Effect of New Zealand blackcurrant extract on cycling performance across quartile distances and the final km of a 16.1 km time-trial

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INTRODUCTION

Blackcurrant intake increased peripheral blood flow in humans (Matsumoto et al., 2005), potentially by anthocyanin inducing vasorelaxation and vasodilation (Ziberna et al., 2013), which may affect exercise performance and pacing strategy in cycling time-trials (TT).

AIMS

To examine the effect of 7 days New Zealand blackcurrant extract on performance during quartile distances and the final km of a 16.1 km (10 mile) cycling time-trial.

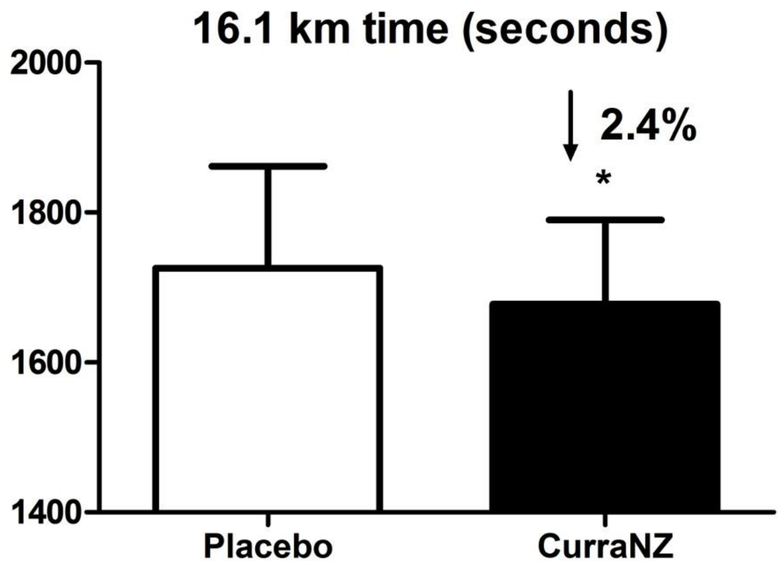
METHODS

Fourteen male trained cyclists (>3 yrs experience; age: 38 ± 13 years, height: 178 ± 4 cm, body mass: 77 ± 9 kg, $\dot{V}O_2$max: 53 ± 6 mL·kg^{-1}·min^{-1}, maximum power: 365±36 W, mean±SD) completed two familiarization and two experimental TT on an electronically braked ergometer (see below, SRM ergometer, SRM International, Germany) with speed recorded by SRM software.

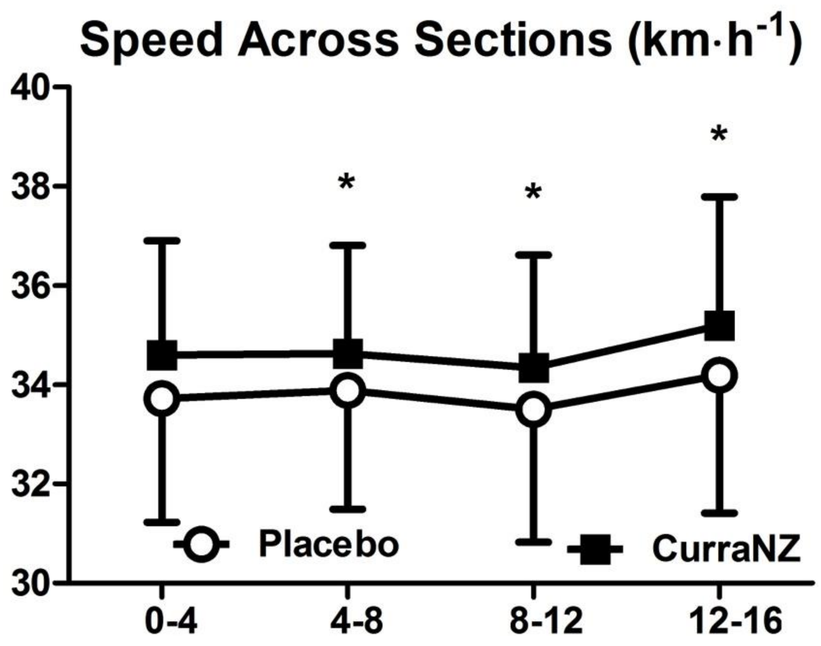
Familiarised participants were tested following 7 days of CurraNZ blackcurrant capsule intake (each containing 105 mg anthocyanin per dose of 300 mg CurraNZ) (Health Currancy Ltd, UK) or placebo (300mg cellulose), one tablet a day with a wash-out of 14 days. Experimental design was double-blind and randomized cross-over. Paired t-tests were used for analysis with significance accepted at p<0.05 (indicated by *).

RESULTS

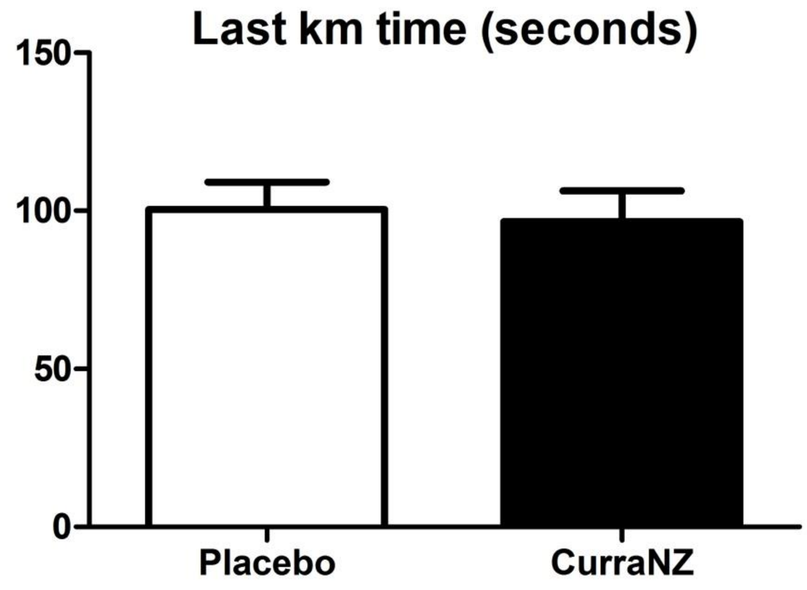
Heart rate and cadence were not affected between conditions for each sector and the final km (P>0.05).



CurraNZ blackcurrant extract improved 16.1 km time trial performance by 2.4% (*P*=0.027), with improvements up to 8.6%



CurraNZ blackcurrant extract improved cycling speed in the last 75% of the 16.1 km time-trial



There was no difference in time or cycling speed in the last km

CONCLUSION

Supplementation with New Zealand blackcurrant extract is associated with improved 16.1 km TT cycling performance. The improvements occurred across the last 75% of the TT, however there was no improvement in cycling speed during the last km.

APPLICATION

New Zealand blackcurrant extract has favourable implications in athletes for aerobic exercise performance. Improvements are observed for speed across the majority of the event and do not result from an improved sprint finish. This may have implications for pacing strategies in endurance events.

REFERENCES

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