

Prostate cancer and the PSA test

A PSA blood test can help indicate the presence of prostate cancer. The prostate gland makes a protein called prostate specific antigen (PSA). This protein helps to nourish sperm and normally, only tiny amounts of PSA enter the bloodstream. Cancer cells in the prostate interfere with proper functioning and can cause large amounts of PSA to enter the blood.

When high levels of PSA are detected in the bloodstream, this may indicate cancer. Other tests are needed to confirm the diagnosis, because an abnormal PSA test can be due to non-cancerous causes. Equally, it is possible for a man to have a normal PSA level when cancer is present.

Normal PSA levels

The prostate slowly enlarges with age and the production of PSA will also rise. Generally, the healthy upper limits of PSA levels in the blood increase with age. One study suggests they may be between 2 and 5.6ng/ml (nanograms per millilitre) in men over 40 years. It is usually recommended that a PSA greater than 4ng/ml should be followed up with further tests.

Other factors that influence PSA levels

Prostate cancer is diagnosed using a range of tests. The PSA blood test alone cannot diagnose prostate cancer. It is possible, although rare, to have prostate cancer without raised PSA levels in the blood. A higher than normal PSA level doesn't automatically indicate prostate cancer either. A high PSA level is due to cancer in around one in three cases.

PSA can be raised by other factors, including:

- Infection of the prostate (prostatitis)
- Benign prostatic enlargement (BPE).

For this reason, the PSA blood test isn't used in isolation when checking for prostate cancer.

Tests – apart from PSA

As the PSA test is not a reliable indicator of prostate cancer on its own, a digital rectal examination (DRE) is usually also recommended – the doctor uses their finger to check for enlargement of the prostate gland or other changes.

If results of the PSA test or the DRE are abnormal, your doctor will likely recommend a biopsy – small samples of tissue are removed from the prostate and examined.

If cancer is diagnosed, further tests may be needed to determine the stage of progression of the cancer. These may include a bone scan, a computed tomography (CT) scan or a pelvic lymph node dissection.

Early detection and screening

Prostate cancer is typically slow growing. High PSA levels can occur five to ten years before the onset of prostate cancer symptoms and early prostate cancer often has no symptoms. The PSA test can help to indicate the presence of cancer at this early stage.

At present, however, health authorities do not recommend widespread 'screening' for prostate cancer. While we have some evidence that regular testing may prevent prostate cancer deaths, there are concerns that many men may be diagnosed and treated unnecessarily as a result of being screened – with a high cost to their health and quality of life, such as incontinence and impotence.

Discuss testing with your doctor

Most authorities suggest that men should make their own choice about whether or not to be screened for prostate cancer. This should be done in discussion with their doctor, after considering the benefits and uncertainties of testing and their own risk from the disease.

Men with a father or brother who were diagnosed with prostate cancer at an early age are at higher risk.

If a man chooses to be tested for prostate cancer, both a PSA test and DRE are recommended to give the best chance of detecting the cancer. In Australia, these tests are covered by Medicare.

Monitoring cancer

After a diagnosis of cancer, regular PSA blood tests are used to monitor the cancer activity in a man's body. Generally, prostate cancer prompts higher and higher levels of blood-borne PSA as it grows. Regular blood tests can indicate whether the tumour is shrinking or enlarging and if the current treatment is working or not.

Where to get help

- Your doctor
- Urologist
- Cancer Council Helpline Tel. 13 11 20
- Multilingual Cancer Information Line, Victoria Tel. (03) 9209 0169

Things to remember

- A normal prostate gland creates a protein called prostate specific antigen (PSA).
- Prostate cancer usually causes large amounts of PSA to enter the blood.
- The PSA blood test can help indicate prostate cancer at an early stage, but further tests are needed before a diagnosis can be made.
- High PSA levels can have a number of non-cancer causes.
- It is possible to have a normal PSA result when prostate cancer is present.
- Cancer Council recommends having an informed discussion with your GP about the benefits and limitations of prostate cancer testing and treatment before having a PSA test.
- Prostate cancer testing and treatment are less likely to have a benefit in older men, particularly those over the age of 75 years.

This page has been produced in consultation with, and approved by:

Australian Prostate Cancer Collaboration

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