

## Childhood Obesity 2020: The association of estimated 24-h urinary sodium excretion with body composition among primary school students: A cross-sectional study in Dubai, United Arab Emirates - Ola El Saleh - Imperial College London

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### Abstract

**Introduction:** Childhood obesity is one of the most alarming health problems in United Arab Emirates; it is crucial to identify potential risk factors to tackle it effectively. Dietary sodium has been lately associated with body composition, yet previous studies presented mixed results, utilised inconsistent methodologies and rarely included children from the Middle East.

**Aim:** The aim of this study was to investigate the association between estimated 24-h urinary sodium excretion (E24hUNa) and body composition in primary school students.

**Methods:** Data were collected cross-sectionally from 531 students aged 6-12 years in Dubai, United Arab Emirates. Twenty-four-hour urinary sodium excretion was estimated from morning spot urine samples, while anthropometric measurements were obtained via standardised procedures. Multivariable regression models

were used to analyse the association between E24hUNa and body mass index z-score (BMIz), body fat percentage (BFP), waist circumference (WC), and risk of overweight/obesity.

**Results:** After adjustment for age, sex, physical activity, screen time and parental BMI, an additional 1 g/day E24hUNa was associated with 0.19 higher BMIz, 1.71% higher BFP, 2.50 cm higher WC and 40% increase in the risk of overweight/obesity, all p-values<0.05. However, the association with BFP was not significant in boys.

**Conclusions:** E24hUNa is positively associated with body composition in primary school students, and the magnitude of the association tends to be higher in girls. Robust longitudinal studies are necessary to validate this association and investigate the underlying mechanisms to plan evidence-informed interventions.

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