

Effects of Cow Milk and Camel Milk on Improving Covered Distance in the 6-Minute Walk Test Performed by Obese Young Adults

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Abstract : Exercise is highly effective against obesity. Milk contains several components that support exercising and physical performance. However, there is a lack of published studies on the relationship between camel milk and ability to exercise. A pilot study was conducted with the purpose of comparing the impact of milk type (Cow vs Camel) compared with water on physical performance. Seven male obese participants (age: 20.3 ± 1.5 years; BMI: 35.7 ± 2.7 kg/m²; resting heart rate: 92.7 ± 4.7 beats per minute; training frequency: 4.4 ± 0.8 days/week) were recruited for this pilot study. In a randomized counterbalanced crossover design, participants took part in 3 trials that included ingesting 3 different pre workout drinks in a random order. The pre workout drinks were water (W), whole cow milk (CW), and whole camel milk (CM). On each trial day, participants were asked to report to the laboratory after an overnight fasting. Following a 15-minute short recovery period after their arrival to the laboratory, each participant was presented with a 500 ml of the assigned experimental drink and were asked to ingest it in one minute and at least 120 minutes prior to performing the 6-minute walk test. All drinks were presented at room temperature. Trials with different experimental drinks were performed on separate days. Participants were given at least 4 days of washout period between trials. The trial order was randomized to avoid bias due to learning effect. The 6-minute walk test was performed by all participants and immediately at the conclusion of the test, the covered distance in meters and the rating of perceived exertion (RPE) were recorded. All data were analysed using SPSS software (Version 29.0). The repeated measures ANOVA testing of collected data showed a significant main effect for treatment on covered distance in meters, $F(2, 8) = 5.794$, $p = 0.028$ with a large effect size (partial eta squared (η^2) = 0.592). Also, LSD post hoc pairwise comparison analysis revealed that Camel milk and Cow milk were significantly ($p = 0.044$ and $p = 0.020$ respectively) superior to water in improving the covered distance during the test and that Camel milk tended to be better than Cow's milk. The RPE values were not significantly different between experimental drinks ($p > 0.05$). In conclusion, milk is superior to water as a pre workout drink, and camel milk is comparable to cow's milk in enhancing ability to support a higher level of performance compared with water, therefore, camel milk could be used to replace cow's milk as a suitable pre-exercise drink without expecting any negative consequences on physical performance. The fact that these positive results were obtained with obese individuals should encourage using camel milk without the fear of disturbing physical performance in other weight categories.

Keywords : camel milk, cow milk, obesity, physical performance, pre-workout drink

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