Mother's vitamin D level linked to birth weight

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Mothers' vitamin D levels at a gestation of 26 weeks or less were positively related to birth weight and head circumference, and, in the first trimester were negatively associated with risk of a baby being born small for gestational age, according to a recent study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism* (*JCEM*).

The major source of vitamin D for children and adults is exposure to natural sunlight. Very few foods naturally contain or are fortified with vitamin D. Thus, the major cause of vitamin D deficiency is inadequate exposure to sunlight. Vitamin D deficiency can result in abnormalities in calcium, phosphorus, and bone metabolism, and there has been recent interest in understanding the role of vitamin D in other health conditions. Previous studies have shown inconsistent associations between maternal vitamin D status and fetal size.

"We found that a mother's vitamin D level, in the first or second trimester of pregnancy, was related to the normal growth of babies who delivered at term," said Alison Gernand, PhD, MPH, RD of the University of Pittsburgh and lead author of the study. "If a mother was vitamin D deficient, the birth weight of her baby was 46 g lower after accounting for other characteristics of the mom. Also if moms were vitamin D deficient in the first trimester, they had twice the risk of delivering a baby that suffered from growth restriction during the pregnancy."

In this study, researchers examined 2146 women delivering term, live births with vitamin D levels measured at a gestation of 26 weeks or less. Birth weight was measured just after birth and infant head circumference and placental weight were measured within 24 hours of birth.

"Our study is an important contribution to the epidemiologic evidence that maternal vitamin D status, especially in early pregnancy, may contribute to both pathological and physiological fetal growth," noted Lisa Bodnar, PhD, MPH, RD, of the University of Pittsburgh and senior author of the study. "Randomized trials that supplement pregnant women with vitamin D are needed to test this finding."

More information: The article, "Maternal Serum 25-Hydroxyvitamin D and Measures of Newborn and Placental Weight in a U.S. Multicenter Cohort Study," appears in the January 2013 issue of *JCEM*.

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