

**Provision of dietary alkali in the UK diet: a pilot study to examine the effects of supplementation with 'Horlicks' on estimates of potential renal acid load (PRAL) and net acid excretion indirect (NAE<sub>Indirect</sub>) in postmenopausal women.**

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Acid-base homeostasis is critical to overall health. In recent years, there has been a particular focus on the role of the dietary alkali supply on bone. Dietary acidity is particularly influenced by the level of PRAL (potential renal acid load) which is a predictor of the dietary component of net acid excretion (NAE) (Remer *et al.*, 2003). In a previous study, we have shown that hot beverages containing potassium bicarbonate have a substantive negative PRAL and hence are suppliers of dietary alkali. (Catterick *et al.*, 2006).

The aim of this pilot study was to compare estimates of dietary acidity (using PRAL and NAE<sub>Indirect</sub>) associated with the habitual diets of postmenopausal women when drinking 'Horlicks' once a day and when not drinking Horlicks. The period of investigation was 7 days. Postmenopausal women aged 55-64 years (*n* 12) were recruited. All women were of Caucasian origin and were in full time employment. Subjects were randomly recruited into two groups and were asked to complete 7-d food diaries for two consecutive weeks. The first group of 6 women were asked to follow their normal diet during week 1 and then to include a standard portion of 'Horlicks Light' drink every day for 7d during week 2. The second group of 6 women followed the routine above but in reverse order. The food diaries were coded and analysed using the Win-Diet computer programme (2005). PRAL and NAE<sub>Indirect</sub> were calculated using the appropriate formulae.

Analysis of the food diaries for 12 post menopausal women aged 55-64 years revealed that for 9 subjects, the PRAL<sub>full</sub> value was lower for the week when the subject was consuming one 27g portion of Horlicks Light once a day, with a mean value of PRAL<sub>full</sub> for the non-Horlicks week of -2.8mEq (SD 7.0), and a mean for the Horlicks week of -10.5mEq (SD 7.7) (*P*<0.017). The PRAL<sub>shortened</sub> values were lower for 11 subjects during the Horlicks week, with a mean value of PRAL<sub>shortened</sub> for the non-Horlicks week of -2.5mEq (SD 7.0), and a mean value for the Horlicks week of -11.5mEq (SD 7.2) (*P*<0.005). Similar findings were seen for NAE<sub>Indirect</sub>.

Further work is now required on a larger and more representative sample of the UK population, but these data indicate an increase in estimates of dietary alkalinity with regular consumption of a beverage containing potassium bicarbonate

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References:

Catterick J., Gannon RHT., Lovell DP et al (2006). *Proceedings of the Nutrition Society* (In the Press)  
Remer T, Dimitriou & Manz F (2003) *American Journal of Clinical Nutrition* 77, 1255-60.