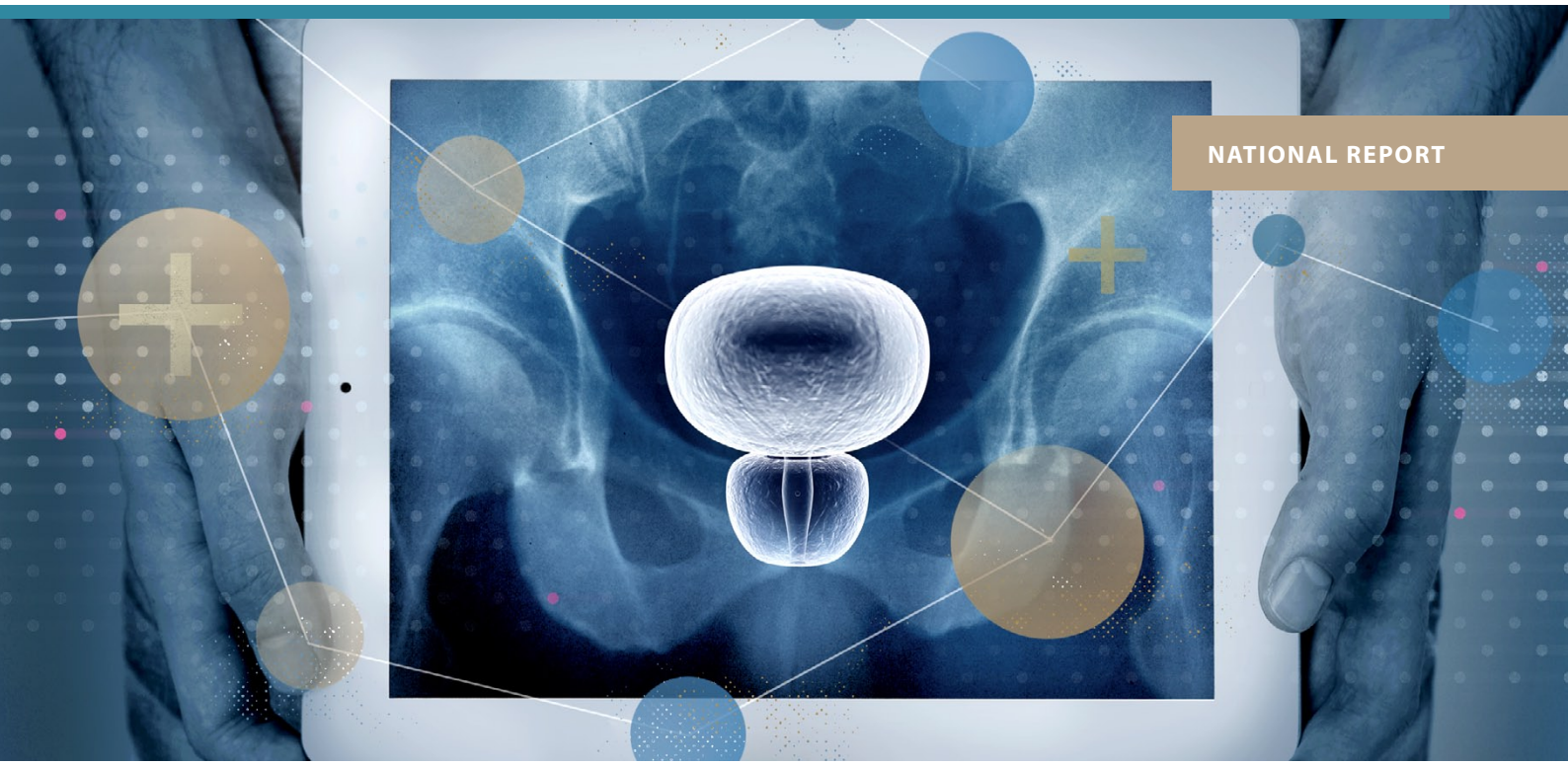


NATIONAL REPORT

Testing for prostate cancer in primary care

This report provides an overview of laboratory prostate-specific antigen (PSA) testing in primary care to facilitate reflection, discussion and identification of opportunities to optimise patient care.

KEY MESSAGES:

- Prostate cancer is the third highest cause of cancer death for New Zealand males, and those with a family history of prostate cancer are at the greatest risk
- Prostate-specific antigen (PSA) testing is the only widely available biochemical test for detecting prostate cancer. Nationally:
  - PSA testing rates have remained relatively stable over the past five years; approximately 19% of adult males were tested each year between 2015–2019
  - The PSA testing rate increases markedly from age 40 years; the highest testing rates in 2019 were in those aged 70–79 years (47% of this group)
  - The PSA testing rate in European males was approximately two-fold higher than Māori and Asian males and approximately three-fold higher than Pacific males
- Interpreting PSA test results can be difficult as elevated levels are not specific for prostate cancer and not all males with malignant tumours have elevated PSA levels. Patient education and discussion of the risks versus benefits is essential before offering a PSA test.
- All middle-aged and older males should be encouraged to report any lower urinary tract symptoms early, particularly Māori, Pacific and Asian males; confirm that any family history of prostate cancer has been recorded

Overview of prostate cancer testing in New Zealand

Prostate cancer is the third leading cause of cancer death for New Zealand males, behind lung and colorectal cancers. However, most prostate cancers are low risk and do not necessarily result in adverse outcomes for patients; 1 in 30 males diagnosed with prostate cancer will die due to the disease.[1] The detection of these low risk cancers can cause stress and adverse effects following a prostate biopsy. Furthermore, treatments such as radical prostatectomy and radiation therapy can result in lifelong adverse effects affecting urinary, sexual and bowel function that are potentially unnecessary in patients with low risk prostate cancer.

Prostate-specific antigen (PSA) testing is currently the only widely available biochemical test for detecting prostate cancer. However, the test cannot reliably diagnose or exclude prostate cancer. PSA levels can fluctuate, and increased levels can be associated with other medical conditions, e.g. benign prostatic hyperplasia or prostatitis, or have other causes, e.g. recent ejaculation, digital rectal examination. In addition, not all males with prostate cancer have elevated PSA levels. Therefore, PSA testing can lead to a cascade of further investigations, interventions and treatments. Patient education that includes a discussion of the risks versus benefits is essential before offering a PSA test.

Further information on testing for prostate cancer is available from: **https://bpac.org.nz/2020/prostate.aspx**

Patient information on prostate cancer, testing and treatment that has been developed for a New Zealand audience is available from: **https://kupe.net.nz**

PSA testing in symptomatic males

Lower urinary tract symptoms may be associated with prostate cancer and guidelines recommend considering PSA testing in males with:[2, 3]

- Decreased force of urinary flow
- Nocturia
- More frequent urination
- Delay in starting urination
- Post-urination dribble
- Blood in urine
- Erectile dysfunction
- Feeling of incomplete bladder emptying

Red flags which are suggestive of metastatic prostate cancer include:[2, 4]

- Bone pain
- Macroscopic haematuria
- Acute neurological symptoms consistent with spinal cord compression or cauda equina syndrome
- Renal failure
- Elevated blood alkaline phosphatase levels

Targeted PSA testing in asymptomatic males

Increasing age and family history are the most important risk factors for prostate cancer; prostate cancer is rare in males aged under 45 years.[2] Targeted testing in groups with an elevated risk is recommended to minimise over-treatment, patient stress and biopsy-related adverse effects. The recommended thresholds for considering testing in asymptomatic males are:[2]

- Without a family history: age 50–70 years
- With a family history: aged 40–70 years
- Testing in asymptomatic males aged over 70 years may be appropriate if there is a family history or they have had an elevated PSA level previously, and they have a life expectancy of more than ten years

The Prostate Cancer GP Tool decision support module provides guidance on testing for prostate cancer in primary care, including information on risk, recommendations on when to refer patients based on their age, symptoms and signs, PSA and digital rectal examination (DRE) results. The GP Tool can be accessed via Medtech32 and Medtech Evolution. Further information is available from: **https://bpac.org.nz/2020/prostate.aspx#gptool**

PSA testing in primary care: laboratory data

This report provides an overview of PSA testing in New Zealand by presenting national laboratory testing data. The laboratory data captures PSA testing in:

- Symptomatic males
- Asymptomatic males (targeted testing)
- Males with abnormal findings on digital rectal examination
- Monitoring of males who have prostate cancer, are undergoing prostate cancer treatment or who are post-treatment

As a consequence, interpretation of the data is limited as it is not possible to determine why a PSA was performed and whether this was appropriate. In addition, there is no ideal level of PSA testing in asymptomatic males, as it is an individual choice to be tested. Instead, clinicians are encouraged to review the national data and consider how this relates to their own practice. Points for reflection are available at the end of this report.

National trend in PSA testing

The number of males aged 18 years and older in New Zealand who received a PSA test has remained relatively stable over the past five years; approximately 19% of adult males were tested each year between 2015–2019 (Figure 1). In 2019, 80% of males who underwent PSA testing had one test, 19% had 2–5 tests, 0.5% had 6–12 tests and 0.04% had ≥13 tests.[5]

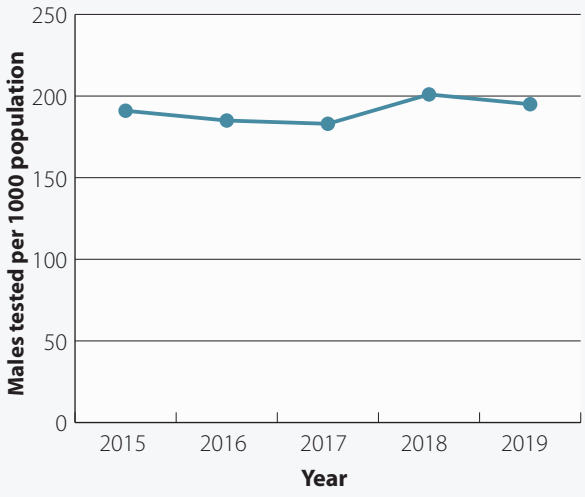


Figure 1. The number of males aged 18 years and older (per 1,000 enrolled males) who underwent a PSA test in New Zealand, 2015–2019.

PSA testing by age

Prostate cancer is relatively rare in males aged under 55 years. Most males who develop prostate cancer are over age 65 years; about one in 13 males will develop prostate cancer before age 75 years.[6] Figure 2 shows the number of males aged 18 years and older who underwent a PSA test in 2019, by age. Testing rates increased markedly from age 40 years; the highest rate was in those aged 70–79 years (470 males tested per 1,000 population). The relatively high rates of PSA testing in males aged ≥ 90 years are likely due to ongoing monitoring in those who have prostate cancer, are undergoing prostate cancer treatment or who are post-treatment, as opportunistic testing is unlikely to be appropriate in this age group.

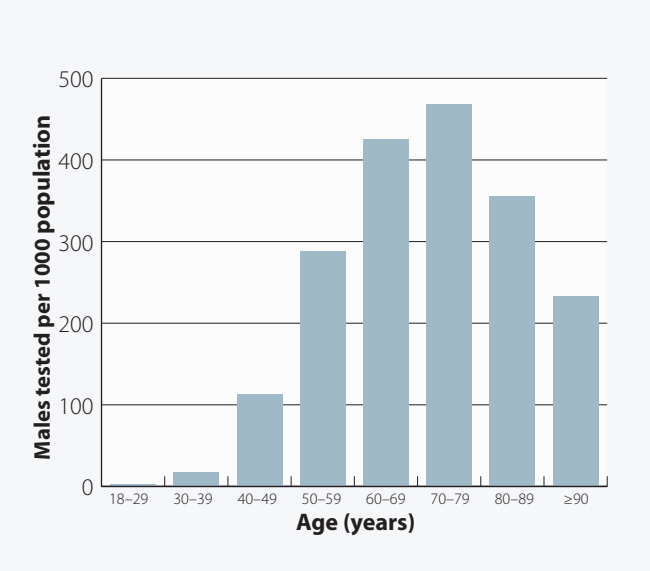


Figure 2. The number of males aged 18 years and older (per 1,000 enrolled males) who underwent a PSA test in New Zealand in 2019, by age in years.

PSA testing by ethnicity

Evidence indicates that Māori are diagnosed with later stage prostate cancer, resulting in poorer outcomes.[7] An assessment of cancer survival rates from 1996 to 2010 found that Māori were approximately twice as likely to die from prostate cancer as non-Māori, following diagnosis.[8] This increased mortality is likely to be due to differences in access to healthcare, rates of diagnosis and treatment, rather than Māori males having a greater risk of prostate cancer.[2] Similar factors are likely to contribute to poorer outcomes in Pacific and Asian males, although prostate cancer mortality data are not available for these groups in New Zealand.

In 2019, the PSA testing rate in European males was approximately two times higher than Māori and Asian males, and approximately three times higher than Pacific males (Figure 3). While the ideal level of PSA testing is not known, these differences in testing rates are likely to contribute, at least in part, to the poorer outcomes in Māori, Pacific and Asian males with prostate cancer; increased testing may lead to earlier diagnoses and improved prostate cancer survival rates in these groups. However, it should be noted that over-testing of European males may also be contributing to the different PSA testing rates between ethnic groups.

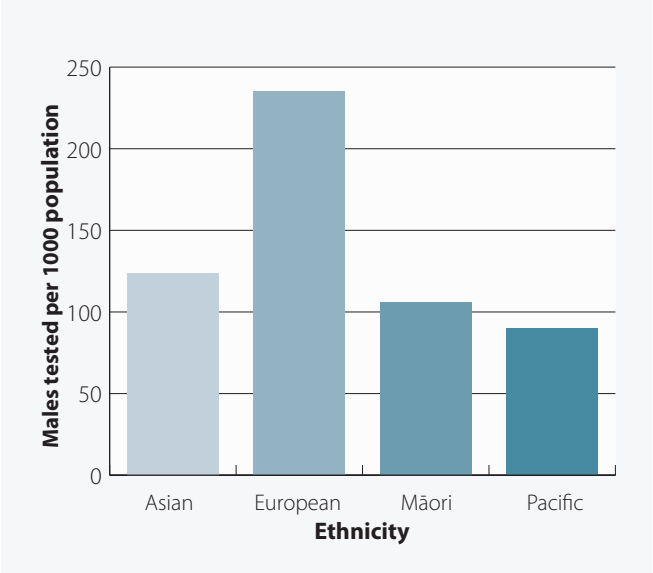


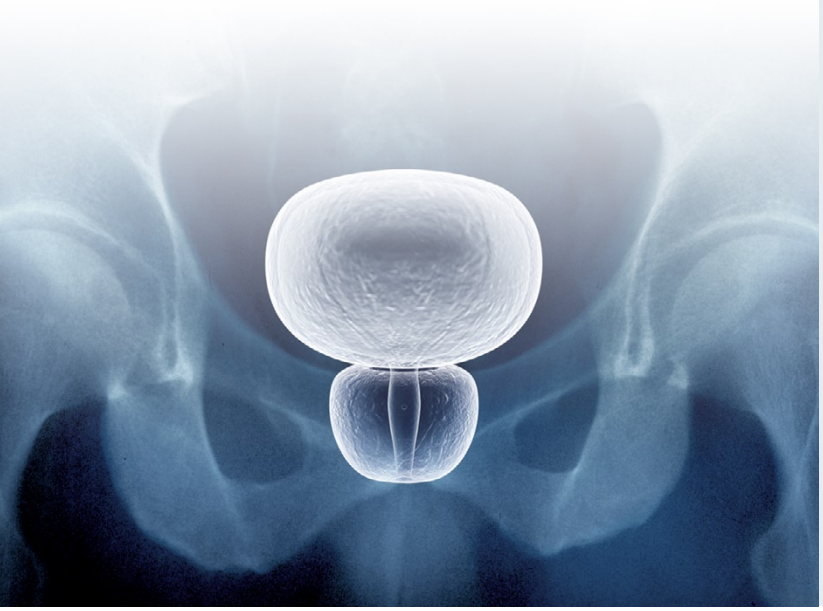
Figure 3. The number of males aged 18 years and older (per 1,000 enrolled males) who underwent a PSA test in New Zealand in 2019, by ethnicity.

All males should be encouraged to report any lower urinary tract symptoms early, particularly those of Māori, Pacific and Asian ethnicities. Confirm that any family history of prostate cancer has been recorded to ensure that patients at increased risk receive appropriate and timely PSA tests.

Points for reflection

- Do you routinely ask middle-aged and older males if they have any lower urinary tract symptoms or discuss the importance of reporting symptoms early? Have you noticed any cultural, ethnic or age differences in willingness to disclose or discuss lower urinary tract symptoms?
- What have you observed to be the main reasons why males request PSA tests in your practice? Have you noticed more males requesting PSA testing in response to national prostate cancer campaigns? Have you noticed any cultural or ethnic trends among males who request PSA testing?
- Discussion about the risks and benefits of prostate cancer testing is essential before offering a PSA test. Do you use or recommend resources to assist patients with making the decision about PSA testing? If so, which resources do you find most helpful? Did you know about the Kupe resource? If so, do you recommend this?
- Did you know about the Prostate Cancer GP Tool decision support tool? Do you use this to guide you through the prostate cancer testing process?
- The risks of PSA testing in asymptomatic males aged over 70 years may outweigh the benefits; under what circumstances do you consider PSA testing in asymptomatic males in this age group?

If you are a clinician, consider auditing males from your practice who have undergone PSA testing. The reflection points may help you identify an appropriate topic for a clinical audit, e.g. PSA testing in asymptomatic males aged > 70 years.



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This report is also available online at:
www.bpac.org.nz/report/psa.aspx