

## Increased takeaway meal consumption increases dietary energy, salt and fat

T. Blackham, L. Stevenson, J.C. Abayomi and I.G. Davies

Nutrition and Health Research Group, Liverpool John Moores University, Liverpool, L17 6BD

Takeaway food has been shown to be energy dense and high in total fat, saturated fatty acids, sugar and salt<sup>(1)</sup>. Frequent consumption of takeaway food has been associated with weight gain, insulin resistance<sup>(2)</sup>, type 2 diabetes<sup>(3)</sup>, and cardio-metabolic risk factors<sup>(4)</sup>. The aim of the present study was to investigate the dietary impact of consuming an additional takeaway meal on top of a normal diet as well as replacing 1, 3 or 7 meals with a takeaway meal over one week. Takeaway meals (Chinese, Indian, English, Pizzas, Kebabs; n = 551) were collected from small independent establishments in Merseyside and analysed at an accredited public analyst laboratory. Nutritional analysis was performed by replacing 30% of the United Kingdom daily estimated average requirements (EAR) for food energy, dietary reference values (DRV) for fats and sugars and reference nutrient intake (RNI) for salt for men and women aged 19–50 years<sup>(5)</sup> with a corresponding mean takeaway food value (Table).

	Energy (kcal)				Sugars (g)			Salt (g)		
	men	% EAR	women	% EAR	men	% DRV	women	% DRV	men & women	% RNI
One additional takeaway	2752 (43)	108	2142 (43)	110	65.12 (0.71)	102	49.88 (0.72)	103	4.9 (0.3)	122
One replacement takeaway	2643 (43)	104	2059 (43)	106	62.36 (0.71)	98	47.76 (0.71)	98	4.7 (0.3)	118
Three replacement takeaways	2828 (130)	111	2296 (130)	118	59.60 (2.14)	93	46.32 (2.14)	96	6.1 (1.0)	152
Seven replacement takeaways	3198 (304)	125	2771 (304)	143	54.14 (5.02)	85	43.44 (5.00)	90	8.8 (2.3)	220

	Total Fat (g)				Total SFA (g)				Total TFA (g)			
	men	% DRV	women	% DRV	men	% DRV	women	% DRV	men	% DRV	women	% DRV
One additional takeaway	108.3 (2.4)	109	84.6 (2.4)	112	34.5 (1.7)	111	27.1 (1.7)	114	5.8 (0.1)	103	4.5 (0.1)	103
One replacement takeaway	104.1 (2.4)	105	81.4 (2.4)	108	33.2 (1.7)	106	26.0 (1.7)	110	5.6 (0.1)	98	4.3 (0.1)	99
Three replacement takeaways	113.9 (7.2)	115	93.2 (7.2)	124	37.2 (5.1)	119	30.8 (5.1)	130	5.4 (0.4)	95	4.2 (0.4)	97
Seven replacement takeaways	133.5 (16.8)	135	116.9 (16.8)	155	45.3 (11.9)	145	40.1 (11.9)	169	5.0 (1.0)	88	4.1 (1.0)	94

Values shown are mean (S.D) for combined takeaway meal categories: Chinese, Indian, English, Pizzas, Kebabs. n = 551 for Energy, Total fat, Total SFA, Salt; n = 258 for Total TFA; n = 392 for Sugars

The results show that just one replacement takeaway per week increases daily energy intake, fat intake, saturated fatty acid intake (SFA) and salt intake. For those consuming more than one takeaway per week the increases are higher. The current study adds to the literature showing how consumption of takeaway could be associated to adverse health outcomes. Further investigations are warranted to assess the dietary frequency and intake of takeaway food; as served portions are large<sup>(1)</sup> they may be shared by more than one consumer.

1. Jaworowska A, Blackham T, Long R *et al.* (2014) *Nutrition & Food Science* **49** (5), 414–430.
2. Pereira M.A, Kartashov AI, Ebbeling CB *et al.* (2005) *Lancet* **365** (9453), 36–42.
3. Krishnan S, Coogan PF, Boggs DA *et al.* (2010) *Am J Clin Nutr* **91**, 465–471.
4. Smith KJ, Blizzard L, McNaughton SA *et al.* (2012) *Eur J Clin Nutr* **66**, 577–584.
5. Department of Health/COMA (1991) *Dietary reference values for food energy and nutrients for the United Kingdom*. London : The Stationery Office.