

Summer Meeting hosted by the Irish Section, 16–19 July 2012, Translational nutrition: integrating research, practice and policy

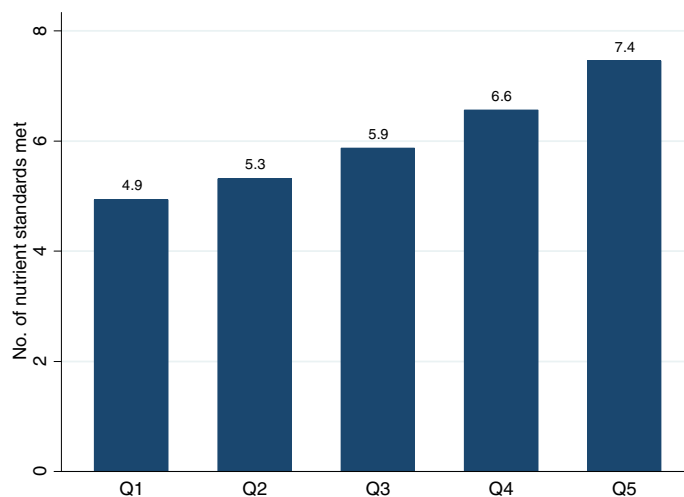
## Which nutrient is most strongly associated with dietary quality in children’s packed lunches?

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Nutrient standards for school meals in England came into force in primary schools in 2007. There are 13 nutrient standards in total excluding energy. Maximum standards are set for total fat, saturated fat, non-milk extrinsic sugars and sodium. Minimum standards are set for protein, total carbohydrate, Non-starch polysaccharides (NSP), vitamin C, vitamin A, folate, calcium, iron and zinc. The standard for energy has lower and upper restrictions. Details of the standards can be found on the School Food Trust website (schoolfoodtrust.org.uk). In 2006 a large survey of 1294 British children’s packed lunches reported that 1% of packed lunches met the food based standards and none of the lunches met all the nutrient based standards including energy.<sup>(1)</sup> The mean number of standards met for 1294 lunches was 6.0 (SD 1.8) out of 13 standards (excluding energy) with a range of 1 to 13 standards. The percentage of children’s packed lunches meeting the standard for each nutrient have been previously reported.<sup>(1)</sup> The most common nutrient standards to be met were protein (93%), vitamin C (84%) and carbohydrate (77%). The 3 nutrient standards least likely to be met were NMES (19%), sodium (20%) and iron (24%).

This analysis determines which nutrient acts as the best marker of overall dietary quality for children’s packed lunches. The number of standards met out of 13 was used as an indicator of dietary quality with a high number of standards met indicating a packed lunch of high nutritional quality and a low number of standards met indicating a packed lunch of low nutritional quality. The 1294 packed lunches were categorized into quintiles of intake for each of the 13 nutrients. Regression analysis was used to determine the percentage of variation in the number of standards met from each nutrient separately. Folate consumption was the nutrient most strongly associated with number of standards met, and therefore dietary quality, in children’s packed lunches. Folate explained 25% of the variation in number of standards met. At the lowest quintile of folate intake (0 to 21 µg) a mean of 4.9 standards were met compared with 7.4 standards at the highest quintile of folate intake (more than 55 µg). Children’s packed lunches are generally of higher dietary quality if they contain more folate rich foods such as fruit and vegetables.



1. Evans CE, Greenwood DC, Thomas JD & Cade JE (2010) A cross-sectional survey of children’s packed lunches in the UK: food- and nutrient-based results. *J Epidemiol Community Health* 64, 977–83.