



The nutritional impact of breakfast programs in the UK

E.M. Hannon¹ and B. Learner²

¹Hannon Nutrition Consultancy, Co. Clare, Republic of Ireland and ²Kellogg Europe, Dublin, Republic of Ireland

School based breakfast programs are increasingly being established in a number of European countries, including the UK. The objective of this study was to assess the impact of school based breakfast programs on dietary shortfalls among lower socioeconomic groups in the UK. A literature review was conducted to assess differences in compliance with food and nutrient based dietary guidelines and prevalence of suboptimal status of micronutrients between low and high socioeconomic groups. MEDLINE databases were searched to collect original studies and reviews published from 1990 to 2015. Studies involving >100 subjects whose dietary intake had been assessed at the individual level and/or used best practice biomarkers reflecting micronutrient status were included. Next to the review, dietary modelling was conducted to assess the impact of foods provided at breakfast clubs in addressing dietary shortfalls. Information on foods provided at breakfast clubs was obtained from local organisers in the UK. Macronutrient and micronutrient composition of foods was accessed using local food composition databases and manufacturers information. A higher prevalence of breakfast skipping⁽¹⁾ and obesity⁽²⁾ and lower intakes of fruit and vegetables⁽³⁾ have been reported in lower compared to higher socioeconomic groups among school aged children in the UK. Low intakes and/or status of certain micronutrients has also been reported in lower socioeconomic groups. Among young people aged 8 to 18 years in the Low Income National Diet and Nutrition Survey (LINDNS)⁽⁴⁾ in the UK, 20 % of girls and 6 % of boys had 25-hydroxyvitamin D concentrations below the cut off point for low vitamin D status (25 nmol/l). Mean intakes of vitamin D did not reach the European Nutrient Reference Value (NRV) of 5 µg among boys and girls and boys aged 2 to 18 years. In the LINDNS, there was evidence of low intakes of riboflavin (mean intakes < LRNI (Lowest Reference Nutrient Intake)) and iron among girls aged 11 to 18 years (21 % & 40 %, respectively). Serum ferritin concentrations below the threshold indicating low iron stores were found in 16 % of girls aged 11 to 18 years⁽⁴⁾. In the National Diet and Nutrition Survey (NDNS)⁽³⁾, mean folate and calcium intakes (girls aged 4 to 18 years only) tended to be lower in the lowest (Q1) compared with the highest quintile (Q5) of equivalised household income. Foods routinely provided at breakfast clubs (e.g. ready to eat breakfast cereals, fruit and vegetables, bread) can make important contributions (11–50 % of Dietary Reference Values) to intakes of key nutrients (e.g. vitamin D, folate, vitamin B2, iron, fibre) that may be lacking in lower socioeconomic groups in the UK. These findings may prompt further research and have implications for public health policy in addressing socioeconomic dietary inequalities in the UK. School based breakfast clubs may form part of a multi-pronged approach to address nutritional and health inequalities between people with different socioeconomic status.

This work was funded by Kellogg Europe.

1. Brooks F, Magnusson J, Klemra E *et al.* (2011) *HBSC England National Report. Findings from the 2010 HBSC study for England*. Hatfield: University of Herfordshire.
2. National Obesity Observatory (2014) Child obesity and socioeconomic status data factsheet. http://www.noo.org.uk/securefiles/150616_1730//ChildSocioeconomic_Aug2014_v2.pdf (accessed March 2016).
3. Bates B, Lennox A, Prentice A *et al.* (2014) *National Diet and Nutrition Survey*, London: PHE, FSA.
4. Nelson M, Erens B, Bates B *et al.* (2007) *Low Income Diet and Nutrition Survey*, London: FSA.