

Low vitamin D linked to Pre-eclampsia

A study has linked low vitamin D levels in mothers to a five-fold increased risk of preeclampsia, a serious complication in pregnancy which can lead to fetal death.

Researchers from the University of Pittsburgh Schools of the Health Sciences and writing in the *Journal of Clinical Endocrinology and Metabolism* said that there was a risk of preeclampsia even with supplementation of up to 400 International Units (IU).

They concluded that "Vitamin D supplementation in early pregnancy should be explored for preventing preeclampsia and promoting neonatal well-being."

This study adds to an ever-growing weight of the importance of vitamin D, which has been linked to a host of health benefits, including improving diabetes, heart health, breast and colon cancer.

Preeclampsia is marked by soaring blood pressure and swelling of the hands and feet, and is the leading cause of premature delivery and maternal and fetal illness and death worldwide, thought to contribute to 76,000 deaths each year.

Preeclampsia, also known as toxemia, affects up to seven per cent of first pregnancies, and health care costs associated with preeclampsia are estimated at \$7bn a year in the United States alone, according to the Preeclampsia Foundation.

Coupled with the fact that some of the women were taken supplements of 400 IUs, it may also boost the argument from some academics that recommended daily intakes of vitamin D should be raised to 800 IUs. The researchers wrote: "Vitamin D has direct influence on molecular pathways proposed to be important in the pathogenesis of preeclampsia, yet the vitamin D-preeclampsia relation has not been studied."

Lead author Lisa Bodnar said: "Our results showed that maternal vitamin D deficiency early in pregnancy is a strong, independent risk factor for preeclampsia."

"Women who developed preeclampsia had vitamin D concentrations that were significantly lower early in pregnancy compared to women whose pregnancies were normal. And even though vitamin D deficiency was common in both groups, the deficiency was more prevalent among those who went on to develop preeclampsia."

The researchers looked into data and banked blood samples taken from women and newborns between 1997 and 2001 at Magee-Women's Hospital of the University of Pittsburgh Medical Center (UPMC) and affiliated private obstetrician practices.

Data was analyzed for 1,198 women enrolled in the Pregnancy Exposures and Preeclampsia Prevention Study, a prospective survey designed to examine factors that may predispose women to preeclampsia. Out of this group, 55 cases of preeclampsia and 220 controls were selected for further study.

Samples of maternal blood were taken prior to 22 weeks pregnancy and again just before delivery. Samples of newborn umbilical cord blood also were tested for 25 hydroxyvitamin D, an indicator of vitamin D status.

Bodnar said: "Low vitamin D early in pregnancy was associated with a five-fold increase in the odds of preeclampsia."

"Data showed this increase risk persisted even after adjusting for other known risk factors such as race, ethnicity and pre-pregnancy body weight. Also troubling was the fact that many of the women reported taking prenatal vitamins, which typically contain 200 to 400 International Units of vitamin D."

They noted that even a small decline in vitamin D concentration more than double the risk of preeclampsia.

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Maternal vitamin D deficiency increases the risk of preeclampsia Lisa Bodnar, Janet Catov, Hyagriv Simhan, Michael Holick, Robert Powers, and James Roberts.