

Determining the Effect of Different Doses of Phosphorus Preloads on Subsequent Food Intake.

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Background: The present study is based on accumulating evidence in animals supporting an inverse relationship between eating behavior and hepatic Adenosine TriPhosphate (ATP) levels, that are known to be dependent on Phosphorous availability. In line with that, an inverse relationship between plasma phosphorus and body weight has been reported. Furthermore, common foods typically associated with weight gain, such as refined cereals, sweeteners, and oils, are low in phosphorus.

Objective: We hypothesized that increasing doses of phosphorus, would proportionally influence satiety, and subsequent food intake in overweight/ obese subjects.

Design: This was a randomized crossover study. Healthy overweight/ obese women (n=12) with a BMI of 31 ± 1.3 (mean \pm SEM) and a mean age of 29.75 ± 2.36 (mean \pm SEM) participated in this study. Subjects consumed different phosphorus doses with 0mg, 125mg, 250mg, 375mg, or 500mg randomly on different test days for 5 weeks with a washout out period of 1 week between test days. Visual analog scales rated hunger and satiety for 0min, 15min, 30min, 45min, 60min, 75min, and food intake was measured at an ad libitum lunch of pizza and water 80 minutes after consuming the supplements.

Results: Responses to satiety-related questions did not differ among treatments. Food intake was also indistinguishable among doses.

Conclusion: Satiety and food intake did not change in a dose-dependent manner after subjects consumed 0, 125, 250, 375, and 500 mg of phosphorus.