

# Vitamin D may boost heart health during weight loss: Study

By Stephen Daniells, 22-Apr-2009

**Supplements of vitamin D may improve cardiovascular health during weight loss, without impacting on how many pounds are shed, suggests a new study.**

Writing in this month's issue of the *American Journal of Clinical Nutrition*, German researchers report that a daily dose of vitamin of 83 micrograms per day had lower levels on triglycerides and markers of inflammation like tumour necrosis factor-alpha (TNF-alpha).

*"The results indicate that a vitamin D supplement of 83 micrograms/d does not adversely affect weight loss and is able to significantly improve several cardiovascular disease risk markers in overweight subjects with inadequate vitamin D status participating in a weight-reduction program,"* wrote the authors, led by Armin Zittermann from the Clinic for Thorax and Cardiovascular Surgery in Bad Oeynhausen.

With obesity rates still high – not only in developed countries but also, increasingly, in newly wealthy emerging markets, there is considerable attention to ways to trim down waistlines. The results of the new randomised, double-blind, placebo-controlled trial indicate that vitamin D supplements may be useful as a means of boosting heart health during weight loss.

## The details on D

Vitamin D refers to two biologically inactive precursors - D3, also known as cholecalciferol, and D2, also known as ergocalciferol. The former, produced in the skin on exposure to UVB radiation (290 to 320 nm), is said to be more bioactive.

While our bodies do manufacture vitamin D on exposure to sunshine, the levels in some northern countries are so weak during the winter months that our body makes no vitamin D at all, meaning that dietary supplements and fortified foods are seen by many as the best way to boost intakes of vitamin D.

In adults, it is said vitamin D deficiency may precipitate or exacerbate osteopenia, osteoporosis, muscle weakness, fractures, common cancers, autoimmune diseases, infectious diseases and cardiovascular diseases.

There is also some evidence that the vitamin may reduce the incidence of several types of cancer and type-1 diabetes.



### **Study details**

Zittermann and his co-workers recruited 200 healthy overweight people with average 25(OH)D levels of 30 nmol/L (12 ng/mL) and randomly assigned them to receive either placebo or vitamin D for one year. All the subjects also participated in a weight-reduction program.

At the end of the study, 25(OH)D levels increased in the D group by 55.5 nmol/L, but by only 11.8 nmol/L in the placebo group. Furthermore, a 26.5 per cent reduction in levels of parathyroid hormone (PTH) were observed in the D group, compared with 18.7 per cent in the placebo group. "High blood concentrations of parathyroid hormone [...] are considered new cardiovascular disease risk markers," explained the authors.

Improvements in triglycerides levels were also observed in the vitamin D group, with a 13.5 per cent decrease noted compared with a 3.0 per cent increase in the placebo group.

Finally, levels of the marker of inflammation TNF-alpha decreased by 10.2% per cent following vitamin D supplementation, compared with 3.2 per cent in the placebo group.

"The beneficial biochemical effects were independent of the loss in body weight, fat mass, and sex," noted the researchers.

On the downside, the researchers noted that participants receiving the vitamin D supplements did experience an average 5.4 per cent increase in their levels of LDL-cholesterol.

Source: *American Journal of Clinical Nutrition* May 2009, Volume 89, Pages 1321-1327, doi:10.3945/ajcn.2008.27004 "Vitamin D supplementation enhances the beneficial effects of weight loss on cardiovascular disease risk markers" Authors: A. Zittermann, S. Frisch, H.K. Berthold, C. Götting, J. Kuhn, K. Kleesiek, P. Stehle, H. Koertke, R. Koerfer

