

# Calcium and vitamin D supplementation improves metabolic profile of pregnant women with gestational diabetes

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New research published in *Diabetologia*, the journal of the European Association for the Study of Diabetes, shows that calcium and vitamin D supplementation improves the metabolic profile of pregnant women with gestational diabetes. The research is by Dr Ahmad Esmailzadeh, Isfahan University of Medical Sciences, Isfahan, Iran, and colleagues.

Gestational diabetes mellitus (GDM), a pregnancy complication, is characterised by carbohydrate intolerance and [metabolic disorders](#). Approximately 7% of all pregnancies in the United States are affected by GDM, but the prevalence ranges from 1 to 14% of all pregnancies in the world depending on the population studied and the diagnostic criteria used. GDM can increase the risk of pre-eclampsia, pre-term delivery and delivery by caesarean section.

"We are aware of no study that has examined the effect of joint calcium–vitamin D supplementation on insulin function, lipid profiles, inflammatory factors and biomarkers of oxidative stress in GDM," say the authors. "The current study was, therefore, done to investigate the effects of calcium plus vitamin D supplementation on metabolic status of [pregnant women](#) with GDM."

This randomised placebo-controlled trial was performed on 56 women with GDM. Subjects were randomly assigned to receive calcium plus vitamin D supplements or placebo. Individuals in the calcium–vitamin D group (n=28) received 1000 mg calcium per day and 50000 IU (international units) vitamin D3 tablets two times during the study (at study baseline and day 21 of intervention) and those in the placebo group (n=28) received two placebos at the same time points. Fasting blood samples were taken at study baseline and after 6 weeks of intervention.

The authors found that, following the administration of [calcium](#) plus vitamin D supplements, they observed significant reductions in fasting plasma glucose, insulin, and LDL or 'bad' cholesterol, as well as improvements in insulin sensitivity and increases in HDL or 'good' cholesterol, compared with those patients who took placebo.

The authors say: "Calcium plus vitamin D supplementation in GDM women had beneficial effects on [metabolic profile](#)...this is important because elevated circulating levels of inflammatory markers and impaired insulin metabolism in GDM can predict the progression to type 2 diabetes (T2D) later in life and neonatal complications. Impaired insulin metabolism in women with GDM can result in adverse long term maternal outcomes and increased perinatal morbidity (babies large for gestational age, birth trauma, pre-eclampsia), and long-term consequences in the offspring. In addition, increased inflammatory markers in GDM might predict the future development of both metabolic and cardiovascular disease."

Provided by Diabetologia

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