

# RANDOX

## ELEVATED PSA

A WINDOW INTO PROSTATE HEALTH,  
URINARY FUNCTION AND MEN'S WELLBEING



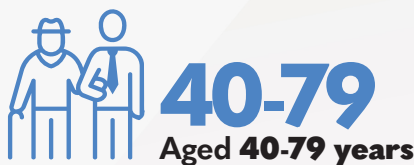
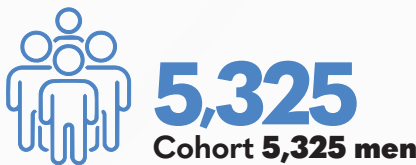
# INSIGHTS FROM A REAL-WORLD COHORT OF 5,325 MEN

Prostate disease is a major health concern affecting men worldwide, encompassing conditions such as benign prostatic hyperplasia (BPH), prostatitis and prostate cancer. As prevalence increases with age, these conditions can significantly impact urinary function, sexual health and overall quality of life.

Prostate-specific antigen (PSA) remains the most widely used biomarker for assessing prostate health. However, elevated PSA levels can result from both benign and malignant conditions, making interpretation challenging when used in isolation.

This whitepaper explores findings from a real-world study of 5,325 men aged 40-79 years, which found that elevated PSA levels were present in 3.5% of participants and were strongly associated with advancing age, higher body mass index (BMI), previous prostate disease, erectile dysfunction (ED), and lower urinary tract symptoms (LUTS).

## THE STUDY ANALYSED DATA FROM:



## KEY STUDY FINDINGS

### Elevated PSA was Identified in 3.5% of Men

Among the 5,325 men assessed:

- ✓ 186 men had elevated PSA
- ✓ 5,139 men had PSA values within age-adjusted ranges

This demonstrates that elevated PSA occurs in a relatively small proportion of the general health-screening population.

## AGE IS A MAJOR DRIVER OF ELEVATED PSA

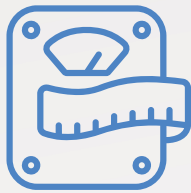
### Age is a Major Driver of Elevated PSA

The prevalence of elevated PSA increased substantially with age.

| AGE GROUP   | ELEVATED PSA PREVALENCE |
|-------------|-------------------------|
| 40-49 years | 1.6%                    |
| 50-59 years | 4.6%                    |
| 60-69 years | 6.6%                    |
| 70-79 years | 4.7%                    |

Notably, men aged 50-69 accounted for approximately 73% of all elevated PSA cases identified. This reinforces the clinical importance of age-adjusted PSA interpretation and highlights the increasing burden of prostate-related risk during mid-to-late adulthood.

## ELEVATED PSA IS ASSOCIATED WITH INCREASED BODY WEIGHT



### Men with elevated PSA demonstrated:

- ✓ Higher median BMI
- ✓ Greater prevalence of overweight and obesity
- ✓ Lower likelihood of maintaining a healthy weight

### Key observations included:

- ✓ 26% of men with elevated PSA were classified as obese
- ✓ Compared to 20% among men with normal PSA
- ✓ Healthy-weight status was less common among men with elevated PSA (23% vs 32%)

## PREVIOUS PROSTATE DISEASE STRONGLY CORRELATES WITH ELEVATED PSA

One of the most significant findings was the relationship between elevated PSA and existing prostate disease.

### Among men with elevated PSA:

- ✓ 17% reported a previous prostate disease diagnosis

### Compared to:

- ✓ 2.9% among men with normal PSA

This represents nearly a six-fold difference and supports the continued role of PSA as an effective first-line indicator for identifying individuals who may benefit from further clinical investigation.

## ERECTILE DYSFUNCTION IS MORE COMMON IN MEN WITH ELEVATED PSA

Sexual health and prostate health demonstrated a meaningful relationship.

### The prevalence of ED was:

- ✓ 17% among men with elevated PSA
- ✓ 11% among men with normal PSA

These findings suggest that elevated PSA may be associated with broader urological and vascular health concerns rather than representing an isolated clinical parameter

## URINARY SYMPTOMS FREQUENTLY ACCOMPANY ELEVATED PSA

Men with elevated PSA were significantly more likely to report LUTS.

### THE PREVALENCE OF ED WAS:

- ✓ Increased urinary frequency
- ✓ Weak urine flow
- ✓ Dysuria
- ✓ Difficulty initiating urination
- ✓ Urgency
- ✓ Incontinence

### Overall prevalence of LUTS:

- ✓ Elevated PSA: 13%
- ✓ Normal PSA: 4.6%



# CLINICAL IMPLICATIONS BEYOND A SINGLE BIOMARKER

Traditionally, PSA testing has been viewed as a standalone measure of prostate health. The findings from this study suggest a broader clinical narrative.

## ELEVATED PSA APPEARS TO BE ASSOCIATED WITH:

- ✔ Prostate disease history
- ✔ Urinary dysfunction
- ✔ Advancing age
- ✔ Sexual dysfunction
- ✔ Metabolic risk factors

Taken together, these observations indicate that PSA may provide valuable insight into overall urological health and should be interpreted alongside patient symptoms and risk factors. There is however a much greater need for integrated risk assessment in patients to evaluate PSA and additional related biomarkers in particular metabolic related tests.

Growing trends are also aligned here towards more personalised and precision-based diagnostic strategies, as diagnostic technologies continue to evolve, there is increasing opportunity to integrate:

- ✔ Biomarker testing
- ✔ Demographic risk factors
- ✔ Clinical symptom profiles
- ✔ Artificial intelligence-driven risk models

Future risk-stratification tools may provide greater specificity than PSA alone, enabling earlier intervention while reducing unnecessary referrals and invasive procedures. This large real-world analysis of 5,325 men demonstrates that elevated PSA is relatively uncommon but highly informative.

For healthcare providers, researchers, and diagnostic developers, the results support a more comprehensive and integrated approach to men’s health assessment, helping identify individuals who may benefit from further investigation and early intervention.

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