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The impact of the family meal on children’s fruit and vegetable intake: a cross-sectional survey of children’s dietary intake from London primary schools

M. S. Christian, C. E. L. Evans and J. E. Cade

Nutritional Epidemiology Group, School of Food Science and Nutrition, Unveirsty of Leeds, Leeds UK

The current recommendations suggest children should eat 400 grams or five portions of fruit and vegetables a day⁽¹⁾. This study uses a specially developed questionnaire for use with primary school children and explores how aspects of the home environment and parental attitudes and values affect children’s fruit and vegetable intake.

This study includes baseline measurements from children attending 51 primary schools in London. These children are taking part in two randomized controlled trials to evaluate a school gardening programme. Baseline data collection consisted of a previously validated 24-hour food ticklist, the Child And Diet Evaluation Tool (CADET)⁽²⁾. The CADET uses age and gender specific food portion sizes to calculate food and nutrient intake. Children’s intake at school was recorded in the CADET tool by trained fieldworkers and intake at home was recorded by parents/carers. A DVD with instructions for completing the questionnaire was sent home for parents/carers and children to watch.

The total sample consists of 2389 children with a mean age of 8.3 years old (SD: +/- 0.6). Overall, the CADET tool found that children consumed on average 293 g fruit and vegetables (SD: +/- 245). Clustered (by school) multilevel regression models with total fruit and vegetables as the primary outcome were conducted to explore how the home environment affects children’s fruit and vegetable intake (please see the table below). Children of families who “always” ate a family meal together at a table, had on average, 130 g more fruit and vegetables, than those families who never ate a meal together. Children whose parents’ always cut up fruit and vegetables for them, consumed on average, half a portion more fruit and vegetables compared to children with parents who sometimes or never cut up their fruit and vegetables.

Parents were asked to comment on the following questions:	N	Unadjusted Model		p ^{trend}	Adjusted Model		P-value	p ^{trend}
		F&V Grams	P-value		F&V Grams	95% CI		
Do you cut up F&V for your child to eat?								
Reference category: Never/rarely	258							
Sometimes	502	30.6	0.03		23.2	- 3.8, 50.3	0.09	
Always	817	54.9	0.001	<0.001	46.6	19.8, 73.4	0.001	<0.001
Missing	823	- 35.9	0.001		- 19.4	- 60.0, 13.1	0.2	
How often do you eat together as a family at a table?								
Reference category: Never	90							
Sometimes	768	101.1	<0.001		96.1	57.5, 134.7	<0.001	
Always	666	130.6	<0.001	<0.001	123.3	90.3, 156.2	<0.001	<0.001
Missing	880	42.8	0.01		67.0	30.4, 103.7	<0.001	

(F&V = fruit and vegetables) Adjusted for sex, ethnicity and Index of Multiple Deprivation Score.

The results show that the CADET tool can be used to estimate fruit and vegetable intake in young children. Our data identified that family evening meal behaviour plays an important role in children’s fruit and vegetable intake. Cutting up fruit or vegetables for children facilitates their intake. Eating a family meal together regularly could potentially increase a child’s fruit and vegetable intake by one portion or more.

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1. WHO (2009) Report of the meeting, Geneva.
2. Cade JE, Frear L & Greenwood DC (2006) *Public Health Nutr.* 9(4): 501–8.