

Experts find link between low doses of vitamin D and adverse pregnancy outcomes

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There is a link between vitamin D insufficiency and adverse health outcomes such as gestational diabetes and preeclampsia in mothers-to-be and low birth weight in newborns, suggests a paper published in *BMJ* today.

Vitamin D insufficiency has been associated with a number of adverse health outcomes and has been recognised as a public health concern. Plus, observational data has suggested a link between low vitamin D and increased risk of adverse [pregnancy outcomes](#) (such as [gestational diabetes](#), preeclampsia, risk of infections, caesarean section and foetal growth restriction). Knowledge of these associations is however limited.

Literature on this topic is growing rapidly. As such, researchers from the University of Calgary in Canada carried out a systematic review and meta-analysis of all existing evidence on the effect of vitamin D concentration on pregnancy and [birth outcomes](#).

Data from 31 studies were included in the analysis - all published between 1980 and 2012 with between 95 and 1,100 participants. Differences in study design and quality were taken into account to minimise bias.

Results showed that pregnant women with low levels of 5-OH vitamin D were more likely to develop gestational diabetes (odds ratio of 0.49), had an increased chance of developing [preeclampsia](#) (odds ratio of 0.79) and an increased chance of giving birth to a baby small for gestational age

(odds ratio of 0.85). No significant differences were found in birth length and [head circumference](#).

The researchers say these results are "concerning" given recent evidence that vitamin D insufficiency is common during pregnancy, especially among high risk women, particularly vegetarians, women with limited sun exposure and ethnic minorities with darker skin.

The researchers conclude that the findings identify a significant association, but there remains a need for large, well-designed randomized controlled trials to determine whether "strategies to optimize vitamin D concentration are effective in improving pregnancy and neonatal outcomes". They also suggest that future studies should look at the dose-response relationship between vitamin D supplements and adverse [health outcomes](#).

In an accompanying editorial, Dr Lucas from the National Centre for Epidemiology and Population Health at the Australian National University says that the findings of this study support a goal of vitamin D sufficiency for all pregnant women. She says that "supplements, diet and sunlight exposure" are all influences which "should be used together, with care". Dr Lucas adds that a previous editorial called for large well designed controlled trials "to clarify the causal association" which she believes is needed to find the magnitude of importance between vitamin D and pregnancy.

More information: Association between maternal serum 25-hydroxyvitamin D level and pregnancy and neonatal outcomes: systematic review and meta-analysis of observational studies, *BMJ*, 2013.

Editorial: Vitamin D sufficiency in pregnancy, *BMJ*, 2013.

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