

Original Article

# The effect of daily intake of tea catechin-rich beverage and acute intake of jelly drink containing alanine and proline on endurance performance

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## ABSTRACT

### **[Aim]**

This study aimed to examine the effect of daily intake of tea catechin-rich (TCR) beverage and acute intake of jelly drink containing alanine and proline on endurance performance.

### **[Methods]**

Endurance performance was assessed using a randomised, double-blind, crossover, placebo-controlled trial in 22 healthy men. First, the participants drank water (500 mL) and then performed the Yo-Yo Intermittent Endurance Test Level 2 (Yo-Yo IE2; water trial). Thereafter, the participants drank either an active (tea catechins: 540 mg) or placebo beverage (tea catechins: 0 mg) for 14 days. After this period, the participants drank an active (alanine: 9.0 g, proline: 1.0 g and carbohydrate: 82 g) or placebo jelly drink (alanine: 0 g, proline: 0 g and carbohydrate: 92 g) and then performed the Yo-Yo IE2. After the 14-day washout period, the participants switched test drinks and repeated the same protocol.

### **[Results]**

The Yo-Yo IR2 performance was higher in both test drink trials than in the water trial ( $p < 0.05$ ). For the participants who achieved  $\geq 2,000$  m of Yo-Yo IE2 performance in the water trial, the Yo-Yo IE2 performance was higher in the active trial than in the water trial ( $p < 0.05$ ). The plasma insulin concentration after the Yo-Yo IE2 was higher in both test drink trials than in the water trial ( $p < 0.05$ ) and tended to be higher in the placebo trial than in the active trial ( $p = 0.077$ ).

### **[Conclusion]**

The present study shows that daily intake of TCR beverage and acute intake of jelly drink containing alanine and proline increased endurance performance.

**Keywords:** Tea catechin-rich beverage, Alanine, Proline, Carbohydrate and lipid metabolism, Endurance performance