**Original Paper**

# Effect of milk consumption on healthy young men rehydration and endurance performance after dehydration due to intermittent exercise in warm environmental condition

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## Abstract

**Background and Objective:** Rapid and adequate rehydration is important for many athletes, especially those taking multiple sessions of exercise each day, or those involved in weight category sports. The macronutrient and electrolyte concentration of the fluid ingested following exercise can affect the amount retained within the body can influence hydration status. This study was done to compare the effect of milk consumption on healthy young men rehydration and endurance performance after dehydration due to intermittent exercise in warm environmental condition.

**Methods:** In this quasi-experimental study, the labroratory protocol was carried out by ten young healthy men in three sessions within one week intervals. Participants were on drinking regiment including water, low-fat milk, and powerade. Urine samples were collected pre-exercise, post-exercise, post-drinking and 1, 2 and 3 hours over recovery. Exercise capacity test commenced within 10 min after 3h recovery. This was undertaken in warm environmental condition at a power output corresponding to 70% VO2 max. Exercise continued until voluntary exhaustion. Heart rate and RPE were recorded at 5 min intervals throughout exercise.

**Results:** Pre-exercise urine specific gravity value was not different between the milk and the, powerade and the water groups. Total urine output was significantly reduced in the milk group in compared to powerade and the water consumption ($P<0.05$). At the end of the study, net fluid balance was significantly positive in milk group compared to powerade and water groups ($P<0.05$). Time of exhaustion on the exercise capacity test (70% VO2 max) was significantly more in milk in comparision with powerade group ($P<0.05$).

**Conclusion:** Low-fat milk is more effective at rehydrating compared to water and exercise capacity in intermittent activity of heat in healthy young men.

**Keywords:** Endurance performance, Dehydration, Rehydration, Milk, Powerade

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**Received** 27 Dec 2014 **Revised** 17 Jun 2015 **Accepted** 22 Jun 2015

Cite this article as: Ramezani S, Shabkhiz F, Choobineh S, Firozeh Z. [Effect of milk consumption on healthy young men rehydration and endurance performance after dehydration due to intermittent exercise in warm environmental condition]. J Gorgan Uni Med Sci. Spring 2016; 18(1): 78-85. [Article in Persian]