

# Abstract

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## Multivitamin use and risk of cancer and cardiovascular disease in the Women's Health Initiative cohorts.

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**BACKGROUND:** Millions of postmenopausal women use multivitamins, often believing that supplements prevent chronic diseases such as cancer and cardiovascular disease (CVD). Therefore, we decided to examine associations between multivitamin use and risk of cancer, CVD, and mortality in postmenopausal women.

**METHODS:** The study included 161 808 participants from the Women's Health Initiative clinical trials (N = 68 132 in 3 overlapping trials of hormone therapy, dietary modification, and calcium and vitamin D supplements) or an observational study (N = 93 676). Detailed data were collected on multivitamin use at baseline and follow-up time points. Study enrollment occurred between 1993 and 1998; the women were followed up for a median of 8.0 years in the clinical trials and 7.9 years in the observational study. Disease end points were collected through 2005. We documented cancers of the breast (invasive), colon/rectum, endometrium, kidney, bladder, stomach, ovary, and lung; CVD (myocardial infarction, stroke, and venous thromboembolism); and total mortality.

**RESULTS:** A total of 41.5% of the participants used multivitamins. After a median of 8.0 years of follow-up in the clinical trial cohort and 7.9 years in the observational study cohort, 9619 cases of breast, colorectal, endometrial, renal, bladder, stomach, lung, or ovarian cancer; 8751 CVD events; and 9865 deaths were reported. Multivariate-adjusted analyses revealed no association of multivitamin use with risk of cancer (hazard ratio [HR], 0.98, and 95% confidence interval [CI], 0.91-1.05 for breast cancer; HR, 0.99, and 95% CI, 0.88-1.11 for colorectal cancer; HR, 1.05, and 95% CI, 0.90-1.21 for endometrial cancer; HR, 1.0, and 95% CI, 0.88-1.13 for lung cancer; and HR, 1.07, and 95% CI, 0.88-1.29 for ovarian cancer); CVD (HR, 0.96, and 95% CI, 0.89-1.03 for myocardial infarction; HR, 0.99, and 95% CI, 0.91-1.07 for stroke; and HR, 1.05, and 95% CI, 0.85-1.29 for venous thromboembolism); or mortality (HR, 1.02, and 95% CI, 0.97-1.07).

**CONCLUSION:** After a median follow-up of 8.0 and 7.9 years in the clinical trial and observational study cohorts, respectively, the Women's Health Initiative study provided convincing evidence that multivitamin use has little or no influence on the risk of common cancers, CVD, or total mortality in postmenopausal women.

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