

Longitudinal associations of physical activity and screen time with food fussiness in Finnish children – the PANIC Study

Objectives: Fussy eating is associated with poor diet quality, such as low willingness to taste and consume vegetables and fruit, and a low intake of several nutrients, such as vitamin C, vitamin E, and fiber. However, the determinants and factors which may affect food fussiness are less known. We therefore investigated the cross-sectional and longitudinal associations of physical activity and screen time with food fussiness.

Methodology: The participants were a population sample of 204 girls and 215 boys aged 6–8 years at baseline. We assessed food fussiness using the Children's Eating Behaviour Questionnaire (CEBQ) and physical activity and screen time using questionnaires at baseline and after 2-year follow-up. Data were analysed using linear regression models, baseline analyses adjusted for age and gender and longitudinal analyses adjusted for age at baseline, gender, and the explanatory and outcome variables at baseline. We further adjusted the data separately for lean body mass and fat mass measured by dual-energy x-ray absorptiometry (DXA).

Results: Physical activity was inversely associated with food fussiness ($\beta=-0.229$, $p<0.001$) and screen time was directly associated with food fussiness ($\beta=0.128$, $p=0.010$) at baseline. Change in physical activity was inversely associated with change in food fussiness ($\beta=-0.142$, $p=0.007$) and change in screen time was directly associated with change in food fussiness ($\beta=0.134$, $p=0.014$). Further adjustments for lean body mass and fat mass had no effect on these associations.

Conclusions: Higher physical activity and shorter screen time were associated with lower food fussiness. Our findings suggest that increasing physical activity and decreasing screen time decrease fussy eating in children.

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The changing role of convenience stores in South Korea

Objectives: This study aimed to develop policy recommendations for creating a healthy food environment involving convenience stores which have been recently promoted as an extension of food retailing and indeed of the foodservice market in South Korea.

Methodology: This study was based on case studies evaluating the nutritional quality of lunch box products sold by the Korean big 3 convenience store brands (CU, GS25, and 7-Eleven) as meal replacements. Samples of all lunch box products sold during October 2016 in Asan city, South Korea were collected for nutritional quality evaluation. A total of 36 different kinds of lunch box products were collected, and among these, 27 products that followed the traditional Korean meal structure (CU: 8, GS25: 10, 7-Eleven: 9) were included in the final analysis.

Results: The food items in the "Meats/Fish/Eggs/Legume" food group was 2.4 times the recommended intake of around 60g, while that in the "Vegetables" food group was even less than one serving size of 70g. The most frequent cooking method both for the animal- and plant-based food groups was stir-frying. The average calories fell short of the reference value for men but exceeded it for women. The percentage energy contribution from fats exceeded the reference range (15%-30%). The average amounts of protein, saturated fat, cholesterol and sodium were higher than recommended.

Conclusions: Overall, the nutritional quality of lunch box products sold by the Korean big 3 convenience store brands was evaluated to be inadequate as meal replacements. This study calls attention to the necessity and importance of establishing healthy food standards for meal replacements in convenience stores, given the ever-growing reliance on these establishments as a go-to spot for a convenient meal. The results may also provide useful insights for developing countries in Asia, which are being targeted as an emerging market for convenience stores.

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