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For Vitamin and Mineral Supplementation, Less Is More

Multivitamins, particularly those containing iron or copper, might raise risk for death.

In the U.S., few individuals face nutritional deficiencies, yet dietary supplements are a multibillion-dollar industry. To explore the relation between older women's use of dietary supplements and mortality, researchers analyzed data on supplement use collected between 1986 and 2008 from 38,772 participants in the Iowa Women's Health Study (mean age at baseline, 62). Deaths were ascertained annually using state and national death registries. Analyses were adjusted for more than 10 potential confounders including age and alcohol intake.

Self-reported use of at least one dietary supplement daily rose from 63% in 1986 to 85% in 2004 (mean follow-up, 19 years). However, with the exception of calcium, supplement use was not associated with lower risk for cancer-related, cardiovascular, or all-cause death. Rather, several supplements were associated with significantly higher risk for death — most notably, iron (with a strong, dose-dependent association) and copper.

Comment: The authors' finding about calcium must be taken in context: Other studies have shown that use of calcium supplements can raise risk for cardiovascular disease — but, unlike those studies, this one did not include adjustment for use of low-dose aspirin ([JW Gen Med Aug 31 2010](http://general-medicine.jwatch.org/cgi/content/full/2010/831/1) (Link to: <http://general-medicine.jwatch.org/cgi/content/full/2010/831/1>) and [JW Gen Med May 12 2011](http://general-medicine.jwatch.org/cgi/content/full/2011/512/1) (Link to: <http://general-medicine.jwatch.org/cgi/content/full/2011/512/1>)). Reverse causation must be considered as a possible explanation for the findings that show potential harms of multivitamins and supplements, as people with failing health might be more likely to use dietary supplements. Nonetheless, caution regarding use of dietary supplements by well-nourished individuals seems warranted and makes biological sense. Unintentional ingestion of multivitamins is a common cause of poisoning (particularly in children). The body has no way to excrete iron or copper, which are both hepatotoxic at high levels. Thus, clinicians should advise most Americans to focus on eating healthy diets and reserving use of dietary supplements for symptomatic nutrient deficiency.

— **Eleanor Bimla Schwarz, MD, MS** (Link to: http://womens-health.jwatch.org/misc/board_about.dtl#aSchwarz)

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[Original article](#) (Link to: [/cgi/ijlink?linkType=FULL&journalCode=archinte&resid=171/18/1625](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181625/)) (Subscription may be required)

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