

Association of food intake and body mass index among 6 to 12 year old Swiss children

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Background

Together with physical activity, eating behavior is one of the primary determinants of a child's risk of obesity. Yet, previous studies concerning the association between a child's body mass index (BMI) and their food intake have provided mixed findings. This study aimed to understand whether pediatric overweight and obesity are associated with eating certain food items.

Method

We work with a sample of 607 Swiss children living in the Canton Ticino, who enrolled in the FAN project – (Family, physical Activity and Nutrition) and completed a 7-day food diary in 2010. These data were used to calculate the daily average consumption for eight food groups. Height and weight of the children were reported by their parents and used to calculate the children's BMI according to the criteria of the U.S. Centre for Disease Control and Prevention. Using multivariate linear regression models, we investigate the existence of an association between a child's BMI and their daily consumption of certain foods, including gender, age of the child, BMI and education of the parent as control variables.

Results

In our sample, overweight and obese children do not differ from healthy weight children in terms of daily consumption of fruit, vegetables, dairy and meat. Yet, compared to healthy weight children, overweight and obese children reported a higher consumption of fish ($\beta=0,047$; $SE=0,022$) and lower consumption of sweets, salty snacks and sugary drinks (SSD) ($\beta=-0,316$; $SE=0,122$), cereal ($\beta=-0,184$; $SE=0,064$), eggs ($\beta=-0,030$; $SE=0,016$).

Conclusions

Swiss overweight and obese children do differ from healthy weight children in terms of the daily consumption of SSD, cereals, fish and eggs, though some results may appear puzzling (such as the inverse association between the consumption of SSD and being overweight/obese). The paper highlights and discusses the possible methodological and substantive reasons behind these results.

Key message

- Swiss overweight and healthy weight children eat a comparable amount of fruits and vegetables. Programs promoting healthy diet in overweight children may be overlooking key determinants of weight