

## Study finds gestational diabetes associated with greater risk of autism in children

April 14 2015

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Quinn, an autistic boy, and the line of toys he made before falling asleep. Repeatedly stacking or lining up objects is a behavior commonly associated with autism. Credit: Wikipedia.

Children whose mothers developed gestational diabetes by the 26th week of pregnancy were at increased risk of developing autism later in life, according to a new Kaiser Permanente study published today in the *Journal of the American Medical Association*.

Researchers examined the [electronic health records](#) of more than 322,000 ethnically diverse [children](#) born between 28 and 44 weeks at Kaiser Permanente Southern California medical centers between January 1995 and December 2009. They followed the children for an average of 5.5 years and found that those exposed to [gestational diabetes](#) by the 26th week of pregnancy had a 63 percent increased risk of being diagnosed with an autism spectrum disorder than children who were not exposed. After taking into account maternal age, education, race and ethnicity, household income and other factors, the increased risk of autism associated with gestational diabetes was 42 percent.

"The exposure of fetuses to maternal hyperglycemia may have long-lasting effects on organ development and function, but whether this can disrupt fetal brain development and heighten risk for neurobehavioral developmental disorders in offspring is less clear," said study lead author Anny H. Xiang, PhD, of the Kaiser Permanente Southern California Department of Research & Evaluation. "Future studies should address whether early diagnosis and treatment of gestational diabetes can reduce the risk of autism." She noted that this was an observational study, therefore the findings reveal associations between gestational diabetes and risk of a child developing autism rather than proving a cause and effect relationship.

The study also found that children whose mothers developed gestational diabetes after 26 weeks of pregnancy had no more risk of autism spectrum disorder than children whose mothers did not have preexisting diabetes or gestational diabetes.

"If the findings of this study reflect a cause and effect relationship, then they add another factor to a growing list of risks associated with gestational diabetes," said study co-author Edward S. Curry, MD, pediatric learning and behavior specialist, Kaiser Permanente Fontana Medical Center. "Our study findings also suggest that early screening for

autism in children of women with gestational diabetes diagnosed by 26 weeks gestation may be warranted."

Autism spectrum disorder is a group of developmental disabilities that can cause significant social, communication and behavioral challenges, according to the Centers for Disease Control and Prevention. People with autism spectrum disorders may communicate, interact, behave and learn in ways that are different from other people and can range from gifted to severely challenged. About 1 in 68 children have been identified with [autism spectrum disorder](#), according to estimates from CDC's Autism and Developmental Disabilities Monitoring Network.

Gestational diabetes is a type of diabetes that develops or is first recognized during pregnancy. While the true prevalence of gestational diabetes is unknown and varies based on diagnostic criteria used, a recent study from the CDC indicated that rates could be as high as 9.2 percent. Gestational diabetes can also lead to additional health problems for the mother, including an [increased risk](#) of developing type 2 diabetes and a greater likelihood of delivering a large baby.

**More information:** *Journal of the American Medical Association*, [DOI: 10.1001/jama.2015.2707](#)

Provided by Kaiser Permanente

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