

## Epidemiology, Symptoms of Benign Prostatic Hyperplasia and its Causes

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### DESCRIPTION

Prostate enlargement, commonly known as Benign Prostatic Hyperplasia (BPH), is a noncancerous expansion of the prostate gland. Frequent urination, difficulty starting to urinate, a weak stream, the inability to urinate, or a loss of bladder control is examples of symptoms. Urinary tract infections, bladder stones, and persistent kidney issues are examples of complications. The reason is not clear. Family history, obesity, type 2 diabetes, insufficient exercise, and erectile dysfunction are risk factors. Anticholinergic drugs, calcium channel blockers, and pseudoephedrine, for example, may make symptoms worse. The urethra is compressed by the prostate, which makes it challenging for urine to exit the bladder, according to the underlying process. Symptoms and inspection are often used to make the diagnosis after ruling out other potential reasons.

### Epidemiology

As of 2010, there were 210 million guys worldwide who had benign prostatic hyperplasia, or 6% of the population. Most men's prostates become bigger as they age. A 46 years old man without symptoms has a 45% chance of getting BPH over the following 30 years. By the age of 75-79 years, the incidence rate has increased from 3 cases per 1000 man-years at the age of 45-49 to 38 instances per 1000 man-years. Men aged 45 to 49 have a prevalence rate of 2.7%, but by the age of 80, it rises to 24%.

### Symptoms

Lower Urinary Tract Symptoms (LUTS), which are classified as storage, voiding, and post-urination symptoms, are most frequently brought on by BPH. The symptoms of storage include the need to urinate frequently, waking up at night to urinate, urgency (a strong, abrupt urge to void that cannot be postponed), involuntary urination, particularly nighttime involuntary urination, or urge incontinence (leakage of urine). Urinary hesitancy, intermittency (not continuous), involuntary interruption of voiding, weak urinary stream, straining to void, a sense of incomplete emptying, and uncontrollable leaking after urination are some of the symptoms of voiding disorders. The

condition known as dysuria, which causes pain while urinating, may also accompany these symptoms.

### Causes

**Hormones:** The majority of scientists believe that androgens, which include testosterone and related hormones, are permissive in the development of BPH. This suggests that while androgens may be necessary for the development of BPH, they are not always its primary cause. Evidence that castrated males do not age-relatedly acquire BPH supports this. In an unusual study of 26 eunuchs from the Qing era palace who were still living in Beijing in 1960, 81% of the eunuchs were unable to feel their prostates. 54 years, on average, have passed since castration (the range was 41 to 65 years). The significance of testosterone in BPH and prostate cancer is still unknown, however, as some research imply that giving exogenous testosterone does not significantly raise the incidence of BPH symptoms. To quantify any danger associated with administering exogenous testosterone, additional randomised controlled trials including more people are required.

**Diet:** Studies suggest that dietary habits may influence the development of BPH, but further research is required to fully understand any significant associations. Increased protein consumption may contribute to the development of BPH, according to studies from China. In contrast to males living in cities and consuming more animal protein, men over 60 in rural regions had relatively low rates of clinical BPH. In contrast, a study of Japanese-American men in Hawaii discovered a weakly positive connection with beef consumption but a large negative association with alcohol consumption. The health professionals follow-up research, a sizable prospective cohort research in the US, found small relationships between BPH (in men with strong symptoms of BPH or BPH surgically verified) and total calorie and protein intake, but not fat. Epidemiological data also shows a connection between BPH and the metabolic syndrome, which is characterised by obesity, diabetes, poor glucose tolerance, high triglyceride levels, high levels of LDL cholesterol, and hypertension.

**Degeneration:** Age related disease benign prostatic hyperplasia affects men. According to the misrepair accumulation ageing

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theory, fibrosis and weakening of the prostate's muscle tissue lead to the development of benign prostatic hyperplasia. The muscle helps the prostate function properly by exerting force to expel the fluid that the prostatic glands secrete. Nevertheless, injuries and damaged myofibers are inevitable when myofibers contract and expand repeatedly. Collagen fibres must be used to replace the damaged myofibers because they have a low capacity

for regeneration. Such defects impair the ability of the muscle tissue to operate, and the fluid generated by the glands cannot be properly eliminated. The resistance of the muscle tissue during contractions and dilations then increases due to the fluid buildup in the glands, and a growing number of myofibers will break and be replaced by collagen fibres.