Test Early Save Lives

Incidence

- New Zealand: one in eight men will be diagnosed with prostate cancer in their lifetime and about 700 men die annually.
- Globally: about 375,000 men die of prostate cancer annually

Guidelines for early detection

- A Prostate Specific Antigen(PSA) blood test is critical.
- A DRE (Digital Rectal Examination) is very helpful to diagnose highly aggressive cancer types which do not produce PSA.
- A baseline PSA test and a DRE at **age 40-45**, before men have prostate enlargement which can cause a rise in PSA, is helpful to assess lifetime prostate cancer risk.
- If there is a family history of early onset prostate cancer (< 60 years of age), the risk is 2-4 times the baseline risk and testing should start at **age 35.**

Current Recommendation for PSA testing at Age 40-45

PSA level	Action
<0.6ng/ml	Low lifetime cancer risk (± 5%) Do next test in 5 years
0.6-1ng/ml	Lifetime cancer risk (± 10%) PSA test every 1-2 years
1.1-2.4ng/ml	High lifetime cancer risk (± 20%) PSA test every 6-12 months
≥ 2.5ng/ml	Immediate referral for MRI or prostate biopsy

Possible non-cancer contributors to increases in PSA

1. False positives can be caused by **physical activity, ejaculation or prostate manipulation** and these should therefore be avoided in the **48 hours** prior to testing.

2. Prostate infection (prostatitis) can cause a rise in PSA. The PSA level should return to normal following antibiotic treatment.

3. Benign prostatic enlargement /hyperplasia (BPH). The larger the prostate, the more PSA it can make. There is a low risk of prostate cancer (8%) if the free PSA ≥ 25%.

PSA tests and calculations

1. Total PSA

All the PSA in the bloodstream, which includes bound and free PSA.

2. Free PSA

It only measures the unbound PSA in your blood stream.

PSA produced by prostate cancer has a higher tendency to bind to proteins in the blood and therefore less than 10-15% are in the "free", unbound form. With benign enlargement, free PSA is often >20-25%.

3. PSA Density (PSAD)

It is the amount of PSA compared to the size of the prostate. It is calculated by dividing the serum PSA level by the volume of the prostate gland as measured by ultrasound, MRI or DRE .

Prostate cancer: PSAD ≥ 0.15 ng/ml/cm3
BPH: PSAD ≤ 0.1ng/ml/cm3

4. PSA Velocity (PSAV)

This is the change in PSA over one year. With a consistent rise in PSA of more than **0.35ng/ml/year,** there is a five fold increased risk of prostate cancer death in the following two to three decades.

If there is an ongoing rise in PSA of more than 0.3ng/ml/year between tests, the patient should be referred to a Urologist.

High risk PSA and indications for an MRI or prostate biopsy

Age	Low Risk PSA	High Risk PSA	MRI or Biopsy Indicated PSA
40-49	<0.6	>1.1	> 3 or very suspicious DRE
50-59	<1	>1.8	> 3 or very suspicious DRE
60-69	<1	>2.0	> 3 or very suspicious DRE
70-75	<1	>3.0	> 3 or very suspicious DRE

(National Comprehensive Cancer Network, NCCN Guidelines 2024, www.nccn.org).

Any patient aged 40-75 with a PSA >3 and who has not had an MRI or prostate biopsy, should be regularly monitored with a PSA and DRE every 6-12 months. If there is an ongoing rise in PSA or change in DRE, then an MRI or prostate biopsy is indicated.

TREATMENT OF LOCALIZED PROSTATE CANCER

1. Active Surveillance

Close monitoring with the expectation to intervene when cure is still possible.

Criteria for Active Surveillance

- Men in their 60s and older
- Gleason score of 6 or lower
- Positive biopsy in one or two cores only
- Cancer only in one lobe of prostate
- PSA ≤ 10ng/ml
- PSA density < 0.15ng/ml/cm3
- Stage T1c (soft prostate)

2. Treatment with Curative Intent

Radical prostatectomy (Laparoscopic or Open)
Radiation therapy
Brachytherapy

CyberKnife Robotic Radiation Therapy

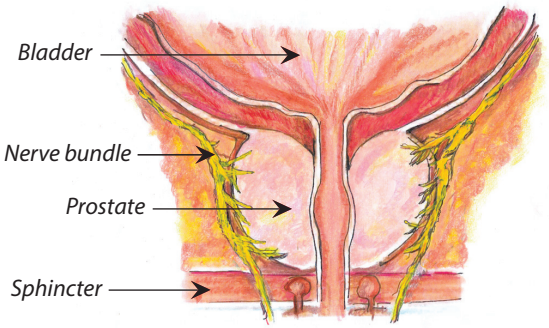
Since the prostate can move during treatment and is located near sensitive areas such as the bladder and bowel, CyberKnife uses tiny gold markers in the prostate to continually track its position during treatment. This means high doses of radiation therapy can be delivered to the tumour with sub-millimetre precision.

Full treatment can be delivered in as little as five precisely targeted 30-minute sessions.

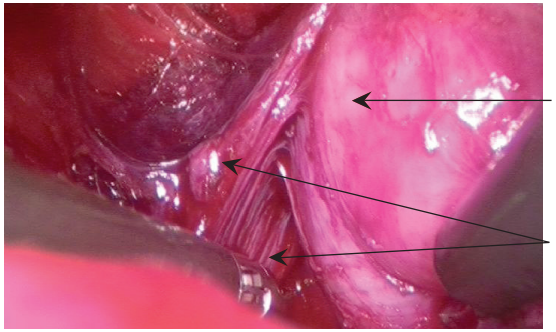
Laparoscopic Radical Prostatectomy

This technique is performed through a few tiny openings (keyhole surgery). The aim is to remove the prostate without damage to the nerve bundles as they are necessary for normal erections. In advanced cancer this is not possible as the cancer grows into the nerve bundles directly or along small nerves (perineural invasion).

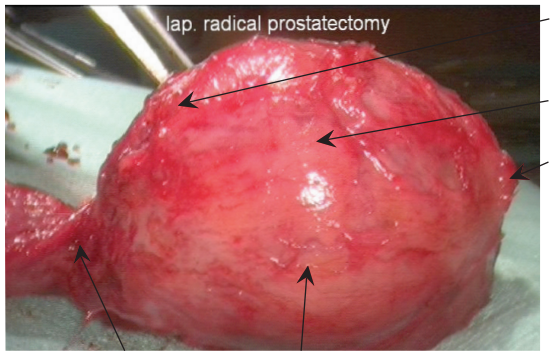
Anatomy



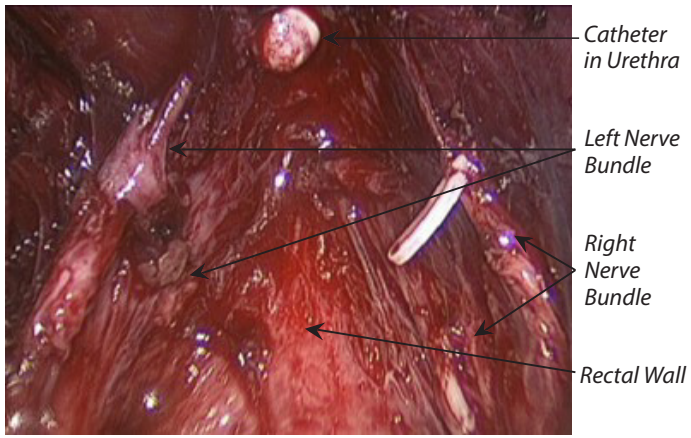
Laparoscopic dissection of left neurovascular bundle



Prostate after removal through umbilicus

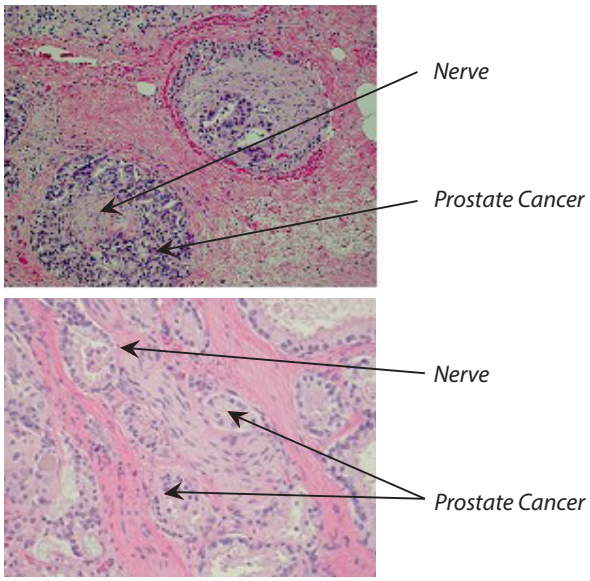


Nerve bundles after removal of prostate



Perineural invasion (Cancer cells around nerve)

Prostate cancer cells may migrate along small nerves leaving the prostate (perineural invasion) and start growing outside the prostate capsule (extraprostatic extension).



192 Peachgrove Road, Claudelands, Hamilton 3214
Ph: 07 847 0773
Mobile: 027 431 4367
Email: dirk@uro.co.nz

PSA TESTING

for

Early detection and treatment

of

PROSTATE CANCER

DIRK DRENT
UROLOGIST

www.uro.co.nz