

# Abstract

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## Multivitamin use and risk of prostate cancer in the National Institutes of Health-AARP Diet and Health Study.

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**BACKGROUND:** Multivitamin supplements are used by millions of Americans because of their potential health benefits, but the relationship between multivitamin use and prostate cancer is unclear.

**METHODS:** We prospectively investigated the association between multivitamin use and risk of prostate cancer (localized, advanced, and fatal) in 295,344 men enrolled in the National Institutes of Health (NIH)-AARP Diet and Health Study who were cancer free at enrollment in 1995 and 1996. During 5 years of follow-up, 10,241 participants were diagnosed with incident prostate cancer, including 8765 localized and 1476 advanced cancers. In a separate mortality analysis with 6 years of follow-up, 179 cases of fatal prostate cancer were ascertained. Multivitamin use was assessed at baseline as part of a self-administered, mailed food-frequency questionnaire. Relative risks (RRs) and 95% confidence intervals (CIs) were calculated by use of Cox proportional hazards regression, adjusted for established or suspected prostate cancer risk factors.

**RESULTS:** No association was observed between multivitamin use and risk of localized prostate cancer. However, we found an increased risk of advanced and fatal prostate cancers (RR = 1.32, 95% CI = 1.04 to 1.67 and RR = 1.98, 95% CI = 1.07 to 3.66, respectively) among men reporting excessive use of multivitamins (more than seven times per week) when compared with never users. The incidence rates per 100,000 person-years for advanced and fatal prostate cancers for those who took a multivitamin more than seven times per week were 143.8 and 18.9, respectively, compared with 113.4 and 11.4 in never users. The positive associations with excessive multivitamin use were strongest in men with a family history of prostate cancer or who took individual micronutrient supplements, including selenium, beta-carotene, or zinc.

**CONCLUSION:** These results suggest that regular multivitamin use is not associated with the risk of early or localized prostate cancer. The possibility that men taking high levels of multivitamins along with other supplements have increased risk of advanced and fatal prostate cancers is of concern and merits further evaluation.

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