

Abstract

Am J Clin Nutr. 2008 Dec;88(6):1567-75.

Plasma selenium concentration and prostate cancer risk: results from the European Prospective Investigation into Cancer and Nutrition (EPIC).

Allen NE, Appleby PN, Roddam AW, Tjønneland A, Johnsen NF, Overvad K, Boeing H, Weikert S, Kaaks R, Linseisen J, Trichopoulou A, Misirli G, Trichopoulos D, Sacerdote C, Grioni S, Palli D, Tumino R, Bueno-de-Mesquita HB, Kiemeny LA, Barricarte A, Larrañaga N, Sánchez MJ, Agudo A, Tormo MJ, Rodriguez L, Stattin P, Hallmans G, Bingham S, Khaw KT, Slimani N, Rinaldi S, Boffetta P, Riboli E, Key TJ; European Prospective Investigation into Cancer and Nutrition.

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BACKGROUND: Some evidence indicates that a low selenium intake may be associated with an increased risk of prostate cancer.

OBJECTIVE: The aim of this study was to investigate the association of plasma selenium concentration with subsequent prostate cancer risk and to examine this association by stage and grade of disease and other factors.

DESIGN: A nested case-control study was performed among men in the European Prospective Investigation into Cancer and Nutrition (EPIC). The association between plasma selenium concentration and prostate cancer risk was assessed in 959 men with incident prostate cancer and 1059 matched controls.

RESULTS: Overall, plasma selenium concentration was not associated with prostate cancer risk; the multivariate relative risk for men in the highest fifth of selenium concentration compared with the lowest fifth was 0.96 (95% CI: 0.70, 1.31; P for trend = 0.25). There were no significant differences in the association of plasma selenium with risk when analyzed by stage or grade of disease. Similarly, the association of selenium with risk did not differ by smoking status or by plasma alpha- or gamma-tocopherol concentration.

CONCLUSION: Plasma selenium concentration was not associated with prostate cancer risk in this large cohort of European men.

PMID: 19064517

