

**Fish and chips with a side order of Trans fat:
The nutrition implications of eating from fast-
food outlets: a report on eating out in east
London**

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Introduction

“Trans fats (or Trans fatty acids) are found in the food chain, with one or more of their double bonds in the ‘Trans’ orientation rather than the common ‘cis’ configuration. This altered double bond configuration has an impact on both the physiochemical and functional properties of the fatty acid, with consequences for their metabolism in vivo.”

Source: Scientific Advisory Committee on Nutrition (SACN), 2007: p 1¹

In 1994, the Committee on Medical Aspects of Food Policy (COMA) reviewed available evidence and recommended that average intakes of Trans fats should not exceed 2% of food energy².

Since 1994 the evidence has been reviewed by SACN³ in 2007 with a specific focus on Trans fat intake in the UK population and levels of IPTFA in processed foods, this work informed Food Standards Agency⁴ guidance. Following this review the recommendation for 2% energy from Trans fats stands. The current recommendations made to the UK government are that for the benefit of public health Trans fat intake should, on average, have a maximum limit of 2% of food energy. WHO in 2003 advised that trans fat be limited to less than 1% of overall energy intake.⁵

The results of the 2008 – 09 rolling National Diet and Nutrition Survey (NDNS)⁶ found that 0.8% energy is provided by trans fats for all groups of the population and therefore meets the Dietary Reference Value for the UK population. However the authors urge caution in interpreting the results because the survey sample was smaller than was expected and engagement was low. This was particularly true in respect of young men. The figures were however adjusted by weighting the data but this still resulted in potentially large standard deviations for the young male population. In addition the foods analysed for the survey potentially miss 20% of food eaten and it is likely that the missed food is snack food and fast food eaten outside the home. It is also clear from the Low Income and Diet Nutrition Survey⁷ that amongst lower

¹ SACN (2007): Update on Trans fatty acids and health. Position statement by the Scientific Advisory Committee on Nutrition. Available at: http://www.sacn.gov.uk/pdfs/sacn_Trans_fatty_acids_report.pdf Accessed on 03/03/10

² Committee on Medical Aspects of Food Policy (1991) Dietary reference values for food energy and nutrients for the United Kingdom. London: HMSO

³ SACN (2007) Update on Trans fatty acids and health. Position statement by the Scientific Advisory Committee on Nutrition. Available at: http://www.sacn.gov.uk/pdfs/sacn_Trans_fatty_acids_report.pdf Accessed on 19/09/10

⁴ FSA (2007): FSA 07/12/07, Trans fatty acids. Available at: <http://www.food.gov.uk/multimedia/pdfs/board/fsa071207.pdf> Accessed 19/09/10

⁵ P'Abbe. MR, Lewis J and Zehaluk C (2010) The Potential of the Codex Alimentarius to promote Health Diets Worldwide—the Canadian Experience of implementation. In *Trade, Food Diet and Health* by Hawkes C et al (editors). Wiley-Blackwell, UK, chapter 13, 238-263.

⁶ The National Diet and Nutrition Survey (2009) Headline results from year one. Available at: <http://www.food.gov.uk/multimedia/pdfs/lidnsummary.pdf> Accessed 07/04/10

⁷ Low income diet and nutrition survey (2007): Summary of key findings. Available at: <http://www.food.gov.uk/multimedia/pdfs/lidnsummary.pdf> Accessed 07/04/10

income adults an estimated 12% are eating more than the maximum recommended level of trans fatty acid measured by percentage of energy intake.

The more recent NICE guidance on Cardiovascular Disease Prevention⁸ recommends eliminating the use of all industrially produced trans fatty acids in food. Particularly, emphasising that some individuals from lower socio economic groups tend to eat more hydrogenated fat and by extension more trans fats than other sectors of the population.⁹

Internationally, the World Health Organisation (WHO) Technical Report on Diet, Nutrition and the Prevention of Chronic Diseases recommended a population goal of less than 1% of trans fatty acids of the overall energy intake. The 2009 review of IPTFAs by WHO,¹⁰ went further and classed them as “industrial additives” based on the fact that they are not naturally present in foods and have no known health benefits, based on this they emphasised the need “*to significantly reduce or virtually eliminate industrially produced TFA from the food supply chain*”. (IPTFA)

Other countries and states have viewed the available evidence differently; these countries include Denmark, Switzerland, and Austria; some US states. In all of these countries and states there has been a move to eliminate IPTFA from all food, in reality this means reducing the content of the diet to around 0.5 % energy given that some trans fatty acids occur naturally and other are produced, all be in small amounts during cooking/ processing.

At a population level trans fat and particularly IPTFA has been implicated in increased risk of death as an outcome of cardiovascular disease. There are potentially four causative factors; TFA are associated with a rise in blood levels of low density lipoprotein (LDL); a reduction blood levels of high density lipoprotein (HDL); there is also a causal link between TFA and inflammation of the cells lining blood vessels which is an independent risk factor for atherosclerosis, sudden death from cardiac causes, diabetes and heart failure¹¹; finally observational studies have found that high intake of IPTFA has a stronger association with the risk of weight gain and particularly abdominal weight compared to alternative fats e.g. polyunsaturated fats^{12, 13}

⁸ NICE (2010) NICE public health guidance 25: Prevention of cardiovascular disease.

⁹ National Heart Forum (2010) Position paper on the elimination of industrially-produced Trans fats (IPTFAs) from foods consumed in the UK. Available at:

http://www.heartforum.org.uk/Policy_Consultations_2093.aspx Accessed 14/07/10

¹⁰ Uauy R et al (2009): WHO Scientific Update on Trans fatty acids: summary and conclusions. In: European Journal of Clinical Nutrition (2009) 63, S69

¹¹ Uauy R et al: WHO Scientific Update on Trans fatty acids: summary and conclusions. In: European Journal of Clinical Nutrition (2009) 63, S69

¹² Wahle K. W., James W.P.(1993) Isomeric fatty acids and human health. European Journal of Clinical Nutrition. 47 (12): 828-39

This is not the place for an extended systematic review of the links between cardiovascular disease (CVD) and social deprivation, this has been documented extensively elsewhere notably in Fair Society, Healthy Lives, the Marmot Review 2010. The report clearly states that:

“There are steep social gradients in the incidence of both cancer and cardiovascular disease”
(p52)¹⁴

Morbidity and mortality from cardiovascular disease is higher among men in the most deprived twentieth compared with the least deprived twentieth of the population, 2.7 times more deaths in 2001-3. The death rate from cardiovascular disease had narrowed by 38% between 2006-8. While causation of cardiovascular morbidity and mortality in the most deprived sectors of the population cannot be causally linked to trans fat intake it is known that risk factors for circulatory disease such as smoking, lack of physical activity and obesity are also elevated along social gradients. The study that we report later in this document was undertaken in a socially deprived area of London, Tower Hamlets, and contributes to the body of evidence on the intake of trans fatty acids in populations in lower income areas.

What action has been taken in the UK?

Significant moves have been made by manufacturers, supported previously by the Food Standards Agency, to reduce trans fat in processed foods. Some UK retailers, including Marks and Spencer, ASDA and the Co-operative, already declare that their products are ‘Trans fat free’. The outcome of this reduction can be seen in the National Diet and Nutrition Survey. However, there has been less emphasis on reducing the trans fat content of takeaway food. In 2006, Stender, Dyerberg and Astrup¹³ found that 170g fries and 160g of nuggets from McDonalds restaurants in the UK contained 6 -8 grams of trans fat This one meal exceeded the current dietary reference value of 2% energy, providing around 3% energy in an average adult diet. McDonalds has now taken steps to reduce the trans fats in the meals it provides¹⁵, however this is not true of all providers of takeaway food. Other independent data on the trans fat content of takeaway food in the UK is difficult to find, for this reason takeaway food remains potentially a significant source of trans fats in the UK diet. That is the equivalent of 85% of the take away food tested containing trans fat.¹⁶ In fast-food outlets repeated use of vegetable oil, where the oil is allowed to cool and then re-heated results in the formation of trans fats. It is estimated that 0.2 – 1% of total fat content are converted into trans fatty acids through the deep frying process over longer periods with initially IPTFA-free vegetable oils¹⁷. On the

¹³ Stender, S., Dyerberg, A., Astrup, A (2007) Fast food: unfriendly and unhealthy. International Journal of Obesity.31; 887-890.

¹⁴ Marmot (2010)The Marmot Review: Fair Society, Healthy Lives. Available at: <http://www.ucl.ac.uk/ghcg/marmotreview/FairSocietyHealthyLives>. Accessed 07/04/10

¹⁵ Information taken from McDonalds website. Available at: <http://www.makeupyourmind.co.uk/tfa.html> Accessed 07/04/10

¹⁶ Lloyd, S, Caraher, M & Madelin, T (2009) The dietary/nutrition implications of eating from fast-food outlets: a case study from east London. Sent for publication.

¹⁷ Health Canada (2006): TRANSforming the food supply: Report of the Trans Fat Task Force submitted to the Minister of Health, p. 26

positive side the experience of British retailers indicates that the removal of trans fat from food is achievable.¹⁸

The persistent presence of trans fats in cheaper, frequently eaten food, such as fast food and snacks, does mean that some sectors of the population are at more risk than others; specifically the sectors of the population that have higher than average intakes of these types of food. It is clear from the 2008 - 09 NDNS that this is likely to be older teenager and young adults² and this is confirmed by Thane and Stephen (2006).¹⁹ Of course it is also known from the Marmot review that there is a social gradient where individual who are socially deprived tend to have a poorer diet than their less deprived counterparts.^{14,20}

Latest estimates indicate that the average person eats one in every six meals outside the home in the UK and also that this is an increasing trend²¹. The number of takeaway food outlets rose by 8% from 2008 to 2009. It is claimed that the demand for affordable takeaway food appears to be insatiable.^{22 23}

The takeaway market in the UK is made up of many independent small and medium size businesses. Often these businesses change premises or change owners over time; it is therefore difficult to keep records of them up to date. Their ability to change and make improvements in their food offer is limited. To date there has not been a consistent approach to addressing trans fat in takeaway food in Britain.

Other countries and cities such as Denmark, Seattle and New York have adopted strategies ensuring that the takeaway sector is using frying and cooking oils with less than 2% IPTFA. Denmark banned the use of frying oils with more than 2% of IPTFA; New York and Seattle have introduced legislation requiring fast food and takeaway chains with more than 15 outlets to only use cooking and frying oil with less than 2% IPTFA. In addition New York has set up a 'Trans fats help center'²⁴

¹⁸ Uauy R et al (2009): WHO Scientific Update on Trans fatty acids: summary and conclusions. In: European Journal of Clinical Nutrition (2009) 63, S69

¹⁹ Thane CW, Stephen AM (2006) Day-to-day variation in food and nutrient intakes of British adults. Public Health Nutrition, Vol. 9, No. 7(A), 102.

²⁰ Medical News Today (2009) Social background weighs heavily on teenage diet 26 September. Available at:

<http://www.medicalnewstoday.com/articles/165247.php> Accessed 07/04/10

²¹ Food Standards Agency (2009). Calorie labelling and nutrition information in catering. Available at <http://www.food.gov.uk/healthiereating/healthycatering/cateringbusiness/calorie>

²² Thompson, J (2009) Britain's appetite for fast food proves insatiable. *The Independent* 25/11/2009.

²³ McDonalds and Allegra Strategies (2009) *Eating out in the UK 2009: A Comprehensive Analysis of the Informal Eating Out Market*. Allegra, London.

²⁴ Trans fat help center. New York City Available at :

<http://www.nyc.gov/html/doh/html/Transfat/index.html>. Accessed 17/04/10.

Methodology

Our study was undertaken in Tower Hamlets, a London Borough which is known to be socially deprived.

We set out the hypothesis as:

To investigate the percentage energy contribution as provided by trans fat from takeaway food in a teenage population.

We know from previous work that young people were eating from take-aways on a regular basis and local observational work for the PCT found that one-third of young males were eating three or more meals outside the home in the week. Our own work with pupils indicated that they were snacking on take-away and fast food. This may be in addition to meals bought or consumed in the family setting.

In order to gain an insight into the location and spread of FFOs, behaviour & food choice and food availability and content we used:

1. Survey and mapping of all fast food outlets (FFOs) in the borough.
2. Food samples from five fast-food outlets that were representative of the type of outlet in the borough, at each of the chosen fast-food outlets we collected data on food options/menus, menu choices, and healthy options; we also observed ordering and consumption patterns at lunchtime and in the evenings.
3. Using the data from the mapping, five outlets were chosen as representative of the types of FFOs in the area. Samples of food, (see table 1) from the menu were taken and sent for analysis to a laboratory that had accredited analytical processes.
4. From the analysis data we calculated a traffic light profile for each food sampled.

Table 1: Take-aways by type and food samples taken

Type of take-away	Samples taken
Pizza bar	1. A small pizza with pepperoni topping
Fish and chip bar	2. A portion of chips from the fish and chip shop 3. A portion of chicken 4. A small portion of fried fish 5. A pie medium
Chinese take-away and fish and chip shop	6. A vegetable chow mein 7. A chicken chow mein 8. A portion of egg fried rice 9. A portion of boiled rice
Doner kebab take-away	10. A small shish kebab 11. A small doner kebab 12. Chicken curry 13. Meat curry 14. A portion of boiled rice
Fried chicken take-away	15. A portion of chips 16. A 2 wing portion of fried chicken 17. A burger 18. A small cheese burger 19. A Halal burger

The samples were analysed for energy, fat, saturated fat, trans fat, carbohydrate, sugars, protein, salt / sodium and fibre by an accredited laboratory. When buying the food we chose the smallest portions sizes available and all calculations assumed that there was no waste from the meal. We aimed to minimise error associated with the risk of making excessive measurements of the trans fat content of the food and subsequently of the trans fat intake of the population. Using the nutrient analysis from the food samples we profiled all the sampled food using the Food Standards Agency (FSA) front of pack signpost labelling system which is based on a nutrient profiling model.²⁵ We recognise that the traffic light system was not designed for analysing food from fast-food outlets; however we consider it to be a robust mechanism for providing a simple framework for understanding the nutrient content of these foods; and also a mechanism which comparisons can be made between foods. In addition this clear system is understood by consumers²⁶.

²⁵ Food Standards Agency (2007). Front of Pack Traffic Signpost Labelling: Technical Guidance: Issue 2. Available at <http://www.food.gov.uk/multimedia/pdfs/frontofpackguidance2.pdf>. Accessed 14/06/10.

²⁶ Van Kleef E., Van Trijp H, Paeps F. and Fernandez-Celemei, L. (2007) Consumer preferences for front-of-pack labelling. Public Health Nutrition 11; (2), 203 – 213.

RESULTS

Context

The concentration of FFOs is the subject of another article, but to set the context the borough had 627 FFOs, newsagents and groceries providing a ratio of 41.8 junk food outlets to every school, this compares to the national average ratio of 25 outlets per school, 36.7 for inner London, and 38.6 for the ten UK ‘worst’ local authorities. There was a clustering of outlets on main thoroughfares in the borough thus contributing to an obesogenic environment. The majority of these outlets had special meal offers as can be seen in Figure 1.

In our previous study, Lloyd, Madelin & Caraher (2010)²⁷ we observed that children were eating take-away food on average 3 times a week, this was verified by data from a local Ipsos Mori²⁸ survey which found that that nearly one third of males aged 16-24 were eating three or meals week from take-aways

Figure 1 Photos of menu options showing soft drinks as inclusive options



Data collected during our observations in the FFOs showed that none of the five outlets advertised any ‘healthy’ options. However some outlets offered salad and / or gherkin in burgers or in kebabs. A similar picture was seen with drinks. All the outlets sold bottled water and the majority had a small selection of ‘diet’ drinks, generally cola; however the vast majority of drinks available were carbonated sugar containing drinks. It was commonly observed that people ordering food included a carbonated drink in their order, also many of the outlets in the area offered free drink with certain meal combinations.

Using the data from nutritional analysis, and comparing them to the front of pack signpost nutritional criteria defined by the Food Standards Agency²⁹, we have created a traffic light front of pack profile for

²⁷ Lloyd, S, Madelin, T & Caraher, M (2010) The School Foodshed: Schools and fast-food outlets in a London borough. Sent for publication.

²⁸ Ipsos MORI (2009). Face to face random probability survey of 2342 respondents aged 16 and over carried out in Tower Hamlets on behalf of the local NHS trust.

²⁹ Food Standards Agency (2007) Front-of-pack traffic light signpost labelling, technical guidance. London: Food Standards Agency.

each analysed food, indicating how 'healthy' the food is. The front of pack profiles and the trans fat presence of all the analysed foods is presented in Table 2.

Table 2: Nutrient profile and trans fat content of all the fast-foods sampled

Type of take-away	Samples taken	Front of pack traffic light signposts				
		Fat	Saturated Fat	Total sugars *	Salt	Trans fats
Pizza bar	1. A small pizza with meat topping	Amber	Red	Green	Amber	√
Fish and chip bar	2. A portion of chips	Red	Red	Green	Green	√
	3. A portion of chicken	Amber	Amber	Green	Red	√
	4. A small portion of fried fish	Red	Red	Green	Green	√
	5. A pie medium	Red	Red	Green	Amber	√
Chinese take-away and fish and chip shop	6. A vegetable chow mein	Amber	Green	Green	Red	√
	7. A chicken chow mein	Red	Green	Green	Red	√
	8. A portion of egg fried rice	Red	Green	Green	Red	√
	9. A portion of boiled rice	Green	Green	Green	Green	X
Kebab house	10. A small shish kebab	Amber	Amber	Green	Amber	√
	11. A small doner kebab	Red	Red	Green	Red	√
	12. Chicken curry	Red	Green	Green	Red	X
	13. Meat curry	Red	Red	Green	Red	√
	14. A portion of boiled rice	Green	Green	Green	Green	X
Fried chicken take-away	15. A portion of chips	Red	Red	Green	Green	√
	16. A 2 wing portion of fried chicken	Amber	Amber	Green	Amber	√
	17. A small burger	Amber	Amber	Green	Amber	√
	18. A small cheese burger	Amber	Amber	Green	Amber	√
	19. A vegetable burger	Amber	Amber	Green	Amber	√

Key:

Red High content of nutrient per portion;

Amber Medium content of nutrient per portion;

Green Low content of nutrient per portion.

* None of the meals analysed contained milk or fruit sugars

Many of the foods had two or more red traffic lights generally indicating that they contained unhealthy levels of fat and saturated fat, and in some cases salt.

Fat

The small pizza which was tested was particularly high in saturated fat, due to the cheese and pepperoni content. The fish and chip shop foods (chips, fish and pie) were high in fat and saturated fat. The exception was chicken, although this was high in salt, see below. Chips and fish are likely to be high in less healthy, saturated fat, because the oil that they are cooked in will most likely have been used a number of times; the pie is likely to be high because of the type of lard / shortening used in the pastry.

The Chinese take-away chicken chow mein and the egg fried rice had high levels of fat, but low levels of saturated fat. The fat adds to the Calorie content of the foods. The analysis of the food from the kebab house, particularly the doner kebab, and the meat curry were particularly unhealthy with high levels of fat, saturated fat and salt. The doner kebab which is a bought-in product is of particular concern as it is assumed that this particular product is produced and sold centrally and therefore supplied to number of outlets, and potentially to a large number of outlets. The food from the fried chicken take-away, as with the fish and chip shop, had a high fat and saturated fat profile, again this is probably due to the oil being used to cook the chicken.

Trans fats

Of particular note is that all the foods tested with the three exceptions of boiled rice (2) and chicken curry contained some trans fatty acids. Trans fats do not generally occur naturally in fast-food type foods; most trans fat in the diet is derived from industrially hardened oils. Several large cohort studies have found an increased risk of coronary heart disease associated with an increased intake of trans fats.³⁰ . While the majority of foods contained trans fat below the 2% energy level, the doner kebab contained 0.838g/100g trans fat, the equivalent of 2.9% energy.

DISCUSSION

All takeaway food with the exception of boiled rice and chicken curry contained trans fat. All children in our focus groups with the exception of one were eating takeaway food regularly, although the number of times that takeaway food was eaten each week varied, this is supported by data from the PCT. As we already mentioned there appears to be a higher intake of fast food among young men and our qualitative work suggested that many young people in our sample were eating fast food as a snack on the way from school. Our findings are supported by some local survey work carried out for the PCT.³¹ This was partially related to its cheapness and also its availability near schools and on routes home from school. So there is a danger that for some groups intake of fast food and trans fats may be higher.

³⁰ Geissler C and Powers H. (2005). Human Nutrition. Elsevier Churchill: Philadelphia.

³¹ Ipsos MORI (2009). Face to face random probability survey of 2342 respondents aged 16 and over carried out in Tower Hamlets on behalf of the local NHS trust.

There is a relationship between high takeaway intake and high trans fat intake. In this area the take-aways were independently owned and run, there are not many national or global chains in the area. National chains due to their purchasing power and central control of standards are likely to be ensuring that oil is not reused and that Trans fats are eliminated from the food sourced. These are harder options for small independently run restaurants and take-aways.

Children who ate takeaway regularly tended to have less healthy diets generally¹³. These children were likely to come from families with higher levels of social deprivation, if the associations are made between increases in LDL and CVD and then to body weight, fat distribution and diabetes, this is potentially very powerful.

In terms of the health of the population of Tower Hamlets there is another factor that has an equal if not greater impact on health. The laboratory analysis shows that the fast-food meals in the area are high in fat with a content of 34 – 37% energy. Of more concern is that 10 -19% of energy is provided by saturated fat. This compares unfavourably with the dietary reference value for fat intake of 34% energy from total fat and 11% energy from saturated fat. The high percentage of saturated fat intake has significant public health implications, specifically potential the impact on the burden of disease from cardiovascular disease.

When this information is also seen in the context of the fast-food containing trans fat, and the role of trans fat in the development of heart disease, this adds to the argument that three fast-food meals a week will contribute significantly to the incidence of CVD amongst individuals in Tower Hamlets. Any increase in trans fats among a section of the population already disadvantaged runs the danger of further increasing CVD rates. Responsible manufacturers are now aiming to reduce trans fats to the lowest level possible in processed products, and to significantly below the safe level of 2% energy intake. The retail and manufacturing sector as well as many of the major big fast-food operators have begun to remove trans fats from their foods and/or change cooking practices. The problem is largely with the small and independent food service sector where the margins of profit are smaller and there is a tendency to cut costs by buying cheaper oils, foods high in trans fats or in reusing oil. The doner kebab that was analysed contained 0.838g/100g trans fats and 259kcal/100g. This is equal to 2.9% energy for that specific product. In percentage terms this is greater than the 2% recommended intake from energy by SACN. This food in particular was likely to be detrimental to health. The reason for the high content is unclear however it is known that hydrogenated vegetable fat enters the food chain, it is possible that this has been added to the doner kebab during manufacture.

The coronary heart disease (CHD) standardised mortality ratio (SMR) for Tower Hamlets is 167.8, the highest SMR for CHD in London. Poor diet is particularly prevalent in areas of nutrition insecurity and inequality, such as Tower Hamlets; therefore it isn't surprising that deaths related to conditions linked to

poor diet in the borough are high. Within this is an inequality in that the community in this area do not have the option of a healthy choice. Global and national chains due to the scale of their operation are probably a better option for not including trans fat in the food they serve.

The point is not that people should not eat out or that there is not a role for fast-food and take-aways, the problems are fourfold:

1. The lack of healthy options and nutrition information in fast-food outlets.
2. The lack of other affordable healthy options in the local environment.
3. Their contribution in large numbers to the obesogenic environment and lack of healthy choice.
4. The lack of owner awareness of the problem.

Rather than ‘demonising’ fast-food there are ways to modify the foodstuffs and production methods to make the options healthier. There is a long tradition of what are called ‘street foods’, with members from ethnic minorities both as customers and also as owners of such establishments. For example ‘chat’ or ‘chaats’ in India are street foods which in the UK have been transformed into starters on restaurant menus. ‘Street food’ has become more and more connected with take-out, junk food, snacks and fast-food as premises change to take account of the times. Key to this is standardisation and new technology which allows time to be saved in the preparation of such food. ‘Street food’ does not have to be unhealthy. In many cases such outlets can perform a useful function in terms of creating distinctiveness and contributing to a healthy diet within a busy lifestyle.

Given the prevalence of obesity in the area of Tower Hamlets and the propensity for children and young adults, (particularly men) to eat relatively large amounts of fast-food, and therefore a have a proportionally higher energy intake from this food, we concerned ourselves with the energy content of the food.³² Particularly the energy derived from fat, and particularly saturated and trans fats. This study shows that in the population that we studied young people in the Tower Hamlets area of London are likely to take in a significant amount of their energy from fast-food. Depending on the food chosen this type of food can also contribute high levels of fat, saturated fat, trans fat and salt to the young person’s diet leading to an unhealthy intake. Two key issues emerge from all of this: the first is to do with choice the second with lack of options. Depending on the choices of food the level of trans fat may be lower although the level of saturated fat will be high. Some of the food we sample had lower levels of trans fats so if you spread your choice across a range of take away food and include rice then you may well have lower trans fat in the food. If you chose particular foods regularly then you may well have higher trans fat intake as in the example of the doner kebab with its 2.9% energy as trans fat. The second issue is one of options in the area we sampled in the options are limited, there were few healthy options and many of the take-aways and FFOs served a similar range of products. Action needs to be taken to support take-aways to provide

³² Prentice AM, Jebb SA. (2003). Fast-foods, energy density and obesity: a possible mechanistic link. *Obesity Reviews*. 4, (4), 187 -194.

healthier alternatives and to help young people and parents understand the diet choices that they are making are impacting on their health.

Another important point of note is that the levels of trans fat in the analysed food was, for most foods less than 2% energy, while this is level acceptable when applying UK, SACN criteria, using alternative criteria This would be unacceptable. The presence of industrially produced trans fat in food is illegal in Denmark, the food tested in Tower Hamlets would be unacceptable if judged by this criteria.

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With thanks to the National Health Forum for permission to use their paper as reference:

National Heart Forum (2010) National Heart Forum position paper on the elimination of industrially-produced Trans fats (IPTFAs) from foods consumed in the UK. Available at:
<http://www.heartforum.org.uk/resources/policypapers/?entryid30=3200> Accessed 20/09/2010