



IMPORTANT ADVANCES in MENS HEALTH –

Understanding increased PSA and MEDIAN PSA

Western Diagnostic Pathology has for some months now been using a new report format for PSA. This report format allows you to more easily identify borderline elevations of PSA and to follow any changes in % free PSA. The report provides –

Free/Total Ratio % (Fractions) (when performed)

This will be provided in a cumulative format. Significant fall in % free PSA or low % free PSA may be an early indication of developing prostate Ca. ^{1,2}

Median PSA for patients age band

The median PSA is the “middle value” of all PSA results for a given age group. As PSA results are skewed the median value is an important indication of the average PSA. Levels above the median may warrant earlier follow-up. Free/Total ratio may also be helpful in assessing results above the median for age. Levels below the median are generally reassuring. WDP have developed PSA Medians for Australian men, based on 482,935 men using the Bayer Centaur assay. **These medians should not be automatically applied to results from other laboratories or other methods.**

Upper limit for age for PSA

The upper limit of normal (ULN) is the 97.5th centile. Results above the age ULN are clearly elevated and warrant earlier follow-up.

When can Fractions be performed?

Medicare supports fractions ONCE per year if the PSA is above the median but below the upper limit for age. Up to FOUR fractions (free/total ratio's) can requested per year in follow-up if the PSA is above the upper limit but less than 10 ug/L.

SAMPLE CASE 1

62 year old man – annual PSA check, normal DRE, no symptoms or family history.

Date	PSA	Free/Total Ratio	Median for age	Upper limit for age	Lab No
11.6.10	1.0		1.2	4.5 ug/L	XXXXXX

- This patient is very anxious, asking specifically for a “fraction” – free/total PSA
- This PSA result is below the median for age and given the history above, is reassuring.
- There is no indication for fractions on PSA results below the median and the precision of the free/total ratio diminishes with PSA levels < 1 ug/L.
- Medicare will not contribute anything towards the cost of free/total PSA in this setting. For a Medicare rebate to be available PSA needs to be above the Age Related Median and less than 10 ug/L.



SAMPLE CASE 2

62 year old man – annual PSA check, normal DRE, no symptoms or family history.

Date	PSA	Free/Total Ratio	Median for age	Upper limit for age	Lab No
11.6.10	10.7		1.2	4.5 ug/L	XXXXXX

This patient's PSA level is clearly elevated, well above the median and upper limit for age.

- Free/total PSA is not helpful in this setting as a normal % free PSA would not “outweigh” the high total PSA.
- Medicare support use of fractions to help further differentiate equivocal levels of PSA although what is meant by “equivocal” is not defined. However, in general “equivocal” has been regarded as levels of PSA between the age related upper limit but less than 10 ug/L.
- Medicare will not contribute anything towards the cost of free/total PSA when PSA \geq 10 ug/L

SAMPLE CASE 3

55 year old man – annual PSA check, normal DRE, no symptoms or family history.

Date	PSA	Free/Total Ratio	Median for age	Upper limit for age	Lab No
11.6.10	1.6		0.8	3.5 ug/L	XXXXXX (as PSA is above the median , GP phones lab and adds on a free PSA/total ratio to the initial request)
11.6.10	1.6	17%	0.8	3.5 ug/L	same sample as above (as Free/Total ratio is equivocal , GP advises repeat in 6 months time)
16.12.10	3.0	6 %	0.8	3.5 ug/L	XXXXXX

Free PSA/Total PSA: Ratios should be interpreted together with clinical features, rate of change and total PSA. However in general-

<= 8% : Abnormal **8-28 % : Equivocal** **> 28% : Normal**

This man's PSA was above the median on his first annual check and his free/total ratio was equivocal. Follow-up 6 months later highlights that although this man's PSA is still below the upper limit for age, his % free PSA has fallen to an abnormal level and his total PSA is well above the median. The rate of rise in PSA (velocity or doubling time) is also faster than expected.

- Causes of transient increase in PSA should be considered and excluded if necessary in this patient.
- If these results were confirmed, further discussion with a Urologist may be warranted despite the patients apparently “normal” PSA- within the upper limit of normal.
- Medicare will contribute to cost of this patient's 1st free/total PSA ratio, but not the second.

References:

1. Walz J, et al. Percent free Prostate-Specific Antigen (PSA) is an accurate predictor of prostate cancer risk in men with serum PSA 2.5 ng/ml and lower. *Cancer* 2008;15:113,10:2695-2703
2. Pepe P, et al. Prevalence and clinical significance of prostate cancer among 12,682 men with normal digital rectal examination, low PSA levels (< 4 ng/ml) and percent free PSA Cut-off values of 15% and 20%. *Urologia Internationalis* 2007;78:308-312

Further Reading:

Common Sense Pathology March 2009. Strategies for detecting prostate cancer. Q Lam, M Frydenberg. www.rcpa.edu.au or www.australiandoctor.com.au

