

During weight loss, supplementation with calcium and vitamin D may reduce central obesity (visceral fat) which is associated with many degenerative and metabolic diseases. In another study researchers found that supplementing with calcium and vitamin D during weight loss enhances heart health benefits in women with typically low calcium intakes.

## Supplementation with calcium and vitamin D decreases central obesity and enhances heart health benefits in overweight adults during weight loss

Many previous studies have indicated that calcium and vitamin D may play a role in the regulation of abdominal fat mass (visceral fat) and enhance heart health benefits of weight loss.

In the first study, researchers analyzed the effect of calcium/vitamin D fortified orange juice on weight loss and reduction in visceral adipose tissue (VAT) in overweight and obese adults.

Two parallel, double-blind, placebo-controlled trials were conducted at the same time with either regular or reduced calorie (lite) orange juice (OJ). There were 171 study subjects randomly assigned to one of two groups. The trials were conducted over a period of 16 weeks.

The treatment groups consumed three 8 ounce glasses of OJ (regular or lite) fortified with 350 mg Ca and 100 IU vitamin D per serving, and the control groups consumed either unfortified regular or lite OJ. Measurements of VAT and subcutaneous adipose tissue were performed before and after the trials.

The average weight loss after 16 weeks was 2.45 kg did not differ significantly between groups. In the regular OJ trial, the reduction of VAT was significantly greater in the calcium/vitamin D group than in the control group. In the lite OJ trial, the reduction of VAT was also significantly greater in the calcium/vitamin D group than in the control group. When the results of the two trials were combined, the difference between the supplemented groups and controls was even more statistically significant.

The findings of the current study suggest that calcium/vitamin D supplementation may contribute to a specific and beneficial reduction of VAT in overweight adults.

In another study, Canadian researchers investigated cardiovascular benefits of long-term calcium supplementation in women with low calcium intake. Healthy, overweight or obese women with a daily calcium intake of less than 800 mg/day were randomly assigned to one

of two groups: a group consuming two tablets/day of a calcium + vitamin D supplement (600 mg elemental calcium and 200 IU vitamin D/tablet), or a group consuming placebo. Both groups completed a 15-week reduced calorie weight-loss program.

Significant decreases in LDL cholesterol levels, as well as the ratios of total to LDL and LDL to HDL were seen the calcium + vitamin D group. These changes were independent of changes due to fat loss and reduced waist circumference. A tendency for more beneficial changes in HDL cholesterol, triglycerides, and total cholesterol was also observed in the calcium+D group.

This was the first study to show that consumption of calcium and vitamin D during weight loss enhances the beneficial effects weight loss on cardiovascular risk factors in overweight women with typically low calcium intake.

Major GC, et al. Supplementation with calcium + vitamin D enhances the beneficial effect of weight loss on plasma lipid and lipoprotein concentrations. 2007. American Journal of Clinical Nutrition 85(1): 54-9.

