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# Vitamin E May Shorten Life

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Vitamin E hasn't proven to be good for the heart, and now a study suggests that too much vitamin E — daily doses of 400 IU or more — actually increases the risk of dying, according to new findings.

Johns Hopkins University researcher Edgar R. Miller III, MD, PhD, an associate professor of medicine, tells WebMD that when he combined 19 vitamin E studies that looked at almost 136,000 patients, "it was clear that as the vitamin E dose increased, so does all-cause mortality."

He says the risk of death starts to increase at 150 IU, but at 400 IU, which is the typical dose available in vitamin E capsules, the risk of dying from any cause is about 10 percent higher than for people not taking the vitamin. At megadoses, such as 2,000 IU of vitamin E, the risk increased more than 20 percent.

"Based on our findings, high-dose vitamin E supplementation is unjustified," he says. Vitamins, he notes, are not regulated by the FDA or other agencies, but a report in 2000 by the Institute of Medicine recommended 1,000 IU per day as the "upper tolerable limit" for vitamin E. "We recommend that the upper tolerable limit be lowered to 400 IU per day," he says. Adults get about 10 IU of vitamin E from diet, he says.

Miller presented his findings at the American Heart Association's Scientific Sessions 2004, and the study was simultaneously released online by the Annals of Internal Medicine.

## 'Don't Take' Vitamin E Supplements

"This is the most important story from this meeting," Raymond Gibbons, MD, a professor of medicine at the Mayo Clinic in Rochester, Minn., tells WebMD. Gibbons, who served as chairman of the scientific program committee at the meeting, says he has been urging his patients to stop taking vitamin E for years.

He also says heart disease prevention guidelines say "vitamin E is 'not recommended.' It doesn't get clearer than that — don't take it."

Studies of vitamin E supplements in people with heart disease have not shown that vitamin E is effective in preventing heart attacks or deaths.

His voice rising as he describes his frustration with patients that "don't take drugs that we know work, yet take a supplement because they heard about it on the radio or because a neighbor recommended it," Gibbons says he hopes this latest report will finally debunk the vitamin E myth.

That is unlikely, judging from the response from the trade group that lobbies for the supplement industry. Annette Dickinson, PhD, president of the Council for Responsible Nutrition, tells WebMD, "Eighteen of the 19 studies in the analysis showed no statistically significant increase in total mortality. I believe he pooled the data to arrive at a conclusion that is based on a statistical artifact."

Asked to comment on that criticism, Gibbons says, "That is just flat-out wrong. In the British Heart Protection Study, the patients taking vitamin E ended up on the wrong side of the survival line. It was not a statistical glitch; it was a clear indication of increased mortality."

The study cited by Gibbons, which also studied the benefit of cholesterol-lowering drugs, randomly assigned more than 10,000 patients to take 660 IU of vitamin E daily and more than 10,000 to take a placebo. In those taking vitamin E, there was about a 10 percent increase in death rate.

Moreover, Dickinson says all the people in the 19 studies were "already sick. They had heart disease or cancer or Alzheimer's disease. The definitive study to test vitamin E in a healthy population has not been done."

Again, Gibbons took exception with this statement. "There's no question that the British Heart Protection study was done in patients with known or presumed heart disease. However, the potential benefit [of a drug] is usually greater in those with the greatest risk. Aspirin is the prime example. Daily aspirin in people with heart disease reduces the risk of heart attack. No ifs, ands, or buts — risk is reduced. But if you look at primary prevention with aspirin — giving aspirin to people with no heart disease — the results are mixed, and low-risk individuals shouldn't be taking daily aspirin."

## Doctors Used To Recommend Vitamin E

The news about vitamin E will be surprising to many people because the vitamin was so widely touted for its ability to reduce the risk of heart disease, says Miller. At one point, doctors used to recommend that patients take vitamin E.

The driving force behind the rise in popularity of vitamin E was reports from observational studies showing that people who took vitamin E had fewer heart attacks and strokes.

The evidence for vitamin E benefit, says Miller, was very much like the "evidence" that postmenopausal women taking hormone replacement therapy had less heart disease — and just like estrogen, when put to rigorous scientific testing, the benefit disappeared.

"But there was a general sense that though vitamin E didn't prevent heart disease, it didn't do any harm either," says Miller. In fact, three earlier meta-analyses reported that "vitamin E had no effect — good or bad — on survival," says Miller. Yet a handful of studies of high-dose vitamin E reported increases in mortality, although the increases were not statistically significant.

"Individual studies usually test only one or two doses, and we suspected that there might be a dose response between mortality risk and vitamin E, which is why we did this [study] that includes doses as low at 16.5 IU all the way up to 2,000 IU a day," Miller says.

He says there are several theories about why vitamin E increases risk. One theory is that it increases bleeding risk, which would increase the risk of a type of stroke, while another theory suggests that at high doses vitamin E stops working like an antioxidant, removing harmful molecules in the body, and instead becomes a pro-oxidant, actually promoting the production of harmful molecules.

Still another scenario suggests that high doses of vitamin E tend to wipe out other antioxidants, which disrupts the body's natural antioxidant protection system.

Yet, even without a clear explanation of how vitamin E could increase mortality, Miller says the take-home message is clear: Don't take home vitamin E.

**Sources:** *American Heart Association Scientific Sessions 2004, New Orleans, Nov. 7-10, 2004. Miller, E. Annals of Internal Medicine online edition. Edgar R. Miller III, MD, PhD, associate professor of medicine, Johns Hopkins University. Raymond Gibbons, MD, professor of medicine, Mayo Clinic, Rochester, Minn. Annette Dickinson, PhD, president, Council for Responsible Nutrition.*

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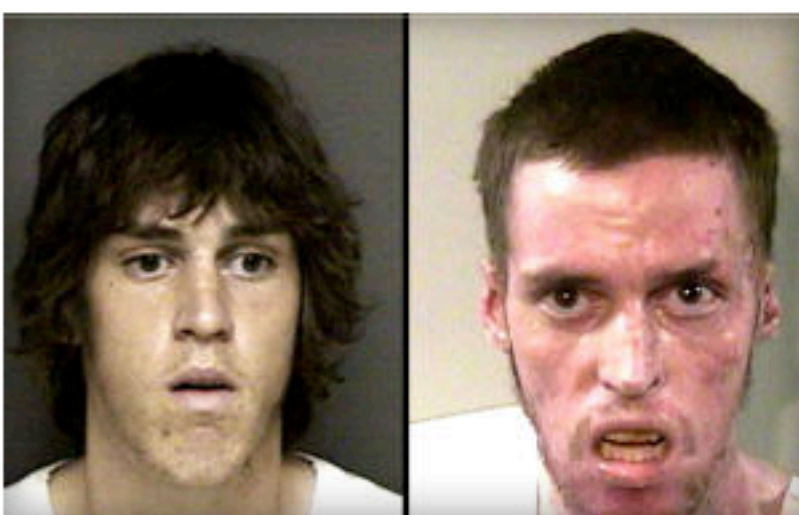
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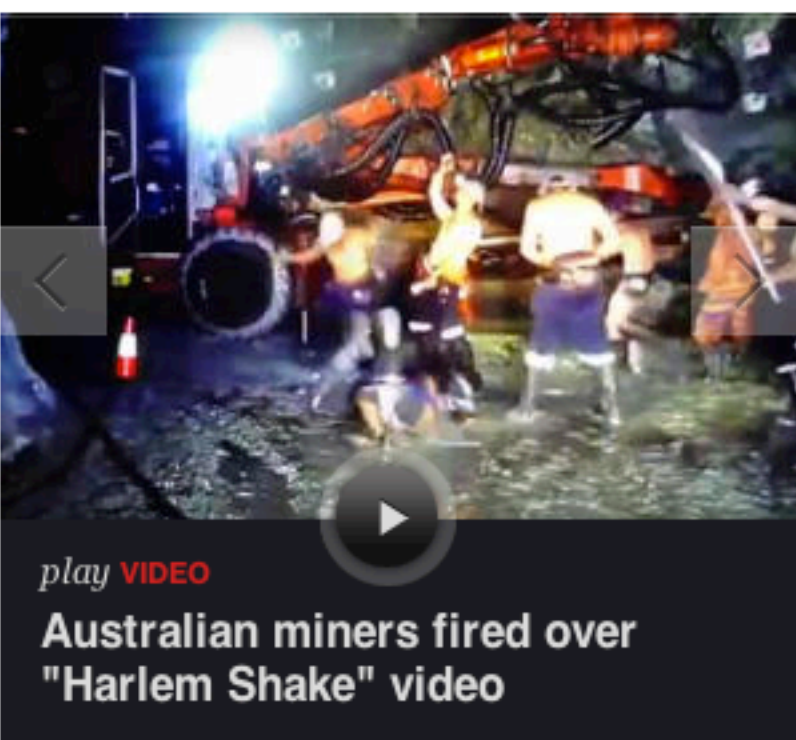
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