



Editorial

# Prostate: The Role of Diet, and Other Factors

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Prostate cancer is the most diagnosed solid tumor in U.S. men. It is associated with aging and occurs in a latent or in a clinical form in 30%-40% of men by age 30-50 years and increases to 75% in men by age 80. The cause of this disease is not well understood; however, certain factors are commonly linked to its development. These factors include genetic predisposition and exposure to androgens and other hormones, infectious agents, and environmental and dietary factors. [1] However, the nutrient deficiencies and excesses that are associated with it remain undetermined. Men with high blood folate levels were at greater risk of high-grade (more aggressive) prostate cancer compared with men with lower folate levels. Folate, a vitamin obtained from foods and supplements, is important for maintaining cell health. Men with higher blood folate levels are at greater risk of high-grade (more aggressive) prostate cancer compared with men with lower folate levels [2].

As for food products, chickpea sprouts were of high safety to non-neoplastic and prostate cells, with interesting cytotoxic effects on prostate DU145 cancer cells. No clear relationship was observed between the activity and isoflavone content. [3] Phosphorus is independently associated with the risk of lethal and high-grade prostate cancer. Calcium may not have a strong independent effect on prostate cancer risk except with long latency periods. [4] Recently, multiple modes of lycopene action in prostate cancer risk reduction were discussed. The inhibition of inflammation, local androgen signaling, multiple levels of antioxidant defense, and reduction of prostate epithelial cell proliferation, all contribute to improving prostate health. The increased consumption of lycopene-containing fruits, vegetables, and especially tomato products, may provide a measure of protection. [5] Vitamin E forms inhibit carcinogenesis. Patients had two capsules of a  $\gamma$ -T-rich vitamin E mixture daily for 7 or 14 days prior to prostatectomy. Their side-chain degradation metabolites (CEHCs and CMBHCs) were significantly elevated in plasma, prostate, and urine samples after supplementation for 7 or 14 days [6]. Further results showed that higher levels of alpha-tocopherol in the blood may be linked with a lower risk of advanced prostate cancer [7].

As for Selenium and selenoprotein P, studies showed that higher levels of these two biomarkers were associated with a lower risk of high-grade prostate disease [8]. Further analysis showed the interactive influence of supplemented selenium with demographic, lifestyle, genetic, and dietary factors, on prostate glandular architecture stability measured through serum PSA. Initial interim study analysis suggests that prostate tissue w-3 fatty acids, especially EPA, may be protective against prostate cancer progression in men with low-risk prostate cancer [9] Dietary fiber is inversely associated with advanced prostate cancer detected by subjective symptoms even among populations with relatively low intake, such as Japanese. These results suggest that a very low intake of dietary fiber is associated with an increased risk of prostate cancer [10]. There is evidence that vitamin D increases total and free testosterone levels, although the effect of testosterone levels within the normal range on prostate cancer progression is unclear [11].

In a three-week pre-prostatectomy intervention, 800 mg of quercetin supplementation combined with 1000 mg of green tea extract for 4 weeks did not result in a significant increase in Epigallocatechin gallate and epicatechin gallate concentrations or a decrease in methylated green tea polyphenols in prostate tissue as compared to men receiving placebo with green tea extracts [12].

In summary, some vitamins and dietary elements have a direct effect on the prostate. These should be taken into consideration when dealing with prostate pathology.

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