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# PSA Measurements

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## Frequently Asked Questions

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### What is PSA?

The prostate gland is a chestnut shaped organ that sits under the bladder. It is part of the urinary and reproductive systems. The role of the prostate gland is to provide nutrition for developing sperm. The central part of the prostate gland enlarges in all men as they get older. This is non-cancerous enlargement. 50% of men get symptoms due to this enlargement. These symptoms are of urinary frequency and a poor urinary stream. In general these symptoms are not the symptoms of prostate cancer. Prostate cancer in general is silent and does not give any symptoms in its early phase as it occurs in the peripheral part of the prostate gland and away from the urinary tube.

PSA stands for prostatic specific antigen. This is a protein that is made by the prostate gland. The function of PSA is to liquefy semen that is ejaculated during sexual intercourse so that the sperm can swim. Some of the PSA that is made by the prostate gland spills over into the blood stream and we can measure this level in the blood. If this level is high it indicates an abnormality with the prostate gland. This abnormality could be benign enlargement, prostate cancer, or inflammation in the prostate gland. It could also be a combination of these problems. The issue that we are most concerned about is whether the elevated PSA reflects prostate cancer or not.

### What are the maximum PSA levels?

Age (yrs)	Maximum PSA
40	2.5
50	3.5
60	4.5
70	6.5

These are age-related maximum levels but it is now clear that there is no real "safe" maximum level (read on).

### Is the test useful in people with a short life-expectancy?

There is some doubt about the clinical usefulness of routine PSA measurements in patients with a life expectancy less than 5–10 years. In such patients, particularly if they have several other serious illnesses, it has been suggested that PSA should only be measured if the prostate is suspicious of malignancy on digital rectal examination (DRE) or if the patient has severe lower urinary tract symptoms, haematuria or bone pain.

### What is the sensitivity of the test?

The sensitivity and specificity of PSA in discriminating between cancer and BPH is somewhat limited. In men with a high PSA, 50% are found to have a prostate cancer on biopsy; in men with a PSA <2.5, about 15% are found to have prostate cancer on biopsy. The sensitivity can be improved by measuring both the free and the bound fractions of PSA and calculating the free/total PSA ratio (FTR). This service is now available for all PSA measurements.

### What about the free-total PSA ratio?

Between the age-specific maxima (see table above), the FTR is a slightly better discriminator than total PSA alone.

A low FTR (<17%) tends to suggest carcinoma and a high FTR (>22%) suggests BPH. If the total PSA is >17 or if the patient has known prostate cancer, the FTR will not have any useful role. If the PSA is normal, the FTR is not used as an indicator for biopsy.

The main role for FTR is to try and avoid biopsy in an elderly man who has a large benign feeling prostate. If the FTR is >22% then biopsy can be avoided.

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## PSA Measurements continued...

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### Who can I contact for more help or information?

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**The Wesley Emergency Centre**

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**Greenslopes Private Hospital, Continence Advisor**

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**Greenslopes Private Hospital Emergency Centre**

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**The Queen Elizabeth II Jubilee Hospital,  
Urodynamics Department**

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**American Urological Association Foundation**

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If you wish to retain a copy for you own records, one will be provided.

*I have read this information sheet and I accept the information it provides.*

Signature

Date

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