

## *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*

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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 and sex, an additional 1 g/day E24hUNa was associated with 0.23 higher BMIz, 1.44% higher BFP, 1.85 cm higher WC and 46% increase in the risk of overweight/obesity, all p-values<0.01. However, the association with BFP was not significant in boys. As for the subsample of students whose parents responded to the questionnaire, 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, after adjustment for age, sex, physical activity, screen time and parental BMI, all p-values<0.05.

**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.

### *Biography:*

Ola El Saleh holds a MSc in Paediatrics and Child Health from Imperial College London. She worked as a Child Health and Nutrition Consultant at UNICEF Gulf Area Office since 2013 and participated in several research studies with Zayed University in Dubai.



### *Speaker Publications:*

1. Haroun, Dalia & Saleh, Ola & Wood, Lesley & Mechli, Rola & Marzouqi, Nada & Anouti, Samir. (2016). Assessing Knowledge of, and Attitudes to, HIV/AIDS among University Students in the United Arab Emirates. PLoS one. 11. e0149920. 10.1371/journal.pone.0149920.
2. Dalia Haroun, Ola ElSaleh and Lesley Wood. (2016). Dietary and Activity Habits in Adolescents Living in the United Arab Emirates: A Cross-Sectional Study. Arab Journal of Nutrition and Exercise (AJNE) / AJNE: Vol 1, No 2 (2016) / Pages 85-100

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(<https://childhood-obesity.insightconferences.com/abstract/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>)

