

Prostate Cancer – Treatment

fact sheet

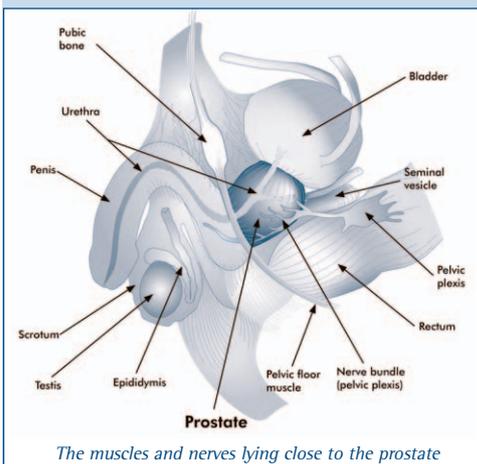
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Once a diagnosis of prostate cancer has been made, a man and his doctor must decide what steps to take next for management and treatment.

How is the type of treatment decided?

The final decision will depend on a number of factors including:

- Gleason score - high (more aggressive), intermediate (Gleason 7), or low grade
- Stage of the cancer - localised in the prostate gland or spread to other parts of the body
- Level of prostate specific antigen (PSA) in the blood and the rate of change of PSA over time (velocity)
- The man's age
- The man's general medical health and known health concerns
- Side-effects of treatment, since all treatments have unwanted effects
- The man's personal preference and priorities



The muscles and nerves lying close to the prostate

To help with making decisions about treatment, patients are often placed into high, intermediate or low risk groups with respect to likely cancer outcomes. By looking at a combination of factors, the chances of different cancer outcomes can be estimated using charts, tables and electronic aids. Although these predictions have limitations, they can be helpful in deciding which treatment might be best for a particular man.

What are the treatment options for localised (only in the prostate) prostate cancer?

If the cancer is localised in the prostate gland, the following options are available:

- Observation monitoring (sometimes called 'watchful waiting')
- Active surveillance
- Surgery (radical prostatectomy)
- Radiation therapy by external beam radiotherapy or brachytherapy

Surgery and radiation therapy both work well in controlling a localised tumour. It is not known whether one works better than the other as a randomized study has never been completed. However, each treatment has different side-effects.

Observation monitoring (watchful waiting)

Some men decide to have no treatment for localised prostate cancer because of the unwanted side-effects of surgery and radiotherapy. These patients prefer to take a 'watchful waiting' approach to see if any complications from their prostate cancer start to become noticeable. This approach is often used for men who are 75 years or older or men who have other health problems. For men using 'watchful waiting', the PSA test can be used as a sign of whether the cancer has progressed.

Active surveillance

Active surveillance is chosen based on PSA, digital rectal examination (DRE) and biopsy findings that indicate the man has low-risk prostate cancer with a low chance of the cancer progressing in the short to medium term.

Further biopsies, PSA tests and DRE are done to check whether these men are in the small sub-group who have more aggressive disease that was missed with the first biopsy. If they are in this small sub-group, they may need to think about treatment to try to cure the cancer.

Two problems with this approach are: 1) the first biopsy specimen may not represent the prostate cancer status for the whole prostate. Sometimes there may be cells with a higher Gleason score (suggesting a higher-grade

tumour) present elsewhere in the prostate that were not included in the first biopsy specimen; and 2) patients worry that they might be one of the minority who are in this sub-group with a more aggressive cancer.

Surgery – radical prostatectomy

A radical prostatectomy (surgery) involves taking out the whole of the prostate gland with that part of the urethra within the gland and seminal vesicles. The urethra from below the prostate is then joined to the bladder. Radical prostatectomy can be performed by an open approach or by using laparoscopy or telescopic 'keyhole' surgery. Robotic prostatectomy is a technologically advanced form of telescopic 'keyhole' surgery.

There are some risks linked to surgery including:

- Urinary incontinence: Leakage of urine may still be a problem in about 5-10 per cent of men one year after a radical prostatectomy
- Erectile dysfunction: About 75 - 85 per cent of men may have problems with getting and keeping an erection after surgery. However, there are some prevention strategies to help lower the chance of this happening, and treatments to help men if erectile dysfunction remains a problem.

Radiation therapy

Radiation therapy can be given externally or internally (brachytherapy) and, as with radical prostatectomy, will cure cancer in many patients.

Patients with high risk disease will begin androgen deprivation therapy (ADT) before radiotherapy to improve the results from radiotherapy in this sub-group of patients.

However, ADT has its own side-effects (see overleaf).

External beam radiation therapy is where small doses of radiation are given over many weeks resulting in a high total dose to the prostate by the end of the treatment.

Radiation damage to other tissues near the prostate can result in irritative bowel

symptoms and inflammation of the bladder, but these usually settle quickly. Erectile dysfunction is a common problem after radiation therapy. It tends to develop gradually and becomes worse over time.

Brachytherapy is usually done by inserting permanent radioactive 'seeds' straight into the prostate gland (low-dose brachytherapy), which stay there even after they are no longer emitting radiation. Another approach is to use rods emitting the radiation which stay in position for only a short time (high-dose brachytherapy).

High-dose brachytherapy is often given with an external beam radiotherapy boost to the target field.

Brachytherapy results in a high dose of radiation directly to the cancer cells. The aim is to reduce some of the side-effects of external beam radiation therapy, particularly those causing damage to the rectum.

How is advanced prostate cancer treated?

If the prostate cancer is aggressive and has spread to other parts of the body, the standard treatment is removal of the male hormones which make the tumour grow. This treatment is called androgen deprivation therapy (ADT).

ADT doesn't cure the cancer but it may help to keep the unwanted effects of the disease 'in check' for a period of time. The timing of starting ADT is a matter for judgement. Because of the significance of the side-effects of ADT, many of which increase over time, and since there is little survival benefit from starting early rather than later, the issue is often balancing the risks of side-effects against the unwanted effects of the disease.

What is androgen deprivation therapy (ADT), formerly called hormone therapy?

The growth of normal prostate cells and prostate cancer cells relies on male hormones (androgens), the most important of which is testosterone. ADT acts by either stopping testosterone production or by blocking the action of testosterone, and its active form dihydrotestosterone (DHT), on the cells and tissues.

What are the side-effects of ADT?

Most men having ADT will have a lack of interest in sexual activity (reduced libido) and some trouble with getting or keeping erections. Other common side-effects include hot flushes, tiredness and sweating, gradual decrease in body hair, reduced bone substance and muscle strength, which worsen over time, and cognitive changes such as changes in how well the memory works and difficulty with doing more than one thing at a time. Liver function may be affected if taking tablet forms of ADT and some men gain weight and have some breast development and/or nipple soreness.

What is hormone resistant, now called castrate-resistant, disease?

Most prostate cancers will shrink or stop growing with ADT. However, after some time, which is different for each patient, the prostate cancer will start to grow again. These tumours become very sensitive to any remaining androgens produced by the adrenal glands and those made within the tumour cells themselves. Also, the receptors for androgens on the surface of the cancer cells become more in number and change shape. When this happens, the receptors bind not only to androgens but also other molecules, including some drugs, which can then also stimulate the tumour to grow.

Measurement of PSA levels is used to monitor the response to ADT. For most patients an increase in PSA levels indicates progression of prostate cancer.

What are the treatments for castrate-resistant prostate cancer?

- **Chemotherapy:** docetaxel has been shown to give a modest improvement in survival and quality of life in men
- **ADT:** for the reasons above, changing to different forms of ADT can help for a period of time

What are the treatments for symptoms when castrate-resistant prostate cancer progresses?

Most treatments are given to relieve pain associated with the cancer, particularly when it has spread to other parts of the body.

External Beam Radiotherapy is often given locally to any area of the body to which the prostate cancer has spread, to give pain relief.

Radioisotopes which are injected into the blood to deliver radiation to areas of increased activity in the skeleton. Radioisotopes may be given to destroy cancer cells which have spread to the bone, and to relieve pain.

Bisphosphonates help reduce bone loss and therefore reduce the risk for bones to fracture: an injected form may lessen the chance of secondary cancers developing in the bones.

Corticosteroids prednisolone and other members of this family of drugs may be given together with other medications to control pain.

Pain relief a variety of medicines are used to give pain relief which is an important part of the management of patients with prostate cancer.

Weight bearing exercises such as walking, jogging, climbing stairs or training with weights: can help to improve muscle and bone strength as well as provide a 'feeling of well-being', even in men with advanced disease.

Palliative and pastoral care It is important to realise that life-expectancy is limited at this time but that a reasonable quality of life with maintenance of dignity is possible. Needs vary from patient to patient and a Palliative Care Clinician is often the best person to help at this time.

Clinical trials of new treatments are continually being done. To be approved for general use, the new treatment must show equal or greater benefit compared with the current management available to patients. Often the trials offer new treatments that are only available in a research trial setting. It is important for men to understand that these are experimental treatments and they may not be of benefit to the men in the trial.

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Date: March 2011

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Andrology Australia is an initiative funded by the Australian Government Department of Health and Ageing.

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