Original Article

Effect of two weeks of tea catechin-rich beverage intake on whole body endurance measured during an intermittent exercise test: a randomised double blind, placebo-controlled trial

Jyunpei YAMAGAMI [*1], Masashi MIYASHITA [*2], Masaru HASEGAWA [*2], Tetsuhiro KIDOKORO [*3], Takuma YANAOKA [*1], Kyoko KASHIWABARA [*1], Takuya WAKISAKA [*4], Yuji MATSUI [*4], Kenji YOSHIMURA [*4], Masao TAKESHITA [*4], Koichi YASUNAGA [*4]

[*1] Tokyo Gakugei University, Graduate School of Education
[*2] Tokyo Gakugei University, Department of Health and Sports Sciences
[*3] Tokyo Gakugei University, The United Graduate School of Education
[*4] Kao Corporation, Health Care Food Research

ABSTRACT

【Aim】
The purpose of the present study was to examine the effect of 2 weeks of tea catechin-rich beverage (TCR beverage) intake on whole body endurance determined from an intermittent exercise protocol.

【Methods】
A randomised, double blind, cross-over, placebo-controlled, trial was designed to assess the effect of TCR beverage on whole body endurance in 27 trained university students. On the first experimental day, the participants drank either TCR beverage (tea catechins 639mg/500mL) or placebo (tea catechins 0mg/500mL), and then performed the Yo-Yo Intermittent Endurance Test Level 2 (Yo-Yo IE2 Test). The participants continued to take each designated drink 1 bottle per day for 2 weeks at the end of which they performed a second Yo-Yo IE2 Test. After a 2-week wash-out period, the participants changed the test drink and repeated the same protocol as above.

【Results】
The total distance covered in the Yo-Yo IE2 Test tended to be higher in the TCR beverage trial compared with the placebo trial ($p = 0.114$, main effect of trial). For those who achieved above 2,000m of the Yo-Yo IE2 Test, maximum heart rate and the total distance covered in the Yo-Yo IE2 Test were significantly higher in the TCR beverage trial compared with the placebo trial ($p = 0.044$ and $p = 0.038$ respectively, main effect of trial).

【Conclusion】
The present study suggests that continued intake of TCR beverage for 2 weeks improves whole body endurance during an intermittent exercise protocol.

Keywords: Tea catechins, Whole body endurance, Exercise performance test