

DIETARY SOURCES AND ASSESSMENT OF SODIUM IN AUSTRALIAN PRE-SCHOOL CHILDREN

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Background/Aims: National Nutrition Survey data indicate that most Australian children's sodium intakes exceed recommendations. Understanding food sources of sodium is important to guide strategies for targeted salt reduction. We aim to identify sodium intake and the dietary sources of sodium in Australian pre-school children.

Methods: Participants included children from the Melbourne InFANT program with dietary data at 3.5 years of age. Intake was assessed by telephone administered multiple pass 24 hour recall & three non-consecutive days of dietary data were collected.

Results: Diet recalls were completed for 261 children with a mean (SD) age of 3.6 (0.95) years. The average sodium intake was 1,505 (521) mg/d, salt equivalent 3.8 (1.33) g/day. Within this sample 85% of children exceeded the Upper Level recommendation of 1,000 mg/day. Major food sources of sodium were cereals and cereal products (25%), including bread (17%); and milk products (20%), including dairy milk (7%) and cheese (9%). Moderate sources were meat and poultry products (17%), including processed meats (8%), and savory sauces & condiments (4%). Ninety seven percent, 86% and 55% of children consumed bread, cheese and processed meats respectively over the 3 days of collection.

Conclusions: These findings confirm that most pre-school children are consuming excessive amounts of sodium. Processed foods such as bread, cheese and meats are major contributors of sodium in their diets. Opportunities to reduce sodium in these key food groups, alongside consumer advice should be priorities to address this excess sodium consumption in Australian pre-school children

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MICRONUTRIENT INTAKE DENSITY MAY BE REDUCED IN CHILDREN WITH HIGH SUGAR INTAKES: A SYSTEMATIC LITERATURE REVIEW

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Background/Aims: To determine the association between micronutrient intake density and a high sugar intake in the diets of children ≤ 12 years of age and identify impacting influential factors.

Methods: A systematic literature review was conducted using, MEDLINE, Scopus and Web of Science databases and keywords: child*, youth*, "high sugar intake*", assoc*, relation*, "micronutrient density", and "nutrient density". No date restriction was applied to the database searches. Studies published in English including data for children ≤ 12 years and addressing sugar and micronutrient intake were included. Micronutrient density was calculated as micronutrient intake divided by total energy intake.

Results: Fourteen studies were included, all level IV evidence. Of the studies assessing total sugar intake associated with micronutrient intake (3/14 studies), one reported significant differences ($p < 0.001$ for vitamin E, niacin, iron and zinc). Added sugar intake associated with micronutrient intake was assessed in six. Three of these studies reported significant association between added sugar intake and micronutrient intake. No trends for the influence of dietary data collection methods were seen. Parental education was identified as a common influence of diet quality in children.

Conclusions: The evidence that high sugar diets can detrimentally influence micronutrient intake density in children is weak. No conclusive amount of sugar intake was shown to impact specifically on micronutrient intake density in children. Use of unreliable sugar intake categorising methods from included studies could influence overall results. Future research could use a standardised approach in regards to dietary collection and sugar intake categorising to improve evidence for this association.

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FLAVOURED MILK CONSUMPTION AMONG CHILDREN – WHAT IS THE EVIDENCE?

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Background/Aims: Due to concerns surrounding added sugars and health there is a need to review the literature to assess the effect of flavoured milk on the diet and health of children.

Methods: A systematic review of the PubMed and Ovid Medline databases was undertaken using the keywords: milk, flavoured, sweetened, and chocolate, limited to English, children and those reporting exclusively on flavoured milk. Fifty-one studies were included in the review under: preferences, consumption, milk and nutrient contribution and health measures.

Results: Flavoured milk receives the highest palatability rating among children, regardless of milk type (soy or cow) with taste being important in driving consumption. When offered, children drink more flavoured than plain milk and when flavoured is not available, children drink less plain milk and consequently less milk overall. Across all studies, flavoured milk consumers had a higher intake of total milk. Micronutrient intake was similar to that of consumers of plain milk, while mixed results were found for energy intake and sugars, due to differences in reporting across studies. The nutrient density of flavoured milk outweighs the added sugar from the flavouring. Some contradicting effects of flavoured milk were observed in sub-groups of overweight children. There was no association with weight status amongst normal weight children.

Conclusions: The growing body of evidence shows flavoured milk is a popular, palatable and nutrient dense beverage. Further research to test the effect of changing flavoured milk consumption and its effect on weight among overweight children is warranted.

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PATTERN AND PREDICTORS OF DAIRY CONSUMPTION DURING ADOLESCENCE

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Background/Aims: To prospectively assess dairy intake and determine the predictors of adequate dairy consumption during adolescence.

Methods: Data from the Sydney Children's Eye Study were used, where 634 Sydney schoolchildren (351 girls and 283 boys) who had dietary data at both age 12 and 17 were included for analyses. Dairy consumption was assessed from validated semi-quantitative food frequency questionnaires. Logistic regression was used to identify predictors of dairy consumption.

Results: Mean total dairy intake decreased by 0.22 serves/day during the 5 year follow up (1.62 vs 1.40 serves/day; $p < 0.0001$). Mean serves/day of milk decreased from 1.11 to 0.92 during adolescence. Moreover, 90% of the decrease in serves/day of total dairy was due to reduced milk consumption. Only a small proportion of the population met the national guideline for dairy intake. A lower proportion of girl consumed ≥ 3 serves/day of total dairy at both baseline ($p = 0.005$) and follow-up ($p = 0.01$). Participants with tertiary qualified parents at baseline were 85% (95%CI: 18, 191) more likely to have intakes of the dairy food group above the median during the 5 years. Frequent flavoured milk consumption (≥ 2 serves/week) at baseline was associated with ~5-fold greater likelihood of maintaining intakes of dairy foods above the median during adolescence.

Conclusions: Dairy food consumption decreased significantly during adolescence, driven primarily by a decrease in milk consumption. Most adolescents did not meet national guidelines for dairy intake. These findings highlight the need for further research into intervention strategies aimed at sustaining dairy consumption.

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