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## Comparing aerobic and resistance exercise emphasis during androgen deprivation and radiation therapy for prostate cancer

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### Background

Most exercise interventions for men with prostate cancer utilise resistance and aerobic exercise, though the optimal combination of each for cardiometabolic health and quality of life (QOL) outcomes is unclear.

### Objective

The objective of this study was to compare an aerobic-emphasised (AE) with a resistance-emphasised (RE) exercise intervention in men with prostate cancer undergoing androgen deprivation therapy (ADT) and radiation therapy (RT), with respect to cardiometabolic health, fitness and QOL outcomes.

### Methods

A 6-month two-armed randomised pilot and feasibility study was undertaken, with the pilot data presented here. Prostate cancer patients (n=24) undergoing ADT and RT were randomised to either an AE (n=12) or RE (n=12) supervised programme.

### Results

There were between group changes favouring RE (p=0.05, Cohen's d = -0.9) in the BESS balance change scores. There were changes favouring AE in SF-36 physical function (p=0.02, Cohen's d = 1.2) and role limitation (p=0.01, Cohen's d = 1.3) values and haemoglobin levels (p=0.04, Cohen's d = 1.1). There were no other between group differences.

When AE and RE data were combined, improvements were seen in the six-minute walk test (Cohen's d = 1.4), timed up and go (Cohen's d = -1.4), sit and reach test (Cohen's d = 0.5), leg press (Cohen's d = 0.8), sit-to-stand (Cohen's d = 1.4), isokinetic peak torque assessments (Cohen's d = 0.6) and physical activity levels via the Godin Leisure Time Exercise Questionnaire (Cohen's d = 3.3). Pre-to post-intervention reductions (p < 0.05) in systolic (Cohen's d = -0.6) and diastolic (Cohen's d = -0.65) blood pressure were also observed.

### Conclusion

Exercise interventions involving aerobic and resistance exercise can improve functional fitness and blood pressure in prostate cancer patients. Early evidence suggests differential effects from protocols that emphasise aerobic or resistance elements. A larger study is justified.

### Keywords

Prostate cancer,  
Androgen deprivation therapy,  
Radiation therapy,  
Exercise prescription

### Conflict of Interest & Ethical Approval

yes

## **Abstract submitters declaration**

yes

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