

Cancer

Cancer of the prostate gland is very common, generally in men over the age of 50. Statistics indicate that it ranks among the most common cancer and cause of cancer death in men. The cause of prostate cancer is unknown; however it often occurs along with the benign (non-cancerous) enlargement of the prostate gland. This is coincidental, since they are not believed to be related as cause and effect and men with benign prostatic enlargements do not necessarily develop cancer. It also appears that those men who undergo surgery for benign enlargement do not have a reduced or increased risk of cancer.

Male sex hormones play a role in cancer growth. Drugs that reduce their levels or block their action are often used in the treatment of prostate cancer. In its early stages prostate cancer is usually an insidious, symptomless disease. Consequently it may not be discovered until it is quite advanced. Often the tumour is discovered incidentally after the removal of excessive benign tissue, which has been blocking urinary flow. Prostate cancer may spread to other pelvic areas, i.e. the rectum, lymph glands and bones, where it can cause severe pain. **If prostate cancer is diagnosed at an early stage, it is potentially curable.**

Treatment

Treatment depends on how advanced the cancer is and the presence of other clinical factors which influence the state of health of the patient. Surgery, radiotherapy and hormone therapy are available and may be used in varying combinations depending on individual circumstances. Some cases of very slow growing tumours may require no active treatment apart from simple observation.

Early Detection

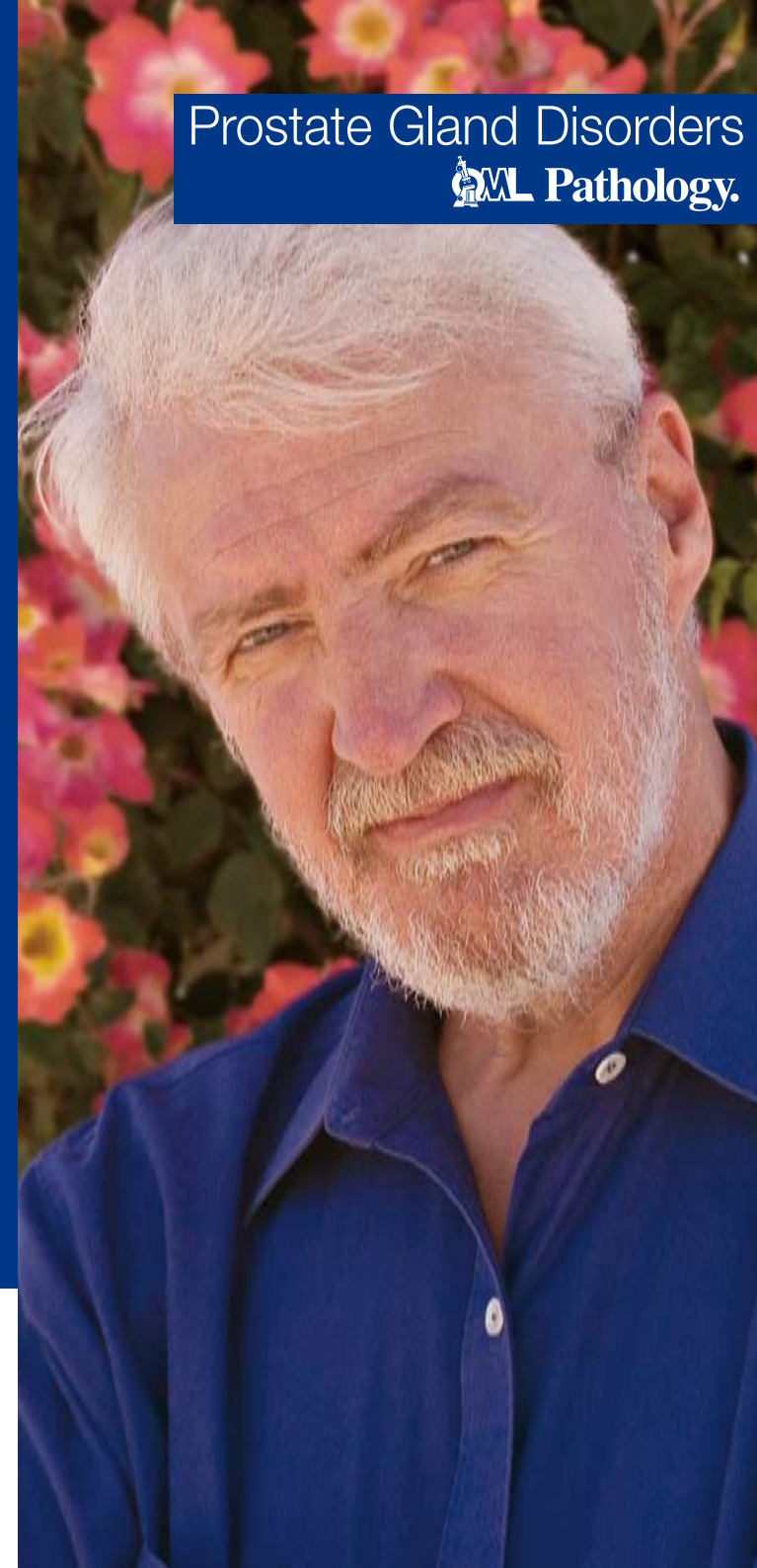
Digital rectal examination combined with a blood test to measure prostate specific antigen (PSA), are useful tests for the early detection of prostate cancer. PSA is a protein produced by the cells in the prostate gland and is thought to play a role in preventing semen from coagulating. Infection, benign enlargement and prostate cancer can all produce detectable elevations in the blood levels of PSA. Estimation of the degree of elevation and the rate of elevation together with the findings of clinical examination often allow your doctor to distinguish the likely cause of a high PSA level. **Regular medical examination by your doctor is the key to early diagnosis.**

Following the clinical examination and blood test, there are complimentary imaging scans (available from Queensland Diagnostic Imaging (QDI)) that can further assist in the detection and diagnosis of an enlarged prostate. These examinations include ultrasound; with or without biopsy, CT Scanning, and Magnetic Resonance Imaging (MRI).

Monitoring

PSA, along with another marker of the spread of cancer - the enzyme Prostatic Acid Phosphatase, may be measured via a blood test prior to the commencement of treatment. Individual response to surgery, medication, progress or recurrence can then be monitored by repeat blood testing following treatment.

Prostate Gland Disorders

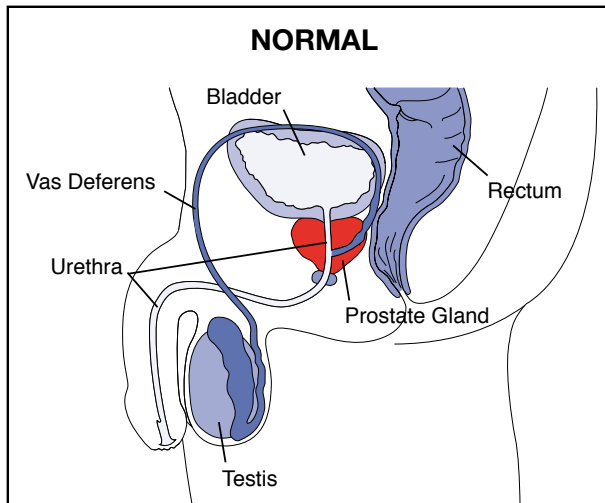


The Male Anatomy

A male's prostate gland is located in the floor of the pelvis surrounding the urethra between the bladder and the penis. The prostate is positioned immediately in front of the rectum, this being the area from which it is examined.

Function of the Prostate

Semen is composed of sperm (from the testes) and a mixture of fluids secreted by the seminal vesicles, bulbourethral glands and the prostate gland. A milky alkaline fluid, which neutralises the acidic environment of the vagina, semen is secreted by the prostate gland to impart maximum mobility to the sperm. The gland contains muscle fibres and contracts in rhythm with the vasa deferentia to help ejaculation.



Cross section of the male urinary tract showing a normal prostate gland.

Note relationship to the rectum allowing a doctor to feel the surface of the prostate during a rectal examination.

Prostate Disorders

Three principal disease processes affect the prostate gland:

- 1) **Infection**
- 2) **Benign enlargement**
(a non-cancerous increase in size of the gland)
- 3) **Cancer**

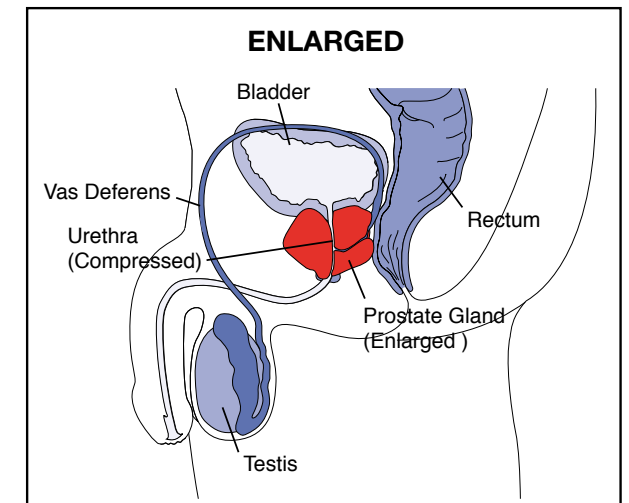
Infection

Bacteria that cause venereal, bladder and kidney infections may also infect the prostate. This may occur following infection of the urinary tract, surgery or catheter insertion. Acute infection causes pain, tenderness, fever, chills and burning urine. Chronic infection manifests as subtle or vague symptoms, such as pelvic pain and discomfort, low back pain or burning urine. So called 'abacterial prostatitis' may be due to either Chlamydia or Ureaplasma organisms. These are usually sexually transmitted. **Infection of the prostate gland may be so mild that the male is unaware of it.** Testing of prostatic secretions and urine will lead to identification of the organism and appropriate antibiotic treatment.

Benign Enlargement

Benign enlargement of the prostate is extremely common in men over 50 years of age, with 70% of men by the age of 60 and 90% by the age of 70 having the condition. As a result, your prostate becomes a bumpy, rubbery mass that can be felt via a rectal examination.

Such enlargement in the confined space of the pelvis, results in compression of the urethra and interference with passing urine. This produces the characteristic clinical symptoms of delayed starting, poor weak flow, terminal dribbling, and often the retention of a small pool of urine in the bladder. Occasionally men experience acute retention or an inability to pass any urine at all. This results in painful overfilling of the bladder that must be relieved by insertion of a catheter. As a result, bladder and kidney infections are much more common in men with this condition. Obstruction or infection, or both, may cause severe kidney damage in some people. Despite the common nature of this complaint, surgical treatment is only required by 5 to 10 percent of men diagnosed with benign enlargement. If surgery is necessary, a prostatectomy or partial reduction in the volume of the gland will relieve the obstruction to the urine outflow.



Cross section of the male urinary tract showing an enlarged prostate gland.

Note how the urethra (tube allowing the passage of urine) is compressed.