

# **Prevention Strategies/Emerging Trends and Issues**

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## **I. Prevention Strategies**

In looking at prevention strategies in terms of how development of prostate cancer can be prevented, one important thing to identify is not only how to prevent it but who is at risk for development. Again, prostate cancer is twice as common in African-American men compared to Caucasian men; there exists a higher mortality in African-Americans compared to Caucasian men once diagnosed; and men with a family history, particularly a first degree relative, have a significantly increased risk of diagnosis of prostate cancer. Maintenance of a healthy weight is important. Obesity is now linked to different pathology states or diseases, including prostate cancer. It has been shown that reduction of prostate cancer and decrease in progression of disease can be affected by maintenance of a healthy weight and weight loss. We have seen this in colon cancer, we have seen this in breast cancer, and we are now seeing it in prostate cancer.

Certain topics have arisen in the urology literature regarding particular mediations and vitamin supplementations which have shown some promise in terms of decreasing the risk of development of prostate cancer, and two trials are pertinent, the PCPT trial and the REDUCE trial. These trials looked at two medications called finasteride and dutasteride, medications which are used to shrink the prostate or help with BPH or urinary symptoms, but have been touted to help with the prevention of prostate cancer.

The PCPT trial looked at finasteride, which is a 5-alpha-reductase inhibitor, which is an enzyme that converts testosterone to DHT. It is the inhibitor that is believed to play a significant role in stopping the development of prostate cancer. The trial concluded that the prevalence of prostate cancer was actually reduced by about 25% in those randomized to finasteride versus placebo. The prevalence of Gleason 7-10 tumors was slightly higher in those patients who were actually taking finasteride versus the placebo group. The REDUCE trial looked at dutasteride, and researchers found a 23% relative reduction in prevention of lower grade prostate cancer tumors.

The SELECT trial was a very large trial with 35,000 male participants who were assigned randomly to four groups: selenium, vitamin E, or a combination. The study was stopped due to lack of effect, and follow-up showed no difference in cancer endpoints.

Statins have been shown to lower the risk of prostate cancer and its recurrence after radical prostatectomy. A large Finnish trial with 22,000 participants showed a 40% decrease in overall prostate cancer incidence in males using statins.

Vitamin D supplementation may help prevent prostate cancer; men living in northern latitudes with less sunlight actually have a higher prostate cancer mortality. Prostate cancer is more prevalence in older men where vitamin D deficiency is more common. The skin melanin in African-American men actually blocks ultraviolet radiation and can inhibit the activation of vitamin D. Prostate cancer cells have been found to express

some vitamin D receptors; several studies have actually shown antiproliferative effects of vitamin D on prostate cancer cell lines.

What can men do to prevent prostate cancer? Education, awareness, and understanding the risks are the primary factors. Diet and exercise can be manipulated, medications and vitamins can be used, but a man must educate himself, remain aware of the risks, and make an effort to understand his own personal risks for prostate cancer.