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Nutritional Status of Migrant Mainland Chinese Children in Auckland

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ABSTRACT

Objective: To assess the food and nutrient intake, activity levels and body composition of migrant Chinese children living in Auckland, and compare the results with data from European children of the same age in New Zealand.

Subjects: Fifty children aged between 7 to 10 years of age, who were born in Mainland China and have immigrated to New Zealand (twenty-seven boys and twenty-three girls).

Method: Three 24-hour recalls were used to evaluate dietary intake. Questionnaires were pretested before survey, and were used to determine food consumption patterns, demographic details, medical status, lifestyle and activity patterns. Anthropometric measurements included were height, weight, upper arm circumference, triceps skinfold, subscapular skinfold and elbow breadth. BMI was calculated.

Results:

- The average body height and weight of the migrant Chinese children was 131.8cm and 29.2kg respectively, higher and heavier than their peers in Mainland China. Each anthropometric measurement was higher in 9 – 10 year old children than 7 – 8 year old children, but only the differences between weight ($p < 0.001$), arm circumference ($p < 0.005$), and elbow width ($p < 0.001$) were significant. Except the triceps skinfold, most anthropometric measurements for the migrant Chinese children were lower than the European children in the Validation Report for the Children's Nutrition Survey in New Zealand, indicating Chinese children had higher arm fat and lower muscle than their counterparts in new Zealand.
- The overall average energy intake of migrant Chinese children was 7712 kJ, close to the recommendations. The average protein intake of children was well above the UK RNI and USA RDA values (69.3g compared with RNI of 28.3g and RDA of 28.0g), and higher than that of their New Zealand and Mainland Chinese counterparts. Mean percentage of food energy derived from carbohydrate was 52.5%. Mean percentages of food energy derived from fat and saturated fat were 29.6 and 12.8, respectively. The fat

intake of children was higher than that found in Mainland Chinese children where the mean percentage of total energy from fat in this age group varies from 23.4-28.5. However, it was lower than that found in New Zealand European children where the average percentages of food energy derived from fat and saturated fat were 34.9 and 16.3 for boys, and 31.4 and 13.8 for girls, respectively.

- Mean intakes of most micronutrients were in excess of UK RNI. Lower intakes of vitamin A Eq were found (95.5% of RNI and 68.5% of RDA), reflecting lower consumption of fruits and vegetables than European New Zealand children.
- The food frequency questionnaire designed to assess nutrient intake in New Zealand European, Maori and Pacific children in the Children's Nutrition Survey was not applicable to migrant Chinese children.
- For the children in this study, breakfast and lunch at school, especially lunch at school, were "Westernized". Dinner of the children mainly maintained Chinese traditional foods.
- While parents of the children realized the importance of modern nutrition, most of them applied the ancient Chinese philosophies regarding food and health to their children. Seventy percent of the parents could feel their children in "hot" or "cold" conditions, and used dietary restriction or encouraged their children to eat certain foods when their children were in hot" or "cold" conditions. All the Cantonese families used herbs in their children's dishes.
- In these Chinese families, the mothers played a very important role in determining food choice of their children.
- The migrant Chinese children achieved the recommended activity levels. However, their activity levels were lower than their counterparts in New Zealand.

Conclusions:

- The trend towards increasing fat and protein intake should be avoided in migrant Chinese children, and the importance of maintaining the traditional Chinese cereal-based diet should be emphasized.
- Foods rich in vitamin A should be recommended for the migrant Chinese children.

- It is crucial that migrant Chinese children during their diet transition adopt healthy western food habits.
- Cultural preferences and mothers' influence should be considered when making nutrition recommendations for migrant Chinese children.

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