

Vegetable variety: An effective strategy to increase vegetable choice in children

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Most children do not meet the recommended daily intake of at least 400 grams fruits and vegetables (Vereecken, De Henauw, & Maes, 2005). These dietary habits tend to track into adolescence and adulthood (Kelder, Perry, Klepp, & Lytle, 1994; te Velde, Twisk, & Brug, 2007).

Variety was identified as a potential factor to increase children's intake of these foods (Krolner, et al., 2011). It was shown that variety was effective in improving meal composition in adults (Bucher, van der Horst, & Siegrist, 2011; Meengs, Roe, & Rolls, 2012). However, because younger children are suggested to be more responsive to internal satiation signals than to external food-related cues compared to adults (Ashcroft, Semmler, Carnell, van Jaarsveld, & Wardle, 2008), it is not clear whether variety is effective to improve meal composition in 7 to 10 year-old children.

To investigate, whether vegetable variety is effective to increase the meal composition of children we invited 100 children (fifty-two boys; mean age 8.8 years (SD 1.1)) to serve themselves a meal from a buffet with replica foods. Using 'Fake Foods' instead of real foods for experiments was shown to be a valid and efficient method for behavioral nutrition research (Bucher, van der Horst, & Siegrist, 2012, 2013).

Children were assigned one of three different fake food buffets containing pasta, chicken, and either one vegetable (carrots or beans) or two vegetables (carrots & beans). The children were asked to serve themselves a meal that they would like to eat for lunch from the given selection.

We found that children given the two-vegetable choice served themselves significantly more energy from vegetables (M 64 (SD 51) kJ, 10.9 (SD 9.4)%) compared to children who were only offered either carrots (M 37 (SD 25) kJ, M 5.9 % (SD 6.5)) or beans (M 38 (SD 34) kJ, M 5.6 (SD 6.3)%). The total energy of the meal was not increased, indicating that children chose a more balanced lunch when offered more vegetables.

The results of the study show that school-aged children are responsive to food-related cues and variety is effective in increasing their vegetable choice. Serving an assortment of vegetables in school cafeterias might be a simple and effective strategy to improve children's nutrition.