

Severe Maternal Hypothyroxinemia Is Associated with Probable Autism in Offspring

tinuous outcomes. Effect estimates were smaller, but results remained significant after adjustment for child IQ. Results did not change when the data set was restricted to women whose thyroid function was assessed in the first trimester.

Conclusions

Severe maternal hypothyroxinemia in early pregnancy was consistently associated with autistic symptoms in children.

ANALYSIS AND COMMENTARY ● ● ● ● ●

The incidence and prevalence of autism spectrum disorders (ASD) has increased over the past several decades; currently, 1 in every 88 U.S. children is considered to be on the autism spectrum (4). The pathogenesis of ASD remains poorly understood, and there is great interest in identifying potentially modifiable risk factors. The strengths of this study include its prospective design, large population-based sample, and wide range of covariates assessed. The causes of

maternal hypothyroxinemia in this study are unclear; thyroid autoimmunity was not associated with autism symptoms, and although urinary iodine concentrations are not reported in this paper, the Generation R cohort is known to be iodine-sufficient. Interventional studies are needed to determine whether screening for and treating isolated maternal hypothyroxinemia improves the developmental outcomes of children. In the absence of such interventional data, current ATA guidelines recommend against treatment for maternal hypothyroxinemia (5).

References

1. Henrichs J, Ghassabian A, Peeters RP, Tiemeier H. Maternal hypothyroxinemia and effects on cognitive functioning in childhood: how and why? *Clin Endocrinol (Oxf)* 2013;79:152-62. Epub May 21, 2013.
2. Román GC. Autism: transient in utero hypothyroxinemia related to maternal flavonoid ingestion during pregnancy and to other environmental antithyroid agents. *J Neurol Sci* 2007;262:15-26. Epub July 24, 2007.
3. Hoshiko S, Grether JK, Windham GC, Smith D, Fessel K. Are thyroid hormone concentrations at birth associated with subsequent autism diagnosis? *Autism Res* 2011;4:456-63. Epub August 31, 2011.
4. Autism and Developmental Disabilities Monitoring Network Surveillance Year 2008 Principal Investigators. Prevalence of autism spectrum disorders—Autism and Developmental Disabilities Monitoring Network, 14 Sites, United States, 2008. *MMWR Surveill Summ* 2012;61:1-19.
5. Stagnaro-Green A, Abalovich M, Alexander E, Azizi F, Mestman J, Negro R, Nixon A, Pearce EN, Soldin OP, Sullivan S, Wiersinga W; American Thyroid Association Taskforce on Thyroid Disease During Pregnancy and Postpartum. Guidelines of the American Thyroid Association for the diagnosis and management of thyroid disease during pregnancy and postpartum. *Thyroid* 2011;21:1081-125. Epub July 25, 2011.