

Comparative Evaluation of the Effect of the Foods with Different Glycemic Indices on Blood Glucose and Serum Free Fatty Acids in Cycling, Male Athletes

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Abstract

Background and Objective: Carbohydrates are considered as the major source of energy in physical activity. Studies show that consumption of carbohydrate foods before exercise can balance blood glucose and free fatty acids and increase athletes' performance. In this study, we compared the effect of three kinds of foods with different glycemic indices on blood glucose (BG) and serum free fatty acids (FFA) in cycling, male athletes.

Material and Methods: In this clinical trial, 21 members of national cycling team randomly allocated to three equal groups of glucose (low glycemic index), lentil (low glycemic index) and potato (high glycemic index). First, Fasting blood samples (5ml) were obtained to measure BG and FFA. Then the subjects were asked to eat their foods. After 45 mins of rest, they pedaled with maximal oxygen consumption (VO_{2max}) for two hours and again their blood samples were taken to compare with the levels of before interventions.

Results: Glucose consumption resulted in a significant decrease in FFA level after 2 hours of pedaling ($P = 0.01$) but no significant change in BG level. Plasma glucose was higher after eating lentil than that of potato ($P < 0.05$), but it was not true for FFA level of both groups.

Conclusion: based on the results, the pre-exercise use of low glycemic index (lentil) compared to high glycemic index (potato) can better lead to increased blood glucose during exercise.

Keywords: Glycemic Index, Blood Glucose, Serum Free Fatty Acids, Cyclists

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