

Effects of dietary sodium and the DASH (Dietary Approaches to Stop Hypertension) diet on the occurrence of headaches: Results from randomized multicenter DASH-Sodium clinical trial

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Muhammad Amer, Mark Woodward, Lawrence J Appel

These authors are associated with Johns Hopkins University, Howard University, University of Oxford, and the University of Sydney.

- 1) "Worldwide, headache is a common medical problem and among the most frequently reported disorders of the nervous system."
- 2) "Globally, 46% of adults are estimated to have an active headache disorder."
- 3) "Headaches affect all age groups, with a higher prevalence in women compared with men."
- 4) There is a direct association between elevated blood pressure and the occurrence of headache. Therefore, dietary factors that lower blood pressure might also reduce the incidence of headache. Sodium reduction reduces blood pressure and therefore might reduce the incidence of headache.
- 5) There are few studies evaluating therapies to prevent or control headaches.
- 6) These authors investigated the effects of three levels of dietary sodium intake (high = 150 mmol/day; intermediate = 100 mmol/day; low = 50 mmol/day) and two diet patterns on the occurrence of headaches; 390 participants were randomized to the DASH or control diet.
- 7) The diets:
 - The DASH diet (Dietary Approaches to Stop Hypertension) is rich in fruits, vegetables; high in dietary fiber, potassium, calcium and magnesium; moderately high in protein; and low in saturated fat, cholesterol and total fat. (n=198)
 - The CONTROL diet was a typical "Western consumption" diet. (n=192)
- 8) Hypertension was defined as:
 - Systolic pressure >140 mm Hg or
 - Diastolic pressure > 90 mm Hg
- 9) "On both diets, the number of headaches reported was greatest for the high sodium level and least on the low sodium level."

10) The risk of headache was similar on the DASH and control diets. "There was no significant association of diet pattern (DASH vs control) with headache on any sodium level." There is "no significant relationship between diet pattern and headache."

11) "Our results contrast with the popular belief that a diet rich in fruits, vegetables and potassium and low in saturated and total fat may ease the frequency, or even prevent, headache."

12) "There was no evidence that the relationship between sodium levels and headache was modified by age, sex, race, baseline BMI or blood pressure."

13) "The results of this study provide encouraging evidence in support of dietary recommendations to lower sodium intake."

14) Sodium (Na⁺) consumption guidelines:

- Many in the US consume much more Na⁺ than the highest levels tested in this study, which was 150 mmol/day.
- WHO guidelines note that Na⁺ intake should be < 87 mmol/day.
- American Heart Association guidelines note Na⁺ intake should be < 65 mmol/day.

15) "A reduced sodium intake was associated with a significantly lower risk of headache, while dietary patterns had no effect on the risk of headaches in adults."

16) "Reduced dietary sodium intake offers a novel approach to prevent headaches."

COMMENTS FROM DAN MURPHY

This article notes that the problem in headaches is **not** the diet, but the **salt** in the diet. By far, the majority of salt consumed by Americans is NOT from a saltshaker, but rather from consuming pre-packaged processed foods. In the 2013 book Salt Sugar Fat, Pulitzer Prize winner Michael Moss notes that processed food producers add salt to nearly everything. Apparently, the most common source of hidden added salt is bread. He notes "No Salt, No Sales." Adding salt increases sales; reducing salt decreases sales.

We have reviewed 2 other articles pertaining to salt and health:

Article 04-11: **Projected Effect of Dietary Salt Reductions on Future Cardiovascular Disease**

Article 02-14: **Sodium chloride drives autoimmune disease by the induction of pathogenic TH17 cells** [this article profiles multiple sclerosis]