SODIUM RESTRICTION IN WOMEN AGED 45-55: A PILOT STUDY

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This pilot study was designed to assess the compliance and feasibility of lowering sodium intake in women aged 45-55 years. This would assist in planning a large, prospective, three year study of sodium restriction and bone mass in female twins of this age. Urinary calcium losses have been found to be higher on a high sodium diet and it has been proposed that a low sodium diet will reduce urinary calcium losses (Goulding et al. 1986).

The six week study consisted of a baseline phase of two weeks and a low sodium diet phase of four weeks. Twenty-seven subjects were seen fortnightly for four visits and instructed in a low sodium diet (50-70 mmol Na/day). Health and food frequency questionnaires were completed at the beginning and end of the study. Four day food records were performed once in each two week period together with 24 hour urine collections (two baseline and four intervention). Self-monitoring of sodium excretion was performed using Saltex reagent strips (Ames). Urinary sodium was 94±8 mmol/day (mean ± 1 SD) at baseline and fell significantly to 54±5 mmol/day during intervention ($P<0.001$). Individual mean urinary sodium 24 hour ranged from 53 to 181 mmol/day. Adjusting for completeness of collections, the ratio of urinary sodium/creatinine was 10.2±0.6 mmol/mmol at baseline and fell to 6.0±0.5 mmol/mmol during intervention ($P<0.001$). There was no significant correlation between urinary sodium excretion and Saltex reagent strip tests performed 3 times per week. There was a non-significant fall in urinary calcium from 2.53 ± 0.26 mmol/day at baseline to 2.32 ± 0.18 mmol/day ($P=0.06$). However, there was a positive linear correlation between the change in urinary sodium and the change in urinary calcium ($r=0.5$ $P<0.01$). The mean energy intake determined from a four day food record at baseline was 6.6 MJ and fell to 5.9 MJ during intervention ($P<0.01$). Mean daily dietary calcium intake was less than the recommended daily intake, being 737 ± 36 mg at baseline, and did not change during intervention (701 ± 26 mg). Fat intake fell from 66 ± 3 to 51 ± 2 g/day ($P<0.001$).

It is possible for women to follow a low sodium diet provided adequate instruction is provided on the sodium content of commercial foods. Saltex reagent strips were not found to provide a useful indicator of sodium intake when performed three times per week. Whether the reduced energy and fat intake found with this short term sodium restriction would be maintained longterm remains to be determined.

GOULDING, A., EVERITT, H.E., COONEY, J.M. and SPEARS,G.F.S. (1986). Adv Human Nutr. 2: 10.

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