Why is this important?

Americans spend an estimated $11.8 billion each year on vitamin and mineral supplements. This is a systematic review of fair and good quality randomized trials and observational studies of vitamin and mineral supplements either alone or in combination in adults without known nutritional deficiencies.

Facts

A systematic review of twenty-four clinical trials and two cohort studies of vitamin supplementation involving hundreds of thousands of people, many followed for more than 10 years, found the following:

Multivitamins (≥ 3 minerals or vitamins) showed

- No reduction in mortality or the development of cardiovascular disease (CVD)
- A possible borderline reduction in the development of cancer in men, but not in women
- No observed harm

B-carotene

- No reduction in mortality or the development of CVD
- A small increase in the development of lung cancer in smokers and asbestos workers.

Vitamin E

- No reduction in mortality, or the development of CVD or cancer
- No observed harm

Vitamins C and D, calcium and selenium

- No reduction in mortality, or the development of CVD or cancer
- No observed harm

Vitamin D + calcium

- No reduction in mortality, or the development of CVD or cancer
- No observed harm

The Bottom Line

Vitamin and mineral supplements have not been shown to reduce cardiovascular disease or mortality in older adults without known nutritional deficiencies. A multivitamin supplement was associated with a small reduction in the incidence of cancer, but without a mortality benefit, and in men only. B-carotene supplementation is associated with an increased risk of lung cancer and a possible small increase in all-cause mortality in people with substantial exposure to cigarette smoke or inhaled asbestos.
Strength of Evidence

(Adapted from Guyatt G BMJ, 26 April 2008)
This refers to the degree to which the findings of this study are likely to be free of bias.

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Tips for Discussion of Results with Patients

- The United States Preventive Services Task Force (USPSTF) found insufficient evidence to recommend the use of vitamin or mineral supplements to prevent CVD or cancer.
- Based on strong evidence the USPSTF recommends against the use of B-carotene or vitamin E supplementation for the prevention of CVD or cancer because of potential for harm.

References


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The Bottom Line summaries reflect the expertise and opinions of the SGIM EBM Task Force as of the date of release of this summary.

THE BOTTOM LINE: Vitamin and mineral supplements have not been shown to reduce cardiovascular disease, cancer or mortality in older adults without known nutritional deficiencies.