Proceedings of the Nutrition Society (2012), **71 (OCE2)**, E159 doi:10.1017/S0029665112002169

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

Comparison of the nutritional quality of Indian takeaway and supermarket ready meals

T. Blackham, J. C. Abayomi and I. G. Davies
Liverpool John Moores University, I.M. Marsh Campus, Liverpool, L17 6BD, UK

The consumption of takeaway food has been associated with weight gain, increased insulin resistance and other adverse metabolic outcomes[1]. This may be partly due to higher energy intakes as well as larger portion sizes[2]. The aim of this study was to evaluate whether Indian takeaway meals were significantly different from similar ready meals when compared per 100 g or per portion.

Samples of takeaway meals ($n = 34$) were collected from small independent takeaway establishments and analysed by an accredited public analyst laboratory. Nutritional quality of ready meals ($n = 26$) was assessed based on the nutritional labelling information for one serving. Median nutrient levels for energy, fat and salt were compared using Kruskal – Wallis test, statistical significance $P<0.05$. The results are presented as median (interquartile range).

When samples were analysed per 100 g, the ready meal equivalent of all four meal types were significantly lower in salt when compared with takeaway meals. The salt content of takeaway meals was at least 3 times greater than their ready meal equivalent. Takeaway jalfrezi, korma and tikka massala meals were significantly higher in energy than ready meals ($p = 0.005$) but were not significantly different in fat content [Table 1]. For ready meals, jalfrezi had the lowest energy and fat content ($p = 0.002$) and korma had the lowest salt content ($p = 0.001$). When considering portion sizes, ready meals were significantly smaller than takeaways ($p = 0.000$) and all four types of ready meals were significantly lower in total energy, fat and salt content ($p<0.05$).

Table 1. Energy, fat and salt content in takeaway and ready meals per portion

	Energy kcal/100 g		Fat g/100 g	
Meal type	takeaway	ready meal	takeaway	ready meal
Chicken Jalfrezi	134.5 (129–156)†	112.0 (95–115)	8.4 (7.2–10.0)†	5.4 (4.5–5.8)
Chicken Korma	190.0 (171–195)†	159.0 (143–166)	10.2 (9.4–13.1)	10.0 (8.7–11.1)
Chicken Madras	132.5 (118–141)	133.0 (121–137)	6.6 (5.3–7.9)	7.2 (6.3–7.7)
Chicken Tikka Massala	172.0 (159–202)†	147.5 (127–159)	9.1 (7.5–12.1)	8.5 (5.9–9.3)

For takeaway meals, the results show a generally poor nutritional quality with a substantial variability in their nutrient composition. Furthermore, the portion sizes provided by Indian takeaways were significantly larger than ready meals. These results suggest there is potential for nutritional improvement in takeaway meals to bring them closer to ready meals in terms of energy, fat and salt content. Emphasis should be placed on recipe reformulation, promoting smaller portion sizes and advising consumers that takeaway meals provide more than one serving. Combined, these recommendations have the potential to make a positive impact on public health, although further investigation into consumption patterns of takeaway foods would be warranted to evaluate usual nutritional intake by takeaway consumers.

1. Smith KJ, Blizzard L, McNaughton SA *et al*. (2011) Takeaway food consumption and cardio-metabolic risk factors in young adults. *Eur J Clin Nutr* doi: 10.1038/ejcn.2011.202.
2. Dunford E, Webster J, Barzi, F *et al*. (2010) Nutrient content of products served by leading Australian fast food chains. *Appetite* **55**(3): 484–489.