

Certain dietary supplements associated with increased risk of death in older women

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Consuming dietary supplements, including multivitamins, folic acid, iron and copper, among others, appears to be associated with an increased risk of death in older women, according to a report in the October 10 issue of *Archives of Internal Medicine*, one of the JAMA/Archives journals. The article is part of the journal's *Less Is More* series.

The use of dietary supplements in the United States has increased considerably over the last decade, according to background information in the article. "At the [population level](#), dietary supplements contributed substantially to the total intake of several nutrients, particularly in [elderly individuals](#)," the authors write.

Jaakko Mursu, Ph.D., of the University of Eastern Finland, Kuopio, Finland, and the University of Minnesota, Minneapolis, and colleagues used data collected during the Iowa Women's Health Study to examine the association between vitamin and mineral supplements and mortality (death) rate among 38,772 older women (average age 61.6 years). Supplement use was self-reported in 1986, 1997 and 2004 via questionnaires.

Among the 38,772 women who started follow-up with the first survey in 1986, 15,594 deaths (40.2 percent) occurred over an average follow-up time of 19 years. Self-reported supplement use increased substantially between 1986 and 2004, with 62.7 percent of women reporting use of at least one supplement daily in 1986, 75.1 percent in 1997 and 85.1 percent in 2004.

The authors found that use of most supplements was not associated with reduced total mortality in older women, and many supplements appeared associated with increased mortality risk. After adjustment, use of multivitamins, [vitamin B6](#), folic acid, iron, magnesium, zinc and copper, were all associated with increased risk of death in the study population. Conversely, [calcium supplements](#) appear to reduce risk of mortality. The association between supplement intake and [mortality risk](#) was strongest with iron, and the authors found a dose-response relationship as [increased risk](#) of mortality was seen at progressively lower doses as women aged throughout the study.

Findings for both iron and calcium supplements were replicated in separate, short-term analyses with follow-up occurring at four years, six years and 10 years.

"Based on existing evidence, we see little justification for the general and widespread use of dietary supplements," the authors conclude. "We recommend that they be used with strong medically based cause, such as symptomatic nutrient deficiency disease."

In an invited commentary, Goran Bjelakovic, M.D., D.M.Sc., of the University of Nis, Nis, Serbia, and Christian Gluud, M.D., D.M.Sc., of Copenhagen University Hospital, Copenhagen, Denmark, discuss the findings of Mursu and colleagues saying they "add to the growing evidence demonstrating that certain antioxidant supplements, such as vitamin E, vitamin A, and beta-carotene, can be harmful."

"Dietary supplementation has shifted from preventing deficiency to trying to promote wellness and prevent disease," the authors write. "Until recently, the available data regarding the adverse effects of [dietary supplements](#) has been limited and grossly underreported. We think the paradigm 'the more the better' is wrong. One should consider the likely U-shaped relationship between micronutrient status and health."

"We cannot recommend the use of vitamin and mineral supplements as a preventive measure, at least not in a well-nourished population," the authors conclude. "[Older women](#) (and perhaps men) may benefit from intake of vitamin D3 supplements, especially if they have insufficient vitamin D supply from the sun and from their diet. The issue of whether to use calcium supplements may require further study."

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