



PSA Testing

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This leaflet was produced by the EAU Patient Information Working Group. It contains general information about prostate cancer detection and does not replace an individual consultation.

Decision aid tools exist to help you decide whether or not to start an early detection pathway. None of these tools replace a consultation with your doctor. Talk to your doctor about the pros and cons of prostate cancer early detection before you decide if you want to be tested.

If you have any specific questions about your individual medical situation you should consult your doctor or other professional healthcare provider.

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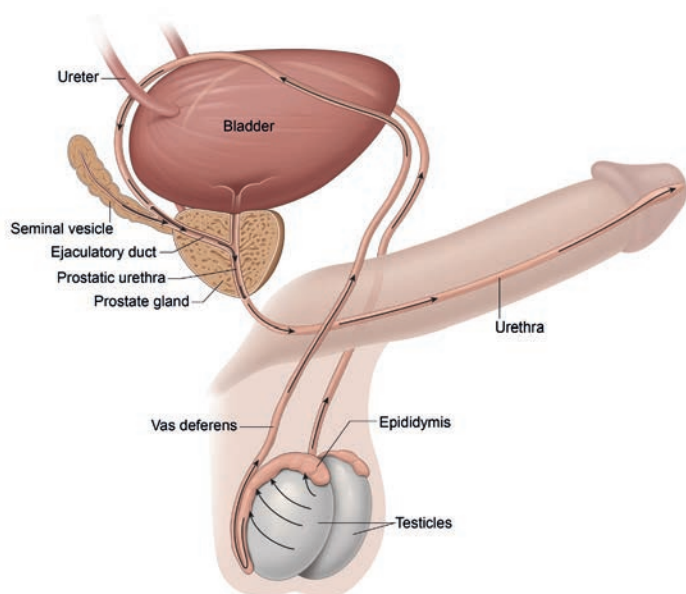
You can find detailed information about the diagnosis and treatment of prostate cancer at our website:
<http://patients.uroweb.org/prostate-cancer>

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PSA Testing

What is the Prostate?

- The prostate is a gland located in the lower urinary tract, under the bladder and surrounding the urethra
- Only men have a prostate
- It produces the fluid that makes up a part of the semen. The prostate helps to push out the semen during ejaculation. It is part of the male reproductive system.
- A healthy prostate is about the size of a walnut and has a volume of 15-25 millilitres (ml)



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Fig. 1: Pathway of sperm.

What is prostate cancer?

Prostate cancer is an abnormal cell growth in the prostate that can spread uncontrollably into surrounding tissues and to other parts of the body through the bloodstream or lymph nodes.

In 2018 more than 450,000 new prostate cancer cases were diagnosed and over 100,000 men died of prostate cancer in Europe. Prostate cancer-related deaths are among the top three of cancer deaths for men. In recent years prostate cancer related deaths are rising again despite the existence of screening methods. That is why the EAU recommends PSA testing for the early detection of prostate cancer.

Unless it is far advanced, prostate cancer shows no clear symptoms (asymptomatic) and men are normally not aware it has developed.

If the disease is not discovered and diagnosed in its early stages, men can develop symptoms such as bone pain due to the cancer spreading.

Early detection is aimed at finding this asymptomatic cancer in an early stage where it can still be cured and stopped from moving to an advanced stage.

Who should get tested?

Prostate cancer early detection should be offered to healthy and well informed men over the age of 50 and men over 45 years of age, who have a known family history for prostate cancer or are of African descent.

Sometimes, depending on your personal situation, there are reasons not to be tested.

Talk to your family doctor about the pros and cons of prostate cancer early detection before you decide whether to be tested or re-tested, especially if you have other health concerns.

How is testing done?

Testing should always involve:

- PSA testing (blood test)
- Digital rectal examination (DRE)

A digital rectal examination is used to check the prostate for any abnormalities. It involves a healthcare provider feeling the prostate by inserting a finger into the rectum.

PSA (Prostate Specific Antigen) testing is one of the most often used tools to diagnose prostate conditions. PSA is a protein made only by the prostate gland. The PSA-level is determined by a blood sample to test the risk of prostate cancer. Depending on the PSA-level (normal or elevated) further testing may not have to happen or, more testing may be needed.

If your PSA is too high or if the digital rectal examination feels abnormal, it may mean you are at risk of having prostate cancer. Together with your healthcare professional and

according to your risk and medical history, the next step may be:

- to repeat the PSA test to make sure the elevated level is not temporarily e.g. caused by an inflammation
- to use a risk prediction tool which, on the basis of more information, such as your age and size of the prostate (next to the digital rectal examination and the PSA test), calculates your personal risk of having prostate cancer
- to perform an MRI of the prostate which produces a detailed image of your prostate, enabling your doctor to see if there are any potential suspicious areas

If considered needed, these exams might lead to a prostate biopsy. A biopsy involves taking samples of the prostate with a needle to look at under a microscope. The tissue is looked at to see if it has cancer and if so, how aggressive it is.

I feel healthy, why should I be tested?

PSA testing involves a simple blood test, your health insurance or national health service will normally cover the costs and it can be done by your family doctor or urologist. It will show if you are at risk of getting prostate cancer and is the only way for finding it early. Based on your personal risk and other conditions you may have, you can determine an early detection strategy/interval together with your family doctor. This means that you are tested at set times.

Are there other reasons for the PSA value to be elevated?

Yes. The PSA value that is found in your blood, is a single current view of your PSA level. Any form of prostate irritation can cause test values to be high. Benign, or non-cancerous enlargement of the prostate, a lower urinary tract infection or prostate irritation (sports, intercourse, urinary catheter) may lead to PSA elevation. Earlier values, medical history and risk factors are therefore important when thinking about retesting or further diagnostics.

Benefits

- A PSA test may help find prostate cancer at an early stage. Cancer is easier to treat and is much better managed if it is found in its early stages.
- It will also let you know if you are at risk of getting prostate cancer in the future.

Limitations

- A PSA level that is high does not always mean that you have prostate cancer (a false-positive result). Other conditions you may have can raise PSA levels such as an enlarged prostate or a prostate infection
- In few cases, the PSA level may be low even though cancer is present (a false negative result)
- PSA testing may find a cancer that would never have given symptoms. This is referred to as over-diagnosis: finding a cancer that is not likely to cause poor health or to present a risk to a man's life

Potential risks of PSA testing

Because of its limitations, PSA testing can possibly lead to unnecessary further testing (such as a biopsy) which, if prostate cancer is found, might then lead to overtreatment (such as an operation or radiation therapy). Many (40%) of the tumours would not end up causing major health problems. Follow-up of these tumours is advised. This may lead to anxiety and stress.

By not measuring your PSA, you will not risk false positive measurements and the resultant stress, retesting and biopsy, but this might also cause the missing of an early (treatable and curable) cancer. Late detection might mean the cancer is found at a more advanced stage with worse cure-rates.

To summarise

- PSA testing helps finding prostate cancer at an early stage when it is more likely to be cured
- Remember, not everyone with a high PSA level will have a cancer and not everyone who is found to have a cancer will need treatment
- Talk to your family doctor about the risks and benefits and whether this test is right for you

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