



Effects of takeaway food consumption on postprandial lipaemia and diet quality: a study on cardiovascular disease risk

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Postprandial lipaemia (PPL) is a risk factor for cardiovascular disease (CVD) due to its atherogenic tendencies^(1,2). PPL is characterised by an increase in the concentration of blood triglycerides and the metabolic events that occur following the digestion and absorption of a meal containing fat⁽³⁾. Consumption of takeaway food (TF) has been on the rise over the past few decades⁽⁴⁾, often containing a range of ingredients associated with a risk of developing CVD⁽⁵⁾. To date there have been no studies which compare differences in TF consumption and the effects, if any, on postprandial responses to a high calorie test meal (HCTM). The aim of the present study was to investigate the effect of TF consumption on markers of postprandial lipid metabolism and risk of developing CVD later on in life. The objectives were to identify the dietary patterns of two groups, measure their lipid profiles, and assess whether regular TF consumers (RTFC) had a higher intake of unhealthy foods compared to non-TF consumers (NTFC).

Ethical approval and written informed consent were obtained prior to participation. Thirteen healthy volunteers were split into two groups; RTFC and NTFC. The HCTM was administered and bloods were analysed across a two hour period using Cholestech LDX point of care to assess PPL between groups. Usual dietary intake was assessed by using the EPIC-Norfolk food frequency questionnaire and responses were processed using FETA software. Demographical characteristics and anthropometrics were recorded. All data were analysed using descriptive statistics; SQRT transformations were applied to data not normally distributed. Mixed between-subjects ANOVA, to compare variables, and independent t-tests, to differentiate nutrient intakes, were carried out between RTFC and NTFC. PPL response was measured as area under the curve and incremental area under the curve according to the trapezoid rule.

Nutrient	RTFC (N = 6)		NTFC (N = 7)		P value
	M	SD	M	SD	
Energy (kcal)	3025.61	1899.57	1413.47	564.19	0.054
Total CHO (g)	361.34	175.17	152.66	81.79	0.016
CHO from sugar (g)	195.58	101.01	55.79	12.28	0.019
Total Fat (g)	126.44	83.60	61.86	27.47	0.079
Saturated FA (g)	50.20	36.17	20.65	8.33	0.058
Protein (g)	113.75	90.21	66.08	16.53	0.195
NSP (g)	22.40	12.43	12.13	4.06	0.101
Salt g* (from sodium) (g)	8.97	3.86	4.38	1.41	0.032

Notes: n = number of participants. P Value = difference between TF groups. Data was represented as mean (M) and standard deviation (SD). *Salt content was calculated from sodium concentration by multiplying by 2.542

PPL was not significantly different between groups. However, regular TF intake was positively associated with higher intakes of total carbohydrate (p = 0.016), sugar (p = 0.019) and salt (p = 0.032). These findings could be attributed to the TF composition reported as high in fats, salt and sugar⁽⁴⁾, or they may be a marker for a high risk diet. In conclusion, a diet high in TF has not been shown to effect PPL in a sample of young adults. However, regular TF consumption has been shown to increase intake of some nutrients which have been associated with CVD risk when consumed in large quantities over a long period of time.

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