

## NSA Poster Presentations: Friday 13 August 2004

### Copper intake of a cohort of women: food sources and age group differences

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**Background-** Worldwide dietary copper intakes are apparently falling. Minimal data is available on copper intake in Australia.

**Objective** - The aims of the study were to estimate the dietary copper intake of a randomly selected population of Victorian women; to ascertain the main food groups contributing to the mean daily Cu intake and to investigate the effect of age group differences in food choices on Cu intake and sufficiency.

**Design** - A detailed semi-quantitative food frequency questionnaire (FFQ) was analysed from 556 women aged 20 – 88 yrs, randomly selected from the Barwon electorate, which is representative of Australia in several demographic factors. The FFQ captured responses on 359 foods, and copper intake was individually estimated from available food data (ANZFA where available and otherwise USDA).

**Outcomes** - The women consumed  $1.56 \pm 0.55$  mg/day Cu (mean  $\pm$  SD); median, 1.49 mg/day. This is higher than most Western nation Cu intakes, but lower than that found in most non-industrialised, rural regions. No toxic level intakes were found. Grains contributed 28% of the total intake, and vegetables provided 24%, including potatoes (13%). Fruit provided 17% and all meats (beef, poultry, lamb, pork, fish, shellfish and offal) provided 16% of the total. Significant age group differences were found. Young women were those most likely to be at risk of low intake. Older women consumed more Cu from whole grains, fruits, offal, beverages, peas & beans, lamb and eggs. Younger women consumed proportionally more Cu from refined grains, beef, mixed dishes (including many “take away” foods), dairy and chocolate foods.

**Conclusion** – Further studies of copper intake in young Australians are warranted.

*Acknowledgement. The FFQs were from a sample obtained as part of the Geelong Osteoporosis study (J.Pasco, M.Kotovitz & G.Nicolson)*

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### Serum selenium concentrations in New Zealand children

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**Background** - The low selenium content of New Zealand soils has resulted in sub-optimal blood selenium concentrations in New Zealand residents. At present there is no data on the biochemical selenium status of New Zealand children.

**Objective** – To determine the biochemical selenium status of New Zealand children.

**Design** - The survey aimed to recruit 3000 participants with 1000 children each of Māori, Pacific, and New Zealand European and other (NZEO) ethnicity. The nationally representative sample was recruited using a two-stage process involving random selection of schools followed by random selection of children within each school. Stored serum was available from 1621 children, and selenium concentrations were analysed using graphite furnace atomic absorption spectrometry.

**Results** - The mean (SEM) serum selenium level was 73.3 (1.5)  $\mu$ g/L (n=832) and 78.5 (1.6)  $\mu$ g/L (n=789) in females and males, respectively. Pacific Island children had the highest mean serum selenium concentrations (81.6  $\mu$ g/L, n=667), followed by Maori (76.0  $\mu$ g/L, n=468), and New Zealand European children (75.3  $\mu$ g/L, n=486). Regional differences were found within New Zealand. Mean selenium concentrations in South Island children ranged between 61.0 and 64.7  $\mu$ g/L compared with a range of 74.1 to 84.1  $\mu$ g/L in North Island children (P<0.05).

**Conclusion** - South Island children have lower selenium concentrations compared with North Island children. Dietary interventions to improve selenium status in South Island children should be considered.

*The Ministry of Health funded the selenium analysis and the 2002 National Children's Nutrition Survey.*