

Does treatment of subclinical hypothyroidism in pregnant women impact IQ in offspring?

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On Feb. 4, in the oral plenary session at the Society for Maternal-Fetal Medicine's annual meeting, The Pregnancy Meeting, in Atlanta, Brian Casey, M.D. with the Eunice Kennedy Shriver National Institute of Child Health and Human Development and Maternal-Fetal Medicine Unit will present findings from a 5-year follow-up study that looked at the treatment of pregnant women with subclinical thyroid dysfunction and whether, or not, that impacted the IQ of their children. The abstract received the Norman Grant award.

Subclinical [thyroid](#) dysfunction includes either an isolated elevation in [thyroid stimulating hormone](#) (subclinical hypothyroidism) or an isolated decrease in circulating free [thyroid hormone](#) (hypothyroxinemia).

Pregnant [women](#) identified with either condition are believed to be at risk for several adverse outcomes in the mother and fetus like gestational diabetes, preterm birth, placental abruption, and stillbirth. Prior studies have also pointed to the role of thyroid hormone in normal development of the fetal brain and suggested an increased risk of lower scores on developmental testing or IQ tests in children of women who went untreated.

The study, titled Effect of Treatment of Maternal Subclinical Hypothyroidism or Hypothyroxinemia on IQ in Offspring set out to determine whether or not subclinical [thyroid dysfunction](#) plays a role in diminished IQ in children of mothers identified with either condition during pregnancy. The study consisted of a multicenter study including two randomized, double-masked, placebo-controlled treatment trials run

in parallel. Women with a singleton pregnancy presenting for prenatal care before 20 weeks' gestation underwent thyroid screening. Eligible and consenting women with either subclinical hypothyroidism or hypothyroxinemia were randomized to thyroid hormone replacement or an identical placebo. Maternal thyroid function was assessed monthly and study drug was adjusted to achieve a prespecified treatment goal. Developmental testing of offspring was performed annually including IQ score at age five.

Between October 2006 and October 2009, 97,226 [pregnant women](#) underwent thyroid screening. There were 3,058 women (3.1%) identified with subclinical hypothyroidism, of which 677 were eligible and randomized. There were also 2,508 (2.9%) women identified with hypothyroxinemia and 526 were randomized. Together, a total of 1203 women were enrolled in both treatment trials. Remarkably, 5-year Wechsler Preschool and Primary Scale of Intelligence IQ scores were obtained in 1,110 (92.3%) of the 1203 offspring. The result was that treatment of women identified with either subclinical hypothyroidism or hypothyroxinemia during the first half of pregnancy did not improve cognitive outcome in offspring through five years of age.

"We now know that children of mothers identified with either subclinical hypothyroidism or hypothyroxinemia during pregnancy do not benefit from maternal thyroid hormone replacement," Casey explained. "These results confirm that routine thyroid screening during pregnancy is not warranted."

Provided by Society for Maternal-Fetal Medicine

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