

# U.S. Preventive Services Task Force

## Vitamin, Mineral, and Multivitamin Supplementation to Prevent Cardiovascular Disease and Cancer

### VITAMIN, MINERAL, AND MULTIVITAMIN SUPPLEMENTATION TO PREVENT CARDIOVASCULAR DISEASE AND CANCER: CLINICAL SUMMARY OF THE USPSTF RECOMMENDATION

#### What does the USPSTF recommend?

The USPSTF recommends against the use of beta carotene or vitamin E supplements for the prevention of cardiovascular disease or cancer.

#### Grade: D

The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the use of multivitamin supplements, or single or paired nutrient supplements (other than beta carotene and vitamin E), for the prevention of cardiovascular disease or cancer.

#### Grade: I statement

#### To whom does the recommendation apply?

- This recommendation applies to community-dwelling, nonpregnant adults. It does not apply to children, persons who are pregnant or may become pregnant, or persons who are chronically ill, are hospitalized, or have a known nutritional deficiency.
- The USPSTF separately recommends that all persons who are planning or capable of pregnancy take a daily supplement containing 0.4 to 0.8 mg (400 to 800 µg) of folic acid.

#### What's new?

This recommendation is consistent with the 2014 USPSTF recommendation statement on vitamin, mineral, and multivitamin supplements to prevent cardiovascular disease and cancer.

#### How to implement this recommendation?

- Do not use beta carotene or vitamin E supplements to prevent cardiovascular disease or cancer.
- The evidence is insufficient to recommend for or against the use of multivitamin supplements, or single- or paired-nutrient supplements (other than beta carotene and vitamin E), to prevent cardiovascular disease or cancer. Clinicians should use their clinical judgment to determine whether or not vitamin supplements should be recommended for an individual patient.

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**Note:** The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision-making to the specific patient or situation.

USPSTF = U.S. Preventive Services Task Force.

See related Putting Prevention Into Practice in the print version of this issue.

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This series is coordinated by Joanna Drowos, DO, contributing editor.

A collection of USPSTF recommendation statements published in *AFP* is available at <https://www.aafp.org/afp/uspstf>.

The full recommendation statement is available at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/vitamin-supplementation-to-prevent-cvd-and-cancer-preventive-medication>.

The USPSTF recommendations are independent of the U.S. government. They do not represent the views of the Agency for Healthcare Research and Quality, the U.S. Department of Health and Human Services, or the U.S. Public Health Service.

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### What additional information should clinicians know about this recommendation?

- For many vitamins and nutrients, there was little evidence of serious harms. However, an important harm of increased lung cancer incidence was reported with the use of beta carotene by persons who smoke tobacco or have occupational exposure to asbestos.
- Excessive doses of vitamin supplements can cause adverse effects.
- It is uncertain whether there might be heterogeneity across populations or by baseline nutrient level, or by socioeconomic factors such as food insecurity, in the effects of vitamin, mineral, and multivitamin supplementation on cardiovascular disease and cancer outcomes.

### Why is this recommendation and topic important?

- Cardiovascular disease and cancer are the 2 leading causes of mortality in the United States.
- In 2015-2018, 26.1 million persons in the United States had some form of cardiovascular disease (excluding hypertension), and in 2021 an estimated 1.9 million persons were diagnosed with cancer in the United States.
- According to National Health and Nutrition Examination Survey data, more than half of surveyed U.S. adults reported using at least 1 dietary supplement in the prior 30 days.

### Where to read the full recommendation statement?

Visit the USPSTF website or the JAMA Network website (<https://jamanetwork.com/collections/44068/united-states-preventive-services-task-force>) to read the full recommendation statement. This includes more details on the rationale of the recommendation, including benefits and harms; supporting evidence; and recommendations of others.

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