

Vitamin D Supplements May Counteract Diabetes

Posted on 2009-10-30 06:00:00 in [Diabetes](#) | [Dietary Supplementation](#) | [Vitamins](#) |

In that low circulating levels of Vitamin D [measured as serum 25-hydroxyvitamin D (25(OH)D] have been shown to correlate with an increased risk of type-2 diabetes, a study by New Zealand researchers investigated the role of Vitamin D supplementation to improve insulin resistance and insulin secretion. Pamela R. von Hurst, from Massey University (Auckland, New Zealand), and colleagues studied 81 South Asian women with insulin resistance, ages 23 to 68 years, living in New Zealand. The study participants were randomly assigned to receive either 100 micrograms (4,000 IU) of Vitamin D3 or placebo daily for six months. In those women receiving Vitamin D supplementation, the researchers found insulin resistance to be markedly lower, the optimal effects achieved when blood vitamin D levels were in the range of 80 to 119 nanomoles per liter. The team concludes that: "In conclusion, improving vitamin D status in insulin resistant women resulted in improved [insulin resistance] and sensitivity ... providing further evidence for an increase in the recommended adequate levels."

[Continue reading...](#)

Pamela R. von Hurst, Welma Stonehouse, Jane Coad. "Vitamin D supplementation reduces insulin resistance in South Asian women living in New Zealand who are insulin resistant and vitamin D deficient – a randomised placebo-controlled trial." *British Journal of Nutrition*, 28 Sep 2009; First View article, doi: 10.1017/S0007114509992017.

Human and Clinical Nutrition

Vitamin D supplementation reduces insulin resistance in South Asian women living in New Zealand who are insulin resistant and vitamin D deficient – a randomised, placebo-controlled trial

Abstract

Low serum 25-hydroxyvitamin D (25(OH)D) has been shown to correlate with increased risk of type 2 diabetes. Small, observational studies suggest an action for vitamin D in improving insulin sensitivity and/or insulin secretion. The objective of the present study was to investigate the effect of improved vitamin D status on insulin resistance (IR), utilising randomised, controlled, double-blind intervention administering 100 µg (4000 IU) vitamin D₃ (*n* 42) or placebo (*n* 39) daily for 6 months to South Asian women, aged 23–68 years, living in Auckland, New Zealand. Subjects were insulin resistant – homeostasis model assessment 1 (HOMA1) > 1.93 and had serum 25(OH)D concentration < 50 nmol/l. Exclusion criteria included diabetes medication and vitamin D supplementation > 25 µg (1000 IU)/d. The HOMA2 computer model was used to calculate outcomes. Median (25th, 75th percentiles) serum 25(OH)D₃ increased significantly from 21 (11, 40) to 75 (55, 84) nmol/l with supplementation. Significant improvements were seen in insulin sensitivity and IR (*P* = 0.003 and 0.02, respectively), and fasting insulin decreased (*P* = 0.02) with supplementation compared with placebo. There was no change in C-peptide with supplementation. IR was most improved when endpoint serum 25(OH)D reached ≥ 80 nmol/l. Secondary outcome variables (lipid profile and high sensitivity C-reactive protein) were not affected by supplementation. In conclusion, improving vitamin D status in insulin resistant women resulted in improved IR and sensitivity, but no change in insulin secretion. Optimal vitamin D concentrations for reducing IR were shown to be 80–119 nmol/l, providing further evidence for an increase in the recommended adequate levels. Registered Trial No. ACTRN12607000642482.

Key Words: [Vitamin D](#); [Type 2 diabetes](#); [Insulin resistance](#)