

- [Abstract](#)

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## Effect of treatment of vitamin D deficiency and insufficiency during pregnancy on fetal growth indices and maternal weight gain: a randomized clinical trial.

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#### Abstract

##### OBJECTIVE:

To determine whether treatment of low serum vitamin D in pregnant women improves fetal growth indices.

##### STUDY DESIGN:

In this open-label randomized clinical trial, 130 Iranian pregnant women (24-26 weeks of gestation) with vitamin D deficiency or insufficiency [25(OH)D <30ng/ml] were divided at random into an intervention group and a control group. The control group received 200mg calcium plus a multivitamin (containing vitamin D3 400U) each day, and the intervention group received 200mg calcium plus a multivitamin (containing vitamin D3 400U) each day, plus vitamin D3 (50,000U) each week for 8 weeks. At delivery, maternal and cord blood 25(OH)D levels, maternal weight gain, neonatal length, neonatal weight and neonatal head circumference were compared between two groups. Serum vitamin D was measured using enzyme-linked immunosorbent assay. A multivariate regression analysis was performed to examine the independent effect of maternal vitamin D level on fetal growth indices.

##### RESULTS:

Mean ( $\pm$ standard deviation) length (intervention group: 49 $\pm$ 1.6cm; control group: 48.2 $\pm$ 1.7cm; p=0.001), head circumference (intervention group: 35.9 $\pm$ 0.7cm; control group: 35.3 $\pm$ 1.0cm; p=0.001) and weight (intervention group: 3429 $\pm$ 351.9g; control group: 3258.8 $\pm$ 328.2g; p=0.01) were higher in the intervention group compared with the control group. Mean maternal weight gain was higher in the intervention group compared with the control group (13.3 $\pm$ 2.4kg vs 11.7 $\pm$ 2.7kg; p=0.006). Multivariate regression analysis for maternal weight gain, neonatal length, neonatal weight and neonatal head circumference showed an independent correlation with maternal vitamin D level.

##### CONCLUSION:

Treatment of low serum vitamin D during pregnancy improves fetal growth indices and maternal weight gain.

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##### KEYWORDS:

Fetal growth; Pregnancy; Vitamin D deficiency

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