

PREVENTION

Multivitamins do not reduce the risk of cardiovascular disease

More than one in three US residents take multivitamin supplements, and approximately \$5 billion is spent on vitamins in the USA alone. The findings from the largest randomized, double-blind, placebo-controlled study to date on the impact of multivitamins for the prevention of chronic diseases were reported at the AHA 2012 Scientific Sessions. Daily multivitamin intake did not reduce the risk of major cardiovascular events, including nonfatal myocardial infarction, nonfatal stroke, and cardiovascular mortality.

The Physicians' Health Study II (PHS II) researchers assigned 14,641 male physicians aged ≥ 50 years to receive either a multivitamin or placebo. The median follow-up time was 11.2 years. Members of the PHS II cohort were predominantly white nonsmokers who exercised frequently and had a higher income than the average US resident. Multivitamin supplementation in individuals with healthy eating habits is not likely to reduce the risk of cardiovascular disease

(CVD), but supplementation has a role in individuals with vitamin deficiencies owing to poor dietary habits. However, multivitamin use did reduce incident cancers in the study population.

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“The decision to take a multivitamin should be based upon the need to correct a nutritional deficiency or on non-CVD benefits,” says Dr Sidney Smith Jr, president of the World Heart Federation, who was not involved in the study. “80% of mortality from CVD occurs in countries with developing economies. These populations are most likely to have nutritional deficiencies.”

Notably, women were not included in the PHS II study. Sex-related differences have been observed in the effectiveness of aspirin for CVD risk reduction. Differences might, therefore, also exist in the effectiveness of multivitamin use.

Multivitamin use in the absence of a solid evidence base for the practice presents two problems. Firstly, multivitamin use is associated with a substantial financial burden. More importantly, taking multivitamins might distract from evidence-based medical strategies to prevent CVD, such as smoking cessation and taking regular exercise.

The PHS II investigators will “continue follow-up of our dedicated physician participants so we can understand the long-term effects of multivitamin use,” says lead author Dr Howard Sesso. “This is especially important since the PHS II is the only randomized clinical trial [on multivitamin use] that has been conducted to date, and has found a modest but significant reduction in cancer.”

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Original article Sesso, H. D. *et al.* Multivitamins in the prevention of cardiovascular disease in men. *JAMA* 308, 1751–1760 (2012)