



MRPHIP

PROSTATE HEALTH IMPROVEMENT PROGRAM

Mr PHIP No. 3

After a diagnosis of prostate cancer: Choosing a treatment for localised prostate cancer

Key points

- > Prostate cancer is usually slow growing compared to other cancers and when caught early it can be cured, usually by surgery or radiotherapy.
- > Your individual cancer risk – how far the tumour extends and how aggressive it is – is important in making a treatment choice.
- > For localised cancer, the three most common treatment strategies are surgery, radiotherapy or delayed treatment (active surveillance or watchful waiting).
- > Each treatment has pros and cons that you need to weigh up.
- > You are able to take your time and talk to a range of people before making this decision. Decisions can be changed as time passes.

Introduction

The time immediately following diagnosis of prostate cancer is a difficult one for many men and their families. This is partly because at the same time as coming to terms with a potentially life threatening disease, a choice needs to be made about treatment. This information describes ways men can work through the decision, and gives an outline of the main treatment options for localised prostate cancer (cancer that has not spread beyond the prostate region). Treatment options for more advanced cancer are given in Mr PHIP No. 4 and 5. For more information, see Resources.

Learning that it's cancer

Hearing the word cancer is usually a shock. Men often say that after that word was mentioned, they felt in a daze: 'Didn't hear anything the doctor said'. A man's response to a diagnosis of cancer may be shaped by the experience of a father, uncle or friend who was diagnosed some time ago, before current improvements in knowledge and treatment. It is good to remember that our success with treating cancers, including prostate cancer, has steadily improved over time. Nevertheless, there is a lot to take in.

[The following suggestions may be helpful at this stage:](#)

- > Take your time. Prostate cancer is normally slow growing. Most men have time to talk to others and think things through before making a decision.
- > Talk to your GP, who may answer some of your questions and may be helpful in clarifying information about the disease and treatments.
- > Make a second appointment with your urologist – write a few questions down before the appointment as a reminder, or have someone come with you.
- > A second opinion can be arranged through your GP or specialist. Men with localised cancer are often encouraged to talk to a second urologist (surgeon) or a radiation oncologist (a doctor who specialises in radiotherapy for the treatment of cancer).
- > Talking to other men with prostate cancer can be helpful in learning



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about the experience of treatment and life after diagnosis. This can be arranged through the Cancer Council Helpline or a support group (see Resources).

- > Partners of men with prostate cancer also feel shock and distress at a diagnosis of prostate cancer. Men and women look for support in different ways, and often have different concerns. The booklet 'Coping with a diagnosis of prostate cancer' and other Resources may be helpful.

Staging prostate cancer: The TNM system

TNM stands for Tumour–
Node–Metastasis

T1	Tumour is small. It cannot be felt by the doctor and may have been detected on needle biopsy, initiated after a raised PSA test. Usually there are no symptoms
T2	Tumour is large enough for a doctor to feel, but is thought to be confined to the prostate gland
T3	Tumour extends beyond the prostate and may have invaded the seminal vesicles
T4	Tumour invades other tissues beyond the prostate in the pelvic region
N1 to 3	Tumour is present in lymph nodes (glands) in the pelvis
M1	Tumour cells present in bone or other distant organs of the body

Within each stage, levels of a, b and c are assigned, depending on the extent of tumour.

Choosing a treatment

The choice of treatment depends on the risk posed by the cancer, particularly how far it has grown (the stage) and how abnormal it looks when viewed through a microscope (the grade). The benefits and side effects of each treatment and your age and health are also important.

Surgery and radiotherapy are offered as treatments for cancer that has not spread beyond the prostate (localised prostate cancer) or remains in the region of the prostate (locally advanced prostate cancer).

How is stage determined?

Information about cancer stage (how far it has spread) comes from the digital rectal examination (the doctor feels the prostate with a gloved finger in the rectum) and radiology tests such as rectal ultrasound, CT (computed tomography), MRI (magnetic resonance imaging) and bone scans. The PSA (prostate specific antigen) blood test is also a guide to tumour extent. These tests help the doctors to estimate the tumour size and where it is.

The most common system used to work out the cancer stage is the TNM system. If you have surgery, more information about the stage may come from the removed tissue.

What is cancer grade?

Tumour grade is a measure of how abnormal the tumour tissue looks (seen under the microscope), which reflects how fast it is likely to grow and spread (its aggressiveness).

The Gleason score is the most common measure of grade. To decide a Gleason score, the pathologist examines tissue from the biopsy or operation. The pathologist scores the appearance of the most common and most abnormal cell patterns out of 5 and adds them. The total score ranges from 2 to 10.



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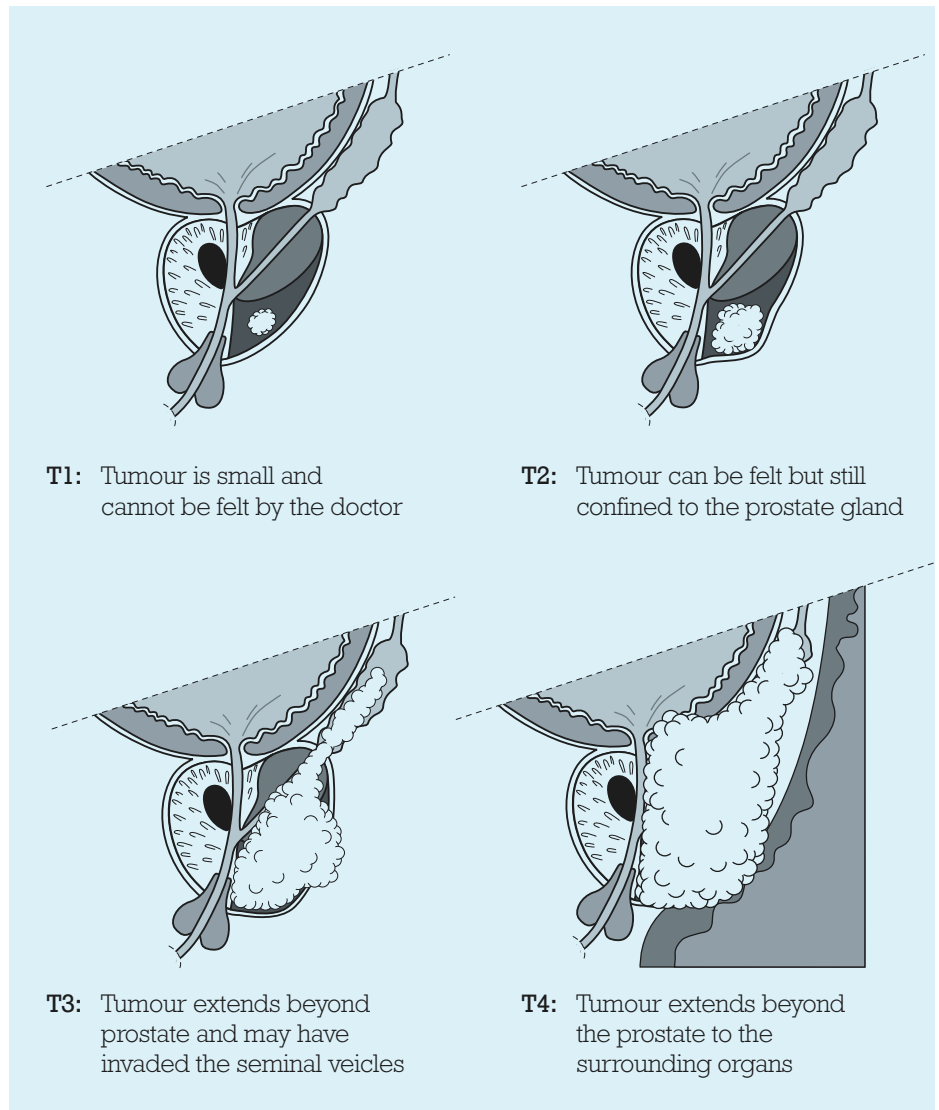


Figure 1: Staging Prostate Cancer

Table 1: Assessing risk

Risk	Stage, Gleason score and PSA	Chance prostate cancer is confined to the prostate
Low	Gleason 2–6 PSA less than 10 Cancer can't be felt or is felt in only a small area	High
Medium	Gleason 7 PSA 10–20 Cancer can be felt in a larger area	Moderate
High	Gleason 8–10 PSA greater than 20 Cancer can be felt extending outside the prostate	Low



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You usually have plenty of time to make a treatment decision – don't feel rushed!

Sometimes, in tissue removed at operation, the pathologist may also comment on a third pattern (called a tertiary score) if it is a higher grade, present in a small amount. Intermediate to high grade cancers (those with a score of 7–10) are the greatest threat because they are growing more rapidly and tend to spread earlier from the prostate.

PSA test

PSA is a protein produced by prostate cells and forms part of the ejaculate. It is produced by both normal and cancerous cells, but when cancer is present the level of the PSA in the blood often rises, so the PSA test can be a guide to the amount of cancer in your body.

Estimating the risk posed by the cancer: Combining stage, grade and PSA level

The stage, Gleason score and PSA result together give an idea of the risk posed by the cancer. This is helpful in deciding whether it is likely to be still confined to the prostate.

Cancer stage, Gleason score and PSA can also be combined in a prediction tool called a nomogram, which estimates the probability of cancer spread or cancer recurrence after treatment. Nomograms are based on the outcome of thousands of men who have been treated. They predict outcomes such as whether the cancer will recur and the probability of survival. If you would like to use a nomogram, talk to your doctor so that s/he can assist you.

More information about nomograms can be found at www.mskcc.org/mskcc/html/10088.cfm

What are the treatment options?

The three most common forms of treatment for localised cancer are

surgery (radical prostatectomy), radiotherapy and active surveillance (a form of delayed treatment or observation only). Another type of treatment, hormone therapy, can be used with radiotherapy for high risk localised prostate cancer, or for cancer which has spread to other parts of the body. (See Mr PHIP No. 5)

Surgery: Radical prostatectomy

Surgery to remove the entire prostate and the seminal vesicles (glands that secrete part of the ejaculate) is called a radical prostatectomy (see [Figure 2](#)). Like any major surgery, it has risks, and is usually offered to healthy men who have at least a 10-year life expectancy.

The operation can be done by open surgery or by a 'keyhole' (laparoscopic) approach. The keyhole approach involves making several small openings in the abdomen. The surgeon may control the instruments using a 'robot'. Keyhole surgery can take longer, but blood loss is usually less and recovery time and hospital stay shorter. Depending on whether the surgery is open or keyhole, hospital stay is 1–6 days with a recovery period of 3–6 weeks before returning to work or energetic activities such as heavy lifting.

Open and keyhole approaches have similar results. The surgeon's experience (number of operations performed) in using either approach is important for a good outcome.

Potential long term side effects of a radical prostatectomy are poor erections (impotence) and urinary leakage (incontinence). Because the prostate lies next to nerves and blood vessels that are important for erections, this operation carries a high risk of poor quality erections (70–90% of cases in an Australian study)¹. If the cancer is small, and the nerves controlling erections can be spared, impotence rates are at the lower end of this range. A nerve-sparing operation is less likely to be possible if your cancer is high risk (see [Table 1](#)).



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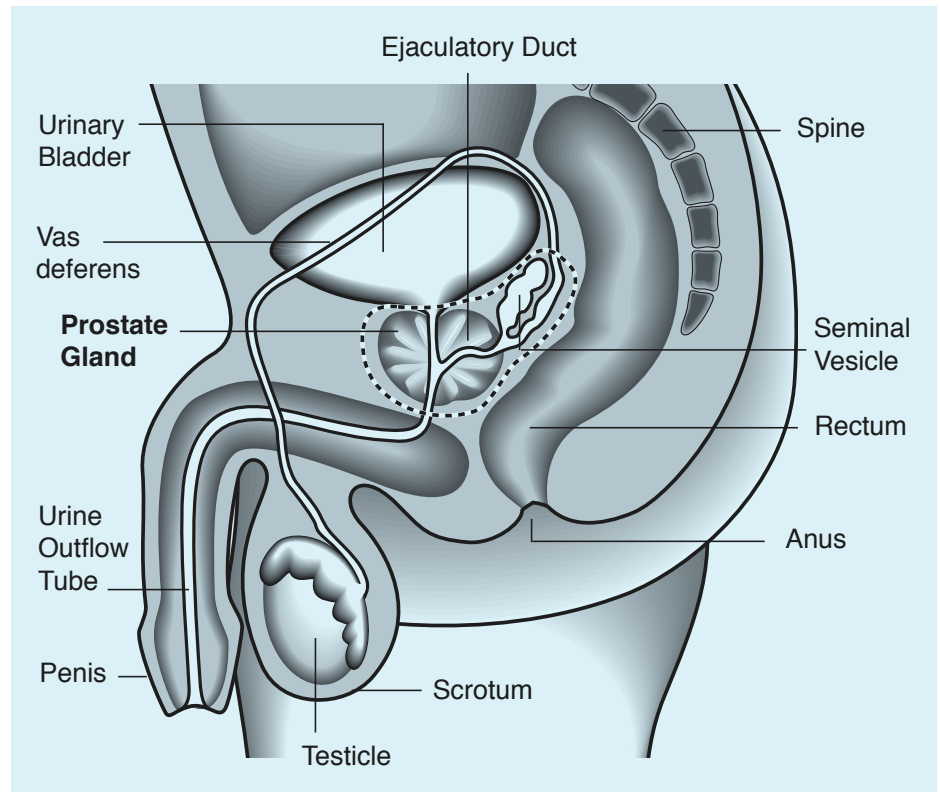


Figure 2: Male Reproductive System: radical surgery to remove the prostate is indicated by the dotted line

The prostate lies at the opening or 'plug hole' of the bladder and surrounds the urine outflow tube (urethra). Mild to moderate urine leakage can occur after the operation. Urinary incontinence occurred in 9–16% men in the Australian study¹ with severe incontinence at the lower end of this range.

The effectiveness of radical prostatectomy in treating localised cancer is very good: up to 88% of men with localised cancer remaining cancer-free at 12 years compared with 54% of men who did not have surgery². For this reason, it is offered as a potentially curative treatment.

Radiotherapy

Radiotherapy, also a common treatment, uses x-ray energy to kill cancer cells. It can be delivered from an external source (called external beam radiotherapy or EBR) or internally, where the source of the radiation is placed in the prostate itself (called brachytherapy).

The treatment is carefully planned using scans and computer software to deliver the right dose to the areas needed. Planning usually involves two visits to a radiation oncology department.

External beam radiotherapy

This treatment uses a method called conformal radiotherapy. This allows the radiotherapist to follow the shape of the prostate in three dimensions and to target the prostate while limiting damage to surrounding tissues.

Intensity modulated radiotherapy (IMRT) uses technology to follow the contours of the prostate to deliver higher, more targeted doses of radiation to increase its effectiveness while reducing unwanted side effects.

Image guided radiotherapy (IGRT) is a common technique used to assist radiation targeting and involves placing three (non-radioactive) seeds into the prostate before treatment. This means the doctor can better monitor the position of the prostate during the course of radiotherapy.



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Prostate cancer support groups may prove helpful in contacting other men with prostate cancer.

External beam radiotherapy is usually divided into small doses over some weeks (e.g. a few minutes of treatment on each of 5 days per week over 7–8 weeks).

Radiotherapy is a suitable treatment for men with low to high risk prostate cancer. It does not have a sudden stressful impact on the body as surgery does and so is appropriate for older people and those with other illnesses and who are not strong enough to undergo surgery. It is also useful to treat disease that has spread just outside the prostate, but is contained within the prostate region.

Side effects are different from surgery. Temporary bowel problems such as diarrhoea and bladder irritation (cystitis) occur in most men after radiotherapy but usually settle down in time. Some men may experience long term diarrhoea, however the incidence of severe, permanent urinary or bowel side effects is low (1–2%). Side effects of radiotherapy may be minimal initially but can increase over several years after treatment. In an Australian study, at 3 years, urine leakage occurred in 3% of men, 2 men out of 3 were impotent and 15% had bowel problems¹.

External beam radiotherapy alone is a successful treatment for men with low and intermediate risk cancer. For men with high risk cancer, it may be combined with hormone therapy (also called androgen deprivation treatment) to improve cancer control.

Brachytherapy

Brachytherapy involves introducing permanent radioactive seeds (low dose rate) or temporary wires (high dose rate) into the prostate. The latter may be delivered with a 4-week course of external beam radiation.

Low dose rate (LDR) brachytherapy is offered to men with low risk cancer: a small, slow-growing tumour and a PSA less than 10 ng/mL. Control of the cancer is comparable to external beam radiotherapy and surgery.

Erectile problems are usually fewer after LDR brachytherapy than after surgery, with 36% impotent at 3 years in the Australian study quoted earlier¹. Brachytherapy may have a greater risk of troublesome urinary symptoms (poor stream, frequent urination, etc.) than either surgery or external beam radiotherapy. For this reason, men's lower urinary tract symptoms are assessed before this treatment is offered. There is a small risk of urinary retention (inability to urinate) and some men may need to wear a urinary catheter initially. Bowel problems were not experienced by men undergoing LDR brachytherapy in the Australian study¹.

High dose rate (HDR) brachytherapy can be used to deliver very high doses of radiation to the prostate. It involves the temporary insertion of needles with the radioactive source on two to four occasions. It is often supplemented with EBRT. This treatment is suitable for men with intermediate and high risk cancers.

Side effects are similar to other forms of radiotherapy, although erectile problems are higher than after LDR brachytherapy (72% impotence in the Australian study¹).

Hormone therapy: Removing the male hormone or its effects

If you have a medium or high risk cancer, your EBRT might be combined with androgen deprivation therapy or hormone therapy. This is treatment with drugs designed to remove or minimise the effect of the male hormone, testosterone, on the body. Hormone therapy may begin 3 to 8 months before radiotherapy and may continue for 2 or more years.

The lack of male hormone can cause cancer cell death, making the job of radiotherapy easier. Hormone therapy alone is never a curative treatment.

This type of combined therapy has been shown to improve cure rates and survival in men with medium and high risk prostate cancer³.



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If you don't understand what you read here, ask your doctor or specialist to explain it.

However as male hormones have many functions in the body, removing them will cause side effects. These include hot flushes, breast enlargement, loss of libido and loss of erectile function (impotence), lack of energy, mood changes (depression) and weight gain. Over the long term, osteoporosis (weakening of the bones) may be a concern. Many doctors now recommend a bone density scan every 1-2 years to monitor changes. Vitamin D and calcium supplements are advised for men on hormone therapy.

Hormone therapy used to increase the effectiveness of radiotherapy is usually temporary, and these side effects diminish with time.

Active surveillance

Some younger men with low risk cancer may prefer to delay their choice of treatment until it is clear that treatment is needed to cure the disease. This approach aims to maintain sexual function for longer and avoid side effects. It is only recommended for men with low risk cancer (see [Table 1](#)) or men with other significant life-threatening health issues.

Men on active surveillance have a PSA test every 3-6 months and may have biopsies. Treatment is often recommended if the PSA increases significantly, the biopsy Gleason increases to 7 or more or the cancer grows significantly in size. If this occurs, it still may be possible to have surgery or radiotherapy.

The disadvantage of active surveillance is that no-one can be certain if or when the cancer has progressed to a point when cure is not possible. It is an option you can discuss with your doctor(s).

Observation but no active treatment (watchful waiting)

Some men with slow growing cancers will not have symptoms of the disease in their lifetime. Men over the age

of 75 years or who have fewer than 10 years life expectancy may not be affected by their cancer even with no treatment and therefore will not benefit from having treatment. Men on a watchful waiting program can be offered hormone treatment to control the cancer if and when it progresses. This is an option for older men or those with other serious illnesses.

New treatments

A number of newer treatments are currently being developed and assessed for localised prostate cancer. While some are available in Australia, most do not attract Medicare or private health insurance benefits and can be costly.

Cryosurgery or freezing of the tumour tissue with liquid nitrogen is available to treat low to intermediate risk cancer that has not spread outside the prostate. Ultrasound during the procedure is used to guide the extent of freezing. It is not suitable for large prostates. Side effects include impotence and urinary incontinence. We don't have long term data on cancer control and for this reason it is not recommended as a primary therapy⁴. It may be offered as 'salvage' therapy after radiotherapy that has failed to control the cancer.

High intensity focused ultrasound (HIFU) is heating of tissue using microwaves. It is being used for localised and more advanced prostate cancer, but is not widely used in Australia. Side effects may include urinary retention (blockage of urine flow) and a prolonged period wearing a catheter. Long term outcomes are hard to measure.

Focal therapy is the removal or 'ablation' of small areas of cancer within the prostate gland. Its success depends on cancers being low risk, very small (less than one-tenth of the prostate) and knowing the exact position of the cancer. Because the rest of the prostate is left intact, it is



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thought that this type of therapy may involve less disruption to the nerves and tissues involved in erections and so have fewer side effects. The disadvantages are that re-treatment may be necessary and it may miss some cancers. The approach is considered experimental.

Which treatment is right for me?

Choice of treatment depends on your cancer – whether it is low risk, moderate or high risk. By ‘risk’, we mean the extent to which it poses a threat to your life. Doctors use mainly the PSA level, cancer stage and cancer grade to decide on risk (Table 1). Urinary difficulties and the size of the prostate may also play a role. Choice of treatment also depends on your age, whether you have other health conditions and your own preference.

- > For low risk cancers, treatments include brachytherapy, external beam radiotherapy, radical prostatectomy and active surveillance.
- > For moderate risk cancers, radical prostatectomy and external beam radiotherapy, with or without brachytherapy, are options.
- > For higher risk cancers, radical prostatectomy or hormone treatment may be offered in combination with radiotherapy.
- > For an older man or those with fewer than 10 years life expectancy, and low to intermediate risk cancer, watchful waiting can be a sensible choice.

How do we know when the cancer is controlled?

After surgery or radiotherapy, PSA tests are the best way to know whether the treatment has removed or destroyed all of the cancer. The PSA level will drop rapidly (within

weeks) after surgery, but may take from 12–18 months to reach its lowest point after radiotherapy. PSA levels are expected to remain low in the long term: undetectable levels after surgery and ideally, less than 1.0 ng/mL after radiotherapy. If the PSA starts and continues to rise after treatment, it typically means that there is continued growth of prostate cancer, and the original treatment did not cure the disease.

Sometimes after radiotherapy, in particular brachytherapy, the PSA can drop, ‘bounce’ upwards for a few months, then drop again. This is usually only seen in the first 1–3 years after radiation treatment. The reason for this PSA bounce is not known.

If the cancer recurs or has spread beyond the prostate region, hormone treatment may be offered. Hormone treatment can usually control the cancer successfully for many years. Issues surrounding this treatment are discussed in Mr PHIP No. 4 and 5. External beam radiotherapy to the pelvic region is sometimes used after radical prostatectomy as the PSA starts to rise again, to achieve better control of the cancer. Surgery is not often used after radiotherapy if radiotherapy is the main treatment.

Although the time after a diagnosis can be difficult, for most men there are many good years of life ahead after treatment for prostate cancer. When it is caught early, the outcome of treatment for prostate cancer is very good – at 10 years after treatment, 60–75% men remain free of cancer and 94–98% of men have not died of prostate cancer⁵.

Sources

1. Smith DP, et al. Quality of life three years after diagnosis of localised prostate cancer: population based cohort study. *British Medical Journal* 2009;339(2):4817.



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2. Bill-Axelsson A, et al. Radical prostatectomy versus watchful waiting in early prostate cancer. *New England Journal of Medicine* 2005;352(19):1977–84.
3. Michel B, et al. External irradiation with or without long-term androgen suppression for prostate cancer with high metastatic risk: 10-year results of an EORTC randomised study. *The Lancet Oncology*, 2010;11(11):1066–73.
4. National Comprehensive Cancer Network. Prostate cancer – v2.2010. National Comprehensive Cancer Network Clinical Practice Guidelines in Oncology. NCCN, 2010 [accessed 3.3.2011].
5. Heidenreich A, et al. Guidelines on Prostate Cancer. The Netherlands: European Association of Urology, 2011.

For more information

Mr PHIP Series available online at www.prostatehealth.org.au

1. Prostate cancer: Should I be tested?
2. Interpreting the PSA test for prostate cancer
3. After a diagnosis of prostate cancer: Choosing a treatment for localised prostate cancer
4. Life after treatment for localised prostate cancer
5. Hormone treatment for prostate cancer
6. Sexual function after treatment for prostate cancer
7. Useful resources / Glossary

Internet

- > www.prostate.org.au
- > www.prostatehealth.org.au
- > www.andrologyaustralia.org.au

Phone

National Cancer Helpline: 13 11 20

Resources

[Localised prostate cancer: a guide for men and their families](#)

Australian Prostate Cancer Collaboration Australian Cancer Network, 2010. Download from www.prostatehealth.org.au. Hard copies free from the Cancer Council Helpline 13 11 20 or Andrology Australia 1300 303 878.

[There's some good years left yet: The experience of a prostate cancer survivor](#)

Barry Oakley, 1999. Published by the Prostate Health Improvement Program, Repatriation General Hospital, Daw Park. Available at: http://www.prostatehealth.org.au/resources/Experience_of_a_Prostate_Cancer_Survivor.pdf

[Life's in the pink: How to maintain a quality of life by a prostate cancer survivor](#)

Barry Oakley. Printed in 2003 by courtesy of The Cancer Council SA. Available at: www.prostatehealth.org.au in Educational Resources section.

[Coping with a diagnosis of prostate cancer](#)

Queensland Cancer Fund. Phone 13 11 20 or download from www.qldcancer.com.au

[Prostate Cancer Foundation of Australia support group network](#)

<http://www.prostate.org.au/articleLive/pages/Support-Groups>

Find a support group near to you.

More resources

See the Mr PHIP prostate cancer resource list in this series



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Disclaimer

This information sheet is not intended to take the place of medical advice. Information on prostate disease is constantly being updated. We have made every effort to ensure that information was current at the time of production; however your GP or specialist may provide you with new or different information that is more appropriate to your needs.

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About Mr PHIP

This information has been developed by the Urology Unit at the Repatriation General Hospital, in consultation with men who live with prostate cancer, their families and friends. In addition other health professionals and community agencies have contributed to their production. We are grateful to all of these individuals and organisations who have been so generous with their time and willingness to assist.