting to make the effort to nurse their babies.

Children who were still nursing after a year had higher receptive language scores at age 3, which means they understood what was being said to them better than their formula-fed peers. At age 7, the breast-fed children scored higher on verbal and nonverbal intelligence tests.

In 3 year olds, every month of breast-feeding raised cognition scores by an average of .21 point. Each month of breast-feeding was associated with a .35 more verbal IQ point and a .29 more nonverbal point in the 7 year olds. A full year of nursing would boost a child's IQ by about 4 points over a child who didn't nurse, said Dr. Belfort, a significant bump considering that IQs average around 100. That is for children getting some breast milk in their diets; those consuming only breast milk before starting to eat solid foods around six months of age saw even greater advantages.

"For an individual person, it would be hard to tell a two or three point difference in IQ, but it would matter a lot for society," said Dr. Belfort. "If we can shift the IQ up, we would have to invest less resources at the low end." Meaning that with improved IQ scores across the board, less funding would have to be spent on remedial education programs.

Dr. Amy Tuteur, an obstetrician who writes a blog called [skepticalob.com](http://skepticalob.com), is unconvinced by a four-point increase in IQ, saying the bump needs to be bigger to prove that it isn't just random variation. "Intelligence is multifactorial and

the idea that any one thing can make a big difference right away makes me skeptical," she said. "American IQ has been increasing steadily, it rose when breast-feeding rates were going down and it rose when breast-feeding rates were going up."

The possible link between breast milk and brain development is only starting to be teased out. Some theories suggest that it isn't the content of the milk but the bond between mother and child developed while nursing that accounts for some of the boost. Other ideas hinge on nutrients found in breast milk such as DHA and ARA, which are fatty acids linked to brain development. Some formula companies put DHA and ARA in their offerings.

"There are nutrients in breast milk that don't really exist anywhere else, and we don't fully know why," says Dimitri Christakis, a pediatrician at Seattle Children's Hospital Research Institute and wasn't involved in the research.

He wrote an editorial in JAMA pediatrics on the study and leads an advocacy group called the Global Breast-feeding Initiative. In the editorial he contends the JAMA study should put skepticism to rest about whether breast-feeding is best for brain development and that society should make it easier and more acceptable for moms to nurse.

For Amra Chudleigh-Neal of Thousand Oaks, Calif., intelligence is just one more reason for her to breast-feed her 6-week old daughter. She said her older child, now 7, has above average IQ, which Ms. Chudleigh-Neal said could be in part because she exclusively breast-fed until her daughter was 6- months old.

"It tends to be a little more of a sacrifice to nurse the second child, you think 'oh my gosh is it really worth it' but looking back with my older child I believe it did make a difference," she said. Ms. Chudleigh-Neal receives extensive support from The Pump Station, a Los Angeles-area nursing resource center that helps with things like connecting moms to lactation professionals.

Not everyone can breast-feed successfully, and that needn't make parents wor-

ry. "Talk to your baby, hold your baby and read to your baby," Dr. Belfort said. "There are so many different factors in a child's development."

One difficulty in studying breast milk is that every feeding can vary based on the mother and what she has eaten. So the Boston researchers also examined a component in mothers' diets that might be responsible for children's brain development: fish, which contains DHA.

The authors found that more than two or more servings of fish per week seemed to confer IQ benefits, but that boost in children's cognition wasn't statistically significant.

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