

A snapshot of school children's lunchboxes in South Australia through a food and sustainability lens

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Although most children in Australia bring a packed lunch from home to school, research on the environmental impacts of children's lunchbox contents is limited. As a second study out of a three-phase research project, a quantitative audit of school lunchboxes was conducted through the development of a novel methodology encompassing food, waste, and packaging considerations. Fourteen preschools and nine primary schools in low ($n = 8$), medium ($n = 7$), and high ($n = 8$) socio-economic areas of Adelaide, South Australia were included in this observational study. Overall, the percentage of total lunchboxes ($n = 673$) that contained at least one item from each of the following food and beverage groups were: Grains and cereals (92.4%), Fruits (78.3%), Snacks (61.5%), Dairy (32.2%), Vegetables (25.9%), Protein (9.2%), Drinks (4.6%), and Mixed meals (1.2%). Snack foods were more prevalent in primary school children's lunchboxes (67.9%) than preschool children's (55.3%; $C^2(1) = 11.2349$, $p = 0.001$). Lunchboxes of preschool children contained more fruits (91.8% v. 64.6%; $C^2(1) = 73.2685$, $p = 0.000$), vegetables (35.6% v. 15.9%; $C^2(1) = 33.9625$, $p = 0.000$), and dairy items (45.3% v. 18.9%; $C^2(1) = 53.5680$, $p = 0.000$), compared to primary school children. Preschool children belonging to the most socio-economically disadvantaged areas had significantly more snack foods in their lunchboxes compared to their socio-economically advantaged counterparts (71.9% v. 49.6% v. 49.2%; $C^2(2) = 13.4697$, $p = 0.001$). These socio-economic differences in the context of snacks were not evident in primary schools, but fruits were more prevalent in higher socio-economic areas (51.6% v. 55.2% v. 79.9%; $C^2(2) = 26.1906$, $p = 0.000$). In preschools, presence of fruit was consistent across the three socio-economic areas, with a significant variation in vegetables evident (24.7% v. 35.7% v. 43.4%; $C^2(2) = 7.8704$, $p = 0.020$). Snacks resulted in the most single-use packaging waste, particularly soft plastic or silver-lined wrappers. Certain grain food items were also packed in single-use cling wrap, ziplock bags and soft plastic, while squeeze pouches were the most common single-use packaging for yoghurt. These preliminary results highlight the environmental impacts of certain food choices because, in contrast, vegetables and fruits were mostly packed in reusable containers. Moreover, vegetables (50.6%) were the most wasted food item compared to snacks (25.2%). This study suggests that food and packaging waste resulting from lunchbox food choices have health and sustainability implications. There is increased recognition of the importance of addressing nutrition early in life, and there are many healthy eating interventions directed to preschools, childcare centres, and primary schools.^(1–4) What seems to be missing is the attachment of environmental consideration to these healthy eating interventions, so the importance and connection of both agendas are realised for public and planetary health.

References

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