

Breastfeeding tied to better emotion perception in some infants

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Genetics and breastfeeding influence infant attention to social eye cues. Credit: Audre Rae Krull (Audre Rae Photography).

Researchers found that among 44 babies with a particular autism "risk" gene, those who were breast-fed longer spent more time looking at

images of "happy" eyes and shied away from "angry" eyes.

The findings, published online Sept. 14 in the *Proceedings of the National Academy of Sciences*, suggest that breast-feeding might enhance social development in certain at-risk infants.

However, the authors and other experts stressed that the study offers no evidence that breast-feeding ultimately affects a child's odds of developing autism, or that it lessens the severity of autism symptoms.

Long-term studies are "absolutely required" to answer those questions, said lead researcher Kathleen Krol, of the Max Planck Institute for Human Cognitive and Brain Sciences, in Leipzig, Germany.

"It could be just as likely that the emotional biases we found in 7-month-old infants will diminish later in life and have little impact on the future behavior of the child," Krol said.

Plus, eye recognition tests are not an established way to gauge autism risk, said Dr. Ruth Milanaik, director of the neonatal neurodevelopmental follow-up program at Cohen Children's Medical Center, in New Hyde Park, N.Y.

Milanaik, who was not involved in the study, said it was well done. But she agreed that no conclusions can be drawn without long-term research.

According to the U.S. Centers for Disease Control and Prevention, about one in 68 U.S. children has been diagnosed with an [autism spectrum disorder](#)—a group of developmental disabilities that affect a person's ability to communicate and interact socially.

The severity ranges widely: Some kids speak little or not at all, and focus obsessively on only a few interests; others have relatively mild problems

with socializing and subtler communication—such as "reading" other people's facial expressions and body language.

Researchers do not fully understand the causes of autism, Milanaik pointed out. But it's thought to involve a combination of genetic predisposition and certain environmental exposures, especially during pregnancy.

Researchers have linked many gene variations to autism risk, and the current study included infants with just one of those variants—in a gene called CD38. The gene may be important in social behavior, according to Krol's team, because it helps release oxytocin—a hormone that promotes bonding.

Similarly, the study said breast-feeding triggers a release of oxytocin in mothers, and possibly infants as well.

So Krol's team looked at whether breast-feeding was related to emotion perception in 98 infants, 7 months old, almost half of whom carried two copies of the "risk" variant of the CD38 gene.

The researchers had moms and babies sit in front of a computer where various image sets popped up. Each set featured a female face with a neutral expression, placed next to an "emotional" face—with either fearful, happy or angry eyes.

In general, Krol's team found, the babies were most drawn to the fearful eyes. Things got more complicated, though, when it came to the happy and angry eyes.

At first, it appeared that all babies who'd been exclusively breast-fed for a longer period—around six months, on average—had a stronger preference for the happy eyes, versus babies who'd been breast-fed for a

shorter time.

But when the researchers took a deeper look, that was true only of babies with the autism risk gene. The longer they'd been breast-fed, the more they preferred happy eyes and turned away from angry eyes.

The significance of those test results is not yet clear. But, Krol said, "emotional attention biases in infancy could translate into future social behavior."

Babies who prefer happy eyes, she explained, might become more prone to "pro-social" behavior, like empathizing with other people and wanting to help them.

However, she emphasized, that's speculation for now.

Milanaik also urged caution, partly because researchers are still trying to understand the complex underpinnings of autism.

One of her concerns, she said, is that some mothers of children with [autism](#) will mistakenly think they are responsible because they did not breast-feed long enough.

But this study would give no support to that, Milanaik stressed.

More information: Genetic variation in CD38 and breastfeeding experience interact to impact infants' attention to social eye cues, www.pnas.org/cgi/doi/10.1073/pnas.1506352112

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