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ZINC CONTENT OF AUSTRALIAN DIETS

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Since 1970, the Commonwealth Department of Health in conjunction with the Department of Science and the Environment has conducted a series of Market Basket Surveys to determine the levels of pesticide residues and heavy metals in the Australian diet. Since 1974, zinc has been included in the list of metals whose levels have been estimated either in a 'total diet', based on data in "Apparent Consumption of Foodstuffs and Nutrients : Australia 1972-73" or in individual foods.

Zinc is an essential trace element in the diet. However, when consumed in excessive amounts, it can be toxic and cause acute gastro-intestinal disorders. The National Health and Medical Research Council has recommended maximum limits for zinc in foods and beverages. High concentrations of zinc occur in molluscs, crustaceans and some fish.

The 1976 Market Basket Survey (National Health and Medical Research Council 1978) was designed to monitor the levels of contaminants in forty-four individual foods, consumed in greatest amounts by Australians. Three samples of each of these foods were purchased in each of the State capital cities in each of the four seasons of that year. The foods were freighted to East Sydney Technical College for preparation, cooking, blending and sampling for analysis by the Australian Government Analytical Laboratory. Zinc levels were estimated in all food samples.

The levels of contaminants in a variety of diets based on the forty-four foods analysed were calculated. Diets were prepared for an infant (6-12 months), child (1-3 years), boy (11-15 years), girl (11-15 years), adult man and adult woman. The calculated daily intakes of zinc from the hypothetical diets used in the 1976 Market Basket Survey are given below. As "Dietary Allowances for Use in Australia" do not include an allowance for zinc, the appropriate levels of dietary zinc recommended by Canadian authorities are also listed.

Table 1 - Level of Zinc in a range of Australian diets

Person	1976 Survey Results mg/day	Canadian allowances mg/day
Infant (6-12 mths)	7.1	5
Child (1-3 years)	9.5	5
Boy (11-15 years)	17.4	10
Girl (11-15 years	15.6	10
Man (20-34 years)	19.3	10
Woman (20-34 years)	12.6	9

The foods that made a significant contribution to the zinc content of the diets were meats, in particular lambs fry, wholegrain cereals, milk products, cheese, peas and peanuts. Oyster samples analysed contained high levels of zinc. A wide range of zinc levels were found in different samples of the one food.

The Report of the 1976 Market Basket Survey concludes that:- "Zinc levels in the Australian diet appear to be nutritionally adequate and certainly do not constitute a matter for toxicological concern".

National Health and Medical Research Council (1978). "Market Basket (Noxious Substances) Survey - 1976". (Commonwealth Department of Health, Canberra).

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