

# PSA Information Sheet

## What is PSA?

Prostate specific antigen (PSA) is a serine protease glycoprotein, which is predominantly produced in the prostate. Blood levels of PSA are a useful indicator of prostatic pathology, to evaluate men at risk of prostate cancer, and for assessment after treatment.

## What are the roles of PSA?

In normal healthy individuals, PSA is secreted into the seminal fluid in high concentrations to liquefy seminal gel by proteolytic cleavage of gel-forming proteins. This helps to increase sperm mobility. A small amount of PSA is also normally found in the blood as a result of leakage from the prostate gland (1).

## Links between PSA blood levels and prostatic pathology

Healthy males should have blood PSA levels less than 4 ng/mL. Higher levels occur in individuals with BPH, prostatitis, and prostate cancer (4 – 30 ng/mL), with very high levels (>30 ng/mL) occurring at higher frequencies in men with advanced stages of prostate cancer (2). The differing levels of the two detectable forms of PSA (total PSA and free PSA) are useful for distinguishing between individuals with BPH and prostate cancer, particularly in men with PSA levels between 4.1 and 10 ng/mL (3).

## What is prostate cancer?

The prostate is a small walnut shaped gland in the pelvis of men. Prostate cancer is the most frequently diagnosed cancer and second leading cause of cancer deaths in men in the United States (4). There are often no symptoms in the early stages of prostate cancer. When symptoms do appear, they can include pain the lower pelvic area, lower back, hips, or upper thighs, frequent urination which can be painful, hematuria, loss of appetite and weight, and painful ejaculation (5).

Early diagnosis of small tumours that are confined to the prostate provides the best prognosis for recovery from prostate cancer. Analyses of blood PSA levels are the most accurate way to detect prostate cancer, particularly in the early stages (6).

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## Where can I find more info?

Visit [www.genetrackdiagnostics.com](http://www.genetrackdiagnostics.com) for full test information, including specimen collection requirements

### CONTACT US:

Email: [support@genetrackdiagnostics.com](mailto:support@genetrackdiagnostics.com)

Phone: 1-888-802-0703

### NOTE:

This brochure is provided for general information purposes only. It is not intended to replace medical advice from a health professional.

### References:

- (1) McCormack RT, et al. (1995). Molecular Forms of Prostate-Specific Antigen and the Human Kallikrein Gene Family: A New Era. *Urology*, 45, 729-744.
- (2) Partin AW, Oesterling JE. (1994). The Clinical Usefulness of Prostate Specific Antigen: Update 1994. *J Urol*, 152, 1358-1368.
- (3) Ito K, et al. (2003). Free/total PSA ratio is a powerful predictor of future prostate cancer morbidity in men with initial PSA levels of 4.1 to 10.0 ng/mL. *Urology*. 61(4), 760-4.
- (4) Parker SL, et al. (1997). *Cancer Statistics, 1997*. *CA Cancer J Clin*, 47, 5-27.
- (5) What is Prostate Cancer? Urology Care Foundation. Updated August 2018.
- (6) Crawford ED, et al. (1996). Serum Prostate-Specific Antigen and Digital Rectum Examination for Early Detection of Prostate Cancer in a National Community-Based Program. *Urology*, 47, 863-869.