Mild iodine deficiency in womb associated with lower scores on children's literacy tests

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–Children who did not receive enough iodine in the womb performed worse on literacy tests as 9-year-olds than their peers, according to a recent study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism* (*JCEM*).

Iodine is absorbed from food and plays a key role in brain development. Even mild deficiency during pregnancy can harm the baby's neurological development.

"Our research found children may continue to experience the effects of insufficient iodine for years after birth," said the study's lead author, Kristen L. Hynes, PhD, of the Menzies Research Institute at the University of Tasmania in Australia. "Although the participants' diet was fortified with iodine during childhood, later supplementation was not enough to reverse the impact of the deficiency during the mother's pregnancy."

The longitudinal study examined standardized test scores of 228 children whose mothers attended The Royal Hobart Hospital's antenatal clinics in Tasmania between 1999 and 2001. The children were born during a period of mild iodine deficiency in the population. Conditions were reversed when bread manufacturers began using iodized salt in October 2001 as part of a voluntary iodine fortification program.

The study found inadequate iodine exposure during pregnancy was associated with lasting effects. As 9-year-olds, the children who received insufficient iodine in the womb had lower scores on standardized literacy tests, particularly in spelling. However, inadequate iodine exposure was not associated with lower scores on math tests. Researchers theorize iodine deficiency may take more of a toll on the development of auditory pathways and, consequently, auditory working memory and so had more of an impact on students' spelling ability than their mathematical reasoning ability.

"Fortunately, iodine deficiency during pregnancy and the resulting neurological impact is preventable," Hynes said. "Pregnant women should follow public health guidelines and take daily dietary supplements containing iodine. Public health supplementation programs also can play a key role in monitoring how much iodine the population is receiving and acting to ensure at-risk groups receive enough iodine in the diet."

More information: The article, "Mild Iodine Deficiency During Pregnancy is Associated with Reduced Educational Outcomes in the Offspring: 9-Year Follow-Up of the Gestational Iodine Cohort," appears in the May 2013 issue of JCEM.

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