

## Effect of Vitamin D Treatment on the Free Radicals Formation in Pregnant Diabetic Rats

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**Abstract.** Normal pregnancy is associated with increased oxidative stress. Pre-gestational diabetes type 1 results in even higher oxidative stress level accompanied with poor antioxidant control. A growing body of evidence suggests that vitamin D status is linked with control of diabetes and has an antioxidant property.

This investigation studied the effect of vitamin D supplementation compared to low-vitamin D diet during pregnancy on biomarkers of oxidative stress in pregnant rats, neonatally exposed to Streptozotocin (100 mg/kg s.c.). The activity of Xanthine oxidase and the MTT-formazan accumulation were used as markers for the formation and accumulation of free radicals in rat blood serum.

Cholecalciferol supplementation increased, while low-vitamine D diet decreased serum 25-hydroxyvitamin D concentrations in pregnant rats, compared with controls. Furthermore, treatment with vitamin D supplements led to a significant decrease in Xanthine oxidase activity and free radicals accumulation.

Our study demonstrated a strong link between vitamin D and oxidative stress. In conclusion, vitamin D supplementation during pregnancy had beneficial effects on oxidative status in diabetic rats.