

PSA Testing for Prostate Cancer

An information sheet for men considering a PSA Test

What is the aim of this leaflet?

Prostate cancer is a serious condition. The PSA test, which can give an early indication that prostate cancer may be present, is now widely available to men who wish to be tested. However, experts still disagree on the overall usefulness of the PSA test. It is not yet known whether or not PSA testing will save lives from prostate cancer.

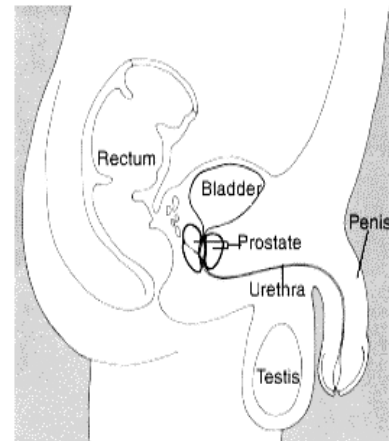
The aim of this information sheet is to give you balanced information about the PSA test, which we hope will help you decide whether or not having the test is the right thing for you. You may wish to discuss this information further with your doctor.

What do we know about Prostate Cancer?

Prostate cancer is the second most common cause of deaths from cancer in men. Each year in the UK about 22,000 men are diagnosed with prostate cancer and 9,500 die from the disease.

Prostate cancer is rare in men below the age of 50 years, and the average age of diagnosis is 75 years. The risk is greater in those with a family history and is also known to be greater in African American men.

The prostate gland lies below the bladder. Prostate cancers range from slow growing to very fast growing cancers. *The slow growing cancers are common, especially in older men. These more 'benign' cancers may not cause any symptoms or shorten life which is why finding these cancers may not always be helpful.*



This picture shows the prostate and nearby organs.

What is a PSA test?

The PSA test is a blood test that measures the level of Prostate Specific Antigen in the blood. PSA is a substance made by the prostate gland, which naturally leaks into the blood stream. A raised PSA can be an early indication of prostate cancer. However, other conditions which are not cancer (e.g. enlargement of the prostate and urinary infections) can also cause a rise in PSA.

- **1 in 10 men who have a PSA test will receive a raised result that requires further action.**
- **However, 2 out of 3 men with a raised PSA level will not have prostate cancer.**

The higher the level of PSA the more likely it is to be cancer.

- If the level of PSA in the blood is raised, this may indicate that prostate cancer is present
- However, many men with a raised PSA will not have prostate cancer
- The PSA test can also miss prostate cancer

What happens after the PSA test?

As a rough guide there are three main options after a PSA test:

- **PSA level is not raised**
Not very likely to have cancer - No further action. However 1 in 6 men with a normal PSA will have prostate cancer
- **PSA slightly raised**
Probably not cancer, but you might need further tests.
- **PSA significantly raised**
Your GP will refer you to a specialist for further tests to find out if prostate cancer could be the cause.

If the PSA level is raised, what further tests would be carried out?

If your PSA is definitely raised, a prostate biopsy is required to determine if cancer is present. This involves taking tissue samples from the prostate through the back passage (bottom). Most men find this an uncomfortable experience, and some describe it as painful. Sometimes complications or infection may occur. However, biopsies can miss some cancers and worry about prostate cancer may remain even after a clear result.

- While a raised PSA level in the blood may indicate cancer in 1 in 3 cases, a prostate biopsy is required to determine if cancer is present
- *About 2 out of 3 men who have a biopsy will not have prostate cancer*

If early prostate cancer is detected, what treatments are used?

There are three main options for treating early prostate cancer which are summarised below:

Radiotherapy: This treatment involves a course of radiotherapy on the prostate gland at an outpatient clinic. The aim is to cure, although there are possible side-effects. Men may experience bladder problems(5%), diarrhoea, and other bowel problems(10%). Erectile problems (25-60%)

Surgery: This involves an operation to remove the prostate gland. The aim is to cure, although again there are possible side-effects. The most common problem after having surgery is impotence (20-80%). Men may also experience bladder problems (20%).

Active monitoring: This involves regular check-ups to monitor the cancer and check it is not growing. The advantage is that because some prostate cancers are very slow growing for these men it will avoid the side effects of radiotherapy and surgery. If there are signs that the cancer is a faster growing cancer and is developing, treatment would be offered. The disadvantage is that the cancer may grow to a more advanced stage. Some men find the uncertainty difficult to cope with.

So should I have the PSA test?

Benefits of PSA testing

- It may provide reassurance if the test result is normal (9 in 10 tests will be normal)
- It may find cancer before symptoms develop
- It may detect cancer at an early stage when treatments could be beneficial
- If treatment is successful, the consequences of more advanced cancer is avoided

Downside of PSA testing

- It can miss cancer, and provide false reassurance
- It may lead to unnecessary medical tests and anxiety when no cancer is present
- It might detect the slow-growing cancer that may never have caused any problems or shortened life span - but we presently have no way of defining these 'benign' cancers.
- The main treatments of prostate cancer have significant side-effects, and there is no certainty that the treatment will be successful

Further information

If you have any questions or wish to receive more information about PSA testing and prostate cancer you can discuss it further with your doctor, or look at one of the following sources of information:

Useful web-sites on prostate cancer and PSA testing:

www.cancerscreening.nhs.uk/

www.macmillan.org.uk/Cancerinformation/Cancertypes/Prostate/Symptomsdiagnosis/PSAtesting.aspx

Booklet:

Understanding the PSA Test

CancerBACUP Helpline: 0808 800 1234

Source

This information sheet is based on one prepared by Jo Brett, Dr Eila Watson, Colleen Bukach, and Dr Joan Austoker, Cancer Research UK Primary Care Education Research Group, University of Oxford. The information sheet is based on information initially prepared by Dr Graham Easton.

PSA Testing when you have no specific waterworks difficulties.

a *personal* view by Dr Roger Leary (age 55!)

My personal summary of all of this information regarding the PSA test *when you have no waterworks problems* is as follows.

Not all doctors will agree with me.

PSA testing is unfortunately a poor screening test because speaking statistically we don't know who is going to benefit from treatment if found to have prostate cancer by the test.

There is a significant risk of 'false positive's meaning you may well have to have further invasive tests (biopsy of prostate) to prove in the end that all is well and you didn't actually have cancer. Lots of worry!

Unfortunately the PSA test can also miss quite a few cases of cancer as well (false negatives) giving you false reassurance. 1 in 6 men with a normal PSA will have prostate cancer.

However on an individual personal basis a negative test is quite reassuring to most people and **in some cases** a positive test will lead to treatment leading to a better outcome following treatment of your cancer.

However in some cases treatment will make little difference or may even lead to a poorer quality of life.

However the test is the only useful one we have available to test for prostate cancer. Because of all these uncertainties in the end only you as the patient can decide whether you favour the 'ignorance is bliss' or 'knowledge is power' approach (even though the knowledge in this case may not benefit you).

This must be your decision.

Your call – I will support your decision because there is no right or wrong answer.

Please see the next page for a useful slightly technical summary

Roger Leary

Update on Prostate Cancer Screening

Prostate cancer is the second most common cancer-related cause of death in men, with 35,000 men diagnosed each year in the UK. Around 80% of men will have histological evidence of prostate cancer by age 80, but only 3.8% will die from the disease. Hence, men are more likely to die *with* prostate cancer than *from* it. This finding has impacted upon the decision not to carry out population screening of asymptomatic men — prostate-specific antigen (PSA) testing may detect prostate cancer that will not manifest as a significant cause of ill health during the patient's lifetime.

Informed Choice Programme for PSA testing (NHS)

The Prostate Cancer Risk Management Programme (PCRMP) have recently revised the information materials for primary care, with the aim that any asymptomatic man over the age of 50 can have a PSA test if they request it. Men considering screening for prostate cancer must be provided with evidence-based material regarding the limitations, risks and benefits of PSA testing, which together with a GP consultation, allows them to make an informed decision (see below). Additionally, clinicians wishing to measure PSA in a patient must obtain informed consent.

Limitations and Benefits of Prostate Cancer screening

- **Poor sensitivity.** 1 in 6 men with a normal PSA level will have prostate cancer.
- **Poor specificity.** 2 in 3 men with a raised PSA level will not have prostate cancer, but will need to undergo invasive follow-up biopsy which carries specific risks. PSA can also be elevated in benign prostatic hyperplasia (BPH), prostatitis and urinary tract infection (UTI).
- **Poor selectivity.** PSA testing cannot distinguish between indolent and aggressive tumours. Without treatment slow growing tumours may remain asymptomatic during the patient's lifetime, but when diagnosed cause needless intervention and anxiety. An aggressive tumour, however, may benefit from potentially life-saving therapy if diagnosed at an early stage.

Prostate Cancer Screening: New Evidence in 2009

Two large studies investigating the utility of screening were published in March 2009.

The European Randomised study of Screening for Prostate Cancer (ERSPC) reported that PSA-based screening for prostate cancer reduced the mortality rate by 20% in 162,243 men aged 55-69. **However, as many as 1410 men need to be screened and 48 men need to be treated to save one life.**

Conversely, the Prostate, Lung, Colorectal and Ovarian (PLCO) screening trial found that screening did not significantly reduce the mortality from prostate cancer after a 7-year follow-up.

A more recent Swedish case-control study, published in September 2009, found that no single cut-off value for PSA concentration had positive likelihood ratios formally required for a screening programme to rule in prostate cancer, but that concentrations <1 .0 pg/L virtually ruled out the diagnosis.

In conclusion, the current evidence suggests that the financial and psychological fallout from the high incidence of overdiagnosis and overtreatment does not support the introduction of a PSA based screening programme at this time.

The Outcome of PSA Testing in 1000 men

For every 1000 men
age 50 – 70 years of age
who have the PSA Test

100 men (10%) will have a
raised PSA and need to have
a biopsy of the prostate gland

7 men are later found to have
prostate cancer which was
NOT detected by the PSA Test

**False Negatives
of PSA Test are 0.7%**

74/100 men have a prostate
biopsy which shows no
evidence of Prostate Cancer

26 men will be diagnosed with
Prostate Cancer following the
biopsy. ie

***In 3 out of 4 men with a
raised PSA, a cancer
will not be found***

67 of these 74 men (90%),
over an extended period of
time will be confirmed to not
have Prostate cancer

but 7 of these 74 men, *despite*
having biopsies will later prove to
have **Prostate Cancer**

**False negatives of Biopsy Test
are 9%**

40 men in each 1000 (4%) who have a PSA test will have prostate cancer.

However, 1 in 3 cases of Prostate Cancer are *not detected* by the test

26 of these 40 men (65%) will have their cancer detected by the PSA Test.

Some of these cancers would be slow growing and not life threatening - *but we don't know which.*

The Downside

We do not yet know which of these 26 men with PSA detected cancers would have suffered unnecessary illness or death as a result of their prostate cancer if it had not been detected earlier using the PSA test