Abstract

Measuring Children's Sodium and Potassium Intakes in New Zealand: A Pilot Study [†]

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Background: Low sodium and high potassium intakes in childhood protect against rises in blood pressure (BP) and risk of cardiovascular disease later in life. Our aim was to pilot methods for collection of 24-h urine samples (gold standard) and diet recalls to assess sodium and potassium intakes and their food sources in 30 children aged 8 to 11 years.

Methods: A cross-sectional survey was completed at one Auckland primary school between August and October 2017. Children's urine samples and BP measures were collected using standard procedures recommended by the World Health Organization. Interviewer-assisted diet recalls were collected with children and their parents/caregivers at school, the day following urine collection, using interactive Intake24 software. Feasibility and acceptability of procedures were assessed through an on-line survey with teachers, and interviews with parents/caregivers and children.

Results: A diverse sample ($n = 27$) was recruited over a two-week period. All children provided a urine sample (71% complete) and interviewer-assisted 24-h diet recall. Median (range) sodium intake was 2191 (800 to 4786) mg/day (salt equivalent 5.5 g), potassium intake was 1776 (800 to 2981) mg/day, BP was 105 (84 to 129)/62 (53 to 89) mmHg, and sodium to potassium molar ratio was 2.0 (1.1 to 4.8). Major food sources of sodium were bread, pies and pastries, and bread and pasta-dishes, and potassium were sauces and condiments, dairy products, and non-alcoholic beverages. Most participants provided adequate data and enjoyed taking part. Small improvements to study procedures and resources should improve completeness of urine samples and quality of 24-h diet recall data.

Conclusions: Collection of 24-h urine samples and diet recalls for assessment of sodium and potassium intakes and their food sources is feasible in 8 to 11 year old children in New Zealand. A larger survey is warranted to (1) confirm findings and (2) inform a potential intervention.

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