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ORIGINAL RESEARCH COMMUNICATION

# Fruit and vegetable consumption, intake of micronutrients, and benign prostatic hyperplasia in US men[1,2,3]

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Background: Nutrients with antioxidant properties or that influence cell growth and differentiation might reduce the risk of benign prostatic hyperplasia (BPH).

Objective: The objective was to evaluate the association of fruit, vegetable, and micronutrient intakes with BPH.

Design: The participants were members of the Health Professionals Follow-Up Study and were aged 46–81 y in 1992. In 1992 and biennially thereafter, the men reported having surgery for an enlarged prostate, and in 1992 and on 3 subsequent questionnaires they completed the American Urological Association symptom index (AUASI). BPH cases were men who reported having surgery or who had an AUASI score of 15–35 ($n$ = 6092). Control subjects were men who had not had surgery and never had an AUASI score >7 ($n$ = 18 373). Men with a score of 8–14 were excluded ($n$ = 7800). Intakes of fruit, vegetables, and antioxidants were assessed with a food-frequency questionnaire in 1986. We calculated odds ratios (ORs) of BPH and 95% CIs using logistic regression.

Results: Vegetable consumption was inversely associated with BPH (fifth compared with first quintile—OR: 0.89; 95% CI: 0.80, 0.99; $P$ for trend = 0.03), whereas fruit intake was not. Consumption of fruit and vegetables rich in ß-carotene ($P$ for trend = 0.004), lutein ($P$ for trend = 0.0004), or vitamin C ($P$ for trend = 0.05) was inversely related to BPH. With increasing vitamin C intake from foods, men were less likely to have BPH ($P$ for trend = 0.0009). Neither $\alpha$- nor $\gamma$-tocopherol intake from foods was associated with BPH ($P$ for trend = 0.05 and 0.84, respectively).

Conclusion: Our findings are consistent with the hypothesis that a diet rich in vegetables may reduce the occurrence of BPH.

Key Words: Benign prostatic hyperplasia • micronutrients • fruit • vegetables



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