Does Post-exercise Ingestion of Lactose-free Skim Milk vs Sport Drink Affect Net Fluid Balance and Thirst?

Marla Frances T. Mallari (Ph.D candidate)[1,2*], Alisa Nana (Ph.D)[2], Metta Pinthong (Ph.D)[2], Saiphon Kongkum (Ph.D)[2], Rungchai Chaunchaiyakul (Ph.D)[2]

[1]College of Human Kinetics, University of the Philippines Diliman

[2]College of Sports Science and Technology, Mahidol University Thailand

*Corresponding author: mtmallari@up.edu.ph

Abstract

Introduction: Hydration and nutrition needs of badminton athletes are of particular interest because of the unique demands of the sport on the player's physiology and skill. Hence the current study looked into the acute effect of lactose-free skim milk (LFM) vs sport drink (SD) taken post exercise on net fluid balance and selected subjective variables (thirst, gastrointestinal GI comfort and palatability). This was part of a larger study done on effect of lactose -free milk on intermittent athlete's recovery post anaerobic exercise.

Methods: Eleven collegiate badminton athletes (5 male and 6 female, Mean age = 19.6±1.7 yrs, Weight = 56.8±5.03 kg) volunteered to participate in this crossover design study, with ≥7-day washout between trials. After a 2-hr training session, the participants rested for 2 hours and ingested the same volume of either LFM or SD, matched for carbohydrate content of 1.0 g CHO/kg body weight. Two badminton-specific agility tests and a shuttle run were done post-ingestion. Body mass was taken, as well as visual analog scales administered at several time points throughout the experiment. Net fluid balance was computed by computing for body mass differences from the start and end of the experiment (Flores-Salamanca and Aragon-Vargas, 2014). The research was reviewed and approved by the Mahidol University Central Institutional Review Board.

Results: No significant difference between groups was found in terms of net fluid balance (**$t(10)=-1.283$, $p=.228$**). Thirst ratings between groups were significantly different after the shuttle run (**$t(10)=-2.23$, $p=.05$**) however, ratings were similar for GI comfort and palatability.

Conclusions: Fluid balance was similar for the two groups, however, ingestion of lactose-free skim milk offered a significant advantage over sports drink in terms of thirst at the end of the performance tests.

Keywords: Lactose free skim milk, Collegiate badminton, Net fluid balance, Thirst