

Concurrent Session 10: AWASH – Salt, the hidden dietary guidelines

The adverse health effects of the current intake of dietary salt

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Background – Thirty percent of Australians have high blood pressure and the incidence of hypertension rises with age, such that between 60 and 70 years, 70% of the population has hypertension [1]. Hypertension is a major risk factor for the development of coronary disease and strokes. There is a large body of evidence implicating high intakes of dietary sodium to hypertension.

Objective – To summarize the evidence to date implicating dietary salt (sodium) in the development and maintenance of hypertension, cardiovascular disease and osteoporosis and review the information on the current dietary sodium intake with reference to the Suggested Dietary Target for health [2].

Outcomes – Meta-analyses of intervention studies continued for at least four weeks have demonstrated significant reductions in blood pressure. Twenty trials in individuals with elevated blood pressure (n=802) and 11 trials in individuals with normal blood pressure (n=2220) with a mean reduction of 78 mmol (4.6 g/day salt), reduced systolic pressure (SBP) by 5.1 mmHg and diastolic pressure (DBP) by 2.7 mmHg in hypertensive individuals. A 74 mmol (4.4 g/day salt) reduction in normotensives reduced SBP by 2.0 mmHg, and DBP blood pressure by 1.0 mmHg [3]. On a population basis, it has been estimated that a reduction of 2 mm Hg in SBP blood pressure would result in 6% reduction in risk of stroke and a 4% reduction in risk of coronary heart disease, and an overall reduction in mortality of 3% [4]. Few studies have linked lower sodium intake to reduced risk of cardiovascular disease, but positive associations have been found between higher sodium intakes and stroke incidence and mortality, and mortality from cardiovascular disease. Although some prospective studies suggest that a high salt intake has adverse effects on cardiovascular disease mortality, there are insufficient reliable data on morbidity and premature mortality outcomes. The lack of this evidence relates to problems in undertaking large scale dietary intervention studies of long duration, requiring a high degree of dietary compliance that is difficult to maintain with the current salt levels inherent in our food supply. A high salt intake has been found to increase left ventricular mass independently of blood pressure and higher dietary salt increases calcium losses from bone. In Australia, sodium intakes have been estimated to be about 150 mmol/day (9g salt) [5], with more than 75% of the dietary sodium consumed, present in the food supply. To ensure that Australians are able to effectively reduce dietary sodium to levels that approach the Suggested Dietary Target of 70mmol sodium/day (4g salt) a reduction in the salt content of the food supply must occur.

Conclusion – There is good evidence that in both hypertensives and normotensives there is a significant fall in blood pressure with dietary sodium reduction in the range 50-100mmol/d (3-6g salt/d). There is moderate evidence that diets high in sodium are associated with increased blood pressure and increased prevalence of hypertension. Dietary sodium reduction can be achieved on a population wide basis with little individual effort by reducing the sodium content of the food supply. An average reduction of 50mmol sodium (3g salt) would reduce blood pressure of the population and would significantly contribute to a decrease in the burden of cardiovascular disease.

References

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4. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure. *Hypertension* 2003;42:206-1252.
5. Beard TC, Woodward, DR., Ball PJ, et al. The Hobart Salt Study 1995: few meet national sodium intake target. *Med J Aust* 1997;166: 404-7.