SydPath
ST VINCENT'S PATHOLOGY

www.sydpath.com.au

PSA AND FREE-PSA INFORMATION SHEET

PSA TESTING

PSA testing can be used as a screening test in asymptomatic men, for investigation of prostatic symptoms or monitoring treatment in men with known prostate cancer. Advice on PSA testing is available in the "Clinical Practice Guidelines on PSA Testing" available from http://www.prostate.org.au-PSA_Guidelines (short form summary recommended).

PSA ASSAY

PSA is measured at SydPath on the Roche assay on the Beckman-Coulter DxI analyser using Access PSA assay with Hybritech standardisation. As with all tumour marker assays, results from one method may not be directly comparable with results from other methods and where possible patients should be monitored using the same method. For questions concerning individual results please contact the laboratory.

AGE-RELATED REFERENCE INTERVALS

SydPath uses age-related intervals are used for PSA reporting (1). This has the effect of increasing the sensitivity for detecting cancer in younger men and decreasing the false-positive rate in older men. The upper limits for the SydPath assay are shown in the table below. Also shown are the approximate age-related median and 75th centile values. Patients with PSA results below the median have a prostate cancer risk below the average for their age.

Age range*	20 – 49	50 – 59	60 – 69	70 - 79	80+
Median	0.70	0.90	1.10	1.40	1.60
75th Centile	1.10	1.50	2.30	3.20	5.50
Upper limit	2.50	3.00	4.00	5.50	6.50

ULTRASENSITIVE ASSAY

The Beckman-Coulter assay measures down to 0.02 ug/L. These very low values provide earlier prognostic information after total prostatectomy, with patients with undetectable PSA in the sensitive assay (<0.02 ug/L) having a better outcome than patients with residual detectable PSA. While the assay allows earlier detection of disease recurrence after prostatectomy, the management of low level recurrence remains somewhat controversial.

PSA FREE / TOTAL RATIO

The PSA we measure in blood is either bound to alpha-1-antichymotrypsin or not bound (free PSA). The measurement of free PSA is used to determine the free / total PSA ratio. The free / total PSA ratio adds to risk assessment in men with a total PSA up to 10 ug/L. A low

free / total PSA ratio (less than 10%) indicates a very high risk of cancer, and a high ratio (> 25%) indicates a low risk of cancer. Ratios between 10 and 25% are intermediate in risk assessment.

For patients with a total PSA between the age-related median and upper reference limit (see table above), a single annual free/total ratio is funded by Medicare. For subjects with total PSA above the age-related upper reference limit and below 10 ug/L, the free / total ratio may be repeated up to 4 times per year to allow closer monitoring.
Total PSA concentrations above 10 ug/L already indicate a high risk of cancer and the free / total PSA ratio cannot be used for reassurance. Note that the free/total PSA ratio is for assistance with the identification of prostate cancer and plays no role in monitoring disease in known cancer patients.

PSA SPECIMEN COLLECTION

PSA testing should not be performed without a prior discussion with the patient about the risks and benefits. See reference 1 for further details.
Samples for PSA testing should **not** be collected: within 2 days of ejaculation, within 2 days of vigorous exercise, within 1 week of a digital rectal examination, within 6 weeks of a prostatic biopsy. A serum (gold top) tube is the preferred specimen.