CONCEPTS IN HYPERTENSION

A Journal Article-Based Approach to Understanding the Clinical Aspects of Hypertension

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## Article of Interest

Beauchamp, G et al. Failure to Compensate Decreased Dietary Sodium With Increased Table Salt Usage. Journal of the American Medical Association. 1987. (Click to Access)

## Context and Study Objective

As highlighted in a recent issue, a high-salt diet is not only the result of patient preference but can be a sequela of medical conditions that decrease an individual's ability to taste lesser amounts of sodium. With respect to low-salt diets, these investigators hypothesized that those placed on a reduced sodium diet would increase table salt usage but not so much as to fully compensate for the lesser amounts of sodium in their new diet.

## Design, Setting, and Participants

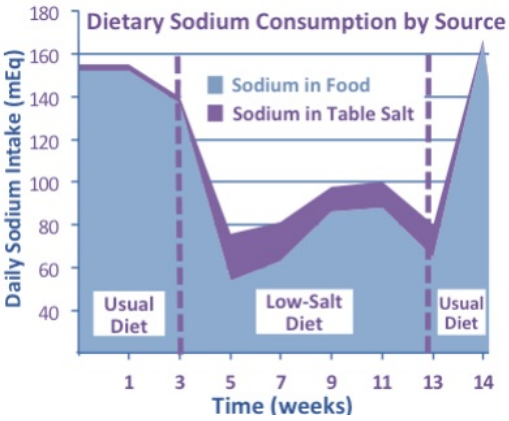
Healthy college students were recruited. Those who reported adherence to a low-salt diet (< 90 mEq or 2100 mg sodium/day) or infrequent use of salt shakers were ineligible. During the 14 week trial, all meals were provided and consumed at the research center. After 3 weeks of their usual diet, subjects' daily dietary sodium intake was calculated by 24 hour urinary sodium collection. Meals were then redesigned so as to reduce sodium content by 50%. Throughout the trial, participants were instructed to use table salt as needed. Daily discretionary salt usage was determined by changes in salt shaker weight. Participants were not aware of the study's objectives.

## Results

-Study characteristics: 11 participants, including 3 women. Age range: 19-31. Ethnicity data not provided. Average sodium consumption at study onset: 153 mEq or 3500 mg/day. Mean sodium intake during 3 week run-in period: 136 mEq or 3100 mg/day. Average sodium consumption during low-salt diet phase: 70 mEq or 1600 mg/day.

-Salt shaker use accounted for 2% of total sodium intake while on their usual diet but 15% of sodium intake while following a low-salt diet.

-Figure: Table salt usage increased while participants consumed low-salt foods. However, while dietary sodium in food was reduced by 50%, heavier table salt usage compensated for only 20% of this sodium deficit. Thus, total salt intake was significantly lower.




-With the addition of table salt to their food, subjects indicated that the sodium-reduced meals were comparable in taste and saltiness to items prepared without limiting sodium content.

-No change in body weight or blood pressure occurred during the experiment.

## Clinical Perspective

-Low-salt diets are difficult to adhere to as the food is perceived as bland. This study suggests that one can indeed enjoy the flavor enhancing properties of salt without consuming excess amounts.

-The authors postulate that a low-salt diet heightens participants' perception of "saltiness" such that less is required to achieve a similar taste. Other papers reveal a behavior aspect to table salt use-- individuals tend to add the same amount (e.g. a similar number of salt shaker shakes) regardless of how much the dish truly requires.

-The studies limitations are considerable. A trial conducted in a small number of normotensive young people is likely not applicable to our elderly population, particularly because aging blunts one's sense of taste. Unfortunately, other publications suffer from yet more methodological flaws.

-Given that 80% of the sodium consumed is found in the processing of foods and only 10% is added during cooking or at the table, the focus should remain on cooking at home with fresh ingredients. One can then add considerable amounts of salt during preparation or at the table and still curtail sodium intake.

-Disclosures: I have no conflicts to declare.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