

Maternal Diabetes and Autism Risk

Researchers at Kaiser undertook a retrospective study to see if there were identifiable risks during pregnancy for the development of autism. The researchers focused on diabetes to see if the presence of diabetes was associated with a greater likelihood of a child developing autism. They looked at the pregnancies and early childhood development records of 322,323 children born in Kaiser Hospitals in Southern California between 1995 and 2009. The pregnancies were characterized as to whether the mothers had preexisting diabetes, gestational (pregnancy related) diabetes diagnosed before 26 weeks of pregnancy or gestational diabetes diagnosed after 26 weeks of pregnancy. The study accounted for any differential effects related to other factors such as smoking, socioeconomic status, maternal age, sex of the child, and other extraneous factors. There were 3388 children diagnosed with autism. Preexisting diabetes and diabetes diagnosed after 26 weeks of pregnancy did not show an increased risk for autism. Diabetes first diagnosed before 26 weeks of pregnancy showed an increased risk for the child developing autism. The risk was characterized as a Hazard Ratio of 1.42. The Hazard Ratio means that the chances are 1.42 more likely to occur in this group than in the overall population.

Editorial: This study is notable for several reasons. First it is a very large study with a many children, followed over a long period of time with a large amount of data. Secondly, the study shows that diabetes diagnosed before 26 weeks of pregnancy was significantly related to the likelihood of the development of autism, while later developing diabetes or preexisting diabetes showed no increased risk.

It cannot be proven from the data but the speculation is that early uterine exposure to high sugar levels will have negative effects on brain development that may lead to autism.

Bibliography

Association of Maternal Diabetes with Autism in Offspring

Anny H. Xiang, PhD; Xinhui Wang, MS; Mayra P. Martinez, MPH; Johanna C. Walthall, PhD; Edward S. Curry, MD; Kathleen Page, MD; Thomas A. Buchanan, MD; Karen J. Coleman, PhD; Darios Getahun, MD, PhD *JAMA*. 2015;313(14):1425-1434