

Sponsored Contribution

Herbs for Prostate Health

Larken Bunce, MS

Awakening Our Innate Response

The prostate is a walnut-shaped gland that forms a collar around the urethra just below the bladder and plays a central role in the male reproductive system. The gland is composed of several lobes or zones enclosed in an outer capsule of tissue. Primarily a secretory gland, the prostate produces the alkaline fluid that makes up 70% of seminal volume. Seminal fluid not only neutralizes the acidic environment of the vagina, but also contains nutrients, thus contributing to successful fertilization by protecting and nourishing sperm. The prostate also closes off the bladder neck during ejaculation, preventing retrograde flow of semen into the bladder.

One of the most common conditions affecting the prostate is benign prostatic hyperplasia (BPH), characterized as non-cancerous proliferation of epithelial and stromal cells of the periurethral and transitional zones, which directly surround the urethra. The enlargement of the gland within its capsule, which may be due to cellular proliferation and/or impaired apoptosis, often forces inward compression of the urethra, impinging upon the flow of urine and contributing to the symptoms associated with BPH. Bladder dysfunction caused by urethral resistance or obstruction is also believed to contribute to symptoms; the bladder wall can thicken and become irritated as it also hypertrophies to increase its contractile force upon emptying. The bladder wall muscle sensitivity that results, along with alterations in nervous tissue within the prostate, is

implicated in the frequent urge to urinate, increased residual urinary volume and acute or chronic urinary retention. The full range of lower urinary tract symptoms (LUTS) associated with BPH include increased urinary urgency, hesitancy and/or frequency, nocturia, diminished or intermittent stream force, straining to urinate, dribbling, and the feeling of incomplete emptying.

When left untreated, BPH symptoms, as well as clinical markers such as peak urinary flow and volume of urine voided, can increase over time. While less common than in the past, complications related to obstruction of the bladder outlet can occur increasingly with age and may include acute urinary retention requiring catheterization, impaired bladder emptying, recurrent urinary tract infections, renal insufficiency, hematuria, urinary stones, or the need for surgery. Many of these symptoms can also occur independently of BPH, and likewise BPH can occur without such symptoms.

Fifty percent of men demonstrate histological signs of BPH by age 60. By age 85, this number jumps to 90%. In the US, an estimated 14 million men have BPH-related symptoms while approximately twice that many men worldwide are symptomatic.¹ Although its ubiquity has led the medical community to consider BPH a normal aspect of the male aging process, the eti-



Larken Bunce is an educator and clinical herbalist practicing in Montpelier, VT. She holds a master of science in herbal medicine and has been joyfully working and playing with herbs since 1994, weaving traditional views of health and nature with scientific understandings of plants and people. She co-directs the Vermont Center for Integrative Herbalism, a non-profit organization providing herbalist training and free clinical services. She serves as core faculty in the Health Arts and Sciences program of Goddard College, as well as education coordinator for Plant Medicine, an international organization delivering evidence-based, clinically relevant information to professionals and the public.

Sponsored Contribution

ology of BPH is still heavily researched. The gradual enlargement of the prostate is currently believed to be hormonally dependent, involving production of the endogenous androgens testosterone and dihydrotestosterone (DHT). DHT is synthesized through reduction of testosterone by 5-alpha-reductase and subsequently binds with a five-fold greater affinity to prostatic androgen receptors. Elevated estrogen levels may also play a permissive role, impacting the metabolism of androgens. Other factors such as stem cells, epithelial growth factors, insulin and prolactin may also play a role.² As research continues regarding both pathophysiology and treatment, particular herbs, foods and nutrients have been identified as promising preventive and therapeutic agents. Many have also been found useful in addressing prostate-related symptoms, such as prostatitis, urinary tract infections and frequency or urgency, regardless of the presence of benign enlargement. A blend of such plants, backed by a combination of strong research and traditional use, appear in Prostate Response®, a formula designed to support men in maintaining reproductive and urinary health as they age.

Saw Palmetto

Use of the berry of the saw palmetto palm (*Serenoa repens*) comes to us from the southeastern United States. Eclectic physicians considered it a generally nutritive, tissue-building tonic and employed it especially for respiratory complaints, such as irritating and chronic bronchial coughs, whooping cough, laryngitis and asthma. It was also used to improve appetite, digestion and assimilation. According to Harvey Wickes Felter and John Uri Lloyd, its most important application, however, was on the urogenital tracts of both male and female: “It is said to enlarge wasted organs, as the breasts, ovaries, and testicles, while the paradoxical claim is also made that it reduces hypertrophy of the prostate.”³ The specific indications for this plant included “prostatic irritation, with painful micturition, and dribbling of urine, particularly in the aged; tenderness of the glands, and other parts concerned in reproduction.”³ No surprise then that it was deemed by those authors ‘the old man’s friend’.

Current research generally focuses on liposterolic extracts of saw palmetto, as it is rich in both fatty acids and phytosterols (including beta-sitosterol). A good extract can be achieved using traditional tincturing

methods; however, standardized products which guarantee constituent content have generally been used in the numerous clinical trials to date. While much attention has been placed on the inhibition of 5-alpha-reductase—the enzyme responsible for conversion of testosterone to DHT — by saw palmetto, other mechanisms of action have also been suggested. These include reduction of smooth muscle spasm; inhibition of androgen and estrogen binding in prostate cells; inhibition of aromatization of androgens into estrogens; anti-inflammatory activity; and perhaps interference with prolactin-induced prostate growth.^{2,4} At a molecular level, saw palmetto may alter DNA structure and expression in prostate epithelial cells, causing contraction of cells, as well as suppress tissue DHT levels in men with symptomatic BPH.⁵

A 2004 meta-analysis of 17 clinical trials using saw palmetto extract, which included 4280 patients, found a significant improvement in peak flow rate and reduction in nocturia, as well as a five-point reduction in International Prostate Symptom Scores (IPSS).⁶ Further, saw palmetto extract has been determined to be as effective as finasteride (a commonly prescribed 5-alpha-reductase inhibitor, aka Proscar) and is better tolerated, has fewer side effects, is less expensive and is less likely to reduce PSA levels (thus masking cancer detection).^{7,8} Recent research has also demonstrated equivalent efficacy of saw palmetto to tamsulosin (an alpha blocker, aka Flomax).⁹ As an exceedingly safe plant with no known contraindications or interactions expected⁷, saw palmetto is clearly a wise choice for any regimen aimed at



prostate health.

Nettle Root and Leaf

Often used in combination with saw palmetto is the root of the stinging nettle (*Urtica dioica*). This weedy green garden invader is a cornerstone of American and European herbal practice, finding use as a mineral-rich spring green, as well as in conditions such as arthritis, allergic rhinitis and BPH. A variety of mechanisms of action on the aging prostate have been proposed for nettle root. Rich in phytosterols (such as stigmasterol and campesterol), nettle root appears in *in vitro* and animal research to exert its effects via impacts on sex hormone binding globulin (SHBG), aromatase, growth factors, prostatic cell membrane sodium-potassium

Sponsored Contribution

pumps, and prostatic hormone receptors.^{10,11} Open trials have also suggested that these activities translate to clinical effectiveness for mild BPH-related symptoms.¹¹

A double-blind placebo-controlled multi-center trial including 543 patients assessed the efficacy of a combination of saw palmetto and nettle root compared to finasteride in early-stage BPH. Results demonstrated equivalent efficacy for both treatments, including improvements in IPSS and an increase in maximum urinary flow, regardless of prostate volume. A difference was seen, however, in adverse events: the herbal combination was deemed safer, with fewer adverse events than finasteride.¹² A phase III clinical trial using the same combination demonstrated significant benefit in LUTS over a 96-week period. Again, IPSS scores were reduced (53%), peak urine flow increased (19%) and residual urine volume decreased (44%), accompanied by extremely low adverse event occurrence.¹³ Overall, nettle root may offer benefit in irritative and obstructive urinary symptoms that are moderate to severe in nature.

Nettle leaf is rich in protein, chlorophyll and a variety of vitamins and minerals, such as zinc and selenium, both valuable to the prostate. One of the most widely used herbs in the Western materia medica, nettle leaf is considered nutritive, astringent, mildly anti-inflammatory and diuretic, all activities of potential benefit in prostate enlargement and urinary irritation.

Pygeum

The bark of *Pygeum africanum*, an evergreen tree of the rose family also known as African plum, is also often combined with saw palmetto to support healthy and comfortable urinary and prostate function. Another plant rich in fatty acids as well as phytosterols, pygeum's proposed mechanisms of activity include inhibition of 5-alpha-reductase; reduction of inflammation and edema (at least partially via eicosanoid synthesis modulation); increase in bladder elasticity; inhibition of growth-factor mediated enlargement; and reduction in prostate hormone levels.^{14,15} Numerous studies have demonstrated the potential of pygeum to impact prostate enlargement, as well as various aspects of bladder function.¹⁵ An analysis of 18 clinical trials involving 1562 men receiving pygeum reported a trend of improvement in urologic symptoms and urine flow measures: diminished nocturia, decreased residual urine volume and increased peak flow.¹⁶ *In vitro* and animal research suggest pygeum may also regulate development of prostate cancer, particularly when used preventively for those at high risk.¹⁷

Clinically, pygeum seems to work best in combination, as it may be less robust in action than saw palmetto, but offers unique benefit in terms of increase in quality and quantity of prostatic secretions, which may enhance fertility.¹⁴

Marshmallow Root

The highly mucilaginous root of *Althaea officinalis* has long been used to soothe and heal inflamed mucus membranes throughout the body. Those of the urinary tract are no exception. Though the mucopolysaccharides responsible for the anti-inflammatory and tissue healing activity are generally too large to leave the gut, marshmallow is believed to work via a nervous reflex action from the gut to the urinary tract. In combination with a slight diuretic action, the demulcent activity of marshmallow makes it a valuable ally in relieving conditions secondary to BPH, such as painful urination, cystitis and urethritis. British phytotherapists Priest and Priest, specifically noted its value in chronic inflammatory conditions of the genitourinary tract in the elderly,¹⁸ while Eclectic physician William Cook noted its moderate diuretic effects, along with its ability to "soothe all irritations of the kidneys and water passages, [as well as] scalding urine."¹⁹

In summary, it seems clear that as men age they would be wise to consider ongoing support for their prostate gland. A multi-faceted strategy, such as Prostate Response, contains well-chosen plants, specific nutrients and valuable food extracts and certainly takes some pressure off of the individual who may be wondering if he is taking a thorough approach. As a recent review notes, saw palmetto, lycopene and selenium each appear to exert a dual activity on proliferative disorders, as well as on inflammatory conditions of the prostate,²⁰ highlighting the potential enhanced benefit of combination approaches to complex processes such as BPH.

Of course, continuing to eat a whole-foods diet, based on plants and supplemented by quality protein sources should form the basis for all long-term health maintenance plans. By nature, such a diet will be rich in color and so provide abundant sources of important phytonutrients such as carotenoids (red-orange), flavonoids (blue-purple), and isothiocyanates (white-green). I counsel my clients that no amount of supplementation can replace a sound diet; however, I am quick to remind them that in many cultures herbs are considered part of the diet. The word 'diet' comes from the Latin *diaeta*, meaning "prescribed way of life". If we consider using herbs and nutrient-dense foods a way of life, we may begin to see shifts in what is considered normal in terms of the aging process and what we may expect in terms of symptoms. Indeed, it is our way of life today that builds and defines the experiences we manifest for ourselves tomorrow. May we all find a diet of ease and joy that supports our physical health and beyond.