

# Too many PSA tests?

Prostate cancer screening is known to increase cancer detection. But there is no evidence that routine digital rectal examination, nor regular PSA screening, improves longevity. Also several US and Canadian guidelines from 2012-2016 firmly recommend against PSA screening at any age.

Large randomised trials of PSA screening show a reduction in mortality rates of less than 1 case per thousand over 10 years.

This is despite knowledge that prostate cancer is the most commonly diagnosed cancer in Australian men. In 2017 the risk of being diagnosed with prostate cancer by the age of 85 is 1 in 7, but the 5- year survival rate is 95%.

This is because most prostate cancers are slow growing and non-aggressive. Symptoms develop late in the course of the condition, and they parallel those of benign prostatic hyperplasia.

The over-diagnosis of indolent non-lethal prostate cancer and its zealous treatment with radical prostatectomy and/or DXRT has an immediate and high morbidity rate. The complications include total impotence, urinary incontinence, and radiation proctitis. Fortunately our urologists are alert to these issues and most collaborate with a policy of 'watchful waiting'.

Recent enlightened advice from US urologists and physician groups have modified the 'no screening at any age' approach. The

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suggestion is to implement shared decision making with male patients aged 55 to 75 years. A full discussion of benefits and harms should precede any mutual decision to proceed with a PSA test.

The patient must be alerted that a positive test could lead to watchful waiting rather than any intervention.

Exceptions include high-risk patients with a strong family history of prostate cancer or those with a known BRCA mutation.

But above the age of 75, PSA screening is only advised with caution and only in very healthy individuals. ●

Reference: Prostate Cancer Screening – a Perspective on the Current State of the Evidence. Paul F Pinsky et al. NEJM 2017; 376: 1285-1289.

## RESEARCH

# Exercise effects when measuring PSA?

Research has concluded that cycling for exercise can increase prostate specific antigen (PSA) in the short term. The mechanism is unknown but has been postulated to involve both mechanical stimulation of the perineum and increased blood flow. Should abstinence from cycling, or even other forms of exercise, be therefore advised when doing this test?

### The PSA in context

The controversies surrounding the PSA test are beyond the scope of this article. PSA is produced by both malignant and benign prostate cells, and PSA levels are known to increase in benign prostatic hyperplasia, prostatitis and prostate cancer. The probability of cancer occurring given an elevated PSA is 1 in 3, although prostate cancer can still be present with a normal PSA.

Procedures that increase PSA include radical prostatectomy, ultrasound-guided needle biopsy, and transurethral resection of the prostate – the increase in PSA is far greater than 100%, and the PSA can remain elevated for days to weeks.

Non-invasive manipulations, such as ejaculation, digital rectal examination (DRE), and cystoscopy also increase PSA but to a lesser degree, and for shorter periods of time than surgical manipulations. It is also recognised that free PSA (fPSA) has been



shown to be eliminated within 2-33h, whereas total PSA takes 2-3 days, and that if PSA is elevated, the lower the fPSA:tPSA ratio, the higher the likelihood of cancer.

### Cycling and PSA

The evidence of cycling causing an increase in PSA has been mixed, though many of the studies that did not show an increase had methodological deficiencies in either the age of men tested (too young), or distance cycled (too short).

More recent studies have confirmed that cycling increases PSA. My own paper (Mejalk,

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Bailis, and Hanks, 2013) showed an average increase of 9.5% in total PSA in healthy male cyclists, when measured straight after cycling. Other studies also confirm an increase with cycling (Safford 1996, Oremek 1996, Kindermann 2011, Frymann 2006, Rana 1994).

So if prolonged cycling increases PSA in men of screening age, what about other exercise? The evidence suggests other exercise can increase PSA but the relationship is not as clear-cut. When other exercise has caused an increase, it has been less than with cycling, and is more likely in older men, in those who already have cancer, and with more intense and/or longer exercise.

### What should a practitioner advise?

- One possible approach is to repeat an elevated single random PSA test after 48 hrs abstinence from cycling (and probably ejaculation and DRE). If it remains elevated, treat the elevated result with the usual further investigation or monitoring. [The alternative is to advise every patient undertaking a PSA test to avoid cycling (and probably ejaculation and DRE) for 48 hrs beforehand, but this method is harder to control and document accurately.]
- Avoidance of all exercise for 48 hrs before PSA testing may have merit, when compliance and accurate documentation are not problematic. ●