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## **A SCHOOL MEAL STUDY: COMPARING PLATE WASTE AND LIKINGS OF PACKED LUNCH AND LUNCH BASED ON THE NEW NORDIC DIET**

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**Background and objectives:** The majority of Danish children do not eat in accordance with the national dietary guidelines. The OPUS School Meal Study is a school-based intervention study testing the health effects of the New Nordic Diet (NND). The aim of this sub-study was to compare edible plate waste and self-reported likings between packed lunch from home and the served NND meal.

**Methods:** The OPUS School Meal study is a cluster-randomized controlled 2-period cross-over study consisting of two three-month periods: an intervention period (NND) and a control period. 187 children (8-11y) at two schools were assigned to the food waste sub-study. Edible plate waste was measured by weighing individually the meal for 5 consecutive days before and after lunch at the end of each dietary period. Self-reported smiley ratings from a web-based dietary assessment software for children were compared to edible plate waste. Data were statistical modelled in two steps, a generalised linear mixed model was fitted for the probability of waste/no waste, and secondly a model for positive waste data was fitted.

**Results:** 74% of all meals (N=1558) had edible plate waste (>5g). Looking at all lunches the odds for leaving edible plate waste was 11 times higher for NND than for packed lunch ( $P < 0.001$ ). Looking at the meals (N=1060) with edible plate waste the amount was not significantly different between meal types; the median (IQR) for NND was 85.0 (36.5; 150.0) and the median (IQR) for packed lunch 70.0 (40.0; 119.0). Lunches rated as 'really bad' or 'bad' in the self-reported likings had more waste than lunches rated 'really good' ( $P < 0.001$ ).

**Conclusions:** The odds of having edible plate waste were significantly higher for NND meals compared to packed lunch. Liking of school meals are a significant determinant in order to reduce edible plate waste.

**Keywords:** School intervention, weighed plate waste method, New Nordic Diet, packed lunch

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