

# SOUTHWESTERN NEWS

Contact: Bridgette Rose McNeill  
(214) 648-3404  
or e-mail: bmcnei@mednet.swmed.edu

## SYNTHETIC VITAMIN E AND NATURAL VITAMIN E ARE EQUALLY POWERFUL ANTIOXIDANTS

DALLAS – October 17, 1997 – Synthetic vitamin E works as well as natural vitamin E in preventing heart disease, according to a clinical trial at UT Southwestern Medical Center at Dallas.

Animal tests have indicated that natural alpha tocopherol - the most active form of vitamin E - is more potent than the synthetic version of the vitamin. Natural alpha tocopherol is absorbed better in the bloodstream, leading to levels 1.5 times higher than with synthetic doses.

"We wanted to see if this held true in humans," said Dr. Ishwarlal Jialal, a senior investigator in The Center for Human Nutrition at UT Southwestern and the study's principal investigator.

A dose-response comparison of natural and synthetic vitamin E at equivalent doses in humans found no significant difference in the amount of vitamin E present in plasma or in low-density lipoproteins (LDL). Also, there was no difference in their abilities to inhibit the oxidation of LDL, the so-called "bad" cholesterol. LDL oxidation is believed to be the first step in development of atherosclerosis, or hardening of the arteries.

The findings were reported in the October issue of the American Heart Association Journal, *Arteriosclerosis, Thrombosis, and Vascular Biology*. The study was coordinated by Sridevi Devaraj, a research fellow in pathology.

"This is an important observation for patients on vitamin E," said Dr. Jialal. "A previous study from (the University of) Cambridge, England, showed that vitamin E at doses of 400 and 800 international units (IUs) a day reduced heart attacks by 77 percent in

(MORE)

## SYNTHETIC VITAMIN E – 2

patients with heart disease."

Only one previous study in humans had directly compared natural and synthetic vitamin E. A University of California, San Diego, School of Medicine study detected no differences between a 1,600 IU dose of natural or synthetic vitamin E in patients with high cholesterol.

"Such a large dose may have inundated the physiological system, negating any differences that might have been seen with lower doses," said Jialal, who is also a professor of pathology and internal medicine.

In a randomized, placebo-controlled study of 79 healthy patients, Jialal and colleagues tested doses of 100, 200, 400, and 800 IUs of natural and synthetic vitamin E for eight weeks.

There was significantly less oxidation of LDL in the groups that received 400 or 800 IUs of natural or synthetic vitamin E. There was no significant change in the groups that received a placebo, 100 or 200 IUs of either form of the vitamin.

The results also confirmed earlier work by Jialal, who had found that a minimum dose of 400 IUs of vitamin E is necessary to induce the antioxidant effect.

"In heart patients taking a minimum daily dose of 400 IUs of vitamin E, it doesn't appear to matter if it's natural or synthetic," he said.

None of the subjects reported adverse effects from supplementation with either the natural or synthetic form.

Also contributing to the study were Beverly Adams-Huet, a biostatistician in the General Clinical Research Center at UT Southwestern, and Cindy Fuller, now an assistant professor at the University of North Carolina at Greensboro.

The research was funded by grants from Henkel Corp. and the National Institutes of Health.

###

This news release is available on our World Wide Web home page at  
<http://www.swmed.edu/news/newspubs.htm/>