Compensation of calories from one cup or six cups of 94% fat free popcorn, but not potato chips, as a before meal snack

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Introduction

•Strategies to enhance compliance to reduced calorie diets are needed to reduce the health burden of obesity.
•Contrasting evidence exists over the ability of pre meal snacking to control satiety and control ad libitum energy intake.

Purpose

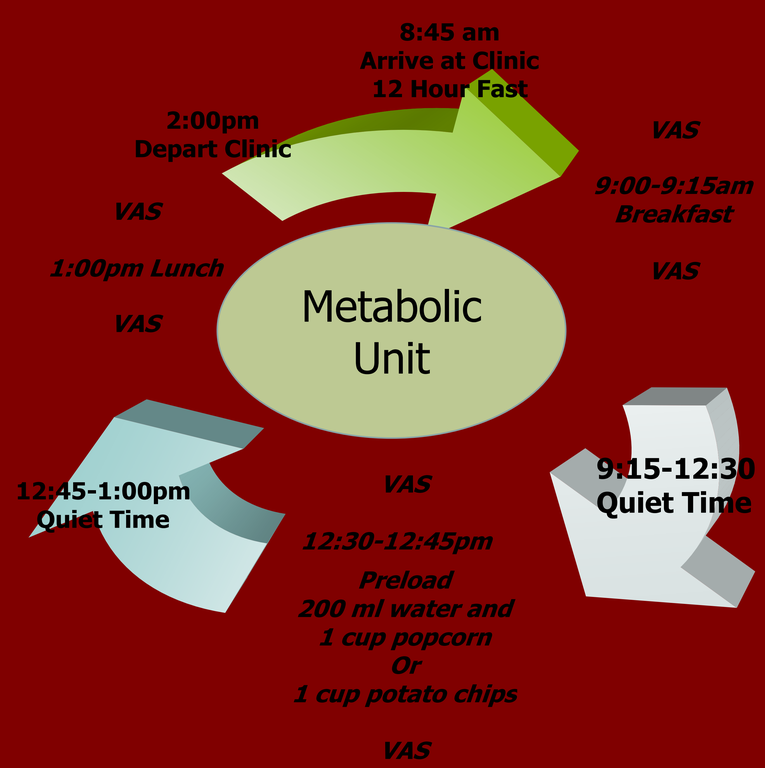
•This study measured caloric compensation when popcorn or potato chips are consumed as a before meal snack.

Methods

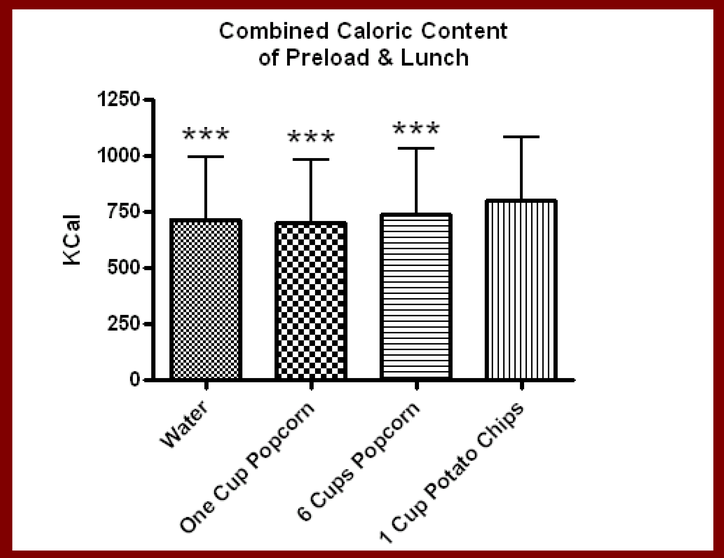
•Subjects (n=35) consumed a standardized breakfast and a standardized pre-load 30 minutes prior to an ad libitum. Conditions were delivered in a randomized order
- •200 mL of water
- •one cup of 94% fat free popcorn (15 kcal)
- •6 cups of 94% fat free popcorn (100 kcal)
- •one cup of potato chips (150 kcal).

•Plate weights were obtained before and after lunch to measure ad libitum consumption.
•Caloric intake from lunch and the preloads were combined and compared to the non-caloric water preload condition to assess compensation.
•Palatability , as rated by completion of visual analog scales (VAS) of food served for lunch was also rated.

Study Schematic



Results



***Different than Potato Chips, $p<0.001$

•No difference in lunch palatability was observed across the preload conditions.

Conclusion

•The results of this study suggest that consuming lower energy density snacks such as 94% fat free popcorn prior to a meal may be an effective strategy to satisfy hunger without increasing total calorie intake when a snack is consumed before a meal.

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