Treatment for prostate cancer

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There are different options for managing and treating prostate cancer. For some men immediate treatment is not required or may not be appropriate. Your treating specialist will advise you of your options based on your age, general health, the stage and grade of the prostate cancer, the severity of symptoms and the likely side effects of treatment.

<table>
<thead>
<tr>
<th>Type</th>
<th>Management or treatment options</th>
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<tr>
<td>Localised</td>
<td>Usually offered active surveillance, surgery or radiotherapy. Watchful waiting may be an option.</td>
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<tr>
<td>Locally advanced</td>
<td>Active surveillance is not recommended and you will be offered surgery and/or radiotherapy. Androgen deprivation therapy may also be suggested.</td>
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<tr>
<td>Advanced/ metastatic (at diagnosis)</td>
<td>Usually offered androgen deprivation therapy. Chemotherapy may also be suggested initially. Watchful waiting may be an option.</td>
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Active surveillance

Active surveillance is a way of monitoring prostate cancer that isn't causing any symptoms or problems and is considered to be low risk or, in selected instances, intermediate risk prostate cancer.

Typically active surveillance involves PSA tests every 3-6 months, rectal examination every six months, multi-parametric MRI scans, and biopsies at 12 months and three years. If at any stage the cancer shows signs of faster or more aggressive growth active treatment, which aims to cure the disease, can begin.
Active surveillance may be a preferred option if the possible treatment side effects would have more impact on your quality of life than the cancer itself. Active surveillance may also be suggested if the cancer is small (low volume) and slow growing (low grade) and is unlikely to spread or cause symptoms. This is generally indicated by a PSA no higher than 20, stage T1–2 and a Gleason score no higher than 6.

**Watchful waiting**

Watchful waiting is another method of monitoring prostate cancer. This involves regular PSA tests and clinic check-ups. The monitoring process is less strict than for active surveillance and further biopsies are not usually required.

Watchful waiting may be suitable for older men where the cancer is unlikely to cause a problem in their lifetime. Some men choose watchful waiting instead of immediate cancer treatment if the cancer is already advanced. It can also be an option for men with other health problems where treatments such as surgery or radiotherapy may not be appropriate.

Cancer treatment can be considered if the cancer spreads and/or causes symptoms. The aim of treatment is to treat symptoms that may be causing problems rather than cure the prostate cancer.

**Surgery**

**Radical prostatectomy**

Your doctor may suggest surgery if you have early prostate cancer, are fit enough for surgery and expect to live longer than 7–10 years. The procedure is called a radical prostatectomy and aims to remove the cancer completely. This involves the removal of the prostate gland, part of the urethra and the seminal vesicles which store semen. For more aggressive cancer the adjacent lymph glands may also be removed (pelvic lymph node dissection).

Radical prostatectomy may be performed using different surgery techniques:

**Open radical prostatectomy**

An open radical prostatectomy is usually done through a small cut in the lower abdomen. After the prostate is removed, the urethra is rejoined to the bladder. You will need to stay in hospital for several days to recover. A thin tube (catheter) will be used to collect your urine in a bag which may feel uncomfortable. The catheter will be removed 6–14 days after the surgery.

Depending on your work and lifestyle you should be able to return to your usual activities within 4–6 weeks and most men can resume driving within a couple of weeks. Heavy lifting should be avoided for six weeks.
Laparoscopic radical prostatectomy

Sometimes the prostate may be able to be removed via keyhole surgery, called a laparoscopic radical prostatectomy (LRP). For this procedure small surgical instruments are inserted through several small cuts in the abdomen. The surgeon performs the procedure by moving the instruments while watching a screen.

This procedure is the same as open surgery but performed using smaller incisions. This generally leads to a shorter hospital stay, less bleeding, a smaller scar and faster recovery from surgery. However there is not a high level of evidence that one technique is better than the other.

This surgery is not suitable for all men and may not be available in all hospitals. Surgeons require specialised training to perform this procedure. Laparoscopic surgery can also be performed using a robotic-assisted device which allows the surgeon to see a three-dimensional picture and to use more advanced instruments than those used for conventional laparoscopic surgery. This is called robotic-assisted radical prostatectomy or RARP.

Nerve-sparing prostatectomy

Sometimes your surgeon may offer a nerve-sparing radical prostatectomy. This involves removing the prostate and seminal vesicles and trying to preserve the nerves that control erections.

This procedure is only possible if the cancer is not in or close to these nerves. This procedure is more suitable for lower grade cancers and may not be possible with higher grade cancers. This surgery is best performed on younger men who have good erectile function.

Problems with erections are common even if nerve-sparing surgery is performed. However, this can be managed in a number of ways. See Symptom management for prostate cancer for more information and ask your doctor or nurse about ways to manage erectile dysfunction (ED) after prostate cancer treatment.

Side effects of prostate cancer surgery

These operations may cause some or all of the following side effects:
Nerve damage – the nerves needed for erections and the sphincter muscle required for bladder control are both very near the prostate. They can be damaged during surgery, causing problems with erections and urinary continence.

Loss of bladder control – a radical prostatectomy may make it difficult for you to control your bladder. Known as urinary incontinence this condition usually improves within a few months following the surgery but may take up to one year to fully stabilise. There are aids and exercises to assist with these problems and it may help to see a continence physiotherapist or continence nurse before your surgery or as soon as possible afterwards. Undertaking the recommended pelvic floor exercises before and after surgery can influence post-surgery bladder control. A small number of men (about 5%) may be left with ongoing and troubling incontinence that could need a further operation to fix.

Erectile dysfunction (impotence) – many men experience impotence (erection problems) after prostate surgery. It may take months to a few years for erections to improve and stabilise. Many men may not recover strong erections. Oral medications, injection therapy or implants may help if you have ongoing problems with erections.

Infertility – as the tubes from the testicles (vas deferens) are sealed and the prostate and seminal vesicles are removed semen is no longer ejaculated during orgasm. This is known as a dry orgasm and results in infertility.

Penile shortening – some men report a decrease in penis length after surgery. It may help to see a psychologist or counsellor for assistance coming to terms with any changes to the appearance of your penis.

Radiotherapy

Radiotherapy is one of the treatments offered to men with early prostate cancer who are otherwise in reasonably good general health. It is generally offered as an alternative to surgery. Sometimes radiotherapy is used after a prostatectomy for locally advanced or more aggressive cancers, or if there are indications that not all of the cancer has been removed by surgery.

Radiotherapy can be delivered externally via external beam radiotherapy or internally via brachytherapy. Most men who receive radiotherapy as their initial treatment will receive androgen deprivation therapy (ADT) before and after.

External beam radiotherapy (EBRT)

External beam radiotherapy (EBRT) uses high-energy x-rays to kill cancer cells or injure them so they cannot multiply.

Treatment is planned to ensure there is as little damage as possible to the normal tissue and organs surrounding the prostate. Sometimes this planning involves inserting small pieces of gold metal into the prostate to allow more accurate aiming of the radiation treatment. Modern machines limit radiation exposure to surrounding healthy tissue. Usually you will have radiotherapy treatment every weekday for up to eight weeks, often in combination with temporary hormone therapy.

During the treatment session you will lie on an examination table under the machine that is aimed at your prostate. Each session usually takes about 15 minutes.

Side effects of external beam radiotherapy

You may experience some of the following side effects.

Sexual dysfunction (impotence) – problems with erections are common after external radiotherapy due to nerve damage and may be further aggravated by ADT. Problems may not occur immediately but may develop over time and be ongoing. Some men notice pain on ejaculation or find that they ejaculate less after, and while, undergoing radiotherapy. This discomfort can ease over time; however dry orgasms are common after radiotherapy.
Infertility – radiotherapy to the prostate usually results in infertility. If you wish to have children speak to your doctor before treatment about sperm banking or other options.

Skin irritation – skin in the treatment area may become red and sore during or immediately after treatment. These reactions fade with time. Ask your treatment team for advice about dealing with this.

Tiredness – when your body has to cope with the effects of radiation on normal cells it becomes fatigued. Fatigue may build up slowly during treatment and should go away when treatment is over but can last up to six months.

Urinary problems – you may experience a burning sensation when urinating or an increased urgency to urinate. These side effects usually go away after treatment, but your doctor can prescribe medication to reduce any discomfort you may experience. Injury to the lining of the bladder can sometimes cause bleeding. This is called radiation cystitis. Radiation is unlikely to cause incontinence but it can cause ongoing bleeding that can be difficult to control. It is important to report any problems to your doctor.

Bowel problems – some men may bleed when passing a bowel motion. This is caused by damage to the fine blood vessels in the lower bowel. Let your doctor know if you experience rectal bleeding. Some men may also have diarrhoea or difficulty holding onto their bowel motions. These problems are usually temporary and your treatment team will let you know how to manage these side effects.

External beam radiotherapy does not make you radioactive and there is no danger to others with whom you might come in contact.

Brachytherapy

Brachytherapy is a type of targeted internal radiotherapy where the radiation source is placed directly within the prostate gland. This allows higher doses of radiation to be given while the effects on nearby tissues such as the rectum and bladder are minimised. Brachytherapy can be given at either a low-dose rate by inserting permanent seeds that are radioactive for three months, or at a high-dose rate through temporary needle implants. Brachytherapy is not suitable for men who already have significant urinary symptoms.

Low-dose rate brachytherapy

This treatment is most suitable for men with a small to moderate-sized prostate gland, few urinary symptoms, and small tumours with a low PSA level (less than 10) and a low/intermediate Gleason or ISUP score.

Low-dose rate brachytherapy involves implanting radioactive seeds, about the size of a grain of rice, into the prostate. The seeds release radiation to kill cancer cells and lose their radiation effect over a period of three months. The seeds are inserted under a general anaesthetic through the skin between the scrotum and anus using needles and are guided into place by ultrasound.

Implantation takes 1–2 hours and is done under general anaesthetic. There is no incision, only some small puncture holes that heal very quickly, allowing for a faster recovery than external beam radiotherapy or surgery. This is usually a day surgery procedure.

The seeds remain radioactive for three months. Although very uncommon, it is possible that a seed may dislodge during sexual activity. For this reason, you will be advised to use a condom or avoid sexual activity for three months. This way if a seed comes out, the condom will catch it.

High-dose rate brachytherapy

This treatment is usually given to men with higher PSA levels and Gleason scores who are at risk of locally advanced cancer. It is generally combined with a short course of external beam radiotherapy.
High-dose rate brachytherapy is given through temporary needle implants. Hollow needles are placed in the prostate under general anaesthetic and high-dose radioactive wires are passed down the needles. You will usually stay in hospital overnight.

**Side effects of brachytherapy**

Inserting the radioactive seeds causes minimal discomfort, but side effects may include pain when urinating, poor urine flow and bladder irritation. These are generally temporary and can be managed. These effects usually start 1–2 weeks after treatment and start to resolve within a couple of months.

Impotence and changes in ejaculation may occur after temporary needle implants. Permanent radioactive seeds have the lowest chance of causing erection problems compared with other treatments. Pain on ejaculation and dry orgasms may also occur. Talk to your doctor and/or treatment team about the best ways to manage these side effects.

For more information about radiotherapy call Cancer Council 13 11 20 or you can download the booklet Understanding Radiotherapy.

**Androgen deprivation therapy (ADT)**

Prostate cancer needs testosterone to grow. Slowing the production of testosterone may slow the growth of the cancer or shrink it temporarily. This is called androgen deprivation therapy (ADT). This treatment used to be known as hormone therapy. ADT is often used before, during and after radiotherapy. It is also sometimes given with chemotherapy.

ADT is also used to manage advanced prostate cancer when disease has spread beyond the prostate. In this case the treatment will not cure the cancer but can keep it under control for months and even years. It may also reduce or eliminate the symptoms of cancer (temporary remission) and help with symptoms such as pain caused by the cancer spreading. ADT is given by injection, or in tablet form. In some cases surgery to remove part or all of the testicles may be preferable.

**ADT injections**

Injections of luteinising hormone-releasing hormone (LHRH) analogue and antagonist are used to control the production of testosterone. These injections will not cure the cancer but will often slow its growth for years. LHRH antagonist injections are usually given monthly, three-monthly or six-monthly.

**Intermittent ADT**

Occasionally ADT is given in cycles. Treatment may continue until your PSA level is low and then stopped for a period of time. It can then be restarted if your PSA rises again. This is not suitable for all men.

The advantage of intermittent ADT is that some side effects may be reduced while treatment is stopped. However it can take many months after the last injection for any side effects to wear off. The risks and benefits of intermittent ADT are being tested in clinical trials and are not yet fully understood.

**ADT Tablets**

Tablets are called anti-androgens and work in a different way to injections to control cancer growth. They are used on their own but also with injections known as a complete androgen blockade.
Surgical approach

Surgery to remove all or part of the testicles offers a permanent solution for reducing testosterone levels. This is known as bilateral orchidectomy. Some men may prefer this approach over taking tablets or having regular injections.

- **Bilateral orchidectomy** – the removal of both testes. After surgery men have the option of having silicone put into the scrotum to keep its shape.
- **Subcapsular orchidectomy** – the removal of only the inner part of the testes. This does not require a prosthesis.

Side effects of ADT

ADT may cause a range of side effects because of reduced testosterone levels. It is difficult to predict if or when a man's testosterone will return to pre-treatment levels.

Side effects can include:

- fatigue
- reduced sex drive (libido)
- erection problems
- loss of muscle strength
- weight gain
- hot flushes
- breast growth and tenderness
- depression
- adverse cognitive and memory changes
- loss of bone density (osteoporosis) (your doctor may monitor your bone mineral density, calcium and Vitamin D levels)
- increased risk of other problems such as obesity, diabetes and heart disease (your doctor will assess these risks with you – it may be helpful to seek advice from a dietitian).

These side effects can be significant but your doctor can help you minimise the impact.

Chemotherapy

Chemotherapy is the use of drugs to kill or slow the growth of cancer cells. If the prostate cancer continues to advance and spread to other parts of your body despite using hormone therapy, chemotherapy may be suitable. Chemotherapy may also be offered as a first-line treatment in combination with Androgen Deprivation Therapy (ADT).

Chemotherapy is generally given by injection (infusion) into a vein (intravenously). It is usually given once every three weeks and you do not need to stay overnight in hospital.

Side effects may include:

- nausea
- hair loss
- changes in blood counts increasing the risk of bleeding or infections
- numbness or tingling in the hands or feet (peripheral neuropathy)
- changes in nails
- other side effects can occur rarely such as allergic reactions or blockages of the tear ducts.

For more information about chemotherapy call Cancer Council 13 11 20 or you can download the booklet [Understanding Chemotherapy](http://example.com/understanding_chemotherapy).
Other therapies

Newer drug therapies are often used to treat men with advanced prostate cancer that has stopped responding to other treatments. These drugs, which include abiraterone and enzalutamide, may help prolong life and reduce symptoms.

This website page was last reviewed and updated April 2017.

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