

NEWS

Study links iodine deficiency in pregnancy with poor cognitive outcomes in children

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A study of nearly 1000 pregnant women from the United Kingdom has found that two thirds were deficient in iodine and that this deficiency was associated with a lower IQ and poorer reading ability in their children.¹

The *Lancet* study used stored urine samples and data from the Avon Longitudinal Study of Parents and Children (ALSPAC), also known as “the children of the 90s cohort.”

Iodine concentrations were measured in 958 urine samples taken in the first trimester of pregnancy and correlated with the IQ of the children when they were 8 years old and with their reading ability at 9 years old.

The World Health Organization says that women who have urinary iodine concentrations below 150 micrograms per litre of urine have a deficiency.² This was the case in 67% of the women in the study.

Children whose mothers had low urinary iodine concentrations had lower scores on verbal IQ (odds ratio 1.6 (95% confidence interval 1.1 to 2.3)), reading accuracy (1.7 (1.2 to 2.5)), and reading comprehension (1.5 (1.1 to 2.2)) than did children of mothers with normal iodine concentrations.

Speaking at a press briefing on the study on 21 May, Margaret Rayman, professor of nutritional medicine at the University of Surrey and one of the study’s authors, said that iodine was a crucial component in thyroid hormone production and was needed for gestational neurodevelopment. She said that in the United Kingdom dairy foods were the traditional source of iodine. In other developed countries seafood and ionised salt were common sources.

Sarah Bath, research fellow at the University of Surrey and the study’s lead author, said, “Having a low iodine status in early pregnancy is associated with poorer scores in a child and this has a lasting effect . . . [This] suggests that iodine is an important nutrient during pregnancy, and adequate intake is essential.”

Bath pointed out that pregnant women and women planning a pregnancy should ensure adequate iodine intake, as their iodine requirements increased during pregnancy. However, she cautioned against excessive iodine intake and the use of kelp supplements, which have inconsistent iodine levels.

Bath recommended that women should have three portions of dairy products a day of around 200 ml each. These could be low fat products, although women who ate organic milk and cheese should eat more, because these products contained less iodine as a result of differences in the pastures that cows grazed on.

If pregnant women were taking supplements they should check that these contain iodine (140-150 micrograms daily), said the researchers.³

In a commentary on the study, Alex Stagnaro-Green, from the School of Medicine and Health Sciences at George Washington University, Washington, DC, said that an important limitation of the study was its use of urinary iodine as a marker of a woman’s iodine status.⁴ However, he added that the findings “should be regarded as a call to action to public health policy makers in the UK.”

- 1 Bath SC, Steer CD, Golding J, Emmett P, Rayman M. Effect of inadequate iodine status in UK pregnant women on cognitive outcomes in their children: results from the Avon Longitudinal Study of Parents and Children (ALSPAC). *Lancet* 22 May 2013, doi:10.1016/S0140-6736(13)60436-5.
- 2 Zupan J. Prevention and control of iodine deficiency in pregnant and lactating women and in children less than 2-years-old: conclusions and recommendations of the Technical Consultation. *Public Health Nutr* 2007;10:1606-11.
- 3 British Dietetic Association. Food fact sheet: iodine. www.bda.uk.com/foodfacts/iodine.pdf.
- 4 Stagnaro-Green A, Pearce EN. Iodine and pregnancy: a call to action. *Lancet* 22 May 2013, doi:10.1016/S0140-6736(13)60717-5.

Cite this as: *BMJ* 2013;346:f3365

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