Effects of the DASH Diet and Sodium Intake on Bloating

Results From the DASH–Sodium Trial

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INTRODUCTION: Bloating is one of the most common gastrointestinal complaints. Evidence has linked fiber and sodium to bloating; however, randomized trials examining these diet components are lacking. Here, we used a randomized trial to examine the effects of the high-fiber DASH diet and dietary sodium intake on abdominal bloating. We hypothesized that both the high-fiber DASH diet and higher sodium intake would increase bloating.

METHODS: The DASH–Sodium trial (1998–1999) randomized healthy adults to a high-fiber (32 g/d) DASH or low-fiber (11 g/d) Western diet (control). On their assigned diet, participants ate 3 sodium levels (50, 100, and 150 mmol/d at 2100 kcal) in 30-day periods in random order, with 5-day breaks between each period. The participants reported the presence of bloating at baseline and after each feeding period. Statistical analyses included log-binomial models to evaluate the risk of bloating.

RESULTS: Of 412 participants (mean age 48 years; 57% women; 57% black), 36.7% reported bloating at baseline. Regardless of the diet, high sodium intake increased the risk of bloating (risk ratio = 1.27; 95% confidence interval: 1.06–1.52; $P = 0.01$). The high-fiber DASH diet also increased the risk of bloating over all sodium levels (risk ratio = 1.41; 95% confidence interval: 1.22–1.64; $P < 0.001$). The effect of high-fiber DASH on bloating was greater in men than in women (P for interaction = 0.001).

DISCUSSION: Higher dietary sodium increased bloating, as did the high-fiber DASH diet. Although healthful high-fiber diets may increase bloating, these effects may be partially mitigated by decreasing dietary sodium intake. Future research is needed to explore mechanisms by which sodium intake and diet can influence bloating.

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