

*This report - eight pages long - discusses prostate trouble. It was written by Aunt Nancy for the National Institute of Health.*

# Benign Prostatic Hyperplasia

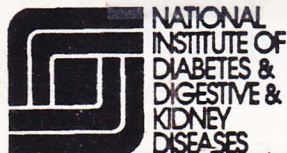
Fact Sheet

## THE PROSTATE GLAND

The prostate gland is a small, chestnut-shaped gland that is part of the male reproductive system. Located deep in the abdomen, the gland is composed of different regions, or lobes, enclosed in a fibrous capsule. As the diagrams below show, the prostate is located in front of the rectum and just below the bladder, where urine is stored. The prostate also surrounds the urethra, the canal through which urine passes out of the body.

All of the prostate gland's functions aren't completely known, but one of its main roles is to squeeze fluid into the urethra as sperm moves through during sexual climax. This fluid, which helps make up semen, energizes the sperm and makes the vaginal canal less acidic.

*This fact sheet was written by Nancy Downes, Office of Health Research Reports, National Institute of Diabetes and Digestive and Kidney Diseases. The draft was reviewed by Institute scientists as well as by Dr. John T. Grayhack, Northwestern University Medical School, who kindly provided his thoughtful comments.*



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## BPH: A COMMON PART OF AGING

BPH, or benign prostatic hyperplasia (also called "benign prostatic hypertrophy") is a noncancerous enlargement of the prostate gland, which occurs mainly in older men. As the gland enlarges, the surrounding capsule stops it from expanding, causing the prostate to press against the urethra, like a clamp on a garden hose. As a result, the bladder must work harder to empty, and often urine remains behind. This narrowing of the urethra and partial emptying of the bladder cause many of the health problems and discomfort associated with BPH.

As a male matures, the prostate goes through two main periods of growth. The first occurs early in puberty, when the prostate doubles in size. At around age 25, the gland begins to grow again. It is this second growth phase that often results, years later, in BPH.

Though the prostate continues to grow during most of a man's life, the enlargement doesn't usually cause problems until late in life. BPH is rarely diagnosed before age 40, but more than half of men in their sixties and as many as 90 percent in their seventies and eighties have some symptoms of BPH.

Many people feel uncomfortable talking about the prostate, since the gland plays a role in both sex and urination. However, prostate enlargement is as common a part of aging as gray

hair. As life expectancy continues to rise, so does the occurrence of BPH. In the United States alone, about 350,000 operations take place each year for relief of BPH.

It's not clear whether certain groups face a greater risk of getting BPH. Studies done over the years have suggested that BPH occurs more often among married men than single men and is more common in the United States and Europe than in other parts of the world. However, these findings have been debated, and no definite information on risk factors exists.

## WHY BPH OCCURS

The cause of BPH isn't well understood. For centuries, it's been known that BPH occurs mainly in older men and that it doesn't develop in males whose testes were removed before puberty. For this reason, researchers believe that aging and the testes, or hormonal changes associated with aging, probably play an important role in the development of BPH.

While much of the research into the cause of BPH focuses on hormonal changes, some theories focus on changes in the cells of the prostate or on a combination of cellular and hormonal factors. The following are among the most widely accepted current theories.

***Change in the Balance of Testosterone to Estrogen***  
Throughout their lives, males produce both testosterone, an