

Testing for prostate cancer: a consultation resource

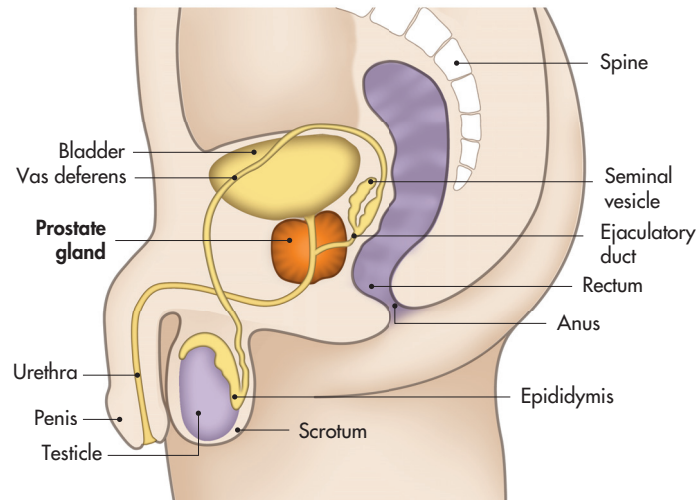
This is a consultation resource for primary care practitioners asked about prostate cancer testing.

Discussion points

- What is your main concern?
- What is prostate cancer and what tests are there?
- What is your risk?
- What are the possible benefits and harms of being tested for prostate cancer?
- What is most important to you?

A national screening programme for prostate cancer has not been established because results from good-quality research studies are required to confirm whether the benefits outweigh the harms. Although a national screening programme for prostate cancer is not appropriate given current information, every man has the right to decide for himself whether or not to be tested to check for prostate cancer. Information about prostate cancer and prostate cancer testing remains under review by the Ministry of Health and interested groups. Doctors and other health practitioners have a duty under the Code of Health and Disability Services Consumers' Rights Regulations 1996 to provide good, balanced information on prostate cancer and the possible benefits and harms of testing and treatment.

The prostate



What is the risk?

Age

Younger men have a smaller chance of having prostate cancer. If diagnosed with prostate cancer, younger men are more likely to die of it. This is because there is more time for the cancer to progress and younger men are less likely to die of other causes.

What is the chance of a diagnosis of prostate cancer?

For a man in his 40s	1 in 500 men
For a man in his 50s	1 in 50 men
For a man in his 60s	1 in 14 men
For a man in his 70s	1 in 9 men

Note: These risk estimates are for the whole decade eg, 40–49 years, not per year of the decade.

Source: New Zealand Health Information Service data for 2001, published in 2005.

Family history

Family history increases risk. The risk is higher if a close relative is diagnosed at a younger age (less than 65 years) or more than one close relative is affected.

ONE relative (father, brother) diagnosed	Risk is about 2 and a half times higher
TWO relatives (father, brothers) diagnosed	Risk is about 4 to 5 times higher

Sources: Johns & Houlston. British Journal of Urology International. 2003;91:789–794; Zeegers et al. Cancer 2003;97:1894–1903.

This risk information is only an estimate to help you assess your own risk.

What are possible benefits and harms of prostate testing?

Benefits

- + May find prostate cancer at an early stage when there are no symptoms and the cancer is still confined within the prostate gland
- + If prostate cancer is detected, treatment may potentially cure the disease
- + The problems with more advanced prostate cancer are avoided if treatment is successful

Harms

- Clinical trials are inconclusive as to whether treating prostate cancer found after PSA testing leads to a longer and better life for men
- May lead to unnecessary medical tests and possible side effects when no cancer is present
- May lead to treatment for a cancer that is slow growing and may not threaten life
- The treatments for prostate cancer may cause permanent side effects and may not result in cure

What is most important to you?

For testing: is this like you?

- ✓ I'm worried I might have prostate cancer and want the best chance of finding it early
- ✓ Having a PSA test will reassure me
- ✓ I have a family history of prostate cancer
- ✓ If I am diagnosed with prostate cancer, I would be prepared to accept the side effects of treatment or to live with knowing I had cancer if I chose not to have treatment
- ✓ I accept that results from studies on PSA testing are conflicting but I'm not interested in waiting for all the proof to be in

Against testing: is this like you?

- ✓ I'm not worried about prostate cancer and I think my chance of getting prostate cancer is low
- ✓ I don't want to risk finding out I have cancer when it may not cause me problems
- ✓ I am more concerned about treatment side effects if there is no guarantee I would be reducing my risk of dying from prostate cancer
- ✓ I am not convinced that studies have yet proven that treatment following PSA testing will save lives
- ✓ I am prepared to accept the possibility that future research may show that PSA tests benefit men's health



What are your thoughts?

Information on prostate disease is constantly being updated. The New Zealand Guidelines Group has made all reasonable effort to ensure that information was current at the time of production (October 2008).

Copies of this resource and 'Testing for Prostate Cancer: Information for Men and their Families' are available free from Wickliffe 04 496 2277; Order No. HP: 4658 (GP) Order No. HP: 4659 (public). Also available online at: www.nzgg.org.nz

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Discussion points

These points are a suggested response when a consultation with a man is due to a concern about prostate cancer or a request for testing for prostate cancer.

1. Clarify the concern

- General concern about prostate cancer
- Urinary tract or other symptoms
- Family history: confirm if first-degree relatives diagnosed and at what age

2. Provide information on prostate cancer and the tests available

- What the prostate is, where it is, that it grows bigger with age and can cause urinary symptoms over the age of 50 years
- What prostate cancer is, that tumours vary from slow growing tumours that may not cause symptoms or shorten life to aggressive tumours
- That prostate cancer is the third most common cause of male cancer deaths in New Zealand (after lung cancer and bowel cancer). About 4 deaths in every 100 male deaths are due to prostate cancer. Most of these deaths (about two-thirds) are in men aged 75 years or older

Risk of death from prostate cancer in New Zealand men

For a man in his 40s	Less than 1 in 10,000 men
For a man in his 50s	1 in 1000 men
For a man in his 60s	1 in 167 men
For a man in his 70s	1 in 43 men

Note: These risk estimates are for the whole decade eg, 40–49 years, not per year of the decade.

Source: New Zealand Health Information Service data for 2001, published in 2005.

- What PSA testing and DRE involve, that these are not diagnostic tests, that a prostate biopsy may be recommended to identify whether cancer is present if PSA and DRE results are suspicious

3. Give an estimate of the individual's risk for prostate cancer

Discuss risk table according to age.

- Prostate cancer is rare in men below the age of 50 years
- Younger men have a smaller chance of developing prostate cancer but risk of death from prostate cancer is higher as they have more time for the cancer to progress

Discuss risk table according to family history.

- A man with a father or brother diagnosed has more than twice the baseline risk, and approximately 4–5 times the baseline risk with 2 relatives affected. The risk is higher if the relative is diagnosed when under 65 years
- It is difficult to give accurate risk estimates for more than 2 relatives affected. Current data is distorted by number of cancers detected in first-degree relatives versus clinically significant cancers detected (Schaid, 2004)

4. Explain potential benefits and harms of prostate testing and treatment

Early identification of prostate cancer has the potential to cure some men before any problems occur. However, prostate testing also has the potential for overdiagnosis of clinically insignificant disease leading to unnecessary treatment.

Potential benefits

- PSA and DRE testing can lead to the detection of prostate cancer in the early stages, when it is still confined to the prostate gland (localised). Early prostate cancer usually produces no symptoms
- Treatment (eg, radical prostatectomy or radiotherapy) for localised prostate cancer may prevent progression of the disease and death from prostate cancer in some men. Subgroup analysis from a recent randomised trial

suggested that radical prostatectomy (compared with 'watchful waiting') may reduce mortality in men under 65 years (Bill-Axelson, Holmberg et al, 2005)

- Prostate cancer detected after it has spread beyond the prostate is usually no longer curable

Potential harms

- Tests may be associated with harmful effects, for example bleeding or infection in relation to prostate biopsy
- The treatments for prostate cancer have possible permanent side effects. There are variations on the reported risk for side effects from current surgical and radiotherapy practice. Side effects of radical prostatectomy include bladder problems (incontinence of varying severity) and erection problems
- Side effects of radiotherapy include bowel and bladder problems and reduced sexual function. Side effects of hormone therapy include reduced sexual function, breast swelling and hot flushes

5. Help the individual clarify their thoughts

- Give examples of reasons men have given for having or not having the test
- Use the table 'What is most important to you?' Ask the man to consider if any of these points seem like his feelings or views
- Ask what questions he has
- Check his understanding of the information discussed
- What does he want to do at this point?
- Provide written information
- If the man requests testing, discuss a management plan outlining follow-up and potential referral pathways

Prostate specific antigen

Summary facts

- A glycoprotein produced almost exclusively by prostatic epithelium
- A tissue-specific rather than cancer-specific serum marker
- Present in seminal fluid, urine and serum
- Normally present in low concentrations in blood, mainly bound to antichymotrypsin

Source: Durham, 2002

Accuracy of PSA test

Sensitivity ('true positives') estimated to be between 74–84%.

Specificity ('true negatives') estimated to be between 90–94%.

True values are likely to be at the lower end of each range (NZGG, 2004).

Normal values for PSA test

There is no PSA value that designates a normal PSA level in blood.

Common PSA normal range cut off: 4.0 ng/ml.

An age-related normal range is commonly used to allow for normal increases in PSA levels with increasing age. An example is included below. Note: differences in PSA assay can lead to differences in age-based ranges reported by laboratories.

Age	PSA upper limit of normal
40 to 50	2.5 ng/ml
50 to 60	3.5 ng/ml
60 to 70	4.5 ng/ml
70 and over	6.5 ng/ml

A single PSA result is not as valuable for detection of prostate cancer as are a number of serial measurements over time to see if an increase is occurring.

PSA velocity (rate of change)

This is calculated from at least 3 PSA measurements over 12 to 18 months, with a higher rate suggestive of increased cancer risk. A threshold of 0.75 ng/ml/yr is frequently used as a threshold to predict cancer.

Non-cancer contributors to increases in PSA

- Benign prostatic enlargement
- Urinary infection
- Urinary retention
- Prostatitis or sub-clinical prostate inflammation
- Ejaculation
- Prostatic massage

Digital rectal examination gives a statistically significant but clinically insignificant increase in PSA levels (Crawford et al, 1992).

PSA testing: practicalities

When taking blood, ensure the specimen will reach the lab and the serum will be separated within 16 hours.

Before having a PSA test men should NOT have:

- an active urinary infection
- ejaculated in the previous 48 hours
- exercised vigorously in the previous 48 hours
- had a prostate biopsy in the previous 6 weeks.

Source: Prostate Cancer Risk Management Programme UK, NHS Screening Programmes, 2002.

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