

Increased risk of autism in children born to mothers with poor thyroid function

Aug. 13, 2013 — /PRNewswire-USNewswire/ -- Pregnant women who don't make enough thyroid hormone are nearly 4 times likelier to produce autistic children than healthy women, report scientists from the Houston Methodist Neurological Institute and Erasmus Medical Centre in the *Annals of Neurology*. The association emerged from a study of more than 4,000 Dutch mothers and their children, and it suggests some autism spectrum disorders can be caused by a lack of maternal thyroid hormone, which past studies have shown is crucial to the migration of fetal brain cells during embryo development.

„It is increasingly apparent to us that autism is caused by environmental factors in most cases, not by genetics,“ said lead author Gustavo Roman, M.D., a neurologist who directs the Nantz National Alzheimer Center. „That gives me hope that prevention is possible.“

The most common cause of thyroid hormone deficiency is a lack of dietary iodine -- because both the thyroid hormones, T3 and T4, contain that element. Iodine deficiency is common throughout the world, including in developed countries. The World Health Organization estimates nearly 1 in 3 people are affected globally.

The present work was based on the Generation R Study, conducted by Erasmus Medical Centre (Rotterdam, Netherlands)

doctors and social scientists, in which thousands of pregnant women were voluntarily enrolled between 2002 and 2006. Blood was withdrawn from the mothers at or around 13 weeks into their pregnancies to measure levels of T4. Six years later, mothers were asked to describe the behavioral and emotional characteristics of their children using a standardized psychology checklist.

Researchers identified 80 „probable autistic children“ from a population of 4,039 -- a

identified as mildly T4 deficient. The researchers found a weak association between mild T4 deficiency and the likelihood of producing an autistic child, but a strong association between severe T4 deficiency and autism (3.89 more likely, as compared with mothers with normal thyroid hormone).

Roman says he has advice for women who are now pregnant, or who are considering having children. „If you are planning to become pregnant, have your doctor measure urine iodine and thyroid function beforehand. If you have just become pregnant, have your doctor measure urine iodine, thyroid function, and begin using prenatal vitamins, making sure iodine is present.“

The study found a correlation between poor maternal thyroid function and autism, but it does not prove that the thyroid function of expecting mothers causes autism in their children. „The next steps are interventional studies,“ Roman said. „We must look at a large nationwide population of women in early pregnancy, to measure urine iodine and thyroid function. We must then correct thyroid deficiencies, if present, and provide prenatal vitamins with supplementary iodine.“



number consistent with the Dutch rate of autism spectrum disorders. 159 mothers were identified as being severely T4 deficient (defined as having 5 percent or less of normal T4, but with normal TSH), and 136 were

Read more:

Román GC, et al. Association of gestational maternal hypothyroxinemia and increased autism risk. *Ann Neurol*. 2013 Aug 13. [Epub ahead of print]. Sullivan KM. Iodine deficiency as a cause of autism. *J Neurol Sci*. 2009;276(1-2):202.