The adverse effects of androgen deprivation therapy on body composition and physical capacity are counteracted by resistance exercise training, with no additional effect of protein supplementation, in prostate cancer patients

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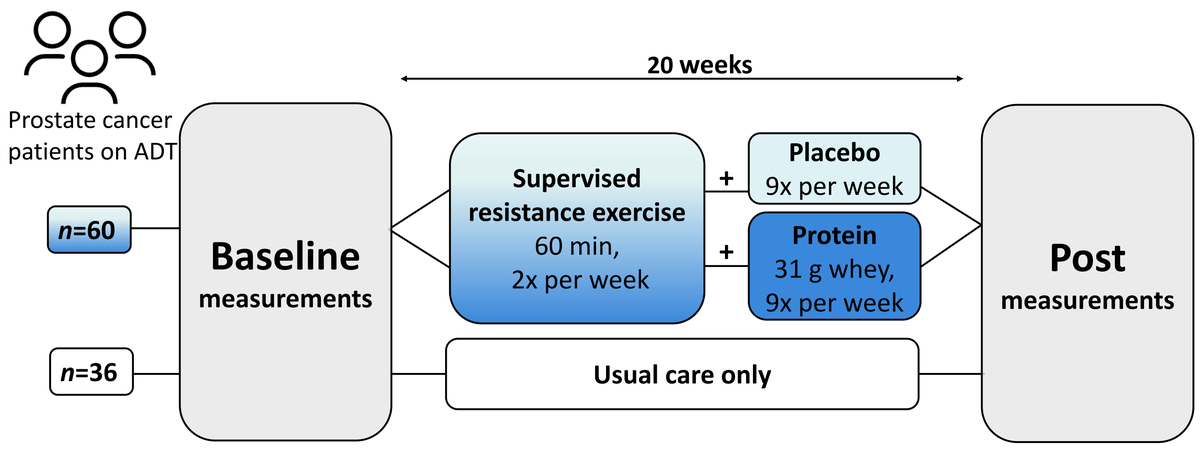
Introduction & Objective

- Androgen deprivation therapy (ADT) is the cornerstone in the treatment of (locally) advanced prostate cancer.
- ADT results in numerous adverse effects, including an increase in fat mass, loss of muscle mass, a lower quality of life and more fatigue.
- We determined the effect of 20 weeks of resistance exercise training, with and without protein supplementation, to counteract the side effects of ADT on body composition, muscle mass, physical capacity, quality of life and fatigue in prostate cancer patients.

Methods

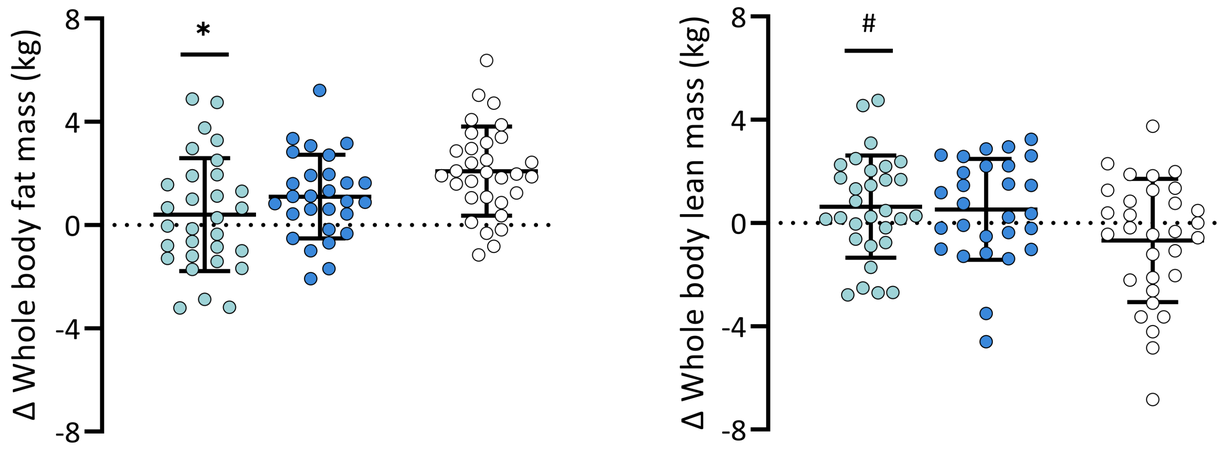


Measurements:

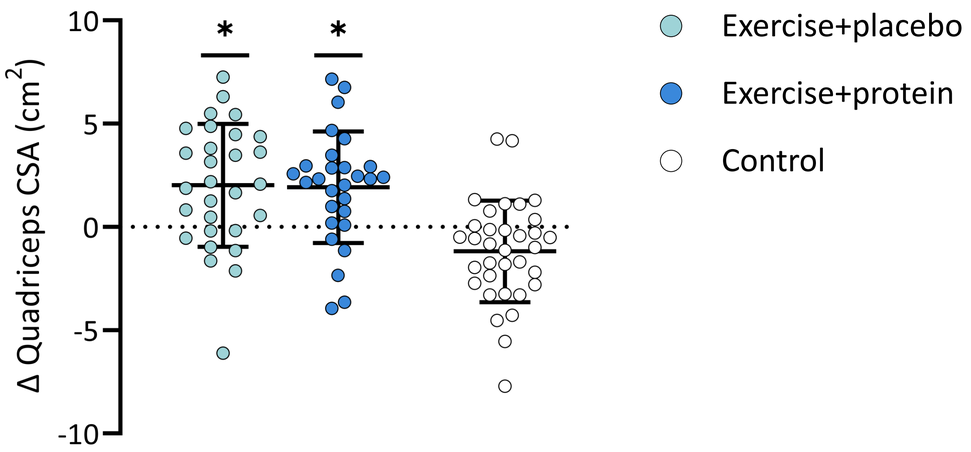
Body composition	| Whole body fat and lean mass | DEXA
Muscle mass	| Quadriceps muscle cross-sectional area | CT
Physical capacity	| Muscle strength | 1-repetition maximum
	| Aerobic capacity | VO_2peak test
Quality of life & Fatigue	| EORCT QLQ-C30 and MFI
Habitual food intake	| Habitual protein intake | 3-day food diary

Results

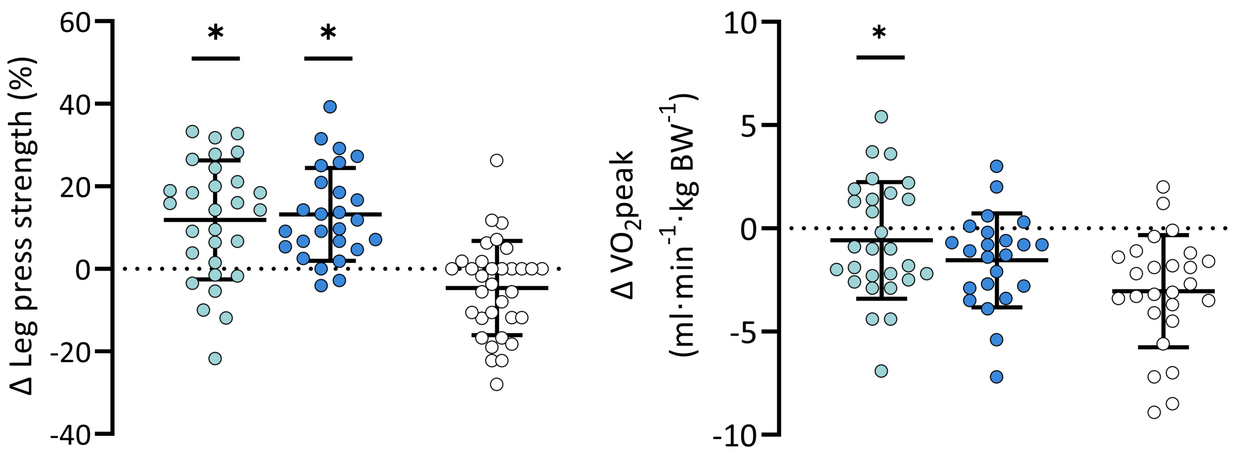
Body composition



Muscle mass



Physical capacity



Quality of life and Fatigue

Significant decreases in physical functioning score and general fatigue score over time, with no differences between groups

Habitual food intake

Average habitual protein intake >1.0 g·kg body weight^{-1}·day^{-1}

Figure Changes over time for outcome measurements. Data were analyzed using repeated-measures ANOVA (time x treatment) followed by within-group (paired t-tests) and between-group (univariate general linear models (GLM)) analyses. For 1RM-data, percentage differences over time within groups were compared between groups with univariate GLM. *Significantly different from control group (P<0.05). #Borderline significantly different from control group (P=0.053).

Conclusion

Prolonged resistance exercise training counteracts the side effects of ADT on body composition, muscle mass, strength and aerobic capacity, with no additional benefits of protein supplementation in prostate cancer patients habitually consuming ample amounts of protein.

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