

Rationale For Prostate™

Although maladies of the female reproductive system such as breast cancer, PMS, and dysmenorrhea, as well as cervical and uterine cancers, have received considerable attention from the medical community and even the popular press, male reproductive problems have not. This is changing, however, with the media attention given to the impotence drug Viagra™, and the notoriety brought by public figures stricken with prostate cancer.

PROSTATE™

Nutrient Support Formula

W Y S O N G

PURPOSE:

A nutritional supplement designed to support the health of the prostate gland.

INGREDIENTS:

Natural Phytonutrient Extracts and Concentrates of Saw Palmetto, Pygeum africanum, Soy Isoflavones and Stinging Nettle Root; Zinc, L-Alanine, L-Glutamic Acid, Glycine, Dried Prostate (Bovine).

- Contains no additives -

DIRECTIONS:

Suggested Dosage: one capsule two times daily. Prostate™ is best assimilated if swallowed with meals. For best results, Prostate should be used as a part of the Wysong Optimal Health Program™.

For long-term usage follow the Wysong Foundation Formula Cycle or discontinue two days out of every week and five successive days every month to decrease the potential for intolerance developing.



Prostate cancer now accounts for more than 335,000 deaths per year and is the second leading cause of death from cancer in men. It is now estimated that 75 to 90 percent of men over the age of sixty suffer from benign prostatic hyperplasia (BPH). As a result, older men are now advised to be tested for BPH and prostate cancer every year.

This recommendation is proffered to the public as some kind of prevention. Unfortunately, testing to detect the presence of these conditions is no more a preventative measure than mammograms are for breast cancer in women. Detecting a disease already present is not prevention; taking measures to prevent the disease from ever occurring in the first place is.

Mounting evidence is demonstrating that reproductive organ disease, as well as sexual dysfunction, can be influenced by environmental and nutritional factors. Not only may these factors be the cause of these conditions, but they also offer the best and safest hope for reversal of problems when utilized properly.

Although this monograph focuses on specific nutritional factors related to prostate health, due attention must be given to other life choices. Increasingly, a variety of hormones and hormone-like compounds are being introduced into our environment and food supply. Some of these are powerful carcinogens at the worst, and metabolic and sexual modifiers at the least. Additionally, pollutants, modern sedentary living, artificial light, unrelenting stress, and all other modern living factors that estrange us from our natural genetic heritage, impact negatively upon not only the prostate gland but all other sexually-related functions and health as a whole.

Prostate™ is the result of several years of research seeking non-toxic, natural nutritional supplements. Ingredients have been selected based upon the weight of scientific evidence and traditional experience with their use. Supplementation with natural nutrients and “nutra-ceuticals” is an emerging science and precise mechanisms of action have not been determined in many cases.

Biochemistry

Prostate saw palmetto berries (*Serenoa repens*) contain approximately 1.5% oil, which is made up of saturated and unsaturated fatty acids and sterols. About 63% of the oil is composed of free fatty acids. The rest contains ethyl esters of these fatty acids and sterols, including beta-sitosterol and its glucoside. The berries also contain carotenes, lipase, tannins, and sugars.

The soluble lipid compounds (fats and oils) are the major pharmacological components. The free fatty acids identified in the berries are capronic, capric, caprylic, lauric, myristic, isomyristic, oleic, and stearic acids. The sterolic portion is composed of beta-sitosterol, stigmasterol, cycloartenol, lupenone, and 24-methyl-cycloartenol.

The prime therapeutic application of Prostate saw palmetto berries is in the treatment of benign prostatic hyperplasia, a non-malignant overgrowth of the prostate gland, which surrounds the urethra as it leaves the urinary bladder. BPH is characterized by increased urinary frequency, nighttime awakening to urinate (nocturia), and reduced force and caliber of urination.

The standardized liposterolic (fat-soluble) saw palmetto berry extract, as found in Prostate, has demonstrated numerous pharmacological effects in addition to nutritional qualities. Specifically, it has demonstrated

anti-androgenic (preventing testosterone from stimulating the prostate gland) and anti-edema (preventing swelling) effects.

BPH is thought to be caused by an accumulation of testosterone in the prostate. Once there, testosterone is converted to a more potent compound called dihydrotestosterone (DHT), which causes cells to multiply excessively and eventually leads to prostate enlargement.

The enzyme required for conversion of testosterone to DHT is 5-alpha reductase, which is inhibited by Prostate saw palmetto berries.

The Prostate liposterolic saw palmetto berry extract has been shown to prevent the conversion of testosterone to DHT, as well as inhibit the binding of DHT to cellular and nuclear receptor sites, thereby increasing the breakdown and excretion of DHT. These effects are the reasons for the impressive clinical results obtained with the Prostate saw palmetto extract.

The bark of the evergreen tree *Pygeum africanum*, as found in Prostate, has compounds that exert anti-inflammatory and anti-edema effects while influencing testosterone metabolism. *P. africanum* also contains betasitosterol.

Prostate amino acids L-glutamate, L-alanine, and glycine are beneficial

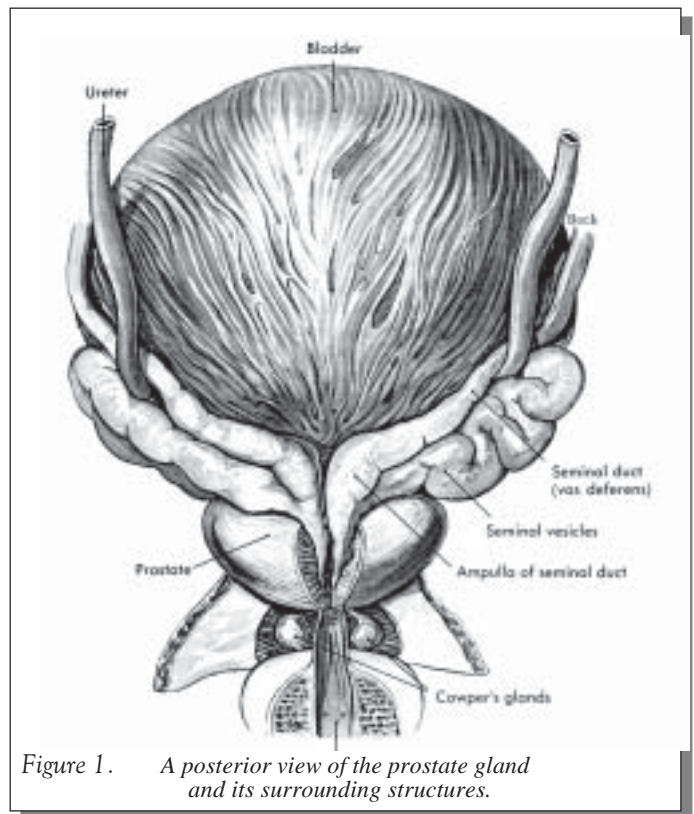
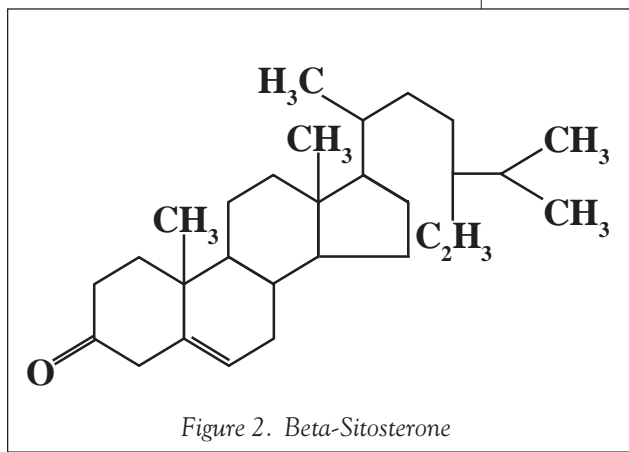


Figure 1. A posterior view of the prostate gland and its surrounding structures.

to patients with BPH and its associated symptoms. Although several clinical studies have proven the great therapeutic value of these compounds, precise mechanisms of action are not yet known. Several hypotheses have, however, been offered including an increase in the demand for proteins high in these amino acids and disruption in their metabolism due to stresses caused by BPH.

Prostate zinc is an essential mineral throughout the body, and is particularly important to the male genitourinary system. The prostate normally contains a higher concentration of zinc than any other organ. Studies have shown concentrations of testosterone and DHT in cancerous prostate tissue to be inversely proportional to zinc levels. Normal levels of zinc inhibit the activity of 5-alpha reductase, thus decreasing DHT production. Zinc has also been found to cause carcinoma-cell detachment and death in the prostate.



In men with BPH and/or prostate cancer, serum zinc levels tend to be normal, but levels in the prostate, as well as the component of semen it produces, are significantly lower. Oral supplementation with zinc usually does not raise serum zinc levels above normal, but does raise the levels found in the prostate and semen. Zinc therapy is also associated with an increase in sperm count and quality (refer to Androlog™ monograph).

Prostate soy isoflavones are valued for their ability to reduce the risk of prostate cancer. They act in several ways to counteract prostate cancer, including as antioxidants, blocking the activity of enzymes needed for cancer cells to grow, and preventing new blood vessel growth needed to feed a tumor. There is also strong epidemiological evidence that prostate disease is significantly less prevalent in the Orient, where the intake of soy products is higher than in the United States.

Genistein is the major isoflavone in soy, and is a broad-spectrum *in vitro* protein-tyrosine kinase inhibitor. Genistein has been identified as a possible causative agent in the adhesion of metastatic prostate cancer cells. If cancerous cells stick together, they do not move through the body and invade other tissues and organs. Direct inhibition of cancer cell growth by genistein has also been reported.

Prostate stinging nettle root has also been shown to decrease the size of the prostate when combined with either *P. africanum* and/or saw palmetto. This effect has

been found to be related to its ability to inhibit the binding of sex hormone-binding globulin to its receptor on human prostatic membranes, thus suppressing prostate cell metabolism and growth.

Dried prostate, as found in Prostase, fuels prostate function and repair. Nutrients contained within specific tissues stimulate the corresponding tissue when consumed.

Clinical Evidence

The positive clinical results of Prostase liposterolic extract of saw palmetto berries on the major symptoms of BPH have been confirmed in several double-blind, placebo-controlled clinical trials.

A double-blind placebo-controlled study was performed on 35 BPH patients never treated before. Patients received saw palmetto or a placebo for 3 months. It was concluded

that the enzyme 5-alpha-reductase was inhibited in the saw palmetto group, and thus the levels of DHT were reduced.

In 18 randomized controlled trials involving almost 3000 men, saw palmetto was compared with finasteride, a medication commonly prescribed in cases of BPH. These studies showed that saw palmetto produced similar improvements in urinary tract symptoms and urinary flow, without adverse side effects such as erectile dysfunction and withdrawal symptoms.

In a double-blind study, an extract of the Prostase ingredient *P. africanum* bark was given to patients for two months. It was concluded that *P. africanum* was significantly more effective than the placebo with respect to urinary frequency, urgency, dysuria (painful or difficult urination), and urinary flow rate.

Authors	Type of Study	Number of Patients	Length of Study	Results
Boccafoschi et al.	Double-blind, placebo-controlled	22	60 days	Significant difference for volume voided, maximum flow, mean flow, dysuria, nocturia.
Cirillo et al.	Open	47	4 months	Significant difference for dysuria, nocturia, urine flow.
Tripodi et al.	Open	40	30-90 days	Significant difference for dysuria, nocturia, volume of prostate, voiding rate, residual urine.
Emili et al.	Double-blind, placebo-controlled	30	30 days	Significant difference for number of voidings, strangury, maximum and mean urine flow, residual urine.
Greca et al.	Open	14	1-2 months	Significant difference for dysuria, perineal heaviness, nocturia, volume of urine per voiding, interval between two diurnal voidings, sensation of incomplete voiding.
Duvia et al.	Controlled trial vs. <i>Pygeum africanum</i>	30	30 days	Significant difference for voiding rate.
Tamca et al.	Double-blind, placebo-controlled	30	31-90 days	Significant difference for frequency, urine flow measurement.
Cukier et al.	Double-blind, placebo-controlled	168	60-90 days	Significant difference for dysuria, frequency, residual urine.
Crimi et al.	Open	32	4 weeks	Significant difference for dysuria, nocturia, volume of prostate, voiding rate.
Champault et al.	Double-blind, placebo-controlled	110	28 days	Significant difference for dysuria, nocturia, flow measurement, residual urine.

Table 1: Clinical studies demonstrating the efficacy of saw palmetto berries in the treatment of benign prostatic hyperplasia.

In a study of 17 patients with residual urine and/or dysuria due to BPH, 8 of 13 patients had reduced residual urine and 14 of 17 patients showed reduced dysuria while being supplemented with a combination of L-alanine, L-glutamate, and glycine. In another study on the same combination of amino acids in 45 patients, 95% had reduced or totally relieved nocturia, urgency was reduced in 81%, frequency was reduced in 73%, and delayed micturition was reduced in 70%.

In a study on zinc supplementation and the prostate gland, zinc was shown to have reduced the size of the prostate gland in the majority of patients. In another study, 19 patients took zinc daily for 2 months. Shrinking of the prostate was found in 14 of these patients. Zinc supplements have also been shown to improve urinary symptoms and reduce the size of the prostate in separate trials on men and animals.

In a study on subjects that were highly susceptible to prostate cancer,



two groups were studied. One group consumed a diet high in the soy isoflavones genistein and daidzein, as found in Prostase, while the second group ate the same diet with low levels of soy isoflavones. The incidence of prostate cancer was reduced in the participants on the high-soy diet, and in those that still developed cancer, onset was delayed by 27%.

A study on the effects of genistein (5,7,4'-trihydroxy-isoflavone), a major component of soy, on the growth of human BPH and prostate cancer tissue

was performed. It was concluded from this study that genistein decreases the growth of both BPH and prostate cancer tissue, which suggests that it has therapeutic value for both conditions.

Studies have shown Prostase stinging nettle root to be effective alone or in combination with saw palmetto or *P. africanum* in combating BPH. In an open study involving 2,080 patients with BPH, a combination of saw palmetto and stinging nettle root was tested for 12 weeks. Results were impressive, showing significant increases in maximum and mean urinary flow, while showing a decrease in residual urine, dysuria and nocturia.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

PROSTASE™ SCIENTIFIC REFERENCES

- Aito K, et al. The conservative treatment of prostatic hypertrophy with Paraprost. *Hinyokika Kyo*. 18(1):41-4. 1972.
- Bach D, et al. Long-term drug treatment of benign prostatic hyperplasia - results of a prospective 3-year multicenter study using Sabal extract IDS 89. *Phytomed*. 3:105-11. 1996.
- Barlet A, et al. Efficacy of *Pygeum africanum* extract in the treatment of micturitional disorders due to benign prostatic hyperplasia. *Wiener klinische Wochenschrift*. 102(22):667-73. 11/23/90.
- Barry MJ, et al. Watchful waiting vs immediate transurethral resection for symptomatic prostatism. The importance of patients' preferences. *JAMA*. 259(20):3010-3017. 1988.
- Bassi P, et al. Standardized *Pygeum africanum* extract in the treatment of benign prostatic hypertrophy. *Minerva Urol Nefrol*. 39:45-50. 1987.
- Boccafoschi, et al. Comparison of *Serenoa repens* extract with placebo by controlled clinical trial in patients with prostatic adenomatosis. *Urologia*. 50:1257-68. 1983.
- Boyle P, et al. Prostate volume predicts outcome of treatment of BPH with finasteride: Meta-analysis of randomized clinical trials. *J Urol*. 155:572A. 1996.
- Bremer HJ, et al. Disturbances of Amino Acid Metabolism: Clinical Chemistry and Diagnosis. Urban & Schwarzenburg, Baltimore-Munich. 1981.
- Brown D. Saw palmetto extract in the treatment of BPH. *J Am Bot Council Herb Res Found*. 34. 1995.
- Brown DJ. The male dilemma: Relief for prostate problems. *Total Health*. 40,58. June 1990.
- Bush IM, et al. Zinc and the prostate. *Presented at the annual meeting of the AMA*. Chicago. 1974.
- Carilla E, et al. Binding of Permixon, a new treatment for prostatic benign hyperplasia, to the cytosolic androgen receptor in the rat prostate. *J Steroid Biochem*. 20:521-3. 1984.
- Champault G, et al. A double-blind trial of an extract of the plant *Serenoa repens* in benign prostatic hyperplasia. *Br J Clin Pharmacol*. 18:461-2. 1984.
- Champault G, et al. Medical treatment of prostatic adenoma. Controlled trial: PA 109 vs. placebo in 110 patients. *Ann Urol*. 18:407-10. 1984.
- Cirillo-Marruco E, et al. Extract of *Serenoa repens* (PermixonR) in the early treatment of prostatic hypertrophy. *Urologia*. 5:1269-77. 1983.
- Corder, et al. Vitamin D and prostate cancer. A prediagnostic study with stored sera. *Canc Epidemiol Biomarkers Prev*. 2(5):467-472. 1993.
- Crimi A, et al. Extract of *Serenoa repens* for the treatment of the functional disturbances of prostate hypertrophy. *Med Praxis*. 4:47-51. 1983.
- Cukier, et al. Permixon vs. placebo. *C R Ther Pharmacol Clin* 4(25):15-21. 1985.
- Di Silveria F, et al. Evidence that *Serenoa repens* extract displays an antiestrogenic activity in prostatic tissue of benign prostatic hypertrophy patients. *Eur Urol*. 21:309-14. 1992.
- Duke JA: Handbook of Medicinal Herbs. CRC Press, Boca Raton, FL. 1985. p118.
- Dumrau F, et al. Benign Prostatic Hyperplasia: Amino acid therapy for symptomatic relief. *Am J Ger*. 10:426-30. 1962.
- Duvia R, et al. Advances in phytotherapy of prostatic hypertrophy. *Med Praxis*. 4:143-8. 1983.
- Emili E, et al. Clinical trial of a new drug for treating hypertrophy of the prostate (Permixon). *Urologia*. 50:1042-8. 1983.
- Fahim M, et al. Zinc treatment for the reduction of hyperplasia of the prostate. *Fed Proc*. 35:361. 1976.
- Feinblatt H, et al. Palliative treatment of benign prostatic hypertrophy: Value of glycine, alanine, glutamic acid combination. *J Maine Med Assn*. 1958.
- Geller J, et al. Genistein inhibits the growth of human-patient BPH and prostate cancer in histoculture. *Prostate* 34:2,75-79. 1998.
- Greca P, et al. Experience with a new drug in the medical treatment of prostatic adenoma. *Urologia*. 52:532-5. 1985.
- Habib FK, et al. Metal-androgen interrelationships in carcinoma and hyperplasia of the human prostate. *J Endocrinol*. 71(1):133-141. 1976.
- Hryb D, et al. The effects of extracts of the roots of the stinging nettle (*Urtica dioica*) on the interaction of SHBG with its receptor on human prostatic membranes. *Planta Medica*. 61(1):31-32. 1995.
- Iguchi K, et al. Induction of necrosis by zinc in prostate carcinoma cells and identification of proteins increased in association with this induction. *Eur J Biochem*. 235(3):766-770. 1998.
- Johansson JE, et al. Fifteen-year survival in prostate cancer. A prospective, population-based study in Sweden. *JAMA*. 277(6):467-471.
- Klippel KF, et al. A multicentric, placebo-controlled, double-blind clinical trial of beta-sitosterol for the treatment of benign prostatic hyperplasia. *Br J Urol*. 80:427-32. 1997.
- Kyle E, et al. Genistein-induced apoptosis of prostate cancer cells is preceded by a specific decrease in focal adhesion kinase activity. *Mol Pharmacol*. 51:2,193-200. 1997.
- Leake A, et al. The effect of zinc on the 5-alpha reduction of testosterone by the hyperplastic human prostate: Evidence for a direct zinc androgen interaction. *J Steroid Biochem*. 20:651-5. 1984.
- Miller AL. Benign prostatic hyperplasia: Nutritional and botanical therapeutic options. *Atl Med Rev*. 1:18-25. 1996.
- Nomura, et al. Shedding light on the etiology of prostate cancer. *Canc Epidemiol Biomarkers Prev*. 2(5)409-410. 1993.
- Romics I, et al. Spectrographic determination of zinc in the tissues of adenoma and carcinoma of the prostate. *Int Urol Nephrol*. 15(2):171-176. 1983.
- Ross RK, et al. 5-alpha-reductase activity and risk of prostate cancer among Japanese and US white and black males. *Lancet*. 339:887-89. 1992.
- Schneider HJ, et al. Treatment of benign prostatic hyperplasia: Results of a surveillance study in the practices of urological specialists using a combined plant-based preparation. *Fortschr Med*. 113:37-40. 1995.
- Snowdon DA, et al. Diet, obesity, and the risk of fatal prostate cancer. *Am J Epidemiol*. 120:244. 1984.
- Stephens FO. Phytoestrogens and prostate cancer: Possible preventive role. *Med J Aust*. 167:138-40. 1997.
- Sultan, et al. Inhibition of androgen metabolism and binding by a liposterolic extract of "Serenoa repens B" in human foreskin fibroblasts. *J Steroid Biochem*. 20:515-9. 1984.
- Tarayre JP, et al. Anti-edematous action of a hexane extract of the stone fruit of *Serenoa repens* B. *Ann Pharm Franc*. 41:559-70. 1983.
- Tasca A, et al. Treatment of obstructive symptomology caused by prostatic adenoma with an extract of *Serenoa repens*. Double-blind clinical study vs. placebo. *Minerva Urol Nefrol*. 37:87-91. 1985.
- Tripodi, et al. Treatment of prostatic hypertrophy with *Serenoa repens* extract. *Med Praxis*. 4:41-6. 1983.
- Werbach MR. Nutritional Influences on Illness: A sourcebook of Clinical Research. Third Line Press Inc, Tarzana CA. 1988.
- Whelen P, et al. Zinc, vitamin A and prostate cancer. *Brit J Urology*. 55(5):525-528. 1983.
- Wilt TJ, et al. Saw palmetto extracts for treatment of benign prostatic hyperplasia. *JAMA*. 280:1604-1609. 1998.