Timing Of Water Intake On Perceived Hunger

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Introduction

Several studies have noted that water intake increases weight loss during diets. Because of the close relationship between water and food intake, this study examines the effects of the timing of drinking water on perceived hunger. Subjects drank several different amounts of water throughout the morning and completed a hunger rating at three time points. This study will help to determine the prime time of drinking water and its effects on hunger in order to serve as a significant dietary tool.

Methods

Subjects. Male (n=10) and female (n=15) subjects were recruited. Experimental Procedure. All subjects drank 500 ml of water 3 h before their visit to the laboratory. Participants were then split into three conditions: the "no water" group received no additional water, the "acute water" group received 500 ml of water 30 min before lunch, and the "chronic water" group received 500 ml 2 h and again 30 min before lunch. During the course of the visit participants rated how hungry they were and desire to eat on a visual analog scale (VAS) at three different time points before the lunch buffet. Below each question is a 100 mm scale anchored by "not at all" at 0 mm and "extremely/the most possible" at 100 mm.

Data analysis. Data was analyzed using two-way repeated-measures ANOVA comparing the water condition to time.

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Figure 1. Ratings of hunger in male participants after varying amounts of water intake. There was no effect of water condition on hunger ratings in males.

Figure 2. Desire to eat ratings in male participants after varying amounts of water intake. There was no effect of water condition on hunger ratings in males.

Figure 3. Ratings of hunger in female participants after varying amounts of water intake. Participants in the acute and hydrated conditions had decreased ratings of hunger after drinking their final bottle of water. * Indicates p<0.05 compared to none condition. # Indicates p<0.05 compared to acute condition.

Figure 4. Desire to eat ratings in female participants after varying amounts of water intake. Participants in the acute and hydrated conditions had decreased desire to eat ratings after drinking their final bottle of water. * Indicates p<0.05 compared to none condition.

Figure 5. Energy intake in male and female participants after varying amounts of water intake. There was no effect of water condition on energy intake in males. Female participants in the hydrated condition had a decreased energy intake. * Indicates p<0.05 compared to none condition.

Summary and Conclusions

➢ Females showed a significant influence of water condition and timing on perceived hunger and desire to eat.
  ○ Post-hoc analyses revealed that when females consumed water, feelings of hunger decreased immediately, and stayed suppressed for at least 30 min.
  ○ There was no influence on perceived hunger and desire to eat in males.

➢ This reflects the possibility that due to the larger muscle mass and higher amount of body water in men, the quantity of water may not have been effective.

➢ Despite females reduced hunger and desire to eat, caloric intake in both the acute and chronic water condition, caloric intake was only reduced in the chronic water condition.

➢ This shows that there is a disconnect between perceived hunger and calories consumed that indicates that hunger ratings do not reflect energy intake.