

ORIGINAL RESEARCH COMMUNICATION

# Reductions in dietary energy density are associated with weight loss in overweight and obese participants in the PREMIER trial<sup>1,2,3,4</sup>

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**Background:** Dietary energy density (ED) reductions are associated with energy intake (EI) reductions. Little is known about influences on body weight (BW).

**Objectives:** We examined the effects of behavioral interventions on ED values and explored how 6-mo ED changes relate to BW.

**Design:** Prehypertensive and hypertensive persons were randomly assigned to 1 of 3 groups: the established group received an 18-session intervention implementing well-established hypertension recommendations (eg, weight loss, sodium reduction, and physical activity), the established+Dietary Approaches to Stop Hypertension (DASH) group received an 18-session intervention also implementing the DASH diet, and the advice group received 1 session on these topics. Two 24-h dietary recalls were collected ( $n = 658$ ).

**Results:** Each group had significant declines in EI, ED, and BW. The established and established+DASH groups had the greatest EI and BW reductions. The established+DASH group had the greatest ED reduction and the greatest increase in the weight of food consumed. When groups were combined and analyzed by ED change tertiles, participants in the highest tertile (ie, largest ED reduction) lost more weight (5.9 kg) than did those in the middle (4.0 kg) or lowest (2.4 kg) tertile. Participants in the highest and middle tertiles increased the weight of food they consumed (300 and 80 g/d, respectively) but decreased their EI (500 and 250 kcal/d). Conversely, those in the lowest tertile decreased the weight of food consumed (100 g/d), with little change in EI. The highest and middle tertiles had favorable changes in fruit, vegetable, vitamin, and mineral intakes.

**Conclusion:** Both large and modest ED reductions were associated with weight loss and improved diet quality.

**Key Words:** Energy density • obesity • weight management • food patterns • fruit and vegetables • PREMIER trial • Dietary Approaches to Stop Hypertension • DASH

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