



EFFECTS OF ANTHOCYANIN-RICH NEW ZEALAND BLACKCURRANT ON RUGBY UNION SPECIFIC TESTS

Paddy Burnett & Mark Willems

University of Chichester, Institute of Sport, Nursing and Allied Health, United Kingdom



Email: m.willems@chi.ac.uk



INTRODUCTION

Rugby union is a contact team sport with athletes requiring multiple performance abilities. New Zealand blackcurrant extract has provided enhanced effects for aerobic and anaerobic exercise in single task performance studies (e.g. cycling [1] and high-intensity running [2]).

AIM

To examine the effects of 7-day intake of New Zealand blackcurrant extract on the performance in a battery of tests including speed, agility and strength testing.

METHODS

University male rugby union players (n=13, age: 21±2 years, height: 182±6 cm, body mass: 86.9±13.3 kg) completed two full familiarisations and two experimental visits in an indoor facility. The study had a double blind, placebo-controlled randomised crossover design. For the experimental visits, participants consumed two capsules a day for seven days of New Zealand blackcurrant extract (210 mg/day of anthocyanins) or placebo with a 7-day wash out. Participants were tested for performance in the following order: Running-based anaerobic sprint test (RAST, Fig. 1A) with a jogged 10-second recovery between the 6x35 m sprints, the Illinois agility test (3x, 2 min rest) (Fig 1B), seated medicine ball (3 kg) throw (3x, 1 min rest (Fig 1C), and hand grip strength 3x, both arms, 1 min rest (Fig 1D). Data were analysed with two-tailed student t-tests with significance accepted at p≤0.05 and interpretation of 0.05>p≤ 0.1 as a trend.

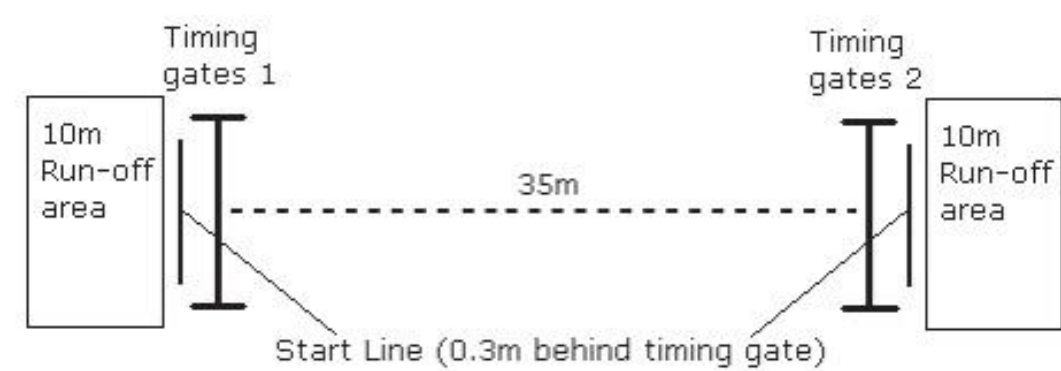


Fig 1A. RAST

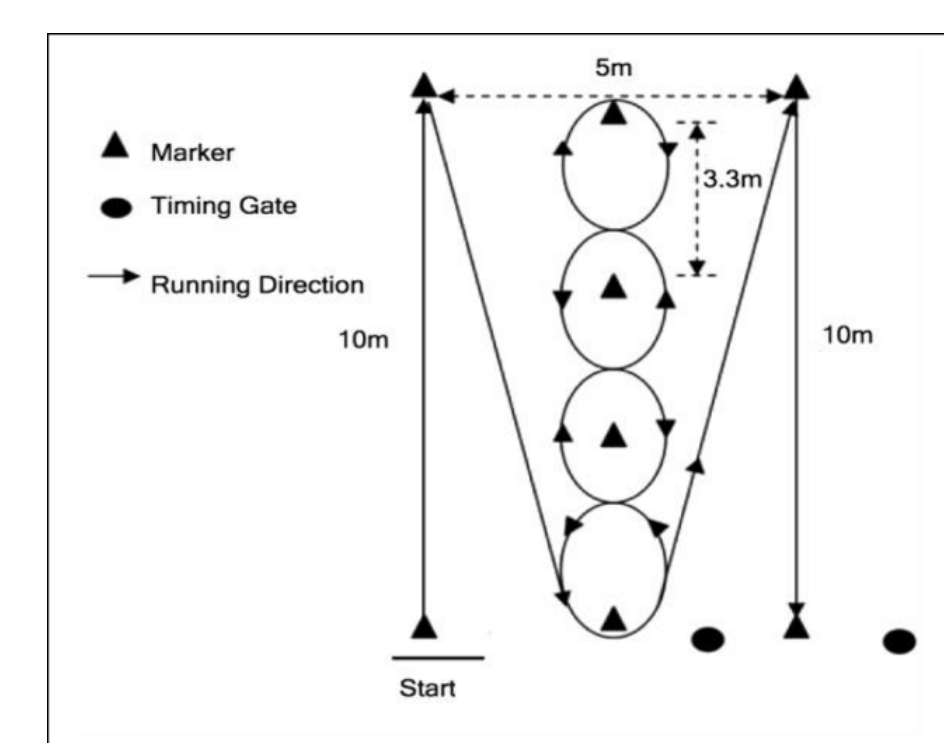


Fig 1B. Illinois agility: from [3]



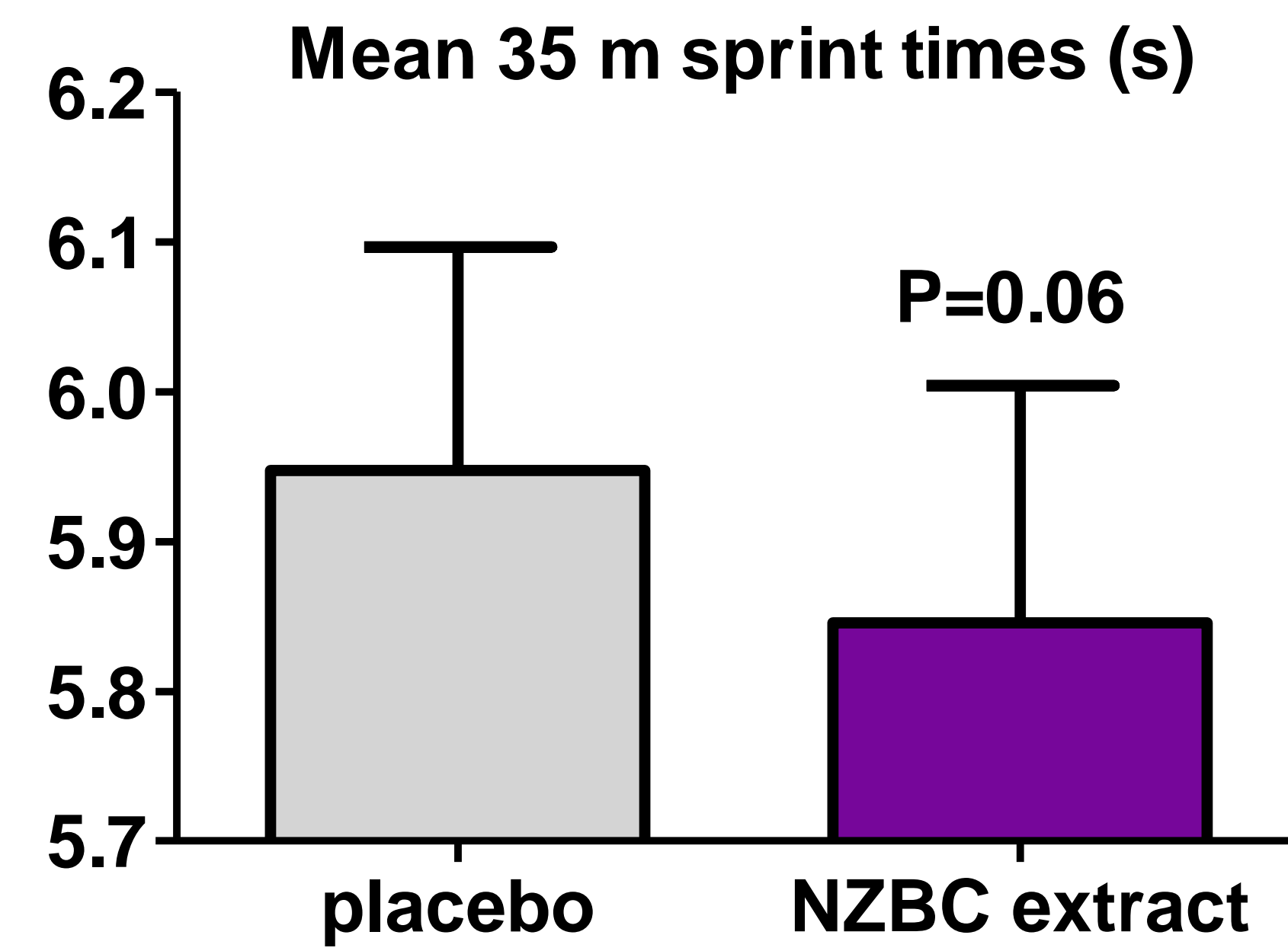
Fig 1C. Seated medicine ball throw



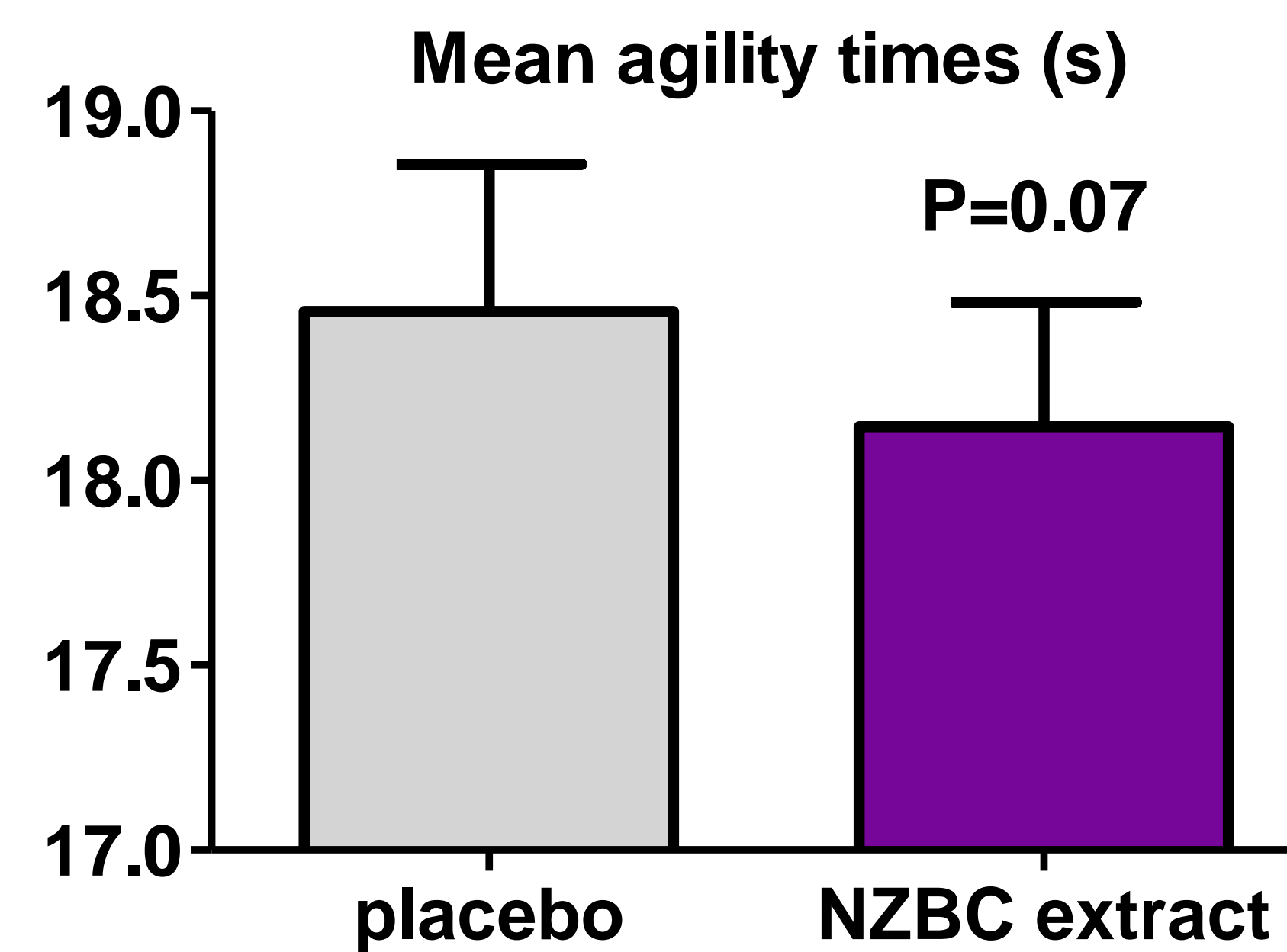
Fig 1D. Hand grip strength



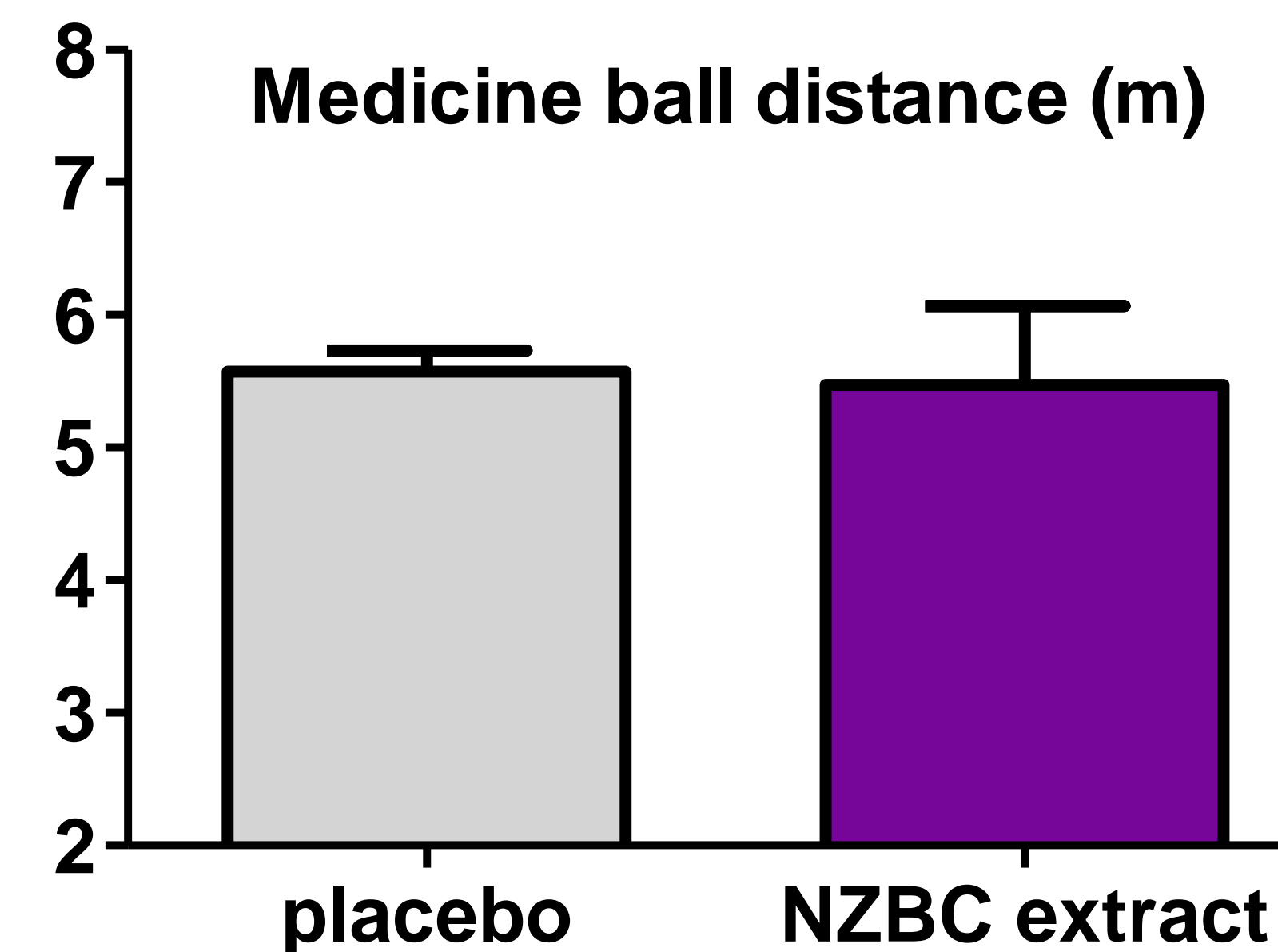
RESULTS



Sprint times over 35 m were 1.7% faster with New Zealand blackcurrant (NZBC) extract, with 6 participants (46%) having changes of more than 3%. Mean±SEM.

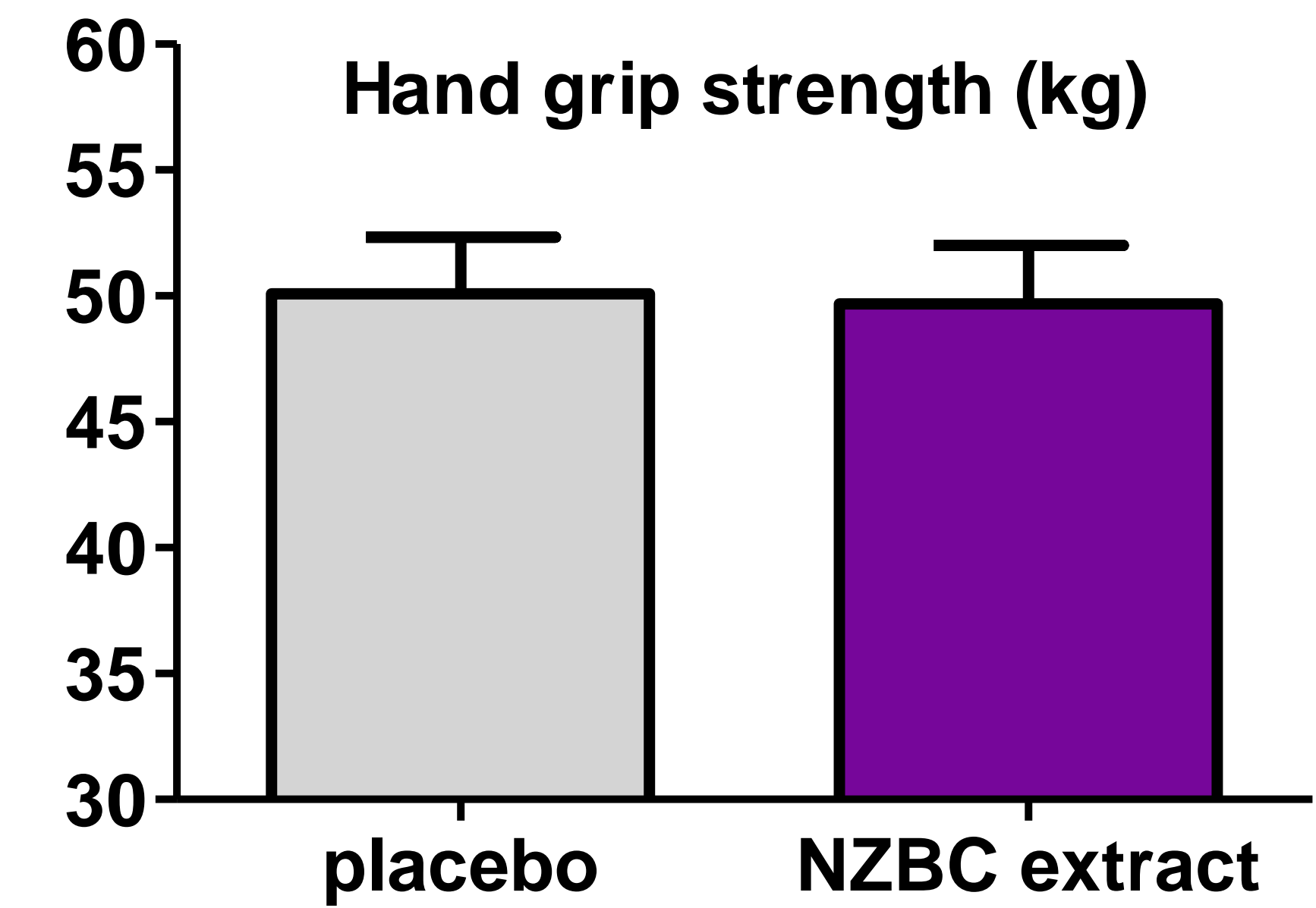


Times for the Illinois agility test were 1.6% faster with New Zealand (NZBC) blackcurrant extract, with 4 participants (31%) having changes of more than 3%. Mean±SEM.



There was no effect on seated medicine ball throw. Mean±SEM.

RESULTS CONT'D



There was no effect on hand grip strength. Mean±SEM.

CONCLUSION

Intake of anthocyanin-rich New Zealand blackcurrant extract in rugby union players seems to improve tasks that require speed and agility but not muscle strength.

APPLICATION

New Zealand blackcurrant extract may be able to enhance exercise performance in team sports that require repeated movements with high intensity and horizontal change of body position without affecting muscle strength.

REFERENCES

- [1] Cook MD, Myers SD, Blacker SD, Willems MET. New Zealand blackcurrant extract improves cycling performance and fat oxidation in cyclists. *European Journal of Applied Physiology* 115(11):2357-2365, 2015.
- [2] Perkins IC, Vine SD, Willems MET. New Zealand blackcurrant extract improves high intensity intermittent running. *International Journal of Sport Nutrition and Exercise Metabolism* 25(5):487-493, 2015.
- [3] Raya MA, Gailey RS, Gaunard IA, Jayne DM, Campbell SM, Gagne E, Manrique PG, Muller DG, Tucker CJ. Comparison of three agility tests with male service members: Edgren Side Step Test, T-Test, and Illinois Agility Test. *Journal of Rehabilitation Research & Development* 50(7):951-960, 2013.

ACKNOWLEDGEMENT

Supplementation was provided by Health Currancy Ltd (United Kingdom) and CurraNZ Ltd (New Zealand). Financial support for conference attendance was obtained from Blackcurrant New Zealand Inc (New Zealand).