

Preemies at high risk of autism don't show typical signs of disorder in early infancy

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A small study at Washington University School of Medicine in St. Louis indicates that premature infants who avoid eye contact are less likely to demonstrate symptoms of autism at age 2 than preemies who maintain eye contact during early interactions. Credit: Robert Boston

Premature babies are at an increased risk for developing autism spectrum disorder. But a small study indicates that preemies who avoid eye contact in early infancy are less likely to demonstrate symptoms of autism at age 2 than preemies who maintain eye contact during early interactions, according to new research at Washington University School of Medicine in St. Louis.

"Children with [autism](#) typically have challenges with social interaction and may avoid [eye contact](#), but it turned out that children in this study who had characteristics of autism at age 2 were more likely to maintain eye contact and not avert their gazes in early infancy," said first author Bobbi Pineda, PhD, assistant professor in [occupational therapy](#) and in pediatrics.

The research is available in the July/August issue of *The American Journal of Occupational Therapy*.

Early intervention can benefit children with autism spectrum disorder. However, while signs of autism have been observed in infants as early as two to six months of age, the disorder is difficult to diagnose before age 2.

In the new study, the researchers observed behavioral symptoms characteristic of autism in a particularly high-risk group of young children: those born prematurely. Observing early behaviors may give researchers and clinicians indicators to look for early in life so they can recommend timely diagnostic testing and interventions to improve a baby's adaptive responses and outcome.

The researchers evaluated 62 premature infants hospitalized in the [neonatal intensive care](#) unit (NICU) at St. Louis Children's Hospital. The

infants were born at least 10 weeks before they reached full term and were evaluated close to the dates they were supposed to have been born.

The researchers focused on whether the infants made eye contact or averted their gazes; responded to objects or people around them; interacted socially; and calmed themselves when upset. They also looked at whether the babies exhibited a horizontal repetitive eye movement called nystagmus.

Of the 62 preemies, 58 were observed for visual cues; the others were asleep during visits from the researchers. Of those 58 babies, 41 averted their gazes, and 21 showed nystagmus. Nearly all of the infants with nystagmus—19—also averted their gazes.

When the babies in the study were screened for autism at age 2, using a recognized screening checklist for autism in toddlers, 13—or 21 percent—screened positive. A positive finding indicates a child is at risk and should receive [diagnostic testing](#). The researchers were surprised to find that many of the babies who had averted their gazes and showed signs of nystagmus as infants did not display warning signs of autism at age 2.

"Surprisingly, we found that the children who later screened positive for autism were more likely as infants to not avert their gazes during [social interaction](#)," Pineda said. "They were more likely to sustain eye contact."

Pineda speculated that [premature infants](#) in the NICU may avert their gazes as a coping mechanism to help them deal with the stress of an intense environment during a vulnerable period of development. So absence of gaze aversion, she said, could signal an inability to avoid stressors.

"This could explain why some infants behave differently in social

interactions as babies than later, as children," Pineda said. "Better understanding how autism traits emerge along the developmental pathway is an important area for future research."

With nearly one in 68 children in the U.S. diagnosed with autism, according to the Centers for Disease Control and Prevention, Pineda and her colleagues hope the new study will motivate researchers to better define differences in development across the lifespan, including the neonatal period.

Screening tools for [autism spectrum disorder](#) don't exist for [infants](#), but research is needed to improve understanding of how autism traits emerge, she said. This would help pave the way for early interventions aimed at improving life skills and allowing those with autism to lead more productive lives.

More information: Pineda R, Melchior K, Oberle S, Inder T, Rogers C. Assessment of Autism Symptoms During the Neonatal Period: Is There Early Evidence of Autism Risk? *The American Journal of Occupational Therapy*. July/August 2015 edition.

Provided by Washington University School of Medicine

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