

Original Article

# Effect of two weeks of tea catechin-rich beverage intake on 3000-meter time-trial performance

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## ABSTRACT

### **[Aim]**

The purpose of the present study was to examine the effect of two weeks of tea catechin-rich beverage (TCR beverage) intake on whole body endurance, lipid-related markers and hematopoietic factor.

### **[Methods]**

A randomised, double blind, cross-over, placebo-controlled, trial was designed to assess the effect of TCR beverage on whole body endurance, serum erythropoietin and iron in 15 long-distance runners. On the first experimental day, the participants drank water (500 mL) and then performed a 3,000-meter time-trial (3,000 mTT). After the first experimental day, the participants began to drink 1 bottle of either a TCR beverage (tea catechins, 639 mg/500 mL) or a placebo (tea catechins, 0 mg/500 mL) per day for 2 weeks. At the end of this period, they then performed a second 3,000 mTT. After a 2-week wash-out period, the participants switched test drinks and repeated the same protocol as above.

### **[Results]**

The 3000mTT results were significantly faster after the TCR beverage trial than after the placebo trial ( $P < 0.05$ , main effect of trial). The serum iron and erythropoietin levels were also significantly higher after the TCR beverage trial than after the placebo trial ( $P < 0.01$ , main effect of trial). No significant differences in lipid-related markers were observed between the two trials.

### **[Conclusion]**

The present findings may suggest that the continuous intake of TCR beverage for two weeks improved the oxygen carrying capacity and enhanced whole body endurance during short, high-intensity exercise.

**Keywords:** Tea catechin, Whole body endurance, High-intensity exercise