

Dietary approaches to reduce blood pressure in a community setting: a randomised crossover study

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Objective – A diet combining increased fruits, vegetables, low-fat dairy foods, fish and nuts etc (DASH) has been shown to lower blood pressure (BP) in controlled intervention studies with all food provided. The aim of this study was to determine the effect on BP of three different self-selected diets: a “DASH” type diet high in fruit, vegetables & low-fat dairy foods (OD), a high dairy diet (HID) & a low sodium, high potassium diet (LNAHIK).

Design – Ninety-four subjects (56 men and 38 women, 55 normotensives (with BP \geq 120/80 mmHg), 39 hypertensives (on anti-hypertensive therapy)) following a one-week run-in period, completed a 12-week study, which consisted of a two-week control diet, after which subjects were randomised to one of the diets for four weeks followed by a second control diet phase, which was followed by the second diet. All subjects completed the OD diet. Home BP was measured daily for the last two weeks in each phase.

Results – Ninety-four subjects completed the OD diet, 43 the LNAHIK diet and 48 the HID diet. The mean age was 55.6 (9.9) years and run-in home BP (mean (SD)) was 129(11.3)/80.6(8.6) mmHg. The changes (mean \pm SEM) in BP between the control diet and dietary phases were: OD: $-1.8 \pm 0.5/-0.4 \pm 0.3$ mmHg (P<0.001, ns respectively); LNAHIK: $-4.4 \pm 0.8/-2.0 \pm 0.6$ mmHg (both P<0.001); HID $+0.6 \pm 0.4/+0.3 \pm 0.3$ (both ns). Urinary sodium (24-hour) fell in OD by 33.0 ± 7.4 mmol/day and by 73.4 ± 10.1 mmol/day in the LNAHIK diet (both P<0.001).

Conclusions – In a community setting, a LNAHIK diet resulted in a greater fall in blood pressure than a self-selected DASH type diet and confirms the positive effect of reducing Na and increasing K on blood pressure.