

**Energy and nutrient content of school lunches provided for children attending early years settings within primary schools: a cross-sectional study [abstract only]**

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**Energy and nutrient content of school lunches provided for children attending early years settings within primary schools: A cross-sectional study.** By C.J. Wall<sup>1</sup> and J. Pearce<sup>1</sup>. 1. *Food and Nutrition Group, Department of Service Sector Management, Sheffield Hallam University, Sheffield, UK.*

All 3 and 4-year-old children in England are entitled to funded early education to support development and school readiness. This is provided by early years settings (EYS) with around 20% of places offered by pre-schools within primary schools<sup>(1)</sup>. Other than the requirement for food to be ‘*healthy, balanced and nutritious*’<sup>(2)</sup>, there are no mandatory standards for food provision in EYS. National voluntary food and drink guidelines for EYS include food-based guidelines for the types of foods to provide for children aged 1-4 years, as well as those to limit and avoid<sup>(3)</sup>. This food-based guidance is underpinned by, and designed to meet, a nutrient framework which outlines appropriate amounts of energy and 10 different nutrients in meals and snacks provided for children aged 1-4 years in EYS, based on UK dietary reference values<sup>(3)</sup>.

This study aimed to evaluate how the energy and nutrient content of lunches provided for children attending EYS within primary schools compared with the nutrient framework underpinning the food and drink guidelines. Nine primary schools providing lunches to pre-school children were recruited from Sheffield and surrounding areas. Each school was visited daily for a week. Two portions of each menu item as served for pre-school children were collected each day, along with the recipes used. Exact portion weights were recorded. Recipes were entered into Nutritics nutrient analysis software using the recorded portion weights. The energy and nutrient content of an ‘average school lunch’ was calculated for each menu option at each school. Most schools had a weekly main (usually meat-based) menu, vegetarian menu, jacket potato menu and sandwich menu.

The mean energy content of lunches across all schools ( $450 \pm 144$  kcal) was above the nutrient framework (approximately 369 kcal), with sandwich meals providing the most energy on average ( $463 \pm 178$  kcal), and jacket potato meals the least ( $435 \pm 104$  kcal). Mean carbohydrate ( $60.6 \pm 18.4$  g), protein ( $16.8 \pm 5.5$  g), fat ( $15.5 \pm 8.0$  g) and fibre ( $6.7 \pm 2.6$  g) contents were all above the nutrient framework. Mean free sugars content ( $10.5 \pm 5.8$  g) was notably high, with menus in all schools exceeding the nutrient framework and providing an average of 9% energy. Mean micronutrient content of lunches across all schools met the nutrient framework, including for vitamin A ( $304 \pm 319$  µg), iron ( $2.4 \pm 0.8$  mg) and zinc ( $2.0 \pm 0.8$  mg) where intakes may be of concern for this age group. The mean sodium content of lunches ( $424 \pm 203$  mg) was in excess of the nutrient framework, which is of concern.

This data indicates that energy, free sugars and sodium content of lunches provided to pre-school children in school settings may be too high and should be reduced while maintaining micronutrient density.

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