INTRODUCTION
Intake of New Zealand blackcurrant (NZBC) extract has been shown to improve high-intensity intermittent running (HIIR) performance (1). Variability in response to sports supplements has been commonly reported (2). Recent recommendations suggest a repeat administration design should be utilised to quantify intra-individual variations in response to sports supplements (3).

AIM
To examine the intra-individual variation in physiological responses and performance of HIIR to exhaustion, following repeated NZBC supplementation.

METHODS
Sixteen active males (age: 23±3 yrs, height: 179±5 cm, mass: 79±11 kg, VO₂max: 55.3±5.4 mL·kg⁻¹·min⁻¹, velocity at VO₂max: 17.2±0.8 km·h⁻¹, mean±SD) visited the laboratory on five occasions. Visit 1 - A rapid ramp test followed by a verification phase was used to confirm V̇O₂max (H/P/COSMOS, Groningen, Netherlands). Participants were then familiarised to the high-intensity, intermittent treadmill based running test (1) which consisted of multiple phases (P) and stages (S) (see below) with continuous heart rate and oxygen uptake recording.

RESULTS
Heart rate, oxygen uptake, lactate and RPE were similar between conditions for the first 3 stages completed by all subjects, in all conditions.

![Graph showing total distance covered during HIIR tests](chart.png)

NZBC increased total running distance by 5.6-7.9%, with NZBC conditions higher than placebo [NZBC1 vs PL1 (p<0.01) and PL2, p=0.01), NZBC2 vs PL1 (p<0.01) and P2 (p<0.05)]. PL1 vs PL2 were similar (p>0.05).

![Graph showing distance covered during HIIR tests](chart2.png)

Distance covered during high-intensity running increased by 6.8-10% with NZBC, with NZBC conditions higher than placebo [NZBC1 vs PL1 (p<0.01) and PL2 (p<0.01), NZBC2 vs PL1 (p<0.01) and PL2 (p<0.05)]. PL1 vs PL2 were similar (p>0.05).

CONCLUSIONS
NZBC extract may consistently enhance high-intensity intermittent running performance, however some intra-individual differences are present. These findings suggest NZBC may be used on multiple occasions to enhance the performance of some individuals in sports characterised by high-intensity intermittent exercise.

REFERENCES

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