Taste Perception and Gastrointestinal Responses Following Salt and Ketone Supplementation in Healthy Adults

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Background and Hypothesis:

Rodent studies indicate that dietary ketones can prevent some of the adverse health effects of high dietary salt. As a result, our laboratory is currently conducting a clinical trial to determine whether this effect can be replicated in humans (NCT:05545501). Both salt loading and ketone supplementation can be unpleasant in terms of taste perception and elicit mild gastrointestinal distress. However, our study needs to mask participants to which conditions they receive from each arm of the study. Therefore, we sought to determine whether we are effectively masking participants.

Experimental Design:

Young adults aged 19-35 who were free from cardiovascular disease were randomly assigned and masked to the order of three conditions. The three conditions included a) placebo capsules and placebo drink, b) salt capsules and placebo drink, and c) salt capsules and ketone drink. Taste perception and gastrointestinal surveys were taken after each condition. Taste perception was rated from 1-5 (great to terrible). Gastrointestinal distress was rated as 0-3 (none to severe). Participants were also asked to guess the condition they were in for each arm of the study.

Results:

After survey collection and data analysis, there were no differences across the three conditions regarding taste perceptions (ps ≥ 0.134) or gastrointestinal distress (ps ≥ 0.224), and there was minimal gastrointestinal distress (average scores of 0 to 1 for nausea, vomiting, bloating, cramping, etc). We found that participants were able to guess the capsule condition correctly 45% of the time and were able to guess the drink condition correctly 39% of the time across the study.

Conclusion and Potential Impact:

The data from this study is important because it tells us that the participants couldn't correctly guess the arm of the study that they were in. This means that participants were properly masked to the three conditions and that bias will be minimized in our clinical trial.