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## Self-reported fruit and vegetable and energy-dense food intake of school-aged children: ‘packed lunchers’ v. ‘school diners’

Helen Moore<sup>1</sup>, Alison Young<sup>2</sup>, Alan Batterham<sup>1</sup> and Carolyn Summerbell<sup>1</sup>

<sup>1</sup>University of Teesside, Middlesbrough, UK and <sup>2</sup>Durham County Council, Durham, UK

The Synchronised Nutrition and Activity Program (SNAP<sup>TM</sup>) is a novel, simple, quick and engaging online method for assessment of energy-balance-related behaviours at a group or population level<sup>(1)</sup> developed by the Centre for Food, Physical Activity and Obesity in the School of Health and Social Care, University of Teesside, Middlesbrough, UK.

A software usability trial was carried out between October 2007 and February 2008 in seven schools from County Durham, UK. Consenting pupils from selected Key Stage 2 classes (aged 7 to 11) were given a standardised presentation from the teacher or teaching assistant in charge about the SNAP<sup>TM</sup> assessment before being asked to complete the online assessment. Between 4 and 6 weeks from the last class completing the assessment, group-level feedback (year group and school level) was sent to the school relating to their data including several physical activity and dietary intake measures, which includes those discussed here.

Consumption of fruit and vegetables and consumption of energy-dense foods (mean counts per pupil per d) are presented from the seven participating schools for: those pupils who had eaten a packed lunch; those who had eaten a school dinner; the two combined. For both fruit and vegetable and energy-dense food counts, a Poisson regression model was used to examine the effect of belonging to the ‘school dinner’ group and year group 4, 5, or 6 (compared with the referent classes of ‘packed lunch’ and year 3 respectively).

	Year 3 (age 7–8)		Year 4 (age 8–9)		Year 5 (age 9–10)		Year 6 (age 10–11)		All year groups	
	Mean	n	Mean	n	Mean	n	Mean	n	Mean	n
Fruit and vegetables*										
Packed lunch only	1.64	11	1.29	34	1.21	34	1.37	43	1.33	212
School dinner only	1.56	16	1.46	39	1.34	38	1.31	45	1.39	138
Combined packed lunch and school dinner	1.59	27	1.38	73	1.28	72	1.34	88	1.36	260
Energy-dense foods*										
Packed lunch only	4.27	11	2.80	44	2.73	48	3.17	53	3.01	156
School dinner only	3.04	23	2.67	54	1.95	37	2.40	48	2.48	162
Combined packed lunch and school dinner	3.44	34	2.72	98	2.39	85	2.80	100	2.74	318

\*Mean counts per pupil per d.

There were no significant effects for fruit and vegetable counts. The Poisson regression incidence rate ratios (IRR) revealed that the expected counts of energy-dense foods in the ‘school dinner’ group were 80% of those in the ‘packed lunch’ group (95% CI 70%, 91%;  $P=0.001$ ). The expected counts of energy-dense foods in years 4, 5, and 6 were all significantly and substantially lower than those of the year 3 referent group, with IRR ranging from 0.66 (year 5; 95% CI, 0.52, 0.83) to 0.77 (years 4 and 6; 95% CI 0.62, 0.97).

The present study suggests that pupils eating a packed lunch consume higher amounts of energy-dense foods over the course of the day than those consuming a school dinner. It also suggests that there is no difference in fruit and vegetable intake between ‘packed lunch’ or ‘school dinner’ groups. The results of this research will be used at a local authority level to stimulate discussion of questions such as: why are children not reporting eating fruit and vegetables; how can we get children to eat fruit and vegetables as part of the school meal; also, around the issue of the contents of a packed lunch.