



## Prostate Specific Antigen (PSA)

PSA is a glycoprotein found in the blood stream that is produced by the prostate gland. PSA rises when the prostate is irritated. Irritation can be caused by mechanical procedures such as digital rectal exam (DRE), cystoscopy, or prostate biopsy. Benign conditions such as benign prostatic hypertrophy (BPH) and prostatitis also cause PSA elevations, but the most worrisome cause of PSA elevation is prostate cancer. PSA is a useful tool in the early detection of prostate cancer especially when combined with DRE.

Prostate cancer is the most common cancer in men and the second most common cause of cancer death in men (see Rx #15 on Prostate Cancer). The American Cancer Society recommends the use of PSA in conjunction with DRE as a screening test for all men 50 and older. Testing at younger ages is recommended for African-American men and men with a family history of prostate cancer due to the higher incidence of the disease in those groups.

PSA is also used in the pre-operative staging of prostate cancer. Concentrations of PSA increase linearly from the lowest clinical stage, Stage T1, to the most advanced cancer, Stage T4. PSA results are also used to determine the effectiveness of treatment. After radical prostatectomy (surgical removal of the prostate gland), it should become undetectable within one month of surgery unless there is residual or recurrent cancer. After successful radiation and hormonal treatments, it drops to very low levels as well.

Refinements continue to be made in the interpretation of PSA test results. The "normal" range of PSA levels is uncertain and may vary with age. However, these ranges have recently been questioned and may miss a large proportion of cancers.

< 50	≤ 2.5 ng/ml
50-59	≤ 3.5 ng/ml
60-70 yr	≤ 4.5 ng/ml
> 70 yr	≤ 6.5 ng/ml

PSA levels are often higher in men in their 60's and 70's due to increased prostatic volume caused by BPH. Other refinements include the use of PSA Density (PSAD), Prostate Specific Antigen Velocity, and differentiation of % Free PSA level. PSAD is the ratio of PSA divided by the volume of the prostatic gland as determined by Transrectal Ultrasonography (TRUS). A PSAD >0.15 is a strong indication of prostate cancer. Prostate Specific Antigen Velocity is the rate of change in the PSA value over time. An increase in the PSA of >0.8 ng/ml per year is a likely indication of cancer. Serum % Free PSA (normal >25%) is determined by measuring the relative percentage of total PSA to PSA that is not bound to serum protein in the blood stream, and it is used when the total PSA is mildly high (up to 10 ng/ml range). A low % Free PSA is an indication of possible prostate cancer.

Underwriting considerations for the evaluation of an elevated PSA include: evaluation with Transrectal Ultrasound (TRUS), biopsies, PSAD, PSA Velocity, % Free PSA, age of the applicant, prior history of prostate cancer, and the life expectancy of the applicant. (Less than 10 years life expectancy may make detection less important because prostate cancer tends to be slow-growing.)

To get an idea of how a client with an abnormal PSA would be viewed in the underwriting process, feel free to use the Ask "Rx" pert underwriter on the next page for an informal quote.

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**Prostate Specific Antigen (PSA) - Ask "Rx" pert underwriter  
(ask our experts)**

Producer \_\_\_\_\_ Phone \_\_\_\_\_ FAX \_\_\_\_\_  
Client \_\_\_\_\_ Age/DOB \_\_\_\_\_ Sex \_\_\_\_\_

If your client has elevated PSA's, please answer the following (if prostate cancer has been diagnosed, please use the Ask "Rx" pert underwriter with Rx #15).

- ① How long has the PSA been elevated? \_\_\_\_\_  
What is the diagnosis? \_\_\_\_\_
- ② Please give the date and result(s) of all recorded PSA value(s) \_\_\_\_\_  
\_\_\_\_\_
- ③ Have these results been:  
 increasing       fluctuating up and down  
 decreasing       unknown  
 stable
- ④ If any of the following have been done, please give the details and result(s):  
 TRUS \_\_\_\_\_  
 PSAD \_\_\_\_\_  
 free PSA \_\_\_\_\_  
 prostate biopsy \_\_\_\_\_
- ⑤ Is your client on any medications?  
 yes, please give details \_\_\_\_\_  
 no
- ⑥ Has your client smoked cigarettes in the last 12 months?  
 yes, please give details \_\_\_\_\_  
 no
- ⑦ Does your client have any other major health problems (ex: heart disease, etc.)?  
 yes, please give details \_\_\_\_\_  
 no

After reading the *Rx for Success* on Prostate Specific Antigen (PSA), please feel free to use this Ask "Rx" pert underwriter for an informal quote.

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