

## The prostate

The prostate is a small organ sitting at the base of the bladder through which urine passes during voiding. The only function of the prostate is to secrete nutrients to aid in sperm transport and nourishment on ejaculation. With age, the prostate grows under hormonal control and without a great relationship to size, causes a degree of obstruction to voiding. It is common for men to notice symptoms such as hesitancy, slowing of the stream, the need to void during the night and dribbling after voiding with the feeling of incomplete emptying at times. Early on, these symptoms can be helped by simple lifestyle changes such as evening fluid and caffeine restriction and medical therapy with smooth muscle relaxants such as flomaxtra can be useful. Beyond this, surgery is required. A TURP or transurethral resection of the prostate using electro-cautery or laser surgery is the usual definitive treatment.

Prostate cancer is the most common adult male cancer other than skin cancer and the second most common cause of adult male cancer death after lung cancer. It is principally a disease of older men, almost an inevitable part of aging, with autopsy studies showing the majority of old men have a trace of cancer if thoroughly assessed. About one in nine men will have the diagnosis made during their life and nearly a third of them will die from their disease. In South Australia about 1000 new diagnoses are made every year. Not all prostate cancers will progress but if found early, they should be curable and later death prevented. Men are advised to have an annual DRE (digital rectal examination) and PSA (prostate specific antigen), a screening blood test for prostate cancer, from the age of 50 years or 45 years if there is a family history of prostate cancer. A father or brother affected doubles a man's risk of getting prostate cancer. Early prostate cancer does not cause symptoms and men should not wait until symptoms to be checked. Men should also be aware that urinary symptoms are more likely to be due to benign enlargement not cancer. If prostate cancer is suspected by the DRE or PSA this is investigated by TRUS (transrectal ultrasound) guided prostate biopsies. 0.5 mm biopsy cores are taken from the prostate under local anaesthetic with minimal discomfort and sent for histopathology. The grade of the cancer, measured by Gleason Score and amount of cancer is assessed and staging radiological studies may be required.

Localized prostate cancer can be treated by surgery or radiotherapy with the aim of cure. Recent less invasive advances include the Da Vinci robotic assisted laparoscopic prostatectomy and low dose rate radio-iodine seed brachytherapy and South Australia is in the unique position of having both of these modern programs even publicly at the Royal Adelaide Hospital. Unfortunately cure can be at the expense of side effects but these are becoming less common and less severe. Male urethral slings and the artificial urinary sphincter are available for the occasional men with significant urinary incontinence after surgery. The risk of erectile

dysfunction from treatment is falling and medical treatment is often effective but surgically implanted inflatable penile prostheses are available.

The mainstay of advanced prostate cancer treatment is androgen deprivation therapy. Huggens and Hodges discovered the dependence of prostate growth on androgens in 1941 and were awarded the Nobel Prize in Medicine for this in 1967. Treatment was initially female hormones or surgical castration but is now periodic injections to suppress testosterone production. 90% of prostate cancers respond to this treatment that can be as simple as one small subcutaneous injection every six months. Although men often respond for many years, androgen deprivation is not a cure and eventual relapse is expected if they live long enough from other causes. Chemotherapy is now available for advanced hormone resistant prostate cancer and can provide useful palliation and a small improvement in survival.

Despite the importance of prostate cancer, it must be remembered that prostate cancer is in fact only the sixth most common cause of adult male death, accounting for 4% of deaths. By far the leading cause of adult male death is heart disease so there is no point in worrying about the prostate and ignoring cardiovascular health. It is important to exercise regularly, have omega-3 fatty acids in the diet and control weight, blood pressure, cholesterol and lipid levels. Fortunately it has been shown that a heart healthy diet and lifestyle also lowers the risk and progression rate of prostate cancer.