



Exercise During Prostate Cancer – The Latest Evidence.

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CREDIT PRUE CORMIE

Contents

- ▶ Prostate cancer statistics
- ▶ Is exercise safe? What type of exercise? What dosage does the evidence recommend?
- ▶ Exercise alongside hormone therapy?
 - ▶ Latest clinical trials.
- ▶ Talk about exercise prescription and bone metastases
- ▶ What is offered at the Kaden Centre.

Prostate cancer incidence

Estimated number of new prostate cancer cases diagnosed in 2022 - 24,217

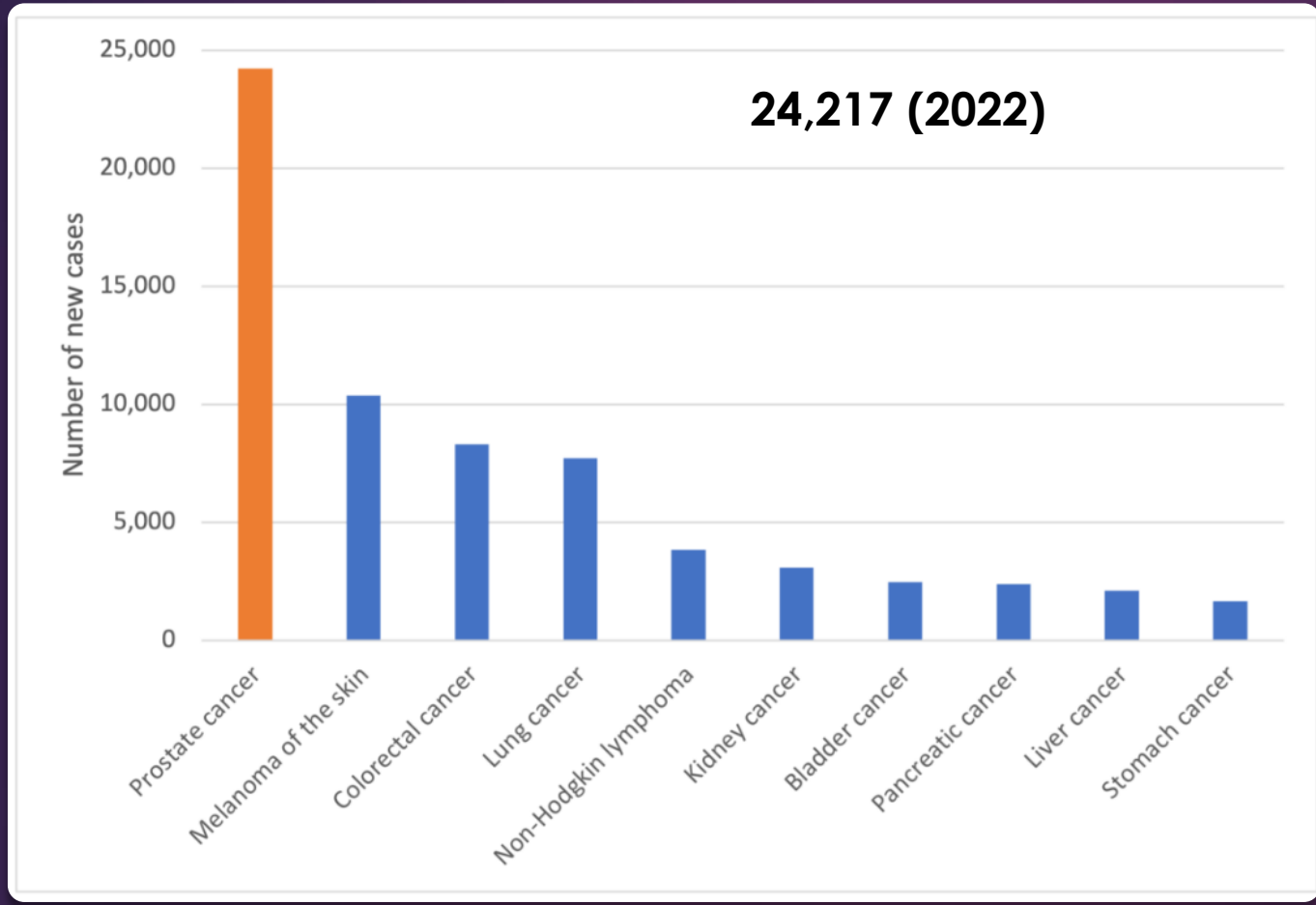
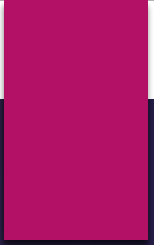
Estimated % of all new male cancer diagnosed in 2022 – 27%

Estimated number of deaths from prostate cancer in 2022 – 3,507

Estimated % of all male deaths from cancer in 2022 – 13%

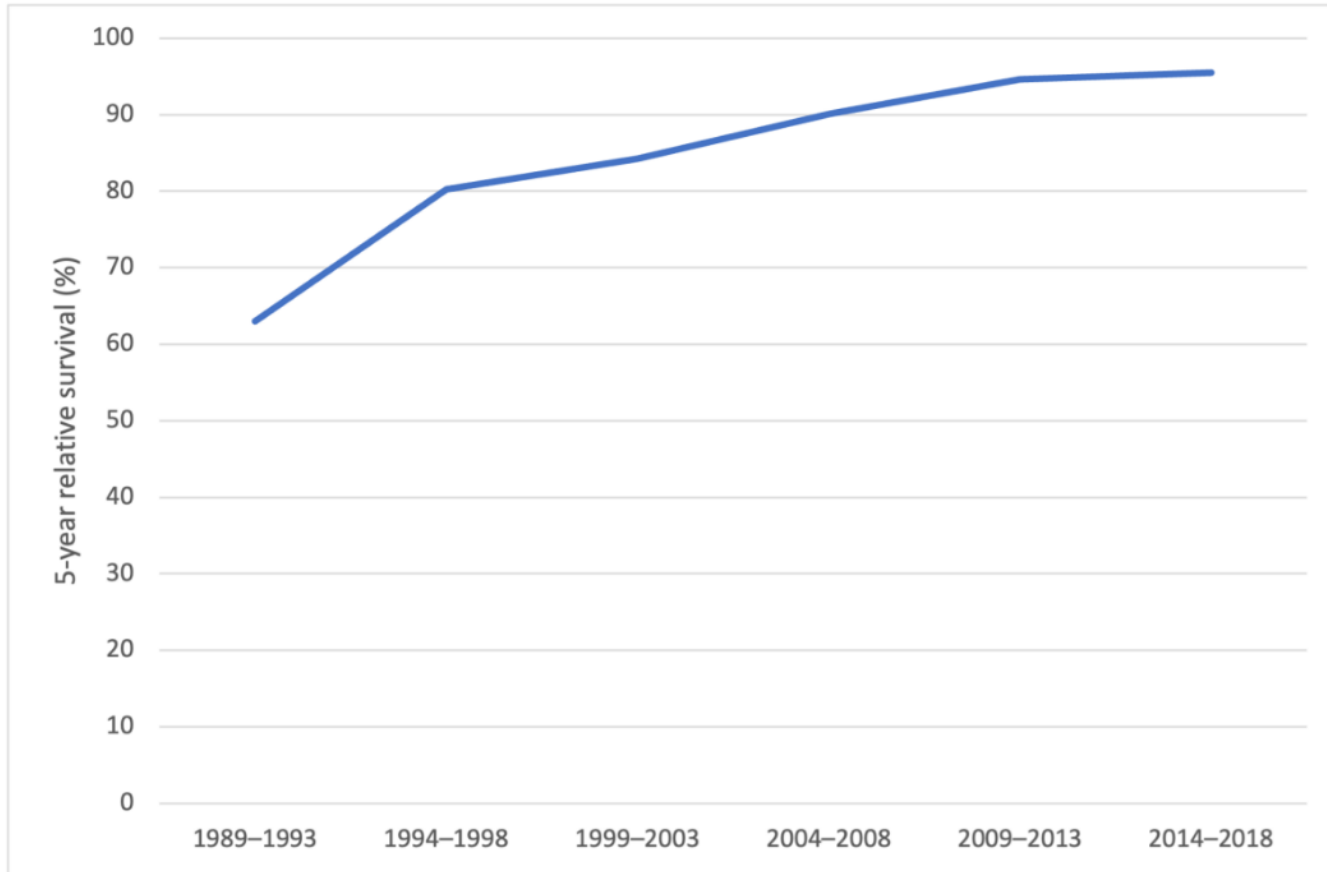
Chances of surviving at least 5 years (2013 – 2018) – 96%

Males living with prostate cancer at the end of 2017 (diagnosed in the 5-year period 2013 – 2017) 89,005



Diagnosis - males

Data sourced from AIHW Cancer Data in Australia 2022 web report and supplementary data tables



Survival

Who gets prostate cancer

Age

**Family
history**

Race

Genetics

Diet

Lifestyle

Treatment options

- ▶ Watchful waiting
- ▶ Active surveillance
- ▶ Surgery
- ▶ Radiotherapy
- ▶ Cryosurgery
- ▶ **Hormone therapy**
- ▶ Chemotherapy
- ▶ Immunotherapy



Is Exercise Safe?

- ▶ American College Sport Medicine - Exercise is safe for cancer survivors. Inactivity should be avoided.
- ▶ COSA Position statement on cancer and exercise – Exercise should be part of standard practice in cancer care and to be viewed as an adjunct therapy that helps counteract adverse effects of cancer and its treatment.



Dosage



3 x 30 minutes of moderate aerobic activity per week



Plus 2-3 weight sessions



Achievable ?

"We combined all your medications into ONE convenient dose."



Androgen deprivation therapy

- ▶ ADT use among men with prostate cancer is widespread.
- ▶ ADT extends the lives of many men with prostate cancer
- ▶ Let's look at some of the side effects of men undergoing prostate cancer treatment, and what exercise can do to help.

Side effects and Exercise

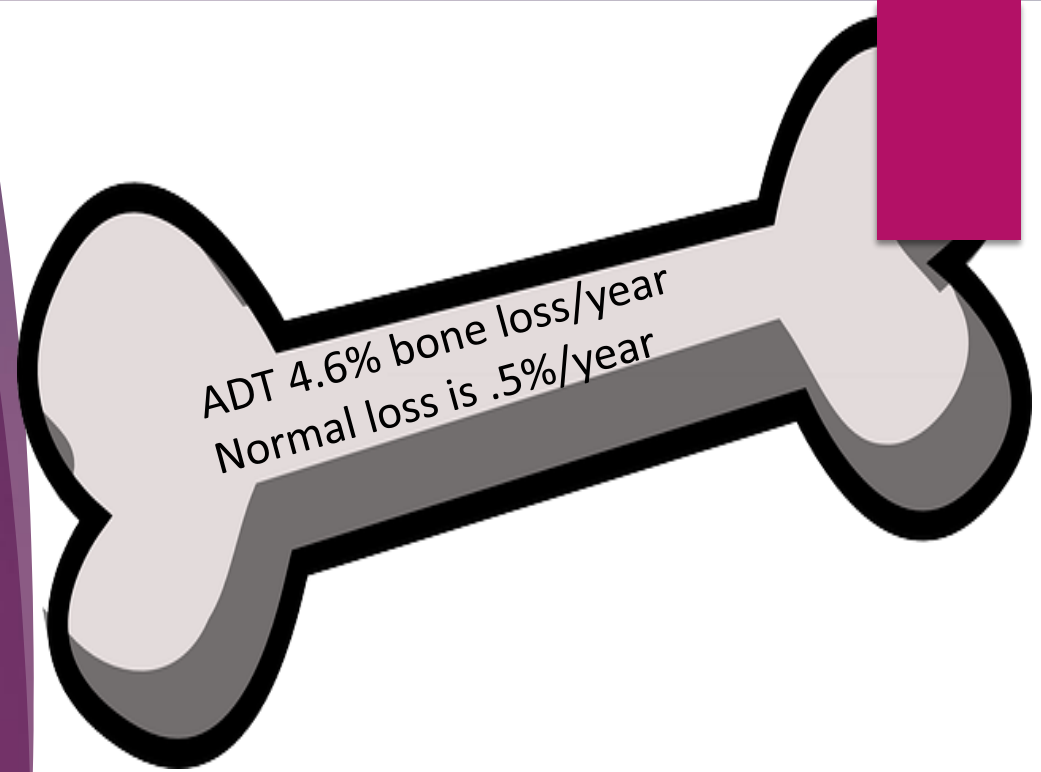
- ▶ Changes to body composition
 - ▶ Increase weight, decrease lean mass, increase fat mass, increase abdominal adiposity.
 - ▶ (Cormie, et al. (2015). Can supervised exercise prevent treatment toxicity in patients with prostate cancer initiating androgen-deprivation therapy: a randomised controlled trial. *BJU international*, 115(2), 256-266.)



Side effects continued

▶ Bone health

- ▶ Testosterone and its metabolites are essential for bone health.
- ▶ ADT is associated with
 - ▶ A decrease in bone mineral density
 - ▶ Increase in bone turnover
 - ▶ Increased fracture risk
 - ▶ Increase osteoporosis risk



Taaffe et al (2019). Commencing Exercise at the onset of ADT preserves bone mineral density at the lumbar spine.

** Exercise can maintain BMD, not necessarily increase it.

Cardiovascular disease and Prostate Cancer

- ▶ Exercise prompts favourable changes to the risk factors associated with CVD

Blood Markers

Parameter	Effect
HDL & total cholesterol	Decrease
Triglyceride levels	Decrease
Insulin sensitivity	Increases

Body composition

Parameter	Effect
Weight	Decrease
Lean body mass	Increase
Fat mass	Decrease

Cardiovascular disease and Prostate Cancer

There is a consistent association between ADT and increased risk of CVD.



Observational evidence.



Bosco et al. 2015 – meta-analyses of 8 observational studies showed a 17% increase in CVD when on ADT.



Separate observational study by O'Farrell et al. 2015 – compared the CV health of 41,326 men with PrCa on ADT to 187,785 men without PrCa. Risk of CVD was higher if treated with ADT



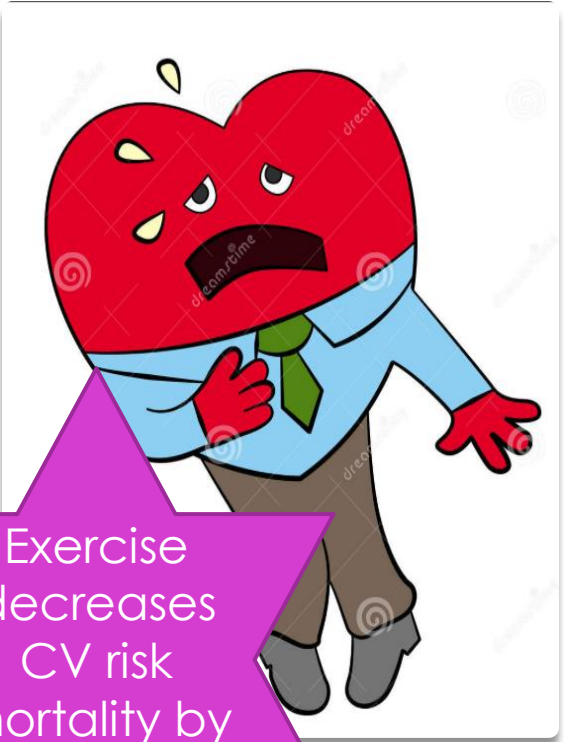
Exercise

Anti-atherosclerotic

Anti-thrombotic

Anti-ischaemic

Anti-arrhythmic



Exercise
decreases
CV risk
mortality by
25%

Diabetes and prostate cancer

ADT

- is associated with an increased risk of developing diabetes and exacerbating existing disease.
- causes a negative change in insulin regulation and lipid levels.
- changes in body composition (increased fat mass and trunk mass).

?Management

? Exercise

Side effects and Exercise

Cancer related fatigue

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graph TD; A[Cancer related fatigue] --> B[Multifactorial]; B --> C[Bo, Y., & Jiansheng, W. (2017). Effects of Exercise on cancer-related fatigue and quality of life in prostate cancer patients undergoing androgen deprivation therapy: a meta-analysis of randomized clinical trials.];
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Multifactorial

Bo, Y., & Jiansheng, W. (2017). Effects of Exercise on cancer-related fatigue and quality of life in prostate cancer patients undergoing androgen deprivation therapy: a meta-analysis of randomized clinical trials.

- Indicated that exercise reduced both CRF and improved QOL in Pr Ca patients receiving ADT.

Exercise and Side effects.

- ▶ Urinary incontinence
 - ▶ Stress
 - ▶ Urge
 - ▶ Overflow

Sayilan and Ozbas (2018).

- ▶ Erectile dysfunction and Loss of libido. **Cormie et al. 2013 *Exercise therapy for sexual dysfunction after prostate cancer.***
- ▶ Currently research is being conducted to explore exercise as a potential management strategy.

Prostate cancer and psychological distress

- ▶ Physiological distress



Distress and exercise

- ▶ Cormie, P., Oliffe, J. L., Wootten, A. C., Galvão, D. A., Newton, R. U., & Chambers, S. K. (2016). Improving psychosocial health in men with prostate cancer through an intervention that reinforces masculine values-exercise. *Psycho-oncology*, 232-235.
- ▶ Galvão, D. A., Newton, R. U., Chambers, S. K., Spry, N., Joseph, D., Gardiner, R. A., ... & Taaffe, D. R. (2021). Psychological distress in men with prostate cancer undertaking androgen deprivation therapy: modifying effects of exercise from a year-long randomized controlled trial. *Prostate Cancer and Prostatic Diseases*, 24(3), 758-766.

Bone Pain in advanced Prostate Cancer



Toothache, dull ache, stabbing pain.



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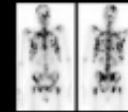


Night pain



Exercise ?

DEALING WITH BONE METASTASES



VIDEO

- Exercise prescription matrix:

Metastases Site	Resistance Exercise			Aerobic Exercise		Flexibility
	Upper	Trunk	Lower	WB	NWB	Static
Pelvis	√	√	√**		√	√
Axial Skeleton (lumbar)	√		√		√	√***
Axial Skeleton(thoracic/ribs)	√*		√	√	√	√***
Proximal Femur	√	√	√**		√	√
All regions	√*		√**		√	√***

√ = Target exercise region; * = exclusion of shoulder flexion/extension /abduction/adduction & inclusion of elbow flexion/extension; ** = exclusion of hip extension/flexion & inclusion of knee extension/flexion; *** = exclusion of spine/flexion/extension/rotation; WB = weight bearing (e.g. walking); NWB = non-weight bearing (e.g. cycling);

Side effects summarised

Surgery	Radiotherapy	Hormone therapy	Chemotherapy
Urinary incontinence	Fatigue	Sexual dysfunction (libido)	Fatigue
Erectile dysfunction	Urinary problems	Fatigue	Compromised immunity
Change in penis size	Bowel problems	Weight & fat mass gain	Nausea and vomiting
Changes during orgasm	Erectile dysfunction	Loss of muscle mass	Diarrhoea & constipation
Infertility	Changes during orgasm	Reduced physical function	Peripheral neuropathy
	Skin irritation	Reduced bone health	Cognitive impairment
	Infertility	Increased risk of CVD	Hair loss
		Increase risk of diabetes	Appetite changes
		Mood swings	Sore mouth & throat
		Cognitive impairment	Swelling
		Hot flushes & gynecomastia	Infertility

Changes to mood/psychological distress; Compromised sleep quality; Reduced masculine self-esteem; Reduced quality of life

The Kaden Centre

- ▶ <https://kadencentre.org.au/>
- ▶ Not for Profit Charity specialising in exercise oncology.
- ▶ Translate research.
- ▶ Services available.
- ▶ Physiotherapists and exercise physiologists
- ▶ Initial assessments
 - ▶ Subjective Ax, Objective Ax. Program written. Letter to referrer outlining findings.
- ▶ Prepare a program
- ▶ Medicare (TCA) or can be used (TCA) to subsidise the program.



**In clinic exercise or at
home via telehealth**

[Home Programs](#)

[Find out more ...](#)

Digital Doctors Referral

What is the Digital Doctors Referral and how does it work?

1) The Digital Doctors Referral form is a quick and easy way to refer your patients directly to the Kaden Centre.

2) Simply fill out the form and the Kaden Centre will contact your patient to arrange an appointment.

3) A letter will be sent back to you, the referring doctor, once our clinicians have seen your patient.

"*" indicates required fields

Patients Name *

Contact phone number *

Patient suffers *

- Cancer
 Chronic Illness

Does the patient have an EPC *

- Yes
 No

Doctors name *

Practice name *

Practice contact number *

Additional comments



MY PROGRAM



MY ACCOUNT



BOOK A CALL



FACEBOOK GROUP



SHOP ONLINE

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- ▶ O'Farrell, S., Garmo, H., Holmberg, L., Adolfsson, J., Stattin, P., Van Hemelrijck, M. (2015) Risk and timing of cardiovascular disease after androgen-deprivation therapy in men with prostate cancer. *J Clin Oncol* 33: 1243–1251.



Questions?