New Zealand Blackcurrant Extract Improves High-intensity Intermittent Running

Ian Perkins, Sarah Vine, Sam Blacker & Mark Willems

University of Chichester,
Department of Sport & Exercise Sciences,
Chichester, PO19 6PE, United Kingdom

INTRODUCTION
Peripheral blood flow is increased by blackcurrant intake in humans (Matsumoto et al., 2005), potentially by anthocyanin-induced vasorelaxation and vasodilation (Ziberna et al., 2013), which may affect substrate delivery, exercise performance and recovery. Blackcurrant intake improved 16.1 km cycling time trial performance, may enhance lactate tolerance, and improved post exercise lactate clearance (Willems et al., 2014).

AIMS
We examined the effect of 7 days New Zealand blackcurrant extract on physiological responses and performance of high-intensity, intermittent running to exhaustion.

METHODS
Thirteen physically active males (age: 25 ± 4 yrs, height: 1.82 ± 0.07 m, body mass: 81 ± 14 kg, V\textsubscript{O2max}: 56 ± 4 mL·kg\textsuperscript{-1}·min\textsuperscript{-1}, V\textsubscript{O2max}: 17.6 ± 0.8 km·h\textsuperscript{-1}, mean±SD) visited the laboratory on 3 occasions. Visit 1 - A rapid ramp test followed by a verification phase was used to confirm V\textsubscript{O2max} (H/P/COSMOS, Groningen, Netherlands). Participants were then familiarised to the high-intensity, intermittent treadmill based running test (Mukherjee & Chia, 2013) 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 4 stages completed by all subjects. CurraNZ blackcurrant increased total running distance (i.e. distance during active recovery and sprints) by 10.6%.

CONCLUSION
Intake of CurraNZ blackcurrant extract is associated with 1) normal physiological responses during high-intensity, intermittent exercise, 2) improved high-intensity intermittent exercise capacity, 3) potentially higher lactate tolerance during high-intensity intermittent exercise and 4) increased lactate clearance after exercise indicating improved recovery.

APPLICATION
CurraNZ blackcurrant extract may have favourable implications for performance in sports characterised by high-intensity intermittent running, due to increased lactate tolerance, and improved recovery.

REFERENCES

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