

# Nutrition Considerations for Patients With Prostate Cancer, Part 1

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Prostate cancer is the second leading cause of cancer death among men in developed countries. Once diagnosed, patients are faced with various medical treatment options, depending upon whether the cancer is localized to the prostate gland or has metastasized elsewhere. In addition to medical treatments, patients are often curious about dietary and nutritional supplements that may help control their disease, slow progression or prevent recurrence. These patients are inclined to request advice from their chiropractor and/or other holistic health care practitioners.

A significant number of experimental and clinical research studies suggest certain dietary practices and the use of specific nutritional supplements may be valuable in helping to prevent recurrence or progression of certain cancers, including that of the prostate. These measures are not to be used in place of recommended medical protocols but may provide complementary assistance and specific desirable biological effects.

## Basic Dietary Considerations

1. *Eat a Low Animal-Fat Diet* - Evidence suggests that the consumption of high-fat animal foods is linked to an increased risk of prostate cancer development and progression. It appears to be prudent to eat a low animal-fat diet.
2. *Don't Smoke* - Although studies do not directly link smoking with an increased risk of prostate cancer, smoking is associated with approximately 30 percent of all cancers and weakens immune function.
3. *Eat More Cruciferous Vegetables* - Cruciferous vegetables including broccoli, cauliflower, Brussels sprouts, cabbage, bok choy and turnips, contain indole-3-carbinol, a substance that helps the body detoxify cancer-causing agents (and other foreign compounds). They also have been shown to act in other ways to lower prostate cancer risk. Patients should consider consuming any combination of these vegetables on a daily basis.
4. *Avoid Alcohol* - After smoking, alcohol consumption is considered to be the second most important environmental cause of cancer, being associated with approximately 3 percent of all cases. Alcohol has been shown to promote cancer development by increasing free-radical damage, speeding up the delivery of cancer-causing agents into the cells (co-carcinogen role), weakening the immune system, overstimulating the release of certain hormones associated with cancer, reducing availability of folic acid (a B-vitamin required for normal DNA synthesis) and speeding up rates of cell division. Some studies link as few as three drinks per week with a significant increase in prostate cancer (e.g., the Harvard Alumni Study). Thus, restricting alcohol consumption is a strong consideration in prostate cancer prevention and management.
5. *Maintain Ideal Weight* - Studies indicate that being overweight increases the risk of certain cancers, especially reproductive cancers. Increased body fat tends to encourage the overproduction of hormones that are linked to the development and progression of certain cancers, which may include prostate cancer. It is therefore prudent to remain at or near one's

ideal body weight.

6. *Avoid Charred Foods and Pan-Fried Meats* - Charred foods and pan-fried meats contain heterocyclic amines that cause cancerous mutations in experimental and animal studies, and are strongly linked to increased risk of prostate cancer.
7. *Consume at Least Five Servings of Fruits and Vegetables Per Day* - Studies have shown that individuals who consume at least five servings of fruits and vegetables each day on average have half the cancer rates as those who consume fewer quantities of fruits and vegetables. Fruits and vegetables contain antioxidants, vitamins, minerals and a variety of phytonutrients that are important in warding off cancer.

#### General Supplement Considerations

1. *High-Potency Multivitamins and Minerals* - A number of vitamins, minerals and antioxidants have been shown to help suppress the growth of various forms of cancer and reduce the rate of cancer recurrence. A high-potency multivitamin and mineral provides your body with a strong head start in regard to the overall supplementation program that may be considered in these cases.
2. *Additional Vitamin E Succinate (2,000-3,000 IU per day)* - Experimental studies demonstrate that vitamin E succinate can help suppress the growth of various types of cancer by inhibiting cell division and enhancing programmed death of prostate cancer cells. Studies have shown that vitamin E succinate exhibits the most potent anti-cancer effects compared to all other forms of vitamin E.
3. *Additional Vitamin C (2,000-10,000 mg per day)* - Experimental studies demonstrate that vitamin C can help reduce the risk of recurrence for certain types of cancer by inhibiting the production of cancer-causing nitrosamines and boosting immune function.
4. *Additional Selenium (700-800 mcg per day)* - Experimental studies indicate that selenium can help suppress the growth of certain cancers by inhibiting the replication of cancer cells, inducing programmed death of cancer cells and boosting immune function. Studies on humans have shown that higher serum levels of selenium are associated with a significant reduction in prostate cancer incidence.
5. *Beta-carotene (50,000-90,000 IU per day)* -Beta-carotene can help reduce the recurrence of certain cancers because it acts as an anti-oxidant, immune-system modulator and enhances differentiation (increases the maturation) of many human cells. These effects are associated with the prevention of cancer and the reversal of some early-stage cancers and dysplasia (pre-cancerous states). High - dose beta-carotene supplementation should not be used by smokers or in the adjunctive management of lung cancer, based upon findings from two clinical trials.
6. *Coenzyme Q10 (150-300 mg per day)* - Experimental studies indicate that coenzyme Q10 may help reduce the recurrence of certain cancers because it acts as an antioxidant, immune-system modulator and exhibits tumor-suppressive effects. Taken in conjunction with other antioxidant supplements (vitamin E, vitamin C, selenium, beta-carotene), several studies have shown that daily supplementation with up to 390 mg of coenzyme Q10 may help reduce the risk of recurrence and progression of some cancers.
7. *Reishi Mushroom Extract (typically 250 mg, four times per day, standardized to 10-12.5 percent polysaccharide content)* - Animal cancer studies have shown a 50 percent tumor regression with reishi mushroom extract treatment. Some Japanese surgeons have used reishi mushroom extract to treat cancer patients. Significant antitumor and immuno-stimulation effects have been noted in many of these cases. Polysaccharides from reishi mushrooms and from other types of folk-medicinal fungi are patented in Japan for use as immuno-modulators. They are combined with chemo and radiotherapy and have demonstrated an ability to reduce side effects, increase treatment efficacy and accelerate recovery from disease. Studies from China have shown that

reishi mushroom extract potentiates the tumor-killing action of certain immune cells. Reishi mushroom extract is known to have other immunomodulating effects and antioxidant properties. Animal studies also show that the polysaccharide fraction of reishi mushrooms can induce apoptosis in certain cancer cells. These effects were primarily due to the increased secretion of antitumor cytokines (signaling agents) induced by reishi mushroom polysaccharides, namely TNF-alpha and IFN-gamma. Other studies show that the D-glucan polysaccharide fraction of reishi mushrooms can also inhibit replication of various human cancer cell lines.

8. *Astragalus* (500 mg, three times per day; 2:1 extract) - Experimental studies have shown that the active constituents in astragalus, primarily its triterpene glycosides and polysaccharide content, can modify immune function and increase the ability of immune cells to recognize and destroy cancer cells. A more detailed explanation of these activities includes the following: The active ingredients in astragalus have been shown to significantly increase the proliferation of lymphocytes, enhance interferon and interleukin-2 production and activity (two powerful signaling agents that enhance the effectiveness of immune cells), activate T-cell blastogenesis, increase T-cell cytotoxicity, enhance the secretion of the immune-modifying chemical known as tumor necrosis factor (TNF), enhance phagocytosis by immune cells and increase natural killer-cell cytotoxicity.

In human studies, astragalus has also been used to reduce the side effects of chemotherapy and radiation treatment. A large clinical study of 572 cancer patients demonstrated that astragalus supplementation was able to protect adrenal-cortical function during radiation and chemotherapy treatment. It also helped to greatly minimize bone marrow depression and gastrointestinal side effects such as nausea, vomiting and intestinal tract ulcerations.

In patients with very low white blood cell counts, as a side effect of drugs, radiation or chemotherapy, astragalus supplementation has been shown to help significantly increase the number of circulating white blood cells, helping to restore normal function of the immune system in these severely immuno-compromised patients.

9. *Chinese Skullcap* (150-200 mg per day) - Many experimental studies indicate that the baicalein flavonoid, found exclusively in Chinese skullcap, prevents and inhibits cancer growth via a number of direct and indirect physiological actions: Baicalein has been shown to inhibit the 12-lipoxygenase enzyme, which converts arachidonic acid into a hormone-like substance that is required for cancer cells to replicate. Studies demonstrate that by inhibiting the 12-lipoxygenase enzyme, baicalein has been shown to inhibit cancer cell proliferation and induces apoptosis (programmed cell death) of many different human cancer cells, including human prostate cancer cells. Experimental evidence suggests that in the presence of baicalein, various cancer cells can be prevented from multiplying and metastasizing to other tissues and that a primary mechanism through which this occurs is via the inhibition of 12-lipoxygenase enzyme activity.

Baicalein also has demonstrated an ability to slow or inhibit the replication rate of many different cancers under experimental conditions, which appears to be due to its ability to suppress the release of enzymes required for cancer cell division (protein tyrosine kinase activity and protein kinase-C activity).

Additionally, baicalein has been shown to inhibit the 5 alpha-reductase enzyme, which converts testosterone to dihydrotestosterone (DHT). DHT is strongly associated with the development of prostate enlargement (benign prostatic hyperplasia) and prostate cancer progression.

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