

# Slight Blood Pressure Benefit Seen With Vitamin C

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New York Bureau

RENO, NEV. — Vitamin C supplementation may result in a small reduction in systolic blood pressure for hypertensive individuals and may help lower cholesterol in patients with hypercholesterolemia, according to the results of two meta-analyses presented at the annual meeting of the American College of Nutrition.

But vitamin C does not appear to be effective in lowering diastolic blood pressure among patients with hypertension, said Marc McRae of the department of nutrition and biochemical therapeutics at the National University of Health Sciences in Lombard, Ill., who presented the findings.

Mr. McRae and his colleagues performed a Medline search of randomized, double-blind controlled trials on the impact of daily vitamin C supplementation on systolic and diastolic blood pressure among hypertensive individuals. The researchers searched for studies published before January 2006.

**Although the effect on cholesterol was not large, studies have shown that even a small drop in total serum cholesterol can reduce the incidence of heart disease.**

A total of nine studies met the inclusion criteria, and the data were then extracted and analyzed. The pooled population of the studies included 297 subjects with a weighted mean baseline systolic blood pressure of 151.0 mm Hg and a weighted mean baseline diastolic pressure of 83.6 mm Hg. Study participants had taken a median daily dose of 500 mg of vitamin C over a 6-week median duration.

Overall, there was a small effect of vitamin C supplementation on systolic blood pressure, with an effect size of  $-2.4$  mm Hg, which was statistically significant. The effect size for diastolic pressure was less than  $-0.5$  mm Hg, which was not statistically significant.

Although the effect size for systolic blood pressure was small, previous studies have estimated that a sustained reduction of 2-3 mm Hg in systolic blood pressure can result in a 6% drop in the risk for stroke and a 4% reduction in the risk for heart disease, Mr. McRae said.

The results indicate that supplementation with at least 500 mg/day of vitamin C for approximately 6 weeks can lead to a small reduction in systolic blood pressure, he said.

In the second meta-analysis, Mr. McRae and his colleagues completed a similar evaluation of the impact of daily vitamin C intake among individuals with borderline-high and high cholesterol levels.

The researchers conducted another Medline search of studies published before January 2006, and included 16 studies that were randomized controlled tri-

als of individuals with cholesterol levels greater than 200 mg/dL and a daily vitamin C intake of at least 500 mg.

The researchers divided the trials according to the baseline total serum cholesterol levels of the study participants. A total of 444 pooled subjects had borderline-high total cholesterol levels between 200 mg/dL and 240 mg/dL. Among those subjects, the median daily vitamin C intake was 1,000 mg over a median 6-week duration. This borderline-high cholesterol

group had an effect size of  $-7.6$  mg/dL, which was not significant.

A total of 307 pooled subjects had hypercholesterolemia with baseline total serum cholesterol levels greater than 240 mg/dL.

Study participants in that group had a median daily vitamin C intake of 1,000 mg over an 8-week median duration. The hypercholesterolemia group had an overall effect size of  $-17.2$  mg/dL, which was statistically significant.

Although the decrease in cholesterol was not large in the hypercholesterolemia group, some studies have shown that even a drop of 20 mg/dL in total serum cholesterol can reduce the incidence of heart disease by 10%-12%, Mr. McRae said.

The results indicate that supplementation with at least 500 mg of vitamin C daily for at least 8 weeks can moderately reduce total serum cholesterol for those with hypercholesterolemia, he said. ■

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