

# Analysis of antioxidant pills' benefits may be hard to swallow

## New report suggests there aren't any, but methodology is under scrutiny

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USA TODAY

In a finding already generating controversy in the supplement industry, a large analysis of studies involving almost a quarter of a million people worldwide has found that popular antioxidant pills such as vitamins A, C and E and beta carotene don't appear to have any health benefits.

One part of the analysis even suggests vitamins A and E and beta carotene in pill form actually appear to increase death rates.

The analysis, published in today's *Journal of the American Medical*

*Association*, found that the risk of death increased 7% for people who took beta carotene, 16% for those who took vitamin A and 4% for those who took vitamin E.

"The results ... were shocking to us; we didn't expect this," says Christian Gluud of the Copenhagen Trial Unit, a non-profit center for clinical research in Denmark.

The researchers performed a meta-analysis, combing findings from 68 randomized trials from 1977 to 2005 involving 232,606 people who took a wide variety of supplement doses. The technique requires careful weighing and analysis of the results of a large number of studies designed and

carried out in different ways. The researchers divided the studies into two groups: those that were well designed (low-bias) and those they believed were not well designed (high-bias) and so not as reliable. A large proportion of the high-bias studies were financed by the supplement industry, Gluud says.

But Balz Frei, a biochemist who studies antioxidants at Linus Pauling Institute at Oregon State University in Corvallis, says Gluud's technique inherently was biased against antioxidants. "The high-bias papers show a 9% decrease in deaths, and the low-bias papers find a 5% increase. The scientific way would have been to include all the studies they reviewed."

However, David Schardt, a nutritionist with consumer group Center for Science in the Public Interest, says making those distinctions is

well accepted in this kind of statistical research. Though the death rates overall were 5%, what's more interesting is that the study didn't find any dramatic positive effects: "If people were really living longer because they were taking antioxidants, you would have seen it."

Jeffrey Blumberg, head of an antioxidant research lab at Tufts University, says he doesn't understand how antioxidants given in pill form can be harmful when excellent evidence shows that a diet rich in foods containing antioxidants is healthful. And antioxidants may not increase life span, but rodent studies have shown they do increase "the health span."

Gluud says the bottom line is people need to eat a varied diet, exercise and not overdo anything: "The moment we think we can buy longevity, we are fooled."

### About the research

**Q: Why did this study come up with findings that are so different from what we've come to believe?**

**A:** It's a meta-analysis — not a study — of 68 randomized trials. Using statistically rigorous methods, meta-analyses are supposed to tease out details from a broad range of studies that might not be readily apparent in any individual study.

**Q: Why is it controversial?**

**A:** Meta-analyses are always potentially controversial because the researchers have to make so many decisions about what data to include and how to weigh it. Critics of this analysis say the researchers were biased in which studies they gave the most weight to and which they considered less reliable.

**Q: Aside from the controversy, what is the take-home message here?**

**A:** Lead researcher Christian Gluud says it's this: Eat a varied diet with lots of vegetables, fruits and whole grains, get exercise and lead a balanced life. Pills can't make up for unhealthful living. "We need very good evidence before advising anyone to put anything in their mouth," he says.