

Vitamin C / Atherosclerosis scare

Early in March, devotees of nutritional medicine were stunned by wide circulation in the media of a press release suggesting that modest supplementary doses of vitamin C were implicated in rapid acceleration of atherosclerosis based on a study presented at the American Heart Association annual meeting. The study performed at the University of Southern California medical school assessed the effects of modest supplementation of vitamin C in smokers versus non-smokers. It purported to show that “thickening” of the carotid artery walls was markedly increased [by a factor of 1.5 in non-smokers and up to five fold in smokers] via supplemental doses of as little as 500mg of vitamin C daily. These results were seen in an astonishingly short period—the study duration was just 18 months.

Within hours of the presentation’s debut from the podium of the AHA meeting, its results were trumpeted in the media, giving millions of routine vitamin C takers cause for alarm. Foes of nutritional supplementation in the ranks of orthodox medicine exulted, claiming instant vindication. “Spin doctors” breathlessly proclaimed to the media that people with cardiovascular disease should immediately curtail their use of vitamin C. On my popular nighttime and weekend radio show, Health Talk (WOR 710 AM), numerous concerned callers pleaded for clarification.

What are the emerging facts behind this most recent scare? First, the manner of dissemination of this story is a case study in sound-bite journalism and is clearly not balanced science. The tenets of legitimate medical investigation require that a theory be first presented in a published paper in a peer-reviewed scientific journal, not leaked to reporters via press release. Once medical professionals have access to a published paper, they have an opportunity to study its methods and challenge its conclusions. For example, in this study, how were study participants polled as to their vitamin C usage? Did they take any other supplements? By what method was arterial “thickening” measured? And how can it be inferred that arterial changes seen in this study are precursors to blood vessel obstruction or stroke? These and other questions are impossible to answer, because the truth of the matter is that nobody has seen the study that is creating all this ruckus! It hasn’t even been accepted for publication yet, so details remain inaccessible to anyone with legitimate questions as to the study’s validity.

While additional clarification awaits the study’s publication (whenever that will be!) these facts have emerged as a result of contact between Owen R. Fonorow of the Vitamin C Foundation and Professor James Dwyer of USC, one of the principal researchers.

1) The study demonstrates no evidence of occlusion (or clogging) contrary to media reports. The USC team used a new, sensitive method of carotid ultrasound that measures three factors: 1. arterial thickening; 2. degree of plaque or atherosclerosis; and 3. blood flow. While there was evidence of thickening, there was no evidence of plaque or diminished blood flow velocity.

2) The clinical implications of “thickening” of the arterial wall are unclear. The sensitive technique of carotid ultrasound used in this study is brand-new, and researchers haven’t yet concluded that the tiny changes measured are indicative of eventual stroke risk. An equally plausible explanation of the thickening seen can be inferred from vitamin C’s known role as a collagen repair nutrient. Elderly patients with fragile, thinned blood vessel walls might well benefit from the effect.

3) Last year, the same USC research team (Dwyer, et al) wrote a paper with opposite findings, casting doubt on the new study’s conclusions. Additionally, the new

vitamin C paper doesn't make sense and flies in the face of much of what we already know about vitamin C's protective role against cardiovascular disease. Recently, studies have shown that vitamin C, when infused directly into the arteries, promotes relaxation of the blood vessel walls facilitating blood flow. We know that vitamin C is an important member of the antioxidant team, counteracting free radicals that are acknowledged to be culprits in promoting blood vessel disease, especially in at-risk populations such as smokers. A recent paper by Simon in Epidemiology (August 1998) showed that for each 0.5 mg. per deciliter increase in blood levels of ascorbic acid (C) there was an 11 percent reduction in coronary heart disease and stroke reduction in a group of more than 6,000 U.S. men and women. Compared to individuals with low or marginal levels of C, there was a 27 percent reduction in heart disease and a 26 percent reduction in stroke in the group with the highest blood levels of vitamin C. No wonder the Nobel Laureate Dr. Linus Pauling made vitamin C the cornerstone of his cardiovascular disease prevention program, personally taking up to 20 grams a day until his death at age of 92. The additional details are emerging on the vitamin C story, but I'm sure that the ultimate conclusions will only fortify our confidence in nutritional supplementation as the basis for a rational heart disease and stroke prevention strategy.

For more information, visit the [Vitamin C Foundation](#).